State of Oregon Department of Environmental Quality

# Oregon Environmental Quality Commission Meeting

**March 18, 2020**

## Action Item 1
## Petition to Adopt Rules Regarding Indirect Sources of Air Pollution

## Table of Contents

# DEQ Recommendation to the Environmental Quality Commission

DEQ recommends that the Environmental Quality Commission, per the statutory requirements of ORS 183.390, deny the Indirect Source Rule Petition in writing.

DEQ recommends several near-term actions to address diesel, air toxics and greenhouse gas emissions attributed to mobile activity induced by indirect sources. DEQ provides more detail on these recommendations in the concluding section of this report:

- Report to EQC on the results and policy implications of the completed non-road diesel equipment emission inventory, including responsive policy (regulatory and/or voluntary) actions.
- Report to EQC on the results and policy implications of the final report to the Legislature from the Supporting Businesses in Reducing Diesel Emissions Task Force.
- Report to EQC on DEQ planned actions in response to EPA, California and other states' development of low $NO_x$ and electrification standards for medium and heavy duty diesel vehicles.
- Report to EQC on the opportunities DEQ is pursuing to accelerate the pace of zero-emission vehicle adoption.
- Report to EQC on the participation of large indirect sources in the Clean Fuels Program.
- Report to EQC on the multi-agency coordination around the Statewide Transportation Strategy implementation.

# Introduction

The EQC received a petition Dec. 20, 2019, that requests the promulgation of new rules to control air pollution from indirect sources. An indirect source of air pollution exists when activities at a location or land-uses lead to the concentration of emissions from mobile sources such as cars, trucks, locomotives and construction equipment.

## Background Information on Rulemaking Petitions

Oregon law allows an interested person to petition an agency to promulgate, amend or repeal a rule. Oregon Revised Statute 183.390 and administrative rules at OAR 340-011-0046 and 137-001-0070 describe the requirements for the petition and for agency review. A petition to adopt new rules must include the full text of proposed rules and provide facts and arguments supporting the proposal. According to the statute, the agency must either deny the petition or initiate rulemaking proceedings within 90 days of receiving the petition.

Upon their review, the EQC may: 1) deny the petition, 2) direct DEQ to initiate rulemaking proceedings based on the rules proposed by the petition, or 3) deny the petition and direct DEQ to take some other action.

## Summary of Petition and Proposed Rules

The petition requests that the commission promulgate new rules regulating the construction and operation of a wide array of indirect sources. While not explicit in the proposed rules, the supporting materials make clear that reduction of diesel particulate matter, a toxic air contaminant, is particularly important to the petitioners. A full copy of the petition, including draft proposed rules and supporting materials, is included as Attachment A to this report.

In summary, the petition requests that:

- The commission issue new rules for a permitting program to control emissions associated with the construction and operation of indirect sources in cities and metropolitan service districts with a population of 50,000 or more.
- That a variety of facilities be regulated as indirect sources, including but not limited to:
  - parking facilities
  - retail, commercial, and industrial facilities
  - recreation, amusement, sports, and entertainment facilities
  - office and government buildings
  - educational facilities
  - hospital facilities
  - warehouses and freight distribution facilities
  - rail terminals
  - ports and marine terminals
  - development projects.
- Indirect Source Construction Permits are required prior to any construction/development of a building 10,000 square feet or larger; the creation or addition of 500 or more parking spaces; demolition of a structure 10,000 square feet or larger; excavation of a lot/area of 8,000 square feet or larger of ground disturbance; or construction valued at $1 million or more when specified air pollutants are expected to exceed thresholds described in rule.
- Indirect Source Operating Permits are required by any facility if any of the following conditions are met: total aggregate emissions from associated mobile source activity exceed thresholds detailed in rule; ambient concentrations of certain pollutants exceed threshold at the source; vehicle trips associated with source are equal to or exceed 50 per day; the aggregate horse power of all mobile sources operating within the source exceed 5,000; the aggregate fuel consumption by all mobile source operating at the facility equals or exceeds 750 gallons of diesel and/or gasoline in any 24 hour period.
- Any applicant for an Indirect Source Permit must provide:
  - an Air Impact Assessment, performed according to department protocol and reviewed and approved by an independent third-party;

    - a mitigation plan, reviewed and approved by an independent third-party, if the AIA projects baseline emissions above specific limits; and
    - a monitoring and reporting schedule if a mitigation plan is required.
- Construction permit requirements: average emissions profiles from all construction equipment and trucks used or associated with the project must meet particulate matter, nitrogen oxide and greenhouse gas emission limits; permit exists for the duration of the construction project, but no more than five years; depending on what is being constructed, the project may also need to obtain an operating permit upon completing construction.
- Operating permit requirements: average emissions profiles from all mobile source activities used at or associated with the source must meet emission limits for $PM_{2.5}$, $NO_x$ and GHGs; the permit expires after no more than five years.
- The source may choose among various measures to reduce $PM_{2.5}$ and $NO_x$ emissions by 50 percent from unmitigated conditions, and GHGs by 25 or 50 percent, dependent on project dates; emission mitigation measures must be quantified through a department-approved model.

## Background on Indirect Source Regulation

Oregon's indirect source regulation dates back to the 1970s when carbon monoxide from mobile sources caused Oregon's air quality in urban areas to violate the national CO standard. DEQ incorporated multiple federal, state and local emission and transportation control measures in Oregon's State Implementation Plan, including rules to regulate indirect sources. While the Environmental Protection Agency originally intended to require the use of indirect source regulations by states, Congress ultimately limited that authority. The Clean Air Act Amendments of 1977 clarified that while states cannot be required by the EPA to promulgate indirect source regulations, they are authorized to do so of their own volition.

In 1984, DEQ expanded application of the Indirect Source Rules to Medford as a requirement of the Medford CO Attainment Plan. In 1986, DEQ removed indirect source rules from Oregon's State Implementation Plan because EPA no longer required them in SIPs. However, DEQ continued to implement indirect source rules at the state level. In 1998, DEQ substantially revised the indirect source rules to reduce permitting requirements for construction of new parking facilities, eliminate regulations for highway projects and airports, and explicitly limit applicability to CO nonattainment and maintenance areas.

Between the mid-1970s and early 1990s, DEQ reviewed the air quality impacts of more than 400 indirect sources statewide and issued Indirect Source Construction Permits for malls, multi-family residential developments, commercial developments and road projects. By the mid-1980s, as increasingly protective federal vehicle emission standards took hold, DEQ's monitoring data showed substantial reductions in CO emissions and fewer standard violations.

DEQ currently requires indirect source construction permits only in certain areas of the state where air quality has not met the CO standard and for parking lot developments or

expansions exceeding 1,000 spaces (or 800 in downtown Portland). DEQ has issued fewer than 10 Indirect Source Construction Permits since 2000.

# DEQ Petition Evaluation

In this section, DEQ assesses the completeness of the petition, the need for the petitioned proposed regulations, potential emission reductions from implementing the proposed regulations, the effect those regulations may have on regulated entities and the DEQ resource implications.

## Petition Requirements

DEQ finds that the petition and attachments meet the administrative requirements of ORS 183.390 and administrative rules at OAR 340-011-0046 and 137-001-0070.

As required by OAR 137-001-0070 (1) and (1) (a):

- The petition provides the name and address of the petitioner and others known to the petitioner to be interested in the rule. (Attachment A, pages 3-5)
- The petition includes the proposed language in full for the new rules (Attachment A, pages 6-22).

DEQ finds that the petition meets the requirements in OAR 137-001-0070 (1) (b) and (c).

- The petition includes facts and arguments in sufficient detail to show the reasons for and effects of adoption of the proposed rule. (Attachment A, pages 23-31)
- The petition contains a statement of the propositions of law asserted by the petitioner (Attachment A, pages 32-33).
    - The petition cites the following federal laws:
        - Clean Air Act, Section 110 – State Implementation Plans
            - 42 U.S.C § 7410(a)(5): indirect source review programs
            - 42 U.S.C § 7410(a)(5)(C): indirect sources
        - CAA, Section 209 – State Standards
            - 42 U.S.C § 7543: motor vehicle emission and fuel standards
- The petition cites the following state rule and statutes:
    - OAR § 340-254-0010: Rules for Indirect Sources - Policy
    - ORS § 468A.025 (Air purity standards; air quality standards; treatment and controls of emissions; rule) and ORS § 468A.040 (Permits; rules) to support the commission's statutory authority to regulate air quality.

## Petition Problem Statement

The petitioners assert facts and arguments to support their request that the commission regulate indirect sources of emissions. Petitioners assert that on-road and non-road mobile source emissions present a substantial threat to human health and the environment. They assert that chemical components in diesel exhaust, in particular, are potent human-health toxics and climate influencing agents. Petitioners assert that adverse health effects from exposure to diesel emissions disproportionately affect low-income and minority communities in urban areas. Related to climate change, petitioners cite that the transportation sector is the

largest GHG contributor in Oregon and that Oregon is not on track to meet the state's GHG reduction goal of 75 percent below 1990 levels by 2050.

Petitioners assert that on-road (e.g. freight trucks) and non-road (e.g. construction equipment) mobile sources are major emitters of diesel particulate pollution and that regulation of indirect sources is a legal means to control aggregate emissions from these sources. Petitioners state that the EQC has previously adopted rules to regulate indirect sources, but those rules are inadequate to address all the pollutants and the extent of emissions attracted to indirect sources. Petitioners conclude their facts and arguments by asserting that other jurisdictions have adopted indirect source rules, some of which apply to multiple types of indirect sources, regulate the construction and operation of indirect sources, and have achieved significant criteria pollutant emission reductions.

# DEQ Assessment of Emissions Associated with Indirect Sources

Mobile sources, such as on-road vehicles and non-road construction equipment, emit multiple air pollutants, some of which are regulated by national standards, such carbon monoxide (CO), nitrogen oxide ($NO_x$), and particulate matter (PM) (including both $PM_{10}$ and $PM_{2.5}$, each representing particle size in micrometers). Mobile sources also release GHGs, such as carbon dioxide, and air toxics, such as several volatile organic compounds and diesel particulate matter. DPM, or black carbon, is categorized as "likely to be carcinogenic to humans" by the Environmental Protection Agency.[1] During operation, indirect sources may cause cars and trucks to congregate at the location, causing higher emissions in the surrounding area than if the source was not present.

In the absence of readily accessible emissions data from the indirect sources outlined in the petition, DEQ reviewed publicly available data, studied conclusions and information that DEQ deemed relevant to understanding the scale of mobile emissions attracted to indirect sources and summarized information from the National Emissions Inventory. DEQ also referred to computer modelling results and conclusions drawn from the Portland Air Toxics Solutions project, as well as that study's 2013 committee report and recommendations.[2] For this petition assessment, DEQ also drew conclusions from surrogate sources of information, such as traffic patterns near indirect sources.

In our assessment of emissions associated with indirect sources, DEQ focused on diesel particulate matter because this is a primary focus in the petition, and because DEQ models of DPM show this pollutant exceeding health benchmarks in the Portland area.

## Diesel Particulate Matter Modeled Concentrations

The PATS modeling study projected 2017 air toxics concentrations for the Portland urbanized region. DEQ input 2005 emission inventories and the model projected 2017 air toxics concentrations based on expected population and economic growth. DEQ then

[1] https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=642
[2] Portland Air Toxics Solutions Committee Report and Recommendations, (Portland Air Toxics Report). https://www.oregon.gov/deq/aq/air-toxics/Pages/PATS.aspx

compared modeled concentrations with health benchmarks and produced maps that illustrated health risk as “times above benchmark” for cancer and non-cancer causing toxics. PATS modeling predicted that DPM would exceed benchmarks by more than 10 times in certain parts of the Portland area. Figure 1 is one of the illustrations from the 2013 Portland Air Toxics Solutions Committee Report showing the modeled distribution of DPM based on times above benchmarks.

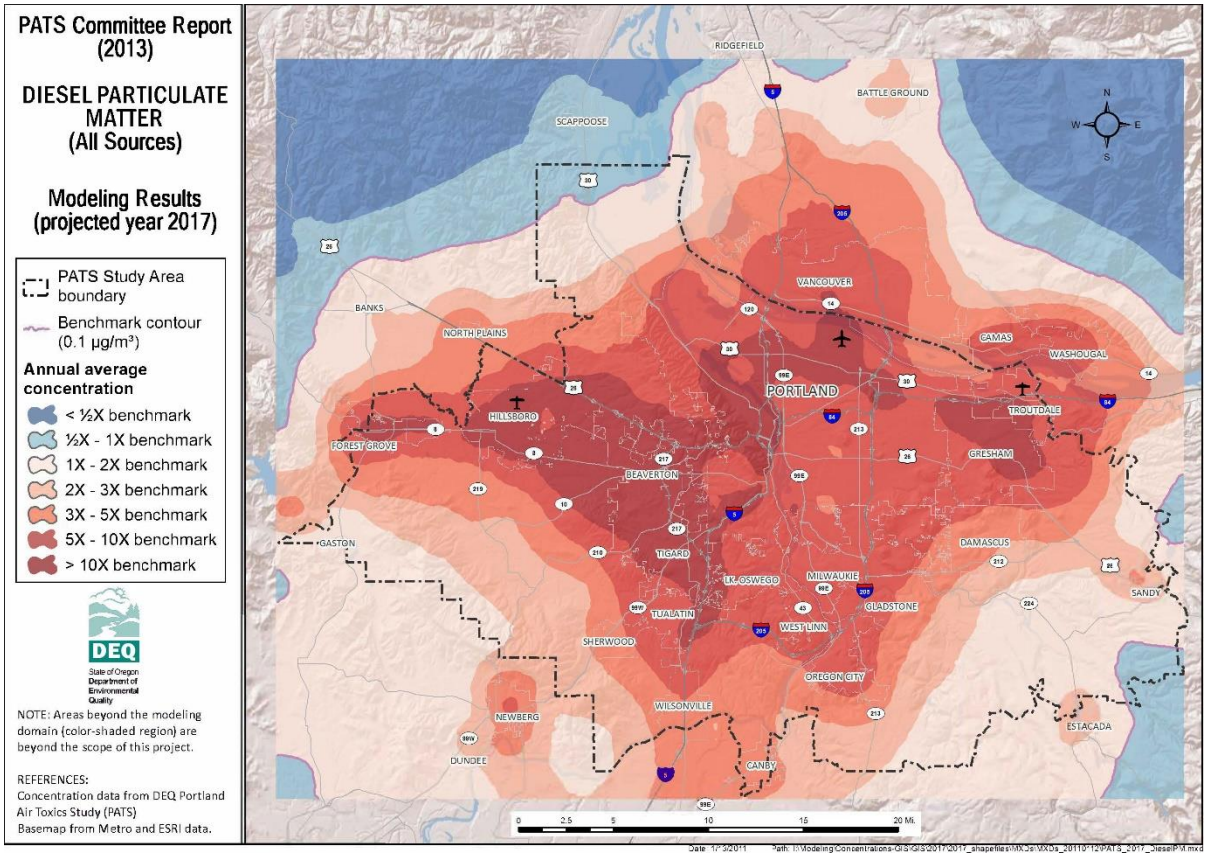


*Figure 1 From Portland Air Toxics Solution Committee Report and Recommendations (Chapter 4. p. 12, Figure 44). Figure title edited for clarity.*

## National Emissions Inventory

To better understand the scale of mobile source emissions induced by indirect sources, such as construction sites and facilities that attract mobile activity, DEQ consulted the 2014 National Emissions Inventory database. The NEI is updated every three years, but the 2017 NEI is not yet available. From the NEI, one can query total annual emissions by state, county, sector, source type and pollutant.

DEQ queried the NEI for diesel particular matter emissions by county, sector (mobile emissions) and source type (equipment or vehicle type), such as marine, locomotive, heavy duty trucks, and construction equipment. Diesel particulate matter is abbreviated as DPM, Diesel $PM_{2.5}$ or black carbon. Figure 2 illustrates the scale of annual black carbon emissions within each Oregon county. Figure 3 illustrates statewide annual black carbon emissions by sector. Statewide, on-road heavy duty diesel vehicles and non-road construction and mining equipment each contribute over 500,000 tons of black carbon annually.

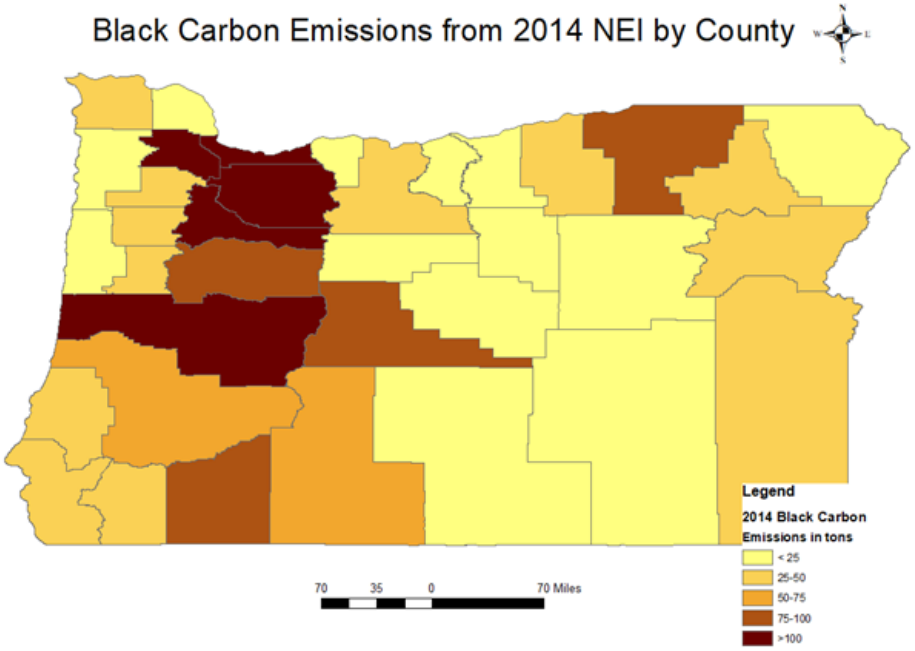


*Figure 2: Range of annual tons of black carbon emissions by county in Oregon. Source: 2014 National Emissions Inventory.*

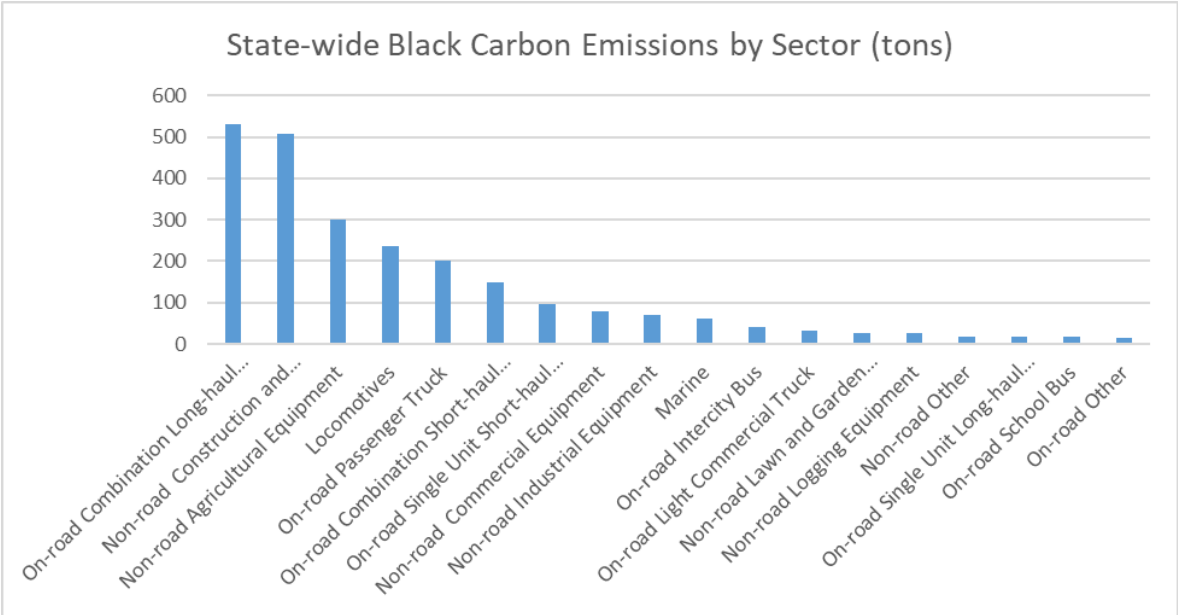


*Figure 3: Black carbon annual emissions in tons by sector in Oregon.*

Figures 4 through 11 illustrate the relative contributions of multiple mobile sources of DPM in the Portland metro counties, and the other counties that encompass MPOs: Benton, Deschutes, Douglas, Jackson, Lane, Linn and Marion Counties. In most areas, the top two mobile sources of DPM are on-road heavy duty vehicles and non-road construction equipment. That is not the case in Douglas and Linn Counties, where the top contributing

DPM source is on-road heavy duty, but the next highest contributions come from light duty diesel vehicles and non-road agricultural vehicles, respectively. Total annual DPM emissions, noted in the charts, vary a great deal between the more populous and more rural counties.

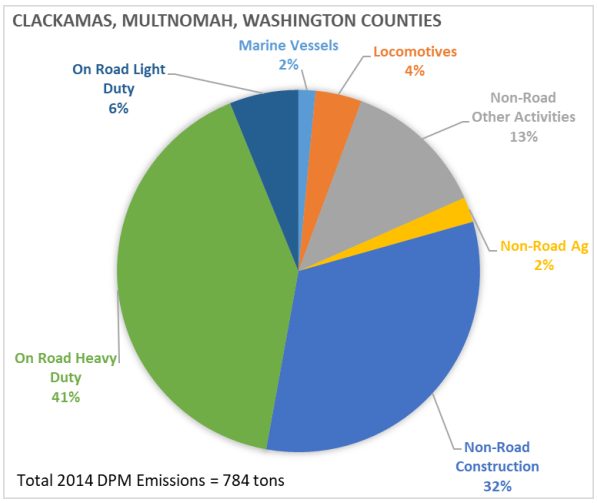


*Figure 4: Total DPM mobile emissions and relative source contributions in Multnomah, Clackamas and Washington Counties.*

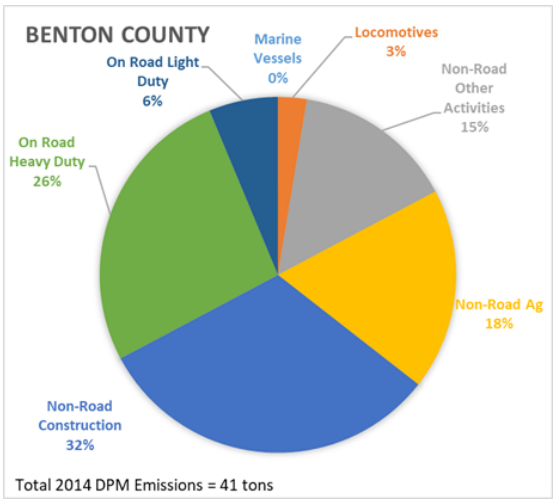


*Figure 5: Total DPM mobile emissions and relative source contributions in Benton County.*

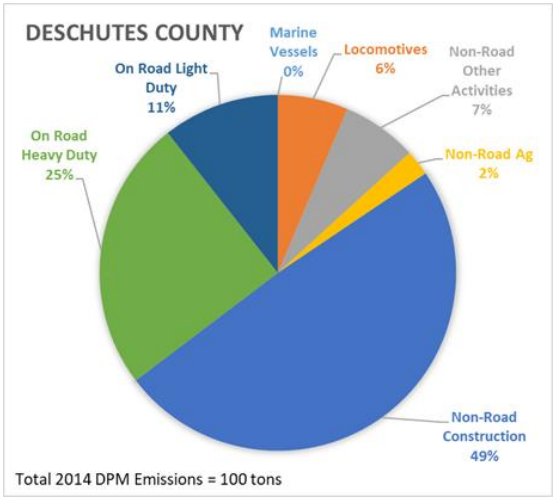


*Figure 6: Total DPM mobile emissions and relative source contributions in Deschutes County.*

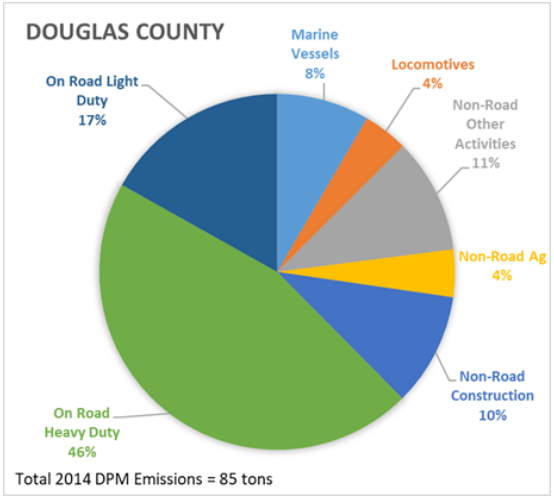


*Figure 7: Total DPM mobile emissions and relative source contributions in Douglas County*

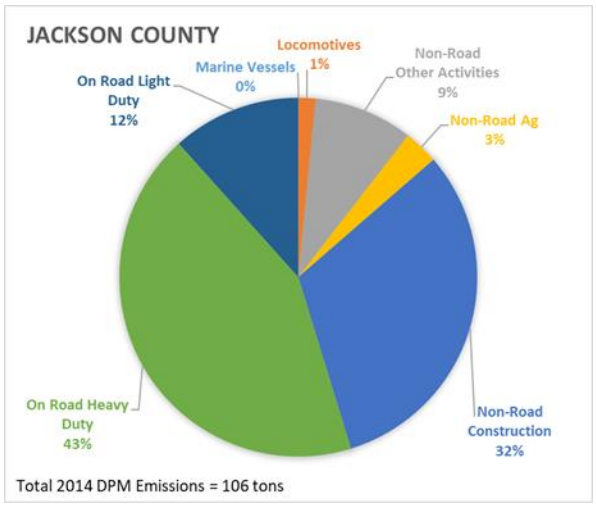


*Figure 8: Total DPM mobile emissions and relative source contributions in Jackson County.*

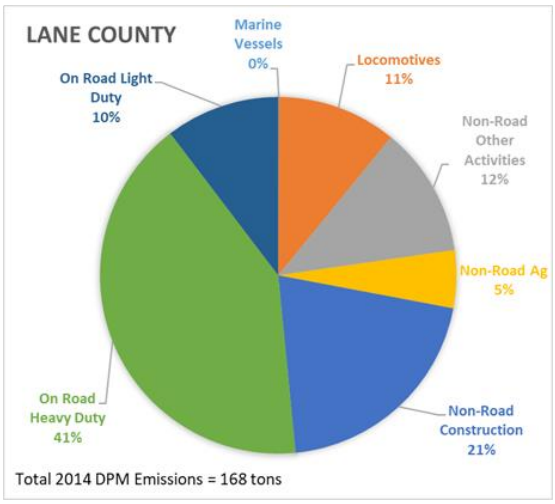


*Figure 9: Total DPM mobile emissions and relative source contributions in Lane County.*

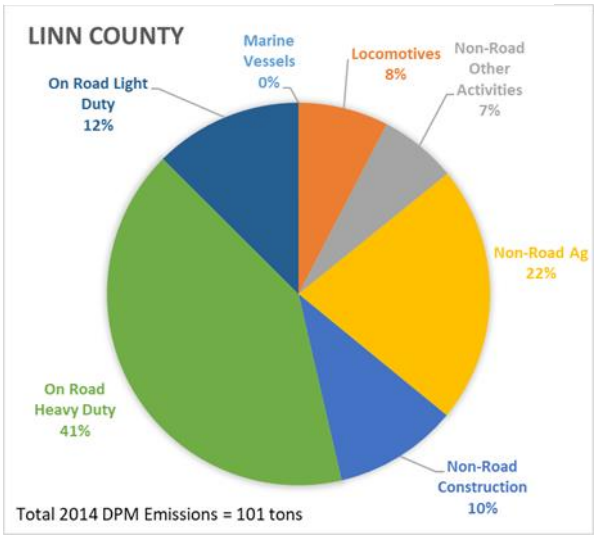


*Figure 10: Total DPM mobile emissions and relative source contributions in Linn County.*

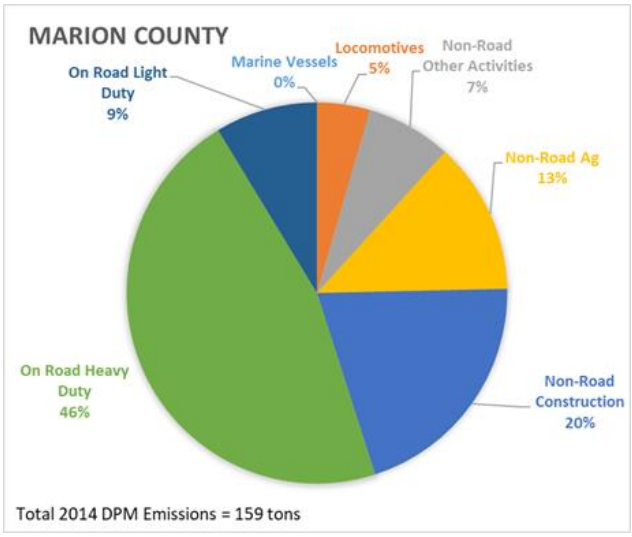


*Figure 11: Total DPM mobile emissions and relative source contributions in Marion County.*

Table 1 shows DPM emissions in tons/year attributed to different types of on-road heavy duty diesel vehicles. For comparison, the table also shows emissions attributed to non-road construction equipment and on-road light duty diesel vehicles. With the exception of Benton and Deschutes Counties, DPM from heavy duty long- and short-haul trucks exceeds 30 tons/year to a high in Multnomah County of approximately 160 tons/year. Of Multnomah County's 160 tons/year heavy-duty truck DPM, nearly 50 tons/year is attributed to short-haul heavy duty trucks. Relatively, transit and school buses contribute smaller amounts of DPM, but still, in Multnomah, Lane and Washington Counties, these emissions exceed 5 tons/year.

Counties emitting the greatest amount of DPM from non-road construction equipment - Clackamas, Deschutes, Multnomah and Washington Counties – produce approximately 49 to

110 tons/year DPM. In other counties DEQ reviewed, annual DPM emissions from construction equipment range from approximately 8 to 35 tons/year.

*Table 1: On-road and non-road DPM emissions in tons/year in several Oregon counties. Source 2014 National Emissions Inventory.*

| | Non-Road Equipment – Diesel | On-Road Diesel Heavy Duty | | | | | | | On-Road Diesel Light Duty |
|---|---|---|---|---|---|---|---|---|---|
| County | Construction and Mining Equipment | Combination Long-haul Truck | Combination Short-haul Truck | Intercity Bus | School Bus | Single Long-haul Truck | Single Short-haul Truck | Transit Bus | Passenger Truck |
| | DPM tons/year | | | | | | | | |
| Benton | 13.1 | 6.4 | 2.1 | 0.6 | 0.3 | 0.2 | 1.2 | 0.1 | 13.1 |
| Clackamas | 55.2 | 48.9 | 13.0 | 3.1 | 1.2 | 1.6 | 8.7 | 0.3 | 16.5 |
| Deschutes | 49.3 | 14.1 | 4.8 | 1.5 | 0.4 | 0.5 | 3.1 | 0.1 | 9.3 |
| Douglas | 8.8 | 23.4 | 7.0 | 2.0 | 0.9 | 0.8 | 4.3 | 0.3 | 12.8 |
| Jackson | 33.5 | 29.0 | 6.5 | 2.3 | 1.4 | 0.9 | 5.1 | 0.2 | 10.8 |
| Lane | 34.5 | 40.6 | 12.9 | 3.9 | 1.7 | 1.3 | 7.7 | 0.5 | 14.7 |
| Linn | 10.6 | 25.1 | 7.9 | 2.0 | 0.9 | 0.8 | 4.6 | 0.1 | 11.0 |
| Marion | 32.4 | 49.2 | 9.7 | 3.0 | 1.4 | 1.6 | 8.0 | 0.2 | 11.2 |
| Multnomah | 109.2 | 110.0 | 28.6 | 6.6 | 2.4 | 3.4 | 18.8 | 0.8 | 14.9 |
| Washington | 88.3 | 45.0 | 12.3 | 3.4 | 1.3 | 1.5 | 8.1 | 0.4 | 8.3 |

Total annual county-wide data provide only an aggregate picture of mobile emissions attributed to indirect sources. DEQ does not have measured or modeled data at a fine enough spatial or temporal scale to estimate emissions from particular activities, project types or locations, either individually or collectively.

# Mobile Activity Associated with Indirect Sources

To assess potential scale of mobile activity attracted to indirect sources, DEQ has made inferences from readily available data, such as traffic counts, vehicle registrations and construction permits.

## Traffic Analysis

DEQ consulted ODOT transportation volume tables[3] that compile 2018 traffic counts and percent vehicle types across Oregon's state maintained roads. DEQ sorted out locations that experienced more than 50,000 average annual daily trips, to represent urban settings. DEQ identified within this subset locations where annual average daily traffic counts dropped by several thousand from the previous traffic counting station as an indication of vehicles leaving the roadway. DEQ then consulted aerial photos and maps to identify potential traffic attractors in the vicinity, such as large commercial, industrial or shopping developments, airports, distribution centers, and entertainment facilities.

[3] ODOT Transportation Volume Tables, https://www.oregon.gov/ODOT/Data/Pages/Traffic-Counting.aspx

ODOT's transportation volume tables also convey the percent of vehicle classifications, with "Class 1" and "Class 2" vehicles being individual or passenger vehicles, and "Class 3" through "Class 13" likely to be diesel-powered vehicles. Table 2 compiles this information and shows AADT dropping between 9,000 and 21,800 vehicles at five locations in the Portland metropolitan area following freeway exits to areas with concentrations of indirect sources. With the exception of the freeway exit to Washington Square Mall, passenger vehicles comprise about 78 percent of the total, and probable diesel-powered vehicles the remainder. At the Washington Square Mall location, passenger vehicles comprise about 85 percent of the total.

DEQ also reviewed ODOT traffic counts at an entrance to Highway 26 in Hillsboro in the years before and after a distribution center was built near that intersection. The facility appears to have been built in 2016. Annual average daily traffic counts entering the freeway at that location increased from 9,400 in 2016 to 11,070 in 2017 and 11,330 in 2018.

*Table 2: Annual Average Daily Traffic counts from year 2018 near several indirect sources. Source: ODOT Transportation Volume Tables. https://www.oregon.gov/ODOT/Data/Pages/Traffic-Counting.aspx*

| State Highway | Indirect Sources Nearby | 2018 AADT | Location Description | Percent Class 1 and 2 | Percent Class 3 to 13 |
|---|---|---|---|---|---|
| Columbia River Highway No. 2 (I-84) | NE 181st Ave. commercial | 110,900 | Fairview Automatic Traffic Recorder, Sta. 26-028, 1.59 miles west of NE 181st Avenue Interchange | 77.81 | 22.19 |
| Columbia River Highway No. 2 (I-84) | | 89,100 | 0.40 mile east of NE 181st Avenue Interchange | 77.81 | 22.19 |
| Columbia River Highway No. 2 (I-84) | Troutdale Airport, commercial, industrial | 70,700 | 0.20 mile west of 223rd Avenue | 77.81 | 22.19 |
| Columbia River Highway No. 2 (I-84) | | 54,900 | 0.50 mile east of NE 238th Drive Interchange | 77.81 | 22.19 |
| Stadium Freeway Highway No. 61 (I-405) | Providence Park, Downtown Portland | 114,800 | SW Yamhill Street Undercrossing | 78.06 | 21.94 |
| Stadium Freeway Highway No. 61 (I-405) | | 105,400 | NW Glisan Street Undercrossing | 78.06 | 21.94 |
| East Portland Freeway No. 64 (I-205) | Marine Dr. Columbia Blvd. industrial | 168,900 | 0.40 mile north of connections to Columbia River Highway (I-84) | 77.82 | 22.18 |
| East Portland Freeway No. 64 (I-205) | | 156,600 | 0.50 mile south of Airport Way Interchange | 77.82 | 22.18 |
| Beaverton Tigard Highway No. 144 (Hwy. 217) | Washington Square Mall | 115,400 | 0.30 mile south of SW Denney Road Interchange | 85.67 | 14.33 |
| Beaverton Tigard Highway No. 144 (Hwy. 217) | | 98,000 | 0.20 mile south of Beaverton-Tualatin Highway Interchange | 85.67 | 14.33 |
| Beaverton Tigard Highway No. 144 (Hwy. 217) | | 111,100 | 0.30 mile south of Scholls Highway (OR210) Interchange | 85.67 | 14.33 |

## Construction Permit Information

DEQ consulted the City of Portland building permit database[4] to assemble a qualitative overview of potential mobile emissions at commercial construction sites in an urban area. DEQ retrieved information on all new commercial construction projects in the city of Portland over a five-year period, 2014 – 2018. DEQ narrowed the list of permits to those for projects exceeding a contract value of $1 million or development area of 10,000 square feet (two thresholds designated in the petitioned proposed rules), resulting in a list of approximately 460 permits, and approximately 390 projects (one site may have multiple permits for different construction activities). Figure 12 illustrates the distribution and type of those construction projects across the city of Portland. Table 3 lists the approximate number and type of construction projects over this five-year period. DEQ also queried the city of Portland permit database for permits issued in 2019, and found 182 projects exceeding either $1 million or 10,000 square feet.

DEQ does not yet have detailed information about the number and kinds of equipment operating at commercial construction projects, but has contracted with Environmental Resource Group to provide a statewide, non-road equipment inventory in the spring of 2020. One component of the statewide data is an inventory of non-road equipment used at approximately 770 commercial and institutional construction projects in Oregon in 2017. Emissions estimates from this commercial construction activity are not yet available, but preliminary results from the commercial and institutional construction equipment inventory indicate that across those 770 projects, diesel fuel consumption was approximately 2 million gallons, averaging about 2,500 gallons per project.

Conducting a non-road equipment inventory and making substantial reductions in diesel emissions from construction activity were among several recommendations from the Portland Air Toxics Solutions Committee. The PATS model predicted that non-road construction activity would be responsible for approximately 250 tons of emitted diesel particulate matter in 2017.

*Table 3: New commercial construction permits issued in Portland, Oregon 2014 – 2018. Source: Portland Maps.*

| **Construction Type** | **Number of Permits Issued (2014 – 2018)** |
|---|---|
| Apartments/condominiums | 265 |
| Assembly (e.g. running track, religious building) | 13 |
| Business | 77 |
| Educational | 8 |
| Factory/industrial | 8 |
| Hazardous (e.g. contaminated site cleanup) | 3 |
| Hotel/motel | 10 |
| Mercantile | 12 |
| Special residential (e.g. memory care facility) | 5 |
| Storage | 32 |
| Utility | 21 |

[4] Portland Maps, https://www.portlandmaps.com/advanced/?action=permits

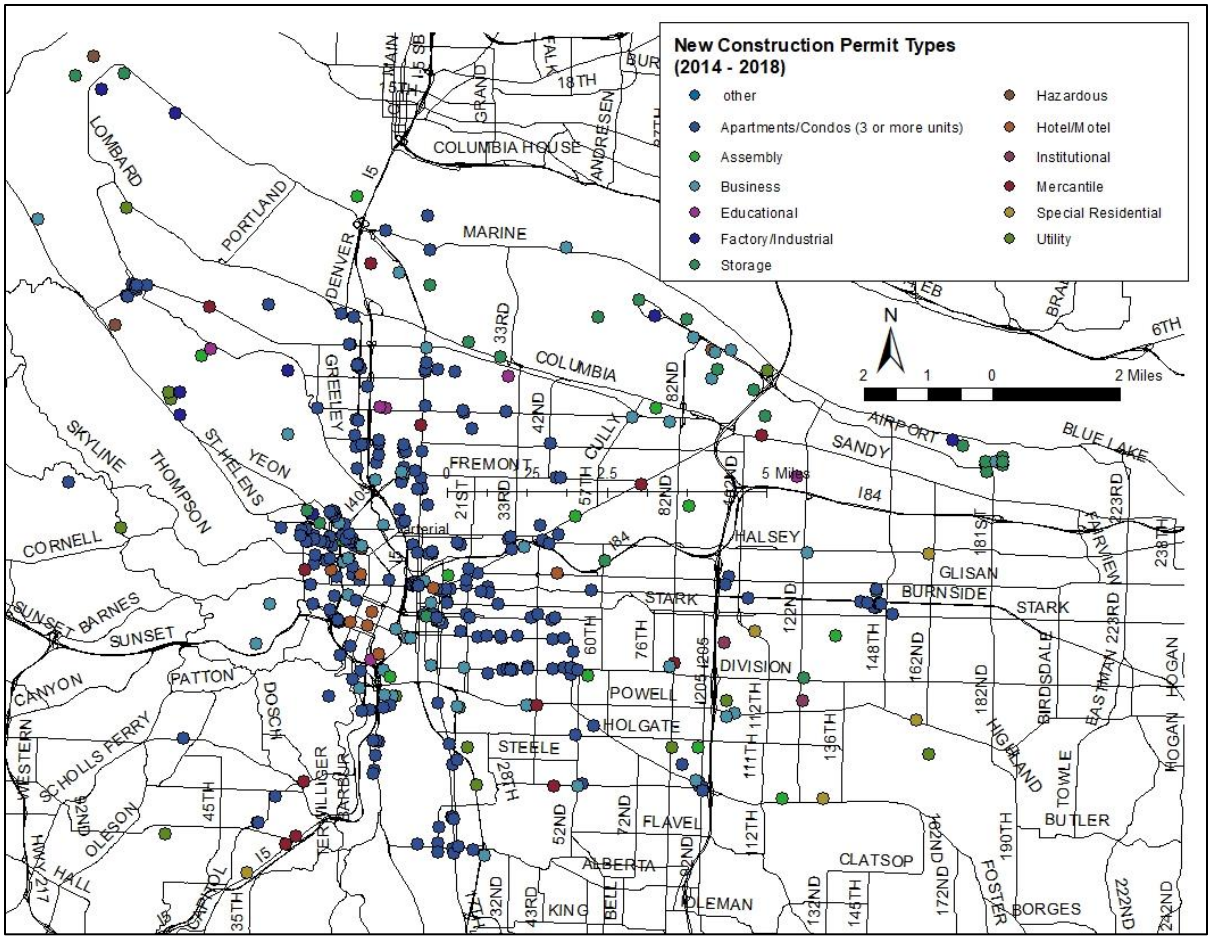


*Figure 12: New commercial construction permits by type, exceeding $1 million contract value or development area of 10,000 square feet, issued between 2014 and 2018 in the city of Portland. Source: Portland Maps, https://www.portlandmaps.com/advanced/?action=permits*

## Conclusions: Emissions Associated with Indirect Sources

DEQ's review of aggregated data representing mobile sources that may be attracted to indirect sources – for example, large parking lots or distribution centers – and surrogate activity data – for example, traffic counts and permits issued - leads to the following conclusions:

- Statewide and in counties with the most mobile source emissions, on-road heavy duty diesel vehicles and non-road construction and mining equipment are the sectors that are responsible for most of the DPM emitted.
- Annual DPM emissions from heavy-duty vehicles in the counties with the most travelled roadways are roughly 50 to 160 tons.
- Annual DPM emissions from non-road construction activity in counties with urban areas is roughly 50 to 250 tons.
- Areas with indirect sources may induce several thousand daily vehicle trips.

- In Portland, over a five year period, about 400 construction projects, the majority being apartments, exceeded a contract value of $1 million or development area of 10,000 square feet.

DEQ does not have readily accessible data at sufficient spatial and temporal scales to estimate emissions induced by particular indirect source activities, project types or locations. The non-road diesel equipment inventory dataset, which DEQ expects to receive in spring 2020, will fill some important knowledge gaps such as equipment quantity, age, activity levels, scrap, retirement and replacement rates. This information will allow for a more accurate emissions model of the non-road construction sector than DEQ completed for the 2012 Portland Air Toxics Solutions project. Another tool that would help DEQ estimate emissions associated with or attracted to indirect sources would be a model that calculates emissions produced at a project- or site-level under various land use, design and other development scenarios.

# Potential Emission Reductions from Proposed Regulations

DEQ does not have readily available data or a model to calculate potential emission reductions from implementation of all aspects of the petitioners' proposed regulations. However, in the past several years, DEQ has undertaken modeling and research to estimate potential diesel, air toxics, and criteria pollutant emission reductions from various mobile source strategies.

## Portland Air Toxics Solutions Modeled Strategies

In 2012, DEQ reviewed literature and modeled potential emission reductions achievable through various strategies compiled by the PATS Committee, and documented that information in several white papers.[5] DEQ evaluated many strategies, such as diesel engine retrofits, increasing fleet turnover, using alternative fuels (including electrification), reduce idling and expanding vehicle maintenance and inspection. DEQ estimated the effect of these strategies on DPM and other pollutant emissions as possible percent reduction, given the many variables and uncertainties associated with strategy implementation. Even estimating percent reductions depends on many variables, such as speed of fleet turnover, funding available to incentivize engine replacement, and the range of use of non-road engines.[6] Table 4 compiles a list of some of the strategies evaluated in the PATS modeling study with the strategies' potential DPM reductions.

[5] Portland Air Toxics Report, *supra* at note 2, Chapter 10, p. 39.
[6] Portland Air Toxics Report, *supra* at note 2, Chapter 10, p. 39, Non-road Diesel White Paper Table 6, p. 15, Diesel On-road White Paper, Table 7, p. 16.

*Table 4: Diesel particulate matter percent reductions achievable with multiple on-road and non-road engine strategies. Source: Portland Air Toxics Report whitepapers, Diesel On-road and Diesel-Non-Road. *Current data available from DEQ's Clean Fuels Program indicates that renewable diesel provides particulate emission reductions greater than 15%.*

| | Strategy | Percent Emission Reduction | Variables |
|---|---|---|---|
| On-road | Speed turnover of fleet to cleaner, new diesel engines | 80% | Voluntary/mandatory; public subsidy availability |
| | Increase fleet mix alternative fuel, e.g. natural gas, biodiesel, electricity | 15% (biodiesel B20)* – 100% (electricity) | Voluntary/mandatory; fuel type |
| | Retrofits, e.g. diesel particulate filters, diesel oxidation catalyst, selective catalytic reduction. | 20 – 90% | Voluntary/mandatory; public subsidy availability |
| Non-road | Retrofits, e.g. diesel particulate filters, diesel oxidation catalyst, selective catalytic reduction. | 25 – 90% | Equipment specifications and activity |
| | Increase fleet mix alternative fuel, e.g. natural gas, biodiesel, electricity. | 16 – 100% | Equipment specifications and activity |

## Cleaner Trucks Initiative Potential Emission Reductions

The Manufacturers of Emissions Controls Association recently completed modeling of emissions reductions achievable through implementation of potential future regulations developed through the Cleaner Trucks Initiative.[7] The Cleaner Trucks Initiative is an EPA-led effort to develop new federal standards for heavy duty diesel engines, particularly for $NO_x$ under low load conditions, such as idling or moving slowly in stop-and-go traffic. The model projects that in Oregon in the year 2035, $NO_x$ emissions from heavy duty diesel engines would be 2,750 tons less than in the base case year, projected as 2028, the year the regulations would take effect.

## San Joaquin Valley Air Pollution Control District Tracked Emission Reductions

The San Joaquin Valley Air Pollution Control District, headquartered in Fresno, California, has implemented an Indirect Source Review program since March 2006, and has tracked resulting $NO_x$ and $PM_{10}$ emission reductions annually. DEQ reviewed the San Joaquin District's annual and five-year review reports and, for additional context, interviewed the District's Permit Services Director, Arnaud Marjollet.

[7] https://www.epa.gov/regulations-emissions-vehicles-and-engines/cleaner-trucks-initiative

Since the program's initiation, staff in the San Joaquin District ISR program have reviewed approximately 3,300 development projects subject to the ISR rule.[8] The on-site mitigation and project design measures implemented at these projects have avoided 15,230 tons combined $NO_x$ and $PM_{10}$ emissions from new developments since 2006.[9] DEQ did not include San Joaquin's reductions associated with off-site mitigation[10] in our analysis, although those reductions are substantial and available for review in the District's annual reports.

In fiscal year 2018, staff in the San Joaquin ISR program reviewed approximately 360 projects subject to ISR rules. In calculating projected emission reduction, San Joaquin takes into account the implementation of the project design elements at full project build out.[11] ISR rule implementation at these 360 projects resulted in projected on-site emission reductions of 1,124 tons $NO_x$ and 2,135 tons $PM_{10}$.[12]

In addition, Director Marjollet noted that non-quantifiable emission reductions are likely accruing because development projects have been steadily incorporating changes such as:

- A growing clean construction equipment fleet - defined as cleaner than the construction fleet average; 49% of developments in 2019 employed clean construction fleets.
- Increasing use of newer heavy-duty on-road fleets and maintaining fleet replacement schedules.

## Conclusions: Potential Emission Reductions from Proposed Regulations

DEQ's 2012 research and modeling for the Portland Air Toxics Solutions project found that diesel engine retrofits, increasing fleet turnover, using alternative fuels (including electrification), and reducing idling could reduce DPM emissions by several hundred tons per year. In the petition's proposed regulations, entities would likely employ strategies such as these to mitigate emissions associated with the construction or operation of indirect sources.

Diesel engine replacement for non-road equipment appears to be the strategy responsible for most of the criteria pollutant reductions (e.g. PM and $NO_x$) achieved in an Indirect Source Review program in one air district in California. On-road and non-road diesel engine replacement with newer, cleaner engines takes place in California through state-mandated and voluntary measures.

DEQ does not have readily accessible data or models to calculate potential emission reductions should the petition's proposed regulations be implemented. However, DEQ

[8] Marjollet, Arnaud, San Joaquin Air Pollution Control District, Director of Permit Services, Personal Communication, January 28, 2020.
[9] San Joaquin Valley Air Pollution Control District 2019 Annual Report, Indirect Source Review Program. https://www.valleyair.org/ISR/ISRResources.htm#ISRReports
[10] The San Joaquin ISR program also includes a provision for payment towards off-site mitigation in lieu of on-site reductions. Much of the off-site emission reduction achieved comes from replacing agricultural equipment engines with those meeting cleaner standards.
[11] Marjollet, A., personal communication, *supra* note 8.
[12] SJVAPCD, 2019 Annual Report, *supra* note 9, p. 11.

expects to soon receive final results from the contractor who is compiling a comprehensive and Oregon-specific non-road diesel engine inventory. In addition to a detailed inventory of Oregon's non-road fleet across multiple sectors, the project results will include emissions modeling that will allow DEQ to estimate emission reductions achievable with engine change-outs and other measures. As well, the inventory will include fuel use calculations for particular fleet characteristics and particular project construction types. Such Oregon-specific data will be important for future modeling, regulatory and non-regulatory efforts and incentive programs.

# Potential Applicability to Regulated Entities

This section of the staff report describes how various aspects of the petition's proposed regulations may apply within jurisdictions, to new construction, and to existing indirect sources.

## Metropolitan Planning Organization Areas Affected

The petition proposed regulations would apply in areas, such as cities, municipalities or Metropolitan Planning Organizations with populations exceeding 50,000 people. There are 8 MPOs entirely within Oregon and two that cross the Oregon-Washington border (Rainier/Kelso/Longview and Milton-Freewater/Walla Walla). The 8 Oregon MPOs are: Portland Metro, Salem/Keizer, Central Lane (Eugene/Springfield), Rogue Valley (Medford/Ashland), Corvallis, Bend, Albany, and Middle Rogue (Grants Pass).

Cities within those MPO boundaries are: Portland, Maywood Park, Forest Grove, Cornelius, Hillsboro, Beaverton, Tigard, King City, Sherwood, Tualatin, Wilsonville, Oregon City, Gladstone, West Linn, Lake Oswego, Milwaukie, Happy Valley, Johnson City, Rivergrove, Gresham, Wood Village, Fairview, Troutdale, Salem, Keizer, Turner, Eugene, Springfield, Coburg, Corvallis, Philomath, Tangent, Millersburg, Jefferson, Adair Village, Albany, Bend, Grants Pass, Medford, Ashland, Eagle Point, Central Point, Phoenix, Jacksonville, Talent, Gold Hill, and Rogue River. Figure 13 shows the MPOs in Oregon where the petition's proposed regulations would apply. DEQ is not certain if the proposed regulations would apply in the Oregon portion of the MPOs that straddle the Washington border.

DEQ expects that an expanded Indirect Source Permitting program, as requested by the petitioners, would require outreach, education, training, and perhaps delegation to cities and municipalities in affected MPOs. DEQ did not attempt to quantify the resources that MPOs may need to acquire to support expanded regulation of indirect sources. Areas where MPOs, cities and municipalities may need to increase resources are: project data collection and management, emissions modeling, reporting, tracking, land use review, permit review, contract review, and inspection.

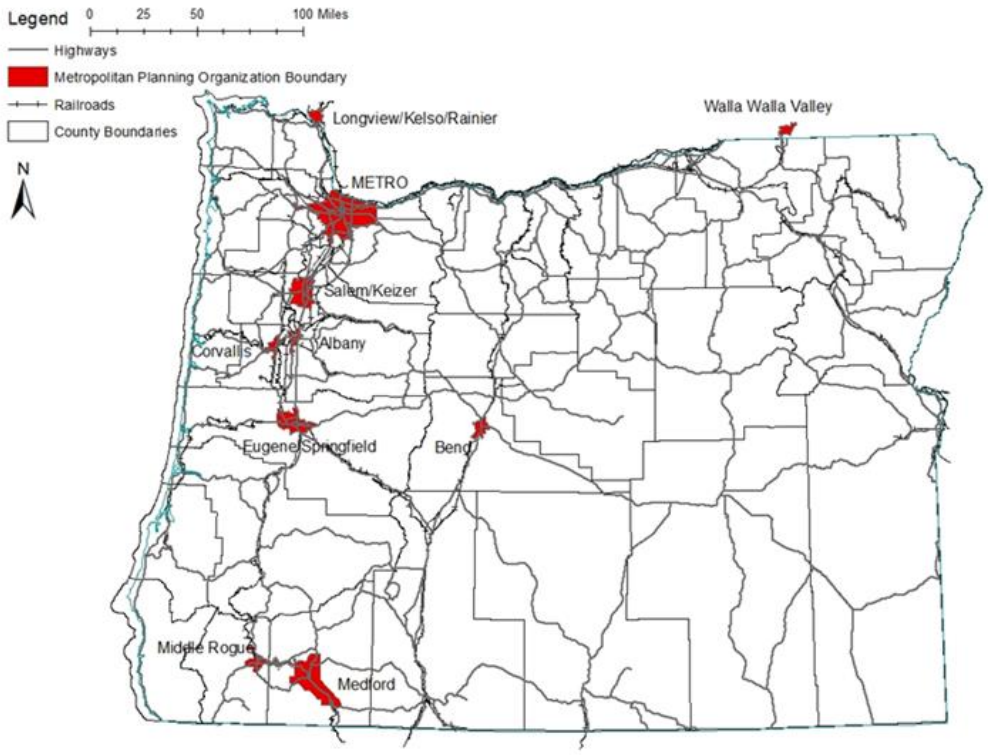


*Figure 13 Metropolitan Planning Organization areas in Oregon.*

## Potential Regulation of New Construction

The proposed regulations' applicability thresholds for new construction (e.g. surface disturbance, square footage, contract value) would likely apply to several hundred construction projects in Oregon each year.

As one estimate for potential projects, DEQ reviewed the internal Water Quality Site Information System for projects requiring construction stormwater permits in 2019. Construction stormwater permits are required for projects disturbing more than one acre. In 2019, DEQ issued 472 construction stormwater permits in Oregon, with 243 being within the boundaries of an MPO, based on the city in which the project was listed. This is likely a low estimate because a one-acre disturbance is about five times greater than the surface disturbance threshold in the regulations that petitioners propose (8,000 square feet).

To estimate the number of construction permits DEQ might expect in an urban area, DEQ reviewed the city of Portland's on-line permit database (Portland Maps).[13] The city of Portland's Bureau of Development Services issued 3,819 commercial building permits in 2019. Of those, 182 had contract values greater than $1,000,000, mostly overlapping with 100 projects that were greater than 10,000 square feet.

[13] https://www.portlandmaps.com/advanced/?action=permits

## Applicability to Existing and Operating Indirect Sources

The petition's proposed regulations would require operating permits for indirect sources that attracted mobile source emissions exceeding certain thresholds or if activities exceeded certain thresholds (e.g. fuel use, heavy-duty vehicle trips). DEQ does not have readily available information or models to quantify operating sources whose attracted activities may exceed emission thresholds. However, DEQ searched the US Business database,[14] to provide an estimate of potential businesses in Oregon metropolitan areas that may require an indirect source operating permit.

DEQ initially set search criteria to include businesses exceeding 10,000 square feet and 20 employees, in the metropolitan areas of Portland, Eugene, Salem, Corvallis, Bend, Grants Pass, and Medford, excluding two industry groups classified as "public administration" and "finance/real estate." This search resulted in 11,719 locations with more than several hundred industry classifications (e.g. educational institutions, manufacturing, construction, retail, transportation).

While several thousand locations across industry types might be subject to the proposed regulations for operating indirect sources, DEQ refined its database search to one industry type that the proposed regulations would almost certainly require to have an indirect source operating permit. The Transportation and Warehousing industry class[15] is likely to be associated with heavy-duty diesel powered vehicles, and, particular to one of the petitioned regulations' thresholds, would be more likely to induce at least 50 heavy-duty vehicle trips per day. DEQ found that in the metropolitan areas of interest, there are approximately 400 locations classified under North American Industry Classification System code "Transportation and Warehousing." To provide additional context about the scale of the operations, DEQ sorted by a readily available category: sales volume. While this petition response does not require a fiscal impact analysis, any future rulemaking would require an analysis of potential impacts to small business. Figure 15 illustrates the number and distribution of warehousing facilities located in Oregon metropolitan counties, separating the locations into those with sales less than and more than $500,000.

[14] The U.S. Businesses database is within ReferenceUSAGov, an Internet-based reference service from the Government Division Infogroup.™ An Oregon State Library account makes this database accessible. https://www-referenceusagov-com.proxy.osl.state.or.us/Home/Home

[15] North American Industry Classification System (NAICS) code beginning with 49: Transportation and Warehousing. Source: https://www.naics.com/.

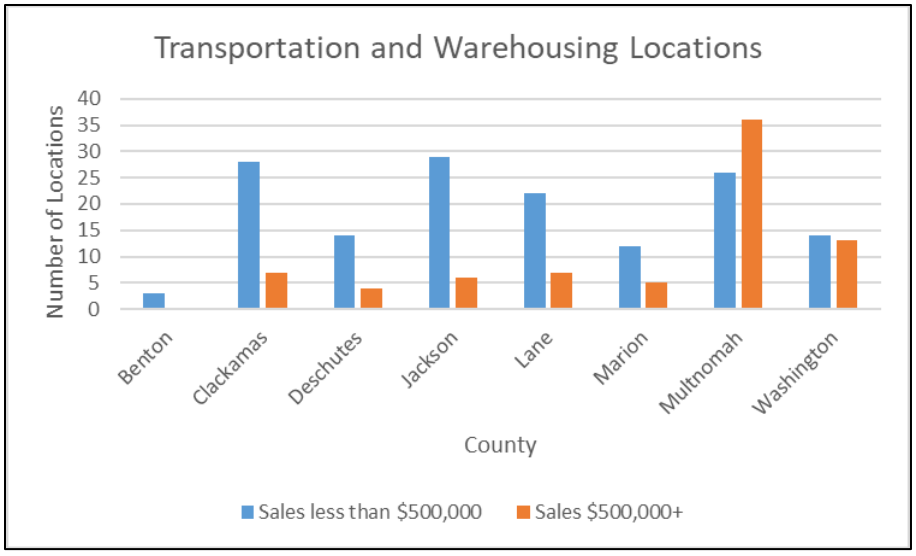


*Figure 15: Number of transportation and warehousing locations in several Oregon counties, divided by sales exceeding $500,000. Source: https://www-referenceusagov-com.proxy.osl.state.or.us/Home/Home*

## Air Impact Assessments

The petition's proposed regulations would require developers or operators of indirect sources to calculate emissions resulting from mobile activity associated with a facility's construction or operation. DEQ has not developed a model to perform such calculations, so regulated entities would likely rely on consultants or in-house technical staff to provide this analysis.

## Conclusions: Potential Applicability

The petition's proposed regulations would likely apply in cities within Oregon's eight MPOs: Portland Metro, Salem/Keizer, Central Lane, Rogue Valley, Corvallis, Bend, Albany, and Middle Rogue. Within those areas, the proposed regulations' applicability thresholds for new construction would likely require permits of several hundred construction projects in Oregon each year. DEQ does not have the specific business activity information to estimate how many businesses in Oregon would trigger the applicability thresholds in the petition's proposed regulations for operating indirect sources. One search of businesses with large footprints (>10,000 sq. ft.) and more than 20 employees yielded over 10,000 results. There are approximately 400 warehousing locations in the MPO-affected counties, and this industry could likely trigger the heavy-duty vehicle trip daily threshold.

The petition's proposed regulations would require permit applicants to submit documentation of the emissions produced during construction and/or operation of the facility. If the analysis showed emission thresholds likely to be exceeded, a second analysis of the effect of mitigation measures would be required. DEQ has not developed a model to make this kind of calculation, nor is DEQ aware of one available "off the shelf." Until such a model was developed, reviewed and certified by an appropriate body (e.g. EPA), the modeling responsibility would likely fall to regulated entities and their consultants.

# DEQ Resource Implications

An indirect source review or permitting program, such as that the petition proposes, would likely require both DEQ regional and Air Quality Division staff resources. To understand

potential resource implications, DEQ reviewed the staffing and output of the San Joaquin Valley Air Quality District ISR program. This summary is based largely on personal communication with the San Joaquin District's Director of Permit Services.[16]

## San Joaquin Valley Air Pollution Control District

The San Joaquin District implements an ISR program with 2 FTE, spread across six staff people who complete IS reviews and provide technical assistance to regulated entities. These program staff review about 350 projects each year and total annual time spent is about 3,600 hours. DEQ did not inquire about the number of non-technical positions that support the ISR program, such as compliance inspectors, administrative support, information services or enforcement staff.

According to Director Marjollet, the six technical staff work with developers as early in the process as possible to help them assemble necessary information. An average complexity project requires about 8 to 10 hours staff review time. For smaller projects, staff complete the Air Impact Analysis for the developer and that cost is covered by an application processing fee. For 2020, the program is projecting $340,000 in application processing fees for 377 projects, which works out to an estimated per project cost of $900.

The San Joaquin ISR program has several tools, procedures and statewide rules in place that support efficient ISR Program implementation, such as:

- Online forms, templates, application materials, and resources
- California Emissions Estimator Model (CalEEMod) – a model that calculates criteria pollutant and GHG emissions from a variety of land uses as well as benefits of implementing mitigation measures
- Statewide rules requiring phasing out of old diesel engines and implementing low $NO_x$ standards
- Mitigation payment and allocation authority - ~$8,750,000 revenue in 2019
- Cost-benefit calculations (e.g. costs/ton pollutant reduced) established in rule.

## DEQ Resource Needs and Potential Workflow

To implement a similar Indirect Source permitting program, such as that proposed in the Petition, DEQ would likely need additional staffing resources in several programs: regional air quality permitting and administration, air quality technical services and operations, air quality planning, information services, vehicle inspection, and compliance and enforcement. DEQ developed a potential work flow scenario to illustrate how a substantially expanded DEQ IS review and permitting program might be implemented. This illustration – Figure 14 – is based largely on DEQ's review of the San Joaquin District's ISR program reports.[17]

In addition to staffing resources across several DEQ programs, DEQ would also likely need to develop tools and models to carry out an efficient, effective Indirect Source permitting

[16] Marjollet, Arnaud, *supra* at note 8.
[17] San Joaquin Valley Unified Air Pollution Control District, Final Draft Staff Report, Rule 9510 – Indirect Source Review, December 15, 2005, p. 17.
https://www.valleyair.org/ISR/Documents/Rule_9510_StaffReport.pdf

program. To understand what analytical capability may be required, DEQ reviewed CalEEMod,[18] the model the San Joaquin District relies on for the ISR program implementation. This model calculates criteria and GHG emissions generated by mobile activity during construction and operation of indirect sources. The California model, however, could not be used to model Oregon indirect sources because CalEEMod's parameters (e.g. climate, emission and carbon intensity factors) are specific to California. Further, some default factors come from particular air districts and are county- or air basin-specific.

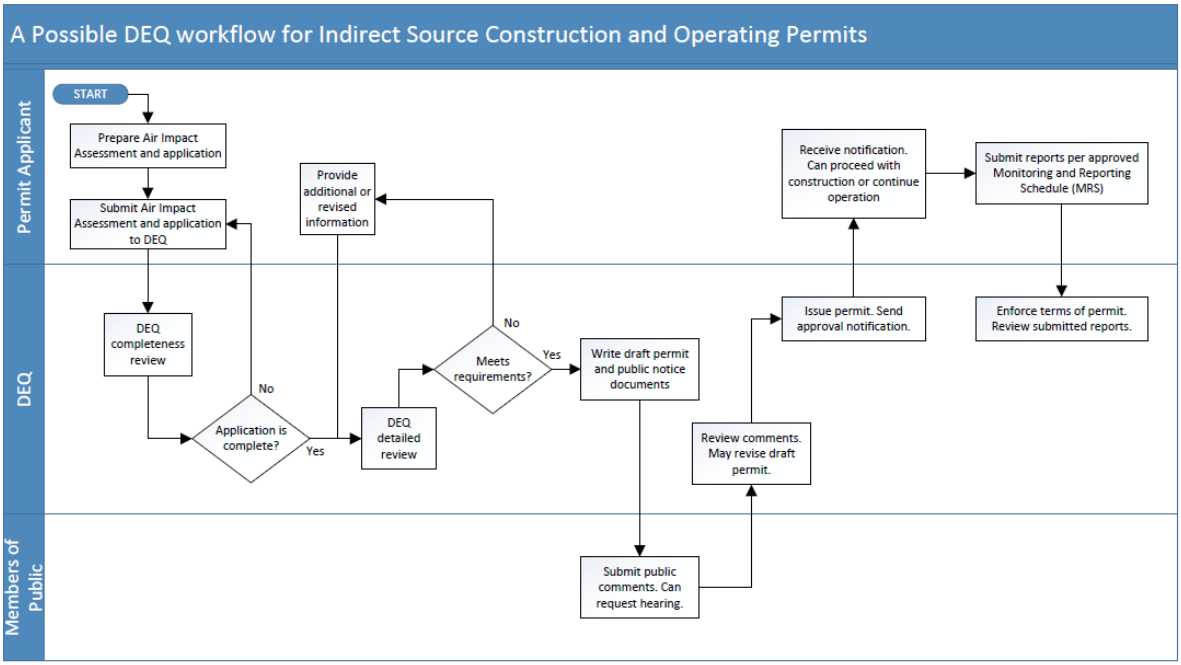


*Figure 14: Possible DEQ workflow for an Indirect Source Permitting program. As DEQ has not developed a model to quantify indirect source emissions, this requirement falls outside the agency to the applicant.*

## Conclusions: DEQ Resource Needs

To implement an effective Indirect Source permitting program, one that could mandate, incentivize and measure significant emission reductions, DEQ would likely need additional staffing resources in several technical, administrative, regional and enforcement programs. While the San Joaquin District's ISR program now operates effectively with a few technical FTE, the program has been operating for 15 years and has several supportive statewide policies and technical resources in place.

# EQC Prior Involvement

DEQ made an informational presentation to the commission Jan. 24, 2020. The commission held a public hearing following DEQ's presentation and heard verbal testimony from 27 commenters.

[18] California Emissions Estimator Model – CalEEMod. http://www.caleemod.com/

# Public Engagement

DEQ created a petition page on the agency's rulemaking webpage. There, DEQ posted the petition, a summary of the petition, background information about indirect source regulation, and instructions for submitting public comment. DEQ held a 30-day public comment period about the regulations proposed in the petition. DEQ delivered an informational presentation at the Jan. 24, 2020, EQC meeting. Following the informational presentation, the EQC heard public comments.

## Public Hearing

DEQ held one public hearing at the Jan. 24, 2020, EQC meeting. Later sections of this document include a summary of the comments received during the open public comment period.

### Presiding Officer's Record

#### Hearing 1

Date: Jan. 24, 2020
Place: Hillsboro Civic Center, 150 Main St., Hillsboro, Oregon
Start time: 11:45 a.m.
End Time: 12:45 p.m.
Presiding Officer: Kathleen George, Chair, Environmental Quality Commission

#### Presiding Officer Report:

Chair George convened the hearing, summarized procedures for the hearing, and explained that DEQ was recording the hearing. Chair George asked people who wanted to present verbal comments to sign the registration list to indicate their intent to present comments. The commission allowed five minutes for petitioners' testimony and two minutes each for all other commenters. During the hearing, 27 people commented verbally and four people submitted written comments.

# Summary of Public Comments

## Public comment period

DEQ accepted public comment on the proposed rulemaking from Jan. 14 until 4 p.m. on Feb. 14, 2020, and reviewed all comments submitted before the deadline. Because this comment period was not associated with a formal rulemaking, and because DEQ did not want to exclude relevant comments, DEQ also reviewed comments received after 4 p.m. Feb. 14, 2020, through Sunday, Feb. 16, 2020. All original comments are on file with DEQ and have been posted to the Indirect Source Petition page on the agency's rulemaking webpage.

DEQ received approximately 340 written comments. Approximately 255 comments supported the regulations proposed in the petition, approximately 75 opposed the proposed regulations, and approximately 10 comments were neither supporting nor opposed. DEQ considered all comments, but unlike a formal rulemaking process, DEQ is not required to write a response to comments on the petition. DEQ has summarized the themes covered in the comments and listed the organizations commenting in support and opposition in Table 5.

DEQ found that the comments reflected common themes. Commenters that supported the regulations proposed in the petition mentioned concerns such as:

- Diesel emissions cause serious adverse health effects and increase public health costs.
- Health impacts from diesel pollution are disproportionately borne by low income Oregonians and Oregonians of color.
- Diesel particulate/black carbon contributes to climate change.
- Oregon's diesel regulations are less stringent than neighboring states, leading to high-polluting equipment from other states being operated here.
- Existing regulations are insufficient to solve problems with diesel emissions.
- Indirect sources are responsible for majority of Oregon diesel emissions.

Commenters that opposed the regulations proposed in the petition mentioned concerns such as:

- The application process and compliance would be burdensome, costly, and/or cause project delays.
- The regulations would be too broad in the number and kinds of facilities that would require permits.
- The regulations would increase housing costs.
- Businesses could be held responsible for the emissions of vehicles they don't own or control.
- The one-year timeline for existing sources to get permits is too not achievable and sanctions too severe.
- The regulations would not in practice have significant health and/or climate benefits.
- The regulations would likely be litigated because they conflict with the Clean Air Act or other federal law by attempting to regulate emissions from motor vehicles and/or those associated with railroads.

- Implementing the regulations would draw DEQ resources away from other air quality control programs.
- Oregon is not exceeding National Ambient Air Quality Standards.

Commenters that did not state an explicit position for or against the regulations proposed in the petition mentioned concerns and requested consideration of such items as:

- Impacts to other state and local government priorities such as public services, economic development and housing affordability.
- Legislative support that DEQ would need for additional resources in order to implement the regulations.
- A desire for more discussion before adopting rules.

*Table 5: Organizations commenting on the Indirect Source Rule Petition.*

| Supporting | Opposing | Neither support nor oppose |
|---|---|---|
| Bridges Middle School | AAsum-Dufour Funeral Home | League of Oregon Cities |
| Brooklyn Action Corps Neighbor. Assoc. | Airlines for America | Metro Council |
| Columbia Riverkeeper | Albany-Millersburg Economic Development Corp. | Oregon Assoc. County Engineers and Surveyors |
| Common Ground Wellness Cooperative | American Trucking Assoc. | Port of Portland |
| Creston Kenilworth Neighbor. Assoc. | APR | |
| Cully Air Action Team | Associated General Contractors | |
| Eastside Portland Air Coalition | Building Owners and Managers Assoc. of Oregon | |
| Environment Oregon | Central Willamette Credit Union | |
| First Unitarian Church of Portland | Food Northwest | |
| Green Energy Institute, Lewis & Clark Law School | Microchip Technology Inc. | |
| Green Lents | Mike's Heating & Air Conditioning | |
| Hillsboro Air and Water | Oregon Business and Industry | |
| Human Access Project | Oregon Farm Bureau | |
| Humboldt Neighbor. Assoc. | Oregon Freeze Dry | |
| King Neighbor. Assoc. | Oregon Rail Users' League | |
| League of Women Voters of Oregon | Oregon Trucking Assoc. | |
| Neighbors for Clean Air | Pepsi Cola of Klamath Falls | |
| Oregon Environmental Council | Pioneer Truckweld, INC. | |
| Oregon Physicians for Social Responsibility | Port of Coos Bay | |
| Portland Clean Air | Remodeling by Classic Homes | |
| quietcleanpdx.org | Rosboro Company | |
| Richmond Neighborhood | Siltronic Corporation | |
| Safe Routes Partnership | Standard Insurance Company | |
| South Portland Neighbor. Assoc. | Stoel Rives | |
| University Park Neighbor. Assoc. | The Burk Team, Keller Williams Capital City | |
| Veterans For Peace | Tualatin Valley Fire & Rescue | |
| | Union Pacific Railroad | |
| | Waste Management | |
| | Western States Petroleum Assoc. | |
| | Pacific Fibre Products | |

# DEQ Programs Relevant to Petition

DEQ has several programs underway or planned to reduce mobile source emissions that the petition targets.

## House Bill 2007 Implementation

The 2019 Oregon Legislature passed House Bill 2007 to reduce diesel emissions, making Oregon the second state in the nation, following California, to implement in-use mobile diesel engine regulations. The bill describes a phase-out schedule for certain older-model diesel engines that are titled or registered in Portland metro area counties. In addition, HB 2007 directs investment of funds Oregon receives from the Volkswagen Environmental Mitigation Fund to support that transition. Oregon Department of Environmental Quality will lead rulemaking efforts on some of the regulations included in the new legislation.

### Title, Registration and Retrofit Requirements

HB 2007 establishes deadlines, beginning in 2023, after which certain older model, medium- and heavy-duty diesel-engine vehicles cannot be titled or registered in Clackamas, Multnomah and Washington counties, unless they meet retrofit requirements. The engine model years and deadlines for registration of approved retrofit options are:

- Jan. 1, 2023: Publicly and privately owned medium- and heavy-duty trucks with an engine model year 1996 or older cannot be registered
- Jan. 1, 2025:
  - Medium-duty trucks with an engine model year 2009 or older cannot be titled
  - Heavy-duty trucks with an engine model year 2006 or older cannot be titled
- Jan. 1, 2029:
  - Publicly and privately owned medium-duty trucks with an engine model year 2009 or older cannot be registered
  - Publicly owned heavy-duty trucks with an engine model year 2009 or older cannot be registered
  - Privately owned heavy-duty trucks with an engine model year 2006 or older cannot be registered

### Model Contract Specifications

DEQ is developing clean diesel model construction contracting specifications for use by state contracting agencies. HB 2007 requires at least 80 percent of vehicles and equipment used on state-funded, Portland area projects to be powered by either 2010 or newer on-road engines or Tier 4 non-road engines. State contracting agencies may follow that requirement or adopt rules for an alternative standard that considers the model standards developed by DEQ. Public improvement contracts exceeding $20 million in value that are advertised or solicited on or after January 1, 2022, will be required to include clean diesel contracting specifications.

### Voluntary Emissions Control Label Program

HB 2007 directs DEQ to develop a voluntary labeling program that will demonstrate the emissions performance of non-road diesel construction equipment. Stickers displayed on

diesel construction equipment during projects will visibly indicate that the equipment meets certain engine standards. DEQ will undertake rulemaking to establish the program elements and expects the program to launch in 2021.

### Volkswagen Environmental Mitigation Grants

Oregon is receiving $72.9 million to reduce diesel emissions with Volkswagen environmental mitigation funds. In addition to spending approximately $18-22 million replacing and retrofitting school buses across Oregon, DEQ plans to create a grant program, as directed by HB 2007, to award remaining funds to projects statewide. Approximately $40 million of the funds received by the State of Oregon will be available, after administrative costs, to retrofit, repower, or replace a variety of older diesel vehicles and equipment under the new grant program.

## Non-road Diesel Emission Inventory

DEQ has contracted with Eastern Research Group to conduct a state-wide multi-sector inventory of non-road diesel engines in public and private fleets. As the petition accurately conveys, and according to the 2014 NEI, non-road diesel powered equipment is one of the top two sources of DPM in several Oregon counties. In addition, and more specifically, modelling results documented in the Portland Air Toxics Report identified DPM emitted from construction activity as a risk driver pollutant.[19] The Portland Air Toxics Report Emission Reduction Plan[20] included several recommended strategies for DEQ and partners to undertake in the coming years; an inventory of construction equipment was one such recommendation. The desired outcome from a construction equipment survey was a better understanding of the quantity, age activity levels, and locations of equipment. As well, the Portland Air Toxics Report recommendations envisioned that DEQ could use this information to improve the emission inventory and future emission modeling.

DEQ began the ERG-contracted project in September 2018 and the project will be complete in the spring of 2020. Through random and targeted surveys and consultation with subject matter experts, ERG will produce an inventory of non-road equipment including population, activity, and location data; scrap, retirement and replacement rates, and ownership information. The final products will be a statistical analysis of equipment populations and related parameters (e.g. horsepower distributions), as well as emissions modeling which includes comparison to EPA's model – MOVES – "non-road" default factors.

## Volkswagen Mitigation Fund School Bus Replacements

DEQ will continue to disburse Volkswagen Mitigation Fund grant funds to retrofit and replace school busses. DEQ expects to retrofit or replace 450 school buses by 2023. DEQ tracks and reports emission reductions this program achieves.

## Diesel Emission Reduction Act Grants

DEQ will continue to implement the retrofit and replacement of school buses, funded by EPA's Diesel Emission Reduction Act grants. DEQ is required to track and report emission

[19] Portland Air Toxics Report, supra at note 2. Chapter 5, p. 1 – 2.
[20] *Ibid*. Chapter 9.

reductions these retrofits and replacements achieve. Beginning this year, DEQ will apply DERA grant funding to also include non-road diesel equipment retrofits and replacements.

## Portland Metro Area Clean Air Construction Standards

DEQ will continue to assist the City of Portland, counties and any other public entities that opt to follow clean air construction standards for publicly funded projects in the Portland metro area. The City of Portland, and Multnomah and Washington Counties have adopted clean construction standards for projects exceeding contract values of $1,000,000 and $500,000, respectively. Clean construction requirements include idling restrictions in the construction zone, older diesel engine phase outs, and compliance verification. Other entities working with the City of Portland and Multnomah County to reduce diesel PM emissions from public construction projects are the Port of Portland and Metro.

## DEQ-PSU-Reed College Air Toxics Ambient Monitoring

DEQ is working with PSU and Reed College under an EPA Community-Scale Air Toxics Monitoring grant. The purpose of this project is to better characterize diesel emissions from four primary sources: shipping areas, freight distribution centers, construction sites, and rail yards. This characterization will be combined with modeling to specifically understand the sources of diesel impacting two vulnerable communities in the Portland Metro area. A central goal of the project is to translate this scientific analysis in a way that informs and engages residents in these communities. Ultimately the partners intend that project outcomes will be community-driven solutions to reduce exposure to DPM.

## Clean Fuels Program

The purpose of Oregon's Clean Fuels Program is to shrink the state's transportation-related carbon footprint through regulation and market incentives. In 2019, CFP required fuel importers to reduce the carbon intensity of their fuels by 1.5 percent below 2015 levels. In 2020, the reduction requirement increases to 2.5 percent. Cleaner transportation fuels include lower carbon ethanol and biodiesel, renewable diesel, electricity, natural gas, biogas, propane, and hydrogen. The program rewards diesel fuel substitutions with renewable and bio-diesel, natural gas, propane and electricity, all of which have lower carbon content and emit less particulate matter than diesel fuel. Some indirect sources, such as ports, are participating in the CFP for their use of natural gas in shuttle buses and installing EV chargers for their employees and the public. CFP encourages these and many more alternatives - electrifying ground service equipment, installing shorepower and other anti-idling technologies, replacing fossil natural gas with renewable sources, replacing diesel with renewable diesel, etc. – that reduce mobile emissions at these locations.

## Low and Zero Emission Vehicle Standards

In 2005, Oregon adopted the state of California's Low Emission Vehicle standards as one means to reduce GHGs and criteria pollutants from the transportation sector. The emission standards took effect on model 2009 and newer passenger vehicles, light-duty trucks, and medium-duty vehicles. As the state of California has increased the stringency of those standards, the EQC has revised Oregon's rules to remain aligned with California's. These standards include manufacturers' fleet average exhaust emission requirements for criteria

pollutants and GHGs, reporting requirements, inspection procedures, and sales requirements for zero-emission vehicles. Effectively, this is a mandate to automobile manufacturers to supply a certain percentage of new plug-in electric – zero emission – and hybrid vehicles in Oregon.

California is the only state that the federal government allows to set its own vehicle emission standards because California had standards in place before the Clean Air Act was legislated. The current U.S. administration has revoked California's waiver to establish state motor vehicle emission standards. However, Oregon continues to implement its Low Emission Vehicle standards and has joined with 22 other states in filing a lawsuit challenging the federal administration over California's waiver revocation.

DEQ is also engaging in multi-state efforts to curb GHGs and criteria pollutants in the transportation sector. DEQ worked with California, Connecticut, Maryland, Massachusetts, New York, Rhone Island and Vermont to develop the first Multi-State Zero Emission Vehicle Action Plan in May 2014 [21] and a second 2018 Multi-State Zev Action plan,[22] also including Maine and New Jersey.

## Vehicle Inspection and Potential Future Emission Standards

To assure that vehicles pollution control systems are properly maintained, DEQ operates a vehicle inspection and maintenance program in the Portland region and in Medford. Portland-area and Medford motorists must have a certificate of compliance from VIP to renew their vehicle registration. VIP tests passenger gasoline and diesel vehicles, and heavy duty gasoline vehicles. DEQ's modeling shows this program to reduce up to 20% criteria pollutants and air toxics from on-road mobile sources.

In December 2019, DEQ signed on to the Multi-state Medium- and Heavy-Duty Zero Emission Vehicle Initiative Statement of Intent.[23] This Statement of Intent acknowledges the large GHG contribution of medium- and heavy-duty vehicles and the adverse public health and air quality effects of the $NO_x$, PM, and air toxics in diesel emissions. In particular, the Statement acknowledges the "disproportionate impacts on many disadvantaged communities located near ports, distribution centers, and other trucking hubs." Signatories to the letter "commit to the development of a multi-state memorandum of understanding to support and accelerate the deployment of medium- and heavy-duty ZEVs through a collaborative process facilitated by the Northeast States for Coordinated Air Use Management (NESCAUM)" and intend "to present a proposed memorandum of understanding to the governors of the undersigned states and the mayor of the District of Columbia for consideration in the summer of 2020."[24]

[21] 2014 Multi-State ZEV Action Plan: https://www.zevstates.us/
[22] https://www.oregon.gov/deq/FilterDocs/MultiStateZEVActionPlan.pdf
[23] http://www.nescaum.org/documents/medium-and-heavy-duty-zev-statement-of-intent.pdf
[24] *Ibid*. p. 2

In addition, DEQ is following California Air Resources Board's development of lower $NO_x$ and PM standards for heavy-duty vehicles.[25] California standards would phase in, beginning with model-year 2024 heavy-duty vehicles and stricter standards would take effect with model-year 2027 vehicles. CARB's new rules would reduce current $NO_x$ emissions by 90%. DEQ is tracking CARB's rulemaking to evaluate how DEQ adopting these standards could reduce heavy-duty diesel emissions in Oregon.

DEQ is also following the progress of EPA's Cleaner Truck Initiative.[26] Through CTI, EPA will develop federal regulations to reduce $NO_x$ emissions from heavy duty diesel powered vehicles, but those regulations would not take effect until 2027 and may be less protective than CARB's standards. DEQ will engage in EPA's eventual rulemaking to support standards that are as protective as technology allows.

## Electric Vehicle Incentives

In 2017, the Oregon Legislature directed DEQ to implement a Clean Vehicle Rebate Program in Oregon. The purpose of the program is to encourage Oregon drivers to purchase or lease new or used hybrid or battery electric vehicles, rather than those powered solely by fossil fuel. The program offers two cash incentives, a standard rebate up to $2,500 and a Charge Ahead rebate for low- and moderate-income households, of $2,500. As of late February 2020, DEQ has awarded over 4,500 standard rebates for a total of nearly $11 million. In February 2020, DEQ also began issuing Charge Ahead rebates.

## Statewide Transportation Strategy Coordination

DEQ's Director and Air Quality Division staff are actively participating in cross-agency work with Oregon Departments of Transportation, Energy, and Land, Conservation and Development to implement the 2018 Statewide Transportation Strategy, adopted by the Oregon Transportation Commission. The agencies have met several times since October 2019 and are in the process of identifying top priority policies for each agency to reduce GHG emissions from the transportation sector. Near-term policy objectives are to integrate land use and transportation planning with an emphasis on active transportation and public transit, as well as reducing mobile GHG emissions through fleet electrification and reducing the carbon content in fuels. DEQ sees likely revision of DLCD's Transportation Planning Rule as an opportunity to incorporate an indirect source emission accounting process for new developments.

[25] https://ww2.arb.ca.gov/our-work/programs/heavy-duty-low-nox
[26] *Supra* at note 7.

# Recommendations

## Petition Action

Per the statutory requirements of ORS 183.390, DEQ recommends that the commission deny the Indirect Source Rule Petition in writing.

## Policy Considerations

DEQ has multiple programs in place and planned, both mandated and voluntary, that will reduce mobile source emissions statewide. These programs address mobile sources of criteria pollutants, air toxics – including DPM – and GHGs. Even so, DEQ shares petitioner concerns that mobile source emissions induced by indirect sources harm public health, particularly for people living near facilities, roads and projects that attract mobile emissions and pollutants. DEQ acknowledges that existing Indirect Source regulations are not sufficient to address the breadth of pollutants and sources the petitioners identify. DEQ acknowledges that the agency does not currently have the data and models needed to quantify, regulate, and reduce emissions induced by indirect sources, nor does the agency have the resources to undertake actions in the petition.

DEQ has noted throughout this report several areas where additional data and information would help DEQ and the regulated community make progress toward reducing diesel and GHG emissions from indirect sources. In response to concerns raised in the Indirect Source Rule Petition, DEQ also recommends several actions in the near, medium and long term to improve our understanding of indirect source emissions and to measure, track, regulate and reduce emissions induced by indirect sources.

### Near-Term Actions

DEQ recommends accelerating and adding public accountability components to several actions that are underway.

- Report to EQC on the results and policy implications of the completed non-road diesel equipment emission inventory, including potential policy (regulatory and/or voluntary actions) responsive to a more complete understanding of Oregon's non-road diesel engine fleet specifications, age, ownership, location, use, activity profiles, and modeled air toxics and GHG emissions. Explain how these actions will address localized impacts and inform future air toxics modeling.
- Report to EQC on the results and policy implications of the final report to the Legislature from the Supporting Businesses in Reducing Diesel Emissions Task Force. DEQ supports the work of this Task Force by providing information about the emission reductions achievable with current state and federal regulations, available funding to support diesel emission reduction (e.g. DERA, VW Environmental Mitigation Fund and the Congestion Mitigation Air Quality program) and progress of DEQ-led diesel reduction programs.
- Report to EQC on DEQ planned actions in response to:

    - EPA's and CARB's low $NO_x$ standards for medium and heavy duty diesel vehicles
    - California and partner states' development of standards for medium- and heavy- duty zero emission vehicles.
- Report to EQC on the opportunities DEQ is pursuing to accelerate the pace of zero-emission vehicle adoption and how DEQ will estimate air toxics and GHG emission reduction from electric vehicle adoption.
- Report to EQC on the participation of large indirect sources – such as ports – in the Clean Fuels Program, particularly in the adoption of alternative fuels, including fleet electrification.
- Report to EQC on the multi-agency coordination around the Statewide Transportation Strategy implementation, particularly in the areas of clean fuel substitution, electrification and VMT reduction and the implications for reducing criteria pollutants, air toxics and GHGs.

## Medium-Term Actions

DEQ recommends that after near-term actions are significantly underway, resources be dedicated to quantifying potential emission reductions from implementing and expanding existing programs.

- Estimate potential emission reductions from implementation of HB 2007 components, such as Portland Clean Air Contracting Standards and diesel engine replacement in Multnomah, Washington and Clackamas Counties through 2030.
- Convene technical advisory committee to recommend methods of emission estimation and most effective pollution reduction measures for sources that induce mobile emissions.
- Study feasibility of expanding the Vehicle Inspection Program to test medium-duty diesel trucks, gross vehicle weight rating of 8,500 – 14,000 pounds.

## Longer-Term Actions

As resources and funding allow, DEQ recommends pursuing development of tools and models that could streamline indirect source regulation.

- Lead or collaborate with other state agencies to develop an Oregon-specific model to estimate criteria and GHG emissions from project-level development scenarios and operation of indirect sources.
- Calculate and document the cost-effectiveness of multiple practices and measures that may be used to reduce or mitigate mobile emissions induced by indirect sources.

# Accessibility Information

You may review copies of all documents referenced in this staff report at:
Oregon Department of Environmental Quality
700 NE Multnomah St., Ste. 600
Portland, OR, 97232

To schedule a review of all websites and documents referenced in this staff report, call Karen Williams, DEQ Air Quality Division, (503) 229 - 5519 (800-452-4011, ext. 5622 toll-free in Oregon).

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

December 20, 2019

Kathleen George, Chair
Oregon Environmental Quality Commission
700 NE Multnomah St, Suite 600
Portland, Oregon 97232

Re: Petition to Promulgate Indirect Source Rules

Dear Chair George:

Since at least 2012, the Oregon Department of Environmental Quality (DEQ) has identified diesel pollution as a major threat to human health and the environment. DEQ has also proposed several strategies to reduce diesel emissions, but the majority of these recommendations have not been implemented. Pursuant to ORS 183.390 and OAR 137-001-0070, Petitioners request that the Environmental Quality Commission (EQC) adopt the rule language proposed herein to reduce emissions from indirect sources.

On behalf of 21 co-petitioners, Melissa Powers, on behalf of the Green Energy Institute at Lewis & Clark Law School (GEI), Mark Riskedahl, on behalf of the Northwest Environmental Defense Center (NEDC), and Mary Peveto, on behalf of Neighbors for Clean Air (Neighbors), hereby submit this Petition for Agency Rulemaking to the EQC.

Petitioner GEI is an energy and climate policy institute within Lewis & Clark Law School's environmental, natural resources, and energy law program. GEI's mission is to develop comprehensive legal and policy strategies to advance a swift transition to a fully decarbonized energy system. GEI supports the adoption of air quality regulations that protect human health and reduce negative climate impacts by preventing emissions of black carbon, a type of fine particulate matter that has a disproportionate impact on global temperatures.

Petitioner NEDC is an independent, non-profit organization dedicated to preserving and protecting the natural environment of the Pacific Northwest. NEDC envisions a future in which Oregon leads the nation in developing, implementing, and enforcing strong laws and regulations that protect the environment and human health. NEDC has a long history of advocacy for improved air quality in Oregon.

Petitioner Neighbors is a non-profit organization whose mission is to create a healthier Oregon by reducing harmful air pollution. Neighbors believes that Oregonians have a right to know what is in the air we breathe, and that an engaged and well-informed public working closely with community organizations, government agencies, and businesses is our most powerful tool in bringing about fundamental change in our laws and enforcement programs to reduce air toxics. Neighbors seeks to reduce short- and long-term exposure of Oregonians to air toxics in order to achieve safer air and a higher quality of life.

Accompanying this letter are a list of the co-petitioners, proposed rule language and the petition, and documents available through this Google drive, https://drive.google.com/drive/folders/1HZoKo4_iJriKbgfhVis6IIIs8DG0PHCe, that provide greater detail about the risks of diesel emissions and why indirect source rules are necessary to reduce harmful emissions.

Thank you for considering this request.

Melissa Powers
The Green Energy Institute at Lewis & Clark Law School
10015 SW Terwilliger Blvd.
Portland, OR 97219

Melissa Powers 12/11/19
Melissa Powers Date

Mark Riskedahl
Northwest Environmental Defense Center
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Mark Riskedahl 12/11/19
Mark Riskedahl Date

Mary Peveto
Neighbors for Clean Air
P.O. Box 10544
Portland, OR 97296

Mary Peveto 12/13/2019
Mary Peveto Date

**BEFORE THE OREGON ENVIRONMENTAL QUALITY COMMISSION**

**Petition to Adopt Rules Regarding Indirect Sources of Air Pollution**

December 20, 2019

Pursuant to OAR 137-001-0070 and OAR 340-011-0046, and the following supporting facts and arguments, we petition the Oregon Environmental Quality Commission to promulgate a new rule pertaining to regulation of emissions of air pollutants from Indirect Sources. Petitioners Green Energy Institute at Lewis & Clark Law School, Northwest Environmental Defense Center, and Neighbors for Clean Air have signed on behalf of all co-petitioners.

**As per OAR 137-001-0070(1), petitioners are:**

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## I. Proposed Rule Language

As required by OAR 137-001-0070(1)(a), petitioners request that the Environmental Quality Commission adopt the proposed rule language below:

**Section 1. Policy and Purpose**
The Commission finds and declares indirect sources to be air contamination sources as defined in ORS 468A.005. The Commission further finds and declares that the regulation of indirect sources is necessary to control the concentration of air contaminants which result from aggregate mobile source emissions associated with the construction and/or operation of indirect sources.

**Section 2. Jurisdiction**
Nothing in this rule shall preclude or restrict any city, county, or other political subdivision of this state from imposing local indirect source controls or requirements that are equivalent to or at least as stringent as the requirements established in this rule. Any city, municipality, or metropolitan service district with a population of less than 50,000 may by ordinance voluntarily select to be included within the geographic scope of this rule as specified in Section 4, subsection (1).

**Section 3. Definitions**
The definitions in OAR 340-200-0020, 340-204-0010 and this rule apply to this division. If the same term is defined in this rule and in 340-200-0020 or 340-204-0010, the definition in this rule applies to this division.

1) "Accredited Emissions Verification Body" means any independent entity or individual approved by the Department to verify emissions data, calculations, estimates, and projections produced by or for an Indirect Source Construction Permit applicant. If the Department determines that any or all verification bodies accredited by the California Air Resources Board (CARB) are capable of providing the verification services necessary under this rule, the Department may authorize CARB-accredited verification bodies to provide the verification services required under section 5(7) of this rule.
2) "Aggregate emissions" or "aggregate mobile source emissions" means the total quantity of emissions of any regulated air pollutant from all mobile source activity associated with a development project, a Regulated Indirect Source, or other indirect source, within a sixty-minute, twenty-four-hour, or 365-day period.
3) "Air contaminant" or "air pollutant" means any dust, fume, gas, mist, odor, smoke, vapor, soot, carbon, acid, particulate matter, compound, regulated pollutant, or any combination thereof, which is emitted into or otherwise enters the ambient air.
4) "Air Impact Assessment" (AIA) means the calculation of emissions generated by the project and the emission reductions required by the provisions set forth in this rule. The AIA must be based solely on the information provided to the Department or Regional Authority having jurisdiction in the permit application, and must include all information listed in section 5(3) of this rule.

5) "Applicant" means an applicant for an Indirect Source Permit.
6) "Associated parking" means a parking facility or facilities owned, operated, and/or used in conjunction with an Indirect Source.
7) "Associated with" means any mobile source activity occurring within the physical or legal boundary of an indirect source, any mobile source activity originating or terminating at an indirect source, and any mobile source activity that passes through or operates within the boundaries of an indirect source for a limited period of time.
8) "Average daily traffic" or "ADT" means the total traffic volume during a twenty-four-hour period, as averaged over a one week, one month, or one year period.
9) "Baseline emissions" means the unmitigated aggregate emissions of any regulated air pollutant, as calculated by the Department-approved model, produced by or projected to be produced by mobile source activity within the boundary of or associated with an indirect source.
10) "Baseline construction emissions" means the sum of projected baseline emissions of any regulated pollutant from all mobile sources operating at the project site or associated with the project for the duration of construction activities, or any phase thereof, in total tons.
11) "Baseline operating emissions" means the sum of projected baseline emissions of any regulated pollutant from all mobile sources operating at the indirect source or associated with the indirect source, as calculated by the Department-approved model, for the first year of operations for that source, or any phase thereof, in tons per year.
12) "Best management practice" or "BMP" means a method, practice, activity, technology, or any combination thereof that is determined by the Department to be an effective means of preventing or reducing emissions of any regulated air pollutant.
13) "California Air Resources Board" or "CARB" means the state regulatory agency charged with regulating air quality in California.
14) "Carbon dioxide equivalent" or "$CO_2e$" means an amount of a greenhouse gas or gases expressed as the equivalent amount of carbon dioxide, and is to be computed by multiplying the mass of each of the greenhouse gases by the global warming potential published for each gas at 40 C.F.R. part 98, subpart A, Table A–1-Global Warming Potentials, and adding the resulting value for each greenhouse gas to compute the total equivalent amount of carbon dioxide.
15) "Commence construction" means to begin to engage in a process or program of on-site construction or on-site modifications, including site clearance, grading, dredging, or landfilling in preparation for the construction, installation, or modification of a structure or facility. Interruptions and delays resulting from natural disasters, strikes, litigation, or other matters beyond the control of the owner or operator shall be disregarded in determining whether a construction or modification program is continuous.
16) "Commission" or "EQC" means the Environmental Quality Commission.
17) "Construction" means any physical change including, but not limited to, fabrication, erection, installation, demolition, or modification of a physical structure.
18) "Construction activity" means any process, operation, action, or reaction (*e.g.,* chemical) of a mobile source or combination of mobile sources that emits a regulated pollutant and is associated with the construction of a development project.
19) "Construction emissions" means any exhaust emissions resulting from the use of internal combustion engines related to construction activity, which is under the control of the applicant or permittee through ownership, rental, lease agreements, or contract.

20) "Continuous monitoring systems" means sampling and analysis, in a timed sequence, using techniques that will adequately reflect actual emissions or concentrations on a continuing basis as specified in the DEQ Continuous Monitoring Manual, found in OAR 340-200-0035, and includes continuous emission monitoring systems, continuous opacity monitoring systems (COMS), and continuous parameter monitoring systems.
21) "Criteria pollutant" means any of the following regulated pollutants: nitrogen oxides, volatile organic compounds, particulate matter, $PM_{10}$, $PM_{2.5}$, sulfur dioxide, carbon monoxide, and lead.
22) "Department" means the Department of Environmental Quality.
23) "Department-approved model" means any computer model that estimates construction and/or operating emissions of any regulated air pollutant resulting from mobile source activity associated with an indirect source, using the most recent DEQ- or EPA-approved version of relevant emissions models and emission factors. Each such model should perform the following functions, as demonstrated by the California Emissions Estimator Model (CalEEMod):
    (a) Quantify potential direct emissions of regulated pollutants from construction and operation activities, including emissions from on-road and nonroad vehicles and engines; and
    (b) Identify mitigation measures to reduce emissions of regulated pollutants and quantify potential emissions reductions resulting from the application of available measures.
24) "Development project" or "project" means any activity, or portion thereof, that is subject to an approval by a public agency, and will ultimately result in:
    (a) The construction of a new building, facility, or structure;
    (b) The reconstruction of a building, facility, or structure; or
    (c) The demolition of a building, facility, or structure.
25) "Director" means the Director of the Department or Regional Authority and authorized deputies or officers.
26) "Emissions" means a release into the atmosphere of any regulated pollutant or any air contaminant.
27) "Emissions control technology" or "emissions control device" means technology added to a mobile source to reduce emissions of an air contaminant, including but not limited to catalytic converters and particulate filters. For the purpose of this rule, all emissions control technology must be verified by the EPA or CARB.
28) "Emissions mitigation measure" means any feature, activity, device, design, condition, or control technology, which is incorporated into the design, equipment, practices, or activities of a development project, or through other means, which will avoid, minimize, reduce or eliminate the emissions of any regulated air pollutant. All on-site emission reductions achieved beyond Department or state requirements shall count towards the project's emissions mitigation requirements. City, County, and other public agency requirements that result in emissions reductions that are additional to those required by the Department may also be credited towards a project's emission mitigation requirements.
29) "Emissions verification statement form" means a paper or electronic form developed by DEQ that must be completed by the permittee and verified by an Accredited Emissions Verification Body to report projected, actual, mitigated, or permitted emissions from all

mobile source activity associated with a development project or the operations of an indirect source.

30) "Greenhouse gas" or "GHG" means any gas that contributes to anthropogenic global warming including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
31) "Heavy duty motor vehicle" means any vehicle defined under OAR 340-256-0010(25).
32) "Indirect source" means a facility, building, structure, installation, or any portion or combination thereof, that attracts or may attract mobile sources of air pollution, or that directly or indirectly causes or may cause mobile source activity that results in emissions of any regulated pollutant. Such indirect sources shall include, but not be limited to:
    (a) Parking Facilities;
    (b) Retail, Commercial, and Industrial Facilities;
    (c) Recreation, Amusement, Sports, and Entertainment Facilities;
    (d) Office and Government Buildings;
    (e) Educational Facilities;
    (f) Hospital Facilities;
    (g) Warehouses and freight distribution facilities;
    (h) Rail terminals;
    (i) Ports and marine terminals; and
    (j) Development projects.
33) "Indirect Source Permit" means an Indirect Source Construction Permit or an Indirect Source Operating Permit.
34) "Indirect Source Construction Permit" means a written permit in letter form issued by the Department or Regional Authority having jurisdiction, bearing the signature of the Director, which authorizes the permittee to commence construction of a development project, including a development project that is or will be a Regulated Indirect Source, under construction and operating conditions and schedules as specified in the permit. An Indirect Source Construction Permit includes requirements for the construction of a development project and does not by itself provide authorization to operate the facility once construction is complete.
35) "Indirect Source Emission Control Program" or "ISECP" means a program which reduces mobile source emissions resulting from the use or operations of an Indirect Source. An ISECP may include, but is not limited to:
    (a) Posting transit route and scheduling information;
    (b) Construction and maintenance of bus shelters and turnout lanes;
    (c) Maintaining mass transit fare reimbursement programs;
    (d) Making a carpool matching system available to employees, shoppers, students, residents, etc.;
    (e) Reserving parking spaces for carpools;
    (f) Making parking spaces available for park-and-ride stations;
    (g) Minimizing vehicle running time within parking lots through the use of sound parking lot design;
    (h) Ensuring adequate gate capacity by providing for the proper number and location of entrances and exits and optimum signalization for such;
    (i) Limiting traffic volume so as not to exceed the carrying capacity of roadways;
    (j) Altering the level of service at controlled intersections;

(k) Obtaining a written statement of intent from the appropriate public agency(s) on the disposition of roadway improvements, modifications, and/or additional transit facilities to serve the individual source;
(l) Construction and maintenance of exclusive transit ways;
(m) Providing for the collection of air quality monitoring data at reasonable receptor and exposure sites;
(n) Limiting facility modifications which can take place without resubmission of permit application.

36) "Indirect Source Operating Permit" means a written permit in letter form issued by the Department or Regional Authority having jurisdiction, bearing the signature of the Director, which authorizes the permittee to commence or continue operations of a Regulated Indirect Source under operating conditions and schedules as specified in the permit.
37) "Indirect Source Permit Application" means an application for an Indirect Source Construction Permit or an Indirect Source Operating Permit.
38) "Metropolitan service district" means a metropolitan service district established under ORS Chapter 268.
39) "Mitigated construction emissions" means the projected or actual aggregate emissions generated by mobile source activity within or associated with a development project after on-site emission mitigation measures have been applied.
40) "Mitigated operating emissions" means the projected or actual aggregate emissions generated by mobile source activity within or associated with an indirect source after on-site emission mitigation measures have been applied.
41) "Mobile source" means a self-propelled vehicle powered by an internal combustion engine or an internal combustion engine installed inside a piece of equipment designed for off-road use, including an engine installed in equipment that is not self-propelled and is not permanently installed at a stationary facility or location. Mobile sources include both on-road and nonroad vehicles and engines, including but not limited to automobiles, trucks, motorcycles, engines used in nonroad construction equipment, locomotives, marine vessels, and aircraft.
42) "Mobile source activity" means any process, operation, action, or reaction (*e.g.,* chemical) of a mobile source or combination of mobile sources that emits a regulated pollutant.
43) "Monitoring" means any form of collecting data on a routine basis to determine or otherwise assess compliance with emission limitations or standards. Monitoring may include record keeping if the records are used to determine or assess compliance with an emission limitation or standard such as records of raw material content and usage, or records documenting compliance with work practice requirements. Monitoring may also include one or more of the data collection techniques listed under OAR 340-200-0020(94).
44) "Monitoring and Reporting Schedule" or "MRS" means a form or document listing an applicant's selected emissions mitigation measures and describing how and when the applicant will implement, monitor, and enforce such mitigation measures and demonstrate compliance with applicable standards and permit requirements.
45) "Nitrogen oxides" or "$NO_x$" means all oxides of nitrogen.

46) "Nonroad vehicle" or "nonroad engine" means any mobile source designed or intended exclusively for off-road or non-highway use.
47) "Off-street area or space" means any area or space not located on a public road dedicated for public use.
48) "Operating emissions" means the aggregate mobile source emissions associated with the operations of a Regulated Indirect Source.
49) "Owner or operator" means a person or entity that owns or operates an indirect source.
50) "Parking facility" means any building, structure, lot, or portion thereof, designed and used primarily for the temporary storage of motor vehicles in designated parking spaces.
51) "Parking space" means any off-street area or space below, above, or at ground level, open or enclosed, that is used for parking one motor vehicle at a time.
52) "Person" means individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the State and any agencies thereof, and the federal government and any agencies thereof.
53) "Particulate matter" or "PM," in the context of this rule, means all finely divided solid or liquid material, other than uncombined water, and including black carbon, emitted to the ambient air through the combustion of any fossil fuel in an internal combustion engine.
54) "$PM_{2.5}$" or "PM-2.5" means:
    (a) When used in the context of emissions, means finely divided solid or liquid material, including condensable particulate, other than uncombined water, with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers, emitted to the ambient air as measured by the test method specified in each applicable rule or, where not specified by rule, in each individual permit;
    (b) When used in the context of ambient concentration, means airborne finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers as measured under 40 CFR part 50, Appendix L or an equivalent method designated under 40 CFR part 53.
55) "Permit," when used in this rule, means an Indirect Source Construction Permit, an Indirect Source Operating Permit, any permit attachments, and/or any amendments or modifications thereof.
56) "Permittee" means the owner or operator of an indirect source that is authorized to emit regulated pollutants under an Indirect Source Construction Permit or an Indirect Source Operating Permit.
57) "Population" means that population estimate most recently published by the Center for Population Research and Census, Portland State University, or any other population estimate approved by the Department.
58) "Project site" means the spatial, physical, or legal boundaries of a development project.
59) "Reasonable receptor and exposure sites" means locations where people might reasonably be expected to be exposed to air contaminants generated in whole or in part by the Indirect Source in question.
60) "Regional Authority" means a regional air quality control authority established under the provisions of ORS 468A.105.
61) "Regulated air pollutant" or "regulated pollutant" means:
    (a) Any criteria pollutant for which there is a National Ambient Air Quality Standard or any air contaminant for which an ambient air quality standard has been promulgated, including any precursors to such pollutants; and

(b) Any air contaminant for which the Department or the United States Environmental Protection Agency determined may reasonably be anticipated to endanger the public health or welfare of current or future generations, including greenhouse gases.

(c) Air contaminants subject to regulation under this rule include but are not limited to carbon dioxide, carbon monoxide, particulate matter (including $PM_{2.5}$ and $PM_{10}$), nitrogen oxides, nitrous oxide, sulfur dioxide, and methane.

62) "Regulated Indirect Source" means any indirect source that must obtain an Indirect Source Operating Permit under section 4(3)(a) prior to commencing or continuing operations.

63) "Total contract value" means the full dollar value of a fully executed contract.

64) "Transit development project" means any project solely intended to create a passenger transportation service that is local, metropolitan, or regional in scope and that is available to any person. Examples of transit development projects include transportation by bus, rail, or other conveyance, either publicly or privately owned, which is provided to the public or specialty service on a regular or continuing basis. Also known as "mass transit," "mass transportation," or "public transportation."

65) "Transportation development project" means any project solely intended to create a new paved surface that is used for the transportation of motor vehicles, or any structural support thereof. Examples of transportation development projects include streets, highways and any related ramps, freeways and any related ramps, and bridges. This does not include development projects where traffic surfaces are a portion of the project, but not the main land-use.

66) "Vehicle trip" means a single movement by a motor vehicle which originates at, terminates at, passes through, or otherwise uses an indirect source.

**Section 4. Sources Required to Have Indirect Source Permits**

(1) **Geographic Scope.** An indirect source identified in Section 4, subsection (2) or (3), and located within a city, municipality, or metropolitan service district with a population of at least 50,000 must obtain, prior to commencing construction or operation or continuing operation beyond one year following the final promulgation of this rule, an Indirect Source Permit from the Department or Regional Authority having jurisdiction.

(2) **Sources required to have Indirect Source Construction Permits**. Except as specified in Section 4, subsection (2)(d), the owner, operator, or developer of a development project identified in Section 4, subsection (2)(a), shall not commence construction of such a project without an approved Indirect Source Construction Permit issued by the Department or Regional Authority having jurisdiction. A development project is or will be a Regulated Indirect Source listed under Section 4, subsection (3)(a) must also obtain an Indirect Source Operating Permit before the Regulated Indirect Source may commence operation.

(a) **Applicability.** Except as specified in Section 4, subsection (2)(d), this section shall apply to any applicant that seeks to commence construction of a development project, or any portion thereof, which upon full build-out and/or project completion will include:

(A) Any permanent residential, commercial, or industrial structure with an area of at least 10,000 square feet;

(B) Any parking facility or other indirect source with associated parking being constructed or modified to create new or additional parking or associated parking capacity of 500 or more parking spaces;

(C) The demolition of any permanent residential, commercial, or industrial structure with an area of at least 10,000 square feet, where such demolition does not represent an incremental phase of construction as specified in Section 4, subsection (b);

(D) The excavation of any lot or portion of any lot area where the total area of disturbance will equal or exceed 8,000 square feet; or

(E) Any development project with a total contract value of $1,000,000 or more, where:

(i) Baseline construction emissions are estimated to equal or exceed one (1.0) ton per year of $PM_{2.5}$, $NO_x$, or any other criteria pollutant; or 2,500 metric tons $CO_2e$ per year of any other air pollutant subject to this rule; or

(ii) Baseline construction emissions could reasonably be anticipated to result in ambient concentrations of $PM_{2.5}$ within the boundaries of the facility exceeding one microgram per cubic meter (1 $\mu g/m^3$) during any sixty-minute period between the hours of 7:00 a.m. and 7:00 p.m. PST, or exceeding 2 $\mu g/m^3$ during any other sixty-minute period.

**(b) Development projects with incremental phases of construction.**

(A) Where an Indirect Source is constructed or modified in increments which individually are not subject to review under this rule, and which are not part of a program of construction or modification in planned incremental phases approved by the Director, all such increments commenced after January 1, 2020 shall be added together for determining the applicability of this rule.

(B) An Indirect Source Construction Permit may authorize more than one phase of construction where commencement of construction or modification of successive phases will begin over acceptable periods of time referred to in the permit; and thereafter construction or modification of each phase may be begun without the necessity of obtaining another permit.

**(c) Projects on Contiguous or Adjacent Property.**

(A) The owner, operator, or developer of any two or more development projects on contiguous or adjacent property under common ownership of a single entity in whole or in part that is designated and zoned for the same development density and land use, regardless of the number of tract maps, where the total combined build out and/or completion of all development projects would trigger applicability of this rule under Section 4, subsections (2)(a) or (2)(b), must apply for an Indirect Source Construction Permit under this section.

(B) Single development projects where individual structures and/or associated parking capacity are to be developed in phases must calculate the total combined area and/or aggregate parking capacity based on the

development project as a whole when determining the applicability of this rule.

(d) **Exemptions.** The following projects shall be exempt from the requirements of Section 4, subsection (2):

(A) A development project identified in Section 4, subsection (2)(a), that has received final discretionary approval prior to January 1, 2020 and commences construction within 18 months of receiving final discretionary approval.

(B) A development project identified in Section 4, subsection (2)(a), that has commenced construction prior to January 1, 2020.

(C) A development project that has mitigated construction emissions below one (1.0) ton per year of $PM_{2.5}$.

(3) **Indirect Sources required to have Indirect Source Operating Permits**. Except as specified in Section 4, subsection (3)(b), the owner or operator of an indirect source identified in Section 4, subsection (3)(a), shall not commence or continue operations beyond one year following the final promulgation of this rule, without an approved Indirect Source Operating Permit issued by the Department or Regional Authority having jurisdiction.

(a) **Applicability.** Except as specified in Section 4, subsection (3)(b), Section 4, subsection (3) shall apply to any applicant that seeks to commence or continue operation of an indirect source, or any portion thereof, if any of the following conditions are met:

(A) Total aggregate emissions from all mobile source activity associated with the facility exceeds one (1.0) ton per year of $PM_{2.5}$, $NO_x$, or any other criteria pollutant; or 2,500 metric tons per year $CO_2e$ of any greenhouse gas that is a regulated air pollutant under this rule;

(B) Ambient concentrations of $PM_{2.5}$ within the boundaries of the facility exceed one microgram per cubic meter (1 $\mu g/m^3$) during any sixty-minute period between the hours of 7:00 a.m. and 7:00 p.m. PST, or exceed 2 $\mu g/m^3$ during any other sixty-minute period;

(C) Vehicle trips by heavy duty diesel motor vehicles, as defined by OAR 340-256-0010, associated with the indirect source equal or exceed 50 within any 24-hour period;

(D) The aggregate engine power of all mobile sources operating within the indirect source in any 24-hour period equals or exceeds 5,000 horsepower; or

(E) Aggregate mobile source activity associated with the site consumes or is reasonably expected to consume 750 or more gallons of diesel fuel and/or gasoline in any 24-hour period.

(b) **Exemptions.** The following indirect sources shall be exempt from the requirements of Section 4, subsection (3):

(A) An indirect source that has mitigated operating emissions below one (1.0) ton per year of $PM_{2.5}$.

**Section 5. Indirect Source Permit Application Process**

(1) **Fees.** Persons applying for an Indirect Source Permit shall at the time of application pay a permit fee established by the Commission.

(2) **Indirect Source Permit Application requirements**. An applicant for an Indirect Source Construction Permit or an Indirect Source Operating Permit shall submit the following to the Department:

(a) A completed Short Form Application;
(b) A map showing the location and size of the site;
(c) A description of the current, proposed, and/or prior use of the site;
(d) The location of current or expected mobile source activity at the site;
(e) An estimate of the annual average weekday vehicle trips generated by the movement of mobile sources to and from the site. A development project shall provide estimates for the first and fifth years after completion of each planned incremental phase of the indirect source;
(f) A description of the availability and type of mass transit presently serving or projected to serve the indirect source. This description shall include mass transit operation within one-quarter mile of the boundary of the indirect source;
(g) A completed Air Impact Assessment, as specified in Section 5, subsection (3) of this rule;
(h) A completed list of emissions mitigation measures, as specified in Section 5, subsection (4) of this rule;
(i) A completed Monitoring and Reporting Schedule, as specified in Section 5, subsection (5) of this rule;
(j) Applicants for an Indirect Source Construction Permit shall also provide a site plan and detailed project description including, but not limited to:
(A) The location and size of all proposed earth-clearing activity at the site;
(B) A proposed project schedule;
(C) If residential, the number and type of dwelling units;
(D) If commercial or industrial, the facility type and interior square footage;
(E) The location and quantity of parking spaces at the indirect source and associated parking area; and
(F) Points of motor vehicle ingress and egress to and from the site and associated parking.
(k) Applicants for an Indirect Source Operating Permit shall also provide:
(A) A list of all mobile sources associated with or reasonably expected to be associated with the facility on a daily, weekly, and monthly basis; and
(B) The make, model, and model year of any mobile sources associated with the facility that are under the applicant's ownership or control.
(l) Such additional information as may be required when there is reasonable basis for concluding:
(A) The indirect source may cause or contribute to a violation of the Clean Air Act Implementation Plan for Oregon;
(B) The indirect source may cause or contribute to a delay in the attainment of or a violation of any applicable ambient air quality standard, or may cause or contribute to the violation of any applicable increment; or

(C) The information is necessary to determine whether the proposed indirect source may cause or contribute to any such delay or violation. The Department shall base such conclusion on any reliable information, including but not limited to ambient air monitoring, traffic volume, traffic speed, or air quality projections based thereon.

(3) **Air Impact Assessment.** An applicant for an Indirect Source Permit must submit an Air Impact Assessment (AIA) with its Indirect Source Permit Application. The AIA shall meet the following requirements:

(a) The applicant shall estimate and quantify construction and operational emissions of any air pollutants subject to this rule that may reasonably be expected to be produced by mobile source activity associated with the indirect source, including but not limited to fine particulate matter ($PM_{2.5}$), nitrogen oxides ($NO_x$), carbon dioxide, and methane. The applicant's AIA shall include:

(A) If the applicant seeks an Indirect Source Construction Permit:

(i) The estimated baseline construction emissions of every regulated pollutant that may reasonably be produced from mobile source activity associated with the project, for each phase of the project; and

(ii) The mitigated construction emissions of every regulated pollutant that may reasonably be produced from mobile source activity associated with the project, for each phase of the project; and

(B) If the applicant seeks an Indirect Source Operating Permit:

(i) The estimated baseline operating emissions of every regulated pollutant that is or may reasonably be produced from mobile source activity associated with the project on an annual basis; and

(ii) The mitigated operating emissions of every regulated pollutant that is or may reasonably be produced from mobile source activity associated with the project on an annual basis.

(b) The AIA analysis shall use a Department-approved model to calculate the estimated baseline emissions and mitigated emissions associated with the project. The applicant shall submit to the Department copies of all model runs conducted for the project.

(c) The AIA may be developed by the permit applicant or by a third-party.

(d) The applicant shall include in its application any other information and documentation that supports the baseline and mitigated emissions calculations specified in the AIA.

(4) **Emissions Mitigation Measures.** If the applicant's Air Impact Assessment indicates that the project's baseline emissions will or may exceed the applicable emissions limits specified in Section 6, subsection (2) of this rule or in Section 7, subsection (2) of this rule, the applicant must submit a list of one or more emissions mitigation measures capable of achieving required emissions reductions from the indirect source. Emissions mitigation measures identified through a Department-approved model are presumed to be capable of achieving quantifiable emissions reductions, as specified through the model. The applicant's selected emissions mitigation measures must comply with the following requirements:

(a) Emissions mitigation measures must achieve quantifiable, verifiable, and permanent reductions in emissions of any regulated pollutants.

(b) Measures must be fully enforceable through permit conditions, development agreements, or other legally binding instrument entered into by the applicant and the Department.

(5) **Monitoring and Reporting Schedule.** An Indirect Source Permit Application shall include a completed proposed Monitoring and Reporting Schedule **(**MRS) for the applicant's selected emissions mitigation measures. A proposed MRS shall outline how the mitigation measures will be implemented and enforced, and must include the following information:
   (a) A list of emissions mitigation measures the applicant has selected to reduce emissions of any regulated air pollutants subject to this rule;
   (b) Standards for determining compliance with selected mitigation measures, such as funding, record keeping, reporting, installation, and/or contracting requirements;
   (c) A reporting schedule;
   (d) A monitoring schedule;
   (e) Identification of the responsible entity for implementation; and
   (f) Provisions for failure to comply.
   (g) Applicants proposing emissions mitigation measures that require ongoing funding shall provide evidence in the proposed MRS of continued funding.

(6) **Additional Requirements for Development Projects that are or will be Regulated Indirect Sources**. If the development project is or will be a Regulated Indirect Source under Section 4, subsection (3)(a), the following Long Form Application information shall be submitted to the Department:
   (a) All information required under Section 5, subsection (2);
   (b) An estimate of the average daily traffic, peak hour, and peak eight hour traffic volumes for all roads, streets, and arterials within 1/4 mile of the Regulated Indirect Source and for all freeways and expressways within 1/2 mile of the nearest boundary of the Regulated Indirect Source for the time periods stated in Section 5, subsection (2)(e) as they exist at the time of application;
   (c) An estimate of the gross baseline emissions of any regulated pollutants covered under this rule;
   (d) Estimated air pollutant levels at reasonable receptor and exposure sites. Estimates shall be made for the first, fifth, and tenth years after the Regulated Indirect Source is completed or fully operational. Such estimates shall be made for the average and, if applicable, peak operating conditions.
   (e) Evidence of the compatibility of the Regulated Indirect Source with any adopted transportation plan for the area;
   (f) An estimate of the additional residential, commercial, and industrial developments which may occur concurrent with or as the result of the construction and use of the Regulated Indirect Source; and
   (g) A description of the Indirect Source Emission Control Program the facility's owner or operator will implement to mitigate operational emissions from mobile source activity associated with the facility's operations.

(7) **Independent Third-Party Verification.** An applicant for an Indirect Source Permit shall obtain independent verification of the indirect source's baseline emissions and mitigated emissions from an Accredited Emissions Verification Body. The applicant shall submit

an Emissions Verification Statement Form signed by an Accredited Emissions Verification Body with its Indirect Source Permit Application.

(8) **Timing.**
  (a) An applicant shall apply for an Indirect Source Construction Permit at least 90 days in advance of the anticipated start of construction.
  (b) An applicant shall apply for an Indirect Source Operating Permit at least 90 days in advance of the anticipated start of operations at the source. The owner or operator of a Regulated Indirect Source that was engaged in operations on or before the date on which this rule went into effect shall apply for an Indirect Source Operating Permit no later than 365 days following the final promulgation of this rule.

(9) **Completeness.** An application shall not be considered complete until the required information is received by the Department or Regional Authority having jurisdiction. If no timely written request is made for additional information, the application shall be considered complete.

**Section 6. Indirect Source Construction Permit Requirements**

(1) **Permit content.** An Indirect Source Construction Permit must include at least the following:
  (a) A requirement to construct according to approved plans;
  (b) A requirement to comply with all applicable requirements;
  (c) Emission limits for aggregated mobile source activity and operations associated with the development project;
  (d) Monitoring requirements;
  (e) Any specialized monitoring equipment (e.g., continuous monitoring systems) requirements, if applicable;
  (f) Notification and reporting requirements;
  (g) A permit expiration date of no more than five years; and
  (h) If upon completion the development project will be a Regulated Indirect Source as defined under Section 4, subsection (3)(a), a requirement to obtain an Indirect Source Operating Permit before commencing operation of the facility.

(2) **Indirect Source Construction Permit emissions requirements.**
  (a) **Emissions standards**. A holder of an Indirect Source Construction Permit (the permittee) shall comply with the following requirements:
    (A) The average exhaust emissions for all non-road construction vehicles, engines, and equipment greater than twenty-five (25) horsepower used or associated with the development project may not exceed 0.02 grams per kilowatt-hour (g/kW-hr) $PM_{2.5}$ or 0.4g/kW-hr $NO_x$ during any sixty-minute period.
    (B) The average exhaust emissions from all on-road diesel-fueled vehicles and engines used or associated with the development project may not exceed 0.01 grams per brake-horsepower-hour (g/bhp-hr) $PM_{2.5}$ or 0.2 g/bhp-hr $NO_x$ during any sixty-minute period.
    (C) The total aggregate emissions associated with all construction activities of any air pollutants that are greenhouse gases subject to this rule shall not exceed ten metric tons per day $CO_2e$.

(b) **Required emissions reductions.** If a permittee's baseline construction emissions are estimated to exceed the emissions standards identified in Section 6, subsection (a), the permittee must achieve the following annual reductions in aggregate emissions from all construction activities associated with the development project until the emissions standards identified in Section 6, subsection (2)(a) are met:
  (A) A 50 percent reduction in baseline construction emissions of $PM_{2.5}$.
  (B) A 50 percent reduction in baseline construction emissions of $NO_x$.
  (C) For development projects that commence construction between January 1, 2021 and December 31, 2029, a 25 percent reduction in baseline construction emissions of any air pollutant that is a greenhouse gas that is a regulated pollutant under this rule.
  (D) For development projects that commence construction after January 1, 2030, a 50 percent reduction in baseline construction emissions of any air pollutant that is a greenhouse gas that is a regulated pollutant under this rule.

(c) **Emissions mitigation measures**. A permittee shall achieve any required emissions reductions by implementing one or more emissions mitigation measures appropriate for the site or facility. A permittee may reduce construction emissions by using lower-emitting construction vehicles, engines, equipment, and other technologies designed to reduce emissions of regulated pollutants. A permittee may further reduce emissions of certain regulated pollutants by implementing best management practices (BMPs) approved by the Department. Emissions mitigation measures must comply with the requirements listed in Section 5, subsection (4) of this rule. Available emissions mitigation measures include but are not limited to:
  (A) Using nonroad vehicles, engines, and equipment that meet tier 4 or above emissions standards;
  (B) Using on-road diesel vehicles and engines that meet the most current and stringent emissions standards adopted by EPA or the State of California for the applicable vehicle or engine class;
  (C) Using electric or other zero-emissions vehicles, engines, and equipment;
  (D) Installing add-on pollution control devices and/or equipment to reduce emissions from non-compliant vehicles and engines;
  (E) Reducing fuel consumption through use of fuel-efficient equipment and/or fuel-conserving BMPs;
  (F) Using alternative fuels, such as renewable diesel, renewable natural gas, or biodiesel; and
  (G) Implementing programs or practices to reduce vehicle trips to or from the indirect source or mobile source activity associated with the indirect source.

**Section 7. Indirect Source Operating Permit Requirements**

(1) **Permit content.** An Indirect Source Operating Permit must include at least the following:
  (a) A requirement to operate according to an approved permit;
  (b) A requirement to comply with all applicable permit requirements;

(c) Emission limits for aggregated mobile source activity and operations associated with the indirect source;
(d) Monitoring requirements;
(e) Any specialized monitoring equipment (e.g., continuous monitoring systems) requirements, if applicable;
(f) Notification and reporting requirements; and
(g) A permit expiration date of no more than five years.

(2) **Indirect Source Operating Permit emissions requirements.**

(a) **Emissions standards**. The holder of an Indirect Source Operating Permit (the permittee) shall comply with the following requirements:

(A) The average exhaust emissions for all non-road vehicles, engines, and equipment greater than twenty-five (25) horsepower associated with the indirect source may not exceed 0.02 grams per kilowatt-hour (g/kW-hr) $PM_{2.5}$ or 0.4g/kW-hr $NO_x$ during any sixty-minute period.

(B) The average exhaust emissions from all on-road diesel-fueled vehicles and engines associated with the indirect source may not exceed 0.01 grams per brake-horsepower-hour (g/bhp-hr) $PM_{2.5}$ or 0.2 g/bhp-hr $NO_x$ during any sixty-minute period.

(C) The total aggregate greenhouse gas emissions associated with all mobile source activities associated with the indirect shall not exceed ten metric tons per day $CO_2e$.

(b) **Required emissions reductions.** If a permittee's baseline operating emissions exceed or are estimated to exceed the emissions standards identified in Section 7, subsection (a), the permittee must achieve the following reductions in aggregate emissions from all mobile source activities associated with the indirect source until the emissions standards identified in section 7, subsection (2)(a) are met:

(A) A 50 percent reduction in baseline operating emissions of $PM_{2.5}$.
(B) A 50 percent reduction in baseline operating emissions of $NO_x$.
(C) For indirect sources operating between January 1, 2021 and December 31, 2029, a 25 percent reduction in baseline operating emissions of any air pollutant that is a greenhouse gas that is a regulated pollutant under this rule.
(D) For indirect sources operating after January 1, 2030, a 50 percent reduction in baseline operating emissions of any greenhouse gas regulated under this rule.

(c) **Emissions mitigation measures**. A permittee shall achieve any required emissions reductions by implementing one or more emissions mitigation measures appropriate for the site or facility. A permittee may reduce operating emissions by using lower-emitting vehicles, equipment, or technologies. A permittee may further reduce emissions of certain regulated pollutants by implementing best management practices (BMPs) approved by the Department. Emissions mitigation measures must comply with the requirements listed in Section 5, subsection (4) of this rule. Available emissions mitigation measures include but are not limited to:

(A) Using nonroad vehicles, engines, and equipment that meet tier 4 or above emissions standards;

(B) Using on-road diesel vehicles and engines that meet the most current and stringent emissions standards adopted by EPA or the State of California for the applicable vehicle or engine class;
(C) Using electric or other zero-emissions vehicles, engines, and equipment;
(D) Installing emissions control technology, add-on emissions control devices and/or equipment to reduce emissions from non-compliant vehicles and engines;
(E) Reducing fuel consumption through use of fuel-efficient equipment and/or fuel-conserving BMPs; and
(F) Implementing programs or practices to reduce vehicle trips to or from the indirect source or to reduce mobile source activity associated with the indirect source, including but not limited to an Indirect Source Emission Control Program.

**Section 8. Issuance or Denial of Indirect Source Permits**

(1) Issuance of an Indirect Source Permit shall not relieve the permittee from compliance with other applicable provisions of the Clean Air Act Implementation Plan for Oregon.
(2) After reviewing a complete Indirect Source Permit Application, the Department or Regional Authority having jurisdiction shall act to either disapprove a permit application or approve it with possible conditions.
(3) An Indirect Source Permit may be denied if:
    (a) The Indirect Source will cause or contribute to a violation of the Clean Air Act Implementation Plan for Oregon;
    (b) The Indirect Source will cause or contribute to a delay in the attainment of or cause or contribute to a violation of any National Ambient Air Quality Standard;
    (c) The indirect source causes or contributes to any violation of any National Ambient Air Quality Standard by another indirect source or system of indirect sources;
    (d) The indirect source will cause or contribute to air pollution in excess of any maximum allowable increase or maximum allowable concentration more than one time per year for any pollutant in any area to which such increments apply, or the indirect source will cause or contribute to air pollution in excess of any annual increment; or
    (e) The applicable requirements for an Indirect Source Construction Permit or an Indirect Source Operating Permit application are not met.
(4) Notice. The issuance or denial of an Indirect Source Permit is subject to the public participation requirements established under OAR 340-209-0030. The Department shall notify the applicant in writing of its decision regarding the application and provide the following in writing to the applicant, all interested parties as identified by the applicant, and make available to the public:
    (a) The Department's approval or disapproval determination of the permit application;
    (b) The required emission reductions; and
    (c) The amount of emissions reductions achieved through application of emissions mitigation measures.

(5) Any owner or operator of an indirect source operating without a permit required by this rule, or operating in violation of any of the conditions of an issued permit shall be subject to civil penalties and injunctions.
(6) Nothing in this rule shall preclude a city, county, Regional Authority, or other political subdivision of this state from establishing additional permit conditions or requirements for Indirect Source Permit applicants or permittees within its jurisdiction, so long as such permit conditions or requirements are no less stringent than those established in this rule.
(7) If the Department shall deny, revoke, or modify an Indirect Source Permit, it shall issue an order setting forth its reasons in essential detail.

**Section 9. Permit Duration**

(1) An Indirect Source Permit issued by the Department or a Regional Authority having jurisdiction shall remain in effect until modified or revoked by the Department or such Regional Authority.
(2) The Department or Regional Authority having jurisdiction may revoke the permit of any indirect source acting in violation of the construction, modification, or operating conditions set forth in this permit.
(3) An approved Indirect Source Construction Permit may be conditioned to expire if construction or modification is not commenced within 18 months after receipt of the approved permit; and, in the case of a permit granted covering construction or modification in approved, planned incremental phases, a permit may be conditioned to expire as to any such phase as to which construction or modification is not commenced within 18 months of the time period stated in the initial permit for the commencing of construction of that phase. The Director may extend such time period upon a satisfactory showing by the permittee that an extension is justified.

## II. Facts and Arguments

As required per OAR 137-001-0070(1)(b), petitioners submit the following facts and arguments:

Emissions from mobile sources, including both on-road and nonroad vehicles and engines, present a substantial threat to human health and the environment. Diesel pollution is a particularly serious problem in Oregon's urban areas. Diesel exhaust contains toxic air pollutants that negatively impact human health and the environment. These pollutants, which include fine particulate matter, nitrogen oxides, and black carbon, have been linked to cancer, cardiovascular disease, and respiratory disorders. Black carbon is also a potent climate forcer that contributes to both local and global temperature increases. To reduce the significant health and environmental risks associated with diesel exhaust, the State of Oregon must implement effective strategies to reduce the levels of pollution emitted by diesel vehicles and engines.[1]

In addition to the significant health and climate impacts associated with emissions from diesel-fueled vehicles, Oregon is also negatively impacted by the emissions from gasoline-fueled mobile sources. Gas-fired vehicles emit carbon monoxide, nitrogen oxides, and perhaps most significantly, carbon dioxide. The transportation sector is the largest source of carbon emissions in Oregon, and despite the state's greenhouse gas reduction goals, transportation sector emissions are rising rather than falling.[2] Under the state's current policy framework, Oregon's transportation emissions are expected to drop to 15–20% below 1990 levels by 2050—falling far short of the state's 75% greenhouse gas reduction goal.[3] To achieve Oregon's climate goals, the state must adopt additional regulatory mechanisms to reduce transportation-sector carbon emissions.

Indirect source rules, such as the rule for which petitioners hereby request promulgation, provide a legal avenue for state and local governments to reduce air pollution and carbon emissions from mobile sources, including both on-road and nonroad vehicles and engines operating within or associated with a distinct site or facility. The Clean Air Act (CAA) gives states broad discretion to adopt indirect source programs to control emissions from mobile sources. Indirect source rules would complement current and future state programs to improve air quality and reduce carbon emissions, because compliance with such other regulatory requirements would count towards a source's compliance obligations under indirect source rules as well. Indirect source rules would also enable the state to control harmful emissions that are not currently subject to regulation.

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[1] For an overview of Oregon's diesel pollution problems and a discussion of available strategies to mitigate the issue, see AMELIA SCHLUSSER, ET AL., DECONSTRUCTING DIESEL: A LAW & POLICY ROADMAP FOR REDUCING DIESEL EMISSIONS IN THE PORTLAND METROPOLITAN AREA (2019), https://law.lclark.edu/live/files/28596-deconstructing-diesel-roadmap [hereinafter DECONSTRUCTING DIESEL LAW & POLICY ROADMAP].

[2] OREGON GLOBAL WARMING COMM'N, 2018 BIENNIAL REPORT TO THE LEGISLATURE at 6 (2018), https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/5c2e415d0ebbe8aa6284fdef/1546535266189/2018-OGWC-Biennial-Report.pdf.

[3] *Id.* at 58.

We strongly urge the Environmental Quality Commission (EQC) to initiate rulemaking proceedings to establish new regulations to address emissions from indirect sources. The EQC and the Department of Environmental Quality (DEQ) have legal and regulatory authority to adopt and implement the rule proposed by this petition, which would significantly reduce harm to public health, the environment, and the state's economy resulting from mobile source emissions.

### A. Reducing diesel emissions in Oregon is necessary to protect public health.

Diesel exhaust contains a variety of toxic air pollutants. The primary pollutants contained in diesel exhaust are particulate matter, black carbon (a type of fine particulate matter), nitrogen oxides, carbon monoxide and carbon dioxide.[4] Diesel exhaust also contains more than 40 additional toxic pollutants, such as benzene, arsenic, and formaldehyde.[5] These pollutants all have negative impacts on the health of Oregon residents.

The toxic compounds in diesel pollution have been linked with increased rates of cancer, heart disease, and respiratory illnesses.[6] The World Health Organization classifies diesel exhaust as a known human carcinogen.[7] Exposure to diesel exhaust increases lung and bladder cancer risks.[8] The cancer risk associated with exposure to diesel pollution is significant; for example, the California Air Resources Board estimates that approximately 70% of the air toxics-related cancer risk in California is attributable to diesel particulate matter.[9] Diesel pollution has also been tied to cardiovascular disease and respiratory disorders and increases the risk of heart attacks and asthma attacks.[10]

A 2005 analysis by the Clean Air Task Force estimated that Oregon's diesel pollution is responsible for 176 premature deaths and 145 non-fatal heart attacks each year.[11] The EQC recognizes diesel pollution as a human carcinogen and adopted a health-based ambient benchmark concentration for diesel particulate matter of 0.1 micrograms per cubic meter ($\mu g/m^3$).[12] Areas of Multnomah County with the highest concentrations of diesel exhaust have

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[4] OR. DEPT. OF ENVT'L QUALITY, THE CONCERNS ABOUT DIESEL ENGINE EXHAUST 1 (2015), http://www.oregon.gov/deq/FilterDocs/DieselEffectsReport.pdf [hereinafter DEQ 2015 DIESEL REPORT].

[5] Cal. Office of Envt'l Health Hazard Assessment, *Health Effects of Diesel Exhaust* (2001), https://oehha.ca.gov/air/health-effects-diesel-exhaust.

[6] DEQ 2015 DIESEL REPORT, *supra* note 4, at 2.

[7] Int'l Agency for Research on Cancer, Diesel Engine Exhaust Carcinogenic at 1 (June 12, 2012), https://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf.

[8] DEQ 2015 DIESEL REPORT, *supra* note 4, at 2.

[9] CAL. ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BD., REVISED PROPOSED 2016 STATE STRATEGY FOR THE STATE IMPLEMENTATION PLAN 15 (Mar. 7, 2017), https://ww3.arb.ca.gov/planning/sip/2016sip/rev2016statesip.pdf.

[10] DEQ 2015 DIESEL REPORT, *supra* note 4, at 2, 4.

[11] *Id.* at 3–4; Clean Air Task Force, *Diesel Soot Health Impacts: Oregon,* http://www.catf.us/diesel/dieselhealth/state.php?site=0&s=41.

[12] DEQ 2015 DIESEL REPORT, *supra* note 4, at 2; OR. DEPARTMENT OF ENVT'L QUALITY, AIR TOXICS PROGRAM, AMBIENT BENCHMARK CONCENTRATIONS (ABC) 4 (Oct. 2010), https://www.oregon.gov/deq/FilterDocs/airtox-abc.pdf.

estimated cancer risks of 542-in-1,000,000,[13] which is more than 500 times higher than the additional cancer risk associated with the EQC's benchmarks.[14] Children and the elderly are particularly vulnerable to diesel pollution exposure, and the Clean Air Task Force estimated that diesel exhaust causes respiratory problems for thousands of Oregon children each year.[15]

Oregon's diesel emissions also inflict substantial societal and economic costs on the state. In total, the health and environmental impacts associated with Oregon's diesel pollution are estimated to cost the state's economy more than $1.6 billion per year.[16] By 2030, reductions in diesel pollution could prevent an estimated 460 premature deaths per year in Oregon and save the state's economy $3.5 billion on an annual basis.[17]

### B. Reducing mobile source emissions is necessary to meet Oregon's greenhouse gas reduction goals.

Mobile sources powered by gasoline and diesel fuel are collectively the largest source of carbon emissions in Oregon. The state legislature adopted goals to reduce greenhouse gas emissions to levels 10% below 1990 levels by 2020 and at least 75% below 1990 levels by 2050.[18] However, instead of dropping, carbon emissions from mobile sources operating in the state have *increased* by more than 20% since 1990.[19] Unless Oregon takes swift action to reduce emissions from on-road and nonroad engines, mobile source emissions will prevent the state from achieving its climate goals.

Gasoline and diesel fuel consumption is a major contributor to the human-caused climate crisis. In 2017, Oregon's transportation sector consumed more than half a billion barrels of petroleum and emitted nearly 26 million metric tons of $CO_2$.[20] These emissions represented nearly 40% of Oregon's total greenhouse gases for the year.[21] Because carbon emissions directly correlate with fuel consumption, these emissions will decrease when fuel efficiency increases. However, the Clean Air Act limits state authority to directly regulate fuel efficiency or carbon emissions from mobile sources. Indirect source rules provide an opportunity for regulating carbon emissions at the state and local level without conflicting with federal law. Indirect source rules would also

[13] MULTNOMAH COUNTY, ENSURING HEALTHY AIR 23 (June 2018), http://multnomah.granicus.com/MetaViewer.php?view_id=3&event_id=1198&meta_id=125609.
[14] Oregon's air toxics ambient concentration benchmarks are based on pollutant concentrations that would result in a risk of 1-in-1,000,000 additional cancer diagnoses over a lifetime of exposure. Or. Dept. of Envt'l Quality, *Oregon Air Toxics Benchmarks,* https://www.oregon.gov/deq/aq/air-toxics/Pages/Benchmarks.aspx (last viewed Oct. 19, 2019).
[15] DEQ 2015 DIESEL REPORT, *supra* note 4, at 3–4.
[16] *Id.* at 6.
[17] *Id.*
[18] OR. REV. STAT. § 468A.205.
[19] OREGON GLOBAL WARMING COMM'N, 2018 BIENNIAL REPORT TO THE LEGISLATURE at 76 (2018), https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/5c2e415d0ebbe8aa6284fdef/1546535266189/2018-OGWC-Biennial-Report.pdf; Ted Sickinger, *With Emissions on the Rise, Oregon Falls Well Short of Greenhouse Gas Reduction Goals*, OREGONLIVE.COM, https://www.oregonlive.com/politics/2018/12/with_emissions_on_the_rise_ore.html.
[20] U.S. Energy Info. Admin, *Oregon: Profile Data, Consumption and Expenditures, Table F16* (2019), https://www.eia.gov/state/data.php?sid=OR#ConsumptionExpenditures; Sickinger, *supra* note 19.
[21] Sickinger, *supra* note 19.

complement other state efforts to reduce greenhouse gas emissions, such as a cap and trade program, because emissions reductions could count towards a source's compliance obligations under both programs.

While all fossil fuel consumption contributes to climate change through carbon emissions, diesel fuel consumption disproportionately contributes to climate change through black carbon emissions. Approximately 70% of the fine particulate matter in diesel exhaust is emitted as black carbon, which is an extremely potent short-lived climate forcer.[22] Black carbon impacts global temperatures in three ways.[23] First, it absorbs solar radiation in the atmosphere and then re-emits that radiation as heat. Second, when black carbon falls back to earth it darkens snow, ice, and lighter-colored surfaces, reducing the amount of sunlight the Earth typically reflects back out to space. And third, black carbon alters the reflectivity, stability, and precipitation from clouds.

An analysis by DEQ reported that black carbon emissions from diesel engines cause an estimated $274 million in annual climate-related impacts in the state.[24] These costs, however, could be quickly avoided: because black carbon is very short-lived (it only remains in the atmosphere for a period of days to weeks), reducing diesel emissions can create substantial near-term climate benefits in Oregon.[25]

The impacts of climate change are already imposing costs and burdens on Oregon's communities. Indirect source rules would enable the state to reduce carbon emissions from the transportation sector and help put Oregon on a trajectory to achieve its climate goals.

### C. Diesel particulate emissions are of particular concern in Oregon's urban centers and environmental justice communities.

Any exposure to diesel particulate matter presents risks to human health. Residents of the state's urban centers, which experience higher levels of diesel exhaust and associated air pollution concentrations, have a greater risk of suffering health impacts related to diesel exhaust exposure than Oregonians living in less urban areas. Low-income and minority communities are disproportionately impacted by diesel pollution. In Portland, for example, diesel pollution concentrations in communities of color may be three times higher than average concentrations within the city.[26]

Recent studies from Portland and Multnomah County illustrate these increased risks. This region typically experiences the highest levels of diesel exhaust and associated air pollution concentrations in Oregon, with many neighborhoods in the Portland metropolitan area exceeding

[22] U.S. ENVT'L PROTECTION AGENCY, REPORT TO CONGRESS ON BLACK CARBON 5 (2010), https://www3.epa.gov/airquality/blackcarbon/2012report/fullreport.pdf.
[23] *Id.* at 3–4.
[24] DEQ 2015 DIESEL REPORT, *supra* note 4, at 6.
[25] DECONSTRUCTING DIESEL LAW & POLICY ROADMAP, *supra* note 1, at 10.
[26] MULTNOMAH COUNTY HEALTH DEPT., 2014 REPORT CARD ON RACIAL AND ETHNIC DISPARITIES 31 (2014), https://multco.us/file/37530/download.

the state's health benchmarks for diesel particulate pollution.[27] Testing by Portland State University detected localized diesel particulate concentrations that were 10 to 20 times higher than the state's safety benchmarks.[28] Areas of Multnomah County with the highest concentrations of diesel exhaust have estimated cancer risks of 542-in-1,000,000, which is much higher than the 1-in-1,000,000 additional cancer risk associated with Oregon's air toxics benchmark standards.[29]

Low-income and minority populations living and working in neighborhoods with elevated diesel pollution concentrations are at increased risk of health problems associated with diesel exhaust exposure.[30] Exposure to traffic pollution has also been shown to negatively affect near-term and long-term academic performance, and many low-income and minority students in the Portland area attend public schools where diesel pollution levels are higher than 80–90% of the United States.[31] Regular exposure to elevated diesel pollution concentrations may have a permanent impact on these students' health, income, and professional potential.

### D. On-road and nonroad sources are major emitters of diesel particulate pollution.

Oregon's diesel pollution is generated by a wide variety of mobile on-road and nonroad diesel engines and vehicles. On-road diesel vehicles include, for example, heavy-duty trucks used to transport freight, medium-duty trucks used for local deliveries, and waste collection vehicles. Nonroad diesel vehicles and engines include most construction equipment, off-road vehicles, agricultural vehicles, lawn and garden equipment, trains, and marine vessels. In Portland, on-road and nonroad diesel engines are estimated to collectively emit more than 472 tons of particulate pollution each year and produce approximately 90% of the diesel particulate matter in the Portland metropolitan area.[32] Similarly, recent emissions inventories in Lane and Marion

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[27] OR. DEPT. OF ENVT'L QUALITY, FACT SHEET: AIR QUALITY IN PORTLAND, PORTLAND AIR TOXICS SOLUTIONS REPORT AND RECOMMENDATIONS 4 (2012), https://www.oregon.gov/deq/FilterDocs/12aq035patsReport.pdf [hereinafter PATS FACT SHEET].

[28] Testing by Portland State University detected localized diesel particulate concentrations that were up to 20 times higher than the state's safety benchmarks. Keely Chalmers, *Diesel Pollution Laws Could Tighten Under Proposed Oregon Bill,* KGW.com (Apr. 3, 2017), http://www.kgw.com/news/local/diesel-pollution-laws-could-tighten-under-proposed-oregon-bill/428262562.

[29] ENSURING HEALTHY AIR: LOCAL COLLABORATIVE AND REGULATORY OPTIONS IN THE PORTLAND METRO AREA 16 (2018), http://multnomah.granicus.com/MetaViewer.php?view_id=3&event_id=1198&meta_id=125609; Or. Dept. of Envt'l Quality, *Oregon Air Toxics Benchmarks*, https://www.oregon.gov/deq/aq/air-toxics/Pages/Benchmarks.aspx.

[30] PATS FACT SHEET, *supra* note 27, at 5.

[31] *See* JACQUELINE S. ZWEIG, ET AL., AIR POLLUTION AND ACADEMIC PERFORMANCE: EVIDENCE FROM CALIFORNIA SCHOOLS (Dec. 2009), http://econweb.umd.edu/~ham/test%20scores%20submit.pdf; Nicole Javorsky, *Can Traffic Pollution Negatively Affect Student Performance?,* PSMAG.COM (Feb. 5, 2019), https://psmag.com/education/can-traffic-pollution-affect-student-performance. At three of Portland's under-performing public high schools, David Douglas, Roosevelt, and Jefferson High Schools, the student bodies are predominantly low-income and non-white, and estimated diesel $PM_{2.5}$ concentrations are higher than those in 80% to 90% of the United States.

[32] PORTLAND AIR TOXICS SOLUTIONS ADVISORY COMMITTEE, PATS 2017 POLLUTANT MODELING SUMMARY 6 (2011), https://www.oregon.gov/deq/FilterDocs/15pollutantsAboveSummary.pdf [hereinafter PATS POLLUTANT MODELING SUMMARY].

counties indicate that on-road and nonroad diesel engines account for the vast majority of those counties' diesel particulate emissions.[33]

According to pollutant modeling by DEQ's Portland Air Toxics Solutions (PATS) Advisory Committee, on-road diesel vehicles in the Portland metropolitan area were projected to emit an estimated 81.7 tons per year of toxic particulate pollution in 2017.[34] In 2010, Portland's average concentrations of on-road diesel particulate pollution were more than 11 times higher than the state's health-based benchmark concentration.[35] PATS estimated that on-road diesel emissions would need to decline by 91% to achieve Oregon's diesel particulate benchmark concentration.[36]

According to the PATS modeling, the majority of Portland's diesel particulate pollution comes from nonroad diesel engines, which were estimated to emit 344.8 tons per year of fine particulate matter.[37] Most of this pollution is emitted from off-road construction vehicles and engines, though rail and marine engines also contribute to Portland's nonroad diesel pollution. With regard to the construction sector, Portland's average concentration of diesel particulate pollution from construction equipment was more than 12 times higher than the state's health-based benchmark.[38] To achieve Oregon's diesel particulate benchmark concentration, PATS estimated that construction emissions would need to drop by 92.5%, or by 228.7 tons per year.[39] PATS measurements also showed average marine and railroad particulate pollution concentrations were more than eight and nine times higher, respectively, than Oregon's benchmark concentrations.[40] To achieve Oregon's benchmark concentrations, rail and marine particulate emissions would need to be reduced by 42.8 tons per year.[41]

While the PATS projections clearly indicate that diesel particulate concentrations in the Portland area present a threat to public health, ongoing research by Portland State University and Reed College suggests that actual diesel emissions rates and pollution concentrations in the metro region may be much higher than the PATS modeling projected, particularly in the vicinity of active construction projects. In other words, diesel engines currently operating in the Portland area may be emitting dramatically more particulate pollution than the PATS team projected.

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[33] U.S. Envt'l Protection Agency, *Air Emissions Inventories: 2014 National Emissions Inventory (NEI) Data*, https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data.
[34] PATS POLLUTANT MODELING SUMMARY, *supra* note 32, at 6.
[35] PATS measured an average on-road diesel particulate matter concentration of 1.117 $\mu g/m^3$, which was 11.17 times Oregon's ambient benchmark concentration of 0.1 $\mu g/m^3$. OR. DEPT. OF ENVT'L QUALITY, PORTLAND AIR TOXICS SOLUTIONS COMMITTEE REPORT AND RECOMMENDATIONS ch. 6, tbl. 13, p. 4 (2012), https://www.oregon.gov/deq/aq/air-toxics/Pages/PATS.aspx [hereinafter PATS REPORT].
[36] *Id.*
[37] PATS POLLUTANT MODELING SUMMARY, *supra* note 32, at 6.
[38] PATS measured an average construction diesel particulate matter concentration of 1.2209 $\mu g/m^3$, which was 12.21 times Oregon's ambient benchmark concentration of 0.1 $\mu g/m^3$. PATS REPORT, *supra* note 35, ch. 6, tbl. 14, p. 5.
[39] *Id.*
[40] The PATS pollutant modeling measured an average marine diesel particulate matter concentration of 0.8191 $\mu g/m^3$, which was 8.19 times Oregon's ambient benchmark concentration of 0.1 $\mu g/m^3$. *Id.* at ch. 6, tbl. 16, p. 7. The study measured an average railroad diesel particulate matter concentration of 0.9545 $\mu g/m^3$, which was 9.54 times Oregon's ambient benchmark concentration of 0.1 $\mu g/m^3$. *Id.* at ch. 6, tbl. 15, p. 6.
[41] *Id.*

### E. Indirect source rules can control aggregate emissions from on-road and nonroad vehicles and engines.

To mitigate the adverse health and environmental impacts from mobile source pollution, the State of Oregon must work to reduce local emissions from vehicles and engines. Indirect source rules provide a legal avenue for the state to control aggregate emissions from both on-road and nonroad vehicles and engines within a single site or facility.

The Clean Air Act (CAA) gives states broad discretion to adopt indirect source programs to control aggregate air pollution from mobile sources. CAA section 110 expressly authorizes states to regulate emissions from "indirect sources" of air pollution.[42] An indirect source is a physical location that attracts or may attract mobile sources of air pollution. Buildings, parking lots, construction sites, highways, ports, and rail yards are all examples of indirect sources.[43] Under the CAA, states may adopt indirect source programs that regulate the aggregate emissions produced by mobile sources within the boundaries of, or attracted by, an indirect source. In other words, indirect source rules are regulatory programs for controlling the total emissions produced by mobile sources associated with an indirect source, without directly regulating the emissions from individual vehicles and engines operating within the indirect source. Indirect source rules therefore empower state and local governments to indirectly regulate emissions from both on-road and nonroad vehicles and engines operating at or attracted to a single location.[44]

### F. Current regulations in Oregon fail to adequately address pollution from indirect sources.

The EQC previously adopted rules for indirect sources, but the program's scope is very limited and it has not had a meaningful impact on air quality in the state. Under existing EQC rules, indirect sources that intend to construct 1,000 or more parking spaces within the city limits of Portland, Salem, Eugene, or Medford, or 800 or more parking spaces in central Portland, must first obtain an indirect source construction permit from DEQ.[45] No other indirect sources in the state are required to obtain permits under the existing rules. Because the regulations were designed primarily to address carbon monoxide emissions resulting from passenger vehicle trips, Oregon's rules for indirect sources fail to reduce emissions from diesel construction equipment and other nonroad vehicles and engines. Moreover, there is no available evidence to indicate that the current rules have measurably reduced emissions from on-road vehicles operating in Oregon's urban communities.

Further, Oregon's current indirect source construction permits generally do not impose any additional substantive requirements on the sources they cover.[46] Under limited circumstances,

[42] 42 U.S.C. § 7410(a)(5).
[43] The CAA defines "indirect source" as "a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution." *Id.* § 7410(a)(5)(C).
[44] The U.S. Court of Appeals for the Ninth Circuit held that indirect source rules are not preempted emissions standards under the Clean Air Act because they target aggregate mobile source emissions associated with a facility, rather than regulate direct emissions from individual mobile sources. Nat'l Ass'n of Homebuilders v. San Joaquin Valley Unified Air Pollution Control Dist., 627 F.3d 730 (9th Cir. 2010).
[45] OR. ADMIN. R. § 340-254-0040(1).
[46] *See* OR. ADMIN. R. §§ 340-254-0060, 340-254-0070.

including if a source will cause or contribute to a violation of Oregon's CAA state implementation plan or a violation of any national ambient air quality standard (NAAQS), DEQ may require the source to establish an Indirect Source Emission Control Program (ISECP) containing selected measures to control emissions.[47] The source may choose any single measure or combination of measures to reduce emissions through its ISECP, such as reserving parking spaces for carpools or reimbursing public transit fares. The source is not required, however, to demonstrate that its chosen measures will result in better air quality or NAAQS attainment. The source is also prohibited from including control measures that do not have "reasonably definable costs."[48]

Oregon's existing rules for indirect sources are thus quite limited in scope and effect, and have little measurable impact on mobile source pollution in the state. However, petitioners recognize that the rules have the potential to provide limited benefits in certain circumstances, and we are not requesting that the EQC repeal Oregon's existing rules for indirect sources. Instead, we urge the EQC to adopt the proposed indirect source rule to more effectively regulate toxic and harmful emissions from a wider variety of sources than those covered under the existing rules.

### G. Other jurisdictions have adopted effective indirect source rules.

Many state and local jurisdictions throughout the United States have adopted indirect source rules. The most effective indirect source rules apply to multiple types and classes of indirect sources, require specific reductions in air pollution emissions from construction and operating activities, give sources flexibility to implement a variety of on-site and/or off-site emissions reduction measures, and include monitoring requirements and legally binding enforcement mechanisms to ensure compliance.

The San Joaquin Valley Air Pollution Control District (APCD) presents a notable example of effective indirect source regulation. The APCD has adopted a fairly comprehensive indirect source review program that applies to a variety of sources and requires measurable reductions in emissions from new and modified indirect sources above certain size thresholds.[49] Before commencing construction, an indirect source must use computer models to project the source's baseline air pollution emissions, including emissions associated with the construction and daily operation of the facility.[50] The source must then identify and implement a combination of on-site and/or off-site measures to reduce its baseline emissions by percentages specified in the rule.[51] For example, an indirect source must reduce its construction-related $PM_{10}$ emissions (*i.e.,* the emissions generated during the facility's construction) by 45% and its operational $PM_{10}$ emissions (*i.e.,* the emissions generated during the completed facility's day-to-day operations) by 50%.[52] The indirect source may achieve these emissions reductions through on-site mitigation measures, such as retrofitting construction equipment with pollution control devices, or by

[47] OR. ADMIN. R. §§ 340-254-0060(2)(g), 340-254-0070(5).
[48] OR. ADMIN. R. § 340-254-0070(4)(a).
[49] San Joaquin Valley Air Pollution Control Bd., District Rule 9510 (Dec. 15, 2005) (amended Dec. 21, 2017; effective Mar. 21, 2018), https://www.valleyair.org/rules/currntrules/r9510-a.pdf.
[50] *Id.* at 1, 11–12.
[51] *Id.*
[52] *Id.* at 13.

paying a fee to support off-site emissions reductions.[53] If the indirect source is unable to reduce its emissions through on-site measures, it must pay an off-site emissions reduction fee for each ton of excess pollution it emits.[54] San Joaquin Valley APCD uses 100% of the revenue it receives from off-site fees to fund emissions reductions projects within the district.[55] The APCD's indirect source review program has had a meaningful impact on diesel pollution in the San Joaquin Valley. As of June 30, 2018, the program has prevented approximately 14,200 tons of $NO_x$ and $PM_{10}$ emissions through on-site mitigation measures and reduced another 8,600 tons of $NO_x$ and $PM_{10}$ through off-site emissions reduction projects.[56]

[53] *Id.* at 11–12.
[54] *Id.* at 13–16.
[55] SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DIST., 2018 ANNUAL REPORT: INDIRECT SOURCE REVIEW PROGRAM at 4 (2018), https://www.valleyair.org/ISR/Documents/2018-Annual-Report.pdf.
[56] *Id.*

## III. Propositions of Law

As required under OAR 137-001-0070(1)(c), petitioners submit the following propositions of federal and state law that support the EQC's authority to regulate emissions from indirect sources to protect air quality in Oregon.

### A. Federal Law: The Clean Air Act expressly authorizes state and local regulation of indirect sources.

The CAA gives states broad discretion to adopt indirect source programs to control mobile air pollution from mobile sources. CAA section 110 expressly authorizes states to regulate emissions from "indirect sources" of air pollution.[57] The CAA defines "indirect source" as "a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution."[58]

Because an indirect source program imposes site-based emissions limitations or requirements, rather than vehicle or engine-based requirements, state and local indirect source rules are not preempted under CAA section 209, which prohibits states from adopting emission standards for motor vehicles.[59] Courts have emphasized that the Clean Air Act grants states broad discretion to decide whether and how to regulate emissions from indirect sources.[60]

### B. State Law: The EQC has broad statutory authority to regulate air quality.

The EQC has clear authority under Oregon law to adopt the proposed indirect source rules. The legislature has provided that the EQC may establish by rule "areas of the state and prescribe the degree of air pollution or air contamination that may be permitted therein, as air purity standards for such areas."[61] Similarly, the EQC, by rule, may "require permits for air contamination sources classified by type of air contaminants, by type of air contamination source or by area of the state."[62]

The EQC has already correctly determined that it has statutory authority to regulate indirect sources, and it has exercised that authority, stating:

> The Commission finds and declares Indirect Sources to be air contamination sources as defined in ORS 468A.005. The Commission further finds and declares that the regulation of Indirect Sources is necessary to control the concentration of air contaminants which result from Motor Vehicle Trips and/or Aircraft Operations associated with the use of Indirect Sources.[63]

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[57] 42 U.S.C. § 7410(a)(5).
[58] 42 U.S.C. § 7410(a)(5)(C).
[59] 42 U.S.C. § 7543; *see* Nat'l Ass'n of Home Builders v. San Joaquin Valley Unified Pollution Control District, 627 F. 3d 730 (9th Cir. 2009).
[60] *See* Trump Hotels & Casino Resorts, Inc. v. Mirage Resorts, 963 F. Supp. 395, 407 (D.N.J. 1997), aff'd, 140 F.3d 478 (3d Cir. 1998).
[61] OR. REV. STAT. § 468A.025.
[62] OR. REV. STAT. § 468A.040.
[63] OR. ADMIN. R. § 340-254-0010.

The proposed rules in this petition build upon EQC's existing regulatory framework and fall squarely within the agency's statutory authority.

## IV. Conclusion

Mobile source emissions currently present significant threats to human health, particularly in urban areas of the state, and are preventing Oregon from achieving its greenhouse gas reduction targets. The proposed indirect source rule would work to reduce these harmful emissions at locations and facilities that attract large numbers of vehicles or operate polluting engines or equipment. Reducing emissions from indirect sources will improve air quality in urban areas, support Oregon's climate goals, and produce meaningful benefits for Oregonians who are currently exposed to some of the highest concentrations of diesel pollution in the United States. We therefore strongly urge the EQC to exercise its rulemaking authority and adopt the new indirect source rule proposed by this petition.