

# Requests for Information from Nov. 17, 2016 Cleaner Air Oregon Advisory Committee Meeting



Request	Follow up
<p>What is the intersection between water quality criteria for human health toxics standards (fish consumption) and pollutants of concern for industrial air emissions?</p> <p>What is the list of bioaccumulative, persistent chemicals?</p>	<p>CAO rulemaking staff met with Deb Sturdevant, Water Quality Standards Program Lead for DEQ, to discuss an issue raised by members of the Advisory Committee, who wanted to know whether protective water quality standards might overlap with protective air quality standards. The underlying concern is that both might end up being protective of the same kind of exposure, which would in effect be “double-counting” potential human health risks if a facility has both a water quality permit and an air quality permit. This issue brings up two related questions. First, do water quality standards already account for deposition of air toxics from air into water? Second, do water quality standards take into account the fact that an individual may be exposed to the same air toxic via direct inhalation as well as through water and fish consumption?</p> <p><u>Do water quality standards already account for deposition of air toxics from air into water?</u> No. Water quality criteria are similar to DEQ's Ambient Benchmark Concentrations for air toxics, in that the source of the pollutant is not considered in derivation of the standard. The water quality criteria are simply a health-risk based concentration of a pollutant in water (or fish tissue) that an individual could be exposed to without suffering risk beyond an acceptable limit. The way that the pollutant gets into the water is not a consideration in development of the criteria, so there is no double-counting from a source perspective between air water quality ambient standards.</p> <p><u>Do water quality standards take into account the fact that an individual may be exposed to the same air toxic via direct inhalation as well as through water and fish consumption?</u> In rare cases. Water quality criteria that are protective of human health come in two forms: “Water + Organisms” standards and the “Organisms Only” standards (refer to Table 40: <a href="http://www.deq.state.or.us/wq/rules/div041/table40.pdf">http://www.deq.state.or.us/wq/rules/div041/table40.pdf</a> ), and are available for 113 pollutants. The ”Water + Organisms” criteria account for exposure that occurs through ingestion of fish and shellfish as well as ingestion of water from the same water body, while the “Organisms Only” criteria estimate risk only for ingestion of fish and shellfish. In the case of 16 non-carcinogenic pollutants, the formulas used to calculate the related water quality criteria include a parameter called a “Relative Source Contribution”, or “RSC”. In this context, the word “source” refers to the media through which an individual person may be exposed to a contaminant (i.e. drinking water, diet, air, etc.). It is not referring to the original source of the pollution, such as an individual industrial facility or car exhaust. RSCs are relevant to use only under certain circumstances; for example, they cannot be used to calculate standards for carcinogenic pollutants. To see the formulas for both non-carcinogenic and carcinogenic pollutants, please refer to Sections D.3.1 and D.3.2 of the <i>Human Health Criteria Issue Paper, 2008-</i></p>

2011: <http://www.deq.state.or.us/wq/standards/docs/toxics/humanhealth/rulemaking/HumanHealthToxicCriteriaIssuePaper.pdf> ).

The purpose of the RSC in the calculation of water quality criteria is to account for all other media of exposure aside from consumption of fish and water. These could include skin absorption, inhalation, or other foods and occupational exposures. Only the RSC parameter has the potential to include some consideration of inhalation exposure as part of a water quality criterion; none of the other parameters used in the water quality formulas, such as the fish consumption rate, take air exposure into account. RSCs were only used in the cases of 16 pollutants (comprising about 14% of the 113 pollutants for which water quality standards exist). In cases where RSCs are relevant to include, EPA typically uses a default RSC value of 20 percent (20%), with some exceptions. This would mean that it is assumed that only 20% of a person's total body exposure to that pollutant is through consumption of water or fish and that the rest comes through other pathways. Table 2 in the *Human Health Criteria Issue Paper, 2008-2011*, lists the 16 pollutants for which RSCs were used to calculate related water quality criteria. With the exceptions of chlorodibromomethane and 1,1,2-trichloroethane, the basis of each RSC used to calculate the related standard is provided in Appendix C of the June 2008 *Human Health Focus Group Report: Oregon Fish and Shellfish Consumption Rate Project*, accessible at <http://www.deq.state.or.us/wq/standards/docs/toxics/HHFGFinalReportJune2008.pdf> . In the cases of ethylbenzene and toluene, which both have an RSC of 20%, the remaining 80% of the exposure is assumed to be related primarily to exposure via the air pathway.

Importantly, RSCs are generalized default values that are not site-specific. The percentages mentioned above are not based on specific information about a particular industry, location, or source of the pollutant.

In conclusion, water quality criteria are derived independently of the source (industrial point source, global air deposition, naturally occurring, agricultural sources, mobile sources, etc.) contribution to the water or fish tissue. Only 16 of the 113 water quality standards were calculated using an RSC, and of those 16 standards, only two utilized an RSC assumed to be related primarily to the air pathway. Therefore, CAO rulemaking staff believes that there is likely to be negligible overlap in protection of human health through exposure to air in the event that a facility has both a water quality permit and an air quality permit.

#### [Fact sheet on Human Health Toxics Water Quality Standards](#)

EPA has a list of 16 chemicals they classify as persistent, bioaccumulative, or toxic (PBT). <https://www.epa.gov/toxics-release-inventory-tri-program/persistent-bioaccumulative-toxic-pbt-chemicals-covered-tri>

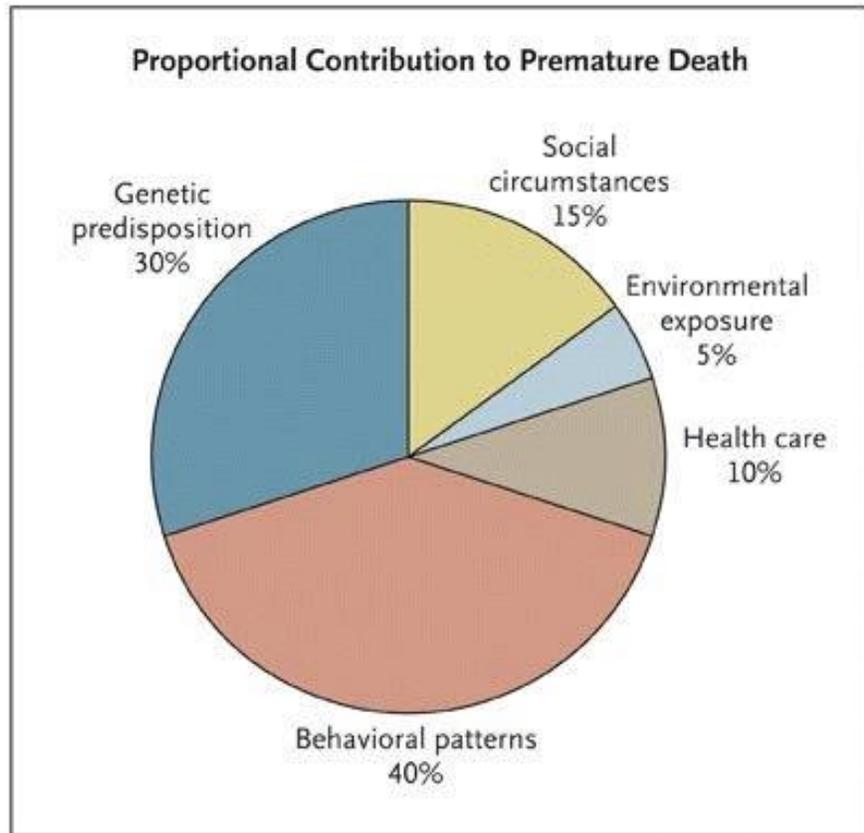
Would it make sense to do cross media for any pollutants that are neither bio accumulative nor persistent?

#### **Why cross-media impacts should be considered only for chemicals that are bioaccumulative and/or persistent:**

Consideration of cross-media impacts is only relevant for chemicals which are bioaccumulative or persistent in the environment; chemicals which are not bioaccumulative or persistent are not present long enough to spread to other media. Bioaccumulative chemicals are those which are absorbed by an

	<p>organism at a rate greater than the rate of breakdown or excretion from that organism, and typically (but not always) accumulate in fatty tissues. PCBs are an example of a bioaccumulative chemical group that accumulates in fatty tissue. Persistent chemicals are compounds that resist environmental degradation through chemical, biological, or photolytic processes; these chemicals tend to remain unchanged for long periods of time in environmental media. Metals are examples of persistent chemicals.</p>
<p>Chart that better defines BACT, TBACT, LAER, etc. in terms of what they require and standards to meet.</p>	<p>Completed and posted to web</p>
<p>With the current staffing level at DEQ, how long do new and renewal permits take to write, for each permitting level?</p>	<p>DEQ is currently not set up to track time spent on an individual permit. DEQ will be transitioning to a new time accounting system and is seeking to improve the tracking to capture a more detailed way of measuring program elements.</p> <p>The question of time spent to issue an air permit with an air toxics component is one of the questions that we are preparing to answer for the rule fiscal impact. The upcoming implementation discussion in the CAO advisory committee will help inform the process. Since policy decisions have not been made regarding whether the air toxics permitting implementation will share a similar process as the Title V permitting, making the comparison between the two will not lead to an accurate depiction of future state timeframes. The regulatory reform includes health based and risk based permitting, unlike the current air permitting structure. Again, the CAO advisory committee process will help work through these fiscal questions.</p> <p>For the time being, DEQ uses the ADCP and Title V timeliness Key Performance Measures (KPM) as a measure of the effectiveness of the Air permitting program. The ADCP permit timeliness improved by 6% from 2014 to 2015 to 84%. The timeliness of the Title V permit increased by 8% from 2014 to 2015 to 90%.</p>
<p>How much did PATS model cost to run?</p>	<p>The DEQ Air Quality Program planned, staged and performed the PATS model between July 2009 and June 2011. Much of the initial work involved learning, capacity building and emission inventory development. DEQ entered into a \$100,000 contract with Eastern Research Group to develop areas of the emission inventory that were beyond staff expertise and availability. Between July 2009 and June 2011, approximately 3.5 DEQ staff worked full time on the PATS model. Core steps included emission inventory development, model layer design, spatial emissions allocation, inputting emission inventory data, running the model and preparing a 2017 projection based on economic trends and regulatory changes. PATS modeling work also included analysis of draft results, doing quality assurance, post processing of data (making raw results understandable through groupings and statistical analysis), GIS mapping, interpretation, and preparation of materials for use in the PATS Advisory committee, responding to advisory committee requests for additional information, and analysis of data quality.</p>

Pie chart Susan Andersen requested



Schroeder, Steven A., New England Journal of Medicine. 2007; 357:1221-1228, September 20, 2007. Retrieved November 17, 2016.  
<http://www.nejm.org/doi/full/10.1056/nejmsa073350#t=article>

## From October

Request	Follow up
Recommendation to organizers – way to incorporate environmental justice voices to agenda.	OHA and DEQ are continually working to ensure that environmental justice topics and discussions are incorporated into all Rules Advisory Committee meetings and documents.
Request – History of OR 101. Cover the many reasons why we have vulnerable populations. They didn’t just drop out of the sky.	Need to understand if this was an offer for discussion or if this was a request that we do this
Request – What is strategy for addressing environmental justice in this rulemaking	DEQ and OHA rulemaking team has bolstered the inclusion of environmental justice in analyzing and presenting options for program elements to the Advisory Committee, particularly around the topic of cumulative impacts and risks. A senior cross-agency team is holding ongoing meetings to develop evidence-based and effective strategies for engaging communities with environmental justice concerns during the rulemaking process.

Request – decision diagram for program	Decision diagram will be available online, once the program is developed.
Summary of public forum input	Online forum survey closed in November 2016. Overview presentation was posted online after the October 18th Advisory Committee meeting. The full report will be available on <a href="http://cleanerair.oregon.gov">cleanerair.oregon.gov</a> in December 2016.