



# DISCUSSION DRAFT: Proposed Framework for Cleaner Air Oregon Health-Risk Based Permitting Program

*This table describes proposed program elements and agency proposals for each element.*

Issue Paper		
Program Element		Proposed
<b>Applicability</b>	<b>1</b> Inclusion of existing sources in program	Requirements would apply to permitted and unpermitted new, modified, and existing sources. DEQ would need to do additional work to identify currently unpermitted sources that pose a health risk. Implementation would be phased in over time.
	<b>2</b> Regulation of individual pieces of equipment and/or the whole facility	The program would set limits on whole-facility emissions as well as emissions from new emissions units.
	<b>3</b> Categorical exemptions	Categorical exemptions would be proposed based on a determination of whether toxic air pollutants are emitted from a piece of equipment or process. The agencies (OHA and DEQ) will evaluate whether DEQ's Title V categorically insignificant activities list is appropriate to use for toxic air pollutants. Examples of categorical exemptions could include small natural gas boilers, spray coating and associated drying equipment used exclusively for educational purposes in educational institutions, office activities, and food service activities.
<b>Pollutant Scope and Setting Concentration Levels</b>	<b>4</b> Air toxics included in the program	<p>The program would use a tiered approach in which different lists of chemicals are used for different program functions.</p> <ul style="list-style-type: none"> <li>• <b>Reporting:</b> The program would require facilities to regularly report emissions on approximately 660 toxic air pollutants (This list is a compilation of toxics list from WA Ecology, California Air Resources Board, EPA's Hazardous Air Pollutants, and DEQ's Toxics Focus List).</li> <li>• <b>Permitting:</b> Only a subset of the reporting list would be regulated in air toxics permits- the approximately 215 toxic air pollutants for which authoritative bodies have developed health risk-based concentrations. At the present time, these authoritative bodies include DEQ's Air Toxics Science Advisory Committee (ATSAC), EPA's Integrated Risk Information System (IRIS) and Provisional Peer-Reviewed Toxicity Values (PPRTVs), California EPA's Office of Health Hazard Assessment (OEHHA), and the federal Agency for Toxic Substances and Disease Registry (ATSDR).</li> </ul>
	<b>5</b> Method for setting regulatory health risk-based concentrations	<p>Risk-based concentrations (RBCs) would be adopted in rule, using available toxicological data from a hierarchy of authoritative bodies.</p> <p><b>Chronic (annual) health risks from long term exposure:</b></p> <ul style="list-style-type: none"> <li>• <u>Carcinogens</u>: DEQ in consultation with ATSAC or OHA, EPA IRIS, EPA PPRTVs, OEHHA</li> <li>• <u>Noncarcinogens</u>: DEQ in consultation with ATSAC or OHA, EPA IRIS, EPA PPRTVs, ATSDR, OEHHA</li> </ul> <p><b>Acute (24-hour) health risks from short term exposure:</b></p> <ul style="list-style-type: none"> <li>• <u>Noncarcinogens</u>: DEQ in consultation with ATSAC or OHA, ATSDR, OEHHA</li> </ul> <p>RBCs for carcinogens with a known mutagenic mode of action would incorporate age-dependent adjustment factors (ADAFs) to account for early-life sensitivity to these carcinogens.</p> <p>RBCs would be reviewed and updated at 3-year intervals. The review would be done by agency staff following the hierarchies listed above, scanning for changes in toxicity values published by the listed authoritative bodies since the last review. RBC values would be listed in the rule language, so changes to RBCs based on new toxicity information from authoritative bodies would require rulemaking with opportunity for public comment. If toxicity information for one of the 660 reporting list toxic air pollutants becomes available from one of the authoritative bodies, that toxic air pollutant would be added to the permitting list along with its new RBC. In the interval</p>

		between triennial reviews, anyone could propose that a new toxic air pollutant be added to the list if they can show that there is enough toxicity information to develop an RBC and there is evidence that the chemical is emitted by an industrial facility in Oregon.
	<b>6</b> Default toxicity values	Default toxicity values are not necessary because toxic air pollutants regulated in permits would already have RBCs listed by authoritative bodies. All other toxic air pollutants are for reporting purposes only, and would not need an RBC or default toxicity value.
	<b>7</b> Risk based concentration averaging times	RBCs would be developed for chronic (annual) and acute (24-hour) averaging times.
<b>Cumulative Risks and Background</b>	<b>8</b> Cumulative risk from multiple air toxics from a single facility	<p>The rules would set an allowable risk level for the total risk impact of all toxic air pollutants emitted by a facility. Risk would be calculated in three categories:</p> <ul style="list-style-type: none"> <li>o Chronic cancer risk</li> <li>o Chronic noncancer risks</li> <li>o Acute noncancer risks</li> </ul> <p>The cumulative risk calculation would assume that the chemical toxicity of a mixture is equal to the sum of its parts, because the science is not yet developed enough to quantitatively account for other types of interactive effects, such as intensifying (synergistic) or canceling (antagonistic) effects.</p>
	<b>9</b> Cumulative risk from multiple facilities in an area	In addition to allowable risk limits for individual facilities, the rules could also set an allowable risk level for the cumulative impact of industrial emissions from multiple facilities whose emissions impact a given area. DEQ would conduct the cumulative risk analysis and not allow new facilities or expansion of existing facilities that would cause impacts above the limit, or would increase impacts if already above this limit. The agencies are considering setting this level between 20 and 80 in 1 million for cancer risk and between hazard index (HI) 2 and 4 for noncancer risk. Alternatively, multi-facility cumulative impacts could be handled through a geographic approach outside this program.
	<b>10</b> Use of background/ ambient concentrations in the assessment of risk?	The scope of this rulemaking is stationary source industrial air toxics emissions. Non-industrial or background concentrations would not be considered in permitting decisions. The agencies would provide data about non-industrial and background concentrations at public meetings and hearings to provide context, and this information could also be used by other DEQ or OHA programs to address community environmental justice concerns and find ways to reduce emissions from non-industrial sources.
	<b>11</b> Cross-media exposure pathways	Reference Emission Rates (RERs) (See Element 17) for the 16 toxic air pollutants that are persistent, bioaccumulative, and toxic (PBT) will be adjusted using South Coast's multipathway adjustment factors. Facilities that screen in above allowable risk levels based on RER comparison could then get more detailed in their risk assessment (See element 19) about which of those factors apply to their emissions given their location and surrounding community. For example, if a factor added to the RBC is based on consumption of homegrown vegetables, and a facility is located somewhere that only affects non-residential areas, this factor could be excluded from risk calculations in the more detailed assessment.
	<b>12</b> Past exposure to air toxics risk	Past exposures would not be considered in permitting decisions. The agencies would acknowledge and qualitatively describe any known historic exposures in a permitting action that requires risk assessment and risk reduction in an appendix to the risk assessment or a stand alone factsheet.
<b>Allowable Risk Levels</b>	<b>13</b> Risk level for individual pollutants for setting RBCs	RBCs for individual toxic air pollutants would be calculated based on a 1 in 1 million excess cancer risk and a hazard quotient (HQ) of 1 for noncancer risk.

	<p><b>14</b> Allowable risk levels, and</p> <p><b>15</b> Allow different risk levels for existing and new sources</p>	<table border="1" data-bbox="739 217 2582 647"> <tr> <td data-bbox="739 217 1407 284"> <p><b>1. New single emissions unit* (PE 14)</b></p> </td> <td data-bbox="1407 217 2582 284"> <ul style="list-style-type: none"> <li>• 1 in 1 million excess cancer risk / hazard index (HI) 1</li> </ul> </td> </tr> <tr> <td data-bbox="739 284 1407 350"> <p><b>2. New single emissions unit with TBACT* (PE 14)</b></p> </td> <td data-bbox="1407 284 2582 350"> <ul style="list-style-type: none"> <li>• 5 in 1 million / HI 1</li> </ul> </td> </tr> <tr> <td data-bbox="739 350 1407 479"> <p><b>3. New and existing whole facility*† (PE 14,15)</b></p> </td> <td data-bbox="1407 350 2582 479"> <ul style="list-style-type: none"> <li>• 10 in 1 million / HI 1</li> <li>• if &gt;10 in 1 million / HI 1, additional community engagement and risk reduction plan required</li> <li>• if &gt; 25 in 1 million / HI 3, accelerated risk reduction schedule</li> </ul> </td> </tr> <tr> <td data-bbox="739 479 1407 647"> <p><b>4. Total industrial emissions impact in an area (across one or multiple facilities)*†‡ (PE 9)</b></p> </td> <td data-bbox="1407 479 2582 647"> <ul style="list-style-type: none"> <li>• could set limit between 20 and 80 in 1 million / between HI 2 and 4 <ul style="list-style-type: none"> <li>◦ no expansion or new facilities would be allowed if they would cause impact above this limit at a receptor, or would increase impact if already above this limit</li> </ul> </li> <li>• or, could handle outside CAO</li> </ul> </td> </tr> </table> <p data-bbox="739 681 2312 711">*Addresses cumulative risk from multiple pollutants †Addresses cumulative risk from entire facilities ‡Addresses cumulative risk from multiple sources</p>	<p><b>1. New single emissions unit* (PE 14)</b></p>	<ul style="list-style-type: none"> <li>• 1 in 1 million excess cancer risk / hazard index (HI) 1</li> </ul>	<p><b>2. New single emissions unit with TBACT* (PE 14)</b></p>	<ul style="list-style-type: none"> <li>• 5 in 1 million / HI 1</li> </ul>	<p><b>3. New and existing whole facility*† (PE 14,15)</b></p>	<ul style="list-style-type: none"> <li>• 10 in 1 million / HI 1</li> <li>• if &gt;10 in 1 million / HI 1, additional community engagement and risk reduction plan required</li> <li>• if &gt; 25 in 1 million / HI 3, accelerated risk reduction schedule</li> </ul>	<p><b>4. Total industrial emissions impact in an area (across one or multiple facilities)*†‡ (PE 9)</b></p>	<ul style="list-style-type: none"> <li>• could set limit between 20 and 80 in 1 million / between HI 2 and 4 <ul style="list-style-type: none"> <li>◦ no expansion or new facilities would be allowed if they would cause impact above this limit at a receptor, or would increase impact if already above this limit</li> </ul> </li> <li>• or, could handle outside CAO</li> </ul>
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<p><b>Screening and Risk Assessment</b></p>	<p><b>16</b> Setting and using de minimis emission rates</p> <p><b>17</b> Setting and using significant emission rates</p> <p><b>18</b> Initial modeling. Risk assessment and modeling once initial screening level is triggered (AERSCREEN)</p> <p><b>19</b> Refined modeling. Risk assessment and modeling once higher level of analysis is triggered (AERMOD)</p>	<p data-bbox="739 753 2862 858">Facilities have the option to conduct a simple risk estimate using assumptions that overestimate the health risks; facilities with emissions below this level would be described as posing “de minimis” risk. The rules would specify a de minimis risk level of 0.5 in 1 million excess cancer risk and HI of 0.5. Facilities whose emissions pose a risk less than this would not have to perform more detailed risk analysis and would have few or no additional requirements.</p> <p data-bbox="739 864 2862 933">Facilities that carry out the simple risk estimate and have emissions above de minimis levels would have to do additional analysis. Many programs in other states use significant emission rates to screen out sources whose emission rates are greater than de minimis but still result in low levels of risk.</p> <p data-bbox="739 949 1821 983">The CAO rules would incorporate a variation on this concept, comprising the following:</p> <ul data-bbox="786 1003 2846 1161" style="list-style-type: none"> <li>• The rules would list reference emission rates (RERs). An RER is the emission rate, back-calculated using AERSCREEN and conservatively chosen default modeling parameters, that would cause air concentrations at the RBC for that toxic air pollutant.</li> <li>• Facilities would divide their emission rate of a toxic air pollutant by the corresponding RER to calculate a screening-level estimate of their risk. If this estimate showed that the facility is below the allowable risk level, the facility would not be required to do more detailed analysis.</li> </ul> <p data-bbox="739 1179 2831 1247">Sources that screen out from further analysis would not have to perform modeling, but would be required to obtain a permit and report emissions, and could request permit conditions to limit their emissions and risk.</p> <p data-bbox="739 1253 2846 1368">Facilities that do not screen out in the RER analysis would use a simple screening model, AERSCREEN, for the first modeling level of risk analysis. Sources that are able to show compliance with the allowable risk level based on screening modeling would not be required to perform a more detailed analysis, but would be required to obtain a permit and report emissions, and could request permit conditions to limit their emissions and risk.</p> <p data-bbox="739 1467 2846 1582">A complex, detailed model, AERMOD, would be used for the second modeling level of risk analysis. Sources that are able to show compliance with the allowable risk level based on refined modeling would not be required to perform a more detailed analysis, but would be required to obtain a permit and report emissions, and could request permit conditions to limit their emissions and risk.</p> <p data-bbox="739 1608 2846 1677">Sources that did not screen out at the AERMOD step could undergo a Health Risk Assessment (HRA) to quantify the risk their emissions pose on an even more refined level of analysis. An HRA would require additional agency toxicologist review.</p>								

<b>Implementation</b>	<b>20</b> Phasing	<ul style="list-style-type: none"> <li>• DEQ and OHA staff recommend issuing separate air toxics permits that are not initially tied to current Air Contaminant Discharge Permits (ACDPs) or Title V permits, then incorporating air toxics permit requirements into the ACDP or Title V permit at renewal.</li> <li>• Implementation would start with areas that have cumulative risk from multiple sources and facilities that pose the highest risk based on emissions inventory data.</li> </ul>
	<b>21</b> Looking beyond current air permitting program for other sources of air toxics	<p>DEQ and OHA staff recommend looking for unpermitted sources of air toxics shortly after rule adoption, first focusing on areas of multiple source cumulative risk. DEQ and OHA would use the following data:</p> <ul style="list-style-type: none"> <li>• Non-permitted businesses that have the same NAICS/SIC codes as permitted businesses;</li> <li>• DEQ hazardous waste generators;</li> <li>• EPA’s Toxics Release Inventory (~660 chemicals) reporters;</li> <li>• State Fire Marshall (~800 chemicals) reporters;</li> <li>• Industrial NPDES Water Quality Permittees;</li> <li>• Oregon OSHA workplace investigations from enforcement investigations; and</li> <li>• Information submitted to DEQ.</li> </ul>
	<b>22</b> Community engagement	<p>The rules would:</p> <ul style="list-style-type: none"> <li>• Require all facilities whose risk is greater than allowable risk levels to develop and implement community engagement plans. Community engagement plans would be required to do the following: <ul style="list-style-type: none"> <li>○ Identify community groups and potentially sensitive populations in the community, including nearby schools and daycare facilities that should be routinely included in important correspondence;</li> <li>○ Tailor public notification and engagement efforts to ensure that potentially sensitive populations in the community are reached;</li> <li>○ Establish a complaint phone line;</li> <li>○ Establish a community committee or other forum for communication between community members and the facility contact;</li> <li>○ Provide public notification of potential health risks;</li> <li>○ Provide opportunities for public input on the generation of risk reduction plans and timelines;</li> <li>○ Hold public meetings after approval of the risk reduction plan (RRP) at times and locations to maximize accessibility. Hold subsequent meetings every 12 months thereafter, until the total facility risk is below the allowable risk level or has received a conditional risk level; and</li> <li>○ Describe the results and recommendations of the public outreach efforts in annual reports to DEQ.</li> </ul> </li> <li>• Require applicants seeking a permit for a new facility that has risk above certain cancer and noncancer risk thresholds to notify the public upon application submittal.</li> </ul> <p>To implement the rules, agencies would plan to do the following, dependent on funding:</p> <ul style="list-style-type: none"> <li>• Employ a staff member with environmental justice experience/competency to handle agency outreach efforts and employ a health educator to communicate risk;</li> <li>• Provide continued environmental justice training to staff;</li> <li>• Develop a plain language document that explains permits and the permitting process;</li> <li>• Post permit materials, annual reports, source test reports, and emissions inventory information on DEQ’s website;</li> <li>• Establish and follow a set of best practices for agency community engagement efforts based on input from community leaders. Examples of best practices could include: <ul style="list-style-type: none"> <li>○ Offer translation services for communities with multilingual populations, including interpreters at public meetings;</li> <li>○ Communicate through culturally-specific media sources and community centers;</li> <li>○ Partner with community organizations; and</li> <li>○ Articulate the permitting process and define the extent to which the public has an opportunity to influence decision making at each step; and</li> </ul> </li> <li>• In communities where cumulative risk from multiple facilities exceeds allowable risk, agencies would coordinate public engagement efforts.</li> </ul>
<b>23</b> Compliance	<p>Compliance activities would include compliance inspections and, where applicable, permit requirements for recordkeeping, reporting, source testing, continuous emissions monitoring, and monitoring pollution control device equipment to ensure good operation.</p>	

	<p><b>24</b> Capacity - regulatory costs and fee structure</p>	<p>OHA and DEQ recommend charging the following fees to cover the cost of the Cleaner Air Oregon air toxics permitting program:</p> <ul style="list-style-type: none"> <li>• A one-time, supplemental assessment payable by existing ACDP and Title V permit holders in fall of 2017. This would cover work between July 1, 2017 through June 30, 2018. This assessment fee would augment general funds provided by the 2016 legislature that helped fund the immediate response to air toxics in the Portland area and rule-making for risk-based approach to air permitting for industrial sources;</li> <li>• Special Activity annual fees scheduled for adoption by rule in early 2018, payable by existing ACDP and Title V permit holders in fall of 2018 for ongoing Cleaner Air Oregon work; and</li> <li>• User fees (i.e., review of modeling, risk assessment, and source testing, public meetings, new sources, etc.).</li> </ul>
	<p><b>25</b> Evaluation</p>	<p>Program effectiveness could be measured by comparing the initial 2017 emissions inventory information against future reported emissions. As DEQ gains more experience after implementation of Cleaner Air Oregon, other measurement tools may be developed.</p> <p>It may also be possible to track pollution prevention efforts motivated by the program.</p>