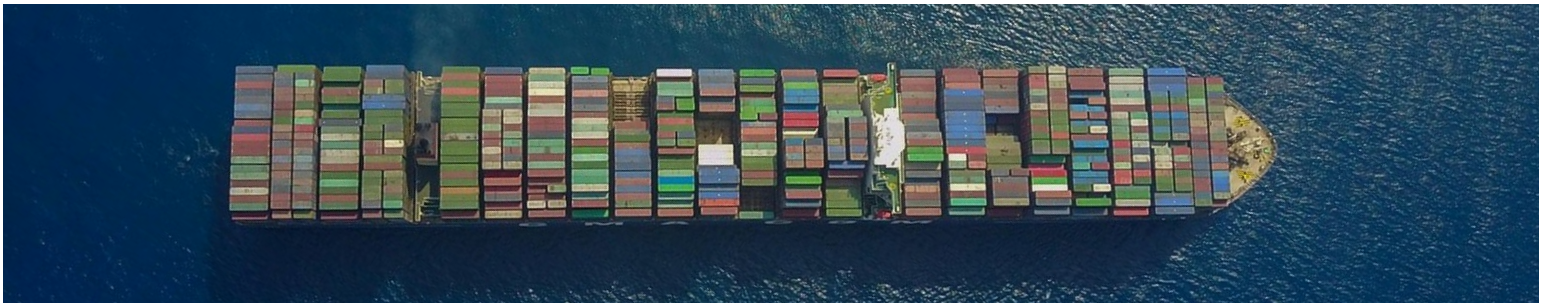

DECONSTRUCTING DIESEL

A LAW & POLICY ROADMAP FOR REDUCING DIESEL EMISSIONS IN THE PORTLAND METROPOLITAN AREA

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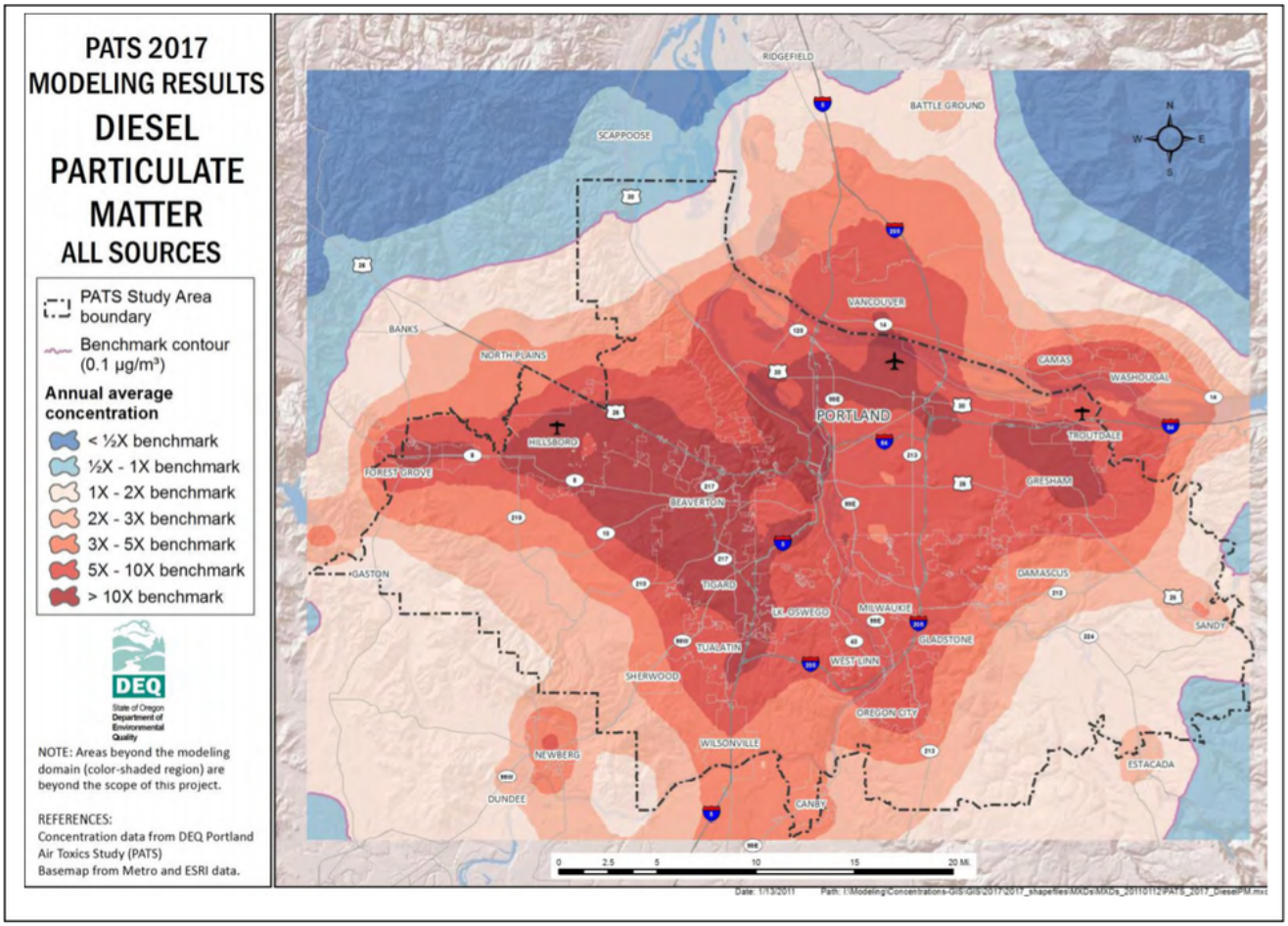
I. INTRODUCTION

Diesel pollution presents a profoundly serious problem in Portland, Oregon, and surrounding Multnomah County. Exhaust from diesel-fueled engines contains toxic air pollutants that present significant threats to public health and contribute to global climate change. Multnomah County, which encompasses the city of Portland and is home to nearly twenty percent of Oregon's population, has one of the highest rates of diesel exhaust exposure in the United States.[1] Area residents are regularly exposed to diesel particulate matter concentrations that are more than ten times higher than Oregon's health-based standards, and many local communities are exposed to even higher levels of these toxic air pollutants.[2] Portland's diesel pollution places local residents at higher risk of developing cancer, heart attack, stroke, cardiovascular disease, and respiratory disorders, with low-income and minority communities disproportionately impacted by diesel pollution and the health threats it presents.[3] These disparate impacts are most pronounced in communities of color, which may be exposed to up to three

Toxic diesel pollution presents a serious health threat for residents of Portland and Multnomah County.

times more diesel pollution than the average area resident.[4] Children are particularly vulnerable to diesel pollution, which can cause permanent damage to growing lungs.[5] The health and environmental impacts associated with diesel pollution impose serious social, emotional, and economic strains on Portland's communities. Diesel-related illnesses contribute to absences from work and school and drive up health care spending. On a statewide level, these impacts are estimated to cost the state more than $1.8 billion each year.[6] Efforts to reduce diesel emissions can therefore create far-reaching benefits for those who live and work in the metropolitan area. If quick action is taken to address the diesel pollution problem, **Oregon could prevent 460 premature deaths and save the state $3.5 billion each year** through avoided illnesses, fatalities, and environmental damage.[7]

Early action to reduce diesel emissions can also produce long-term climate benefits by reducing atmospheric concentrations of black carbon. Commonly known as "soot," black carbon is a type of particulate matter that significantly contributes to climate change by directly absorbing solar radiation. Diesel emissions are one of the primary sources of black carbon. While black carbon is a very potent climate forcer, it is also short-lived, remaining in the atmosphere for days or weeks rather than decades. Short-term

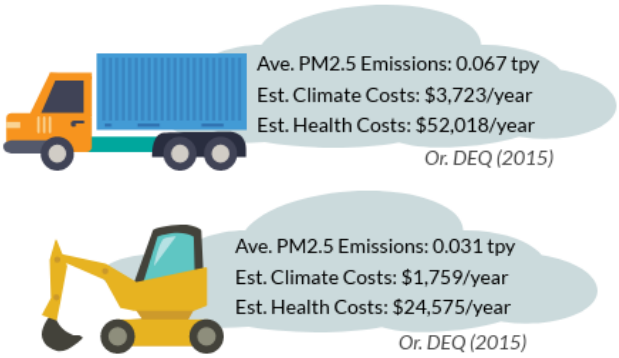


Map from PATS 2017 Pollutant Modeling Summary (DEQ 2011)

reductions in diesel black carbon emissions can therefore have a profound impact on global temperatures.[8]

The term "diesel pollution" refers to the combination of toxic air pollutants emitted by diesel-fueled vehicles and engines, which include fine particulate matter (some of which is emitted as black carbon) and nitrogen oxides. Emissions from heavy-duty on-road diesel vehicles, such as trucks and buses, and from nonroad diesel engines, such as construction vehicles, trains, ships, and lawn and garden equipment, are the primary sources of diesel pollution in the Portland metropolitan area. While all diesel engines emit toxic air pollutants, old engines are a much larger problem than new engines—**older diesel engines emit as much as 99% more pollution than newer engines**. Because newer diesel engines are much cleaner than older engines, California has taken action to phase out older diesel vehicles from its public and private fleets. As a result, many old, dirty diesel vehicles from California are being sold into Oregon. Unless quick action is taken to address this issue, Portland's diesel problem will likely continue to worsen over time.[9]

HEALTH & CLIMATE COSTS ASSOCIATED WITH AN AVERAGE DIESEL TRUCK & EXCAVATOR

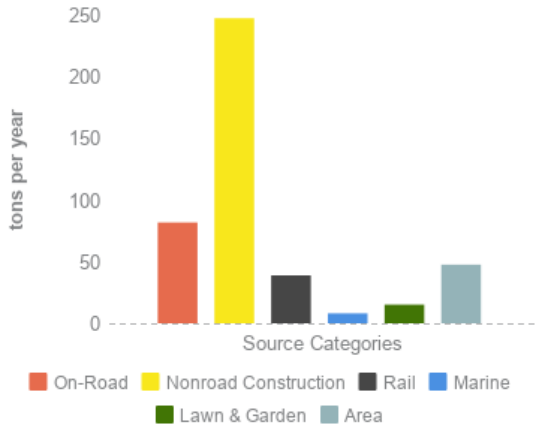


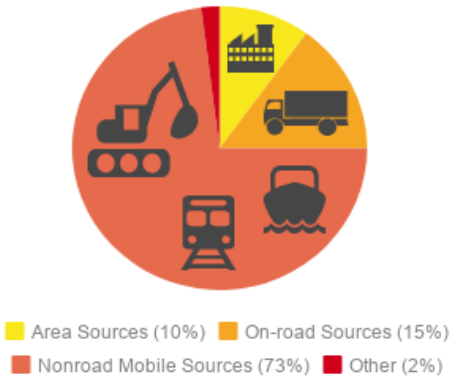
To reduce the significant health and environmental risks associated with diesel pollution, Portland and Multnomah County must adopt and implement effective strategies to reduce local diesel emissions. Unfortunately, local governments face a number of legal and regulatory hurdles that limit available options for addressing diesel emissions. A series of complex legal frameworks and jurisdictional dynamics at the state and federal levels restrict local authority to regulate diesel vehicles and engines in certain contexts. This Roadmap aims to help local governments and community stakeholders better understand the legal frameworks and regulatory limitations local governments must navigate to effectively address diesel pollution at the local level. The Roadmap also identifies a variety of strategies local governments can implement to reduce diesel pollution from local sources. This Executive Summary is intended to provide a concise overview of the legal and policy issues surrounding diesel emissions regulation.

II. SOURCES OF DIESEL POLLUTION

Oregon's diesel pollution is generated by a wide variety of on-road and nonroad diesel engines and vehicles. On-road diesel vehicles include heavy-duty trucks used to transport freight; medium-duty trucks used for local deliveries; buses; waste collection vehicles; and emergency vehicles, such as fire engines. Nonroad diesel vehicles and engines include most construction equipment; off-road vehicles, such as diesel-fueled recreational vehicles; agricultural equipment, such as tractors; lawn and garden equipment; railroad locomotives; and marine vessels. These diesel vehicles and engines collectively emit approximately 472 tons of particulate matter pollution in Portland each year.[9] To achieve Oregon's health-based standard (called an "ambient benchmark concentration"[10]) for diesel particulate matter, **Portland must reduce its annual diesel particulate matter emissions by 86%.**[11]

PORTLAND'S ESTIMATED DIESEL PARTICULATE MATTER EMISSIONS BY SOURCE CATEGORY





ESTIMATED DIESEL PARTICULATE MATTER EMISSIONS REDUCTIONS NEEDED TO MEET OREGON'S AMBIENT BENCHMARK CONCENTRATION

Source Category	Average Concentration ($\mu g/m^3$)	Estimated Emissions (tons per year)	Reductions Needed (tons per year)	Percentage Reduction
On-Road Mobile	1.117	81.7	74.4	91%
Nonroad Construction	1.22	247.3	228.7	92.5%
Rail	0.954	38.8	35.6	91.8%
Marine	0.819	8.0	7.2	89.5%
Lawn & Garden	1.33	15.1	14.0	92.3%

Oregon's Ambient Benchmark Concentration for diesel particulate matter is 0.1 micrograms per cubic meter ($\mu g/m^3$).
Data from DEQ Portland Air Toxics Solutions Study (2011).

III. REGULATING DIESEL EMISSIONS: JURISDICTIONAL DYNAMICS AND LIMITATIONS

The only meaningful way to reduce diesel pollution concentrations in Portland and Multnomah County is to reduce the aggregate unfiltered emissions produced by diesel vehicles and engines. This can be achieved by restricting the number of diesel vehicles and engines operating in the area, restricting the amount of time these vehicles and engines operate in the area, and/or restricting the amount of air pollution these vehicles and engines emit in the area. While these strategies may seem fairly straightforward in concept, local governments face a number of barriers to implementing these types of regulatory restrictions at the local level. Most of these barriers stem from a combination of federal laws that limit state and local jurisdiction over motor vehicle regulations.

On a general level, the federal government has reserved near-exclusive authority to regulate the design and manufacturing of new vehicles and engines. Because vehicle manufacturers typically operate on a national scale, the federal government aimed to create a degree of certainty and uniformity within the automotive industry by preventing individual states from adopting their own unique vehicle requirements. States and local governments therefore have very limited authority to establish emissions standards for new vehicles and engines, because these types of standards would presumably require compliance at the manufacturing level. Similarly, because many commercial transport companies operate in interstate commerce

Local governments have limited authority to regulate emissions from new diesel trucks.

(*i.e.,* they transport commercial property between different states), the federal government also reserved near-exclusive authority to regulate commercial transportation of goods and people.

In some instances, federal laws expressly prohibit state and local governments from regulating in a certain area. This is known as "preemption." If a federal law preempts state regulation in a certain area, local regulation is typically preempted as well. Some federal laws preempt state and local governments from regulating a certain activity or industry for economic reasons but make exceptions for regulations designed to protect public safety. Other laws provide more tailored exceptions for specific states, activities, or purposes. State governments also occasionally adopt laws that preempt local governments from regulating certain activities or industries.

A. Federal Restrictions on State and Local Authority

The federal government has reserved nearly exclusive jurisdiction over motor vehicle manufacturing and design. As a result, most states are prohibited from adopting laws and regulations targeting certain aspects of motor vehicle design, including vehicle emissions and fuel economy. Federal law also limits state and local authority to adopt laws and regulations that place economic burdens on commercial transportation or discriminate against out-of-state industries.

The following federal laws restrict state and local authority to regulate motor vehicles:

- The **Clean Air Act** preempts state and local governments from adopting or enforcing emissions standards for new on-road motor vehicles and both new and existing non-road vehicles and engines. The Clean Air Act makes an exception for the State of California, which may request a waiver from the U.S. Environmental Protection Agency (EPA) to adopt its own emissions standards for new on-road vehicles and most new and existing nonroad vehicles and engines. If California receives a waiver from EPA, other states (including Oregon) may adopt California's emissions standards.
- The **Energy Policy and Conservation Act** preempts states from adopting or enforcing fuel economy standards for new and existing motor vehicles that are subject to existing federal fuel economy standards.
- The **Federal Aviation Administration Authorization Act** preempts states and local governments from adopting laws or regulations that directly affect the prices, routes, or services of commercial transport providers.
- The **Commerce Clause of the U.S. Constitution** prohibits states and local governments from adopting laws or regulations that unduly burden interstate commerce or unreasonably discriminate against out-of-state businesses or industries.

A freight train passes through Southeast Portland. Federal law preempts Oregon from directly regulating emissions from diesel locomotives.

B. State Restrictions on Local Government Authority

Just as federal law can restrict state and local regulatory authority, state law may preempt local governments from regulating in certain areas. The Oregon Constitution generally protects local "home rule" authority, which allows local governments to adopt regulations and policies that apply exclusively within their jurisdictional boundaries. However, the Oregon legislature can restrict home rule authority by explicitly or unambiguously prohibiting local regulation in a specific context. Much like the federal government, Oregon aims to provide a degree of statewide uniformity in its regulation of motor vehicles and preempts or restricts local governments from regulating in certain areas.

Oregon limits local authority to regulate motor vehicles and other mobile sources through the following mechanisms:

- Article IX, Section 3a of the Oregon Constitution significantly restricts how local governments may use revenues associated with motor vehicle ownership and use.
- Oregon law expressly preempts local governments from regulating certain aspects of motor vehicle operation, such as idling of commercial vehicles.
- The Oregon legislature has delegated certain regulatory authorities to specific state agencies. For example, the Oregon Department of Transportation has authority to administer many provisions within the Oregon Vehicle Code, and local governments are prohibited from adopting regulations that conflict with many Vehicle Code requirements.
- Some state agencies have adopted regulations that preempt local governments from regulating in certain areas. For example, Environmental Quality Commission regulations impose restrictions on local governments that wish to regulate emissions from indirect sources of air pollution.[12]

Due to restrictions imposed by Article IX, section 3a of the Oregon Constitution, vehicle fuel taxes and many other transportation-related revenues are deposited into the State Highway Trust Fund and dedicated for specific highway-related uses.

C. What State and Local Governments Can Do to Reduce Diesel Pollution

While the federal laws described above restrict state and local authority to adopt emissions standards for new (and some existing) motor vehicles and impose certain economic restrictions on commercial vehicles, state and local governments have authority to regulate diesel pollution in other ways. For example, while the Clean Air Act prohibits individual states (other than California) from imposing unique design requirements on motor vehicle manufacturers, federal law generally does not intrude on state and local authority to protect public health and safety.

To protect air quality and control diesel pollution, states may:

- Adopt California's EPA-approved emissions standards for new on-road vehicles and new and existing nonroad vehicles and engines.
- Regulate emissions from existing on-road motor vehicles.
- Regulate motor vehicle ownership, operation, and use within their borders.
- Regulate emissions from indirect sources of diesel pollution.
- Adopt proprietary or voluntary policies designed to reduce diesel emissions.

Unless otherwise preempted under state law, local governments generally possess the same regulatory authorities that state governments possess. However, as section B explained, Oregon restricts local governments from regulating in certain contexts. Part IV presents a variety of strategies local governments can pursue to reduce diesel emissions while avoiding preemptive constraints under federal and state law.

EXAMPLES OF GENERALLY PERMISSIBLE STATE & LOCAL EMISSIONS CONTROLS

State and local governments may regulate emissions from existing on-road diesel vehicles.

State and local governments may regulate aggregate emissions from indirect sources of air pollution (e.g., construction sites).

State and local governments may adopt clean vehicle standards for publicly owned fleets.

IV. LOCAL STRATEGIES TO REDUCE DIESEL EMISSIONS

Diesel pollution presents a very serious public health threat for those who live and work in the Portland metropolitan area. Fortunately, the City of Portland and Multnomah County have a variety of tools at their disposal to address the area's diesel problem.[13] Oregon's local governments, including the City and County, generally have authority to adopt regulations and policies to protect the health and safety of local residents and the environment. The City and County can exercise their so-called "police powers" to target diesel emissions by regulating vehicle use and operation within their respective jurisdictional boundaries. The City and County can also act in a proprietary capacity to phase out dirty diesel engines in public fleets and in private fleets operating under public contracts. In addition, the City and County can incentivize private parties to voluntarily transition to cleaner vehicles and engines.

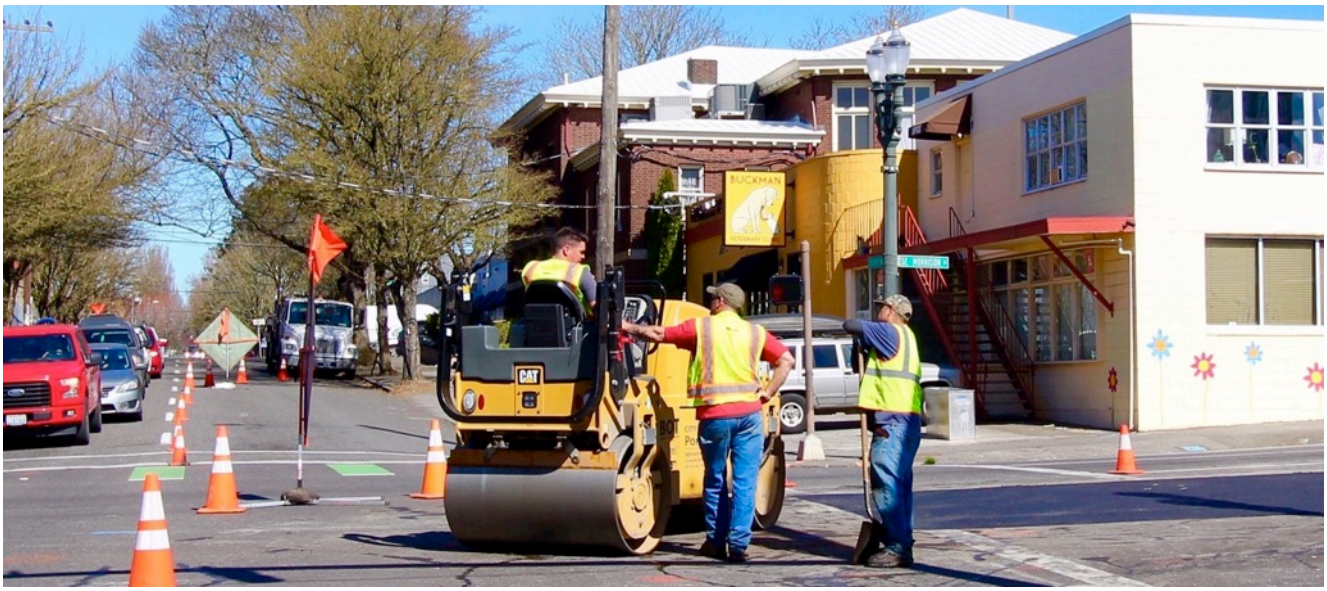
Local governments must balance an assortment of diverse, and potentially conflicting, considerations and concerns when adopting policies that could have widespread social, economic, and/or environmental impacts. On a general level, policies should provide a public benefit while minimizing public harm. In practice, however, the distinction between benefits and harms can be difficult to discern. For example, a diesel reduction policy may benefit a group

A diesel truck passes by residential condos and outdoor dining in Southeast Portland.

of people by reducing their exposure to toxic air pollution, but also impose additional compliance costs on the group. Local policy makers must also consider and balance a policy's near-term economic impacts with the long-term costs of inaction. For example, a diesel reduction policy may impose relatively high near-term compliance costs, yet avoid decades of diesel-related health care costs for local communities.

The following sections present a variety of regulatory, proprietary, and voluntary strategies to reduce diesel emissions in the Portland metropolitan area. The strategies outlined in this Roadmap were selected due to their potential to achieve meaningful, long-term reductions in diesel emissions while balancing competing legal, social, economic, and environmental considerations. In general, each strategy outlined in this Roadmap is intended to be **effective at achieving public policy objectives** (*i.e.,* reducing diesel emissions), relatively **feasible to implement** under existing political and regulatory frameworks, and **legally justifiable** (*i.e.,* likely capable of surviving a legal challenge). While each of the strategies described below will impose some costs on the private or public sector, strategies with completely unrealistic or infeasible economic impacts were omitted from this analysis. (For example, the City could effectively reduce diesel emissions by purchasing low-emissions vehicles to replace every privately owned diesel vehicle operating in Portland, but the costs to do so would be extremely high.) Strategies that would impose disproportionate economic burdens on frontline communities were also omitted.

Section A presents strategies for addressing emissions from on-road vehicles and section B presents strategies targeting nonroad emissions. Section C outlines a series of statewide legislative and regulatory solutions that would complement local efforts to reduce emissions. Finally, section D describes potential strategies for raising revenue to fund local diesel reduction efforts.



In 2018, the City of Portland and Multnomah County adopted clean air construction requirements for public works projects.

A. Reducing Emissions from On-Road Diesel Vehicles

A large portion of the Portland area's diesel pollution comes from emissions from large, on-road diesel vehicles, particularly trucks and buses. Exhaust from medium-duty and heavy-duty diesel vehicles contributes to air pollution throughout the metropolitan area, and these emissions are directly responsible for elevated diesel particulate matter concentrations near highways and high-traffic local roads. Unfortunately, the City and County generally lack authority to prohibit new diesel vehicle purchases or restrict diesel vehicle registrations. However, the City and County have considerable authority to regulate the operation and use of vehicles along local roads within their respective jurisdictions. The City and County also have authority to promote or require the use of clean diesel vehicles and practices through public procurement policies and public contracts. Finally, the City and County have broad discretion to implement voluntary programs that incentivize private parties to transition to clean diesel vehicles.

Local On-Road Emissions Reduction Strategies

- **Impose restrictions on truck traffic and parking:**
  - Establish **mandatory truck routes** and prohibit truck traffic on alternate routes, particularly along roads near schools or hospitals or in communities with elevated levels of diesel pollution
  - Establish **time of day truck routes** to reduce on-road emissions during high-traffic periods
  - **Restrict truck loading zone hours** to encourage off-hours deliveries
  - Establish voluntary clean diesel and diesel-free zones on public and private property
  - Impose **dynamic road user fees** on heavy-duty diesel vehicles through time-of-day or zone-based tolls
- **Adopt clean fleet requirements:**
  - Establish City and County **clean fleet requirements** for public fleets, public contractors, and local franchises
  - Encourage the Port of Portland to adopt **voluntary drayage fleet standards** for diesel drayage trucks operating under contract with the Port
- **Restrict diesel vehicle idling:**
  - Restrict idling on public school property by school buses and diesel delivery vehicles
  - Impose idling restrictions through public contracts
  - Enforce state idling laws
  - Educate property owners and vehicle operators of idling-related costs and emissions
- **Promote the transition to electric trucks and buses:**
  - Develop a plan to deploy heavy-duty EV charging infrastructure
  - Encourage TriMet to electrify its bus fleet on an accelerated schedule

B. Reducing Emissions from Nonroad Engines and Indirect Sources of Diesel Pollution

Nonroad engines and vehicles are the largest categorical source of diesel particulate matter pollution in the Portland metropolitan area.[14] Construction machinery, ships, locomotives, and diesel-fueled lawn and garden equipment all contribute to the area's diesel pollution problem. Construction sites and other indirect sources of air pollution, such as ports, rail yards, shipping terminals, and industrial facilities, emit large amounts of diesel pollution in localized areas, particularly during daytime hours. These sites are commonly located near minority and low-income communities that are disproportionately impacted by poor air quality and pollution. To address diesel emissions from nonroad sources, the City of Portland and Multnomah County should establish targeted programs to reduce emissions from construction sites, other indirect sources (such as railyards and commercial shipping terminals), and lawn and garden equipment.

Local Nonroad and Indirect Source Emissions Reduction Strategies

- **Reduce construction-related emissions:**
  - Adopt **in-use diesel pollution control requirements** for construction sites operating under City or County permits
  - Establish a **voluntary cleaner diesel construction designation** for contractors operating tier 4 equipment
- **Adopt indirect source rules** that require aggregate emissions reductions from all mobile sources (including on-road and nonroad diesel vehicles and engines) operating within the source's boundaries
- **Establish a lawn and garden equipment rebate program** to incentivize local homeowners and lawn care contractors to replace high-emissions equipment with electric models



C. Advocate for Legislative Solutions

While the policies described above have the potential to achieve meaningful diesel emissions reductions within the Portland metropolitan area, the state government has authority to adopt additional diesel reduction policies that may be preempted or infeasible to implement at the local level. The City and County can encourage the Oregon legislature and the state Environmental Quality Commission (EQC) to pursue diesel reduction strategies that would improve air quality at the local level. With approximately 20% of Oregon's population residing in Portland and Multnomah County,[15] the City and County have a certain degree of political influence at the state level. To protect the health and wellbeing of local communities, the City and County should encourage the Oregon legislature and the Oregon Environmental Quality Commission (EQC) to adopt legislation and regulations that will facilitate diesel emissions reduction efforts at the local level.

1. Legislative Strategies. The City and County should encourage the Oregon legislature to make the following changes to Oregon's existing laws to reduce diesel emissions at the state and local levels:

- **Eliminate the statewide idling preemption** to allow local governments to regulate idling of commercial diesel vehicles
- **Eliminate the statewide pollution control equipment exemptions** for heavy-duty diesel vehicles, including proportionally registered vehicles,[16] which is a necessary first step toward regulating emissions from heavy-duty diesel vehicles operating in the Portland area
- **Eliminate the statewide registration exemption for nonroad vehicles,** which prevents the City and County from collecting information on the quantities, types, and ages of nonroad equipment operating in the Portland metropolitan area
- Allow local governments to **adopt more stringent registration requirements** and conditions for vehicles registered within their borders

2. Regulatory Strategies. The City and County should petition the EQC to take the following regulatory actions to address diesel pollution:

- **Strengthen the EQC's indirect source rules** and remove the regulatory restriction on local indirect source rules
- **Require emissions control system inspections** for heavy-duty diesel vehicles
- **Adopt on-road performance standards** for existing medium-duty and heavy-duty diesel vehicles
- **Adopt California's nonroad emissions standards** to facilitate the replacement of older engines with equipment meeting tier 4 emissions standards

D. Funding the Clean Diesel Transition

In Oregon, local governments face unique challenges to acquiring funding for diesel reduction programs. Unlike most state constitutions, the Oregon Constitution significantly restricts how the state and local governments may spend motor vehicle-related revenues. Article IX, section 3a of the Oregon Constitution mandates that all taxes on motor vehicle fuels and taxes and fees levied on motor vehicle operation and use (such as driver's license fees and vehicle title and registration fees) be used for specified highway purposes. As a result, revenue streams that commonly fund diesel reduction efforts in other states are largely off-limits to Oregon's local governments. The City and County can use revenues from their own general funds to finance diesel reduction efforts, and/or seek federal or state funding to support local diesel reduction programs. To raise additional funding for local diesel programs while avoiding Oregon's constitutional constraints, the City and County should consider raising revenues through permit fees, privilege and sales taxes, and penalties for violations of local regulations.

Funding Strategies:

- **Increase permit fees** for local projects that will produce diesel pollution, such as large construction projects
- **Levy privilege taxes** on dealers or vendors that sell diesel-fueled vehicles or engines, and levy sales taxes on diesel-fueled equipment
- **Impose penalties and fines** for violations of diesel-related ordinances, such as truck route or idling violations

V. CONCLUSION

Diesel pollution in the Portland metropolitan area adversely affects the health and welfare of local residents and negatively impacts the local environment. Fortunately, the City of Portland and Multnomah County have the authority and opportunity to pursue a variety of strategies to address the area's dirty diesel issues. By implementing a combination of regulatory requirements, proprietary initiatives, voluntary incentives, and educational programs, the City and County can effectively reduce local diesel emissions. Moreover, the City and County can design and implement their diesel reduction strategies to provide new economic opportunities for local businesses and promote deployment of newer, cleaner technologies.

To meet the City's and County's long-term climate and energy targets, Portland and Multnomah County must ultimately shift away from diesel fuel and transition to electric and alternatively fueled vehicles and engines. Until this transition is complete, the City and County should prioritize strategies that reduce diesel pollution and minimize negative economic impacts in vulnerable frontline communities. By working together and collaborating with community groups, diesel-intensive industries, and other local stakeholders, Portland and Multnomah County can help create a cleaner, healthier urban environment for current and future generations.

EXECUTIVE SUMMARY END NOTES

[1] *HB 3310: Hearing Before the H. Comm. on Health Care,* 78th Or. Leg. Assem. (Mar. 31, 2015) (testimony of Jae Douglas, Multnomah County Environmental Health Dir.), https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/58247.
[2] 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 Factsheet]. 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.
[3] PATS FACTSHEET, *supra* note 2, at 5.
[4] Multnomah County Health Dept., 2014 Report Card on Racial and Ethnic Disparities 31 (2014), https://multco.us/file/37530/download.
[5] Damian Carrington, *Diesel Pollution Stunts Children's Lung Growth, Major Study Shows,* THEGUARDIAN.COM (Nov. 14, 2018), https://www.theguardian.com/environment/2018/nov/14/diesel-pollution-stunts-childrens-lung-growth-london-study-shows.
[6] OR. DEPT. OF ENVT'L QUALITY, THE CONCERNS ABOUT DIESEL ENGINE EXHAUST 6 (2015), http://www.oregon.gov/deq/FilterDocs/DieselEffectsReport.pdf [hereinafter DEQ 2015 DIESEL REPORT].
[7] *Id.* at 7.
[8] *Id.* at 4–6.
[9] In 2019, the Oregon Legislature passed a bill to reduce diesel emissions in the Portland metropolitan area (including Multnomah, Clackamas, and Washington Counties) by prohibiting the titling of pre-2007 heavy-duty trucks (HDVs) and pre-2010 medium-duty trucks (MDVs) starting in 2025, prohibiting registration of pre-1997 trucks starting in 2023, and prohibiting registration of pre-2007 HDVs and pre-2010 MDVs starting in 2029. HB 2007, 80th Or. Leg. Assem. (2019).
[10] 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].
[11] The Oregon Environmental Quality Commission has adopted a health-based ambient benchmark concentration for diesel particulate matter of 0.1 micrograms per cubic meter ($\mu g/m^3$). 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.
[12] PATS POLLUTANT MODELING SUMMARY, *supra* note 10, at 6.
[13] Unless expressly authorized by statute, administrative restrictions on local authority, such as the EQC's restrictions on local indirect source regulation, very likely interfere with local home rule authority protected under the Oregon Constitution. However, though state agencies have limited authority to preempt local regulation, administrative rules that prohibit local regulation tend to deter local action.
[14] In this Roadmap, the "City" and the "County" refer to Portland's and Multnomah County's municipal and county governments, respectively. The "Portland metropolitan area" refers to the geographic area encompassing Portland and Multnomah County, as well as portions of adjacent Clackamas and Washington counties.
[15] PATS POLLUTANT MODELING SUMMARY, *supra* note 10, at 6.
[16] As of July 2017, Multnomah County had a population of 807,555 people. U.S. Census Bureau, *Quick Facts: Multnomah County, Oregon* (July 1, 2017), https://www.census.gov/quickfacts/multnomahcountyoregon. Oregon had a statewide population of 4,142,776. U.S. Census Bureau, *Quick Facts: Oregon* (July 1, 2017), https://www.census.gov/quickfacts/fact/table/or,US/PST045217.
[17] Proportionally registered vehicles are commercial vehicles that are registered in more than one state. OR. REV. STAT. § 815.300(7), (8), 801.285.

1 INTRODUCTION

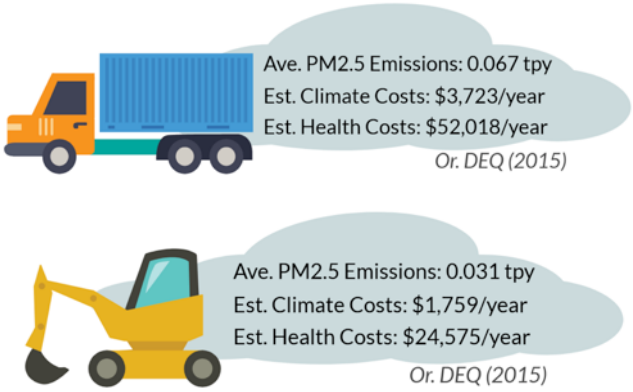
Diesel pollution is a profoundly serious problem in Portland, Oregon, and the surrounding area. Multnomah County, which encompasses the city of Portland and is home to nearly twenty percent of Oregon's population, has one of the highest rates of diesel exhaust exposure in the United States.[1] Diesel exhaust contains toxic air pollutants that threaten the health of area residents and contribute to global climate change. Portland-area residents are regularly exposed to levels of diesel pollution that far exceed Oregon's health-based air quality benchmarks.[2] Exposure to diesel pollution places local residents at higher risk of developing cancer, heart attack, stroke, cardiovascular disease, and respiratory disorders. Low-income and minority communities are exposed to disparately high levels of diesel pollution and are disproportionately impacted by the adverse health effects associated with diesel exhaust.[3] Children are particularly vulnerable to diesel pollution, which can cause permanent damage to growing lungs.[4]

The health and environmental impacts associated with diesel pollution impose serious social, emotional, and economic strains on Portland's communities. On a statewide level, diesel-related impacts are estimated to cost the state more than $1.8 billion a year.[5] Efforts to reduce diesel emissions can therefore create far-reaching benefits for Oregon residents, and particularly those who live and work in the Portland metropolitan area. If quick action is taken to address the diesel pollution problem, **Oregon could prevent an estimated 460 premature deaths and save the state $3.5 billion each year** through avoided illnesses, fatalities, and environmental damage.[6] Early action to reduce diesel emissions can also produce long-term climate benefits by reducing atmospheric concentrations of black carbon. Commonly known as "soot," black carbon is a type of particulate matter that significantly contributes to climate change by directly absorbing solar radiation. Diesel emissions are one of the primary sources of black carbon. While black carbon is a very potent climate forcer, it is also short-lived, remaining in the atmosphere for days or weeks rather than decades. Short-term reductions in diesel black carbon emissions can therefore have a profound impact on the global climate.[7]

To reduce the significant health and environmental risks associated with diesel exhaust, local governments must implement effective strategies to reduce diesel pollution in the Portland area. Conceptually, reducing diesel pollution is a straightforward endeavor—if we reduce diesel fuel consumption, we will reduce diesel pollution. On a practical level, however, complex legal frameworks restrict local authority to limit fuel consumption and regulate motor vehicle emissions. Several federal and state laws prohibit or restrict local governments from regulating motor vehicles in various contexts, and the federal and state governments are unlikely to eliminate these legal restrictions in the near future. In response to this reality, this report specifically focuses on identifying local strategies to reduce diesel pollution that do not require legislative or regulatory action at the federal or state levels.

Diesel exhaust contains several types of toxic air pollutants, including fine particulate matter, nitrogen oxides, and black carbon. The largest sources of diesel pollution in the Portland metropolitan area are heavy-duty **on-road diesel vehicles**, such as diesel trucks, buses, and on-road construction vehicles, and **nonroad diesel vehicles** and engines, such as off-road construction equipment, locomotives, ships, and lawn equipment.

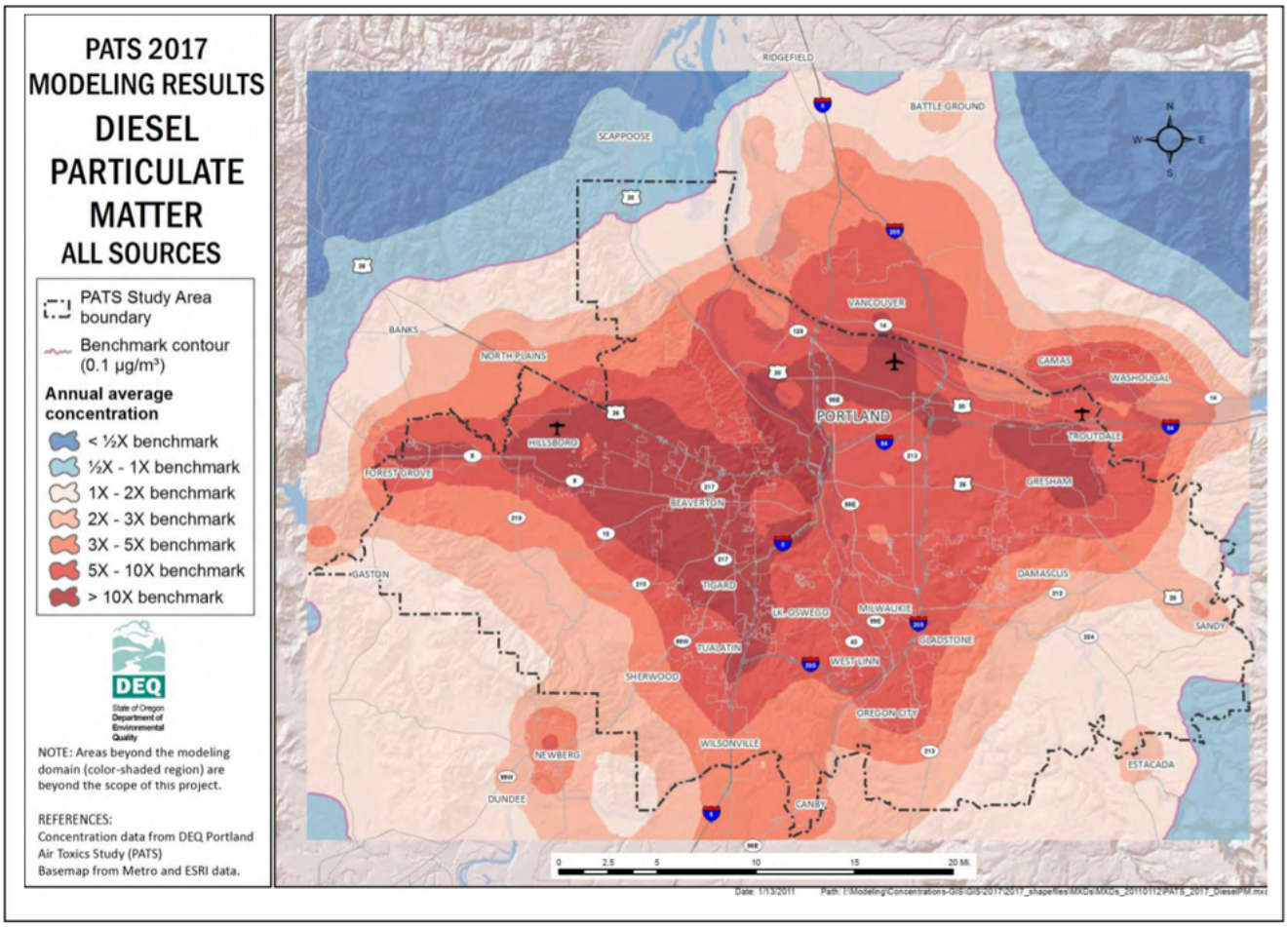
HEALTH & CLIMATE COSTS ASSOCIATED WITH AN AVERAGE DIESEL TRUCK & EXCAVATOR



Collectively, these on-road and nonroad vehicles and engines are "**mobile sources**" of diesel pollution. Older diesel vehicles and engines emit much higher levels of air pollution than newer vehicles and engines. In an effort to protect residents from harmful diesel exhaust, California is in the process of phasing-out older diesel vehicles from its public and private fleets. In contrast, Oregon has taken few, if any, steps to deter the use of older, dirtier diesel vehicles in the state. As a result, many old, dirty diesel vehicles from California are being sold into Oregon, which means that Portland's diesel problem will continue to worsen if the City of Portland and Multnomah County fail to take action.[8]

This analysis focuses on strategies to reduce diesel pollution in Portland and Multnomah County for several reasons. First, Portland and Multnomah County have the highest levels of diesel exhaust and associated air pollution concentrations in Oregon. Second, air monitoring studies have identified dangerously high levels of toxic diesel pollution concentrations in the Portland metropolitan area. Given the area's population density, Portland-area residents are at much higher risk of suffering health impacts related to diesel exhaust exposure than Oregonians living in less urban areas. The transportation sector is the largest source of air toxics in Portland and Multnomah County, and reducing diesel emissions from mobile sources is a public health priority for the region.[9]

The governments of Portland and Multnomah County have both demonstrated a desire and commitment to reduce diesel pollution within the metropolitan area. However, the City and County face a number of legal hurdles in turning these objectives into actions. First, several federal and state laws act to limit or prohibit local diesel regulation. For example, the federal **Clean Air Act (CAA)** grants the **U.S. Environmental Protection Agency (EPA)** authority to establish emissions standards for new motor vehicles and engines and prohibits states from adopting their own emissions standards for these mobile sources.[10] This restriction of state legal and regulatory authority is known as "preemption," which means that a higher



Map from PATS 2017 Pollutant Modeling Summary (DEQ 2011)

legal authority generally supersedes a conflicting lower legal authority.[11] Laws adopted by the higher federal government can preempt those adopted by the lower state governments. Similarly, because local municipalities and counties are political subdivisions of a state, state laws can preempt local government regulations. In Oregon, some state laws prohibit local governments from regulating diesel pollution in certain contexts. For example, Oregon law preempts local governments from adopting their own restrictions on commercial vehicle idling, an activity that exacerbates local diesel pollution levels.

Second, multiple regulatory entities have overlapping and at times conflicting jurisdiction over motor vehicles and diesel-emitting activities. In the legislative and regulatory contexts, "jurisdiction" refers to a government body's authority to adopt and administer laws and regulations. At the federal level, EPA has jurisdiction over federal vehicle emissions standards and has near-exclusive authority to adopt and enforce these standards. The **U.S. Department of Transportation (USDOT)** promulgates federal fuel economy standards and has regulatory jurisdiction over the interstate highway system and commercial motor vehicle safety. At the state level, the **Oregon Department of Environmental Quality (DEQ)** and its governing body, the **Environmental Quality Commission (EQC)**, have jurisdiction over air quality regulation, while the **Oregon Department of Transportation (ODOT)** has jurisdiction over the transportation sector. Federal and state regulatory jurisdictions often overlap, which can create practical challenges for state and local governments that wish to regulate in a certain area. In some contexts, local governments share jurisdiction with federal and state regulators. For

example, the City of Portland, USDOT, and ODOT all share a certain amount of regulatory authority over the portion of I-5 running through Portland. In other contexts, local government jurisdiction is superseded by federal and state entities. In practice, overlapping jurisdictions can contribute to regulatory inertia if regulatory agencies assume their federal, state, or local counterparts have exclusive jurisdiction over specific entities or activities.

Similarly to the federal regulatory framework, several local governmental entities share jurisdiction over the transportation system in the Portland metropolitan area. The City generally has regulatory jurisdiction within the city limits, while the County generally has regulatory jurisdiction over unincorporated areas within the county. The City and County collaborate on many issues, and the County implements planning and sustainability-related initiatives on a county-wide scale. The City and County also share jurisdiction with Metro, the metropolitan service district and planning organization for the Portland metropolitan area.[12] Metro engages in regional transportation planning and works with the City, County, and local transit agencies to coordinate regional transportation system investments. TriMet (the Tri-County

Metropolitan Transportation District of Oregon), the public transit provider for the Portland metropolitan area, is a separate municipal entity with its own governing body and administrative rules codified in the TriMet Code.[13] In practice, these local government entities often work together through joint initiatives, investments, and planning efforts. At times, however, the lack of a clear jurisdictional hierarchy at the local level can create regulatory challenges, particularly if a regulatory objective necessitates action by multiple local government entities.

Third, in the diesel pollution context, the scope of local regulatory power is often unclear or undefined. For example, under federal law, state and local governments retain broad discretion to regulate the use, operation, or movement of motor vehicles. At the state and local levels, however, the scope of this authority is often unclear. Oregon law gives local governments authority to restrict traffic if certain conditions exist, but it may be difficult for local governments to determine when those threshold conditions are met.[14] Similarly, the CAA gives states discretion to determine whether and how to regulate emissions from "indirect" sources of air pollution, which are locations or facilities that attract mobile sources of air pollution.[15] Oregon's air pollution laws do not expressly restrict or limit local governments from regulating the aggregate emissions from indirect sources. However, the EQC has adopted indirect source regulations with limited applicability that aim to prevent local governments from establishing more effective local programs to address indirect source emissions. It is unlikely that the EQC's regulations legally preempt local authority, but they may act as a deterrent to local governments. A lack of clarity has resulted in regulatory gaps that allow diesel pollution to continue unabated.

When it is unclear whether a statute or regulation allows for or restricts local government jurisdiction in a specific context, courts often determine the scope of local authority. In some regulatory contexts, judicial decisions clearly delineate the extent and limit of local government jurisdiction.[16] In other contexts, courts have declined to define the scope of local regulatory authority or established vague standards for determining whether local regulation is permissible. Moreover, some ambiguous statutory restrictions on local authority have never been challenged in court, so no case law is available to clarify the scope of local jurisdiction. As a result, it may be impossible to definitively determine whether a local government has authority to adopt specific regulatory requirements. In these instances, local governments should decide whether a proposed regulation's local benefits will outweigh the risk that the regulation may not survive a legal challenge.

Despite the hurdles and challenges described above, local governments are currently working both collaboratively and independently to reduce diesel pollution in the Portland region. The City and County worked with Metro, the Port of Portland, and Clackamas County to adopt a regional clean diesel procurement policy that will require public contractors to use clean diesel equipment when working on public projects.[17] The County's and City's Clean Air Construction Standards will go into effect on January 1, 2020.[18] The City of Portland has adopted Clean and Efficient Fleet requirements for garbage and recycling franchises[19] and is actively working to transition city fleets to electric and alternative-fuel vehicles.[20] Multnomah County recently resolved to work with TriMet to "complete a rapid transition to an all-electric bus fleet."[21]

Oregon has also adopted several policies that aim to reduce diesel pollution statewide. The state's Clean Diesel Engine Fund aims to provide grants and loans to help fund the replacement or retrofit of older diesel vehicles and equipment.[22] Financed in part by funds received under Oregon's Volkswagen (VW) settlement agreement, the Clean Diesel Engine Fund prioritizes grants to replace or retrofit 450 diesel school buses.[23] Oregon's Zero-Emission Incentive Fund and Charge Ahead Program will use revenues from the state's vehicle privilege tax to fund rebates for electric and zero-emissions vehicles.[24] The state has also adopted California's zero-emissions vehicle (ZEVs) sales mandate that requires 22% of new passenger cars sold in Oregon to be ZEVs by 2025.[25] And in 2019, the Oregon legislature passed a bill to gradually restrict titling and registration of many older diesel trucks in the Portland metropolitan area over the next decade.[26]

While these state and local efforts will help reduce diesel pollution in Oregon, they target only a subset of the diesel vehicles and engines currently operating in the Portland area. To effectively address the region's diesel pollution problem, Portland and Multnomah County must take additional action to reduce emissions from existing heavy-duty diesel vehicles and nonroad diesel vehicles and engines. Although certain regulatory actions are clearly preempted by state or federal law, the City and County have authority to implement a variety of policies and programs to reduce air pollution from on-road and nonroad diesel vehicles and engines. This report aims to inform local policymakers and community stakeholders of the legal barriers to local diesel regulation and identify legally sound strategies that the City and County can pursue to effectively reduce local diesel pollution.

Part II briefly describes the primary air pollutants in diesel exhaust and the health and environmental impacts associated with these pollutants. Part III explores the legal limitations associated with regulating diesel emissions and discusses the scope of state and local regulatory jurisdiction over on-road and off-road diesel vehicles and engines. Part IV recommends strategies for the City and County to pursue to reduce diesel pollution while avoiding preemption under state and federal law.

II PORTLAND'S DIESEL POLLUTION PROBLEM

Diesel vehicles and engines emit a variety of air pollutants, including particulate matter, nitrogen oxides, and black carbon, which negatively impact human health and contribute to climate change. Any exposure to diesel particulate matter presents risks to human health, and more than 90% of Oregonians may face an elevated risk of developing cancer due to diesel pollution.[27] In the Portland metropolitan area, the transportation and construction sectors are the largest sources of toxic diesel pollution. **The health and climate-related impacts associated with Oregon's diesel pollution are estimated to cost the state's economy more than $1.8 billion a year.**[28]

Portland-area residents are exposed to dangerously high levels of diesel pollution: on a city-wide basis, Portland's average diesel particulate matter concentrations are estimated to be more than ten times higher than Oregon's health-based particulate matter benchmark concentration.[29] Many neighborhoods face even higher concentrations of diesel particulate matter pollution. Recent testing by Portland State University detected localized diesel particulate concentrations that were up to 20 times higher than the state's particulate matter benchmarks.[30] Low-income and minority populations are disproportionately impacted by diesel pollution and face elevated health risks resulting from diesel exhaust exposure.[31] Communities of color may be exposed to diesel pollution concentrations that are two to three times higher than the city's average concentrations.[32]

Oregon's diesel emissions inflict substantial societal and economic costs on the state. DEQ estimates that diesel-related health impacts cost the state's economy $1.6 billion per year, while black carbon-related climate impacts cost the state an estimated $274 million per year.[33] 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.[34]

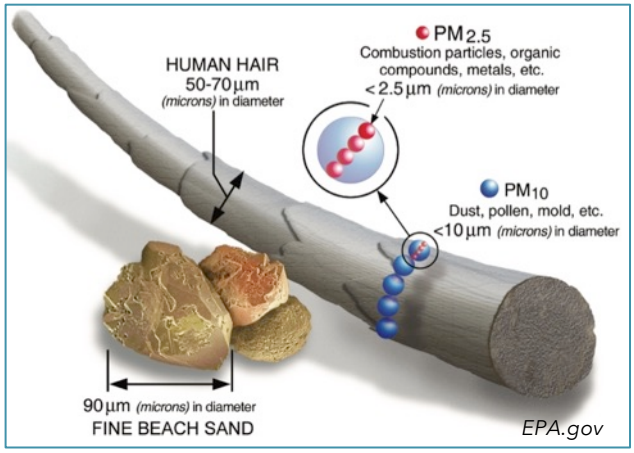
This Part provides a brief overview of diesel pollution and its impacts in Oregon and the Portland metropolitan area. Section A describes the primary toxic air pollutants in diesel exhaust. Section B briefly describes the health and climate impacts associated with diesel pollution. Section C describes the main sources of diesel pollution within the Portland metropolitan area.

A. DIESEL POLLUTION: A BRIEF OVERVIEW

Diesel exhaust contains a variety of toxic pollutants and climate-forcing compounds. The primary pollutants contained in diesel exhaust are particulate matter, black carbon (a type of fine particulate matter), and nitrogen oxides. These pollutants all have negative impacts on human health and the environment.

1. PARTICULATE MATTER

Fine particulate matter is the most prevalent air pollutant in diesel exhaust. Particulate matter is a designated criteria pollutant under the Clean Air Act (CAA) that is subject to **national ambient air quality standards (NAAQS)**.[35] Particulate matter is comprised of microscopic particles of various compounds, such as dust, smoke, or soot, that are easily inhaled deep into the lungs.[36] Diesel exhaust is primarily comprised of **fine particulate matter ($PM_{2.5}$)**,[37] the smallest and potentially the most dangerous type of particulate matter. $PM_{2.5}$ is capable of entering the bloodstream, where it can be transported to other areas of the body. $PM_{2.5}$ exposure can negatively impact the respiratory, cardiovascular, and nervous systems.



2. BLACK CARBON

Black carbon is a dark-colored type of $PM_{2.5}$ that absorbs sunlight. Approximately 75% of the particulate matter emitted from diesel engines is black carbon.[38] Like all $PM_{2.5}$, black carbon can be inhaled deep into the lungs and can have a negative impact on respiratory, cardiovascular, and nervous system functions. Black carbon exposure has also been shown to decrease cognitive functioning in children and the elderly.[39] In addition to these health impacts, black carbon is a potent climate forcer that warms the atmosphere by absorbing solar radiation and re-emitting it as heat.[40] Black carbon emissions are second only to carbon dioxide (CO_2) emissions in their impact on anthropogenic climate change.[41] Diesel vehicles are one of the largest source of black carbon emissions in the United States; in 2005, nearly 50% of U.S. black carbon emissions were produced by diesel engines.[42]

3. NITROGEN OXIDES

Nitrogen oxides (NO_x) are a category of gases that react with other air pollutants to create ground-level ozone, particulate matter, and acid rain.[43] Nitrogen dioxide (NO_2), like particulate matter, is also a designated criteria pollutant subject to NAAQS.[44] NO_2 can irritate or damage the respiratory system and exacerbate asthma. NO_x, including NO_2, can combine with volatile organic compounds (VOCs) to create ground-level ozone (smog), which can also cause respiratory issues.

B. DIESEL'S HEALTH AND CLIMATE IMPACTS

Diesel exhaust negatively impacts the health of Oregon residents and contributes to climate change. The toxic compounds in diesel pollution have been linked with increased rates of cancer, heart disease, and respiratory illnesses. Diesel fuel combustion emits carbon dioxide and black carbon, which contribute to near-term and long-term global temperature increases.

1. HEALTH IMPACTS

Diesel pollution is associated with a range of health conditions and diseases. The World Health Organization classifies diesel exhaust as a known human carcinogen.[45] Exposure to diesel exhaust increases lung and bladder cancer risks.[46] Diesel pollution has also been tied to cardiovascular disease and respiratory disorders.[47] Exposure to diesel exhaust increases the risk of heart attacks and asthma attacks.

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**.[48] 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 ($\mu g/m^3$).[49] Areas of Multnomah County with the highest concentrations of diesel exhaust have estimated cancer risks of 542-in-1,000,000,[50] which is more than 500 times higher than the additional cancer risk associated with the EQC's benchmarks.[51] 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 a year.[52]

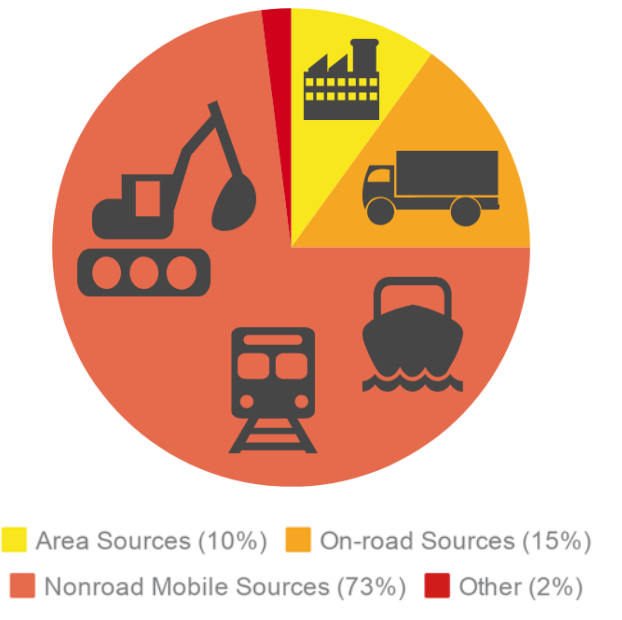
2. CLIMATE IMPACTS

Diesel fuel consumption is a major contributor to human-caused climate change. One gallon of diesel fuel emits approximately 22.4 pounds of CO_2;[53] on a per-gallon basis, diesel fuel combustion produces more CO_2 than gasoline.[54] But the particulate and black carbon emissions from diesel combustion have an even greater impact on climate change. Approximately 70% of the particulate matter in diesel exhaust is emitted as black carbon, which is an extremely potent short-lived climate forcer.[55] Black carbon impacts global temperatures in three ways. First, it absorbs solar radiation in the atmosphere and then re-emits that radiation as heat.[56] 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.[57] And third, black carbon alters the reflectivity, stability, and precipitation from clouds.[58] A 2015 DEQ analysis estimated that **black carbon emissions from diesel engines cause $274 million in annual climate-related impacts in Oregon**.[59] 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.

C. SOURCES OF DIESEL 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, buses, waste collection vehicles, and emergency vehicles, such as fire engines. Nonroad diesel vehicles and engines include most construction equipment, off-road vehicles, agricultural vehicles, lawn and garden equipment, trains, and marine vessels. According to the 2011 **Portland Air Toxics Solutions (PATS)** study, on-road and nonroad diesel engines collectively emit more than 472 tons of particulate matter pollution in Portland each year.[60] These mobile sources are responsible for approximately 90% of the diesel particulate matter pollution in the Portland metropolitan area.[61]

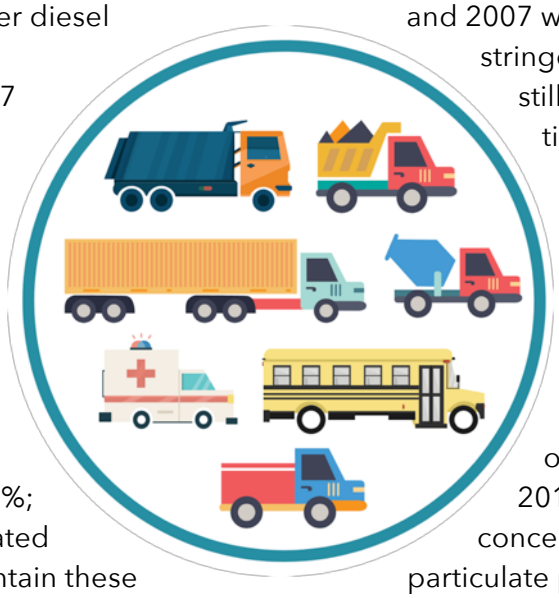
FIG. 1
DIESEL POLLUTION SOURCES IN PORTLAND



DATA FROM DEQ PATS STUDY (2011)

1. ON-ROAD DIESEL VEHICLES

Though only approximately 6% of Oregon's on-road vehicles are powered by diesel fuel,[62] these vehicles consume 29% of all transportation fuel used in Oregon and are responsible for more than half of Oregon's transportation-related air pollution.[63] **Between 40,000 to 60,000 trucks travel on Portland's highways on a daily basis.**[64] Diesel trucks, buses, and other heavy-duty diesel vehicles, such as fire trucks, garbage trucks, and on-road construction vehicles (*e.g.*, dump trucks) can emit large quantities of particulate matter and other diesel pollutants. Diesel trucks manufactured prior to 2007 that have not been retrofitted with particulate filters emit ten times more particulate matter than new trucks. Vehicle owners can retrofit older diesel trucks with filters that reduce particulate matter emissions by 85–95%; however, it costs an estimated $16,000 to install and maintain these filters,[65] and vehicle owners lack incentives to make this additional investment.



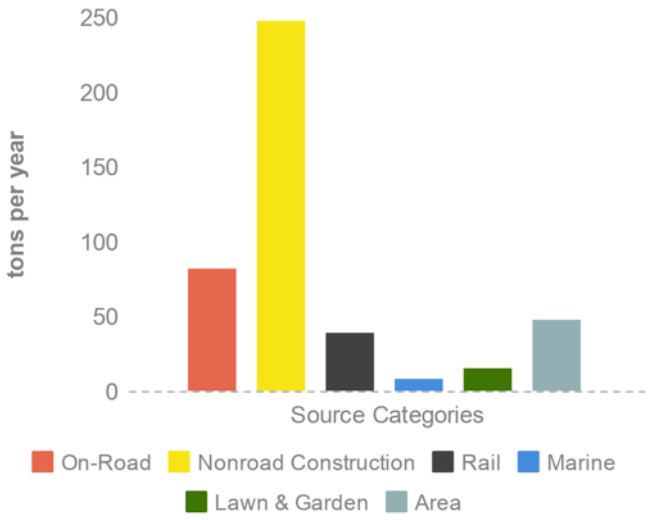
Heavy-duty diesel vehicle manufacturers must comply with federal EPA emissions standards for the applicable model year. EPA's emissions standards for heavy-duty diesel vehicles have increased in stringency over time. The current federal standards limit particulate matter emissions to 0.01 grams per brake-horsepower hour (g/bhp-h).[66] These standards apply to heavy-duty diesel vehicles manufactured in 2007 and subsequent years. EPA's emissions standards for pre-2007 model years were much less stringent than the current standards, and heavy-duty diesel vehicles manufactured prior to 1988 were not subject to federal particulate matter emissions standards at all.[67] As a result, diesel trucks manufactured before 2007 may emit at least ten times as much particulate pollution as newer trucks, with the oldest trucks potentially emitting more than 60 times more pollutants than new trucks.[68] Urban buses manufactured between 1994 and 2007 were subject to slightly more stringent standards, but older buses still emit between five and ten times more particulate matter than newer buses.[69]

According to pollutant modeling by DEQ's PATS Advisory Committee, on-road diesel vehicles in the Portland metropolitan area emit an estimated 81.7 tons per year of toxic particulate matter.[70] In 2010, Portland's average concentrations of on-road diesel particulate pollution were more than 11 times higher than the state's health-based particulate matter benchmark.[71] PATS estimated that **on-road diesel emissions would need to decline by 91%**, or 74.4 tons per year, to achieve Oregon's particulate matter benchmark by 2017.[72]

Portland's current on-road particulate matter emissions are potentially much higher than the 2011 PATS study projections. A 2015 analysis by ODOT estimated that 13,600 to 17,800 heavy-duty freight trucks travel on the 25-mile segment of I-5 running through the

Portland metro area each day.[73] Based on EPA 2008 emissions averages, a heavy-duty diesel truck would emit approximately 5 grams of $PM_{2.5}$ driving through Portland on I-5.[74] On a daily basis, truck traffic along the I-5 corridor could emit 68,680 to 89,890 grams of $PM_{2.5}$ each day, and potentially as much as 36 tons of $PM_{2.5}$ each year. This does not account for the estimated 26,100 to 41,200 trucks traveling on Portland's other highways each day. When these other truck routes are factored in, based on ODOT's daily truck traffic estimations for I-205, I-84, I-405, and U.S. 26, freight traffic traveling through Portland could emit between 58 and 86 tons per year of $PM_{2.5}$.[75] While these emissions estimates are based on average in-use emissions rates for the 2008 heavy-duty diesel truck fleet, and therefore do not account for reductions in particulate matter emissions rates in newer trucks,[76] these estimates also do not include emissions from other types of diesel vehicles, such as buses, garbage trucks, or on-road construction vehicles, and they do not include emissions from diesel vehicle traffic on city streets and other local roads. As a result, it is highly likely that Portland's on-road diesel particulate emissions exceed the PATS estimate of 81.7 tons per year.

FIG. 2
PORTLAND 2017 ESTIMATED DIESEL PARTICULATE MATTER EMISSIONS BY SOURCE CATEGORY



DATA FROM DEQ PATS STUDY (2011)

2. NONROAD DIESEL VEHICLES AND ENGINES

According to the PATS modeling, the majority of Portland's diesel particulate pollution comes from nonroad diesel engines, which emit an estimated 344.8 tons per year of particulate matter.[77] 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.

Like on-road vehicles, nonroad vehicles and engines are required to comply with federal emissions standards for particulate matter and other pollutants. Nonroad emissions standards vary depending on engine size and type and are organized into tiers of increasing stringency. Tier 1 standards were phased in from 1996 to 2000, Tier 2 standards were phased in from 2001 to 2006, Tier 3 standards were phased in from 2006 to 2008, and Tier 4 standards were phased in from 2008 to 2015.[78] The most current Tier 4 nonroad standards for particulate matter emissions range from 0.4 grams per kilowatt-hour (g/kWh) to 0.02 g/kWh, depending on engine size.[79] Older nonroad engines emit much higher levels of particulate matter than

newer Tier 4 engines. For example, Tier 1 nonroad engines may emit between 13.5 to 27 times as much particulate matter as new Tier 4 engines.[80]

The PATS analysis split nonroad emissions into three sub-categories: construction emissions, rail emissions, and marine emissions. During the PATS modeling period, Portland's average concentration of diesel particulate pollution from construction equipment was more than 12 times higher than the state's health-based benchmark.[81] To achieve Oregon's particulate matter benchmark concentration by 2017, PATS estimated that construction emissions would need to be reduced by 92.5%.[82] This would equate to reducing construction-related diesel particulate emissions by 228.7 tons per year.[83] 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.[84] To achieve Oregon's benchmark concentrations, rail and marine particulate matter emissions would need to be reduced by 42.8 tons per year.[85]

To mitigate the adverse health and climate impacts from diesel pollution, the City and County must work together to reduce local emissions from diesel vehicles and engines. However, several legal barriers and jurisdictional hurdles constrain the local governments' authorities to address these emissions. Part III describes the legal dynamics that limit state and local authority to regulate diesel emissions.

TABLE 1

ESTIMATED DIESEL PARTICULATE MATTER EMISSIONS REDUCTIONS NEEDED TO MEET OREGON'S AMBIENT BENCHMARK CONCENTRATION

Source Category	Average Concentration ($\mu g/m^3$)	Estimated Emissions (tons per year)	Reductions Needed (tons per year)	Percentage Reduction
On-Road Mobile	1.117	81.7	74.4	91%
Nonroad Construction	1.22	247.3	228.7	92.5%
Rail	0.954	38.8	35.6	91.8%
Marine	0.819	8.0	7.2	89.5%
Lawn & Garden	1.33	15.1	14.0	92.3%

Oregon's Ambient Benchmark Concentration for diesel particulate matter is 0.1 micrograms per cubic meter ($\mu g/m^3$).
Data from DEQ Portland Air Toxics Solutions Study (2011).

III REGULATING DIESEL EMISSIONS: JURISDICTIONAL DYNAMICS AND LIMITATIONS

Several federal laws directly or indirectly regulate diesel vehicles and diesel emissions. For example, the **Clean Air Act (CAA)** directs EPA to establish motor vehicle emissions standards that vehicle manufacturers must comply with on a nationwide scale. Federal laws also establish vehicle fuel economy standards and regulate certain aspects of commercial vehicle traffic. In some instances, federal laws expressly preempt state and local governments from regulating in a certain area. In the motor vehicle context, the CAA expressly preempts states from adopting emissions standards for new vehicles and engines, unless California receives a waiver from preemption. Some state laws also contain preemption provisions restricting local regulatory jurisdiction over motor vehicles. For example, Oregon law expressly preempts local governments from regulating commercial vehicle idling. While these preemption provisions significantly restrict state and local regulation in certain contexts, state and local governments retain authority to regulate in other areas. Similarly, although the CAA preempts states from adopting emissions standards for new motor vehicles, states have authority to regulate vehicle use, operation, and movement, and they retain authority to regulate emissions from "indirect sources" of diesel pollution, such as construction sites, rail yards, and parking lots. In Oregon, local governments largely have jurisdiction to regulate in these areas as well.

This Part explores the scope and limits of state and local regulatory jurisdiction in the motor vehicle context. Section A describes the ways in which federal laws preempt or limit state authority to regulate diesel vehicles and engines. Section B explains how Oregon law restricts local government authority to regulate motor vehicles and diesel pollution. Section C describes the areas in which Oregon's state and local governments retain regulatory authority over vehicles and diesel pollution.

A. JURISDICTIONAL LIMITS UNDER FEDERAL LAW

The federal government has reserved nearly exclusive jurisdiction over motor vehicle design standards and limits state authority to adopt laws or regulations that burden certain vehicle-related industries. The CAA preempts state and local governments from adopting emissions standards for new motor vehicles and engines and certain types of existing vehicles and engines, unless California receives a waiver from preemption from EPA. The **Energy Policy and Conservation Act (EPCA)** preempts states from adopting fuel economy standards for most new and existing motor vehicles. Federal law also limits state and local authority to impose substantial economic restrictions or burdens on motor vehicles engaged in interstate commerce. The **Federal Aviation Administration Authorization Act (FAAAA)** preempts states and local governments from adopting economic regulations that directly affect certain aspects of commercial trucking. State and local governments are further restricted from imposing burdens on interstate commerce under the Commerce Clause of the U.S. Constitution. This section describes the ways in which these federal statutory and Constitutional provisions restrict or preempt state or local authority to regulate mobile sources of air pollution.

1. FEDERAL PREEMPTION UNDER SECTION 209 OF THE CLEAN AIR ACT

Mobile sources of air pollution, including both on-road and nonroad motor vehicles, are generally subject to regulation under Title II of the CAA. Title II gives EPA authority to adopt standards regulating emissions of air pollutants from *new* on-road motor vehicles and engines.[86] Motor vehicles are "on-road" vehicles, such as passenger cars, trucks and buses. Title II also gives EPA authority to adopt emissions standards for certain nonroad vehicles and engines.[87] Nonroad vehicles and engines include off-road construction equipment, recreational vehicles, and marine vessels. Collectively, on-road and nonroad vehicles and engines constitute "mobile sources" of air pollution subject to regulation under Title II of the CAA.

The CAA gives EPA near-exclusive authority to adopt emissions standards for certain types of mobile sources by expressly prohibiting states from adopting their own emissions standards for these vehicles and engines. Section 209 of the CAA expressly preempts most states and local governments from adopting or enforcing emissions standards for new on-road vehicles and all nonroad vehicles. CAA Section 209(a) preempts state and local regulation of emissions from new on-road motor vehicles and engines.[88] CAA Section 209(e) preempts state and local regulation of emissions from

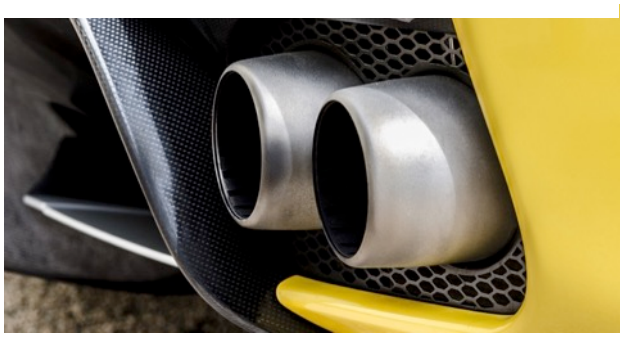
new and used nonroad vehicles and engines.[89] Both section 209(a) and 209(e) prohibit states (other than California) and local governments from adopting or attempting to enforce "standards" to control mobile source emissions. Section 209(a) also prohibits states from imposing emissions-related certification or inspection requirements on new on-road vehicles.

The CAA contains one notable and significant exception to its preemption of state and local mobile source emissions regulations. Section 209 allows California to adopt its own state-specific emissions standards and request a preemption waiver from EPA.[90] If California's emissions standards are at least as stringent as applicable federal emissions standards, EPA has limited discretion to deny California's waiver request.[91] Once EPA grants a preemption waiver for California's emissions standards, other states may choose to adopt standards identical to California's.[92]

This section briefly explains the scope and effects of mobile source preemption under the CAA. Subsection a describes the types of mobile sources that are subject to the CAA's preemption provisions and discusses the CAA's distinctions between "new" and "used" on-road and nonroad vehicles and engines. Subsection b describes the types of state and local regulatory actions that are preempted under section 209 of the CAA. Subsection c discusses the California waiver exception and explains what other states must do to adopt California's emissions standards.

a. VEHICLES AND ENGINES SUBJECT TO THE CAA'S MOBILE SOURCE PREEMPTION PROVISIONS

The primary purpose of CAA Section 209's preemption provisions is to ensure that automakers and engine manufacturers are not subjected to multiple emissions standards requiring manufacturers to adjust vehicle and engine designs on a state-by-state basis. To promote nationally uniform design standards, the CAA preempts most state and local governments from adopting emissions standards for new vehicles and engines.[93] Because California had adopted its own emissions standards prior to the adoption of uniform federal standards, Congress added the waiver exception allowing California to establish separate, more stringent emissions standards for new on-road motor vehicles and engines.[94] The CAA also allows California to adopt its own emissions standards for many types of new nonroad vehicles and engines and all used nonroad engines. Once EPA grants a waiver for California's emissions standards, other states may choose to adopt standards identical to California's. This means that all new on-road motor vehicles and engines and most new and used nonroad vehicles and engines are subject to at most two emissions standards—the federal standards and any standards adopted by California. The following subsections explain which types of vehicles and engines are subject to CAA Section 209's preemption provisions.



i. "NEW" ON-ROAD VEHICLES AND ENGINES

The CAA's preemption provisions under Section 209 largely prohibit states from adopting emissions standards for "new" on-road motor vehicles and engines. "New" motor vehicles and engines are vehicles and engines that have not yet been sold at retail to consumers.[95] In other words, "new" means "showroom new."[96] When a new vehicle or engine is sold by a dealership to a consumer, the vehicle or engine is no longer considered "new" under the CAA.

As explained above, the CAA's emphasis on new vehicles and engines is primarily intended to prevent individual states from subjecting vehicle and engine *manufacturers* to divergent emissions limitations or design standards. By giving EPA near-exclusive authority to adopt emissions standards for new vehicles and engines, Section 209(a) ensures that car manufacturers meet nationally uniform standards when designing and constructing new vehicles and engines. These standards can be categorized as "design standards," because they apply to the design and manufacturing of new motor vehicles and engines. Except for the California waiver exception, the CAA preempts states and local governments from imposing diverging design standards on vehicle manufacturers and distributors.

While Section 209 preempts states from imposing state-specific standards on new motor vehicles, the CAA does not preempt states from regulating emissions from *existing* on-road motor vehicles. Under the statutory definition of "new motor vehicle," a vehicle is no longer "new" once the vehicle's title is transferred from the dealer to a consumer through a retail sale. This means that a state could potentially impose additional regulatory requirements the moment a consumer purchases and registers a new vehicle. Courts have expressed some reservations regarding states' apparent authority to immediately regulate vehicles that no longer qualify as "new" under the CAA,[97] but have ultimately held that state regulations placing the burden of compliance on individual vehicle owners, rather than on manufacturers and distributors, are permissible under Section 209(a).[98]

JURISDICTION OVER ON-ROAD VEHICLES & ENGINES	
EPA	○ All **new** on-road motor vehicles and engines
California	○ All **new** on-road motor vehicles and engines, with a waiver from EPA ○ All **used** on-road motor vehicles and engines (no waiver required)
Other States	○ May adopt emissions standards for new on-road motor vehicles and engines, so long as standards are identical to those adopted by California that have received a waiver from EPA ○ All **used** on-road motor vehicles and engines (no waiver required)

ii. NEW AND USED NONROAD VEHICLES AND ENGINES

CAA Section 209(e) also preempts most states from adopting or attempting to enforce emissions standards for nonroad vehicles and engines.[99] The nonroad vehicle and engine category includes a broad variety of mobile sources, including off-road construction vehicles and engines, farming equipment, off-road recreational vehicles, and small engine equipment, such as lawnmowers, as well as marine vessels, aircraft, and locomotives.[100] Unlike the CAA's preemption provision for on-road vehicles, Section 209(e) generally preempts states (other than California) and local governments from directly regulating emissions from new *and* used nonroad engines. Federal law does not prohibit states from adopting nonroad source regulations that are unrelated to emissions, such as nonroad vehicle registration and fee requirements,[101] or that indirectly regulate nonroad emissions through indirect source rules.[102]

Like Section 209(a), Section 209(e) preempts states from adopting or attempting to enforce "any standard or other requirement relating to the control of emissions" from certain nonroad vehicles and engines.[103] However, the CAA's preemption for nonroad sources operates slightly differently than Section 209's on-road motor vehicle preemption provisions. First, California's authority to adopt or enforce emissions standards for nonroad sources is slightly narrower than its authority to adopt standards for on-road motor vehicles. Section 209(e) gives EPA *exclusive* authority to adopt

or enforce emissions standards for new nonroad engines smaller than 175 horsepower that are used in construction or farm equipment, as well as for new engines used in locomotives.[104] This means that *all* states, including California, are preempted from adopting emissions standards for this subgroup of nonroad vehicles and engines. For all other nonroad engines (all engines larger than 175 horsepower, and all smaller engines that are *not* used in construction or farm equipment), California may adopt its own emissions standards and seek a preemption waiver from EPA.[105] Once EPA grants a waiver, other states may adopt emissions standards that are identical to California's nonroad standards.[106]

Second, unlike the preemption provision for on-road motor vehicles, the CAA's nonroad preemption provision applies to both new *and* non-new (*i.e.,* used) vehicles and engines. While Section 209(e)(1) gives EPA exclusive authority to regulate certain types of *new* nonroad sources, Section 209(e)(2) authorizes California to seek a waiver to regulate "any nonroad vehicles or engines other than those" under EPA's jurisdiction.[107] Courts have held that Section 209(e) therefore allows California to adopt emissions standards for all used nonroad vehicles and engines, as well as adopt emissions standards for new nonroad vehicles and engines that are not within EPA's exclusive jurisdiction.[108]

Under Section 209(e), states—other than California—are preempted from adopting or enforcing emissions regulations for both new and non-new nonroad sources.[109] If California adopts nonroad emissions standards and receives a waiver from EPA, other states may adopt emissions standards that are identical to California's standards.[110] Additionally, after adopting nonroad emissions standards, all states, including California, must wait at least two years before allowing the standards to go into effect.[111] This mandatory delay period is designed to give vehicle and engine manufacturers time to comply with the standards.

JURISDICTION OVER NONROAD VEHICLES & ENGINES

EPA	○ All new nonroad engines up to 175 hp that are used in construction or farm equipment ○ All new locomotives and all new engines used in locomotives
California	○ All new nonroad engines *above* 175 hp, except those used in locomotives ○ All new nonroad engines *under* 175 hp, except those used in construction or farm equipment ○ All used nonroad vehicles and engines
Other States	○ May adopt nonroad emissions standards identical to those adopted by California that have received a waiver from EPA

b. CLEAN AIR ACT PREEMPTION OF STATE AND LOCAL EMISSIONS REGULATIONS

CAA Section 209 dictates that no state (other than California) and no local government may "adopt or attempt to enforce any standard" relating to the control of emissions from new vehicles and engines or used nonroad vehicles and engines.[112] However, the CAA does not specify which kinds of state or local regulations represent "standards" subject to preemption under Section 209 or which kinds of state or local actions represent an "attempt to enforce" such standards. Subsection i explains how courts have interpreted the terms "standards" and "attempt to enforce" from CAA section 209 and discusses the implications these judicial interpretations have on state regulation. Subsection ii describes the types of regulatory actions state and local governments can pursue to address mobile source emissions while avoiding preemption under the CAA.

i. PREEMPTED EMISSIONS "STANDARDS" AND ENFORCEMENT EFFORTS UNDER CAA SECTION 209

Section 209(a) of the CAA prohibits states from adopting or attempting to enforce "any *standard* relating to the control of emissions from new motor vehicles or new motor vehicle engines."[113] Preempted emissions "standards" generally include requirements or criteria that apply to vehicles and engines, while preempted efforts to enforce emissions standards generally include compliance obligations or penalties directed at vehicle manufacturers, dealers, or purchasers.[114]

The Supreme Court has identified three types of **"standards"** subject to preemption under CAA Section 209:[115] any state law or regulation that 1) restricts the amount of a certain pollutant a vehicle or engine may emit, 2) requires the installation or use of a specific type of pollution-control device in vehicles or engines, or 3) requires specific vehicle or engine design features related to the control of emissions.[116] These types of state and local emissions standards are subject to federal preemption under the CAA. Section 209(a) preempts state and local governments from adopting emissions standards for new on-road vehicles, and section 209(e) preempts state or local emissions standards for both new and used nonroad vehicles and engines.[117]

In addition to adopting emissions standards, Section 209 expressly prohibits states from **attempting to enforce** emissions standards for vehicles or engines.[118] Courts have interpreted the term "attempt to enforce" to mean that states are preempted from bringing enforcement actions against vehicle and engine manufacturers, distributors, and purchasers for failing to comply with federal emissions standards or preempted state standards.[119] CAA section 209(a) preempts state and local governments from enforcing emissions standards for new on-road vehicles and engines, and section 209(e) preempts state and local governments

from enforcing emissions standards for all nonroad vehicles and engines.[120]

While section 209(a) only expressly preempts state and local governments from adopting or attempting to enforce emissions standards for *new* on-road vehicles and engines, this preemption may potentially extend to existing on-road vehicles as well if state or local enforcement actions effectively force manufacturers to install emissions control equipment in new vehicles.[121] For example, if a state required all vehicles registered in the state to use a specific emissions control device that was not required under EPA's standards, vehicle manufacturers would effectively be forced to install the device in all new vehicles offered for sale in the state. While such a state requirement technically would not apply to "new" vehicles (because once a vehicle is sold to an end user and registered with a state, the vehicle is no longer considered "new" under the CAA), the burden of compliance would effectively fall on manufacturers.

Similarly, state regulations that prohibit consumers from purchasing new vehicles with certain emissions characteristics could also effectively force compliance onto manufacturers. According to the Supreme Court, such a purchase prohibition would represent an "attempt to enforce" an emissions standard for new vehicles and would therefore be preempted under the CAA.[122] As the Court explained, a "manufacturer's right to sell federally approved vehicles is meaningless in the absence of a purchaser's right to buy them."[123] State or local fleet rules mandating the purchase of new low-emissions vehicles may also represent a preempted "attempt to enforce" emissions standards under the CAA.[124] According to the Court, when imposed on a broad scale, fleet purchase mandates could potentially coerce manufacturers to produce vehicles with different emissions characteristics from federally approved vehicles. [125] Thus, vehicle purchase mandates or prohibitions that place the burden of compliance on manufacturers would likely be preempted under the CAA.

ii. IN-USE RESTRICTIONS AND REGULATING EXISTING VEHICLES

While CAA section 209 preempts state and local governments from adopting or attempting to enforce emissions standards for new on-road motor vehicles and all nonroad vehicles and engines, the CAA expressly declines to interfere with state and local authority to "control, regulate, or restrict the use, operation, or movement of registered or licensed motor vehicles."[126] State and local governments therefore have broad authority to adopt so-called **in-use regulations** that control how vehicles and engines are operated in their jurisdictions.[127] State and local governments have authority to adopt and enforce in-use restrictions for both on-road and non-road engines and vehicles.[128] In addition, state and local governments may adopt emissions regulations that apply to existing, non-new on-road motor vehicles and engines.

There are many types of in-use regulations that states and local governments may adopt to indirectly control air pollution from on-road and nonroad vehicle use. For example, states and localities may restrict or manage traffic by establishing carpool and high-occupancy

vehicle lanes, discouraging unnecessary vehicle travel by imposing tolls and road user fees, adopting mandatory truck routes that divert heavy-duty traffic away from vulnerable or densely populated areas, restricting vehicle idling, or limiting traffic in urban areas during certain times of the day.

State and local governments also have a wide degree of authority to regulate emissions from existing on-road vehicles. While CAA section 209(a) preempts state and local emissions standards for new on-road vehicles and prohibits states from requiring emissions-related certifications or inspections for new vehicles, the CAA does not prohibit state or local governments from regulating emissions from existing on-road vehicles. State and local governments may regulate emissions from existing vehicles by adopting inspection and maintenance requirements, prohibiting tampering with pollution control devices, and requiring emissions testing for used vehicles to demonstrate compliance with in-use emissions standards for applicable model years. State and local governments may also adopt fleet performance standards that prohibit fleet owners from adding older vehicles to their fleets beyond a certain date and/or require fleet owners to phase-out older vehicles by a certain date. As long as state and local requirements only apply to existing vehicles and do not impose compliance burdens on vehicle or engine manufacturers, the requirements should not face preemption under the CAA.

CLEAN AIR ACT PREEMPTION SUMMARY

Preempted State or Local Emission Standards:

- Restrictions on the amount of pollution a new on-road or any nonroad vehicle or engine may emit.
- Laws or regulations requiring the installation or use of a specific type of pollution-control device in new on-road or any nonroad vehicles or engines.
- Policies requiring specific vehicle or engine design features related to the control of emissions.

Preempted State or Local Enforcement Actions:

- Any enforcement action against vehicle and engine manufacturers, distributors, and purchasers for failing to comply with emissions standards for new on-road vehicles or any nonroad vehicles.
- Requirements that coerce manufacturers to install certain emissions control equipment.
- Vehicle purchase prohibitions that coerce manufacturers to produce vehicles with certain emissions controls or characteristics.
- Vehicle purchase mandates that coerce manufacturers to produce vehicles with certain emissions controls or characteristics.

Permissible In-Use Regulations:

- Tolls and other road user fees.
- Mandatory truck routes.
- Idling restrictions.
- Traffic access restrictions (e.g. HOV lanes, area-based traffic restrictions).

Permissible Regulation of Existing On-road Vehicles:

- Inspection, maintenance, and anti-tampering requirements.
- In-use emissions testing and compliance certification.
- Fleet performance standards.
- Pollution control equipment requirements for older vehicles.

c. THE WAIVER EXCEPTION

While the CAA significantly restricts state authority to regulate emissions from new mobile sources, the statute includes an exception for California. CAA Sections 209(b) and (e) allow EPA to issue a waiver for California to adopt its own emissions standards for new mobile sources, so long as California determines that its standards are "at least as protective of public health and welfare as applicable Federal standards."[129] EPA must grant a waiver unless it finds that California's protectiveness determination was arbitrary and capricious, California lacks "compelling and extraordinary conditions" that necessitate the state standards, or California's standard and enforcement provisions are inconsistent with the CAA's mobile source provisions.[130]

Section 209's waiver provisions apply to California emissions standards for new on-road motor vehicles and emissions standards for most new and existing (non-new) nonroad vehicles and engines. However, California may not adopt emissions standards for new nonroad engines smaller than 175 horsepower that are used in construction or farm equipment.[131] EPA has exclusive authority to adopt emissions standards for these new vehicles and engines.

Once EPA issues a waiver to California for a specific emissions standard, any other state with a nonattainment plan may choose to adopt and enforce California's standard in lieu of the federal standard.[132] A state does not have to obtain approval from EPA before adopting such standard. If a state chooses to adopt California's standards, the standards must be "identical" to the standards covered by the federal waiver.[133] The state must also adopt the standard at least two years before the standard goes into effect for a given model year.[134]

CALIFORNIA WAIVER APPLICABILITY

With a waiver from EPA, California may adopt and enforce emissions standards for:

- New on-road vehicles & engines (no waiver required for existing on-road)
- New nonroad engines above 175 hp (construction and farm equipment only)
- All existing nonroad vehicles & engines
- Existing locomotives

In sum, CAA section 209 preempts Oregon and its local governments from adopting emissions standards for new on-road motor vehicles or new and existing nonroad vehicles and engines. However, Oregon may regulate emissions from these classes of vehicles and engines by adopting California's applicable emissions standards that have received a waiver from EPA. The CAA does not preempt Oregon from regulating emissions from existing on-road vehicles, regulating in-use emissions from any type of vehicle or engine, or regulating aggregate emissions from mobile sources within indirect sources of air pollution. In certain contexts, however, these types of regulations may potentially be preempted under other federal laws. The following subsections briefly describe several other federal laws that may have a preemptive impact on state and local efforts to regulate emissions from mobile sources.

2. FEDERAL PREEMPTION UNDER THE ENERGY POLICY AND CONSERVATION ACT

The **Energy Policy and Conservation Act (EPCA)**[135] is a federal law that preempts states from adopting or attempting to enforce "laws or regulations related to fuel economy standards" when a federal average fuel economy standard is in effect.[136] EPCA's preemption provision applies to both new and existing vehicles that are already subject to federal fuel economy standards. Under EPCA, states are preempted from adopting regulations that "contain a reference to fuel economy standards or make fuel economy standards essential to the operation of those rules."[137] For example, a state law requiring privately owned fleets to procure vehicles that achieve a certain fuel economy would likely be preempted under EPCA.[138] However, state and local governments are free to impose fuel economy targets on publicly owned fleets and fleets operating under public contracts.[139]

3. PREEMPTION UNDER THE FEDERAL AVIATION ADMINISTRATION AUTHORIZATION ACT

The **Federal Aviation Administration Authorization Act (FAAAA)** Section 601(c)(1) preempts states and local governments from adopting or enforcing "any law, regulation, or other provision having the force and effect of law related to a price, route, or service of any motor carrier."[140] Motor carriers are people engaged in the commercial transportation of property, such as commercial truck drivers.[141] Unless a law or regulation qualifies for an exception under the FAAAA, state and local governments may not adopt economic regulations that directly affect motor carriers or burden interstate commerce. The FAAAA's preemption provision only applies to laws, regulations, and other actions with the force and effect of law (such as certain public contract requirements) that directly affect motor carriers.[142] Regulations that merely have "an indirect, remote, or tenuous effect" on a motor carrier's prices, routes, or services[143] are *not* preempted by the FAAAA.

The FAAAA's preemption provision

The FAAAA limits state and local authority to regulate commercial trucks.

contains an exception for state and local regulations that are "genuinely responsive to safety concerns."[144] The FAAAA therefore does not preempt states from adopting safety regulations for motor carriers. To qualify for this exception, a law or regulation must have a "logical or genuine connection" to a legitimate safety motive.[145] A regulation's safety justification does not have to directly relate to the safe operation of a motor carrier itself; regulations that are "genuinely responsive" to the safety of other vehicles and individuals may also avoid preemption under the FAAAA.[146] For example, a law designed to protect the safety of motorists after their vehicles have been towed may qualify for the FAAAA's safety exception.[147] The impact of air pollution on general public welfare likely is not a valid safety justification under the FAAAA, though it ultimately is unclear whether a court would conclude that an emissions regulation is genuinely responsive to motor vehicle safety concerns.[148]

The FAAAA's safety exception extends to laws and regulations adopted by local governments in addition to those adopted at the state level.[149] Governments are not required to expressly identify a regulation's safety justification; a court may infer from the subject matter that the government had public safety in mind when it adopted the regulation at issue.[150]A law or regulation motivated by both safety and economic concerns will likely avoid preemption under the FAAAA, so long as the law has a logical safety connection to motor vehicles.

In addition to the safety exception, the FAAAA does not preempt states and local governments from imposing truck size or weight restrictions on public highways or adopting minimum insurance requirements.[151] This means that state and local governments have authority to establish mandatory routes for trucks above a specified weight or size, without requiring a valid safety justification for the restriction.

4. FUEL REGULATIONS

Section 211(c) of the CAA authorizes EPA to preempt state and local regulation of fuel and fuel additives for emissions purposes if EPA makes an affirmative finding that a fuel or fuel additive characteristic must be regulated or left unregulated for purposes of public health or welfare, or for technological reasons.[152] The only diesel fuel characteristics for which EPA has preempted state and local regulation are: sulfur content, cetane index, and aromatic content.[153] There is very little, if anything, standing in the way of state and local regulation of diesel fuel sold within state and local borders. For example, a state can mandate that all diesel fuel sold within the state contains a certain percentage of biodiesel.

5. FEDERAL CONSTITUTIONAL LIMITATIONS: THE DORMANT COMMERCE CLAUSE

The U.S. Constitution's Commerce Clause grants Congress authority to regulate interstate commerce.[154] The "dormant" Commerce Clause is the inverse of this exclusive grant of authority; it prohibits states from placing a burden on interstate commerce or unduly discriminating against out-of-state entities. A state law or program may violate the dormant Commerce Clause if it 1) "clearly discriminates against interstate commerce in favor of intrastate commerce," 2) "imposes a burden on interstate commerce incommensurate with the local benefits secured," or 3) "has the practical effect of 'extraterritorial' control of commerce occurring entirely outside the boundaries of the state in question."[155] In determining whether a nondiscriminatory state law violates the dormant Commerce Clause, courts balance the law's burdens on interstate commerce with the law's local benefits. If the law's burdens on interstate commerce are "clearly excessive in relation to the putative local benefits," the law will likely be struck down as unconstitutional.[156]

In the motor vehicle context, courts have held that the following state laws do not violate the dormant Commerce Clause:

- The flat fee option exception to Oregon's weight-mile tax, which is an alternative fee structure available to certain types of carriers of certain types of commodities.[157]
- An annual fee imposed on all trucks engaged in commercial hauling within the State of Michigan.[158]
- Reasonable state road tolls with residency-based discounts for local in-state residents.[159]
- A local New Hampshire ordinance limiting nighttime access to an interstate trucking terminal.[160]

Courts have invalidated the following state laws under the dormant Commerce Clause:

- An Iowa law prohibiting the use of trucks longer than 60 feet on interstate highways within the state's borders.[161]
- A New Jersey regulation prohibiting out-of-state trucks from using the state highway network, while permitting in-state trucks to use both interstate and state highway systems.[162]
- Pennsylvania taxes on large trucks that were applied inconsistently between in-state and out-of-state trucks and were deemed to place a heavier burden on out-of-state businesses than they did on state residents.[163]

B. LIMITS ON LOCAL AUTHORITY UNDER OREGON LAW

Just as federal law may restrict state and local regulatory authority, state law may preempt local governments from regulating in certain areas. The Oregon Constitution generally preserves local governments' "home rule" authority to regulate pursuant to their local charters. To restrict local regulatory authority, the Oregon legislature must unambiguously express its intent to preempt local regulation in a specific area. In the motor vehicle context, certain provisions within the constitution and state laws and regulations impose jurisdictional limits on local government authority. First, article IX, section 3a of the constitution significantly restricts how local governments may use revenues associated with motor vehicle ownership and use. Second, Oregon law expressly preempts local governments from regulating certain aspects of motor vehicle operation, such as vehicle idling. Finally, the Oregon legislature has delegated certain regulatory authorities to specific state agencies, and some agencies have adopted regulations further limiting local authority. This section explains how state laws and regulations limit local authority to regulate diesel vehicles and emissions in Oregon.

1. HOME RULE AUTHORITY

Oregon's constitution preserves local governments' home rule authority, which means that local governments generally have authority to regulate within their borders to the extent authorized by their governing charters, so long as local regulations do not directly conflict with or are not preempted by state or federal law.[164] The Oregon Supreme Court has established a presumption in favor of preserving local home rule authority. To restrict local government authority, the legislature must "unambiguously" express an intent to preempt local governments from regulating in a certain area.[165] The legislature may express this intent by including explicit preemption language within a statute. For example, a statute may specify that local governments may not regulate in a certain context or may prohibit local governments from adopting rules that conflict with state statutory or regulatory requirements. If a local regulation is completely incompatible with a state law, meaning the two laws cannot operate concurrently, the incompatibility signifies a legislative intent to preempt the local regulation.[166]

If the legislature has not unambiguously expressed intent to preempt local regulation, a court will typically uphold local regulatory authority so long as 1) the local action is exercised in accordance with the powers granted by the local charter, and 2) the local regulation can operate concurrently with state law.[167] In instances where a conflict exists between state and local laws, but the statutory text does not clearly preempt local regulation, Oregon courts look to the legislative history of the state statute to

determine whether the legislature intended to prohibit the type of local regulation at issue.[168] Oregon's preemption analysis also draws a distinction between procedural and substantive state laws. When a state law concerns local government procedures or structures, there is a strong presumption in favor of home rule.[169] However, when a state law "embodies substantive social, economic, or regulatory objectives," the state law is more likely to prevail over a conflicting local law.[170]

Courts may also consider whether the local law addresses a "legitimate" local concern[171] and whether the law's primary impacts are local or statewide in nature.[172] Courts are more likely to uphold a conflicting local regulation if it addresses a legitimate local concern and has a primarily local impact. Conversely, courts are more likely to identify preemptive intent if a local law is designed to address a tenuous or illegitimate local concern and/or impacts residents outside of the local government's jurisdiction.

2. OREGON CONSTITUTIONAL LIMITS ON LOCAL AUTHORITY: ARTICLE IX, SECTION 3A

Article IX, section 3a of the Oregon Constitution imposes significant limitations on the use of transportation-related revenues in Oregon. This provision mandates that all revenue collected through taxes or other fees imposed on motor vehicle fuels or on the "ownership, operation or use of motor vehicles" may only be used to fund "the construction, reconstruction, improvement, repair, maintenance, operation and use of public highways, roads, streets and roadside rest areas in this state."[173] State revenues subject to article IX, section 3a are deposited into the state highway fund. State highway fund revenues are apportioned between Oregon counties, cities, and the state.[174] City and county governments may only use these revenues for the purposes listed in the constitution.[175] If city or county governments collect revenues from local taxes or fees related to motor vehicle fuels, operation, or use, these revenues must also be used for the purposes listed in article IX, section 3a.[176] Only revenues associated with on-road motor vehicles are subject to the constitutional limitations; revenues associated with nonroad vehicles are not restricted by article IX, section 3a.

According to the Oregon Supreme Court, *any* financial burden, whether it is called a tax, fee, assessment, excise, levy, etc., placed on motor vehicle fuel or motor vehicle ownership, operation, or use is subject to the state constitutional restrictions.[177] The court recently clarified that the following types of taxes are subject to article IX, section 3a: fuel taxes; motor vehicle ownership-based taxes and fees, such as title and registration fees; operation-based taxes and fees, such as driver's license fees; and use-based taxes and fees, such as Oregon's weight mile tax.[178] The court held that a "privilege" tax imposed on retail sales of motor vehicles was not subject to the constitutional limitations because the tax was imposed on vehicle dealers, and thus was not based on the status of vehicle ownership.[179] According to the court, voters intended for article IX, section 3a "to apply to taxes that are attributable to the use of the public highways for motor vehicle

transportation."[180] Because the privilege tax was triggered by the *sale* of a vehicle, rather than the *ownership* of a vehicle, it therefore did not fall within the category of taxes that voters intended article IX, section 3a to cover.

The Oregon Supreme Court narrowly construes the permissible uses listed in article IX, section 3a, and has struck down state legislation allocating motor vehicle fuel-related revenue toward non-highway purposes.[181] In earlier cases interpreting the permissible uses of article IX, section 3a revenues, the court held that revenue used for purposes associated with the operation or use of highways must "primarily and directly facilitate motorized vehicle traffic."[182] These projects must be "within or adjacent to a highway, road, street or roadside rest area right-of-way."[183] More recently, the court held that article IX, section 3a revenues are not always required to promote motorized vehicle traffic; state highway fund revenues may be used for any projects involving the construction, reconstruction, and improvement of public highways, regardless of the projects' impacts on motor vehicle use.[184] However, a project funded by article IX, section 3a revenue must be located within the right-of-way of a public road or highway.[185] Highway-*related* projects and programs may not be funded through the state highway fund.[186] For example, highway fund revenues may not be used to fund parking lots,[187] most public transportation projects, or gas station upgrades.[188] Counties and cities may use "reasonable amounts" of their state highway fund allocations to construct and maintain footpaths and bike paths along roadways.[189] In addition, highway funds have been used to fund safety-related programs that directly benefit highway users.[190] Highway funds may not, however, be used to fund the policing of public highways.[191]

Due to Oregon's constitutional restrictions on transportation-related revenues, taxes on gasoline and diesel fuel are deposited into the State Highway Trust Fund.

Article IX, section 3a of the Oregon Constitution places significant limitations on the use of transportation-related revenues, which makes it challenging for state and local governments to raise funding for programs to reduce diesel emissions. For example, the constitutional provision likely restricts the City from using local gas tax revenues to fund programs to promote EV use or deploy EV infrastructure.[192] Article IX, section 3a does contain a few exceptions to its restrictions on permissible highway fund uses. Notably, highway fund revenues may be used "for the cost of administration and any refunds or credits authorized by law."[193] However, there is little judicial or administrative guidance on the scope of this exemption, so it is unclear which types of refunds or credits may represent permissible uses of state highway funds.

3. LEGISLATIVE LIMITS ON LOCAL AUTHORITY

Local governments are primarily governed by state law. State legislatures may therefore limit local government regulatory authority or preempt local governments from regulating in certain areas. State legislatures may limit local authority through legislation that expressly prohibits local governments from regulating in a certain area, grants a state regulatory agency exclusive rulemaking jurisdiction in a particular area, or reserves regulatory authority for the legislature itself. The Oregon legislature has restricted local authority to regulate motor vehicles by expressly preempting local regulation and by adopting state laws that cannot operate concurrently with local laws.

The Oregon legislature has adopted numerous laws that directly restrict local authority to regulate motor vehicles. For example, the Oregon Vehicle Code expressly prohibits local governments from adopting regulations that conflict with the statewide Vehicle Code.[194] The Vehicle Code also preempts local governments from adopting rules relating to vehicle registration requirements.[195] The Code does permit eligible counties and districts to adopt local vehicle registration fees, but these fees are subject to statutory maximums and vehicle exemptions, and may only be used for the purposes listed under article IX, section 3a of the Oregon Constitution.[196] Oregon's statewide idling law also expressly preempts local governments from regulating commercial vehicle idling.[197]

The Oregon Legislature has authority to preempt local governments from regulating certain activities.

Some of Oregon's statutory requirements also restrict local government authority by making it impossible for state and local laws to function together concurrently. For example, Oregon law requires vehicles registered within the Portland metropolitan area to be equipped with certified pollution control systems.[198] The City would therefore be preempted from adopting an ordinance waiving the statutory pollution control system requirement. The state law also carves out exemptions from the pollution control system requirements for certain classes and types of vehicles.[199] Because the statute specifies that certain vehicles, including vehicles registered outside of the Portland metropolitan area, are not required to have pollution control equipment, the City would likely be preempted from requiring vehicles registered *outside* the area to have pollution control equipment installed when operating within the city limits.[200]

4. REGULATORY LIMITS ON LOCAL AUTHORITY

In limited circumstances, state agency rules and regulations may also restrict local regulatory authority. As Part III.B.1 explained, the Oregon Constitution protects local home rule authority unless the legislature has unambiguously expressed its intent to preempt local regulation in a specific context. The legislature may express preemptive intent by adopting legislation that cannot operate concurrently with local regulations.[201] The legislature may also delegate authority to state agencies to adopt regulations implementing state laws and policies. When the legislature gives an agency broad regulatory discretion, granting the agency "the authority, responsibility, and discretion for refining and executing generally expressed legislative policy," the agency assumes authority to adopt regulations "of a legislative nature."[202] If an agency has been delegated broad discretion to regulate in a certain area to achieve a specified policy objective, and the agency exercises this authority by adopting a regulation that cannot operate concurrently with a local rule, a court may find that the agency's regulation preempts the local rule. However, if an agency's regulation conflicts with or contradicts any legislative policies or statutory provisions preserving local regulatory authority, the regulation should not preempt local action. Thus, an agency's authority to preempt local regulation depends on the scope of the agency's delegated authority within a given regulatory area and the nature and scope of the statutory provisions the agency is attempting to implement.

If the legislature has granted an agency exclusive regulatory authority within a given area and authorized the agency to adopt any rules necessary to exercise this authority, the agency may have discretion to adopt regulations that limit local regulatory authority. However, a regulation should only preempt local governments from adopting rules that cannot operate concurrently with the regulation. For example, the Oregon legislature has delegated authority to the EQC to adopt protective water quality standards, and the EQC has exercised this authority and promulgated water quality standards. If the City adopted a regulation allowing local businesses to violate the EQC's water quality standards, the regulation would be preempted by the EQC's standards because the regulation and the standards directly conflict with one another. If, however, the City adopted local water quality standards that were more stringent than the EQC's standards, the local standards should survive a preemption challenge.

Unless the legislature has unambiguously declared that local regulatory authority is preempted, agency regulations expressly preempting local regulations that are more protective of statewide requirements likely infringe on local home rule authority and are likely unconstitutional. Similarly, if the legislature has expressly *authorized* local governments to regulate in a specific area, agency regulations restricting local authority would likely violate the Oregon Constitution.

C. STATE AND LOCAL AUTHORITY TO REGULATE DIESEL POLLUTION

While the CAA and other federal laws restrict state and local authority to adopt emissions standards for new (and some existing) mobile sources (with the exception of California standards that receive a waiver from EPA) and impose certain economic restrictions on commercial vehicles, state and local governments have authority to regulate diesel pollution in other ways. The CAA's preemption provisions are generally designed to prevent individual states from imposing varying design requirements on mobile source manufacturers. However, the federal statute generally does not intrude on state and local authority to protect public health and safety or the ability of state and local governments to participate in the market in their proprietary capacities.[203]

There are several areas in which state and/or local governments retain authority to protect air quality and control diesel pollution. First, states may regulate emissions from existing on-road motor vehicles. Second, state and local governments may regulate motor vehicle ownership, operation, and use within their jurisdictions. Third, state and local governments may restrict emissions from indirect sources of diesel pollution. And fourth, states and local governments may adopt proprietary policies designed to reduce diesel emissions. This section provides a general overview of Oregon's authority to regulate diesel pollution and describes the state and local entities that have or share regulatory jurisdiction over air quality and mobile sources.

1. REGULATING MOTOR VEHICLE EMISSIONS

While the CAA prohibits states (other than California) from adopting emissions standards for new motor vehicles, states retain authority to regulate emissions from existing on-road vehicles. Section 209(a) of the CAA preempts states from adopting or enforcing emissions standards for new on-road motor vehicles or engines.[204] This provision prohibits individual states from requiring specific vehicle or engine designs or equipment related to emissions controls that would effectively place the burden of compliance on vehicle manufacturers.[205] The CAA contains a special exception authorizing California to seek a waiver from EPA to adopt emissions standards for new motor vehicles,[206] and other states, including Oregon, are authorized to adopt emissions standards that are identical to California's.[207] In other words, the federal government and California are the only entities with authority to regulate emissions from motor vehicles prior to the initial retail sale and registration of such vehicles. Other states may choose to apply the federal standards or any California standards that have received a waiver from EPA.

Once a motor vehicle is no longer "new," the CAA's preemption provision no longer applies. All states have authority to regulate

emissions from existing (*i.e.,* non-new) on-road vehicles and engines. (This authority only extends to existing *on-road* vehicles; the CAA preempts states from adopting emissions standards for both new and existing nonroad vehicles and engines.[208]) For example, states may require older vehicles to have specific pollution control devices installed when operating on state roads. States may also prohibit older, dirtier vehicles from registering or operating within the state beyond a certain date.[209] Local governments also have authority to adopt emissions standards for existing vehicles,[210] though this authority may be limited or preempted under state law.

Oregon's air quality control laws establish a cooperative regulatory framework that the state and local governments implement through coordinated actions. Oregon's official air quality policy expressly aims to "provide for a coordinated statewide program of air quality control and to allocate between the state and the units of local government responsibility for such control" and "facilitate cooperation among units of local government in establishing and supporting air quality control programs."[211] The legislature also determined "that the state has a responsibility to establish procedures for compliance with standards which control or eliminate" the emission of pollutants from motor vehicles.[212] Recognizing that air pollution from motor vehicles threatens air quality in the Portland metropolitan area, the legislature adopted specific policies aimed at reducing motor vehicle emissions in the Portland area.[213] For example, passenger vehicles registered in the Portland metropolitan area are required to comply with Oregon's motor vehicle pollution control system requirements.[214]

The Oregon legislature delegated authority to the EQC and DEQ to regulate air pollution within the state. The legislature also authorized the EQC to re-delegate this regulatory authority to regional air quality control authorities. Oregon law does not expressly preempt local governments from directly regulating motor vehicle emissions; from a practical standpoint, however, this type of direct regulation would require cooperation and coordination between local regulators and DEQ. The following subsections describe the jurisdictional entities and authorities related to vehicle emissions regulation in Oregon.

a. THE DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE ENVIRONMENTAL QUALITY COMMISSION

DEQ, along with its rulemaking board, the EQC,[215] is the state regulatory agency responsible for administering Oregon's statewide air quality laws.[216] Subject to limitations under federal or state law, the EQC has authority to regulate air pollution associated with motor vehicle emissions and adopt regulations and standards that are "necessary and proper" to perform its delegated functions.[217] Under state law, the EQC has express authority to adopt motor vehicle emissions standards;[218] adopt rules to control greenhouse gas emissions by prohibiting tampering, alteration, or modification of vehicle pollution control equipment;[219] adopt criteria for certifying motor vehicle pollution control equipment;[220] adopt procedures for verifying compliance

with certification requirements;[221] and issue grants and loans under Oregon's Clean Diesel Engine Fund.[222] Additionally, the legislature directed the EQC to adopt low-carbon fuel standards and establish and administer Oregon's Clean Fuels Program.[223] The legislature also directed the EQC to "establish a goal to reduce excess lifetime risk of cancer due to exposure to diesel engine emissions to no more than one case per million individuals by 2017," and directed DEQ to track and report its progress on meeting this goal.[224]

The legislature directed DEQ and the EQC to exercise their existing authorities and adopt additional programs to control mobile source emissions in the Portland metropolitan area, including policies that incorporate California or federal emissions standards for new lawn and garden equipment, improve the vehicle inspection program, and reduce emissions through federal and state alternative fuel vehicle fleet programs.[225] In the Portland metropolitan area, DEQ is responsible for certifying and testing motor vehicle pollution control systems[226] and establishing and administering a vehicle inspection program.[227]

In accordance with these statutory directives focused on Portland, the EQC has

The Oregon Department of Environmental Quality administers the vehicle inspection program in the Portland area.

adopted a variety of regulations to implement Oregon's air quality laws. For example, the EQC has adopted visible emissions limits and rules establishing pollution control certification and inspection requirements.[228] The EQC has also adopted California's low-emission vehicles standards for passenger cars and certain light-duty and medium-duty vehicles with 2009 and newer model years.[229] The EQC has adopted regulations to administer Oregon's Clean Fuels Program[230] and the Clean Diesel Grant and Loan Program, which aims to replace or retrofit Oregon's school bus fleet.[231] Finally, the EQC has adopted indirect source rules (described in greater detail in Part III.C.3) designed to reduce emissions from indirect sources.[232]

b. REGIONAL AIR QUALITY CONTROL AUTHORITIES

Two or more local governments representing a contiguous territory with at least 130,000 residents may form a regional air quality control authority ("regional authority") with the purpose of regulating air pollution within the regional authority's territory.[233] Cities and/or counties seeking to form a regional authority must obtain approval from the EQC.[234] Once the EQC approves the formation, the regional authority will take over the EQC's and DEQ's air pollution control functions and enforcement responsibilities within the regional authority's boundaries.[235] A regional authority absorbs DEQ's regulatory authority (as well as the EQC's rulemaking authority), and "may regulate, limit, control or prohibit by rule all air contamination sources not

otherwise exempt within their respective jurisdictions," subject to EQC approval and oversight.[236] However, a regional authority may not adopt regulations or standards that are less stringent than the EQC's rules or standards.[237] Finally, the EQC has discretion to retain regulatory control over any class of air pollution sources if it finds that regulating the class of sources is "beyond the reasonable capabilities" of the regional authority.[238]

Regional authorities assume all of the EQC's and DEQ's air quality-related regulatory functions and obligations. If a regional authority lacks capacity to fulfill these regulatory duties, it may enter into an agreement with the EQC to reduce the scope of the regional authority's functions or obligations.[239] However, the EQC is not obligated to enter into such an agreement.

c. LOCAL GOVERNMENT AUTHORITY TO REGULATE MOBILE SOURCE EMISSIONS

Local governments, such as city or county governments, have limited authority to directly regulate emissions from mobile sources. The CAA preempts most state or local governments from regulating emissions from new on-road motor vehicles and both new and existing nonroad vehicles and engines.[240] The City and County have no express authority to adopt emissions standards for existing on-road motor vehicles, and Oregon's home rule authority may not be broad enough to preserve this type of regulatory authority at the local level.[241] Through their police powers, local governments have authority to enforce Oregon's emissions standards and pollution control system requirements. For example, local police officers can issue citations to vehicles violating Oregon's visible emissions standards. From a practical standpoint, however, it is difficult for a local government to effectively enforce these standards on a case-by-case basis, because the standards are largely enforced through DEQ emissions testing and inspection protocols.

By forming a regional air quality control authority, the City and County could gain additional authority to regulate mobile source emissions by assuming the EQC's and DEQ's regulatory authorities and responsibilities relating to air pollution controls. However, the EQC would still have discretion to retain authority over vehicle emissions standards if it determined that the newly formed regional authority was not reasonably capable of regulating motor vehicle emissions. Moreover, by forming a regional authority, the City and County would also absorb DEQ's responsibility to regulate emissions from stationary sources—and the administrative costs and revenues associated with this regulatory obligation. The regional authority could seek to reduce the scope of its responsibilities through an agreement with the EQC, but it is unclear whether the EQC would approve this course of action.

2. REGULATING VEHICLE OPERATION AND TRAFFIC

While federal law limits state authority to directly restrict vehicle emissions, state and local governments have broad authority to control emissions by regulating the use, operation, or movement of motor vehicles on state and local roadways. CAA Section 209(d) expressly preserves state and local authority to adopt so-called "in-use" restrictions that regulate the "use, operation or movement of registered or licensed motor vehicles."[242] Truck routes, vehicle size or weight restrictions, and anti-idling laws are all examples of in-use restrictions. State or local in-use restrictions may have a direct or indirect effect on mobile source emissions. For example, under the CAA, states and local governments have authority to impose time limits on vehicle idling, adopt mandatory truck routes, or establish high-occupancy vehicle lanes, all of which have the potential to reduce vehicle emissions.

While the CAA does not preempt local governments from adopting in-use restrictions, state laws may limit or prohibit specific types of local in-use restrictions. In Oregon, state and local "road authorities" are responsible for regulating vehicle use and traffic on roads and highways within their respective jurisdictions. DEQ and regional air quality control authorities also have limited authority to restrict traffic if necessary to control air pollution that presents a serious threat to public health or safety.

a. ROAD AUTHORITIES

In Oregon, "road authorities" have general regulatory authority over the local roads within their jurisdictions, except for state and interstate highways, over which ODOT has jurisdiction.[243] The Portland City Council is the road authority for the City; it has jurisdiction over all public roads and highways that are not designated state or interstate highways within the City's boundaries.[244] The Multnomah County Board of Commissioners is the road authority with jurisdiction over all county roads located outside the boundaries of incorporated cities within the County.[245]

Under Oregon law, road authorities may restrict vehicle use and traffic on their jurisdictional roadways if necessary to protect the roadways from damage or "to protect the interest and safety of the general public."[246] If one of these conditions is met, a road authority may entirely prohibit vehicle use or prohibit the operation of certain classes or types of vehicles on jurisdictional roads.[247] Road authorities may also impose limits on vehicle weight or size, or impose any other restrictions (other than speed limits) that are necessary to protect a roadway or the public.[248]

In addition to imposing restrictions necessary to protect roads or public safety, a road authority may establish mandatory truck routes within its jurisdictional road network, and may prohibit heavy-duty trucks from using other local roads that serve the same general route or area as a designated truck route.[249] To avoid preemption under the federal FAAAA, local truck routes that are not based on vehicle weight or size should have a public safety justification (though public safety need not be the only justification for establishing mandatory truck routes).[250]

b. ESTABLISHING MANDATORY TRUCK ROUTES

Oregon law expressly permits local road authorities to establish mandatory truck routes on roads within their jurisdictions.[251] Despite this express statutory grant of authority, ODOT has erected barriers for local road authorities that wish to establish truck routes. ODOT's restrictions are based on a misunderstanding of the U.S. Supreme Court's decision in *City of Columbus v. Ours Garage and Wrecking Service*.[252] In response to *Ours Garage*, which interpreted the scope of the FAAAA's safety exemption, ODOT unilaterally concluded that the FAAAA preempted Oregon's local truck route statute because the state law did not require a safety justification for truck routes.[253] ODOT subsequently mandated that local governments obtain ODOT approval prior to establishing local truck routes. However, ODOT lacks valid legal justifications and authority to impose the prior approval requirement on local governments. ODOT's truck route approval requirement 1) ignores an additional FAAAA preemption exception regarding truck routes, 2) fails to account for federal court decisions clarifying the scope of state and local preemption under the FAAAA, 3) represents a misstatement and unduly narrow application of the Supreme Court's *Ours Garage* holding, and 4) infringes on local governments' home rule authorities granted under the Oregon Constitution.[254]

ODOT's errors originate from the Supreme Court's *Ours Garage* decision interpreting the FAAAA. *Ours Garage* involved local towing regulations adopted by the City of Columbus, Ohio, which were challenged by a local tow truck operator under the FAAAA.[255] The primary dispute in the case concerned the

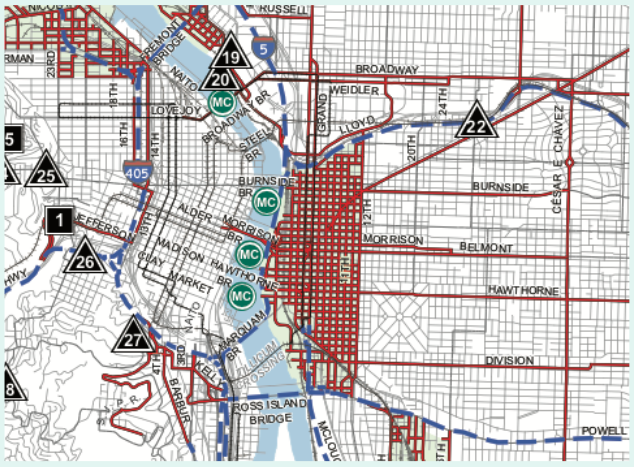
Under Oregon law, local road authorities may designate mandatory truck routes.

scope of the FAAAA's safety exception. The FAAAA preempts certain regulations adopted by states *or* local governments, but the statute's preemption exceptions only expressly apply to *state* regulatory actions. The tow truck operator argued that the FAAAA's safety exception did not extend to local regulatory actions and asserted that Columbus's towing regulations were therefore preempted under the FAAAA. The Court disagreed and held that local regulations that are genuinely responsive to safety concerns are not preempted under the FAAAA.[256] The Court also clarified that states may delegate authority to local governments to adopt safety regulations applicable to motor carrier prices, routes, or services.[257]

Following the *Ours Garage* decision, ODOT applied the Court's holding to justify its adoption of local truck route approval procedures. In these approval procedures, ODOT misconstrued the *Ours Garage* holding by stating that local truck routes could only avoid preemption under the FAAAA if a) local road authorities had been expressly delegated authority to adopt truck

routes *specifically* for safety purposes, and b) each road authority established a "bona fide safety reason" to establish each individual truck route.[258] ODOT concluded that it had the power to "delegate authority to local jurisdictions to designate local truck routes for safety reasons."[259] However, ODOT also chose to restrict the scope of this delegated authority by requiring road authorities to obtain ODOT approval, on a case-by-case basis, before designating any truck routes within their local jurisdictions. ODOT established a complex process for local road authorities to follow in applying for truck route approval that far exceeds the requirements of Oregon's statutory truck route laws and is not necessary under the FAAAA.[260]

ODOT's interpretation of *Ours Garage* and its subsequent limitations on local truck route authority are legally unjustified for several reasons. First, ODOT incorrectly stated that the FAAAA only allows truck routes to be established for safety reasons, when the FAAAA also expressly authorizes truck route restrictions based on vehicle size and weight.



The City of Portland has established voluntary, "preferred" routes for trucks operating on city roads. This map segment depicts preferred routes in inner Portland. Map: Portland Bureau of Transportation, 2017.

Specifically, ODOT's approval procedures state: "the only acceptable basis for directing trucks off a given route is for objective safety reasons."[261] However, the FAAAA expressly declines to preempt "highway route controls or limitations based on the size or weight of the motor vehicle."[262] This size or weight exception is additional to the FAAAA's safety exception. States and local governments can therefore adopt mandatory truck routes based on vehicle size or weight (*i.e.,* prohibit trucks above a certain size or weight from operating on specific roads) without triggering preemption under the FAAAA. If a state or local government wants to otherwise regulate a trucking company's prices, routes, or services, the regulation must have a valid safety justification.

Second, ODOT's interpretation of local truck route preemption under the FAAAA conflicts with post-*Ours Garage* judicial decisions regarding the scope of state and local preemption under FAAAA. According to ODOT, Oregon's truck route law is preempted by the FAAAA because it does not require local governments to establish "bona fide safety reasons" for establishing local truck routes.[263] However, several decisions issued by the U.S. Court of Appeals for the Ninth Circuit have concluded that a state or local law does not need an express safety justification to avoid preemption under the FAAAA.[264] According to the Ninth Circuit, a valid safety rationale can be inferred from a law's subject matter or surrounding circumstances, and mixed motives (such as a combination of economic and safety justifications) are permissible.[265] Based on these holdings and the text of the FAAAA itself, Oregon's statutory authorization for local truck routes is *not* automatically preempted by the FAAAA merely because it authorizes local road authorities to adopt

truck routes without requiring an express safety justification. Indeed, as the preceding paragraph explains, local trucks routes do not need a valid safety justification to avoid preemption under the FAAAA if the routes are based on vehicle size or weight.

Third, ODOT's policy is based on a misstated quote from the *Ours Garage* decision and an unduly narrow application of the Court's holding in that case. Specifically, ODOT stated: "The Supreme Court decision [held that] 'Local jurisdictions can establish a truck route with specific delegation of authority from the state to do so; however, local regulation that is not genuinely responsive to safety concerns garners no exemption from preemption.'"[266] Contrary to ODOT's assertion, the Supreme Court in *Ours Garage* did not go this far. The Court simply held that the FAAAA does not *prohibit* a state from delegating authority to local governments to adopt safety regulations for motor carriers; it did not *require* states to delegate authority to establish truck routes for safety purposes.[267] Moreover, the *Our Garage* decision does not include the statement ODOT attributed to the Court. The decision does not contain a single reference to "truck routes," and the Court's statement most closely resembling ODOT's quoted text clarifies that local *tow truck* regulations must have genuine safety rationales to avoid preemption under the FAAAA.[268] ODOT's far-reaching interpretation of the *Ours Garage* holding is thus based primarily on an assertion of law that was not made by the Supreme Court.

Finally, ODOT's local truck route approval requirements infringe on the local home rule authority protected under the Oregon constitution. Unless the legislature unambiguously establishes its intent to restrict local regulatory authority, local home rule authority is protected by the Oregon constitution. In the truck route context, the legislature expressly authorized local road authorities to establish truck routes within their jurisdictions. Because the legislature did not unambiguously express intent to prohibit local governments from establishing truck routes, ODOT's truck route approval requirement directly infringes upon local governments' home rule authorities. Moreover, ODOT's truck route policy directly conflicts with Oregon law. In addition to authorizing *all* road authorities to establish truck routes, the statute requires local road authorities to obtain ODOT approval before establishing any truck routes on state highways subject to ODOT jurisdiction. By requiring approval for *all* local truck routes (and reserving discretion to deny truck route approval), ODOT's truck route policy directly limits the authority granted to local governments under Oregon law. As a state agency, ODOT does not have authority to unilaterally invalidate Oregon's statutory authorization.

The Oregon legislature expressly delegated authority to local road authorities to adopt mandatory truck routes.[269] Under this authority, road authorities may prohibit trucks and other heavy vehicles from using roads that are not designated truck routes.[270] Road authorities can issue penalties to a truck

operating on a non-truck route, unless it would be impossible for the truck to reach its destination using a designated route.[271] To designate mandatory truck routes or prohibit truck travel on alternate routes, a road authority must adopt an appropriate order, ordinance, or resolution establishing the restrictions and must install signs on applicable roadways notifying drivers of the restrictions.[272] Local truck route restrictions go into effect as soon as these signs are in place. ODOT does not have authority to impose additional requirements on local governments or otherwise restrict local road authorities from imposing mandatory truck routes on local roadways.

c. REGULATING VEHICLE OPERATION FOR AIR QUALITY PURPOSES

Oregon's air quality regulators also have some authority to regulate vehicle use and traffic as a means of controlling dangerous air pollution. However, existing regulations limit the ability of Oregon agencies to take meaningful action to protect human health. The EQC and regional air quality control authorities have authority to "regulate, limit, control or prohibit motor vehicle operation and traffic as necessary for the control of air pollution which presents an imminent and substantial endangerment to the health of persons."[273] When triggered, the "imminent and substantial endangerment" condition enables regulators to restrict vehicle use and traffic to address localized air quality threats.[274] The term "imminent and substantial endangerment" is not specifically defined by statute, so the EQC or regional authority have some discretion when determining whether air pollution presents a sufficient risk to public health to warrant regulatory intervention. For example, the EQC or regional authority rules could potentially impose temporary restrictions on diesel vehicle use if localized particulate matter emissions were found to exceed national ambient air quality standards (NAAQS) or significantly exceed Oregon's health-based ambient benchmark concentrations for particulate matter.[275]

The EQC has also adopted regulations for air pollution emergencies that require DEQ to restrict vehicle use when pollution concentrations exceed certain thresholds.[276] Local governments, ODOT, and state and local police are required to cooperate and assist DEQ or the regional authority with administering and enforcing these restrictions when air pollution emergencies exist.[277] Under current EQC rules, however, Oregon's threshold concentrations for particulate matter pollution are substantially higher than the NAAQS and the state's benchmark concentrations. For example, DEQ is not required to issue an air pollution alert and increase its monitoring activities until $PM_{2.5}$ levels are four times higher than the NAAQS, and additional regulatory responses are not required until pollution levels are six to eight times higher than the NAAQS.[278] DEQ is not required to restrict motor vehicle traffic until average ambient PM_{10} concentrations exceed 500 micrograms per cubic meter ($\mu g/m^3$) or $PM_{2.5}$ concentrations exceed 280.5 $\mu g/m^3$ over a two-hour period.[279] The EQC would therefore need to reduce its air pollution emergency thresholds to enable DEQ and local governments to restrict vehicle use when particulate matter concentrations exceed the NAAQS or the state's benchmark concentrations.

3. REGULATING EMISSIONS FROM NONROAD VEHICLES AND ENGINES

The CAA expressly preempts state and local governments from directly regulating emissions from new and existing nonroad vehicles and engines.[280] EPA has exclusive authority to adopt emissions standards for certain types of new nonroad engines, including new engines under 175 horsepower used in construction or farm equipment and new locomotive engines.[281] California is the only state authorized to adopt emissions standards for all other new and existing nonroad engines, but it must first receive a waiver from EPA.[282] Other states may then adopt California's standards.[283]

As a result of the CAA's preemption provisions, Oregon's authority to directly regulate emissions from both new and existing nonroad vehicles and engines, such as off-road construction equipment, is limited to adopting California's standards. In addition to emissions standards for new nonroad engines, California has adopted fleet performance standards for existing off-road diesel vehicles larger than 25 horsepower.[284] California's off-road performance standards gradually require public and private fleets to phase-out older, higher-emissions engines, so many of these older engines are being sold to new owners in other states. If Oregon adopts California's off-road fleet performance standards, it would prevent Oregon-based fleets from purchasing older nonroad diesel engines from California.

In addition to adopting California's nonroad standards, Oregon has other options for indirectly regulating emissions from nonroad diesel engines. For example, Oregon can adopt nonroad source regulations that are unrelated to emissions, such as nonroad vehicle registration and fee requirements.[285] Oregon can also indirectly regulate aggregate nonroad emissions through indirect source rules.[286]

EPA has exclusive authority to adopt emissions standards for new nonroad construction equipment under 175 horsepower.

California may seek a waiver for emissions standards for new construction equipment over 175 hp and all existing construction equipment.

4. REGULATING INDIRECT SOURCES OF AIR POLLUTION

The CAA gives states broad discretion to adopt indirect source programs to control mobile air pollution from mobile sources.[287] CAA Section 110 expressly authorizes states to regulate emissions from "indirect sources" of air pollution.[288] An indirect source is a physical location that attracts or may attract mobile sources of air pollution.[289] Buildings, parking lots, construction sites, highways, ports, and rail yards are all examples of indirect sources of air pollution. Under the CAA, states may adopt indirect source rules that regulate the aggregate emissions produced by on-road or nonroad mobile sources within the boundaries of an indirect source. In other words, indirect source rules regulate the aggregate emissions produced by mobile sources within an indirect source's boundaries, without directly regulating the emissions from individual vehicles and engines. As long as 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.[290] Indirect source rules therefore empower state and local governments to indirectly regulate emissions from both on-road and nonroad diesel vehicles and engines operating at a single location. Perhaps more significantly, indirect source rules enable state and local governments to regulate aggregate emissions from nonroad vehicles and engines (including construction equipment) without facing preemption under Section 209(e).[291]

Indirect sources are locations that attract mobile sources, such as construction sites, rail yards, ports, highways, and parking lots.

Many state and local jurisdictions throughout the United States have adopted indirect source rules. Courts have emphasized that the CAA grants states broad discretion to decide whether and how to regulate emissions from indirect sources, and state and local rules vary in their applicability and their scope.[292] The most effective indirect source rules apply to multiple types and classes of indirect sources, require specific reductions in air pollution emissions, 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 has adopted a fairly comprehensive indirect source rule that applies to a variety of sources and requires measurable reductions in emissions. Oregon has also adopted indirect source rules, but the state's program is limited in applicability and scope and does not directly require emissions reductions. The following subsections briefly describe the San Joaquin Valley and Oregon indirect source rules to illustrate how dramatically these jurisdictions' rules differ.

a. SAN JOAQUIN VALLEY INDIRECT SOURCE RULE

The San Joaquin Valley Air Pollution Control Board has adopted one of the most innovative and effective indirect source programs.[293] The San Joaquin Valley rule applies to new and modified indirect sources above certain size thresholds. 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. The source must then identify and implement a combination of on-site and/or off-site measures to reduce its baseline pollution emissions by percentages specified in the rule. 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%.[294] The indirect source may achieve these emissions reductions through on-site mitigation measures (such as retrofitting construction equipment with pollution control devices) or by paying a fee to support off-site emissions reductions. 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.[295]

San Joaquin Valley's indirect source rule applies to a variety of sources, including new construction projects above specific size thresholds.

b. OREGON'S INDIRECT SOURCE RULES

The EQC has adopted an indirect source permit program in Oregon, but the program's applicability is very limited, and it has not been widely implemented or enforced. 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.[296] The application must include estimates of the average annual weekday vehicle trips the source will attract and associated air pollution emissions.[297] The indirect source must also pay $600 in fees to DEQ.[298] Most indirect source construction permits will not impose any additional requirements on the source covered by the permit.[299] However, if an indirect source will cause or contribute to a violation of Oregon's CAA state implementation plan or a violation of any NAAQS, the source may be required to implement an Indirect Source Emission Control Program (ISECP).[300] 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.[301] The source is not required, however, to demonstrate that its chosen measures will result in better air quality or NAAQS attainment.

Oregon's existing indirect source program is thus quite limited in scope and effect. Even so, the EQC's regulations attempt to preempt local governments from adopting more stringent or meaningful local indirect source rules. The regulations assert that it is necessary to regulate indirect sources on a statewide basis, and that the EQC "assumes or retains jurisdiction" over indirect source regulations.[302] The EQC also retains discretion to extend indirect source jurisdiction to regional air quality control authorities.[303] These administrative restrictions on local regulation likely violate the home rule authority granted to local governments under Oregon's constitution.[304] The Oregon legislature has not adopted any laws authorizing or prohibiting indirect source regulation. Thus, the legislature has not expressly delegated exclusive regulatory jurisdiction over indirect sources to the EQC, nor has the legislature expressed an unambiguous intent to preempt local regulation of indirect sources. Therefore, local governments likely retain home rule authority to adopt indirect source rules to address local air quality concerns.

Oregon's indirect source rule only applies to new parking facilities with 1,000 or more spaces (or at least 800 spaces in central Portland).

5. LOCAL GOVERNMENTS ACTING AS MARKET PARTICIPANTS

State and local governments have broad authority to address diesel emissions through their own procurement policies and public contract requirements. Under the market participation doctrine, state and local governments are exempt from federal preemption when a public entity is acting in a proprietary, rather than regulatory, manner.[305] A state or local government acts in a proprietary manner when it pursues its own interests in "efficient procurement of needed goods and services, as measured by comparison with the typical behavior of private parties in similar circumstances."[306] In other words, if a public entity is directly participating in the marketplace by purchasing goods, contracting for services, or managing publicly owned property, the public entity is acting in a proprietary capacity as a market participant, rather than as a government regulator. When a public entity is acting as a market participant, it is free to pursue public policy objectives through rules and regulations that might otherwise be preempted under federal law.

The market participation doctrine limits the scope of federal preemption under the CAA and the FAAAA.[307] Public fleet rules are not preempted under federal law when they direct the procurement behavior of state and local government entities or guide the formation of public contracts.[308] Thus, regulations directing state or local government entities to purchase or lease certain types of vehicles, or imposing conditions or requirements on public

Local governments can establish low-emissions standards for publicly owned fleets.

contracts for the use of privately owned fleets, are proprietary actions that "constitute direct state participation in the market."[309] A procurement policy (regardless of any underlying goals or motivations) will not trigger federal preemption so long as the state or local government is acting as a market participant. In other words, state and local governments are free to decide how, where, and why they spend public funds.

However, the market participant doctrine will not shield a regulation from federal preemption if a state or local government is acting in a regulatory capacity, rather than a proprietary capacity. For example, when a state or local government includes binding enforcement or penalty provisions in a policy that is otherwise proprietary in nature, the provisions may have a regulatory effect that weakens the applicability of the market participation doctrine. An enforcement or penalty provision's potential to trigger federal preemption depends on the specific requirements of the applicable federal statute. In some cases, an enforcement provision within a public procurement contract may be a permissible proprietary action under the CAA, yet trigger federal preemption under the FAAAA.

In the CAA context, public fleet rules may include enforcement provisions, including fines and criminal sanctions, without necessarily voiding the rules' proprietary nature. For example, the Ninth Circuit held that criminal enforcement provisions included in public fleet procurement rules did not transform the rules from proprietary to regulatory actions and therefore did not trigger preemption under the CAA.[310] However, in the FAAAA context, enforcement mechanisms and penalty provisions in public contracts may effectively transform the rules from permissible proprietary to impermissible regulatory actions because the FAAAA expressly preempts state actions "having the force and effect of law."[311] For example, in *American Trucking Ass'n, Inc. v. City of Los Angeles,* the Supreme Court held that a state contract agreement for drayage trucks that included "coercive" enforcement mechanisms effectively had "the force and effect of law," and therefore was preempted under the FAAAA.[312] The mandatory contractual agreement at issue in *American Trucking* included criminal penalties for non-compliance, including jail time.[313] The agreement imposed by the State Board of Harbor Commissioners specifically required drayage companies operating at the Port of Los Angeles to attach a placard to each truck with a phone number for reporting environmental or safety concerns and submit a plan identifying off-street parking locations for off-duty trucks.[314] To implement these requirements, the agreement prohibited terminal operators from allowing non-compliant, unregistered drayage trucks from accessing the Port. If a terminal operator allowed a non-registered truck to operate on Port property, the state reserved the right to impose a fine up to $500 or sentence the operator to up to six months in jail. Because a private party would not possess authority to impose criminal penalties for comparable contract violations, the Court determined that the government was acting in a regulatory,

rather than proprietary, capacity.[315] Thus, the market participation doctrine is slightly more limited under the FAAAA than it is under the CAA—while criminal enforcement provisions in public contracts may not trigger preemption under the CAA, a local government cannot impose criminal penalties through a contractual agreement and avoid preemption under the FAAAA.

Under the market participation doctrine, local governments may reduce emissions by requiring public fleets to purchase or lease low-emission diesel vehicles, or other types of low- or non-emitting vehicles. Local governments may also include clean diesel requirements in public contracts or require public franchise fleets (such as garbage trucks) to use low-emission, zero-emission, or alternative-fuel vehicles.[316] Local governments may also impose specific restrictions on the use of public vehicles and fleets operating under public contract. For example, a local government may impose idling restrictions on public fleets, such as school buses, or private fleets operating under a public contract, such as construction vehicles used on a public works project.[317]

Local governments should exercise caution when including enforcement provisions in public contracts with privately owned motor carrier fleets (such as tow trucks, drayage trucks, or commercial transportation fleets). Strict, one-sided enforcement provisions—especially those that impose criminal penalties—could "have the effect of law" and trigger preemption under the FAAAA. Public contracts involving privately owned fleets that are not engaged in the commercial transportation of private property or passengers are not subject to FAAAA preemption, and therefore do not face the same enforcement limitations.[318]

EXAMPLES OF GENERALLY PERMISSIBLE STATE & LOCAL EMISSIONS CONTROLS

State and local governments may regulate emissions from existing on-road diesel vehicles.

State and local governments may regulate aggregate emissions from indirect sources of air pollution (e.g., construction sites).

State and local governments may adopt clean vehicle standards for publicly owned fleets.

IV LOCAL STRATEGIES FOR REDUCING DIESEL POLLUTION

Despite the complex jurisdictional limitations and preemption provisions discussed in Part III, the City of Portland and Multnomah County can pursue a variety of strategies to reduce diesel emissions from on-road and nonroad vehicles and engines. Because heavy-duty diesel trucks are the largest source of on-road diesel exhaust in the Portland metropolitan area, strategies that reduce emissions from these vehicles can provide substantial benefits for local air quality. Both the City and County have authority to regulate on-road vehicle operation and use within their jurisdictions, incorporate clean diesel requirements in public procurement and public contracting policies, and incentivize private parties to voluntarily transition to cleaner diesel vehicles. At the same time, the City and County should also consider strategies to reduce emissions from nonroad diesel vehicles and engines, which are collectively responsible for the majority of Portland's diesel particulate matter pollution.[319] Section A describes local strategies for reducing diesel emissions from on-road sources, while Section B describes local strategies for reducing emissions from nonroad sources. Section C describes some potential options for funding the clean diesel transition in the Portland metropolitan area.

A. REDUCING EMISSIONS FROM ON-ROAD DIESEL VEHICLES

Diesel exhaust from large on-road diesel vehicles significantly contributes to the Portland area's diesel pollution problem and elevates pollution concentrations along high-traffic roads and highways. The City and County generally lack authority to prohibit private purchases of new diesel vehicles or restrict registration of diesel vehicles within the City and County boundaries. However, the City and County have considerable authority to regulate the operation and use of vehicles along their jurisdictional roads. The City and County also have authority to promote or require the use of clean diesel vehicles and practices through public procurement policies and public contracts. Finally, the City and County have broad discretion to implement voluntary programs that incentivize private parties to transition to clean diesel vehicles. This Section briefly describes several local strategies to reduce diesel emissions from on-road sources that avoid preemption under state and federal law.

1. IMPOSE RESTRICTIONS ON DIESEL TRUCK TRAFFIC AND PARKING

Local truck traffic is a significant source of diesel pollution in the Portland area. Truck traffic and deliveries during daytime hours can contribute to elevated particulate matter levels in urban areas and near locations with disproportionately vulnerable populations, such as schools and hospitals. To reduce diesel pollution in urban areas during daytime hours, the City can adopt truck routes and loading zones that prohibit truck through-traffic or parking during certain periods of the day. To reduce diesel pollution near vulnerable populations, the City could establish mandatory truck routes and prohibit truck traffic on roads adjacent to schools and hospitals.

The City has made a concerted effort to control truck traffic and parking. For example, the Portland Bureau of Transportation (PBOT) has established voluntary preferred truck routes[320] and has adopted truck loading zone regulations that prohibit commercial trucks from actively loading or unloading on City roads for longer than 30 minutes.[321] To expand on these existing initiatives, the City should explore additional strategies to reduce on-road diesel emissions by establishing mandatory and time-of-day truck routes, encouraging off-hour deliveries, establishing voluntary clean diesel or diesel-free zones, and establishing dynamic road user fees for heavy-duty vehicles.

a. ESTABLISH MANDATORY AND TIME-OF-DAY TRUCK ROUTES

Oregon law expressly authorizes local road authorities to establish mandatory truck routes and prohibit truck traffic on alternative routes.[322] Local road authorities also have exclusive authority to regulate public parking on their jurisdictional roads.[323] Road authorities may impose additional restrictions on road use by certain types and sizes of vehicles if necessary to protect public safety or protect roadways from undue damage.[324] Federal law does not preempt state and local governments from adopting mandatory truck routes, so long as the routes serve a public safety purpose or are limited to vehicles above specified sizes or weights.[325] While ODOT currently requires local governments to seek its approval before establishing mandatory truck routes, this administrative policy is inconsistent with state and federal law and infringes on local governments' home rule authorities granted under the Oregon Constitution, as noted above.[326] The City and County should therefore exercise their full authority to establish truck routes and restrict truck traffic on alternative routes.

As the road authority for Portland, the City has authority under Oregon law to establish mandatory truck routes on roads under its jurisdiction and to prohibit truck through-traffic on alternate jurisdictional routes. PBOT has issued a map of preferred truck routes within the City,[327] but use of these routes is voluntary, the routes are prevalent in high-density areas, and PBOT does not prohibit trucks from operating on alternate routes. To reduce diesel pollution in high-density areas and near vulnerable routes and locations, the City should adopt mandatory truck routes on jurisdictional roadways.[328] Mandatory truck routes prohibit trucks from operating on alternate routes serving the same destination, while still allowing trucks to operate on alternate routes for short periods of time

A diesel truck passes by residential condos and outdoor dining in Southeast Portland.

when necessary. For example, trucks are permitted to make deliveries to businesses located along non-truck routes, but must minimize the distance they travel along the alternate route.

The City should also consider establishing time-of-day truck routes to encourage off-hours (*i.e.,* nighttime) deliveries and minimize exposure to diesel pollution during the day. For example, the City could establish time-of-day routes that divert truck traffic away from schools during school hours. Similarly, the City could establish truck routes that divert truck traffic away from downtown areas during business hours, while still allowing certain trucks, such as delivery trucks, to enter the area if necessary to provide service to customers.

Wherever possible, the City should restrict truck traffic on high-injury corridors in communities of color and low-income communities. Sixty percent of Portland-area traffic accidents resulting in fatalities or severe injuries occur on just six percent of the region's roadways and intersections.[329] Metro designates these roadways as high injury corridors and intersections. The majority of the region's high-injury corridors are located in communities with high concentrations of people of color, low-income households, and English language learners, and most pedestrian fatalities and severe injuries occur in these communities. These communities are also disproportionately impacted by diesel pollution, so establishing mandatory truck routes that avoid high-injury corridors could provide significant safety and health benefits for these communities.

The City should also establish mandatory truck routes that prohibit trucks from using roads that are designated bike boulevards, that have dedicated bicycle lanes, or that serve as active transport routes. As the City

works to increase the number of people who commute by bicycle and on foot (as well as through other active means), it should designate routes that shield active commuters from truck traffic to protect public safety and promote non-motorized transportation.

To designate mandatory truck routes, a local road authority must establish truck route restrictions through an appropriate order, resolution, or ordinance and must install signs notifying drivers of applicable truck route designations, restrictions, and penalties.[330] Local governments may enforce mandatory truck routes and may impose fines of up to $1,000 on drivers operating on non-designated routes.[331] Penalties for truck route violations are not subject to the limitations imposed by article IX, section 3a of the Oregon Constitution, and thus may be used to fund local diesel reduction programs. However, local governments may not impose penalties on a driver operating on a non-truck route if the driver cannot reach his or her destination without traveling along the non-designated route.[332] Despite this statutory exception, establishing and enforcing mandatory truck routes enables local governments to raise revenues for diesel reduction programs while also reducing dangerous air pollution in local communities.

b. ENCOURAGE OFF-HOURS DELIVERIES BY RESTRICTING LOADING ZONE HOURS

To reduce daytime particulate matter pollution in high-density areas or near vulnerable populations, the City should encourage or require diesel trucks to make off-hours deliveries by restricting availability of public loading zones. For example, the City could prohibit truck loading and unloading in the vicinity of schools and daycares during school and business hours. In areas with elevated levels of particulate matter pollution, in areas with traffic congestion, and in areas used for alternative and active transport, the City could establish loading zones and parking spaces that are reserved for medium- and heavy-duty delivery vehicles during certain nighttime hours and available for all vehicles during daytime hours.

The City should also re-designate parking spaces to limit deliveries during rush hours. In downtown Portland, all metered parking spaces qualify as loading zones before 10:30 a.m.[333] This policy may incentivize diesel trucks to make deliveries during morning rush hour, which would produce additional particulate matter pollution near congested roadways. To reduce rush hour diesel pollution, the City should revise its downtown loading zone policy to encourage off-hours deliveries. The City should also increase parking rates for any use of loading zones during daytime hours. Fines for parking and other traffic violations are not restricted to highway purposes under the Oregon Constitution, and therefore can be used to fund local diesel reduction programs.

The City should also work with private property owners to encourage off-hour deliveries. The City does not have authority to regulate truck loading and parking on private property, such as private parking lots or driveways. To encourage off-hours deliveries on private property, the City should explore opportunities to incentivize private business owners to accept and facilitate deliveries during non-business hours and disincentivize daytime deliveries. A combination of daytime loading zone restrictions and incentives to shift to off-peak deliveries could yield significant benefits. For example, a New York City pilot program offered businesses $2,000 to allow nighttime deliveries.[334] The purpose of the program was to reduce truck traffic during daytime hours, improve air quality, and demonstrate the feasibility and benefits of off-hour deliveries in New York. The pilot program produced multiple benefits for participants and New York as a whole. For example, truck drivers reported nighttime delivery speeds 130% faster than midday delivery speeds and saved an estimated $1,000 per month in parking fines.[335]

Portland's loading zones may encourage daytime deliveries by prohibiting non-truck parking during daytime hours.

By restricting loading zone hours and increasing and enforcing penalties for parking violations, the City could reduce daytime air pollution while also raising revenue for local diesel reduction programs. Some of this additional revenue could be used to provide incentives to local businesses to shift their deliveries from daytime to nighttime hours.

c. CREATE VOLUNTARY CLEAN DIESEL AND DIESEL-FREE ZONES

Some international jurisdictions have established low emission zones to reduce diesel emissions from heavy-duty vehicles. For example, London's Low Emission Zone charges a fee to vehicles that do not meet the zone's emissions standards.[336] In concept, clean diesel zones are areas that would prohibit older, dirtier diesel vehicles, while diesel-free zones would prohibit all diesel vehicles. In the United States, state and local efforts to establish mandatory clean diesel or diesel-free zones would likely face preemption challenges under the FAAAA.[337] However, local governments and businesses are free to establish voluntary clean diesel or diesel-free zones on their own property.

The FAAAA restricts states and local governments from adopting regulations relating to commercial truck routes or services unless the regulation genuinely responds to a safety concern connected to motor vehicles. For example, a local government could justify restricting truck traffic in urban areas during daytime hours as a means of protecting the safety of pedestrians and drivers of smaller vehicles. However, restricting road access to a specific type of heavy-duty vehicle (such as an older diesel truck) while allowing access to other types of heavy-duty vehicle (such as newer diesel trucks) for the purpose of reducing diesel pollution would likely fall outside the scope of the FAAAA's safety exemption. Local governments and businesses are free to establish voluntary clean diesel or diesel-free zones on their own property.

As an alternative to mandatory restrictions, the City and County can establish voluntary clean diesel or diesel-free zones at City and County-owned facilities and can encourage other public and private entities to do the same. For example, Oregon Health and Science University, Legacy Health System, and Providence Health System designated their campuses and facilities as Clean Diesel Zones and made commitments to reduce diesel emissions from their operations and their suppliers, vendors, and service providers.[338] The City and County should adopt similar zones and commitments for public facilities, such as administrative buildings and public schools, community centers, libraries, and health centers.[339]

OHSU's campus is a designated Clean Diesel zone. *Photo: OHSU/Aaron Bieleck (2018).*

d. ESTABLISH DYNAMIC ROAD USER FEES FOR HEAVY-DUTY VEHICLES

The City and County have authority to impose reasonable tolls or other road user fees on jurisdictional roads.[340] The County also has authority to establish tolls on Willamette River bridges located in Portland that are operated and maintained by the County.[341] To reduce diesel pollution during certain time periods, and deter truck traffic during certain times of day or during periods of compromised air quality, the City and/or County could impose "dynamic" or variably priced road tolls on vehicles with three or more axles. Dynamic road tolls could be used to deter truck traffic in certain areas during pre-scheduled periods. For example, the City could require trucks entering downtown to pay tolls during weekday rush hours. Dynamic road tolls could also be used to deter truck traffic during periods of compromised air quality. For example, if ambient particulate matter concentrations exceed public safety thresholds, dynamic road tolls could go into effect to deter truck traffic.

Dynamic road tolls are currently in use on some Northwest highways, and Oregon is currently in the process of establishing dynamic tolls along the two major interstate highways running through Portland. In 2017, the legislature directed the Oregon Transportation Commission to establish **value pricing** to reduce traffic congestion along I-5 and I-205 in the Portland metropolitan area.[342] To reduce congestion, the Commission is authorized to establish variable time-of-day pricing along these highways.[343] Washington State has already implemented dynamically priced road tolls. For example, Washington established express toll lanes on I-405 that impose

variable rates based on real-time traffic conditions.[344] When traffic is light, toll rates are low to encourage vehicles to use the express lanes; when the express lanes become congested, toll rates increase to discourage additional vehicles from using the lanes. All vehicles are authorized to use the express lanes regardless of passenger occupancy. The express toll lanes have helped increase rush hour traffic speeds in all lanes on I-405.[345] Washington also established "high occupancy toll" (HOT) lanes on SR 167 that allow solo drivers to pay a toll to use the highway's high occupancy vehicle (HOV) lanes.[346] The HOT lane toll rates vary between $0.50 and $9.00 depending on traffic speeds and volumes.[347]

Dynamic road tolls that specifically target diesel-fueled vehicles would be very challenging to implement and could be vulnerable to Constitutional challenges.[348] The City and County can mitigate these constraints by establishing dynamic tolls based on vehicle size rather than fuel type. The vast majority of heavy-duty trucks in operation today are powered by diesel fuel, so tolls imposed on vehicles with three or more axles help send a price signal to discourage diesel vehicle traffic while also accounting for the damages local roads incur from heavy-duty vehicles.

2. ADOPT CLEAN FLEET REQUIREMENTS

Clean fleet requirements direct or encourage public or private fleet owners to maintain a certain percentage of "clean" (*i.e.*, low-emission or zero-emission) vehicles in their fleets. Local governments have authority to impose clean fleet requirements when they act in a proprietary capacity as market participants.[349] Both the City and County thus have broad authority to impose clean fleet requirements on publicly owned fleets or include clean fleet conditions or requirements in public contracts. The City and County may also impose clean fleet requirements on private entities operating pursuant to a public franchise agreement.[350] For example, the City currently requires local waste hauler franchises (trash, recycling, and yard debris collectors) to replace their older collection vehicles with newer models to protect public health and the environment.[351] However, local governments have limited authority under state and federal law to impose generally applicable clean fleet requirements on privately owned fleets.[352]

The City and County have both adopted or pursued clean fleet policies in some form. In 2012, the City adopted fleet upgrade requirements for waste haulers that require all residential and commercial garbage and recycling trucks to have model year 2007 or newer engines.[353] The County is developing a Sustainable Fleet Strategy to guide the County's vehicle procurement selections with an aim to reduce emissions and promote alternative fuel vehicles.[354] The City and County, in collaboration with Metro, the Port of Portland, and Clackamas County, also participated in the Oregon Clean Air Construction Collaborative, which developed a uniform regional Clean Air Construction Standard aimed at reducing diesel pollution.[355] The City and County should continue to pursue and expand on these existing clean fleet efforts. In addition, the City should encourage the Port of Portland to adopt clean fleet standards for trucks operating at Port facilities.

a. ADOPT CITY AND COUNTY CLEAN FLEET REQUIREMENTS

To further reduce diesel emissions in the metropolitan area, the City and County should pursue the following clean fleet strategies:

- Adopt clean diesel fleet standards for public fleets, including emergency vehicles, that prohibit procurement of diesel vehicles that are older than model year 2007 vehicles and require the phase-out of existing diesel vehicles within the fleet that are older than model year 2007 vehicles.
- Finalize and adopt public procurement policies that require contractors working on public projects to use post-2007 heavy-duty on-road diesel vehicles.
- Adopt clean fleet requirements for all franchises operating within the City or County that own or operate diesel vehicles. Eligible franchises include, for example, taxi companies, shuttle services, private buses, and non-emergency medical transport services.

In addition to clean fleet requirements mandating the phase-out and replacement of older, dirtier diesel vehicle engines, the City and County can also adopt clean fleet standards that require public fleet operators and private contractors working on public projects to exercise clean diesel best practices when operating their on-road fleets. For example, the City of Chicago adopted a "Clean Fleet Score" ordinance that requires all contractors on city projects to have a "clean fleet score" based on the use of emission control devices and in-use emission reduction practice, such as the use of anti-idling practices.[356]

b. URGE THE PORT OF PORTLAND TO ADOPT DRAYAGE FLEET STANDARDS

Ports generate a substantial amount of diesel pollution, both from marine vessels and from drayage trucks, which are short-haul diesel vehicles used to transport cargo into and out of ports and other shipping terminals. Under the market participant doctrine, a port acting in its proprietary capacity may impose conditions on drayage trucks operating pursuant to a contract or other agreement with the port.[357]

California's San Pedro Bay Ports (the Port of Los Angeles and the Port of Long Beach) exemplify the levels of emissions reductions ports can achieve through concerted, collaborative action. In 2006, the San Pedro Bay Ports adopted a Clean Air Action Plan designed to reduce port-related particulate matter emissions 77% below 2005 levels by 2023.[358] In accordance with this initiative, the Ports launched a Clean Trucks Program in 2008 to phase out older drayage trucks.[359]

The Cities of Los Angeles and Long Beach established a $44 million fund to offset costs to drayage truck operators and facilitate the purchase of compliant equipment.[360] This fund was financed in part through a Clean Truck Fee assessed on containerized cargo hauled by drayage trucks.[361] By 2012, the Port of Los Angeles's entire drayage truck fleet had transitioned to 2007 and newer vehicles, resulting in an 80% reduction in emissions.[362] As of 2017, the Port's drayage-related particulate matter emissions had decreased 97% since 2005.[363] Ports in New York, New Jersey, and Oakland, California have also adopted similar drayage fleet standards.[364]

The City should urge the Port of Portland to adopt clean diesel conditions for drayage trucks operating in the Port. At a minimum, these conditions should require drayage truck operators to have diesel particulate filters installed on their vehicles and exercise clean diesel operating practices, such as limits on idling. These types of requirements are often less costly than vehicle or engine replacements and can have a significant impact on emissions. The Port of Portland should also prohibit the use of glider engines on Port property and work with drayage truck operators to establish a timeline for phasing out older diesel vehicles.[365]

3. ESTABLISH IDLING RESTRICTIONS

When diesel engines idle (operate while the vehicle is parked or stationary), they unnecessarily emit particulate matter and other pollutants in a localized area. On average, heavy-duty diesel vehicles emit approximately 1.1 grams of $PM_{2.5}$ per hour.[366] Idling diesel school buses emit an average of 1.401 grams of $PM_{2.5}$ per hour, and idling public transit buses emit an average of 1.069 grams of $PM_{2.5}$ per hour.[367] Construction equipment, locomotives, and ships all emit air pollutants while idling. On an individual basis, diesel engine idling may not have a meaningful impact on air quality, but on an aggregate basis, idling generates a significant amount of diesel pollution in the Portland metropolitan area.

In 2011, Oregon adopted legislation prohibiting the operator of a commercial vehicle from idling the vehicle for more than five minutes in any continuous sixty-minute period.[368] The idling prohibition includes exceptions for certain activities and vehicles[369] and only applies to commercial vehicles weighing more than 10,000 pounds.[370] The stated purpose of Oregon's idling legislation is "to reduce greenhouse gas and other emissions from the use of commercial vehicles."[371] Despite this purpose, however, the legislature expressly preempted local governments from adopting more stringent idling regulations for commercial vehicles.[372] Under Oregon law, a "city, county or other local government may not enact any charter provision, ordinance, resolution or other provision regulating the idling of primary engines in commercial vehicles."[373] The statute also effectively

Diesel trucks emit substantial amounts of particulate matter while idling.

preempts state agencies from regulating commercial vehicle idling as well.[374]

Oregon's idling law therefore preempts local governments from adopting generally applicable ordinances or rules restricting commercial vehicle idling on public roads and public property. For example, the City is preempted from establishing anti-idling zones on local roads.[375] However, local governments retain authority to restrict vehicle idling through internally applicable policies and may impose stricter idling restrictions on public employees and operators of publicly owned vehicles. For example, the County imposes a 20-second idling limit on County fleet vehicles and commercial vehicles operating on County property.[376] Local governments may also restrict idling when acting in a proprietary capacity as a market participant. For example, the City could include an anti-idling provision

in a contract for a public works project, and the County could prohibit its vendors from idling. An anti-idling contract condition likely would not fall within the idling law's preemptive scope because the contract provision would not "regulate" idling of commercial vehicles through local legislative action. However, to preserve the proprietary nature of this type of contractual restriction, local governments should not attempt to enforce the restrictions through regulatory mechanisms or impose criminal penalties on violators. Instead, a violation should be treated as a breach of contract.

To reduce idling-related diesel emissions, the City and/or County should restrict idling on public school property, include anti-idling provisions in public contracts, enforce state idling restrictions, educate private property owners on the dangers of idling-related emissions, and encourage voluntary efforts to reduce diesel vehicle idling. Mandatory truck routes and loading zone restrictions can also help reduce idling in certain areas.[377]

a. RESTRICT IDLING ON PUBLIC SCHOOL PROPERTY

Local governments may restrict idling on public school property by prohibiting school bus drivers from idling bus engines and including anti-idling provisions in contracts with private contractors operating on school property. Local governments may also restrict truck parking on school property or restrict deliveries during school hours. To reduce diesel emissions in the vicinity of public schools, local governments may impose parking restrictions for heavy-duty vehicles near school properties and adopt mandatory truck routes that divert truck traffic away from schools, particularly during school hours.

b. RESTRICT IDLING THROUGH PUBLIC CONTRACTS

Local governments may include anti-idling conditions in contracts for public works projects or other services provided by private entities. For example, a construction contract could stipulate that equipment operators must avoid idling engines for more than a set amount of time. Similarly, a procurement contract could stipulate that delivery truck drivers turn off primary engines when making deliveries to public entities. The County currently imposes a twenty-second idling limit on commercial vehicles used for public projects.[378] The County's idling policy applies to all county-owned vehicles and commercial vehicles operating on County property pursuant to a public contract.[379] The City and County have also established a five-minute idling restriction on nonroad equipment used for public construction projects through their Clean Air Construction Standards.[380] The City

and County should continue to strengthen and expand idling restrictions through public contracts to reduce construction-related diesel pollution in the Portland area.

To avoid preemption under Oregon's idling law, the City and County must ensure they act in a proprietary capacity when imposing anti-idling conditions in public contracts. To ensure that a public contract provision represents a proprietary action—rather than a regulatory action—a local government should avoid including any enforcement or criminal penalty provisions within the contract that would otherwise be unavailable to a private party.[381] For example, a public contract should not specify that the contract's provisions are enforceable under the penal code or include coercive criminal penalty provisions. Instead, the contract should include stipulated damages for breach of contract that are enforceable by either party to the agreement.

c. ENFORCE STATE IDLING RESTRICTIONS

The City and County should enforce Oregon's idling restrictions, particularly in the vicinity of vulnerable populations, such as schools and hospitals. A violation of Oregon's statewide idling restrictions is a Class C traffic violation,[382] which holds a maximum fine of $500.[383] Local police have authority to enforce Oregon's idling restrictions, yet rarely do so. To reduce diesel emissions, local governments should train their police forces and county sheriffs' offices to identify and enforce idling violations within their jurisdictions. Fines for idling violations are shared between the City and County and are not subject to the use limitations established by article IX, section 3a of the Oregon Constitution.[384]

d. EDUCATE PRIVATE PROPERTY OWNERS

Oregon's ant-idling laws only apply on property open to the public.[385] This means that diesel vehicle operators are free to idle their engines for unlimited amounts of time when parked on private property that restricts access to the public. Diesel vehicle idling at locations such as freight terminals, distribution centers, and industrial properties that regularly receive or make large deliveries may substantially contribute to urban air pollution. While local governments may not directly restrict idling at these types of private locations, they can educate facility owners and operators about the air pollution impacts associated with vehicle idling and encourage facilities to impose voluntary idling restrictions on diesel vehicles and engines.

Private property owners may be unaware of the health risks and localized air quality impacts associated with vehicle idling.

4. PROMOTE THE TRANSITION TO ELECTRIC TRUCKS AND BUSES

The most effective way to decrease on-road diesel pollution is to replace diesel-fueled vehicles with electric vehicles (EVS). Oregon has made great progress in electrifying its passenger vehicle fleets, and the state currently has one of the highest electric car market shares in the country. In 2017, EVs accounted for 2.4% of all new car sales in the state, making Oregon second only to California in terms of EV market share.[386] With new medium-duty and heavy-duty EVs poised to hit the market over the next few years, Oregon will have more opportunities to meaningfully reduce diesel emissions by electrifying its commercial truck and public bus fleets.

Oregon has taken a number of proactive steps to advance EV deployment in the state. For example, Oregon has adopted California's Zero-Emission Vehicle (ZEV) sales mandate, which requires 4.5% of new 2018 passenger cars and light-duty trucks sold in Oregon to be ZEVs.[387] The ZEV sales mandate increases for each subsequent model year through 2025, when it maxes out at 22% of total passenger car and light-duty truck sales for all subsequent model years.[388] Oregon has also participated in the West Coast Electric Highway initiative, which has spurred the installation of dozens of fast-chargers on the state's highways.[389] In 2017, Governor Kate Brown signed Executive Order No. 17-21, which established the goal of deploying 50,000 EVs in Oregon by 2020.[390] The state also established EV rebate programs that will provide standard rebates of $1,500 or $2,500 for new EVs and plug-in hybrids and $2,500 for used EVs purchased or leased by low or moderate-income households.[391] More recently, Oregon has proposed to allocate approximately $10.9 million of the state's Volkswagen settlement funds to develop and maintain light-duty EV charging infrastructure.[392] The City has also adopted a target to upgrade 30% of the City's sedan fleet to EVs by 2020.[393] The Multnomah County Board of Commissioners has committed to work with TriMet to "complete a rapid transition to an all-electric bus fleet."[394]

A Proterra electric bus operated by the San Joaquin Regional Transit District (RTD) recharging at a fast charging station. The RTD's e-buses entered into service in 2013. *Photo: San Joaquin RTD (2013).*

In September 2018, TriMet announced that it aims to phase-out its diesel buses and transition to an all-electric or alternatively fueled bus fleet by 2040.[395] TriMet's Board of Directors approved the transit agency's plan to spend $53 million on 80 electric buses over the next five years, but TriMet has yet to identify a clear strategy for procuring between 500 and 900 nondiesel buses over the next two decades.[396]

Electrifying Oregon's transportation system will result in substantial air quality improvements and significantly reduce the state's greenhouse gas emissions. To date, Oregon's efforts have largely focused on accelerating the transition to passenger EVs. To achieve additional air quality benefits and reduce harmful diesel pollution, the City and County should plan for and deploy infrastructure to support heavy-duty EVs as well. In addition, the City and County should encourage TriMet to electrify its public bus fleet and phase-out its older, dirtier diesel buses as quickly as possible.

a. DEVELOP A PLAN FOR DEPLOYING HEAVY-DUTY EV CHARGING INFRASTRUCTURE

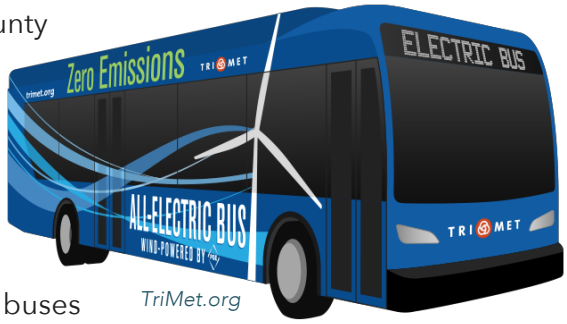
Multiple vehicle manufacturers have designed heavy-duty EVs, and electric truck production is projected to ramp up over the next few years.[397] A limited number of Daimler's short-haul electric trucks have already been deployed for commercial use in the United States, and the Portland-based manufacturer is planning to begin large-scale production of medium-duty and heavy-duty electric trucks in 2019.[398] Tesla's semi-autonomous Semi truck (also scheduled for commercial delivery in 2019) has an estimated base price of $150,000 or $180,000, depending on battery range, and a projected payback period of two years.[399] The Tesla Semi has a range of 300 to 500 miles and consumes two kilowatt-hours (kWh) of electricity per mile, resulting in potential lifetime fuel savings of more than $200,000.[400] In comparison, an average diesel-fueled semi costs around $120,000 and consumes approximately $70,000 of diesel fuel each year.[401]

Even if these industry-based e-truck production schedules and cost projections turn out to be overly ambitious, America's trucking industry will almost certainly begin to electrify over the next decade. To facilitate the transition from diesel to electric trucks, the City and County should develop a strategic plan for deploying charging stations and other infrastructure to support electric freight transport. Currently, the vast majority of Portland's public charging stations are sited to support passenger EV charging.[402] The City and County should identify sites that could support medium- and heavy-duty EV charging and develop a year plan for deploying charging infrastructure at these locations.

Tesla Semis on a test drive. *Photo: Korbitr (2018).*

b. ELECTRIFY THE TRIMET BUS FLEET

A substantial amount of the diesel pollution generated in the Portland metropolitan area comes from the area's public transportation system. TriMet, the transportation district providing public transportation (primarily bus and light rail services) within the metropolitan area, operates a relatively large fleet of diesel buses, many of which are older models operating without particulate filters.[403] TriMet is a municipal entity with its own governing body and code, and it has authority to issue ordinances that have the force of law.[404] Because TriMet is a public entity in its own right, neither the City nor County has authority over TriMet's fleet procurement policies.[405] The City and County should work together to encourage TriMet to electrify its bus fleet and phase out the older buses in its fleet.



TriMet.org

TriMet currently operates a fleet of 658 diesel buses.[406] TriMet's fleet currently includes 335 newer buses with cleaner-burning diesel engines.[407] Though the average age of the buses in TriMet's fleet is 7.4 years, the oldest bus is nineteen years old.[408] Pre-2007 buses emit much higher levels of particulate matter and other pollutants than newer buses. Though TriMet has installed particulate filters on many of its older buses,[409] it reportedly still operates more than 100 older, unfiltered buses, and had approximately 70 unfiltered buses operating in regular service in 2017.[410] In the near-term, TriMet has added five electric buses to its fleet.[411] These buses were purchased with federal grant funding[412] and support from Portland General Electric, and they will operate along a single route in Beaverton, a Portland suburb in Washington County.[413] TriMet reportedly aims to test the new electric buses under real-world conditions to determine whether they "are a viable and economic option for system-wide expansion."[414] In the long-term, TriMet has adopted a goal to phase-out its diesel buses and transition to an all-electric (or alternatively fueled) bus fleet by around 2040.[415] TriMet's Board of Directors approved the transit agency's plan to spend $53 million on 80 electric buses, but TriMet will need to procure an additional 500 to 900 non-diesel buses over the next two decades to meet its projected transit demand in 2040.[416]

Moving forward, the City and County should encourage TriMet to transition to an entirely electric bus fleet as quickly as possible. In addition to their air quality and climate benefits, electric buses have significantly lower fuel and maintenance costs than diesel or CNG (compressed natural gas) buses. On average, an electric bus costs between $200,000 and $400,000 more than a new diesel bus.[417] Over its useful life, however, an electric bus can save its owner $125,000–$275,000 in maintenance costs[418] and up to $400,000 in fuel costs.[419] TriMet's newer diesel bus fleet averages 4.7 miles per gallon and consumes approximately 14,000 gallons of diesel fuel per day.[420] TriMet's entire bus fleet consumes nearly six million

gallons of diesel fuel a year.[421] At TriMet's current diesel fuel costs, this equates to more than $30,000 in daily fuel costs (and $10.75 million in annual fuel costs).[422] If TriMet's bus fleet were entirely electric, its daily energy costs would be less than $10,000 (approximately $3.4 million per year).[423] Considering fuel cost savings alone, an electric bus fleet could save TriMet more than $7.3 million each year. When "social costs" associated with air pollution and noise are factored in, TriMet estimates that replacing its current bus fleet with electric buses rather than new diesel buses will result in total cost savings of nearly $75 million.[424]

At a minimum, TriMet should commit to only purchasing electric buses moving forward. To motivate TriMet to make such a commitment, the City could consider signing onto the Fossil Fuel-Free Streets Declaration. Through this declaration, a dozen cities throughout the world, including Seattle, Los Angeles, and Vancouver, B.C., have pledged to only purchase electric buses, starting in 2025.[425]

As a more proactive alternative, the City and County should encourage TriMet to transition its existing fleet to electric buses prior to 2040. For example, in 2017 the Los Angeles County Metropolitan Transportation Authority committed to electrifying its entire bus fleet by 2030.[426] In Seattle, King County Metro Transit committed to purchase 120 electric buses by 2020.[427] TriMet should continue to seek federal, state, and local grant funding to support its electrification efforts. To reduce the upfront capital costs of this transition, TriMet could seek out innovative financing options that may be available from manufacturers. For example, electric bus manufacturer Proterra offers a "battery lease" option that allows transit authorities to purchase an electric bus at a comparable price to a new diesel bus and lease the battery from the manufacturer.[428] Under this option, TriMet's fuel savings could offset the cost of the battery lease.

As TriMet phases out its older, dirtier buses, the City and County should urge TriMet to prioritize electric bus and charging infrastructure deployments on routes serving low-income communities of color, particularly communities with elevated diesel pollution levels. Passengers on unfiltered diesel buses are reportedly exposed to elevated levels of diesel pollution.[429] This pollution likely has a disproportionate impact on low-income or minority communities, which are more likely to rely on public transit. For example, Portland's minority residents are four times as likely to commute by public transit than white residents.[430] Replacing older diesel buses with electric buses will help improve air quality in low-income communities of color and reduce residents' exposure to harmful diesel pollution.

B. REDUCING EMISSIONS FROM NONROAD DIESEL ENGINES AND INDIRECT SOURCES

Nonroad diesel engines and vehicles are the largest source of particulate matter pollution in the Portland metropolitan area.[431] Construction sites and other indirect sources, such as ports, rail yards, shipping terminals, and industrial facilities, emit large amounts of diesel pollution in localized areas, particularly during daytime hours. These sites are commonly located near minority and low-income communities that are disproportionately impacted by poor air quality and pollution. Residential and commercial nonroad engines also greatly contribute to the Portland area's diesel pollution concentrations. Diesel- and gasoline-powered lawn and garden equipment emit substantial amounts of particulate matter, NO_x, CO_2, and other air pollutants, contributing to higher air pollution concentrations in residential neighborhoods. To reduce air pollution from nonroad sources, the City and County should establish targeted programs to address and reduce diesel pollution from construction sites, other indirect sources, and lawn and garden equipment.

1. REDUCE CONSTRUCTION-RELATED EMISSIONS

Construction sites generate a substantial amount of pollution from nonroad diesel vehicles and engines. According to recent research findings from Portland State University, active construction sites in Portland have 10 to 20 times more airborne diesel particulate matter than non-active sites.[432] Many active construction sites are in residential neighborhoods throughout the City.[433] The CAA preempts state and local governments from directly regulating emissions from new or existing nonroad vehicles and engines.[434] However, state and local governments retain authority to control construction-related emissions through indirect source rules and in-use restrictions on nonroad equipment. In addition, local governments have authority to impose clean diesel conditions in contracts for public works projects.

The City and County worked with Metro, Clackamas County, and the Port of Portland to develop a regional Clean Air Construction policy that requires contractors working on large public contracts to use Tier 4 diesel construction equipment or retrofit existing

equipment with diesel pollution control technologies.[435] This policy should help significantly reduce diesel emissions from large public construction projects in Portland and Multnomah County. To further reduce construction-related diesel pollution in the Portland metropolitan area, the City should establish in-use diesel pollution control requirements for public *and* private construction sites. To incentivize additional emissions reductions, the City should establish a voluntary clean diesel construction designation for private contractors. As an additional or alternative strategy, the City and County could adopt indirect source rules that apply to construction sites or work to ensure the EQC adopts such rules. Indirect source rules are described in greater detail in Part III.C.3.

a. ADOPT IN-USE DIESEL POLLUTION CONTROL REQUIREMENTS

The City's Bureau of Development Services (BDS) is responsible for issuing site development and residential and commercial building permits for construction projects within the City.[436] To reduce in-use construction-related diesel emissions, the City should establish diesel pollution control requirements within its development permit and inspection programs.

Diesel pollution control requirements could be loosely modeled off Portland's existing erosion control requirements for construction projects. Under Portland's erosion control program, developers are required to apply erosion and sediment control measures before beginning any ground-disturbing activities.[437] Developers must take temporary measures to control erosion during construction and apply permanent erosion control measures to control erosion and sediment after the project is completed. Developers must comply with certain requirements (*e.g.*, prevent sediment transport, stabilize soils, inspect and maintain erosion controls) and have discretion to select appropriate control measures to achieve these requirements (*e.g.*, using one or more temporary soil stabilization best management practices).[438] Pre-construction and final inspections are required, and projects must post signs with the City's Erosion Control complaint number while construction is ongoing. Finally, the City must inspect and approve permanent erosion control measures before issuing final approval for any residential or commercial construction site.[439]

The City should establish diesel pollution control requirements that function much like the City's erosion control requirements. For example, the City could require all construction sites to apply diesel pollution control measures and prohibit aggregate site emissions above a certain threshold. Developers could be given discretion to select appropriate control measures for their

projects and circumstances. The City could require active construction sites to post signs notifying the local communities of the health risks associated with diesel pollution and directing area residents to contact the City if they have concerns about the emissions produced by on-site construction equipment.

The City could also impose additional requirements for construction sites in the vicinity of vulnerable locations. For example, construction sites within a certain radius of a school or daycare could be required to apply additional emissions control measures during daytime hours.

b. ESTABLISH VOLUNTARY CLEANER DIESEL CONSTRUCTION DESIGNATION

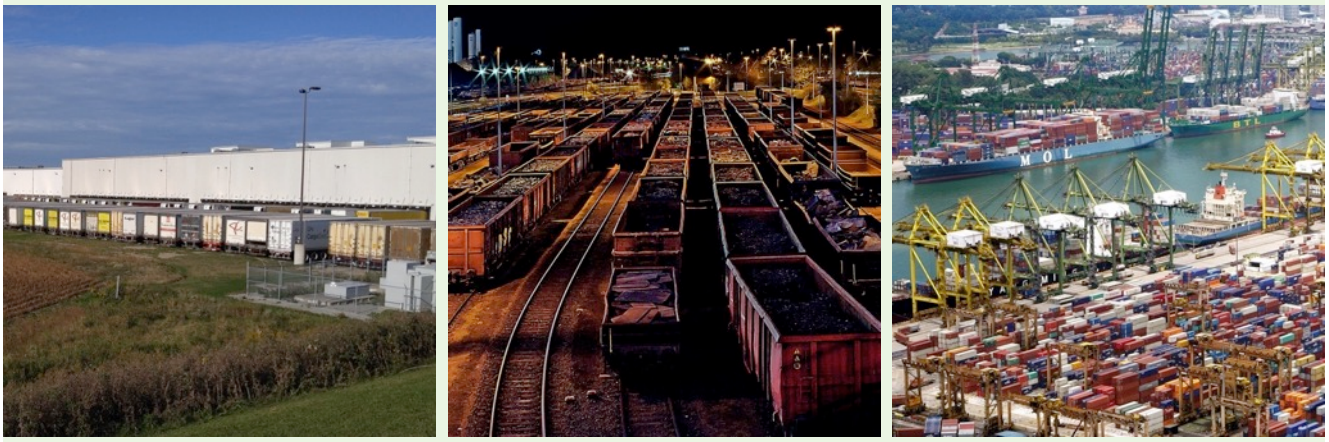
To encourage developers and subcontractors to reduce construction-related diesel emissions, the City and/or County could establish a voluntary cleaner diesel construction designation. Developers and subcontractors that use Tier 4 nonroad equipment and commit to following best management practices to reduce construction-related emissions could apply for "cleaner construction" status. The City or County could provide these entities with construction signs and vehicle labels promoting their cleaner construction designations. While participation in the program would be voluntary, it would help to raise public awareness of the prevalence of local construction-related pollution and encourage developers and contractors to upgrade their fleets and take additional measures to reduce emissions.

2. ADOPT INDIRECT SOURCE RULES

The City and County can reduce diesel pollution from both on-road and nonroad engines by adopting indirect source rules. These rules would help reduce localized particulate matter pollution in neighborhoods near Portland's rail yards, shipping terminals, and industrial areas. Indirect source rules would also help reduce diesel pollution produced by construction sites. Because these sites tend to be "hot spots" of diesel pollution, indirect source rules would create significant air quality benefits for neighboring communities.

As Part III.C.3 explained, the City and County may have preexisting authority to adopt indirect source rules. However, the City and County could avoid potential regulatory conflicts by forming a regional air quality control authority (regional authority).[440] With authorization from the EQC, the City and County could form a regional authority for the sole purpose of establishing and administering an indirect source program.[441]

A local indirect source program should require specific reductions in construction and operations-related emissions over a business-as-usual baseline. For example, the rules should clearly specify which types of indirect sources are subject to the program and require all covered sources to obtain indirect source permits specifying the sources' aggregate emissions limits.[442] The program should give indirect sources flexibility to select the most appropriate



Shipping depots, rail yards, and cargo ports are all indirect sources of diesel pollution.

emissions reduction measures for their specific circumstances. For example, an indirect source could have the option to reduce emissions by prohibiting unnecessary engine idling.

As a regional authority, the City and County could fund a local indirect source program through permit fees.[443] The regional authority could also impose a penalty fee for each day an indirect source fails to comply with its specified emissions limit.[444] Any indirect source penalties recovered by the regional authority must be paid into the County treasury.[445]

Alternatively, the City and County could petition the EQC to strengthen and expand existing state indirect source rules to regulate diesel emissions. The petition would initiate a regulatory process that would provide the public information about the risks of diesel emissions from indirect sources and, hopefully, lead to statewide indirect source regulation that would benefit the Portland Metropolitan area and the rest of the state.

3. ESTABLISH AN ELECTRIC LAWN AND GARDEN EQUIPMENT REBATE PROGRAM

Diesel and gasoline-fueled lawn and garden equipment are responsible for a large percentage of total nonroad particulate matter, NO_x, and CO_2 emissions. According to 2011 EPA data, **lawn and garden equipment is responsible for approximately 13% of all nonroad $PM_{2.5}$ emissions** nationwide.[446] One hour of lawn mowing with a typical gas-powered mower emits the same amount of pollution as driving a car for 200 miles.[447] Two-stroke gasoline-fueled engines emit approximately 7.7 grams of particulate matter per horsepower-hour[448]—770 *times* as much particulate matter per horsepower-hour as new heavy-duty trucks.[449] The Portland metropolitan area would significantly reduce regional air pollution by phasing out diesel- and gasoline-powered lawn and garden equipment and replacing this equipment with electric-powered models.

Because the CAA preempts states (other than California) from adopting emissions standards for new and existing nonroad engines,[450] the City and County lack authority to directly regulate emissions from lawn and garden equipment. Rather than mandate the phase-out of gas-powered lawn equipment, the City and/or County should consider establishing a rebate program to incentivize area residents and businesses to purchase electric lawn and garden equipment. For example, through its Lawn Care for Cleaner Air program, Louisville, Kentucky offers residents a $50 rebate for purchasing an electric mower, and a $100 rebate for trading-in a gas mower for an electric mower.[451] Residents are eligible for rebates of $15 or $30 for electric string trimmers and leaf blowers.[452] Louisville offers even larger rebates for commercial businesses, which can earn $50 rebates for trading-in gas-powered trimmers and leaf blowers for electric models.[453] Louisville has also partnered with the equipment manufacturer Stihl to offer larger rebates up to $225 for Stihl electric lawn and garden equipment.[454] Between 2010 and 2017, the city awarded nearly $250,000 in rebates for more than 4,700 residential electric lawn mowers and other pieces of electric-powered garden equipment.[455] The program is funded through penalties recovered for air pollution violations.[456]

The City and/or County could fund a clean lawn equipment rebate program by levying a tax on gas-powered lawn and garden equipment sales. Because lawnmowers, string trimmers, and leaf blowers are not motor vehicles operated on public highways, taxes on these types of equipment are not subject to the highway fund limitations established by article IX, section 3a of the Oregon Constitution. The funding should not only support the equipment purchases; it should also support a robust outreach program aimed at quickly eliminating the use of older equipment.

Finally, to prevent emissions leakage, the City and County should create or fund a recycling and scrappage program that would recycle any non-emitting reusable parts of the lawn equipment and destroy any of the fuel-burning and pollution-emitting components.

The Louisville Air Pollution Control District's Lawn Care for Clean Air Program offers generous rebates for residential and commercial electric lawn care equipment.

LAWN CARE for CLEANER AIR

Images: LouisvilleKY.gov

C. ADVOCATE FOR LEGISLATIVE AND REGULATORY SOLUTIONS

In addition to pursuing the types of local regulatory actions described above, local governments can advocate for statewide legislative and regulatory action to address diesel pollution. Legislative action may help facilitate more stringent action at the local level by eliminating local regulatory preemptions or removing exceptions under state law that prevent local governments from regulating certain classes of vehicles or engines. The Oregon legislature can also establish statewide programs that help reduce diesel pollution in communities across the state. In addition to legislative action, the EQC can adopt or revise air quality regulations to control emissions from diesel-fueled vehicles. In some cases, legislative action may be necessary to direct the EQC to exercise its rulemaking authority. Given that approximately 20% of Oregon's population resides in Portland and Multnomah County,[457] the City and County have a certain degree of political influence at the state level. To protect the health and wellbeing of local communities, the City and County should encourage the Oregon legislature and/or the EQC to address diesel pollution at the state level and adopt legislation and regulations that facilitate diesel reduction efforts at the local level.

The City and County should advocate for two broad categories of statewide action. First, they should encourage the Oregon legislature to revise existing laws to eliminate provisions that impede state or local efforts to reduce diesel pollution. Second, they should encourage or petition the EQC to adopt or revise regulations to control emissions from diesel vehicles and engines. If the EQC fails to take action, the City and County should encourage the legislature to adopt new laws that direct the EQC to regulate diesel pollution. While the legislature and the EQC can pursue a variety of strategies to reduce diesel pollution on a statewide basis, the legislative and regulatory solutions described in this section can also meaningfully address diesel pollution within the Portland metropolitan area.

1. LEGISLATIVE SOLUTIONS

To date, the Oregon legislature has largely declined to adopt legislation that directly addresses emissions from diesel-fueled vehicles and engines. In some cases, the legislature has expressly exempted certain types of diesel vehicles from state programs. For example, nonroad vehicles are largely exempt from legal requirements imposed under the Oregon Vehicle Code. In other cases, the legislature has expressly preempted local governments from regulating diesel vehicles in certain contexts. The City and County should encourage the legislature to eliminate the following statutory preemptions and exceptions that constrain local efforts to reduce diesel pollution.

a. ELIMINATE LOCAL IDLING PREEMPTION

Oregon law generally prohibits commercial vehicles from idling for more than five minutes in any 60-minute period.[458] The legislature currently has exclusive authority to regulate commercial vehicle idling, and state law preempts local governments from adopting more stringent idling regulations.[459] Local governments should encourage the legislature to remove this preemption to allow more stringent local idling regulations.

b. ELIMINATE POLLUTION CONTROL EQUIPMENT EXEMPTIONS FOR HEAVY-DUTY DIESEL VEHICLES, INCLUDING PROPORTIONALLY REGISTERED VEHICLES

To register a vehicle in the Portland metropolitan area, the vehicle generally must be equipped with a certified pollution control system.[460] However, Oregon law exempts a variety of vehicle classes from the state's pollution control system requirements, including many types of heavy-duty vehicles.[461] For example, fixed load vehicles (such as concrete mixers, cranes, and other heavy-duty diesel vehicles in which a piece of equipment or appliance are permanently installed on the vehicles) and proportionally registered vehicles (such as commercial trucks operating in more than one state) are not required to have pollution control systems.[462] Local governments should encourage the legislature to eliminate these exemptions.

c. ELIMINATE REGISTRATION EXEMPTION FOR NONROAD VEHICLES

Oregon's Motor Vehicle Code expressly exempts nonroad vehicles from the state's vehicle registration requirements.[463] This exemption prevents the state from collecting information on the types, ages, and quantities of nonroad vehicles operating in Oregon. The exemption could also potentially constrain the state's ability to adopt California's nonroad emissions regulations, which require vehicle owners to report their nonroad vehicles to state regulators and label each vehicle with a unique equipment identification number issued by the state.[464] Local governments should therefore encourage the legislature to remove the state's registration exemption for nonroad vehicles.

d. ALLOW LOCAL GOVERNMENTS TO ADOPT MORE STRINGENT REGISTRATION REQUIREMENTS FOR LOCALLY REGISTERED VEHICLES

Oregon law gives certain local governments (namely counties and districts, including Metro and TriMet[465]) authority to impose vehicle registration fees, subject to statutory conditions and limitations.[466] However, these local governments do not have authority to impose their own vehicle registration qualifications or requirements.[467] Oregon law also preempts local governments from imposing vehicle equipment requirements that conflict with the statewide vehicle code.[468] These statutory restrictions on local authority prevent the City and County from imposing more stringent local vehicle registration requirements, such as requiring older diesel trucks to install particulate matter filters as a precondition of registration. These statutory provisions also make it extremely difficult for local governments to implement certain types of local programs, such as requiring diesel vehicles to display stickers with information on the vehicles' emissions or pollution controls. The City and County should encourage the legislature to grant local governments authority to adopt more stringent local vehicle registration requirements.

2. REGULATORY SOLUTIONS

The Oregon legislature delegated authority to the EQC to adopt rules and standards to protect air quality within the state.[469] In accordance with this authority, the EQC may adopt regulations to control emissions from stationary, mobile, and indirect sources of air pollution.[470] The EQC generally has a broad degree of discretion to determine the applicability and stringency of its air pollution regulations. As a result, some of the EQC's regulations are too limited in scope or applicability to have a meaningful impact on diesel emissions. The EQC has also declined to regulate emissions from certain classes of vehicles and engines. To promote effective regulatory strategies to reduce diesel emissions throughout the state, as well as within the Portland metropolitan area, the City and County should consider petitioning the EQC to commence rulemakings to strengthen its existing diesel-related regulations and adopt new regulations to control emissions that are currently unregulated at the state level. If the EQC fails to take adequate regulatory action, the City and County should then encourage the legislature to direct the EQC to act.

a. STRENGTHEN EQC INDIRECT SOURCE RULES AND REMOVE THE REGULATORY RESTRICTION ON LOCAL INDIRECT SOURCE RULES

In the 1990s, the EQC adopted indirect source rules designed to reduce air pollution resulting from new parking facilities in specific urban areas throughout the state.[471] Though the EQC's rules are geographically limited, only apply to a small subset of indirect sources, and have minimal implementation and enforcement requirements, they largely prohibit local governments from adopting more stringent programs to address indirect source emissions.[472] The City and County should push the EQC to repeal its regulatory preemption of local indirect source rules and overhaul the statewide indirect source rules. Revised indirect source rules should apply to a broad variety of indirect sources that generate emissions from on-road and nonroad engines and should require the application of mitigation measures to reduce construction-related and operations-related emissions.

b. REQUIRE EMISSIONS CONTROL SYSTEM INSPECTIONS FOR HEAVY-DUTY DIESEL VEHICLES

EQC regulations require emissions control system inspections for certain classes of on-road vehicles.[473] However, the EQC's regulations do not require inspections of heavy-duty diesel vehicles.[474] Heavy-duty diesel vehicles are required to comply with visible emissions restrictions, but these standards are difficult to enforce without a vehicle inspection program.[475] Because Oregon's emissions inspection program

specifically applies to vehicles registered in the Portland area, the City and County should push the EQC to apply its emissions control system inspection program to heavy-duty diesel vehicles in addition to heavy-duty gasoline vehicles.

c. ADOPT ON-ROAD PERFORMANCE STANDARDS FOR EXISTING MEDIUM-DUTY AND HEAVY-DUTY DIESEL VEHICLES

The legislature has expressly authorized the EQC to adopt emissions standards for motor vehicles.[476] The EQC has exercised this authority by adopting California's vehicle emissions standards for new light-duty and medium-duty vehicles.[477] The emission standards only apply to 2009 or newer model year vehicles.[478] The EQC's adoption of California's emissions standards complies with the CAA's requirement that states like Oregon do not adopt unique emissions standards for new, on-road motor vehicles.[479] However, the CAA does not preempt Oregon from adopting emissions standards for existing (non-new) on-road vehicles. The EQC therefore has authority to adopt emissions standards for all diesel vehicles that are currently registered in the state, including those registered prior to 2009. To help reduce emissions from on-road diesel vehicles in the Portland area, the City and County should push the EQC to adopt emissions standards for existing on-road diesel vehicles, including heavy-duty vehicles.

d. ADOPT CALIFORNIA'S NONROAD STANDARDS

While the EQC does not have explicit authority to adopt emissions standards for nonroad vehicles (because the applicable statutory definition of "motor vehicle" excludes nonroad vehicles),[480] the EQC may regulate nonroad emissions through its general authority to regulate sources of air contamination.[481] However, the EQC's authority to adopt emissions standards for nonroad vehicles and engines is constrained by the CAA, which preempts states (other than California) from directly regulating emissions from new or existing nonroad vehicles and engines.[482] To comply with the CAA, the EQC may only adopt California's emissions standards for nonroad vehicles.[483] California has adopted off-road fleet regulations that apply to most types of nonroad engines that are 25 horsepower (hp) and larger.[484] California's regulations operate by prohibiting fleet owners from adding older diesel vehicles to their fleets beyond certain dates and requiring fleet owners to update or retrofit older diesel vehicles by specified deadlines.[485] The regulations also require fleet owners to report their vehicles to the California Air Resources Board, which then assigns each vehicle a unique identification number that must be displayed on the vehicle.[486] Because nonroad vehicles and engines are the largest source of diesel pollution in the Portland metropolitan area, the City and County should push the EQC itself to adopt California's off-road regulations.

D. FUNDING THE TRANSITION AWAY FROM DIRTY DIESEL

In Oregon, local governments may find it quite challenging to acquire funding for diesel reduction programs. Unlike most state constitutions, the Oregon Constitution significantly restricts how the state and its local governments may spend motor vehicle-related revenues. Revenue streams that commonly fund diesel reduction efforts in other states are largely off-limits to local Oregon governments wishing to establish similar programs. The City and County can seek federal grants or request state funding to support local diesel reduction efforts, but these revenue sources are highly uncertain and variable. The City and County can also uses revenues from their own general funds to support diesel reduction efforts. To raise additional funding for local diesel programs while avoiding Oregon's constitutional constraints, the City and County could consider raising revenues through permit fees, privilege taxes, and penalties for violations of local regulations.

Any revenues subject to article IX, section 3a may only be used for permissible highway purposes.[487] Local diesel reduction programs may not fall within the range of "permissible" projects eligible for highway funding.

The following types of taxes and fees are currently reserved for highway purposes in Oregon:

- Motor vehicle fuel taxes, including taxes and fees on fuel importation, storage, distribution, sale, or use
- Title and registration fees
- Driver's license fees
- Oregon's weight mile tax
- Portland's heavy vehicle tax
- Any special highway user taxes or fees, such as tolls or road user fees
- Emissions fees for air pollution from motor vehicles[488]

As a result of Oregon's constitutional limitations, the City and County cannot use revenues from registration fees or heavy vehicle taxes to fund diesel replacement programs or purchase electric buses. These constitutional funding constraints do not exist in many other states. For example, the Texas Emissions Reduction Plan, which provides grants to support diesel vehicle replacements and retrofits,[489] is funded through titling, registration, and inspection fees and surcharges.[490] Oregon voters would need to amend the state's constitution before titling or registration fees could fund a diesel reduction program. Under the current law, local governments can only fund non-roadway related diesel reduction programs through revenues that are not subject to article IX, section 3a.

1. PERMIT FEES

The City and/or County can raise money for local diesel reduction programs by increasing permit fees for projects that have the potential to emit large quantities of diesel pollution, such as large construction projects. For example, a construction permit fee surcharge could help fund an in-use diesel pollution control program for construction sites or provide rebates for purchases of clean diesel construction equipment. If the City and County establish an indirect source program, indirect source permit fees could help fund diesel engine replacements and other diesel mitigation projects throughout the area.

2. PRIVILEGE TAXES

Privilege taxes are taxes imposed on dealers or distributors that sell certain products to retail end-users. The taxes are a form of sales tax that is imposed on sellers, rather than retail purchasers, in exchange for the retailers' "privilege of engaging in the business of selling" the type of product to which the tax applies.[491] The Oregon Supreme Court recently held that Oregon's privilege tax on motor vehicles is not subject to article IX, section 3a, because the tax was imposed on vehicle dealers rather than vehicle purchasers and thus was not directly associated with the status of vehicle ownership.[492] The court determined that voters did not intend for "taxes levied on, or measured by, sales of motor vehicles" to be subject to article IX, section 3a.[493] The City and County could therefore raise revenue for diesel programs by imposing local privilege taxes on diesel vehicle dealers. Privilege taxes can be structured in a variety of ways. For example, the tax can be levied on a per-sales basis (*e.g.,* as a percentage of a vehicle's retail price), on a net revenue basis (*e.g.,* as a percentage of a dealer's net profits), or as a flat tax that applies uniformly to all dealers within a certain size or class. Privilege taxes can also be imposed on dealers of on-road and/or nonroad vehicles and engines. The City and County should consider the risks of "leakage"—the risk that the tax may encourage buyers to purchase vehicles outside the City or County—when determining appropriate privilege tax rates, particularly for more expensive vehicles. Lower privilege tax rates that apply to a broad pool of dealers should

result in less leakage than higher privilege tax rates that apply to a small pool of dealers.

In addition to imposing privilege taxes on dealers engaged in vehicle sales, the City and County can also impose taxes on vehicle rentals. These taxes could be levied on rentals of on-road diesel vehicles, such as moving vans or delivery trucks, and on rentals of nonroad diesel engines, such as construction equipment.

3. PENALTIES AND FINES

Finally, the City and/or County could establish financial penalties for violations of local diesel-related ordinances and use the fines to fund diesel reduction programs. Penalties are a proven mechanism for ensuring regulatory compliance, deterring violations, and generating revenues to support regulatory programs. To support their diesel reduction efforts, the City and County should consider adopting new, enforceable requirements that include financial penalties for violations. For example, if the City establishes mandatory truck routes, it could then impose fines on trucks operating on alternative routes.[494] These fines could help fund local diesel reduction programs that cannot otherwise be funded by dedicated highway revenues. However, because the ultimate goal of any regulatory program should be absolute compliance, the City and County should avoid adopting programs that are overly reliant on penalty revenues. When a public program is overly or entirely funded by penalty payments, the program's financial stability is dependent on entities violating local regulations. Thus, under the truck route example, the City could end up relying on truck drivers to operate on impermissible routes—and emit diesel pollution along those routes—simply to raise revenue for diesel reduction programs. Penalties can provide a good source of supplemental revenue for diesel reduction programs, but they should not be the primary source of programmatic funding.

Diesel pollution is a serious problem in the Portland metropolitan area that adversely affects the health of area residents and negatively impacts the local environment. Fortunately, the City of Portland and Multnomah County have the authority and opportunity to pursue a variety of strategies to address the area's diesel issues. By implementing a combination of regulatory requirements, proprietary initiatives, voluntary incentives, and educational programs, the City and County can effectively reduce diesel emissions in the metropolitan area. These strategies can be designed and implemented to provide new economic opportunities for local businesses and promote deployment of newer, cleaner technologies. The City and County should prioritize strategies that reduce diesel pollution and minimize negative economic impacts in vulnerable frontline communities that are already disproportionately burdened by diesel pollution. By working together and collaborating with community groups, diesel-intensive industries, and other local stakeholders, the City and County can help create a cleaner, healthier urban environment for current and future generations.

END NOTES

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[6] *Id.* at 7.

[7] Melissa Powers, *Black Carbon, in* LEGAL PATHWAYS TO DEEP DECARBONIZATION IN THE UNITED STATES 846–47 (Michael B. Gerrard & John C. Dernbach, eds., 2019).

[8] In this report, the "City" and the "County" refer to Portland's and Multnomah County's municipal and county governments, respectively. The "Portland metropolitan area" refers to the geographic area encompassing Portland and Multnomah County, as well as portions of adjacent Clackamas and Washington counties.

[9] *See* Multnomah County Bd. of Commissioners, 100% Renewable Energy Resolution, ¶ m (June 1, 2017), https://multco.us/file/100-renewable-resolution-finaldoc [hereinafter Mult. County 100% Renewable Resolution].

[10] The CAA makes an exception for the State of California, which is described in greater detail in section III.A.1.a.

[11] The federal government's authority to preempt state and local action derives from the Supremacy Clause of the U.S. Constitution.

[12] Metro, *What is Metro?,* https://www.oregonmetro.gov/regional-leadership/what-metro. Metro is a metropolitan service district organized pursuant to OR. REV. STAT. ch. 268.

[13] *See* TriMet Code § 2.20, https://trimet.org/about/code.htm; OR. REV. STAT. § 267.510. TriMet is a metropolitan transportation district organized pursuant to OR. REV. STAT. ch. 267.

[14] For example, Oregon law allows local road authorities to restrict highway use if necessary to protect the highway from undue damage or "protect the interest and safety of the general public." OR. REV. STAT. § 810.030(1).

[15] 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." 42 U.S.C. § 7410(a)(5)(C).

[16] For example, in *National Association of Home Builders v. San Joaquin Valley Unified Pollution Control District,* the Ninth Circuit held that local indirect source regulations were authorized under the Clean Air Act (CAA) and that the CAA's preemption provisions for nonroad source regulations does not extend to indirect source rules. 627 F. 3d 730 (9th Cir. 2009).

[17] City of Portland Bureau of Planning and Sustainability, *City of Portland Commits to Clean Air Construction Standard* (Dec. 13, 2018), https://www.portlandoregon.gov/bps/article/706766; Multnomah County, *Portland Aims to Cut Deadly Emissions, Commits to Cleaner Diesel on Public Construction Sites* (Dec. 13, 2018), https://multco.us/multnomah-county/news/portland-aims-cut-deadly-emissions-commits-cleaner-diesel-public-construction; 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 [hereinafter MULT. COUNTY ENSURING HEALTHY AIR REPORT].

[18] Clean Air Construction Standards, Draft for Public Comment (Nov. 5, 2018), https://multco.us/file/76180/download.

[19] PORTLAND CITY CODE § 17.102.050, adopted through City Ordinance No. 185449, effective July 21, 2012.

[20] 2017 CITY OF PORTLAND ELECTRIC VEHICLE STRATEGY (2016), https://www.portlandoregon.gov/bps/article/619275; CITY OF PORTLAND AND MULTNOMAH COUNTY, CLIMATE ACTION PROGRESS REPORT 60 (Apr. 2017), *available at* https://www.portlandoregon.gov/bps/article/636700.

[21] Mult. County 100% Renewable Resolution, *supra* note 9, at ¶ m.

[22] Clean Diesel Grant and Loan Program, OR. REV. STAT. §§ 468A.801, 468A.803.; OR. ADMIN. R. § 340-259-0005.

[23] OR. REV. STAT. § 468A.805.

[24] OR. ADMIN. R. § 340-270-0010 *et seq.*

[25] *Id.* § 340-257-0080(2); 13 C.C.R. § 1962.2.

[26] In 2019, the Oregon Legislature passed a bill to reduce diesel emissions in the Portland metropolitan area (including Multnomah, Clackamas, and Washington Counties) by prohibiting the titling of pre-2007 heavy-duty trucks (HDVs) and pre-2010 medium-duty trucks (MDVs) starting in 2025, prohibiting registration of pre-1997 trucks starting in 2023, and prohibiting registration of pre-2007 HDVs and pre-2010 MDVs starting in 2029. HB 2007, 80th Or. Leg. Assem. (2019).

[27] OR. DEPT. OF ENVT'L QUALITY, VW ENVIRONMENTAL MITIGATION PLAN FOR THE STATE OF OREGON 2 (2017), http://www.oregon.gov/deq/FilterDocs/VWenviroMitPlan.pdf [hereinafter OREGON VW PLAN].

[28] OR. DEPT. OF ENVT'L QUALITY, THE CONCERNS ABOUT DIESEL ENGINE EXHAUST 6 (2015), http://www.oregon.gov/deq/FilterDocs/DieselEffectsReport.pdf [hereinafter DEQ 2015 DIESEL REPORT].

[29] 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 FACTSHEET]. The EQC has adopted a health-based ambient benchmark concentration for diesel particulate matter of 0.1 micrograms per cubic meter ($\mu g/m^3$). DEQ 2015 DIESEL REPORT, *supra* note 28, at 2; OR. DEPT. OF ENVT'L QUALITY, AIR TOXICS PROGRAM, AMBIENT BENCHMARK CONCENTRATIONS (ABC) 4 (Oct. 2010), https://www.oregon.gov/deq/FilterDocs/airtox-abc.pdf.

[30] 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.

[31] PATS FACTSHEET, *supra* note 29, at 5.

[32] MULTNOMAH COUNTY HEALTH DEPT., 2014 REPORT CARD ON RACIAL AND ETHNIC DISPARITIES 31 (2014), https://multco.us/file/37530/download.

[33] DEQ 2015 DIESEL REPORT, *supra* note 28, at 6.

[34] *Id.* at 7.
[35] The national ambient air quality standard for $PM_{2.5}$ is 35 micrograms per cubic meter averaged over a 24-hour period. The national ambient air quality standard for PM_{10} is 150 micrograms per cubic meter averaged over a 24-hour period. U.S. Envt'l Protection Agency, *NAAQS Table,* https://www.epa.gov/criteria-air-pollutants/naaqs-table.
[36] U.S. Envt'l Protection Agency, *Particulate Matter (PM) Pollution,* https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM.
[37] $PM_{2.5}$ is a type of particulate matter with a diameter of 2.5 microns. According to the Oregon Dept. of Environmental Quality, $PM_{2.5}$ makes up approximately 80–95% of pollutants from diesel emissions. DEQ 2015 DIESEL REPORT, *supra* note 28, at 1.
[38] U.S. ENVT'L PROTECTION AGENCY, REPORT TO CONGRESS ON BLACK CARBON 5 (2010), https://www3.epa.gov/airquality/blackcarbon/2012report/fullreport.pdf [hereinafter EPA BLACK CARBON REPORT].
[39] DEQ 2015 DIESEL REPORT, *supra* note 28, at 3.
[40] EPA BLACK CARBON REPORT, *supra* note 38, at 1.
[41] DEQ 2015 DIESEL REPORT, *supra* note 28, at 5.
[42] EPA BLACK CARBON REPORT, *supra* note 38, at 6.
[43] OREGON VW PLAN, *supra* note 27, at 2.
[44] The primary NAAQS for NO_x include a 1-hour standard of 100 parts per billion (ppb) and an annual standard of 53 ppb. U.S. Envt'l Protection Agency, *Primary National Ambient Air Quality Standards (NAAQS) for Nitrogen Dioxide,* https://www.epa.gov/no2-pollution/primary-national-ambient-air-quality-standards-naaqs-nitrogen-dioxide.
[45] INT'L AGENCY FOR RESEARCH ON CANCER, DIESEL ENGINE EXHAUST CARCINOGENIC (June 12, 2012), https://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf.
[46] DEQ 2015 DIESEL REPORT, *supra* note 28, at 2.
[47] *Id.*
[48] Clean Air Task Force, *Diesel Soot Health Impacts: Oregon,* http://www.catf.us/diesel/dieselhealth/state.php?site=0&s=41.
[49] DEQ 2015 DIESEL REPORT, *supra* note 28, 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.
[50] MULT. COUNTY ENSURING HEALTHY AIR REPORT, *supra* note 17, at 23.
[51] 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.
[52] Clean Air Task Force, *Diesel Soot Health Impacts: Oregon,* http://www.catf.us/diesel/dieselhealth/state.php?site=0&s=41.
[53] U.S. Energy Info. Admin., *How Much Carbon Dioxide is Produced From Burning Gasoline and Diesel Fuel?* (May 19, 2017), https://www.eia.gov/tools/faqs/faq.php?id=307&t=11.
[54] A gallon of diesel fuel produces approximately 22.4 lbs. CO_2, while a gallon of gasoline produces approximately 19.6 lbs. CO_2. *Id.*
[55] OREGON VW PLAN, *supra* note 27, at 4.
[56] EPA BLACK CARBON REPORT, *supra* note 38, at 3.
[57] *Id.* at 4.
[58] *Id.*
[59] DEQ 2015 DIESEL REPORT, *supra* note 28, at 6.

[60] 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].
[61] *Id.*
[62] DEQ 2015 DIESEL REPORT, *supra* note 28, at 1.
[63] OREGON VW PLAN, *supra* note 27, at 2. Diesel vehicles are responsible for 49% of Oregon's transportation-related NOx emissions and more than 60% of Oregon's transportation-related particulate matter emissions. *Id.*
[64] OR. DEPT. OF TRANSPORTATION, PORTLAND REGION 2016 TRAFFIC PERFORMANCE REPORT 11 (2017), http://www.oregon.gov/odot/regions/documents/region1/2016_tpr_finalreport.pdf [hereinafter ODOT 2016 TRAFFIC REPORT]. Truck traffic estimates are based on 2015 data.
[65] DEQ 2015 DIESEL REPORT, *supra* note 28, at 8.
[66] Emission Standards and Supplemental Requirements for 2007 and Later Model Year Diesel Heavy-Duty Engines and Vehicles, 40 C.F.R. § 86.007-11(a)(1)(iv) (2017).
[67] For example, the emissions standards for heavy-duty vehicles manufactured from 1994 to 2007 only restricted particulate matter emissions to 0.10 g/bhp-h, while federal emissions standards for 1991 to 1993 model years limited particulate matter emissions to 0.25 g/bhp-h. 40 C.F.R. §§ 86.099-11(a)(4), 86.004-11(a)(1)(iii)(B); U.S. ENVT'L PROTECTION AGENCY, HEAVY-DUTY HIGHWAY COMPRESSION-IGNITION ENGINES AND URBAN BUSES: EXHAUST EMISSIONS STANDARDS (2016), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100O9ZZ.pdf [hereinafter EPA HDE EMISSIONS STANDARDS TABLE].
[68] Heavy-duty diesel trucks with 1988–1990 model years were subject to a federal particulate matter emissions standard of 0.60 g/bhp-hr. *Id.*
[69] For example, urban buses manufactured between 1999 and 2006 were subject to a certification particulate matter emissions standard of 0.05 g/bhp-hr and an in-use particulate matter emissions standard of 0.07 g/bhp-hr. 40 C.F.R. §§ 86.099-11(a)(4)(i), 86.004-11(a)(1)(iii)(A).
[70] PATS POLLUTANT MODELING SUMMARY, *supra* note 60, at 6.
[71] 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].
[72] *Id.*
[73] ODOT 2016 TRAFFIC REPORT, *supra* note 64, at 1, 11.
[74] According to EPA emissions data, the 2008 U.S. heavy-duty diesel truck fleet emitted an average of 0.202 grams of $PM_{2.5}$ per mile, which equates to 5.05 g. $PM_{2.5}$ over 25 miles. U.S. ENVT'L PROTECTION AGENCY, AVERAGE IN-USE EMISSIONS FROM HEAVY-DUTY TRUCKS 4 (2008), https://nepis.epa.gov/Exe/ZyNET.exe.
[75] ODOT estimated that each day 7,900–13,100 trucks travel on 27 miles of I-205, 6,500 to 7,800 trucks travel on 18 miles of I-84, 5,900 to 10,000 trucks travel on four miles of I-405, and 1,500 to 6,000 trucks travel on 15 miles of U.S. 26. ODOT 2016 TRAFFIC REPORT, *supra* note 64, at 1, 11.
[76] For example, average highway particulate matter emissions from HDV7 long-haul trucks (26,001–33,000 lbs. GVWR) dropped from 0.3260 g/mile for 2006 model year vehicles to 0.006 g/mile for 2019 model year vehicles. U.S. ENVT'L PROTECTION AGENCY, 2018 SMARTWAY TRUCK CARRIER PARTNER TOOL: TECHNICAL DOCUMENTATION AT A-7, A-11 (2018), https://www.epa.gov/sites/production/files/2018-01/documents/420b18004.pdf.
[77] PATS POLLUTANT MODELING SUMMARY, *supra* note 60, at 6.

[78] 40 C.F.R. §§ 89.112, 1039.101, 1039.102; *see* U.S. ENVT'L PROTECTION AGENCY, NONROAD COMPRESSION IGNITION ENGINES: EXHAUST EMISSIONS STANDARDS (2016), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf.
[79] U.S. ENVT'L PROTECTION AGENCY, NONROAD COMPRESSION IGNITION ENGINES: EXHAUST EMISSIONS STANDARDS (2016), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf.
[80] *Id.*
[81] PATS measured an average construction diesel particulate matter concentration of 1.2209 μg/m^3, which was 12.21 times Oregon's ambient benchmark concentration of 0.1 μg/m^3. PATS REPORT, *supra* note 71, ch. 6, tbl. 14, p. 5.
[82] *Id.*
[83] *Id.*
[84] The PATS pollutant modeling measured an average marine diesel particulate matter concentration of 0.8191 μg/m^3, which was 8.19 times Oregon's ambient benchmark concentration of 0.1 μg/m^3. *Id.* at ch. 6, tbl. 16, p. 7. The study measured an average railroad diesel particulate matter concentration of 0.9545 μg/m^3, which was 9.54 times Oregon's ambient benchmark concentration of 0.1 μg/m^3. *Id.* at ch. 6, tbl. 15, p. 6.
[85] *Id.*
[86] 42 U.S.C. § 7521(a). Under the CAA, a "motor vehicle" is "any self-propelled vehicle designed for transporting persons or property on a street or highway." *Id.* § 7550(2).
[87] *Id.* § 7550(11). A "nonroad" vehicle or engine is any self-powered vehicle or engine that is not designed to transport people or property on streets or highways. *Id.* § 7550(11).
[88] *Id.* § 7543(a).
[89] *Id.* § 7543(e).
[90] *Id.* § 7543(b), (e).
[91] *Id.*
[92] *Id.* § 7507. Only states with nonattainment plans under the Clean Air Act may adopt California's emissions regulations. *Id.* Oregon has a nonattainment plan within its EPA-approved Clean Air Act State Implementation Plan. *See* U.S. Envtl. Prot. Agency, *EPA Approved Regulations in the Oregon SIP,* https://www.epa.gov/sips-or/epa-approved-regulations-oregon-sip.
[93] CAA Section 209 also prohibits states from adopting or attempting to enforce emissions standards for motor vehicle parts or engine parts that are already subject to federal regulation. 42 U.S.C. § 7543(c).
[94] *See* Engine Mfrs. Ass'n v. U.S. Envtl. Prot. Agency (*EMA*), 88 F.3d 1075, 1080 (D.C. Cir. 1996).
[95] The CAA defines "new motor vehicle" and "new motor vehicle engine" as a vehicle or engine, "the equitable or legal title to which has never been transferred to an ultimate purchaser." 42 U.S.C. § 7550(3). An "ultimate purchaser" is "the first person who in good faith purchases such new motor vehicle or new engine for purposes other than resale." *Id.* § 7550(4).
[96] *EMA*, 88 F.3d at 1084.
[97] For example, the U.S. District Court for the Southern District of New York indicated that there must be some limits on the ability of states and localities to impose emissions standards the moment a new car is sold and registered in the state. However, the court did not establish a bright line standard regarding the point at which a state or locality could permissibly exercise regulatory authority over a non-new vehicle. The court did clarify that the CAA does not preempt states from imposing emissions standards on the resale or reregistration of a vehicle. Allway Taxi, Inc. v. City of New York, 340 F. Supp. 1120, 1123 (S.D.N.Y. 1972), *aff'd per curiam*, 468 F.2d 624 (2d Cir. 1972).
[98] *See* Wyoming v. Volkswagen Grp. Of Am. (*In re* Volkswagen "Clean Diesel" Mktg., Sales Practice, & Prods. Liab. Litig.), 264 F. Supp. 3d 1040, 1051 (N.D. Cal. 2017).

[99] 42 U.S.C. § 7543(e).
[100] A nonroad vehicle is defined as "a vehicle that is powered by a nonroad engine and that is not a motor vehicle or a vehicle used solely for competition." *Id.* § 7550(11).
[101] *See* Jensen Family Farms, Inc. v. Monterey Bay Unified Air District, 644 F.3d 934, 934 (2011).
[102] Indirect source rules are described in greater detail in section III.C.3.
[103] 42 U.S.C. § 7543(e)(1).
[104] *Id.*
[105] *Id.* § 7543(e)(2).
[106] *Id.* § 7543(e)(2)(B). States must provide a two-year window between adopting and implementing nonroad standards. *Id.*
[107] *Id.*
[108] Engine Mfrs. Ass'n v. U.S. Envtl. Prot. Agency (*EMA*), 88 F.3d 1075, 1093 (D.C. Cir. 1996).
[109] Pac. Merch. Shipping Ass'n v. Goldstene, 517 F.3d 1108, 1113 (9th Cir. 2008).
[110] 42 U.S.C. § 7543(e)(2)(B). Any state standards, and the implementation and enforcement of the standards, must be "identical, for the period concerned, to the California standards." *Id.*
[111] *Id.* § 7543(e)(2)(B).
[112] *Id.* § 7543(a), (e).
[113] 42 U.S.C. § 7543(a).
[114] Engine Mfrs. Ass'n v. S. Coast Air Quality Mgmt. Dist. (*SCAQMD*), 541 U.S. 246, 253 (2004).
[115] *SCAQMD,* 541 U.S. at 253.
[116] *Id.*
[117] *Id.* (on-road standards); Pacific Merchant Shipping Ass'n v. Goldstene, 517 F.3d 1108, 1113 (9th Cir. 2008) (nonroad standards).
[118] 42 U.S.C. §§ 7543(a), 7543(e).
[119] *See SCAQMD,* 541 U.S. 246; Allway Taxi, Inc. v. City of New York, 340 F. Supp. 1120, 1124 (S.D.N.Y. 1972); Wyoming v. Volkswagen Grp. Of Am. (*In re* Volkswagen "Clean Diesel" Mktg., Sales Practice, & Prods. Liab. Litig.) (*Wyoming v. VW*), 264 F. Supp. 3d 1040, 1050 (N.D. Cal. 2017).
[120] *SCAQMD,* 541 U.S. at 255 (on-road standards); Pacific Merchant Shipping Ass'n v. Goldstene, 517 F.3d 1108, 1113 (9th Cir. 2008) (nonroad standards)
[121] *See Wyoming v. VW*, 1053–55.
[122] *SCAQMD,* 541 U.S. at 255.
[123] *Id.*
[124] *Id.*
[125] *Id.*
[126] 42 U.S.C. § 7543(d).
[127] As section III.A.1.b explains, a vehicle is no longer "new" once it is registered with a state.
[128] *See* Pacific Merchant Shipping Ass'n v. Goldstene, 517 F.3d 1108, 1115 (9th Cir. 2008).
[129] *Id.* § 7543(b), (e)(2).
[130] *Id.* § 7543(b)(1), (e)(2)(A).
[131] *Id.* § 7543(e)(1). In addition, California may not adopt emissions standards for new locomotives.
[132] *Id.* §§ 7507, 7543(b). Only states with nonattainment plans to achieve compliance with a national ambient air quality standards may adopt California's mobile source emissions standards.
[133] *Id.* §§ 7507, 7543(b). If another state chooses to adopt California standards for nonroad sources, the state must adopt identical implementation and enforcement provisions as well.
[134] *Id.* § 7507.
[135] Pub. L. No. 94-163, 89 Stat. 871 (1975) (codified as amended in scattered sections of 42 and 49 U.S.C.).

[136] 49 U.S.C. § 32919(a) (2012).
[137] Metropolitan Taxicab Board of Trade v. City of New York, 615 F.3d 152, 158 (2d Cir. 2010).
[138] *Id.*
[139] Engine Manufacturers Ass'n v. South Coast Air Quality Management District, 498 F.3d 1031 (9th Cir. 2007).
[140] 49 U.S.C. § 14501(c)(1).
[141] *Id.* § 13102(14).
[142] In *American Trucking Ass'n v. Los Angeles,* the Court held that a Port's public contract requirements had "the force and effect of law" and thus were preempted under the FAAAA because the public contract's criminal penalty clause represented a "coercive mechanism, available to no private party." 569 U.S. 641, 642 (2013).
[143] American Trucking Ass'n v. Los Angeles, 559 F.3d 1046, 1053 (9th Cir. 2009) (quoting Tocher v. City of Santa Ana, 219 F.3d 1040, 1047 (9th Cir. 2000)).
[144] FAAAA § 601(c)(2) states that the section "shall not restrict the safety regulatory authority of a State with respect to motor vehicles." 49 U.S.C. § 14501(c)(2). The statute does not define the term "safety." The Supreme Court has held that this exception applies to state regulations that are "genuinely responsive to safety concerns." City of Columbus v. Ours Garage and Wrecker Service, 536 U.S. 424, 442 (2002).
[145] Cal. Tow Truck Ass'n v. San Francisco, 807 F.3d 1008, 1020 (9th Cir. 2015) (*CTTA II*). If the state's "purported safety justification is a pretext for undue economic regulation," a court would likely conclude that it is preempted under the FAAAA. *Id.*
[146] *See id.* at 1022.
[147] According to the Court of Appeals for the Ninth Circuit, state laws governing tow truck operators may address broad safety concerns—such as the possibility that stranded motorists may be placed in dangerous situations after their cars have been towed—and qualify for the FAAAA's safety exemption. *Id.*
[148] The Ninth Circuit explained that the FAAAA's safety exemption applies to safety regulations "that are "genuinely responsive" to the safety of other vehicles and individuals" involved in the operation of a motor vehicle, in addition to regulations that directly relate to the operation of a motor vehicle. *Id.* at 1023. For example, in *CTTA II* the court held that a regulation designed to protect the safety of individuals who have their cars towed qualified for the FAAAA's safety exemption. *Id.* However, the permissible safety regulations identified in *CTTA II* were designed to protect individuals from immediate harms related to motor vehicles (including harms that could occur when an individual's vehicle is involuntarily towed), rather than less tangible health-based risks associated with exposure to motor vehicle emissions. *See id.*
[149] City of Columbus v. Ours Garage and Wrecker Service, 536 U.S. 424, 442 (2002).
[150] *CTTA II,* 807 F.3d at 1020 (citing Cal. Tow Truck Ass'n v. City & Cnty. Of San Francisco, 693 F.3d 847 (9th Cir. 2012)).
[151] 49 U.S.C. § 14501(c)(2).
[152] 42 U.S.C. § 7545(c); Oxygenated Fuels Ass'n Inc. v. Davis, 331 F.3d 665 (9th Cir. 2003); *see also In re* Methyl Tertiary Butyl Ether ("MTBE") Prod. Liab. Litig., 725 F.3d 65 (2d Cir. 2013); American Petroleum Institute v. Cooper, 718 F.3d 347 (4th Cir. 2013); Exxon Corp. v. City of New York, 548 F.2d 1088 (2d Cir. 1977); *In re* Methyl Tertiary Butyl Ether ("MTBE") Prod. Liab. Litig., 175 F. Supp. 2d 593 (S.D.N.Y. 2001); Oxygenated Fuels Ass'n, Inc. v. Pataki, 158 F. Supp. 2d 248 (N.D.N.Y. 2001), *opinion adhered to as modified on reconsideration*, No. 1:00-CV-1073, 2002 WL 32329221 (N.D.N.Y. May 16, 2002); Minn. Auto. Dealers Ass'n v. Stine, No. 0:15-cv-02045-JRT-KMM, 2016 WL 5660420, at *9–12 (D. Minn. Sept. 29, 2016).
[153] 40 C.F.R. § 80.520(a) (2017).
[154] U.S. CONST. art. I, § 8, cl. 3.
[155] *See* Wyoming v. Oklahoma, 502 U.S. 437 (1992).
[156] Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).

[157] American Trucking Ass'n, Inc. v. Oregon Dept. of Transportation, 339 Or.554, 124 P.3d 1210 (Or. 2005).
[158] American Trucking Ass'n, Inc. v. Michigan Pub. Serv. Comm'n, 125 S.Ct. 2419 (2005).
[159] Selevan v. New York Thruway Authority, 711 F.3d 253, 259–60 (2nd Cir. 2013) (applying the Supreme Court's Evansville test, 405 U.S. 707, 715–17 (1972), as extended by *Northwest Airlines v. Kent*, 510 U.S. 355, 369 (1994)); Janes v. Triborough Bridge and Tunnel Authority, 774 F.3d 1052 (2nd Cir. 2014).
[160] New Hampshire Motor Transport Ass'n v. Town of Plaistow, 67 F.3d 326 (1995).
[161] Kassel v. Consolidated Freightways Corp. of Delaware, 450 U.S. 662 (1982).
[162] American Trucking Ass'n v. Whitman, 437 F.3d 313 (3rd Cir. 2006).
[163] American Trucking Ass'n v. Scheiner, 483 U.S. 266 (1987).
[164] While the term "home rule" is not used in the Oregon Constitution, courts have found that this authority is granted by Article XI, section 2, and Article IV, section 1(5) of the Oregon Constitution. *See* Rogue Valley Sewer Services v. City of Phoenix, 357 Or. 437, 445 (2015).
[165] *Id.* at 450–451.
[166] Northwest Natural Gas Co. v. City of Gresham, 359 Or. 309, 337 (2016) (reiterating the preemption test established in *La Grande/Astoria*, City of La Grande v. Pub. Employees Retirement Bd., 281 Or. 137, 148 (1978), as applied in *Rogue Valley Sewer Services,* 357 Or. at 450–451: "The first inquiry must be whether the local rule in truth is incompatible with the [state] legislative policy, either because both cannot operate concurrently or because the legislature meant its law to be exclusive.").
[167] *Rogue Valley Sewer Services,* 357 Or. at 450–451. If a local regulation makes it impossible for a regulated entity to comply with a state statute, the local regulation does not operate concurrently with state law. *Id.*
[168] *Northwest Natural,* 359 Or. at 337–338.
[169] *Id.* at 344–345.
[170] *Id.* at 344.
[171] For example, the Oregon Supreme Court has held that a need to fund local police and fire departments is a legitimate local concern. *Id.* at 345.
[172] For example, when the burdens of a local regulation fall primarily on local residents (such as an increase in utility rates for local ratepayers), the regulation will likely be found to have a local impact. *Id.* [*Northwest Natural]*
[173] OR. CONST. art. IX, § 3a(1).
[174] OR. REV. STAT. § 366.739. Generally, the state retains approximately 50% of highway fund revenues and distributes approximately 30% of remaining revenues to cities and 20% to counties. Highway funds are allocated among cities based on population size and among counties based on vehicle registration totals. STATE OF OREGON LEGISLATIVE POLICY AND RESEARCH OFFICE, FUNDING TRANSPORTATION 3 (2016), https://www.oregonlegislature.gov/lpro/Publications/BB2016FundingTransportation.pdf.
[175] OR. REV. STAT. §§ 366.774, 366.790.
[176] *Id.* § 294.950.
[177] Automobile Club of Oregon v. State, 314 Or. 479, 493 (1992) ("The character of a levy is determined by its function, not by the label the legislature attaches to it.").
[178] AAA Oregon/Idaho Auto Source v. State of Oregon, 363 Or. 411, 423 (2018).
[179] *Id.* at 424.
[180] *Id.* at 425.
[181] For example, the Court in *Automobile Club* held that an assessment on underground gasoline storage tanks and an emissions fee collected at the time of vehicle registration were taxes subject to Art. IX, sec. 3a, and therefore any revenue raised from these taxes could only be used for the purposes outlined in the Constitution. The Court held that funding public transportation projects, such as public bus purchases and

research into alternative fuels, were impermissible uses of revenue under Art. IX, sec. 3a. *Automobile Club,* 314 Or. at 493.
[182] *Id.* at 490 (quoting Rogers v. Lane County, 307 Or. 534, 545 (1988)).
[183] Rogers v. Lane County, 307 Or. 534, 545 (1988).
[184] Oregon Telecommunications Ass'n v. Oregon Dept. of Transp., 341 Or. 418, 430 (2006).
[185] *Id.* at 431–32.
[186] *Rogers* at 542–43.
[187] *Id.* at 545–46.
[188] *Automobile Club,* 314 Or. at 494–95.
[189] OR. REV. STAT. § 366.514. Cities and counties generally must devote at least 1% of their highway fund allocations to constructing footpaths and bike paths along roadway rights-of-way. *Id.* § 366.514(3). Bike and/or walking paths that are not within a roadway right-of-way may not be paid for with state highway revenues. *See* STATE OF OREGON LEGISLATIVE POLICY AND RESEARCH OFFICE, FUNDING TRANSPORTATION 1 (2016), https://www.oregonlegislature.gov/lpro/Publications/BB2016FundingTransportation.pdf.
[190] In a 1984 opinion, Oregon Attorney General Fred Miller asserted that highway fund could be used to fund a driver training program and an implied consent program designed to deter drunk driving because reducing drunk driving increases the safety of public highways, which has a "direct and substantial benefit to the highway user." Fred D. Miller, Or. Op. Atty. Gen. OP-5647 (1984). The Miller opinion drew from an earlier AG opinion, which asserted that a driver training program could be funded with highway funds "because student driver training unquestionably contributed to the better operation and use of our highways." *Id.* at 4 (quoting 38 Op Atty Gen 800, 810 (1977)).
[191] In 1980, voters repealed art. IX, sec. 3 and replaced it with the current art. IX, sec. 3a, which contained nearly identical language to the previous provision. The primary effect of the replacement was the elimination of policing and park and recreational activities as permissible uses of highway funds. *See id.* 1–2.
[192] The City may potentially use highway funds to develop EV infrastructure within the right-of-way of a local jurisdictional road if it can show that the infrastructure is an "improvement" of the road. The City may also potentially use highway funds to promote EV use as a means of reducing emissions on local roads, because such emissions present a safety hazard for local drivers. However, it is uncertain whether the Oregon Supreme Court would uphold these expenditures as permissible uses of art. IX, sec. 3a funds.
[193] OR. CONST. art. IX, § 3a(2).
[194] OR. REV. STAT. § 801.040.
[195] *Id.* § 801.041.
[196] *Id.* §§ 801.040, 801.041, 801.042, 803.420, 803.445.
[197] *Id.* § 825.615.
[198] *Id.* § 815.295.
[199] *Id.* § 815.300.
[200] One could also argue that there is not actually a legal conflict under this scenario, because a vehicle could comply with the Portland requirement without violating state law. However, because the city rule would presumably conflict with the purpose of the state exemptions, a court would likely review the legislative history of the statute to determine whether the legislature intended for the statewide pollution control requirements to be exclusive. Moreover, in 2016 the Oregon Supreme Court reiterated that "a state law that embodies substantive social, economic, or regulatory objectives" will generally preempt a contrary local policy, unless the local policy primarily addresses a legitimate local concern and has a primarily local impact. Northwest Natural Gas Co. v. City of Gresham, 359 Or. 309, 343–46 (2016). This hypothetical helps illustrate the complexity of state and local jurisdictional conflicts.
[201] Thunderbird Mobile Club v. Wilsonville, 228 P.3d 650, 658 (Or. Ct. App. 2010).

[202] Springfield Educ. Ass'n v. Springfield Sch. Dist. No. 19, 621 P.2d 547, 555–57 (Or. 1980).
[203] A local government acts in a proprietary capacity when it directly engages in economic activity as a market participant, rather than a regulator. The distinction between proprietary and regulatory actions is discussed in greater detail in Part III.C.5.
[204] 42 U.S.C. § 7543(a).
[205] The CAA's mobile source preemption provisions are described in greater detail in Part III.A.1.
[206] 42 U.S.C. § 7543(b).
[207] *Id.* §§ 7507, 7543(b).
[208] *Id.* § 7543(e). This distinction is discussed in greater detail in Part III.A.1.a.
[209] CAA section 209(d) expressly preserves state and local authority to regulate the "use, operation, or movement of registered or licensed motor vehicles." *Id.* § 7543(d).
[210] Allway Taxi, Inc. v. City of New York, 340 F. Supp. 1120, 1124 (S.D.N.Y.) ("We do not say that a state or locality is free to impose its own emission control standards the moment after a new car is bought and registered…. The preemption sections [of the CAA], however, do not preclude a state or locality from imposing its own exhaust emission control standards upon the resale or reregistration of the automobile.").
[211] OR. REV. STAT. § 468A.010(1)(b)–(c).
[212] *Id.* § 468A.355(3).
[213] *Id.* § 468.020.
[214] *Id.* §§ 468A.363, 468A.365.
[215] The EQC is a five-member panel that adopts the rules and regulations that DEQ administers. EQC members are appointed by the Governor of Oregon to serve four-year terms. *See* Or. Dept. of Envt'l Quality, *Oregon DEQ's Policy and Rulemaking Board,* https://www.oregon.gov/deq/about-us/eqc/Pages/default.aspx.
[216] The EQC is responsible for adopting Oregon's environmental regulations and standards. OR. REV. STAT. § 468.020. DEQ is responsible for administering Oregon's environmental regulations and standards, subject to the EQC's policy direction. *Id.* § 468.035.
[217] *See id.* § 468A.360.
[218] *Id.* The Clean Air Act preempts the EQC from adopting Oregon-specific emissions standards for new motor vehicles, but the EQC may adopt California's emissions standards that have received a waiver from EPA. 42 U.S.C. §§ 7507, 7543(a), (b).
[219] *Id.* § 468A.279.
[220] *Id.* § 468A.365.
[221] *Id.* § 468A.385.
[222] *Id.* § 468A.803. The legislature allocated a portion of Oregon's VW settlement funds to the Clean Diesel Engine Fund to fund school bus replacements. *Id.* § 468A.801.
[223] *Id.* § 468A.266. Oregon's Clean Fuels Program is designed to reduce greenhouse gas emissions from vehicle fuels by 10% below 2010 levels by 2025.
[224] *Id.* § 468A.793.
[225] *Id.* § 468A.363.
[226] *Id.* § 468A.365.
[227] *Id.* § 468A.390.
[228] OR. ADMIN. R. § 340-256-0010 *et. seq.*
[229] *Id.* § 340-257-0010 *et. seq.*
[230] *Id.* § 340-253-0000 *et. seq.*
[231] *Id.* § 340-259-0005 *et. seq.*
[232] *Id.* § 340-254-0010 *et. seq.*

[233] OR. REV. STAT. § 468A.105. The EQC has discretion to waive this population requirement if certain conditions are met. *Id.* § 468A.110.
[234] *Id.* § 468A.105(2).
[235] *Id.* § 468A.135. A regional authority may enter into an agreement with the EQC to absorb some, but not all, of the agency's authorities and obligations. *Id.* § 468A.145. Absent such an agreement, the regional authority will have exclusive jurisdiction to regulate air quality within its boundaries. *Id.* § 468A.135(3).
[236] *Id.* § 468A.135(2), (4).
[237] *Id.* § 468A.135.
[238] *Id.* § 468A.140.
[239] *Id.* § 468A.145.
[240] If it receives a waiver from EPA, California may adopt its own emissions standards, and other states may adopt California's standards. 42 U.S.C. §§ 7507, 7543(a), (b).
[241] While the Oregon legislature has not expressly delegated exclusive regulatory jurisdiction to the EQC in this context, a court would likely conclude that due to the statewide impacts and economic implications of vehicle emissions standards, the legislature intended for the EQC to have exclusive authority to adopt emissions standards.
[242] CAA § 209(d) states: "Nothing in this part [the CAA's mobile source preemption provisions] shall preclude or deny to any State or political subdivision thereof the right to otherwise control, regulate, or restrict the use, operation or movement of registered or licensed motor vehicles." 42 U.S.C. § 7543(d).
[243] OR. REV. STAT. § 810.010.
[244] *Id.* § 810.010; PORTLAND CITY CODE § 16.10.100.
[245] OR. REV. STAT. § 810.010.
[246] *Id.* § 810.030(1).
[247] *Id.* § 810.030(2)(a).
[248] *Id.* § 810.030(2).
[249] *Id.* § 810.040. City or county road authorities may not establish truck routes on state or interstate highways or restrict vehicle use on these highways.
[250] See discussion of FAAAA preemption in Part III.A.3.
[251] OR. REV. STAT. § 810.040.
[252] City of Columbus v. Ours Garage and Wrecker Service, 536 U.S. 424 (2002).
[253] OR. DEPT. OF TRANSPORTATION, ODOT APPROVAL PROCEDURE FOR LOCAL TRUCK ROUTES 2 (2007), http://www.oregon.gov/ODOT/Planning/Documents/LocalTruckRoute_ApprovalProcedure.pdf [*hereinafter* ODOT LOCAL TRUCK ROUTE PROCEDURE].
[254] See section III.A.3 for a more detailed description of preemption under the FAAAA and section III.B.1 for a more detailed description of Oregon's home rule authority.
[255] *Ours Garage,* 536 U.S. 424 (2002).
[256] *Id.* at 442.
[257] *Id.* at 428, 442.
[258] ODOT LOCAL TRUCK ROUTE PROCEDURE*, supra* note 253, at 2.
[259] *Id.* at 1.
[260] *Id.*
[261] *Id.* at 2.
[262] The FAAAA's preemption provisions "shall not restrict the safety regulatory authority of a State with respect to motor vehicles, *the authority of a State to impose highway route controls or limitations based on the size or weight of the motor vehicle* or the hazardous nature of the cargo, or the authority of a State to

regulate motor carriers with regard to minimum amounts of financial responsibility relating to insurance requirements and self-insurance authorization." 49 U.S.C. § 14501(c)(2)(A) (emphasis added).
[263] ODOT LOCAL TRUCK ROUTE PROCEDURE, *supra* note 253, at 2.
[264] *See* Cal. Tow Truck Ass'n v. San Francisco, 807 F.3d 1008, 1020 (9th Cir. 2015) (*CTTA II*); Cal. Tow Truck Ass'n v. San Francisco, 693 F.3d 847, 864 (9th Cir. 2012) (*CTTA I*); Tillison v. Gregoire, 424 F.3d 1093, 1102–03 (9th Cir. 2005).
[265] *See CTTA II*, 807 F.3d at 1020; *CTTA I*, 693 F.3d at 860, 864.
[266] ODOT LOCAL TRUCK ROUTE PROCEDURE, *supra* note 253, at 1.
[267] The Court specifically stated: "We hold that § 14501(c) [of the FAAAA] does not bar a State from delegating to municipalities and other local units the State's authority to establish safety regulations governing motor carriers of property, including tow trucks." City of Columbus v. Ours Garage and Wrecker Service, 536 U.S. 424, 428 (2002).
[268] The Court stated: "Local regulation of prices, routes, or services of tow trucks that is not genuinely responsive to safety concerns garners no exemption from §14501(c)(1)'s preemption rule." *Id.* at 442.
[269] OR. REV. STAT. § 810.040.
[270] *Id.*
[271] *Id.* § 811.450.
[272] *Id.* § 810.040.
[273] OR. REV. STAT. § 468A.405.
[274] In the stationary source context, for example, DEQ and the Oregon Health Authority have concluded that elevated emissions of dangerous air pollutants "above safe ambient benchmark concentrations" presented an imminent and substantial endangerment to public health, which DEQ addressed by issuing a cease and desist order against the emitting facility. Or. Dept. of Envt'l Quality, In the Matter of Bullseye Glass Co., Cease and Desist Order: Final Order (May 19, 2016), https://www.oregon.gov/deq/FilterDocs/BullseyeCDO_Renewal.pdf. The facility subject to the cease and desist order had recorded lead pollutant emissions of 416 nanograms per cubic meter over a 24-hour period, which greatly exceeded the national ambient air quality standard for lead of 150 nanograms per cubic meter.
[275] The national ambient air quality standard for $PM_{2.5}$ is 35 micrograms per cubic meter ($\mu g/m^3$) averaged over a 24-hour period. The national ambient air quality standard for PM_{10} is 150 $\mu g/m^3$ averaged over a 24-hour period. U.S. Envt'l Protection Agency, *NAAQS Table,* https://www.epa.gov/criteria-air-pollutants/naaqs-table. Oregon's health-based ambient benchmark concentration for diesel particulate matter of 0.1 $\mu g/m^3$. 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.
[276] OR. ADMIN. R. ch. 340, div. 206.
[277] OR. REV. STAT. §§ 468A.410, 468A.455.
[278] Oregon's air pollution alert threshold for $PM_{2.5}$ is 140.5 $\mu g/m^3$ averaged over a 24-hour period. OR. ADMIN. R. §§ 340-206-0030, 340-206-8010. Oregon's air pollution warning threshold for $PM_{2.5}$ is 210.5 $\mu g/m^3$ averaged over a 24-hour period (six times the NAAQS), and Oregon's air pollution emergency threshold for $PM_{2.5}$ is 280.5 $\mu g/m^3$ averaged over a 24-hour period (eight times the NAAQS). *Id.* §§ 340-206-0030, 340-206-8020, 340-206-8030.
[279] *Id.* §§ 340-206-0030, 340-206-8030.
[280] 42 U.S.C. § 7543(a).
[281] *Id.* § 7543(e)(1).
[282] *Id.* § 7543(e)(2).
[283] *Id.* § 7507.

[284] CAL. CODE REGS. tit. 13, §§ 2449, 2449.1 (2018); *see* CAL. AIR RESOURCES BD, IN-USE OFF-ROAD DIESEL-FUELED FLEETS REGULATION (2016), https://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf.
[285] *See* Jensen Family Farms, Inc. v. Monterey Bay Unified Air District, 644 F.3d 934, 934 (2011).
[286] Indirect source rules are described in greater detail in section III.C.4.
[287] CAA § 110(a)(5) allows states to include indirect source review programs in their state implementation plans (SIPs), but prohibits EPA from requiring indirect source programs as a condition of SIP approval. 42 U.S.C. § 7410(a)(5)(A)(i).
[288] *Id.* § 7410(a)(5).
[289] 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).
[290] *See* Nat'l Ass'n of Home Builders v. San Joaquin Valley Unified Pollution Control District, 627 F. 3d 730 (9th Cir. 2009).
[291] The U.S. Court of Appeals for the Ninth Circuit held that indirect source programs are not preempted under Section 209(e) so long as the programs do not directly impose emissions limitations on nonroad sources operating within an indirect source. *See id.*
[292] In *Trump Hotels & Casino Resorts, Inc. v. Mirage Resorts,* the plaintiff argued that an indirect source may also be a "major stationary source" under the Clean Air Act, but the federal district court of New Jersey disagreed, holding that indirect sources are subject to a different legal regime where regulatory discretion is left to the states. 963 F. Supp. 395, 407 (D.N.J. 1997), aff'd, 140 F.3d 478 (3d Cir. 1998).
[293] 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.
[294] *Id.* §§ 6.1, 6.2.
[295] *Id.* § 7.0.
[296] OR. ADMIN. R. § 340-254-0040(1). Specifically, an indirect source construction permit is required for applicable sources within the boundaries of a carbon monoxide nonattainment or maintenance area that contains at least one city with a population of 50,000 or more people.
[297] *Id.* § 340-254-0060.
[298] *Id.* § 340-254-0050. These fees include a $100 filing fee and a $500 application processing fee. If the facility is located in a "sensitive area," DEQ has discretion to impose an additional $2,000 Extended Analysis Processing Fee. *Id.*
[299] *See id.* §§ 340-254-0060, 340-254-0070.
[300] *Id.* §§ 340-254-0060(2)(g), 340-254-0070(5).
[301] *Id.* § 340-254-0030(8).
[302] *Id.* § 340-254-0020.
[303] *Id.*
[304] Home rule authority is discussed in greater detail in section III.B.1.
[305] Engine Mfrs. Ass'n v. South Coast Air Quality Management Dist., 498 F.3d 1031, 1040 (9th Cir. 2007) (hereinafter *EMA v. South Coast*).
[306] *Id.* at 1041.
[307] *See id.* at 1043 (discussing CAA); Tocher v. City of Santa Ana, 219 F.3d 1040, 1049 (9th Cir. 2000) (discussing FAAAA).
[308] *EMA v. South Coast*, 498 F.3d at 1039 (procurement); *Tocher,* 219 F.3d at 1049 (public contracts).
[309] *EMA v. South Coast*, 498 F.3d at 1046.
[310] *Id.* at 1048.
[311] Am. Trucking Ass'n, Inc. v. City of Los Angeles, 569 U.S. 641, 642 (2013).

[312] *Id.*
[313] *Id.* at 650–651.
[314] *Id.* at 645.
[315] *Id.* at 651.
[316] *EMA v. South Coast*, 498 F.3d at 1036–37.
[317] For example, Multnomah County has adopted anti-idling restrictions for County-owned vehicles and commercial vehicles operating on County property. Multnomah County, Vehicle Idling Reduction Policy (July 22, 2011), https://multco.us/file/13395/download.
[318] 49 U.S.C. §§ 13102(14), 14501(c)(1). Federal preemption under the FAAAA is described in greater detail in section III.A.3.
[319] PATS POLLUTANT MODELING SUMMARY, *supra* note 60, at 6.
[320] PORTLAND BUREAU OF TRANSPORTATION, PORTLAND TRUCK MAP (2017), *available at* https://www.portlandoregon.gov/transportation/article/476724 [hereinafter PORTLAND TRUCK MAP].
[321] PORTLAND CITY CODE § 16.20.220; PBOT, *Commercial Vehicles*, https://www.portlandoregon.gov/transportation/article/60016.
[322] OR. REV. STAT. § 810.040. Road authority jurisdiction is described in section III.C.2.a.
[323] *Id.* § 810.160.
[324] *Id.* § 810.030.
[325] 49 U.S.C. § 14501(c). Federal preemption and applicable exceptions under the FAAAA are described in greater detail in section III.A.3.
[326] The legal and constitutional implications of ODOT's truck route policy are discussed in greater detail in section III.C.2.a.
[327] PORTLAND TRUCK MAP, *supra* note 320.
[328] The City of Portland does not have jurisdiction over state or interstate highways, so the City does not have authority to establish truck routes on interstate highways, such as I-5 or I-205, or on state highways, such as highway 26.
[329] METRO, 2018 REGIONAL TRANSPORTATION PLAN: PUBLIC REVIEW DRAFT CHAPTER 3, 3-7, 3-8 (2018), https://www.oregonmetro.gov/sites/default/files/2018/06/29/RTP_Ch3_Systempoliciespublicreview.pdf.
[330] OR. REV. STAT. § 810.040.
[331] *Id.* § 810.450. A violation of a posted truck route is a Class B traffic violation, which carries a maximum fine of $1,000. *Id.* 153.018(2)(b).
[332] *Id.* § 810.450(3).
[333] Portland Bureau of Transportation, *Commercial Vehicles*, https://www.portlandoregon.gov/transportation/article/60016.
[334] SUSTAINABLE STREETS INDEX 2010, OFF-HOUR DELIVERIES, http://www.nyc.gov/html/dot/downloads/pdf/ssi10-offhour.pdf.
[335] *Id.* at 63.
[336] Transport for London, *About the LEZ,* https://tfl.gov.uk/modes/driving/low-emission-zone/about-the-lez.
[337] The FAAAA's preemption provisions are described in greater detail in section III.A.3.
[338] CLEAN DIESEL HOSPITAL LEADERSHIP GROUP, DECLARATION OF COOPERATION (Oct. 16, 2006), https://westcoastcollaborative.org/files/news/CleanDieselZonesCommitment.pdf.
[339] Under the market participant doctrine, the City and County have authority to establish these types of programs for public facilities when they are acting in a proprietary, rather than regulatory, capacity. The market participant doctrine is described in section III.C.5.
[340] OR. REV. STAT. § 383.004.
[341] *Id.* § 383.004(2)(b).

[342] *Id.* § 383.150.
[343] *Id.* § 383.150(3).
[344] Wash. State Dept. of Transportation, *I-405 Express Toll Lanes,* http://www.wsdot.wa.gov/Tolling/405/about.htm.
[345] *Id.*
[346] Wash. State Dept. of Transportation, *SR 167 HOT Lanes,* http://www.wsdot.wa.gov/Tolling/SR167HotLanes/default.htm.
[347] Wash. State Dept. of Transportation, *SR 167 HOT Lanes Toll Rates,* http://www.wsdot.wa.gov/Tolling/SR167HotLanes/HOTtollrates.htm.
[348] For example, a road toll may violate the Constitution's Commerce Clause if it is not based on a "fair approximation" of a toll payer's use and impact on the roadway. Selevan v. New York Thruway Auth., 711 F.3d 253, 259 (2nd Cir. 2013). Because vehicle size and weight, rather than fuel type, are the primary factors affecting a vehicle's road impacts, tolls based on fuel type may not fairly approximate associated road impacts.
[349] For more information, see the discussion of the market participant doctrine in section III.C.5.
[350] For example, the Ninth Circuit upheld the South Coast Air Quality Monitoring District's clean fleet rules for garbage fleets and private airport transportation fleets under the market participant doctrine. Engine Mfrs. Ass'n v. South Coast Air Quality Management Dist., 489 F.3d 1031 (9th Cir. 2007).
[351] PORTLAND CITY CODE § 17.102.050, adopted through City Ordinance No. 185449, effective July 21, 2012.
[352] See discussion of preemption of local regulation under federal and state law, sections III.A and III.B. Most notably, local governments in Oregon do not have authority to prohibit vehicle titling or registration within their jurisdictions and likely lack authority to adopt and enforce emissions standards, which fall under the jurisdiction of the EQC and DEQ. However, the Oregon legislature has not expressly preempted local governments from adopting emissions standards, so there is some uncertainty regarding the scope of preemption in this area. Nevertheless, in practice it would be difficult for local governments to implement local emissions standards.
[353] PORTLAND CITY CODE § 17.102.050, adopted through City Ordinance No. 185449, effective July 21, 2012.
[354] CITY OF PORTLAND AND MULTNOMAH COUNTY, CLIMATE ACTION PROGRESS REPORT 60 (Apr. 2017), *available at* https://www.portlandoregon.gov/bps/article/636700.
[355] In December 2018, the Portland City Council and the Multnomah County Board of Commissioners adopted Clean Air Construction policies that require most contractors working on public construction projects to use post-2007 diesel engines or engines retrofitted with diesel particulate filters. City of Portland Bureau of Planning and Sustainability, *City of Portland Commits to Clean Air Construction Standard* (Dec. 13, 2018), https://www.portlandoregon.gov/bps/article/706766; Multnomah County, *Portland Aims to Cut Deadly Emissions, Commits to Cleaner Diesel on Public Construction Sites* (Dec. 13, 2018), https://multco.us/multnomah-county/news/portland-aims-cut-deadly-emissions-commits-cleaner-diesel-public-construction. Multnomah County previously piloted a clean diesel contracting policy during the construction of the East County Courthouse. *See* MULTNOMAH COUNTY, CASE STUDY: CLEAN DIESEL RETROFITS ON THE EAST COUNTY COURTHOUSE (2013), *available at* https://www.oregonlegislature.gov/dembrow/workgroupitems/5-27%20Case%20Study%20-%20East%20County%20Courthouse.pdf.
[356] CHICAGO, ILL., CODE § 2-92-595 (2011).
[357] A port has authority to impose conditions on drayage trucks through contracts or other proprietary agreements with private drayage truck companies, so long as the conditions do not represent an exercise of regulatory authority or include penalty provisions that have the force and effect of law. The market

participant doctrine and distinctions between proprietary and regulatory actions are described in section III.C.4.

[358] SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN 2017 25 (2017), http://www.cleanairactionplan.org/documents/final-2017-clean-air-action-plan-update.pdf/; DELIVERING THE GOODS: HOW CALIFORNIA CAN CREATE THE SUSTAINABLE FREIGHT SYSTEM OF THE FUTURE 17 (2018), https://www.law.berkeley.edu/wp-content/uploads/2018/03/DeliveringTheGoods.pdf.

[359] SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN 2017 32 (2017), http://www.cleanairactionplan.org/documents/final-2017-clean-air-action-plan-update.pdf/.

[360] *See* L.A., Cal., Ordinance No. 180681 (Aug. 21, 2008); L.A., Cal., Ordinance No. 180679 (May 5, 2009); L.A., Cal., Ordinance No. 180923 (Oct. 14, 2009); L.A., Cal., Ordinance No. 1809253 (Oct. 14, 2009); L.A., Cal., Ordinance No. 180942 (Oct. 27, 2009); L.A., Cal., Ordinance No. 181125 (Mar. 12, 2010); L.A., Cal., Ordinance No. 181126 (Mar. 12, 2010); L.A., Cal., Ordinance No. 181255 (June 27, 2010); *see also* Scott L. Cummings, *Preemptive Strike: Law in the Campaign for Clean Trucks*, 4 U.C. IRVINE L. REV. 939 (2014) (describing the history of the ports' development and efforts to regulate port-related air pollution).

[361] The Clean Truck Fee imposed a charge of $35 per loaded container on older diesel trucks and newer diesel trucks purchased with Clean Trucks Program funds. CLEAN TRUCK FEE: WHO PAYS, WHO DOESN'T PAY (2009), https://www.portoflosangeles.org/ctp/CTP_Clean_Truck_Fee.pdf.

[362] The Port of Los Angeles, *About the Clean Truck Program,* https://www.portoflosangeles.org/ctp/idx_ctp.asp.

[363] SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN 2017 33 (2017), http://www.cleanairactionplan.org/documents/final-2017-clean-air-action-plan-update.pdf/.

[364] Diesel Technology Forum, *Policy: Why Retrofit?,* https://www.dieselforum.org/policy/why-retrofit.

[365] Gliders are new truck cabs with used diesel engines.

[366] U.S. ENVT'L PROTECTION AGENCY, IDLING VEHICLE EMISSIONS FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND HEAVY-DUTY TRUCKS 4 (2008), *available at* https://nepis.epa.gov.

[367] U.S. ENVT'L PROTECTION AGENCY, AVERAGE IN-USE EMISSIONS FROM URBAN BUSES AND SCHOOL BUSES 4 (2008), https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EVY1.PDF?Dockey=P100EVY1.PDF.

[368] OR. REV. STAT. § 825.605. "'Idling' means operation of the primary engine of a commercial vehicle while the vehicle is stationary. *Id.* § 825.601(5).

[369] For example, a commercial vehicle is exempt from Oregon's idling restriction if it is stuck in traffic, and emergency vehicles are exempt when responding to a public emergency. *Id.* § 825.610.

[370] A "commercial vehicle" is defined as "a commercial vehicle with a gross vehicle weight rating that is greater than 10,000 pounds." *Id.* § 825.601(3).

[371] *Id.* § 825.600.

[372] *Id.* § 825.615.

[373] *Id.*

[374] "The authority to regulate the idling of primary engines in commercial vehicles is vested solely in the Legislative Assembly." *Id.*

[375] For example, the Oregon Court of Appeals concluded that an administrative rule of general applicability prohibiting a specific activity on institutionally owned or controlled property represented a form of regulatory action preempted under state law. Oregon Firearms Ed. Council v. State Bd. of Higher Education, 264 P.3d 160, 165 (Or. App. 2011). That case involved an Oregon statute (O.R.S. § 166.170) prohibiting local governments from enacting any ordinances regulating firearms. When the State Board of Education adopted administrative rules prohibiting individuals from possessing firearms on state university property, the Court of Appeals held that the rules represented the type of regulation preempted under the statute. This is

analogous to a local ordinance prohibiting all people from engaging in a specific conduct (idling) on property under local control (city roads).

[376] Multnomah County, Vehicle Idling Reduction Policy (July 22, 2011), https://multco.us/file/13395/download.

[377] During a public hearing on the 2011 idling bill, H.B. 2081, Senate Committee Chairman Lee Beyer (D-Springfield) asserted that the bill would not restrict local governments from controlling idling in certain locations, such as next to schools. According to Sen. Beyer, "There is nothing in this bill that stops a local government, through their zoning code from deciding where truck routes are or where trucks can park. They still have that authority." Audio Recording, *Public Hearing on H.B. 2081 Before the S. Comm on Bus., Transp., & Econ. Dev.*, 76th Leg. Sess. at 25:50 (Or. May 19, 2011) (statement of Sen. Lee Beyer, Chairman, S. Comm on Bus., Transp., & Econ. Dev.) (emphasis added).

[378] Multnomah County, Vehicle Idling Reduction Policy (July 22, 2011), https://multco.us/file/13395/download.

[379] *Id.* § IV(a).

[380] Oregon Clean Air Construction Collaborative: A Project to Address Diesel Particulate Pollution, Exhibit A (2018), http://multnomah.granicus.com/MetaViewer.php?view_id=3&event_id=976&meta_id=128566; Clean Air Construction Standards, Draft for Public Comment (Nov. 5, 2018), https://multco.us/file/76180/download.

[381] Part III.C.5 discusses the legal distinctions between proprietary and regulatory actions under the market participant doctrine.

[382] OR. REV. STAT. § 825.605(5).

[383] *Id.* § 153.018(2)(c).

[384] PORTLAND BUREAU OF TRANSPORT., PERFORMANCE BASED PARKING MANAGEMENT MANUAL 71 (2018), https://www.portlandoregon.gov/Transportation/article/686017.

[385] *Id.* § 825.605(4). "The offense described in this section, unlawfully idling the primary engine of a commercial vehicle, applies on any premises open to the public."

[386] ELECTRIFICATION COALITION, ZEV STATE POLICY RANKINGS 11 (2018), https://www.zevscorecard.com/wp-content/themes/ec/assets/doc/zev_state_policy_rankings_6_11_2018.pdf.

[387] OR. ADMIN. R. § 340-257-0080(2); 13 C.C.R. § 1962.2.

[388] 13 C.C.R. § 1962.2.

[389] *West Coast Green Highway: Cleaner and Smarter Transportation from British Columbia to Baja California,* http://westcoastgreenhighway.com/index.htm#/.

[390] Or. Gov. Kate Brown, Exec. Order. No. 17-21 (Nov. 6, 2017), https://www.oregon.gov/gov/Documents/executive_orders/eo_17-21.pdf.

[391] Or. Dept. of Envt'l Qual., *Oregon Clean Vehicle Rebate Program,* https://www.oregon.gov/deq/aq/programs/Pages/ZEV-Rebate.aspx. Oregon's EV rebates will be funded by the state's newly adopted vehicle privilege tax, which was upheld by the Oregon Supreme Court in August 2018. AAA Oregon/Idaho Auto Source v. State of Oregon, 363 Or. 411 (2018).

[392] OR. DEPT. OF ENVT'T QUALITY, PROPOSAL FOR USING VOLKSWAGEN MITIGATION FUNDS FOR LIGHT DUTY EV CHARGING INFRASTRUCTURE (June 5, 2018), https://www.oregon.gov/deq/FilterDocs/vw15VWStrawProp.pdf. Specifically, the proposal aims to upgrade Oregon's existing DC fast charger network, install EV chargers at multi-unit dwellings, and expand the fast charging network into underserved communities.

[393] 2017 CITY OF PORTLAND ELECTRIC VEHICLE STRATEGY (2016), https://www.portlandoregon.gov/bps/article/619275.

[394] Mult. County 100% Renewable Resolution, *supra* note 9, at ¶ 11.

[395] Andrew Theen, *TriMet Debuts $500 Million Plan Ditch Diesel Buses, Go Electric,* OREGONLIVE.COM (Sept. 15, 2018), https://www.oregonlive.com/commuting/index.ssf/2018/09/trimet_debuts_500_million_plan.html; TRIMET, TRIMET NON-DIESEL BUS PLAN, https://trimet.org/meetings/board/pdfs/2018-09-12/non-diesel-bus-plan.pdf.
[396] Andrew Theen, *TriMet Approves Plan Ditch Diesel Buses by 2040,* OREGONLIVE.COM (Sept. 26, 2018), https://www.oregonlive.com/commuting/2018/09/trimet_approves_plan_to_ditch.html.
[397] Tesla, Daimler, Volvo, and Mercedes are all developing medium-duty and heavy-duty electric vehicles. Danny Palmer, *What is the Tesla Semi? Everything You Need to Know About Tesla's Semi-Autonomous Electric Truck* (Mar. 22, 2018), https://www.zdnet.com/article/what-is-the-tesla-semi-everything-you-need-to-know-about-teslas-semi-autonomous-electric-truck/.
[398] Andrew Krok, *Daimler's All-Electric eCanter Box Truck is Ready for Work* (Sept. 15, 2017), https://www.cnet.com/roadshow/news/daimlers-all-electric-ecanter-box-truck-is-ready-for-work/; *Daimler Trucks Sets Up E-Mobility Group*, DAIMLER.COM, https://www.daimler.com/products/trucks/freightliner/e-mobility-group.html.
[399] *Tesla Semi*, TESLA.COM, https://www.tesla.com/semi.
[400] *Id.* In May 2018, Oregon's electric rates for transportation averaged $0.09/kWh, which would equate to an average fuel cost of $0.18 per-mile for the Tesla Semi. U.S. Energy Info. Admin., *Electric Power Monthly* (July 24, 2018), https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a.
[401] Andrew J. Hawkins, *Does the World Need a Tesla Truck?* (Nov. 16, 2017), https://www.theverge.com/2017/11/16/16655890/tesla-semi-truck-2017-freight-weight-fuel-range.
[402] See map, ChargeHub, *Charge Your EV in Portland,* https://chargehub.com/en/countries/united-states/oregon/portland.html?city_id=411.
[403] Nick Budnick, *Agency Still Relies on Dirty Diesel Fleet,* PORTLANDTRIBUNE.COM, Jan. 26, 2017, https://portlandtribune.com/pt/9-news/341731-221727-agency-still-relies-on-dirty-diesel-fleet-.
[404] *See* TriMet Code § 2.20; OR. REV. STAT. ch. 267.
[405] *See* OR. REV. STAT. § 267.570.
[406] TRIMET NON-DIESEL BUS PLAN, *supra* note 395, at 4.
[407] TriMet, *Better Buses*, https://trimet.org/newbuses/.
[408] TRIMET NON-DIESEL BUS PLAN, *supra* note 395, at 4.
[409] As of October 2015, TriMet had retrofitted 196 older buses with particulate matter filters. TriMet, *Moving Forward with Cleaner, More Efficient Buses* (Oct. 2, 2015), http://howweroll.trimet.org/2015/10/02/moving-forward-with-cleaner-more-energy-efficient-buses/.
[410] Nick Budnick, *Agency Still Relies on Dirty Diesel Fleet,* PORTLANDTRIBUNE.COM, Jan. 26, 2017, https://portlandtribune.com/pt/9-news/341731-221727-agency-still-relies-on-dirty-diesel-fleet-.
[411] TriMet, *We're Going Electric!,* https://trimet.org/electricbuses/.
[412] In 2017, TriMet received a $3.4 million grant from the Federal Transit Administration's Low or No Emission Vehicle Deployment Program to help fund its electric bus purchases. TriMet, *2018 is Going to Be Electrifying for TriMet!* (Aug. 9, 2017), http://news.trimet.org/2017/08/2018-is-going-to-be-electrifying-for-trimet/.
[413] TriMet, *We're Going Electric!,* https://trimet.org/electricbuses/.
[414] *Id.*
[415] Andrew Theen, *TriMet Debuts $500 Million Plan Ditch Diesel Buses, Go Electric,* OREGONLIVE.COM (Sept. 15, 2018), https://www.oregonlive.com/commuting/index.ssf/2018/09/trimet_debuts_500_million_plan.html; TRIMET NON-DIESEL BUS PLAN, *supra* note 395, at 4.
[416] Andrew Theen, *TriMet Approves Plan Ditch Diesel Buses by 2040,* OREGONLIVE.COM (Sept. 26, 2018), https://www.oregonlive.com/commuting/2018/09/trimet_approves_plan_to_ditch.html.

[417] David Roberts, *Electric Buses Are Coming, and They're Going to Help Fix 4 Big Urban Problems,* VOX.COM (Apr. 28, 2018), https://www.vox.com/energy-and-environment/2017/10/24/16519364/electric-buses. In 2016, TriMet purchased new diesel buses for $470,000 each. TriMet, *First Batch of New Buses Take to the Street* (Feb. 17, 2016), http://howweroll.trimet.org/2016/02/17/first-batch-of-new-buses-take-to-the-streets/. TriMet is adding five New Flyer Xcelsior electric buses to its fleet, which the manufacturer reported cost between $700,000 and $900,000 each in 2017. New Flyer of America, *Country's Largest Transit Bus System on Electric Buying Spree* (Oct. 17, 2017), https://www.newflyer.com/2017/10/countrys-largest-transit-bus-system-electric-buying-spree/.

[418] Electric bus manufacturer Proterra estimates that owners of its electric Catalyst bus can save $175,000 in lifetime maintenance costs compared to a diesel bus and $275,000 in lifetime maintenance costs compared to a diesel hybrid bus. Proterra, *The Proterra Catalyst 40-Foot Transit Vehicle,* https://www.proterra.com/products/40-foot-catalyst/. New Flyer estimates that owners of its Xcelsior Charge bus can save up to $125,000 in lifetime maintenance costs. New Flyer of America, *Country's Largest Transit Bus System on Electric Buying Spree* (Oct. 17, 2017), https://www.newflyer.com/2017/10/countrys-largest-transit-bus-system-electric-buying-spree/.

[419] New Flyer of America, *Country's Largest Transit Bus System on Electric Buying Spree* (Oct. 17, 2017), https://www.newflyer.com/2017/10/countrys-largest-transit-bus-system-electric-buying-spree/. Proterra estimates that the lifetime operational savings from its Catalyst buses amount to more than $460,000. Proterra, *The Proterra Catalyst 40-Foot Transit Vehicle,* https://www.proterra.com/products/40-foot-catalyst/.

[420] TriMet's FY2019 budget projects spending $11,052,980 on diesel bus fuel at a cost of $2.15 per gallon, which equates to a total fleet wide fuel consumption of 5,140,920 gallons per year, or an average of 14,084 gallons per day. TRIMET, ADOPTED BUDGET 2018–2019, OP-38, https://trimet.org/budget/pdf/2019-adopted-budget.pdf.

[421] TRIMET NON-DIESEL BUS PLAN, *supra* note 395, at 4.

[422] TriMet's FY2019 budget reflects a bus diesel fuel cost of $2.15 per gallon. TRIMET, ADOPTED BUDGET 2018–2019, Overview-7, https://trimet.org/budget/pdf/2019-adopted-budget.pdf.

[423] Proterra's 40-foot electric Catalyst buses average 1.5 kWh/mile. Proterra, *The Proterra Catalyst 40-Foot Transit Vehicle,* https://www.proterra.com/products/40-foot-catalyst/. Oregon's electric rates for the transportation sector averaged $0.0932/kWh in May 2018. U.S. Energy Info. Admin., *Gasoline and Diesel Fuel Update* (Jul. 23, 2018), https://www.eia.gov/petroleum/gasdiesel/. TriMet's bus fleet travels an average of 67,191 miles per-day, which would cost $9,393.26 at current average electricity rates.

[424] TRIMET NON-DIESEL BUS PLAN, *supra* note 395, at 11.

[425] C40 Cities, *Our Commitment to Green and Healthy Streets: C40 Fossil-Fuel-Free Streets Declaration,* https://www.c40.org/other/fossil-fuel-free-streets-declaration.

[426] L.A. Metro, *Metro Leads the Nation in Setting Ambitious 2030 Zero Emission Bus Goal* (Aug. 2, 2017), https://www.metro.net/news/simple_pr/metro-leads-setting-2030-zero-emission-bus-goal/.

[427] King County, *King County Executive Announces Purchase of Battery Buses, Challenges Industry to Build Next-Generation Transit* (Jan. 10, 2017), https://www.kingcounty.gov/elected/executive/constantine/news/release/2017/January/10-battery-buses.aspx.

[428] Proterra, *Financing Your Electric Bus*, https://www.proterra.com/financing/.

[429] Nick Budnick, *Agency Still Relies on Dirty Diesel Fleet,* PORTLANDTRIBUNE.COM, Jan. 26, 2017, https://portlandtribune.com/pt/9-news/341731-221727-agency-still-relies-on-dirty-diesel-fleet-.

[430] METRO, PUBLIC REVIEW DRAFT: 2018 REGIONAL TRANSPORTATION PLAN CHAPTER 3, 3-19 (June 29, 2018), https://www.oregonmetro.gov/sites/default/files/2018/06/29/RTP_Ch3_Systempoliciespublicreview.pdf.

[431] PATS POLLUTANT MODELING SUMMARY, *supra* note 60, at 6.

[432] Keely Chalmers, *High Diesel Levels Found at Construction Sites, Study Says,* KGW.com (May 7, 2018), https://www.kgw.com/article/news/health/high-diesel-levels-found-at-construction-sites-study-says/283-549819577.
[433] For a map of active construction sites in Portland, see Next Portland, *Development Map,* http://www.nextportland.com/map/ (site updated weekly).
[434] 42 U.S.C. § 7543(a).
[435] Oregon Clean Air Construction Collaborative: A Project to Address Diesel Particulate Pollution, Exhibit A (2018), http://multnomah.granicus.com/MetaViewer.php?view_id=3&event_id=976&meta_id=128566. Multnomah County's draft Clean Air Construction Standard is available at https://multco.us/file/76180/download.
[436] PORTLAND CITY CODE § 3.30.010.
[437] City of Portland Bureau of Development Services, *Erosion Control Inspections,* https://www.portlandoregon.gov/bds/37057.
[438] City of Portland Bureau of Development Services, Simple Site Erosion Control Requirements Form (2016), https://www.portlandoregon.gov/bds/index.cfm?a=99201.
[439] City of Portland Bureau of Development Services, *Erosion Control Inspections,* https://www.portlandoregon.gov/bds/37057.
[440] Part III.C.3 describes the regulatory restrictions on local indirect source rules.
[441] The City of Portland and Multnomah County may together form a regional air quality control authority (regional authority). OR. REV. STAT. § 468A.105. EQC regulations allow any regional authority to request jurisdiction from the EQC to adopt indirect source rules. OR. ADMIN. R. § 340-254-0020. The regional authority may contract with the EQC to limit its jurisdictional obligations to controlling emissions from indirect sources, and request that the EQC retain jurisdiction over all other air quality control functions. OR. REV. STAT. §§ 468A.135, 468A.145.
[442] The EQC may authorize regional authorities to issue air quality permits within their jurisdiction. *Id.* § 468A.155.
[443] Permit fees should fund the regional authority's administrative costs associated with the program, as well as an inspection program to determine whether a source is complying with its permit. *Id.* § 468.065(2).
[444] *Id.* § 468.140(1)(a).
[445] *Id.* § 468.135(2).
[446] JAMIE L. BANKS & ROBERT MCCONNELL, NATIONAL EMISSIONS FROM LAWN AND GARDEN EQUIPMENT (2015), https://www.epa.gov/sites/production/files/2015-09/documents/banks.pdf.
[447] Louisville, Kentucky Air Pollution Control District, *Lawn Care for Greener Air Program,* https://louisvilleky.gov/government/lawn-care-cleaner-air.
[448] BANKS & MCCONNELL, *supra* note 446 at 6
[449] Particulate matter emissions for 2007 and later heavy-duty engines are restricted to 0.01 grams per brake horsepower-hour. Emission Standards and Supplemental Requirements for 2007 and Later Model Year Diesel Heavy-Duty Engines and Vehicles, 40 C.F.R. § 86.007-11(a)(1)(iv) (2017).
[450] See section III.A.1.e for a description of CAA preemption over nonroad emissions regulations.
[451] Louisville, Kentucky Air Pollution Control District, *Lawn Care for Greener Air Program: Residential Rebates,* https://louisvilleky.gov/government/lawn-care-cleaner-air/residential-rebates.
[452] *Id.*
[453] Louisville Metro Air Pollution Control District, *Professional Lawn Care Equipment Rebate Program,* https://louisvilleky.gov/government/lawn-care-cleaner-air/professional-lawn-care-equipment-rebate-program.
[454] *Id.*

[455] LOUISVILLE METRO AIR POLLUTION CONTROL DISTRICT, LAWN CARE FOR CLEANER AIR & GROW MORE MOW LESS 2017 ANNUAL REPORT 5 (2018), https://louisvilleky.gov/sites/default/files/air_pollution_control_district/documents/allother/2017/20180117-lawn-care-annual-report.pdf.
[456] Terry Boyd, *Go 'Green' and Get a (Significant!) Lawn Care Rebate from Louisville Metro Air Pollution Control District* (Mar. 30, 2012), https://insiderlouisville.com/economy/go-green-and-get-a-significant-lawn-care-rebate-from-louisvile-metro-air-pollution-control-district/.
[457] As of July 2017, Multnomah County had a population of 807,555 people. U.S. Census Bureau, *Quick Facts: Multnomah County, Oregon* (July 1, 2017), https://www.census.gov/quickfacts/multnomahcountyoregon. Oregon had a statewide population of 4,142,776. U.S. Census Bureau, *Quick Facts: Oregon* (July 1, 2017), https://www.census.gov/quickfacts/fact/table/or,US/PST045217.
[458] OR. REV. STAT. § 825.605.
[459] *Id.* § 825.615.
[460] *Id.* §§ 468A.365,803.350, 803.465.
[461] *Id.* § 815.300.
[462] *Id.* §§ 815.300(7), (8), 801.285.
[463] *Id.* § 803.305(4) ("A vehicle is exempt from registration if it is not operated on the highways of this state.").
[464] CAL. AIR RESOURCES BD., IN-USE OFF-ROAD DIESEL-FUELED FLEETS REGULATION (Oct. 2016), https://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf. California's off-road regulations are administered by the California Air Resources Board, which is comparable to the Oregon DEQ. While Oregon's nonroad vehicle exemption does not expressly restrict DEQ from administering an Oregon version of California's off-road program, the nonroad registration exemption could prevent DEQ from partnering with the Oregon Department of Motor Vehicles to implement reporting and labeling requirements.
[465] "Districts" include mass transit or transportation districts (such as TriMet) and metropolitan service districts (such as Metro). OR. REV. STAT. § 801.237.
[466] *Id.* §§ 801.041, 801.042.
[467] *Id.*
[468] *Id.* § 801.040.
[469] *Id.* §§ 468.015, 468.020, 468A.025.
[470] *Id.* ch. 468A.
[471] OR. ADMIN. R. § 360-254-0010 *et.seq.* The EQC's indirect source rules are described in greater detail in Part III.C.4.
[472] *Id.* § 360-254-0020. The rule's regulatory preemption makes an exception for Regional Authorities that meet certain conditions.
[473] *Id.* § 360-256-0300, *et. seq.*
[474] *Id.* § 360-256-0340.
[475] *Id.* §§ 360-256-0100, 360-256-0110.
[476] OR. REV. STAT. § 468A.360.
[477] OR. ADMIN. R. § 360-257-0010 *et. seq.*
[478] *Id.* § 360-257-0020.
[479] 42 U.S.C. §§ 7507, 7543(b).
[480] OR. REV. STAT. §§ 468A.350, 468A.360.
[481] *See id.* § 468A.005 *et seq.*
[482] 42 U.S.C. § 7543(e).

[483] *Id.* Specifically, any EQC standards for nonroad mobile sources, as well as any provisions relating to the implementation and enforcement of such standards, must be "identical, for the period concerned, to the California standards." *Id.* § 7543(e)(2)(B).
[484] For an overview of California's off-road regulations, *see* CAL. AIR RESOURCES BD., IN-USE OFF-ROAD DIESEL-FUELED FLEETS REGULATION (Oct. 2016), https://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf.
[485] *Id.*
[486] *Id.*
[487] The limitations imposed by article IX, section 3a of the Oregon Constitution are described in Part III.B.2.
[488] Automobile Club of Oregon v. State, 314 Or. 479 (1992).
[489] Tex. Comm'n on Envt'l Quality, *Texas Emissions Reduction Plan (TERP),* https://www.tceq.texas.gov/airquality/terp.
[490] TEX. COMM'N ON ENVT'L QUALITY, TEXAS EMISSIONS REDUCTION PLAN BIENNIAL REPORT (2015–2016) v (2016), https://www.tceq.texas.gov/assets/public/comm_exec/pubs/sfr/079-16.pdf.
[491] *See* AAA Oregon/Idaho Auto Source v. State of Oregon, 363 Or. 411, 413 (2018) (quoting Or. Laws 2017, ch. 750, § 90(1)).
[492] *Id.* at 424.
[493] *Id.* at 419.
[494] Fines for traffic violations are not subject to article IX, section 3a. Local governments may use traffic fines for "general governmental purposes." OR. REV. STAT. § 153.675(1).