



State of Oregon Department of Environmental Quality

Draft Fiscal Impact Statement

Round 2 Regional Haze Division 223 Rulemaking Advisory Committee Meeting

May 17, 2021

Introduction

DEQ invites public input on proposed permanent rule amendments to chapter 340 Division 223 of the Oregon Administrative Rules. The proposed rules pertain to Oregon's implementation of the federal 1999 Regional Haze Rule, amended in 2017. The purpose of the Regional Haze Program is to improve visibility in wilderness areas and national parks with the goal to attain natural visibility conditions by 2064. DEQ also implements the 2017 Regional Haze Rule to protect and improve visibility in the Columbia River Gorge National Scenic Area. The 2017 Regional Haze rule requires states to periodically update their plans to attain natural visibility by 2064. DEQ completed Oregon's first Regional Haze Plan in 2010 and a report on the first period of implementation in 2017. The Round 2 Regional Haze planning period covers the years 2018 through 2028.

DEQ is currently preparing a Round 2 Regional Haze Plan. Under the federal 2017 Regional Haze Rule, plans must include federally enforceable rules for sources to reduce emissions of haze-forming pollutants. The Round 2 regional haze pollutants are particulate matter, nitrogen oxides and sulfur oxides. The proposed rules codify in Division 223 the screening procedure and processes DEQ follows to regulate facilities under the 2017 Regional Haze Rule and establish compliance options. With the proposed revisions to Division 223, DEQ also repeals rules that implemented the first round of Regional Haze requirements and are no longer relevant.

Fee analysis

This rulemaking does not increase or create new fees. Entities regulated by the proposed rules may incur DEQ fees associated with construction notices, construction permits, and permit revisions. DEQ includes fees among the fiscal impacts described later in this document in the Fiscal Impacts to Large Businesses section.

Statement of fiscal and economic impact

Fiscal and Economic Impact

The proposed rules codify the methodology by which DEQ screens and identifies facilities that must install pollutant controls or reduce emissions of round 2 regional haze pollutants. The methodology consists of four steps:

- DEQ completes an initial screening based on facility emissions and distance to Class 1 areas;
- Regulated facilities undertake an analysis to determine the feasibility and cost-effectiveness of pollutant controls; and
- Regulated facilities choose a compliance option and enter into an agreement with DEQ to install the selected pollutant controls or lower emissions by a time certain; or
- DEQ issues orders to regulated facilities to install pollution control equipment by a time certain.

DEQ doesn't expect facilities to incur costs at the initial screening because the initial screening does not involve any input from facilities but is calculated based on information already in DEQ's possession. DEQ expects that regulated facilities will incur costs when they are required to analyze the feasibility of pollution controls and when they are required to install pollution controls or lower emissions.

Statement of Cost of Compliance

State agencies

No state agencies are regulated facilities under the proposed rules, so this rulemaking does not impose any mandatory requirements for state agencies and, accordingly, does not impose any direct compliance costs.

DEQ and possibly Lane Regional Air Protection Agency staff will implement the proposed rules. The fiscal effects on DEQ and LRAPA include dedicating resources such as permit writers, inspectors, compliance and enforcement staff, and management oversight. DEQ does not expect any other state agency to be fiscally affected by the proposed rules.

Local governments

No local governments are regulated facilities under the proposed rules, so this rulemaking does not impose any mandatory requirements for local governments and, accordingly, does not impose any direct compliance costs. DEQ does not expect local governments to be fiscally affected by the proposed rules.

Public

The rulemaking does not impose any mandatory requirements for the public at large and, accordingly, does not impose any direct compliance costs on the public. DEQ addresses the potential for the proposed rules to increase the cost of building materials in the Housing Cost section of this document.

DEQ expects the proposed rules to have indirect, broad and positive fiscal effects on the public, particularly people living or working near regulated facilities, through community health improvement and reduced health care costs. Pollution control equipment required through the proposed rules reduces the general public's exposure to round 2 regional haze pollutants: NO_x, PM, and SO₂.

Short-term health effects of NO_x exposure include respiratory irritation, which can exacerbate existing respiratory diseases, like asthma. NO_x also leads to secondary formation of PM and ozone, each of which can lead to short-term respiratory impairment and long-term health effects, such as greater susceptibility to respiratory disease.¹ Adverse health effects of PM exposure include both respiratory and cardiovascular impairment and damage, up to premature death for vulnerable populations.² Exposure to SO₂ causes short-term respiratory impairment and may lead to long-term respiratory damage and, as with NO_x and PM exposure, most adversely affects older people, children, and those with respiratory diseases.³

DEQ does not have information to calculate public health costs saved from this rulemaking but refers to information available through the Oregon Health Authority that estimates the health burden costs from diseases exacerbated by air pollution (Table 1). According to OHA 2017 data and analysis, lower respiratory disease is the fifth leading cause of death for Oregonians.⁴ A comprehensive 2002 study assessed the contribution of pollution to disease and found that 10-30% of asthma is attributable to outdoor air pollution (including both industrial and non-industrial sources). In the early 2000s, the yearly fraction of asthma cases that could be attributed to environmental factors cost the US between \$0.7 and \$2.3 billion. These cost estimates account for direct medical costs and lost productivity due to asthma-related premature deaths.⁵

¹ Environmental Protection Agency. Basic information about NO₂. <https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects>, accessed 05/06/21.

² Ibid. Health and Environmental Effects of Particulate Matter. <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>, accessed on 05/06/21.

³ American Lung Association. Sulfur Dioxide. <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/sulfur-dioxide>, accessed on 05/06/21.

⁴ <https://www.oregon.gov/OHA/PH/ABOUT/Documents/indicators/leadingcausesofdeath.pdf>

⁵ Landrigan PJ, Schechter CB, Lipton JM, Fahs MC, Schwartz J. Environmental pollutants and disease in American children: estimates of morbidity, mortality, and costs for lead poisoning, asthma, cancer, and developmental disabilities. *Environ Health Perspect.* 2002 Jul;110(7):721-8.

Table 1 Public Health Costs from Diseases Exacerbated by Air Pollution			
Health Outcome	Description	Average Annual Cost of Each Case	Estimated Annual Medical Costs in Oregon^{6,7}
Asthma	Estimates for adults and children	\$2,740	\$411 million
Cardiovascular disease	Estimates for adults only - hypertension, stroke, coronary heart disease, congestive heart failure, other	\$2,220- \$16,760 (disease- specific)	\$3.6 billion ⁸

Large businesses - businesses with more than 50 employees

DEQ does not expect a fiscal impact for large businesses that are not regulated facilities. DEQ expects that large businesses that are regulated facilities will incur fiscal impacts from the proposed rules. The application of the initial screening in the proposed rules identifies 32 large businesses as regulated facilities and requires those facilities to conduct further analysis of their emissions and pollution controls. The proposed rules require those businesses to conduct an analysis to identify emission control measures and to characterize four factors: cost, time to install, remaining useful life, and energy/non-air effects. DEQ expects regulated large businesses may use internal technical and professional resources or may contract with a consulting firm to fulfill the four factor analysis component of the proposed rules. DEQ estimates that a complex four factor analysis may require approximately 120 hours of professional time, at a rate of \$200/hr. In Table 2, DEQ provides a range of costs a large businesses may incur to complete a four factor analysis, either in-house or through a consultant.

⁶ Calculated using the CDC Chronic Disease Cost Calculator – see footnote 7 – based on 2008 prevalence and cost statistics and 2010 census data. Estimates are limited to medical expenditures and do not include indirect costs such as missed days of work and school.

⁷ Estimated medical treatment costs of chronic diseases, Oregon 2010.
https://www.oregon.gov/oha/PH/DISEASES/CONDITIONS/CHRONICDISEASE/DATAREPORTS/Documents/datatables/CDCC_2010.pdf

⁸ This cost estimate integrates costs of all cardiovascular disease without double counting costs of treatments for comorbid cardiovascular conditions.

Table 2
Cost of Completing Four Factor Analysis

Consultant Fees	Facility Professional Resources
\$5,000 - \$25,000	\$5,000 - \$25,000

The proposed rules allow regulated facilities two compliance options. A regulated facility may enter into an agreement with DEQ to timely reduce emissions or install controls that DEQ determines are cost-effective. DEQ will issue orders to regulated facilities that do not enter into agreements with DEQ to install pollution controls by a time certain. The costs of control installation and maintenance depends on the number and size of emission units. Table 3 lists estimated cost ranges for pollution control equipment that reduces emissions of round 2 regional haze pollutants. DEQ estimated Table 3 costs from information and vendor quotes that facilities submitted in the response to the agency’s request that facilities provide this information under OAR 340-214-0110.⁹ DEQ drew costs for electrostatic precipitation and baghouses from the Cleaner Air Oregon rulemaking fiscal impact statement.¹⁰

⁹ <https://www.oregon.gov/deq/air/Pages/haze-ffa.aspx>

¹⁰ <https://www.oregon.gov/deq/Rulemaking%20Docs/cao-pn2notice.pdf>

Table 3 Cost of Pollution Control Installation and Maintenance				
Pollution Control Device	Applicable to	Pollutant Controlled	Installation	Operations and Maintenance
Low NOx Burner - LNB	combustion of natural gas	NO _x	\$10 - 45 thousand per MMBtu/hr of equipment capacity	\$1 - 5 thousand/year, per MMBtu/hr of equipment capacity
Selective Catalytic Reduction - SCR	combustion	NO _x	\$3 - 30 million	\$0.1 - 4 million/year
Selective Non-Catalytic Reduction - SNCR	combustion	NO _x	\$1 - 6 million	\$50 - 500 thousand/year
Electrostatic Precipitation - ESP	equipment that generates fine particulate matter	PM	\$0.3 - 8 million	\$0.1 - 8 million/year
Catalytic Ceramic Filters - CCF	glass furnaces	NO _x , PM10, SO ₂	Approximately \$5,000 per ton of pollutant removed	
Ultra Low Sulfur Diesel Fuel - ULSD	equipment formerly using high-sulfur #6 Fuel Oil as backup	SO ₂	No additional cost. No additional changes to site.	
Baghouse	dust-generating equipment	PM10	\$0.3 - 20 million	\$0.1 - 7 million/year
Low Emission Combustion - LEC	reciprocating natural gas compressor engines	NO _x	\$2 - 5 million per engine	\$2 - 300k/year per engine

Under the proposed rules, regulated facilities enter into agreements with DEQ or DEQ issues an order to the facility requiring the facility to reduce emissions or install controls by a time certain. To fulfill the agreements or comply with DEQ's orders, regulated facilities may incur fees for permit revisions. If the regulated facility is complying with the proposed rules through pollution control installation, DEQ will also require the source to submit a notice to construct and under certain conditions, obtain a construction Air Contaminant Discharge permit. Table 4 lists the permitting costs that regulated facilities may incur.

Table 4 Permitting Costs			
Notice to Construct	Construction ACDP*	Specific Activity Fees Existing Source Permit Revisions 340-220-0050(2)(a)	
720	14,400	Administrative	\$510
		Simple	\$2,041
		Moderate	\$15,306
		Complex	\$30,612

* If Construction ACDP fulfills Title V format, procedures and public notice requirements, DEQ may revise the Title V permit through an administrative amendment.

Small businesses – businesses with 50 or fewer employees

No small businesses are regulated facilities under the proposed rules, so this rulemaking does not impose any mandatory requirements for small businesses and, accordingly, does not impose any direct compliance costs.

Some small businesses may be indirectly affected by the proposed rules. DEQ anticipates that such small businesses will see a positive fiscal impact. DEQ does not currently know how many small businesses would be impacted by the proposed rules because DEQ does not have information about the extent to which different kinds of small businesses benefit from visitors to Class 1 areas. The types of small businesses that may be impacted by the proposed rules include those in the tourism, leisure and hospitality industry in areas of the state welcoming visitors to wilderness areas, the Columbia River Gorge National Scenic Area, and Crater Lake National Park. National Parks and wilderness areas attract tens to hundreds of thousands of visitors each year. According to the US Forest Service National Visitation Monitoring system, in 2016, more than 200,000 people visited the Mt. Hood Wilderness area and more than 3 million visited the Columbia Gorge National Scenic Area.¹¹ In 2019, approximately 27,000 people visited wilderness areas in the Wallowa Whitman National Forest,¹² the largest of which are Eagle Cap and Hells Canyon (in 2016 and 2019, respectively) and more than 700,000 visited Crater Lake National Park.¹³

In Oregon, the tourism industry is mainly composed of small businesses, according a recent report from the Oregon Employment Department, “Of Oregon’s 204,612 leisure and hospitality jobs in March 2020, 125,778 were in establishments with 10 to 49 workers.”¹⁴

According to the Oregon Employment Department, in 2019, approximately \$5 billion in wages were paid within the Leisure and Hospitality industry sector, employing more than 200,000 people in more than 14,000 businesses. Counties containing Class 1 wilderness areas and

¹¹ US Forest Service, National Visitor Use Monitoring <https://apps.fs.usda.gov/nvum/results/A06022.aspx/FY2016>

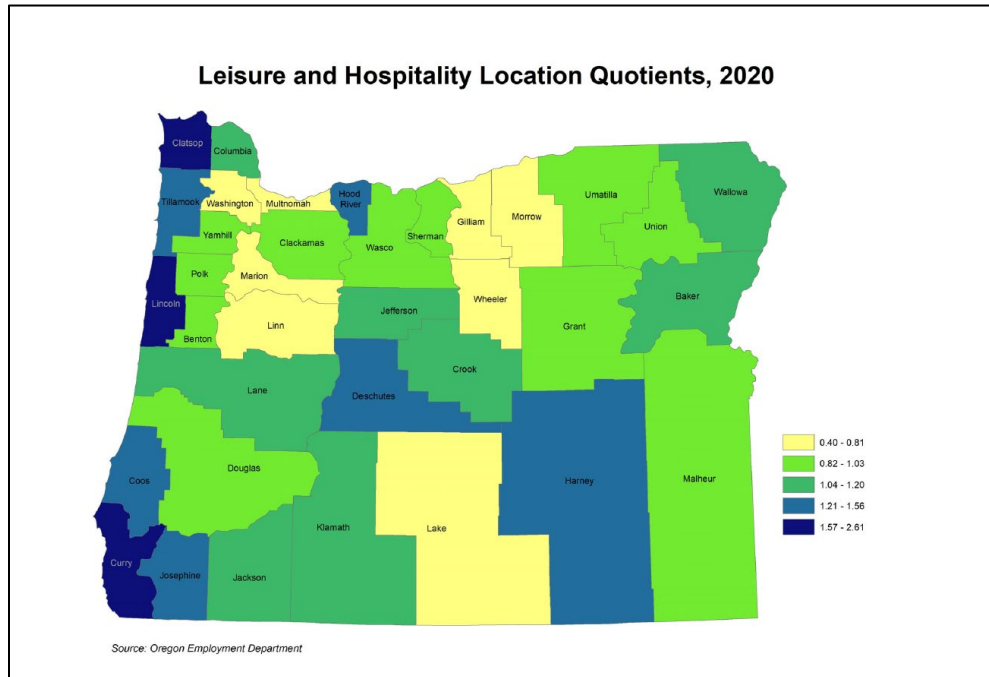
¹² *Ibid.*

¹³ <https://www.nationalparked.com/crater-lake/visitation-statistics>, accessed on 05/06/21.

¹⁴ Oregon Employment Dept. (March 2021), <https://www.qualityinfo.org/-/oregon-s-leisure-and-hospitality-industry>

national parks, are among those deriving a relatively high percentage of employment income from travel and tourism, compared to all industry totals.¹⁵ Note in Figure 1 relatively high leisure and hospitality quotients in Hood, Deschutes, Klamath and Wallowa Counties.¹⁶

Figure 1: Leisure and hospitality quotients in Oregon counties. Source: Oregon Employment Department



a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

None of the businesses regulated by the proposed rules are small businesses. DEQ confirmed this through a review of the US business database, Reference USA.gov.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

None.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

None

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ did not involve small businesses in developing the proposed rules because no small businesses are regulated by the proposed rules.

¹⁵ *Ibid.*

¹⁶ *Ibid.*

Documents relied on for fiscal and economic impact

Document title	Document location
US Business Database	ReferenceUSA.com
Oregon Employment Department. Oregon Leisure and Hospitality Industry (Tauer, G., 2021)	https://www.qualityinfo.org/-/oregon-s-leisure-and-hospitality-industry
Four Factor Analysis Documents	https://www.oregon.gov/deq/aq/Pages/haze-ffa.aspx
DEQ Fiscal Impact Statement, Cleaner Air Oregon Rulemaking	https://www.oregon.gov/deq/Rulemaking%20Docs/cao-pn2notice.pdf
Oregon Health Authority. Estimated medical treatment costs of chronic diseases, Oregon 2010	https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/CHRONICDISEASE/DATAREPORTS/Documents/datatables/CDCC_2010.pdf
US Forest Service. National Visitor Use Monitoring System	https://apps.fs.usda.gov/nvum/results/A06022.aspx/FY2016
Environmental Protection Agency. Basic information about NO2.	https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects .
Environmental Protection Agency. Health and Environmental Effects of Particulate Matter.	https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm .
American Lung Association. Sulfur Dioxide.	https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/sulfur-dioxide .
Oregon Health Authority. Leading Causes of Death.	https://www.oregon.gov/OHA/PH/ABOUT/Documents/indicators/leadingcausesofdeath.pdf
Environmental pollutants and disease in American children: estimates of morbidity, mortality, and costs for lead poisoning, asthma, cancer, and developmental disabilities. Landrigan PJ, Schechter CB, Lipton JM, Fahs MC, Schwartz J.	J. Environ Health Perspect. 2002 July; 110(7):721-8.

Advisory committee fiscal review

DEQ has appointed an advisory committee.

As ORS 183.33 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact,
- The extent of the impact, and
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

The committee will review the draft fiscal and economic impact statement and its findings will be stated in the approved minutes.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel. A memorandum¹⁷ pertaining to a study conducted by the University of Oregon to support Oregon Department of Land Conservation and Development rulemaking describes the major factors influencing the cost of residential housing construction. Cost components include land, material and labor and regulatory costs such as permits, compliance with zoning requirements and system development charges.

DEQ acknowledges the proposed rules have the potential to affect housing development costs because some of the large businesses regulated by the proposed rules are in the lumber products industry or otherwise produce building materials. DEQ would not expect any increase in regulatory compliance costs for the lumber industry, over current compliance costs, to be significant enough to affect the cost of building materials. DEQ does not expect the proposed rules to have any effect on the major cost components of residential construction such as cost of land, labor, or permitting or zoning regulations.

Alternative formats

DEQ can provide documents in an alternative format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

¹⁷ University of Oregon, 2016. Cost Components of Housing. https://www.oregon.gov/lcd/UP/Documents/UO-Cost_Components.pdf accessed on 05/07/21.