Draft Fiscal Impact Statement

Cleaner Air Oregon

REFORMING OREGON’S INDUSTRIAL AIR QUALITY REGULATIONS

Inviting Oregonians to help create new regulations that protect what we all care about: the health of our people and our planet, and the economic vitality of our communities.

August 29th and 30th, 2017
Topics Covered in this Discussion

- Overview of Fiscal Advisory Committee Process
- Summary of information in draft fiscal statement
- Description of cost information
- Description of health benefit information

Aug 29th

- Discussion of fiscal impact questions required in ORS 183.333, 335, and 540

Aug 30th
What is Required?

• ORS 183.335: agency must provide notice of fiscal impact for proposed rules
  – Impacts can be both positive and negative

• If significant small business impact, consider mitigation
What is in the Fiscal Impact Statement?

- Available information to project significant effects on
  - State agencies
  - Local government
  - Small and large business
  - The public
- Significant impacts on businesses
- Cost of compliance for affected small business
- Housing cost
Fiscal Advisory Committee Process

Rule advisory committee:
- Reviews fiscal impact statement
- Provides recommendations on:
  - Draft rule’s fiscal impact
  - Extent of that impact
  - Significant adverse fiscal impacts on small businesses and potential mitigation

DEQ:
- Records committee input
- Revises fiscal impact statement if necessary
Draft Fiscal Impact Statement Methodology

• All Cleaner Air Oregon draft fiscal analyses are based on estimates

• Insufficient information to project specific impacts on all potentially affected businesses, government and people

• DEQ decided against using hypothetical scenarios to avoid generating incorrect information
Draft Fiscal Impact Statement Overview

• Business fiscal impacts
• Government
• Public
• Housing cost
Draft Fiscal Business Cost Ranges

**Risk Assessment**
- Look up table
- AERSCREEN
- AERMOD
- Health risk assessment

**Emission Reduction**
- Pollution control equipment
- Pollution prevention

**Other Requirements**
- Annual or semi-annual reporting
- Source testing
- Community engagement

**Fees**
- Base fee
- Activity fees (potential)
- Call-in fee (potential)
<table>
<thead>
<tr>
<th>Task</th>
<th>Simple</th>
<th>Complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions inventory</td>
<td>$0*-5,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>Level 1 Assessment Lookup Table Calculation Using Stack Heights and</td>
<td>$100</td>
<td>$600</td>
</tr>
<tr>
<td>Exposure Location Distance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2 Assessment – AERSCREEN modeling</td>
<td>$5,000</td>
<td>$35,000</td>
</tr>
<tr>
<td>Level 3 Assessment – AERMOD modeling</td>
<td>$5,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Level 4 Assessment - Health Risk Assessment</td>
<td>$5,000</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

*DEQ is doing emissions inventory for all the approximately 2,200 sources that have General and Basic Permits
## Business Cost Ranges – Potential Emission Reduction Measures

<table>
<thead>
<tr>
<th>Control Device Type</th>
<th>Types of Pollutants it can reduce</th>
<th>Examples of facilities where this is used</th>
<th>Initial costs</th>
<th>Annual Operating Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabric filter (baghouse)</td>
<td>PM, hazardous air pollutant (HAP) PM</td>
<td>Asphalt batch plants, concrete batch kilns, steel mills, foundries, fertilizer plants, and other industrial processes. Colored art glass manufacturers.</td>
<td>$360,000 - $18,500,000</td>
<td>$180,000 - $6,200,000</td>
</tr>
<tr>
<td>Electrostatic precipitator (ESP)</td>
<td>PM, HAP PM</td>
<td>Power plants, steel and paper mills, smelters, cement plants, oil refineries</td>
<td>$320,000 - $7,100,000</td>
<td>$100,000 - $7,600,000</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Fugitive PM or volatile organic compounds (VOCs)</td>
<td>Any process or operation where total emissions capture is required, i.e., printing, coating, laminating</td>
<td>$14,000 - $420,000</td>
<td>$400 - $10,000</td>
</tr>
<tr>
<td>HEPA filter</td>
<td>Chrome emissions</td>
<td>chrome plating</td>
<td>$13,000 - $240,000</td>
<td>Application specific</td>
</tr>
<tr>
<td>Wet scrubber (packed towers, spray chambers, Venturi scrubbers)</td>
<td>Gases, vapors, sulfur oxides, corrosive acidic or basic gas streams, solid particles, liquid droplets</td>
<td>Asphalt and concrete batch plants; coal-burning power plants; facilities that emit sulfur oxides, hydrogen sulfide, hydrogen chloride, ammonia, and other gases that can be absorbed into water and neutralized with the appropriate reagent.</td>
<td>$25,000 - $170,000</td>
<td>$19,000 - $830,000</td>
</tr>
</tbody>
</table>
Estimated Costs:

- Reporting Costs: $120 to $1,200/year

- Community Engagement Meeting Costs: $1,400 to $6,400/meeting
Alternative 1
• 27.6% CAO base fee

Alternative 2
• 23.6% CAO base fee
• $10,000 Call-in Fee (Title V, Standard ACDPs)
• $500 Call-in Fee (Simple, General and Basic ACDPs)
• Specific Activity Fees
### SPECIFIC ACTIVITY FEES

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Title V</th>
<th>Standard</th>
<th>Simple</th>
<th>General/Basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call-In Fee (Fee Option 2)</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>LEVEL 1 TEU1/F1 Air Toxics Permit Attachment</td>
<td>$590</td>
<td>$1,500</td>
<td>$590</td>
<td>$1,000</td>
</tr>
<tr>
<td>LEVEL 1 TEU2/F2 Air Toxics Permit Attachment</td>
<td>$770</td>
<td>$2,000</td>
<td>$770</td>
<td>$2,000</td>
</tr>
<tr>
<td>LEVEL 2 TEU1/F2 Air Toxics Permit Attachment</td>
<td>$1,120</td>
<td>$2,700</td>
<td>$1,120</td>
<td>$2,700</td>
</tr>
<tr>
<td>LEVEL 2 TEU2/F2 Air Toxics Permit Attachment</td>
<td>$1,540</td>
<td>$3,000</td>
<td>$1,540</td>
<td>$3,000</td>
</tr>
<tr>
<td>LEVEL 3 TEU1/F1 Air Toxics Permit Attachment</td>
<td>$5,340</td>
<td>$9,000</td>
<td>$5,340</td>
<td>$8,400</td>
</tr>
<tr>
<td>LEVEL 3 TEU2/F2 Air Toxics Permit Attachment</td>
<td>$7,780</td>
<td>$13,300</td>
<td>$7,780</td>
<td>$10,900</td>
</tr>
<tr>
<td>LEVEL 4 TEU1/F1 Air Toxics Permit Attachment</td>
<td>$13,380</td>
<td>$25,100</td>
<td>$13,380</td>
<td>$21,500</td>
</tr>
<tr>
<td>LEVEL 4 TEU2/F2 Air Toxics Permit Attachment</td>
<td>$13,600</td>
<td>$29,900</td>
<td>$13,600</td>
<td>$24,300</td>
</tr>
<tr>
<td>RISK REDUCTION PLAN/F3 Air Toxics Permit Attachment</td>
<td>NA</td>
<td>$46,300</td>
<td>NA</td>
<td>$44,800</td>
</tr>
<tr>
<td>CONDITIONAL RISK LEVEL/F3 Air Toxics Permit Attachment</td>
<td>NA</td>
<td>$57,300</td>
<td>NA</td>
<td>$57,300</td>
</tr>
<tr>
<td>SOURCE AMBIENT MONITORING PLAN/F3 Air Toxics Permit Attachment</td>
<td>NA</td>
<td>$57,800</td>
<td>NA</td>
<td>$57,800</td>
</tr>
<tr>
<td>SOURCE AMBIENT MONITORING PLAN (plan review, data analysis only)</td>
<td>NA</td>
<td>$21,000</td>
<td>NA</td>
<td>$21,000</td>
</tr>
<tr>
<td>TBACT Analysis</td>
<td>NA</td>
<td>$6,000</td>
<td>NA</td>
<td>$6,000</td>
</tr>
<tr>
<td>Source Sponsored Public Meetings (New Source &gt;5 &amp; &lt; 10 in 1 MM)</td>
<td>NA</td>
<td>$2,400</td>
<td>NA</td>
<td>$2,400</td>
</tr>
<tr>
<td>Source Test Review</td>
<td>NA</td>
<td>$5,900</td>
<td>NA</td>
<td>$5,900</td>
</tr>
<tr>
<td>Postponement of Risk Reduction Fee</td>
<td>NA</td>
<td>$4,100</td>
<td>NA</td>
<td>$2,000</td>
</tr>
<tr>
<td>Director Consultation</td>
<td>NA</td>
<td>$4,500</td>
<td>NA</td>
<td>$2,300</td>
</tr>
</tbody>
</table>
Fiscal Benefits of Cleaner Air Oregon on Businesses

Fiscal Benefits:

- Pollution Prevention
- Environmental Services Sector
Fiscal Benefits of Pollution Prevention

Pollution Prevention

• Reduced operating costs
• Reduced compliance costs
• Reduced liability
• Increased productivity
• Increased marketability as a "green" business; and
• Even possibly increased profits.
Various studies on the Clean Air Act and SCAQMD regulations have shown that increased environmental regulations have been accompanied by economic growth.
Why include health in a fiscal analysis?

• The fiscal impact of the rule depends on the potential benefits as well as the potential costs

• Air toxics are associated with increased risk of many health outcomes that have a substantial economic and social burden in our state
Information needed to evaluate the health impact of Cleaner Air Oregon

- Which chemicals are currently emitted? How much?
- How many people are exposed? Who?
- How much will emissions be reduced? Where?
- Health effects associated with each chemical?
- Portion of disease cases attributable to exposure?
- Cost of each case?
- Prevalence of related health outcomes?
Information needed to evaluate the health impact of Cleaner Air Oregon

- Which chemicals are currently emitted? How much?
- How much will emissions be reduced? Where?
- How many people are exposed? Who?
- Health effects associated with each chemical?
- Portion of disease cases attributable to exposure?
- Prevalence of related health outcomes?
- Cost of each case?

$??$
What does the fiscal analysis consider?

- **Potential health effects of air toxics**
  - Sensitive health outcomes that serve as the basis for RBCs
  - Other health outcomes that are less sensitive or less well characterized

- **Potential magnitude of the contribution of pollution to health**
  - National evidence on the health impact of living near industrial sites
  - Estimates of the fraction of specific diseases attributable to pollution

- **Burden of related diseases in Oregon**
  - Incidence
  - Economic cost
Potential health effects of air toxics

Air toxics increase risk of a wide range of health outcomes:

- heart disease
- respiratory disease
- cancer
- liver disease
- premature birth
- birth defects
- miscarriage
- impaired fertility

- neurological effects
- intellectual disability
- reduced immune function
Potential magnitude of the contribution of pollution to disease

Living near industrial sites can measurably increase risk for:

- premature death
- cardiovascular disease
- autism
- asthma
- cancer
Potential contribution of pollution to disease

Improved air quality can improve public health

• In Southern California, air pollution control efforts were accompanied by meaningful improvements in children’s respiratory health
• The temporary closure of a steel mill in Utah Valley was linked to temporary improvements in birth outcomes and respiratory health
• Federal regulations on leaded gasoline resulted in a dramatic decrease in blood-lead levels in children across the country
Potential contribution of pollution to disease

National estimates of the fraction of disease caused by pollution

<table>
<thead>
<tr>
<th>Health Outcome</th>
<th>Type of Pollution</th>
<th>Attributable Fraction of Cases</th>
<th>Estimated annual cost nationally (1997) of cases attributable to pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood asthma</td>
<td>Outdoor air pollution (industrial and nonindustrial sources)</td>
<td>10-30%</td>
<td>$0.7-2.3 billion</td>
</tr>
<tr>
<td>Childhood cancer</td>
<td>Chemicals in the environment</td>
<td>2-10%</td>
<td>$132-663 million</td>
</tr>
<tr>
<td>Neurodevelopmental disorders</td>
<td>Chemicals in the environment (excluding lead)</td>
<td>5-20%</td>
<td>$4.6-18.4 billion</td>
</tr>
<tr>
<td>Lead Poisoning</td>
<td>Lead</td>
<td>100%</td>
<td>$43.4 billion</td>
</tr>
</tbody>
</table>
## Total Burden of disease in Oregon (All Causes)

### Direct medical costs of chronic disease in Oregon

<table>
<thead>
<tr>
<th>Chronic Disease</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma (adults and children)</td>
<td>$411 million/year</td>
</tr>
<tr>
<td>Cancer (adults only)</td>
<td>$1.9 billion/year</td>
</tr>
<tr>
<td>Cardiovascular Disease (adults only)</td>
<td>$3.6 billion/year</td>
</tr>
</tbody>
</table>
# Total Burden of disease in Oregon (All Causes)

## Adverse birth outcomes in Oregon

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Total # of pregnancies impacted by each outcome in Oregon, 2009-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low birth weight</td>
<td>14,239</td>
</tr>
<tr>
<td>Pre-term birth</td>
<td>17,442</td>
</tr>
<tr>
<td>Miscarriage (after 20 weeks gestation)</td>
<td>978</td>
</tr>
<tr>
<td>Birth anomalies</td>
<td>2,831</td>
</tr>
</tbody>
</table>
Other considerations

- People who experience the health burden may be different from the people who benefit from ability to emit air toxics above RALs.
- Many of the indirect costs and broader social costs of disease are particularly difficult to quantify.
- Risk-based air toxics permitting regulations could also significantly improve the health of workers.
Summary

• Air toxics are known to increase risk of a wide range of health outcomes
• Pollution has the potential to make a substantial, measureable contribution to disease
• DEQ and OHA don’t know what proportion of chronic diseases may be attributable to industrial air toxics, but chronic diseases have a substantial social and economic impact in Oregon.
RAC Discussion
Discussion of Draft Fiscal Impact Statement

Advisory committee to provide recommendations on:

• Will the draft rule have a fiscal impact?
• What is the extent of that impact?
• Will the draft rules have a significant adverse impact on small businesses and if so, what are recommendations for potential mitigation?
Draft Fiscal Business Cost Ranges

Risk Assessment
- Look up table
- AERSCREEN
- AERMOD
- Health risk assessment

Emission Reduction
- Pollution control equipment
- Pollution prevention

Other Requirements
- Annual or semi-annual reporting
- Source testing
- Community engagement

Fees
- Base fee
- Activity fees (potential)
- Call-in fee (potential)
Draft Fiscal Small Business Impacts

• Will there be a significant adverse effect on small business?
• Consistent with public health and safety, can impacts be reduced by less intrusive or costly alternatives?

Examples:
- Different compliance or reporting requirements or schedules
- Clarifying, consolidating or simplifying the compliance and reporting requirements
- Using objective criteria for standards
- Exempting small businesses from rule requirements
Draft Fiscal Small Business Impacts

Fiscal impact mitigation in discussion draft rules:

- Tiered implementation
- Conditional risk levels
- Additional time for compliance with risk levels
- Defer compliance with risk levels if technology not available
- Director consultation when above upper limit risk levels
- Postponement of control measure installation if inability to pay
Draft Fiscal State Agency and Local Government Impacts

Government
• Direct effects – fees and compliance for government owned facilities
• Indirect effects – goods and services

DEQ and OHA Workload
• Required resources
• Resolution of historic health concerns
Draft Fiscal Public Impacts

Public Health Benefits

Environmental Services Sector Impacts

Public Costs

Housing Cost
Questions?