November 5, 2025

*Submitted Via Ecology.gov*

Dustin Watson
Mobile Source Air Quality Specialist
**Washington Department of Ecology**
anthony.bruma@ecy.wa.gov

**Re: ZEVergreen State Dialogue Sessions**

Dear Dustin Watson and the Regulatory Team,

This letter is submitted by Front and Centered, Duwamish River Community Coalition, Communities for a Healthy Bay, Friends of Toppenish Creek, and Earthjustice. This comment letter is submitted in response to the Department of Ecology's ("Ecology") request for feedback on its ZEVergreen Dialogue Sessions.

Per the recommendations in the attached letter, we encourage the Department of Ecology to develop and adopt emission control limits for ports and distribution hubs, including warehouses, which attract diesel-fuel powered mobile sources like cars, trucks, and other non-road vehicles. As explained in the attached letter, states around the country are developing regulations to control pollution associated with freight movement, by requiring freight nodes, such as ports and distribution centers, to reduce and control the emissions from vehicles that operate on-site. These policies work and have successfully led to the adoption of zero emission vehicles, and the build out of charging infrastructure, while also improving emission reductions in overburdened communities where these facilities congregate. We urge you to take strong and decisive action to protect our communities. Please see the attached letter for further details. Also attached is a recent publication describing efforts to control warehouse pollution in New York, and a publication describing similar such efforts in California.

Sincerely,

Logan Danzek
**Communities for a Healthy Bay**

Mia Ayala-Marshall
**Duwamish River Community Coalition**

Maiko Patschke
**Front and Centered**

Jean Mendoza
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# Exhibit 1

October 23, 2025

*Submitted Via Ecology.gov*

Anthony Bruma
**Washington Department of Ecology**
anthony.bruma@ecy.wa.gov

**Re: Chapter 173-448 WAC – Air Quality in Overburdened Communities Rulemaking**

Dear Anthony Bruma & Rulemaking Team,

This letter is submitted by Front and Centered, Duwamish River Community Coalition, Communities for a Healthy Bay, Friends of Toppenish Creek, and Earthjustice. Our organizations carry the stories and regional and statewide perspectives of frontline communities in Washington State. This comment letter is submitted in response to the Department of Ecology's ("Ecology") most recent workshop on Emission Reduction Strategies. Herein, we make two recommendations:

First, Ecology should use air quality targets that it develops for overburdened communities to set air quality standards and emissions limits that will reduce pollution in these communities. Washington's Clean Air Act and the Climate Commitment Act explicitly provide Ecology with this authority and require Ecology to use its authority to reduce emissions in overburdened communities.

Second, in considering both Ecology's obligation to identify major sources of emissions in overburdened communities, and its obligation to reduce emissions from those sources, Ecology should adopt regulations to control emissions from diesel pollution hotspots by regulating facilities that attract diesel mobile sources like mega-warehouses and ports. Washington can look to successful examples from California to reduce pollution from warehouses and ports–which are major sources of pollution in and near to port-communities.

Addressing pollution hotspots at goods movement hubs like ports and warehouses advances environmental justice. It addresses the reality that polluting activities like freight warehouses, distribution centers, and ports are often sited in communities that have historically had less political power – communities of color, immigrant communities, and poorer areas. These communities endure the health burdens of decisions made by distant

corporate logistics planners. Regulating these facilities shift the responsibility for controlling pollution back onto the polluters. They say, in effect, *if you want to operate a facility that draws hundreds of diesel trucks through a neighborhood, you must take action to mitigate the pollution and protect that neighborhood's health*.

This is entirely consistent with the **community-led principles of environmental justice** that our coalition embraces. It's also supported by Washington's statutory commitments – the Climate Commitment Act's EJ provisions, as well as the HEAL Act (Healthy Environment for All Act), which directs agencies like Ecology to reduce disparities and ensure meaningful involvement of overburdened communities in decisions (RCW 70A.02.050–060). Implementing indirect source controls would show that Ecology is listening to frontline communities who have been calling for solutions to the unchecked diesel and noise impacts of nearby ports and warehouses.

## I. Ecology must set enforceable limits on air pollution to protect overburdened communities

Ecology should use its authority under RCW 70A.65.020 to set strong air quality standards in overburdened communities that reduce the exposure of these communities to harmful criteria air pollutants. In turn, Ecology should seek to achieve reductions in air pollution through strong emissions limits for stationary sources, and indirect source control to reduce emissions from the transportation sector.

### *A. Ecology has authority to set strong air quality standards to reduce air pollution in overburdened communities.*

The Climate Commitment Act directs the Department of Ecology ("Ecology") to set health protective air quality targets for overburdened communities, and then requires Ecology to take action to meet those targets through stricter air quality standards, emission limits and enforcement orders. Ecology must identify the stationary and mobile sources that are the greatest contributors of those emissions, and then "achieve reduction targets through adoption of emission control strategies or other methods[.]" RCW 70A.65.020(2)(b)(ii), (iii). Further, Ecology has broad authority to develop air quality standards, and emissions standards and limits to protect air quality and public health. *See* RCW 70A.15.3000(1), (2). And, is specifically directed to use this authority to set "stricter air quality standards, emission standards, or emissions limitations on criteria pollutants" to reduce such pollution in overburdened communities. *See* RCW 70A.65.020(2)(b)(iv). "The air quality standards and emission standards may be for the state as a whole or may vary from area to area or source to source[.]" RCW 70A.15.3000(3). Lastly, Ecology must issue enforcement orders to ensure compliance with air quality standards, and emissions limits or standards adopted pursuant to RCW 70A.65.020. Washington's Clean Air Act requires Ecology to take swift action to protect public health through enforcement orders:

> "The department … must issue an enforceable order… to all permitted or registered sources operating in overburdened communities when … the department determines

that criteria pollutants are not being reduced in an overburdened community and the department … adopts stricter air quality standards, emissions standards, or emissions limitations on criteria pollutants."

RCW 70A.15.1100.

**Recommendation 1:** Consistent with the approach proposed in Ecology's last rulemaking workshop, Ecology should identify air quality targets in overburdened communities, and make those targets enforceable by making them air quality standards. Ecology can then set emission limits for stationary sources to reduce criteria pollution, focusing on facilities that operate in identified overburdened communities.

**Recommendation 2:** Consistent with its authority to develop air quality standards, Ecology should develop a regulation to control hotspots of diesel pollution that concentrate at goods movement hubs, like ports and warehouses. RCW 70A.65.020 explicitly requires Ecology to address **both stationary *and mobile* sources** in achieving air quality targets for overburdened communities. These diesel pollution hotspots are a major contributor of pollution in overburdened communities of both smog forming and cancer-causing air pollutants, which Ecology should regulate.

## II. Regulating Diesel Pollution at Large Warehouses & Ports

Science shows that the emission of diesel pollution from medium and heavy-duty trucks deteriorates air quality with the toxic emission of diesel particulate matter, and NOx, in and around goods movement corridors. This pollution is particularly noxious in Seattle, Vancouver, and Tacoma. Diesel pollution can cause deleterious impacts on the health of community residents who live near to ports, warehouses, highways, and designated trucking corridors, where the cumulative movement of freight in these freight distribution hubs creates diesel pollution hotspots.[1] In addition, the transportation sector is the largest emitter of GHG pollution in the state.[2] Reducing emissions from the transportation sector is critical to achieving the climate and health objectives of the Climate Commitment Act.

Washington has taken steps to reduce toxic diesel, but more needs to be done to protect the health of overburdened communities. By adopting the Heavy Duty Omnibus Rule and the Advanced Clean Trucks rule, Washington State has taken significant steps toward addressing pollution from medium and heavy duty vehicles, and the public health impacts of these important tailpipe emissions regulations will be felt for decades.[3] However, these regulations only apply to new vehicles, and further, Washington must take steps to upgrade needed infrastructure to support this transition to electrified freight movement. Indirect

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[1] DRCC, Earthjustice, Front & Centered, Communities for a Healthy Bay, Friends of Toppenish Creek, *Comment Letter on Chapter 173-448 WAC – Air Quality in Overburdened Communities Rulemaking*, Mar. 19, 2025 (describing public health impacts from goods movement in overburdened communities, like South Seattle).

[2] *See* Statewide GHG Emissions Inventory, https://apps.ecology.wa.gov/publications/documents/2414077.pdf.

[3] We understand these regulations have been subject to challenge and litigation.

source regulation can help with both these problems by encouraging facilities that attract mobile sources, like ports and mega-warehouses, to take actions that facilitate reduced mobile source emissions, like installing fast chargers for electric vehicles.

It is also important to consider the federal context, which makes state-level indirect source rules even more critical. This year, the U.S. Congress took steps to overturn EPA's waiver that allowed California to develop stricter emission standards for medium and heavy-duty trucks (NRDC Press Release). According to an analysis by the Natural Resources Defense Council, the Congressional Review Act resolution blocking updated truck standards would result in **an extra 1.6 million tons of carbon emissions and 17,700 metric tons of fine particulate (PM 2.5)** nationwide from the affected vehicles (NRDC Press Release). Given this context, it is even more important to utilize as many regulatory tools as possible that will drive vehicle innovation and electrified vehicle adoption in our state. Indirect source rules offer a way for states to help develop infrastructure and incentives to support electrifying the freight sector.

### *A. What tools are available to regulate facilities that create diesel pollution hotspots?*

**Ports, rail yards, mega-warehouses and distribution centers** attract trucks, ships, and trains that transport freight because these vehicles are used in the distribution of freight. Diesel is the primary fuel used by these types of vehicles. The concentration of diesel-powered vehicles at freight distribution hubs creates **diesel pollution hotspots**.

While the federal Clean Air Act preempts Washington from developing new tail-pipe emission standards for vehicles, it explicitly allows local and state governments to regulate facilities that attract mobile sources, such as ports and warehouses, and to require those facilities to reduce pollution generated on-site by motor vehicles. The federal Clean Air Act reserves the authority for states to regulate any "facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution[,]" which the Clean Air Act defines as an indirect source.[4] States may adopt a "facility-by-facility review of indirect sources of air pollution, including such measures as are necessary to assure, or assist in assuring, that a new or modified source will not attract mobile sources of pollution[.]"[5]

As EPA has explained in its proposal to incorporate the WAIRE Rule into California's State Implementation Program ("SIP"), "by defining the term 'indirect source program' in Section 110(a)(5)(D), Congress was not diminishing existing State authority under Section 116 to adopt such programs that apply to existing sources, such as existing

[4] 42 U.S.C. § 7410(a)(5)(C).
[5] *Id*.

warehouses, if they elect to do so."[6] This means that states have the authority to adopt such regulations pursuant to their traditional police powers.

States and local governments around the country have developed regulations to control diesel hotspots requiring them to cumulatively reduce pollutant emission from mobile sources that frequent these facilities. Oregon's Department of Environmental Quality requires applicants seeking to construct new or modify existing indirect sources ("IS") such as parking, retail, commercial, industrial, recreational, educational, and hospital facilities as well as office and government buildings of a certain size be required to obtain IS permits with construction and operation conditions that control emissions.[7] Oregon's program is similar to the California's San Joaquin Valley District Rule 9510, which has regulated $NO_x$ and $PM_{10}$ emissions from the construction and operation of new development projects since 2005.[8] The U.S. Virgin Islands and Washington D.C. are two other U.S. territories that have similar construction and parking lot-related ISRs.[9]

In California, a local air district adopted Rule 2305, the **Warehouse Indirect Source Rule (WAIRE)**, a groundbreaking measure to curb pollution from the goods movement industry. Rule 2305 requires large warehouses (100,000+ sq ft) to earn a certain number of points each year by implementing emission-reducing actions, or else pay a mitigation fee.[10] The purpose is to internalize the environmental cost of diesel traffic to those profiting from the warehouse, and to incentivize a switch to cleaner alternatives. Preliminary analysis of the impacts of the WAIRE rule shows that the rule resulted in increased electric truck acquisition, investments into charging infrastructure, and an increased number of electric truck visits at warehouses.[11] Southern California's example is highly relevant to Washington – we too have exploding growth in warehouse logistics (especially with e-commerce) and similar resulting diesel-related air quality challenges.

In terms of regulating mega-warehouses, the New York State Senate passed a bill that would regulate freight pollution occurring at warehouses, and the bill is now before the New York Assembly.[12] Colorado is also considering regulating diesel hotspots at transportation hubs like ports and warehouses, and is currently investigating how to structure such a

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[6] California South Coast Air Quality Management District Air Plan Approval, 88 FR 70622.
[7] Or. Admin. R. 340-254-0030 et seq.
[8] San Joaquin Valley Air Pollution Control District Rule 9510, https://ww2.valleyair.org/media/cjlnn0u1/r9510-a.pdf.
[9] San Joaquin Valley Air Pollution Control District Rule 9510, https://ww2.valleyair.org/media/cjlnn0u1/r9510-a.pdf.
[10] S. Coast Air Quality Mgmt. Dist., *WAIRE Program*, https://www.aqmd.gov/home/rules-compliance/compliance/waire-program.
[11] *See* Attachment A, *Pritzer Brief: Wielding the Power of ISRs: Using Indirect Source Rules to Fight Air Pollution from Mega Facilities*.
[12] NYS 2025-S1180A, https://www.nysenate.gov/legislation/bills/2025/S1180/amendment/A.

program.[13] Colorado also developed an extensive analysis of its legal authority to adopt an indirect source program.[14]

More recently, California's local air district has proposed a comprehensive rule to require ports to reduce pollution from all mobile sources.[15] This proposed rule would require the ports of Los Angeles and Long Beach to develop plans for port-wide charging and fueling infrastructure, with the goal of reducing indirect emissions from the port to meet state and federal air quality standards.[16]

### *B. Mobile Sources Are A Major Contributor of Pollution in Overburdened Communities*

**Mobile sources** are a **major contributor of pollution**, particularly mobile sources that rely on diesel, marine diesel, heavy fuel oil, or low-sulfur fuel oil for power such as medium and heavy-duty vehicles, diesel powered trains, and ships. Pollution from mobile sources adversely affects the health of communities throughout Washington State. The Environmental Health Disparities Map shows that communities impacted by mobile sources also tend to rank high in Socioeconomic Factors indicators, including People of Color and Population Living in Poverty. A closer examination of the transportation infrastructure and land use policy decisions in Tacoma demonstrates how health disparities result across the state from mobile sources and associated cumulative and health effects in communities in and near centralized pollution sites.

In Tacoma, Interstate 5, State Route 16, and the maze of freight routes to and from the Port of Tacoma run through these neighborhoods, carry heavy-duty diesel truck traffic that releases toxic exhaust. Diesel engines are a dominant source of $NO_2$ and fine particulates; a recent Puget Sound Clean Air Agency (PSCAA) air toxics study concluded that diesel particulate matter is the *single largest driver of cancer risk* in Tacoma's air.[17] This study revealed that at Tacoma's Tideflats about **65% of the area's diesel pollution came**

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[13] RAQC, Indirect Source Rule, https://raqc.org/control-strategies/indirect-source-rule/#:~:text=Indirect%20sources%20include%20activities%20associated,attainment%20and%20maintenance%20of%20the.

[14] *See* Attachment B, Christy Law, *Indirect Source Control Authority*, https://raqc.egnyte.com/dl/Bi1QyETJZG.

[15] S. Coast Air Quality Mgmt. Dist., Proposed Rule 2304, https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-2304.

[16] *Id.*

[17] Puget Sound Clean Air Agency, *Tacoma and Seattle Air Toxics Trends Technical Report*, Dec. 2023, https://www.pscleanair.gov/DocumentCenter/View/5369/2023TacomaSeattleAirToxicsReport?bidId=.

**from maritime and port-related sources and 35% from on-road vehicles**, underscoring the substantial impact of port trucking and shipping in Tacoma.[18]

South and East Tacoma, some of the communities identified by the Department of Ecology as overburdened, face a **cumulative pollution burden** from both **stationary industrial sources** and **mobile sources**. Ecology's own 2023 report identifies South and East Tacoma (population ~147,000) as highly impacted by fine particulate matter (PM 2.5) and cumulative air pollutant emissions. [19] These communities contain historically redlined neighborhoods with a high proportion of Black, Indigenous, and residents of color as well as the industrial zones in the Port of Tacoma and South Tacoma. Notably, life expectancy in Tacoma's South End neighborhood (68.4 years) is a full 18 years shorter than in the city's more affluent North End (86.7 years).[20]

Of the four most populous counties in the Puget Sound region, Pierce County as a whole has highest rate of deaths due to cardiovascular disease and stroke (234 per 100,000).[21] While certain areas of Tacoma see nearly double that rate (456 per 100,000), the city also experiences asthma hospitalizations at one of the highest rates in the state (30.4 per 100,000).[22,23] The prevalence of chronic diseases like asthma and cardiovascular illness in Tacoma/Pierce County reiterate that **environmental justice and public health are inextricably connected**.

Crucially, the health impacts of this cumulative pollution are **well documented and alarming**. Compared to state averages and even just to other parts of Pierce County, residents of South and East Tacoma suffer higher rates of asthma, heart disease and dramatically shorter lifespans. Although Ecology's 2023 report affirms that overburdened communities statewide have more heart disease deaths and about **2.4 years shorter life expectancy on average** than other communities, the residents of overburdened communities in Tacoma live 9-12 years shorter (68.4 and 71.1 years in different census tracts) than the

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[18] *Id*.

[19] Wash. Dep't of Ecology, *Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report*, at 171-180, https://apps.ecology.wa.gov/publications/documents/2302115.pdf.

[20] Puget Sound Regional Council, *Life Expectancy by Census Tract (Equity Insights and Analysis)*, https://www.psrc.org/our-work/equity/equity-tracker/communities-health/life-expectancy.

[21] Puget Sound Regional Council, *Cardiovascular Disease Mortality by Census Tract (Equity Insights and Analysis)*, https://www.psrc.org/our-work/equity/equity-tracker/communities-health/cardiovascular-disease-mortality.

[22] *Id*.

[23] Wash. State Department of Health, *Washington Tracking Network (WTN) Asthma Hospitalizations: Age-Adjusted Rate*, https://fortress.wa.gov/doh/wtn/WTNPortal/#!q0=886.

state average of 80.4 years.[24, 25] These health disparities in Tacoma and communities across the State are, in part, the result of policy decisions that allowed polluting activities to concentrate near marginalized neighborhoods. As our coalition emphasized in previous comments, **cumulative health impacts are a major issue of concern in overburdened communities. Mobile source pollution in particular directly harms these communities**. If regulatory agencies fail to account for cumulative impacts in permits and planning, then *systemic injustice will flourish* as polluting projects continue to **harm overburdened communities.**

### i. Warehouse Pollution

Unfortunately, South Tacoma offers a case study in **procedural gaps and accountability failures** that have perpetuated pollution inequities. A recent example is the Bridge Industrial warehouse project, a massive 2.5 million-square-foot logistics center proposed in South Tacoma's residential area. Despite community outcry about the air quality impacts, the City of Tacoma issued a Mitigated Determination of Non-Significance under SEPA – **approving the project without a full Environmental Impact Statement or any Health Impact Assessment.[26]** The warehouse is expected to generate thousands of additional **truck trips per day** on local streets that already endure heavy pollution.[27]

As community leaders have observed, this decision essentially told residents that **their health is "non-significant"** in the eyes of regulators. This is precisely the kind of blind spot – where indirect or off-site emissions are ignored – that has allowed toxic air to persist in overburdened areas. This example underscores an urgent need for Ecology to exercise leadership: local land use processes alone cannot sufficiently protect environmental justice communities. **Ecology must step in to fill these regulatory gaps**, ensure cumulative impacts are addressed, and prevent new projects from adding to the pollution burden in places like South Tacoma.

South Tacoma's 12,000-vehicle/day warehouse project is one illustration, but the pattern is widespread: new warehouse complexes along I-5 and I-90, and expanding marine terminals, create hotspots of pollution in overburdened communities like South Park, Georgetown, and Tacoma. These communities share a similar pattern of environmental

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[24] Wash. Dep't of Ecology, *Improving Air Quality in Overburdened Communities Highly Impacted by Air Pollution: 2023 Report*, at 53-54, https://apps.ecology.wa.gov/publications/documents/2302115.pdf.
[25] Puget Sound Regional Council, *Life Expectancy by Census Tract (Equity Insights and Analysis)*, https://www.psrc.org/our-work/equity/equity-tracker/communities-health/life-expectancy.
[26] Earthjustice, *What You Should Know About the Bridge Industrial South Tacoma Warehouse Project*, Oct. 6, 2023, https://earthjustice.org/feature/south-tacoma-warehouse-bridge-industrial.
[27] *Id*.

health disparities and being similarly situated where direct and indirect sources of air pollution are concentrated. It's time for Ecology to take action to mitigate this pollution to meet air quality targets and reduce health disparities in Washington.

### ii. Pollution from Ports

From a health perspective, the port sector is one of the *largest contributors of criteria air pollutants* in our region. The **Port of Tacoma**, together with the broader **Northwest Seaport Alliance (NWSA)**, is a significant source of air pollution affecting Tacoma's overburdened communities. Port-related activities – including ocean-going vessels, harbor craft, cargo-handling equipment, locomotives, and trucks – produce a concentrated plume of emissions that spreads across Commencement Bay and into surrounding neighborhoods (Tacoma's Northeast Tacoma, Tideflats, Fife, South End, and beyond). Recent emissions inventory data underscores the magnitude of this impact: **in 2021, maritime and port operations in the Puget Sound region (Tacoma, Seattle, and other Puget Sound ports) emitted approximately 1.59 million metric tons of $CO_2e$** (greenhouse gases) into the air.[28] Of this total, pollution from on-road heavy-duty trucks that occurred on site at the terminal amounted to 238,471 tons of $CO_2e$ emissions.[29]

According to the Puget Sound Maritime air emissions inventory, **ocean-going vessels (OGVs) are the single largest source of nitrogen oxides ($NO_x$) and sulfur dioxide ($SO_2$) emissions** in the Puget Sound airshed, due to the large ships calling at our ports.[30] Other major port-related emitters include harbor vessels (tugs, ferries), which also produce significant diesel particulate matter. Heavy-duty **diesel trucks** moving cargo to and from port terminals and nearby warehouses likewise also are a significant source of diesel pollution.[31] In short, port activities represent the intersection of both stationary and mobile pollution sources that significantly degrade air quality in Tacoma's overburdened communities.

**Mobile sources at Washington's ports** include the **ocean going vessels** (OGVs) burning high-sulfur diesel or bunker fuel as they maneuver or berth; the **harbor tugs and equipment** (cranes, yard trucks, cargo handlers often running on diesel); the **railroad locomotives** hauling freight; and the endless stream of **diesel trucks** (drayage trucks) that move containers and goods in and out of port terminals and nearby warehouses.

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[28] Puget Sound Maritime Air Forum, *Puget Sound Maritime Air Emissions Inventory Volume, 1* at ES-2 (April 2024), https://s3.us-west-2.amazonaws.com/nwseaportalliance.com.if-us-west-2-or/2024-06/FINAL%202021%20PSEI%20Report%20Volume%201%20(3%20April%2024)scg.pdf.
[29] *Id*., at 90.
[30] *See Id*., generally.
[31] *See Id*., generally.

Collectively, these mobile sources release large quantities of diesel exhaust, $NO_x$, $SO_2$, and fine particulate ($PM_{2.5}$). Notably, the 2021 Puget Sound Maritime emissions report found that at the NWSA terminals, the biggest contributors to emissions were **ships (especially during hoteling at berth), cargo-handling equipment, locomotives, and trucks.**[32] At NWSA facilities, OGVs were identified as the top source not only of $NO_x$ and $SO_2$ but also of particulate matter ($PM_{10}$ and $PM_{2.5}$) and diesel particulate matter among all port-related sources.[33] This means that communities near the Port of Tacoma are continually exposed to **elevated levels of diesel soot and combustion byproducts**, which are known to cause cancer, respiratory illness, heart attacks, and premature death.

**The impact on human health and environmental justice communities around ports is severe.** For example, the South End and Eastside neighborhoods of Tacoma lie just south and west of the Port/Tideflats and are directly downwind of port emissions. These areas are part of Ecology's identified overburdened communities, and residents there experience higher asthma rates and other pollution-related health disparities. Perhaps the most striking illustration is the presence of the **Northwest Detention Center (NWDC)** – a large immigrant detention facility – *within* the Port of Tacoma industrial area. The NWDC houses several hundred to over a thousand people at any time, effectively functioning as a residential population confined 24/7 in the middle of a toxic air pollution hotspot. The Tacoma Tideflats area is so polluted that the City of Tacoma has deemed it generally **"unfit for residents"**, yet detainees (who are disproportionately people of color) are held there involuntarily. Community advocates have noted that NWDC detainees are exposed to pollutant concentrations around the clock that likely **exceed what would be considered safe for workers on an 8-hour shift**, raising serious environmental justice and human rights concerns. In short, the Port of Tacoma's pollution is not just a theoretical problem – it is causing real harm to real people, many of whom have little political power or choice in the matter.

Despite these well-known impacts, **current regulatory oversight of port pollution is patchy and insufficient**. The Puget Sound Clean Air Agency regulates some emissions (and has partnered on voluntary clean air programs), and the NWSA itself has a voluntary "Northwest Ports Clean Air Strategy." While these efforts have yielded some progress (e.g., cleaner standards for trucks entering the port, shore power at a few berths, and phasing out older diesel equipment), they are **not enforceable or comprehensive enough** to bring port-area air quality in line with health-protective levels. For instance, many ocean-going vessels still use dirty fuels or engines without the best available controls, especially once beyond the dock.

Truck emissions, while improved from a decade ago, still add significantly to neighborhood pollution – and the **cumulative cancer risk from diesel in port-adjacent communities remains extremely high**, as PSCAA's 2022 study confirms. In Tacoma's

[32] *See Id*., generally.
[33] *See Id*., generally.

Tideflats, PSCAA found that **maritime sources (ships, harbor craft) contributed roughly 213 per million excess cancer risk from diesel, compared to 114 per million from on-road diesel – together summing to over 300 per million risk from diesel alone in that area.**[34] These are very high levels of pollution and risk, which demand action. They illustrate that **port pollution is an urgent public health crisis** that not only affects Tacoma, but other coastal communities in the State**.** This situation calls for a strategic, multi-faceted regulatory approach by Ecology.

Moreover, we call on Ecology to increase air monitoring of $PM_{2.5}$, $PM_{10}$, diesel particles (e.g., measurements of Black Carbon), $NO_x$, and Air Toxics, to understand emission sources and to document patterns over time in emissions and concentrations. While some of those pollutants are currently monitored by Ecology, not all of them are. In too many cases, monitoring in overburdened communities is lacking. Furthermore, ecology should strengthen the connections between concentration measurements, understanding the emission sources causing the pollution, and their subsequent actions to reduce those emissions. In this way, Ecology can better connect information-gathering and action, with ongoing feedback between those two over time.

## III. Conclusion

In conclusion, Front and Centered, Earthjustice, DRCC, Communities for a Healthy Bay, and Friends of Toppenish Creek respectfully request that the Department of Ecology use the air quality targets for overburdened communities that it develops through this rulemaking, to set strong air quality standards and emissions limits in the affected communities. Further, given that diesel hotspots at ports and warehouses are a major contributor of criteria air pollutants, greenhouse gas emissions, and highly toxic diesel particulate matter, Ecology should take action to regulate these hotspots by requiring facilities that attract diesel vehicles to reduce emissions that occur onsite.

Sincerely,

Logan Danzek
**Communities for a Healthy Bay**

Mia Ayala-Marshall
**Duwamish River Community Coalition**

Maiko Patschke
**Front and Centered**

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[34] Puget Sound Clean Air Agency, *Tacoma and Seattle Air Toxics Trends Technical Report*, Dec. 2023, https://www.pscleanair.gov/DocumentCenter/View/5369/2023TacomaSeattleAirToxicsReport?bidId=.

Jean Mendoza
**Friends of Toppenish Creek**

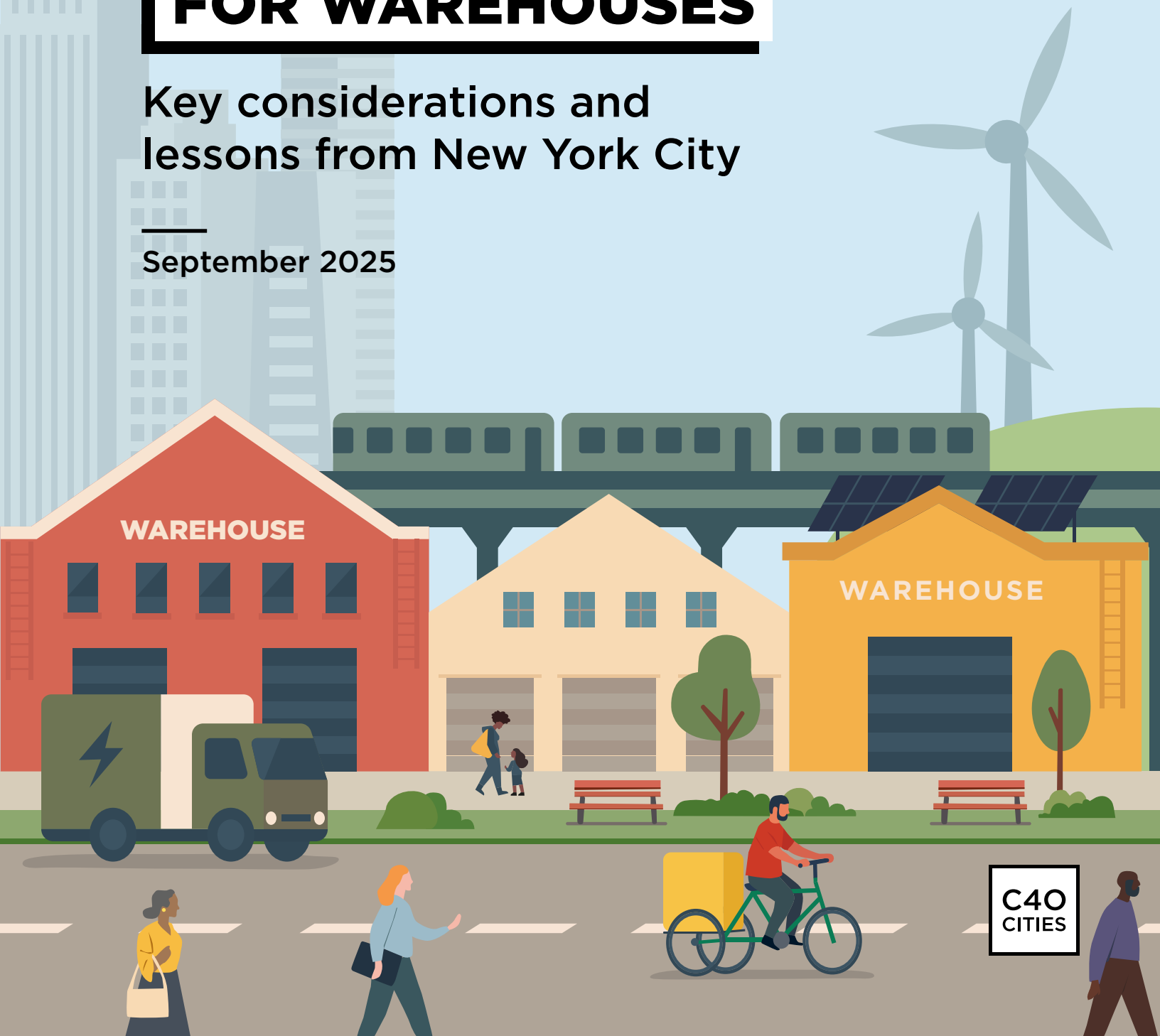
Jaimini Parekh
**Earthjustice**

# Exhibit 2

# DEVELOPING AN INDIRECT SOURCE RULE (ISR) FOR WAREHOUSES

## Key considerations and lessons from New York City

September 2025



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# CONTENTS

# EXECUTIVE SUMMARY

E-commerce growth in the US is fueling demand for warehousing and distribution centers. Many warehousing facilities are opening closer to residential neighborhoods and attracting a significant number of vehicle trips, raising concerns over the impacts of freight traffic and air pollution exposure.

One innovative way that cities and states are starting to address the outsized impact of warehouses and trucks on public health is by implementing an indirect source rule (ISR). Warehouses are an "indirect source" of air pollution, largely due to the diesel trucks that they attract. ISRs aim to reduce pollution generated from warehousing and distribution facilities by incentivizing the uptake of zero emission technologies and other mitigation strategies. Southern California exhibits a promising model of an ISR, which provides a variety of options for earning points and meeting the requirements.

To reduce harmful air and climate pollution from freight in environmental justice communities, New York City has been prioritizing the development of a warehouse ISR. The policy would be the first city-level warehouse ISR of its kind, and aims to improve public health for New Yorkers, decrease congestion and reduce social and racial inequities.

***As more states and cities explore ISR policies, this guide aims to equip interested stakeholders with information and lessons from NYC to undertake and accelerate the policy development process.***

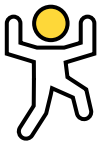
## Key considerations

The guide highlights steps and considerations that will help a city, state or agency develop and introduce a warehouse ISR.

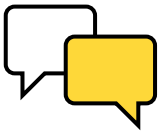
- **Getting started:** From the outset, interested stakeholders should identify critical components like legal authority and policy champions.
- **Is a warehouse ISR the right policy to implement?** Deciding whether an ISR is the appropriate policy for a city or region requires an evaluation of its specific air quality challenges, existing regulatory framework and desired outcomes.
- **Is the local warehousing landscape appropriate for the implementation of an ISR?** A city or region's warehousing landscape can help to identify the major industry players, as well as the number and characteristics of warehouses in the region.
- **Who should be involved in the policy design process?** Effective policy design necessitates continuous engagement with diverse stakeholders, including government agencies, industry and environmental and community groups.
- **How should the warehouse ISR policy be designed?** Designing an effective ISR requires balancing air quality improvements with practical, equitable policies that can withstand legal scrutiny. The guide highlights key design components including format and reporting requirements, plus critical considerations like pollution reduction and workforce impacts.

## Lessons and recommendations from NYC

The guide concludes with lessons and recommendations from New York City's experience that can help cities, states or agencies with their related efforts. The key recommendations include:

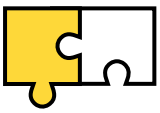


**Empower champions to move the policy forward**

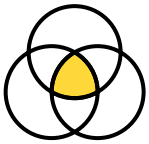


**Provide opportunities for engagement**

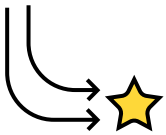
**Build a coalition of supporters and leverage external partners**



**Prioritize interagency coordination to enable better collaboration and a speedier process**



**Memorialize a commitment and follow it with externally-facing milestones**



**Make progress on parallel paths at the same time**

**Be consistent with the intended policy outcomes**

**Build on existing research and policies**

As NYC moves the process forward in late 2025 and 2026, please feel free to reach out to C40 Cities with any questions.




# 1

# INTRODUCTION

E-commerce growth in the US is fueling demand for warehousing and distribution centers. Same-day and instant delivery have increased demand for goods and are the fastest-growing sectors today.[1] To meet these rapid delivery expectations, many warehousing facilities are opening closer to residential neighborhoods and attracting a significant number of vehicle trips, raising concerns over the impacts of freight traffic and air pollution exposure. According to the World Economic Forum,[2] without more targeted action, by 2030 some cities will likely see 80% more delivery vehicles on the road and delivery-related emissions rise by up to 60%. E-commerce growth is a particular challenge for the US – in 2021, the average American household received 55% more packages[3] than the global average.

Most packages are delivered by medium- and heavy-duty trucks, which are major contributors of nitrogen oxides ($NO_x$) and fine particulate matter ($PM_{2.5}$) pollution. $NO_x$ and $PM_{2.5}$ are extremely harmful to people's health as they penetrate deep into the lungs and are linked to respiratory and cardiovascular morbidity and mortality, even at low concentrations. The majority of these pollutants come from the vehicles' exhaust, but non-exhaust emissions from truck tires and brakes are also a major source. Fossil fuel trucks also emit greenhouse gases and their increased presence on city streets leads to greater road danger and congestion.

One innovative way states and cities are beginning to tackle the outsized impact of warehouses and trucks on public health is by implementing indirect source rules (ISRs). Warehouses are an "indirect source" of air pollution, largely due to the diesel trucks that carry goods to and from them. ISRs aim to reduce pollution generated from warehousing and distribution facilities by incentivizing the uptake of zero emission technologies and other mitigation strategies, such as truck route optimization, urban greening and renewable energy generation (e.g., installing solar panels). ISRs can also target a diverse array of facilities, including ports, airports, railyards or other types of new developments.

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***ISRs offer a flexible way to tackle warehouse pollution and improve local air quality and public health outcomes.***

One promising model of an ISR is in Southern California. EarthJustice highlighted[4] that the Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program has already demonstrated positive results since its introduction in 2021, with ISR actions delivering a reduction in $NO_x$ emissions and diesel PM pollution. Building on the success of the warehouse ISR, the Southern California air quality agency also adopted a railyard ISR[5] in August 2024, and is actively considering a marine ports ISR, which could regulate ship and cargo handling equipment emissions, as well as trucks.

ISRs offer a flexible way to tackle warehouse pollution and improve local air quality and public health outcomes. One approach for the policy is a compliance menu, which is the structure of the WAIRE program in California and provides a variety of options for earning points. By offering a range of ways to meet the requirements, the rule allows people and companies to choose the path that works best and is most cost-effective for them.

With the goal to improve residents' quality of life, many cities in the U.S. are actively trying to reduce emissions and congestion from road freight. For example, Los Angeles has introduced designated loading zones downtown for zero emission vehicles and is advancing medium and heavy duty charging hubs. Portland piloted a zero emission delivery zone with dedicated loading areas and sensors to help monitor progress. Seattle is working toward Low-Pollution Neighborhoods and developing a commercial cargo bike program to encourage the shift to smaller electric freight vehicles. By providing a mandate to reduce pollution, ISRs can work alongside existing voluntary and incentive initiatives to accelerate progress.

While European cities are seeing success with Low Emission Zones, U.S. federal law prevents these Europe-style zones that restrict vehicle access based on emissions. ISRs can help U.S. cities, regions and states achieve similar aims to improve air quality and public health, while encouraging the shift to cleaner vehicle technology. Momentum is building for ISRs[6] with more policies under consideration in New York City, Colorado, New Jersey and California.

## Addressing truck pollution in NYC through the first city-level warehouse ISR

New York City needs urgent action to accelerate the shift to zero emission technologies and protect all communities from harmful pollution. Research[7] from the International Council on Clean Transportation (ICCT) in 2022 shows that heavy-duty diesel vehicles are responsible for roughly half of on-road transport $NO_X$ and $PM_{2.5}$ emissions, even though they represent a small proportion of total vehicle activity. Additionally, freight volumes in NYC are predicted to increase by nearly 70% in the next two decades.[8]

Across all of the U.S., reducing pollution from urban freight is an issue of environmental and social justice. In New York City, communities of color are exposed to 5% more $PM_{2.5}$[9] from diesel trucks than average, while non-Latino white residents are exposed to 10% less than average. Moreover, in high-poverty neighborhoods in NYC, traffic sources contributed to nearly 10 times more[10] asthma emergency department visits due to $PM_{2.5}$ exposure, as compared to low-poverty areas.

Warehouses are also being built near low-income communities and communities of color. According to a 2024 study[11] by Environmental Defense Fund (EDF), nearly 5 million people in NYC reside within half a mile of a warehouse. Of those, over 300,000 are under the age of five and nearly 650,000 are over the age of 64, groups that are more susceptible to the negative health impacts from air pollution. Black, Hispanic/Latino, and low-income populations also live near warehouses at rates that are around 50% higher than would be expected based on statewide statistics.

**Freight volumes in NYC are predicted to increase by nearly**

**70%**

**in the next two decades.**

**Nearly**

**5 million**

**people in NYC reside within half a mile of a warehouse.**

Advocates and organizers across the state have spent years raising awareness of the need for ISR policies to address growing freight and warehouse pollution. In particular, they have worked to advance the Clean Deliveries Act, which would establish an indirect source rule for last-mile and e-commerce warehouses statewide. The rule has gained increasing support and momentum but has yet to be passed in 2025.

Meanwhile, New York City released 'PlaNYC: Getting Sustainability Done'[12] in early 2023, a long-term strategic climate plan that aims to protect New Yorkers from climate threats, improve quality of life and build the green economy. The plan includes an ambitious commitment to reduce harmful air and climate pollution from freight in environmental justice communities. To meet that commitment, the city has been prioritizing the development of a warehouse ISR, with city legislation introduced in late 2024. On the next page there is an overview of how the process has evolved.

# NYC's policy development timeline

**APRIL 2023**

NYC releases PlaNYC commitment to "Get polluting trucks off NYC streets"

**SUMMER 2023**

C40 and NYC begin to explore legal pathways for reducing freight pollution

**JANUARY 2024**

NYC joins City Climate Innovation Challenge for Zero Emissions Delivery, led by Los Angeles Cleantech Incubator (LACI)

**MAY 2024**

Mayoral administration and City Council commit[13] to advancing a warehouse ISR

C40 releases an RfP for policy exploration[14] to help NYC better understand the potential impacts of and options for an ISR

**JUNE 2024**

Sabin Center for Climate Change Law publishes *Cities, E-Commerce & Public Health: 3 Legal Pathways to Limiting Freight Vehicle Emissions*[15]

**AUGUST 2024**

Policy research and development begins with TYLin, a global engineering firm that provides planning advisory and infrastructural solutions

**DECEMBER 2024**

Councilmember Avilés introduces legislation[16] that would require the Department of Environmental Protection to create an ISR

**FEBRUARY 2025**

City Council holds a hearing on the legislation with many advocates appearing in support

**SUMMER 2025**

NYC brings on a dedicated policy fellow to continue policy research and development

15 additional sponsors sign onto the City Council bill

**FALL 2025**

Environmental review process set to begin

The policy would be the first city-level warehouse ISR of its kind, and aims to improve public health for New Yorkers, decrease congestion and reduce social and racial inequities. As well as the expected local benefits in the city, the rule would bring additional air quality and health benefits to nearby regions, which could also be served by the same cleaner vehicles.

An ISR would further incentivize the private sector to transition to cleaner modes and contribute to the transformation of the city's streets.

As more states and cities explore ISR policies, this guide aims to equip interested stakeholders with information and lessons from NYC to undertake and accelerate the policy development process.

**New York City** is already an ambitious leader in the United States in addressing the harmful pollution and congestion impact of urban freight. The ISR would become part of a broader package of innovative policy measures to modernize and decarbonize the urban logistics sector, including:

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- **Off-Hour Delivery Program:**[17] Encourages businesses in congested areas of the city to accept deliveries between 7 PM and 6 AM.
- **LockerNYC Pilot:**[18] Enables New Yorkers to safely receive and send packages using secure parcel lockers on the sidewalk.
- **Microhub Pilot:**[19] Creates local delivery hubs, known as microhubs, to support the transfer of packages from trucks to more sustainable modes.
- **Blue Highways:**[20] Explores the use of NYC's waterways for transporting goods.
- **Smart Curbs Pilot:**[21] Explores how NYC can modernize the curb space to improve safety and increase efficiency.
- **Clean Trucks Program:**[22] Accelerates the shift to clean trucks by providing financial incentives for truck owners to upgrade their vehicles.
- **Cargo Bikes Program:**[23] Encourages the switch to e-cargo bikes to make deliveries safer and more sustainable by reducing the number of large delivery trucks on streets.




# 2

# KEY CONSIDERATIONS FOR A WAREHOUSE ISR

# GETTING STARTED

Based on the experience and learnings from NYC, the following steps and considerations will help a city, state or agency develop and introduce a warehouse ISR.

Introducing an ISR requires several steps, some of which can happen simultaneously. At the outset, interested stakeholders should determine:

## 1 Legal authority

Who has the authority in your region to introduce an ISR – such as the city, county or state? For example, in Southern California, the South Coast Air Quality Management District (AQMD) runs the ISR program.

Partners can help with evaluating the legal landscape. For example, NGOs and universities might be able to assist with reviewing state and local laws to determine who has the authority. As a great starting point, the Sabin Center for Climate Change Law at Columbia released a white paper[24] in summer 2024 that reviews the legal implications of ISRs and highlights the connections with multiple federal legal frameworks that could preempt local action. Federal statute should guide how an agency crafts its policy, based on what the agency is and is not allowed to regulate.

## 2 Pathway for rulemaking

Related to the legal authority, would the effort require state or city legislation? In New York, either the city or the state can introduce an ISR, and both levels require legislation. If no legislation is needed, determine how the regulation will be created and approved. In Southern California, the South Coast AQMD had previously prescribed authority over pollution from stationary sources (i.e. the warehouses themselves).

## 3 Policy champions

ISRs are ambitious policies that take time to develop and can experience significant pushback. Who can help move the policy forward? Elected officials and agency policy leaders, as well as external supporters and advocates, will be critical champions.

## 4 Priority values and messaging

Consider the best messaging to align with local stakeholders' values (see section "Who should be involved in policy design?" below). ISRs touch on many angles in addition to air quality, such as public health, quality of life, congestion, safety, economic development and climate. Which angle is best to lead with can be based on local priorities, the jurisdiction's legal basis for its authority to craft the rule, and decision-makers' values. Strategic messaging can also determine when and how to reach out to stakeholders and publicize the effort.

## 5 Desired end goals

Related to the priority values and messaging, what are the intended outcomes alongside reducing air pollution? Introducing an ISR can be an effective way to accelerate the shift to electric transport. Other potential outcomes include lower asthma rates in the target areas, smaller form factor vehicles to help reduce congestion or smaller overall warehouse footprints.

## IS A WAREHOUSE ISR THE RIGHT POLICY TO IMPLEMENT?

Deciding whether an ISR is the appropriate policy for a city or region requires a thorough evaluation of its specific air quality challenges, existing regulatory framework and desired outcomes.

### Assess the area's air quality challenges

Is the city or region experiencing significant health problems due to air pollution? If mobile source emissions, particularly from trucks, are significant contributors, then an ISR becomes a highly relevant option. Analyze detailed emissions inventories to estimate the proportion of pollution attributable to these indirect sources. For example, resources like the NYC Health Department's work on the air quality and health impacts of traffic[25] can provide valuable insights in connecting traffic-related emissions with public health concerns.

### Consider the limitations of existing regulations

State and local governments often have limited direct authority over mobile sources once they are in operation. While other policies exist to address mobile source emissions (e.g. cleaner vehicle incentives, anti-idling laws), an ISR uniquely bridges this gap by imposing requirements on the stationary facilities that attract significant mobile source activity, offering a local mechanism to influence regional air quality. This can be particularly crucial for areas experiencing rapid growth in logistics and e-commerce, where the existing regulatory environment may not adequately address the effects of the increase in truck traffic.

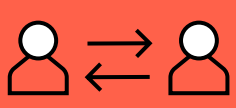
### Weigh the political feasibility of an ISR

ISRs can be complex to design and implement, and may face opposition from industry stakeholders concerned about compliance costs. Cities and regions should assess their administrative capacity, technical expertise and political will to develop, enforce and adapt such a regulation. Consider the availability of existing incentives for various mitigation strategies that could ease the transition for businesses and encourage compliance.

## IS THE LOCAL WAREHOUSING LANDSCAPE APPROPRIATE FOR THE IMPLEMENTATION OF AN ISR?

When contemplating the implementation of a warehouse ISR, it's crucial to consider a city or region's warehousing landscape. The overall landscape is not just about how many warehouses there are, but their characteristics, location and property age, as well as the major industry players.

Cities and regions should consider the following:

| | |
|---|---|
| **Growth and location**  | Is there a significant trend of new warehouse development within the city or region, particularly for e-commerce and logistics? Are warehouses clustered in specific areas or distributed throughout the region? Areas with high concentrations or rapid growth of these facilities are often prime candidates for an ISR due to the cumulative air pollutants emitted from the freight traffic they generate. It is also important to consider the location of these warehouses in proximity to sensitive areas. Where are these warehouses located in relation to disadvantaged communities, schools, hospitals or parks? High volumes of truck traffic from indirect sources can significantly impact air quality and public health in nearby communities, making these "hot spots" a key concern that an ISR can help to address. |
| **Vehicle types, freight patterns and transportation infrastructure**  | How do different vehicle types (vans, medium duty, heavy duty) currently access these facilities and what proportion of all freight trips are made by these different vehicle types? Understanding the existing road networks and potential for traffic congestion around warehouses throughout the day is vital. The trip length and duration of existing vehicle trips can help to assess the emissions impact of specific vehicle types and inform the design of effective strategies that could be included in the ISR, such as optimizing delivery routes or encouraging off-peak deliveries. |
| **Warehousing costs**   | Costs associated with real estate and warehousing are a significant factor for businesses, and implementing an ISR can introduce new financial considerations for all operators. A thorough assessment of warehousing costs is essential both for designing an ISR that operators can feasibly comply with and to help understand any potential economic impacts on local businesses and the broader economy. |
| **Warehouse industry landscape**  | Understanding the relationships and diversity of arrangements between shippers, facility owners, tenants or operators, and third-party logistics providers is paramount in designing an effective ISR policy. Understanding these contractual relationships is crucial because they define who holds the levers for different types of operational changes and facility modifications. |

Additional considerations that are helpful to know:

| | |
|---|---|
| **Types of warehousing operations**  | Different types of warehousing operations generate different traffic patterns. A distribution center handling high-volume, quick-turnaround goods will have different impacts than a traditional warehouse facility. |
| **Local assets and opportunities**  | A successful ISR program should strategically align with and leverage existing local assets and opportunities. Complementary policies and pre-existing plans related to freight movement or air quality – such as existing incentive programs for EV charging – can reinforce an ISR's objectives. Incorporating these local opportunities can enhance the effectiveness of an ISR and help to accelerate the transition to a cleaner and more efficient freight ecosystem. |

By analyzing the local warehousing landscape, cities and regions can estimate the most significant mobile sources of air pollutants and tailor an ISR to be both effective in improving air quality and practical for the businesses operating within their jurisdiction. As an example of how to potentially structure the analysis, NYC undertook an extensive operational landscape analysis[26].

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## WHO SHOULD BE INVOLVED IN THE POLICY DESIGN PROCESS?

Effective policy design necessitates broad and continuous engagement with diverse stakeholders. Establishing dedicated working groups can facilitate targeted input and collaboration, ensuring the proposed ISR is comprehensive, equitable and implementable.

Local context will determine who should advise the policy development, such as:

### Government agencies

Collaboration with other government agencies or departments helps ensure alignment with existing land-use plans, infrastructure development, and broader environmental goals. This group can identify potential jurisdictional overlaps, legal considerations and political challenges early in the design process, facilitating coordinated implementation and avoiding conflicts.

### Industry advisory committee

Regulated entities and industry associations' direct operational experience is invaluable for understanding technical feasibility, practical implementation challenges and economic impacts of proposed regulations. Early engagement helps design realistic compliance pathways, avoid unintended burdens and fosters industry buy-in, which is critical for long-term program success. This group can also help identify potential solutions and innovative approaches to compliance within their sectors.

### Environmental and community groups

Local groups can help ensure the ISR effectively addresses public health concerns and environmental justice issues. Engaging these groups builds trust, helps identify priority pollution sources and impacts from a community standpoint, and ensures the policy reflects the needs and concerns of vulnerable populations.

As the ISR policy is being designed and iterated, its champions should concurrently define and pursue a clear pathway for its implementation. This means identifying the relevant rulemaking authorities, and determining the appropriate regulatory mechanism, whether through formal rulemaking or new legislation and to codify the policy.

## HOW SHOULD THE WAREHOUSE ISR POLICY BE DESIGNED?

Designing an effective ISR requires a careful balance between achieving air quality improvements and ensuring the policy is practical, equitable and positioned to withstand legal scrutiny and litigation. The design process should be iterative, incorporating technical analysis, stakeholder input and lessons learned from other jurisdictions.

### Key components of policy design

**The format of the ISR**

The format of an ISR dictates how regulated entities will comply with its requirements, and flexibility in compliance can enhance the program's success and stakeholder acceptance. South Coast's WAIRE program format includes an adaptable menu-based system that offers a list of compliance options with different point values, enabling businesses to choose compliance pathways best suited to their operations and financial capabilities. A program in San Joaquin uses a different format that requires developers to achieve emission reductions through the implementation of design features and on-site measures during both the construction and operational phases of development projects. Instead of a points-based system, it focuses on compliance with emission reduction targets through mandatory on-site measures or payment of fees to fund off-site emissions reduction projects.

Cities and regions should explore how other ISRs are designed and consider which approach aligns with their identified goals. There are considerable foundational resources that detail existing efforts and summarize the different approaches to an ISR, such as the case study research produced by New York City[27] in partnership with C40 Cities.

**Multiple pathways to compliance**

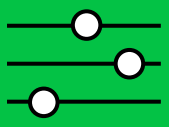
Providing diverse options for regulated entities to achieve compliance is a cornerstone for an effective ISR. A variety of compliance pathways acknowledges the varied operational realities of different businesses, while encouraging innovation and the adoption of cleaner technologies. Since certain menu options naturally complement each other, such as zero emission vehicle procurement with charging infrastructure, warehouse operators are likely to pursue specific pathways that bundle related menu options.

Designing sufficient menu options that enable these natural combinations can help ensure warehouse operators have viable pathways for diverse operating arrangements. For example, a "cargo bikes pathway" could enable a warehouse operator to earn compliance points by shifting the majority of their last-mile deliveries to electric cargo bikes, installing charging or battery-swapping infrastructure to support these vehicles, and participating in microhub programs. In this example, operators would combine multiple emission-reduction measures to meet the total point requirement by leveraging synergies between complementary technologies and operational changes.

**Reporting structure**

The reporting structure of an ISR program is critical for tracking compliance, monitoring progress and ensuring accountability. A well-defined reporting system simplifies the process for regulated entities, effectively captures and demonstrates compliance across various flexible pathways, and provides the implementing agency with the necessary data to assess the program's effectiveness and identify areas for improvement.

**Custom plans**



As an additional option to standard compliance pathways, the ISR could allow custom plans, which may be suitable for entities with complex or unique operations. Custom plans provide a greater degree of adaptability within an ISR program, allowing regulated entities to propose tailored emissions reduction strategies that may not fit neatly into predefined menus. Custom plans can foster innovative partnerships within the industry that can be effective and economically feasible for the regulated entity, enhancing buy-in from stakeholders.

## Key considerations during policy design

**Pollution reduction impact**


The defining success factor of any ISR program is its impact on air pollution reduction. Policy design must critically consider the pollution reduction effectiveness of various compliance options, ensuring that any associated point system accurately reflects and incentivizes those impacts. The points each warehouse needs to earn should be directly proportional to the truck traffic it generates.

**Cost of compliance**


The financial implications for regulated entities are a significant consideration in the design and implementation of an ISR program. Compliance with emissions reduction mandates often involves substantial upfront investments, particularly for technologies like zero emission vehicles and the necessary charging or fueling infrastructure. The high costs associated with electrifying fleets, especially for operations reliant on large Class 8 trucks, can remain a significant hurdle for warehouse operators.

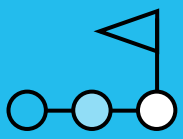
The policy design, including the allocation of points within a menu-based system, should carefully consider these financial outlays to balance the ambition of emissions reductions with the practical feasibility for businesses. Policy design should also aim to mitigate these costs by providing flexible compliance pathways. Virtual training and information sessions can also be offered to help operators leverage existing incentives and programs for cleaner technology adoption. Offering alternatives to compliance through mitigation fees can also provide financial flexibility and support overall compliance goals without imposing a single, potentially prohibitive, cost pathway.

**Scenario testing**

Scenario analysis can be a crucial foresight tool for designing robust ISR programs, enabling agencies to evaluate the strength of the proposed point system, as well as determine appropriate phase-in strategies to enable operators to comply in the early years.

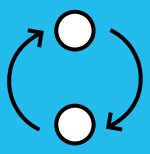
This analysis should be conducted early in the policy design phase, after initial compliance options and point values have been drafted but before the regulatory framework is finalized. During this stage, agencies can model how different types of warehouses—varying in size, location, fleet composition, and operational constraints—would respond to the proposed requirements. This ensures compliance pathways are viable for diverse operators by accounting for varying business capabilities, operational constraints and fleet types. Scenario testing will be able to identify potential barriers to regulation rollout, allowing for the development of clear guidance to operators and flexible solutions that will reduce noncompliance risks.

**Phase-in variable**



Implementing a phase-in variable can be helpful for introducing new programs, particularly those with ambitious compliance requirements. This approach involves gradually increasing compliance stringency or expanding the program's scope over time, rather than imposing full requirements immediately. A phase-in variable might include targeting only the largest facilities or setting lower compliance thresholds in the initial years. Measured introduction allows regulated entities to adapt, plan investments, and gradually transition to new technologies or operational practices without facing overwhelming immediate burdens. Phase-in variables also provide the administering agency valuable time to refine the program based on early implementation experiences and feedback.

**Carrying over points**

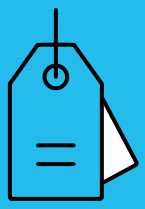


To further incentivize significant early investments, an ISR program can include a points transfer or carryover mechanism. Operators who make substantial capital investments or achieve compliance targets well ahead of schedule can bank their excess points accrued. These points can be used to offset future compliance obligations, which helps to reward proactive investment, offer flexibility to operators and mitigate financial risks from large upfront expenditures. The period over which these points can be transferred or remain valid is an important consideration for program design, impacting long-term incentives and market stability.

**Workforce impact**

The implementation of an ISR could potentially impact the labor force within regulated entities, necessitating shifts in existing roles and the acquisition of new skills. Compliance with emission reduction mandates, particularly those encouraging the adoption of cleaner technologies like zero emission vehicles, can provide benefits to workers like reduced noise and air pollution exposure, and may also require staff to learn new operational and maintenance procedures. C40's white paper[28] explores the workforce implications of the urban freight sector, highlighting the potential of green jobs creation through the transition to electric urban freight. Effective policy design for an ISR should consider these labor implications by providing resources for workforce training and encouraging collaborative efforts between various stakeholders to ensure a smooth and equitable transition.

## Impact on consumer prices



It is important to acknowledge the potential for indirect costs of compliance to be passed on to consumers, ultimately influencing the price of goods and services. Regulated entities facing investments in new technologies (like zero emission vehicles) or mitigation fees may integrate these operational expenses into their pricing structures to maintain profitability, as warehouses tend to be low margin businesses. The exact magnitude of this impact is subject to market dynamics, competition and the specific design of the ISR. Not all pollution-reduction measures increase operating costs and, when they do, not all costs are passed on to consumers. Nevertheless, policymakers must carefully consider these potential upstream effects on consumer affordability.

Analyzing cost-benefit scenarios against the cost of inaction can help determine whether the societal benefits of a policy outweigh any projected impacts on prices or other factors. For example, air pollution from traffic alone contributes to an estimated 320 premature deaths and 870 emergency department visits and hospitalizations each year in New York City.[29] Detailed analysis of the Southern California warehouse ISR projected it would result in 150 to 300 fewer deaths, 2,500 to 5,800 fewer asthma attacks, and 9,000 to 20,000 fewer work lost days from 2022-2031. Expected total discounted monetized public health benefits ranged from $1.2 to $2.7 billion over the compliance period.[30] The cost of inaction is important to consider when evaluating the policy's costs and impacts.

## Impact on warehouse relocation

Faced with compliance costs, some warehouse operators might consider relocating to nearby jurisdictions with less stringent environmental regulations in an effort to reduce their operational expenses. This "leakage" could lead to unintended consequences such as job losses and economic displacement in the regulated region, while potentially shifting environmental burdens to other areas. However, warehouse location decisions are driven by a complex interplay of factors far beyond regulatory costs, and "leakage" will not necessarily happen or will not happen at scale. Operators prioritize elements such as proximity to customers and workforce, real estate availability and suitability, and access to transportation infrastructure.

Policymakers must carefully consider the economic competitiveness of the regulated area, including the benefits of locating warehouses within the considered region, and the potential for a disparity in compliance costs compared to neighboring regions. Designing ISRs with flexible compliance pathways, offering incentives for staying and investing in cleaner technologies, and fostering regional collaboration on air quality initiatives can help create a more level playing field, encouraging businesses to meet emissions reduction goals within the existing jurisdiction rather than seeking relocation. When new regulations are proposed, industry stakeholders often raise concerns about potential business relocations and job losses. Economic analysis helps assess the likelihood and scale of these potential impacts.

## Emerging trends

The warehousing and logistics sector is dynamic, constantly evolving with new technologies, consumer demand, and environmental considerations. Recognizing and integrating these emerging trends into ISR policy design ensures the rule remains relevant, effective and forward looking.




# 3

# LESSONS AND RECOMMENDATIONS FROM NYC

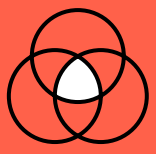
**As New York City and partners have worked to develop an ISR, several recommendations have emerged that can help states and other cities in their own related efforts.**

### Empower champions to move the policy forward

Developing an ISR is a substantial and time-intensive undertaking, and invested champions can help overcome political, budgetary, or other resource challenges. Champions – both elected officials and agency policy leaders – are essential and can secure buy-in from key decision-makers to keep the process progressing.

### Build a coalition of supporters and leverage external partners

An indirect source rule isn't created in a day. Beyond individual champions, it will take many hands and minds – inside and outside the government – to get the policy over the finish line. Supportive groups, such as EV industry groups or electrification alliances, as well as environmental justice advocates and organizers, can raise awareness of and voice support for the policy, while NGOs that work on air quality, renewable energy, transport and public health can provide technical assistance. Facilitating the creation of a coalition of supporters that understand the policy and key milestones, and have the ability to mobilize to keep the policy on the agenda, can also help maintain continuity through personnel and administrative changes.



### Memorialize a commitment and follow it with externally-facing milestones

A city or state publicly going on record as pursuing an indirect source rule, such as by including it in a published plan or other public commitment, can ensure leadership alignment on the policy, as well as empower the project team to carry it forward with internal and external stakeholders. Opportunities to promote the policy and generate positive attention (e.g., public hearings, newspaper articles, rallies) – while formally memorializing both government and stakeholder support – can also make the idea easier to advance and create staying-power.

### Be consistent with the intended policy outcomes

Recall the priority values identified at the outset and consistently emphasize why the policy is needed throughout messaging and communications.

## Provide opportunities for engagement

Share information with interested stakeholders about the policy development, including having direct conversations with impacted industry players so they can identify opportunities for collaboration early. Provide opportunities for dialogue and meaningful contributions.

## Prioritize interagency coordination to enable better collaboration and a speedier process

Other government agencies are invaluable resources and stakeholders in an indirect source rule. The NYC City team leading the policy, made up of leadership from City Hall and the Department of Environmental Protection, meets regularly with representatives from an array of City agencies, including the NYC Dept. of City Planning, NYC Dept. of Transportation, the NYC Economic Development Corporation, the NYC Dept. of Small Business Services, NYC Dept. of Health and Mental Hygiene, and the Mayor's Office of Climate and Environmental Justice. ISRs will likely touch on many different teams and topic areas, and setting up regular opportunities for sharing information and coordination will result in a better-informed policy and help prevent unexpected internal barriers down the line.

## Make progress on parallel paths at the same time

There will be multiple efforts that need to take place to implement an ISR, including industry engagement, awareness raising, legislative drafting and detailed policy design. Don't wait until each step is finished or all of the details are in place before starting to move other pieces forward. For example, while NYC was pushing for the local law, the city was also engaging in in-depth policy design research.

## Build on existing research and policies

In 2025, ISRs are much better established and researched than they were in the early 2020s. Make sure to check with other states, cities or NGOs that have developed or looked at ISRs to learn from their efforts, utilize existing resources and avoid duplicating foundational research.

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As NYC moves the process forward in late 2025 and 2026, please feel free to reach out to C40 Cities with any questions

### Additional reading:

- How to decarbonise urban freight in your city
- New York City's Indirect Source Rule Legislation
- Indirect Source Rule: Case Studies from California
- New York City Warehouses: Operational Landscape
- Cities, E-Commerce & Public Health: 3 Legal Pathways to Limiting Freight Vehicle Emissions

## Endnotes


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21 New York City Department of Transportation (2024) NYC DOT Launches 'Smart Curbs' Program to Better Utilize Curb Space for Community Needs on Upper West Side. Press Release, 28 October.

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25 City of New York (no date) The public health impacts of $PM_{2.5}$ from traffic air pollution. Environment & Health Data Portal.

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30 South Coast Air Quality Management District (2021) Second Draft Socioeconomic Impact Assessment for Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program and Proposed Rule 316 – Fees for Rule 2305.

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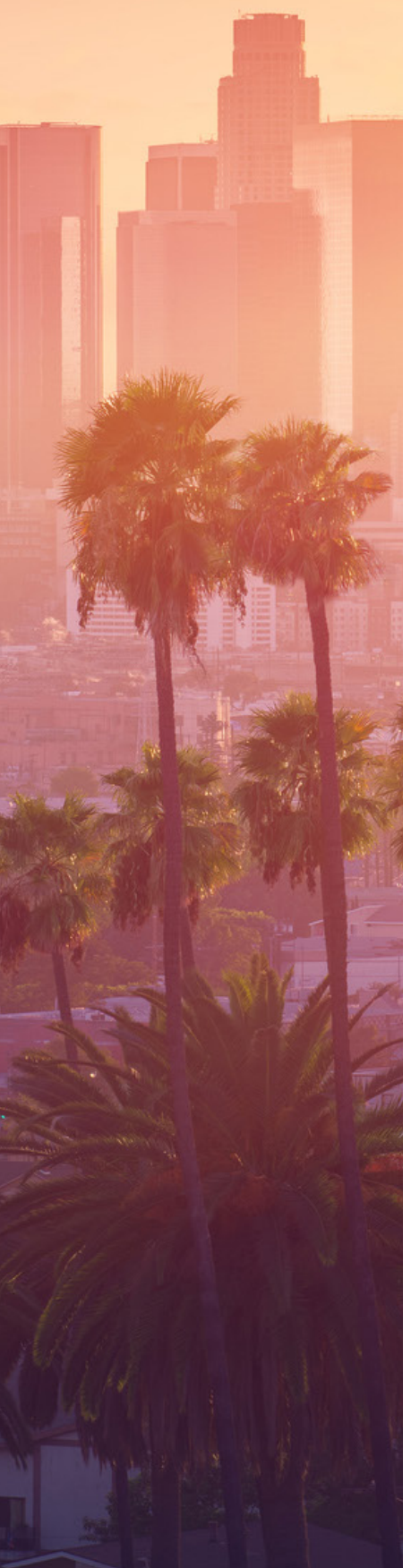
# Exhibit 3

POLICY BRIEF NO. 19
APRIL 2025



Pritzker Briefs
PRITZKER ENVIRONMENTAL LAW AND POLICY BRIEFS

# Wielding the Power of ISRs: Using Indirect Source Rules to Fight Air Pollution from Mega Facilities

***By Brennon Mendez and Cara Horowitz***[1]

## I. Introduction

Air pollution remains a serious threat to communities in much of the United States. Across the country, more than 35 percent of the population lives in air districts that fail to meet one or more of the minimum ambient air quality standards set under the federal Clean Air Act to protect public health. Additional communities live next to pollution "hot spots" that may be masked by an overall air basin's compliance with ambient standards. Many air regulators face complex challenges in meeting federal and local air quality goals. In part, this is due to a mismatch between local air basin regulatory authority—which is typically focused on the control of stationary source pollution and largely excludes control of mobile sources, like vehicles—and the largest sources of local air pollution, which are often mobile sources.

This brief discusses a set of air regulatory tools that can help overcome this mismatch and empower states and local air districts to do more to reduce harms caused by air pollution to communities. Air regulators possess significant, often untapped, legal authority to regulate stationary sources in a way that addresses mobile source pollution, too. This is because stationary sources cause both direct emissions from their sites as well as "indirect source emissions," such as the emissions from cars and trucks moving to and from sites like warehouses, ports, and refineries. While nearly all stationary source air pollution rules to date have focused on reducing direct emissions, indirect source emissions can be regulated by states and local air districts through the adoption and enforcement of so-called indirect source rules (ISRs).

ISRs seek to reduce pollution that is induced by stationary sources but not directly emitted from those sources, such as pollution from associated vehicle traffic or construction equipment. ISRs are increasingly attracting the attention of community groups, advocates, and air pollution regulators as an important regulatory tool, and they are increasingly being used by air districts. In recent years, two of California's 35 local air districts have adopted ISRs to tackle hard-to-abate emissions—the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the South Coast Air

1 Brennon Mendez is an Emmett/Frankel Fellow in Environmental Law and Policy at UCLA Law's Emmett Institute on Climate Change and the Environment. Cara Horowitz is the Andrew Sabin Family Foundation Executive Director of the Emmett Institute on Climate Change and the Environment at UCLA Law. All views expressed in this paper are those of the authors, not the institution with which they are affiliated.

UCLA School of Law
Emmett Institute on Climate Change & the Environment

Quality Management District (SCAQMD).[2] This brief seeks to explore the potential for expanded use of ISRs inside and outside of California.

First, this brief provides key background information on how ISRs have been drafted, passed, and implemented by air districts. Second, it assesses the legal and practical strengths of ISRs as a regulatory tool, as well as the barriers to adoption of ISRs by local air districts and states. This section also explores the legal foundation of ISRs under applicable federal and state law. Third, this brief proposes recommendations to advance the adoption of ISRs to better regulate indirect source emissions caused by stationary sources.

In short, we conclude that ISRs are legally sound tools that air districts could adopt widely and swiftly. ISRs have the potential to empower states and local air districts to better comply with the federal Clean Air Act and related state statutes, meet ambitious emission reduction targets, and pursue environmental justice by foregrounding the needs of directly-affected communities living near stationary sources of air pollution that cause significant indirect emissions. With federal and California emission standards for cars, trucks, and other mobile sources under current threat of rollback, these stationary source tools may become even more important.

# II. Indirect Source Rule Basics and Examples from California

*ISRs have the potential to empower states and local air districts to better comply with the federal Clean Air Act and related state statutes, meet ambitious emission reduction targets, and pursue environmental justice.*

### CALIFORNIA'S AIR POLLUTION CONTROL REGIME: A PRIMER

**Air pollution in California is regulated pursuant to two statutory schemes created by the federal Clean Air Act, 42 U.S.C. § 7401 et seq., and the California Clean Air Act, Cal. Health & Safety Code § 39000 et seq. Under the federal Clean Air Act, "the Environmental Protection Agency (EPA) is authorized to issue national air quality standards setting the maximum allowable concentration of a given pollutant," and "states are required to attain air quality of specified standards and to do so within a specified period of time" via state implementation plans (SIPs) "proposing methods for maintaining air quality."[3] Local air districts "prepare SIP elements and submit them to CARB for review and approval," then "CARB forwards SIP revisions to [EPA] for approval and publication in the Federal Register."[4] Once approved by the EPA, California's SIP "ha[s] the force and effect of federal law."[5] The federal Clean Air Act requires that California's SIP demonstrate that CARB is implementing all "reasonably available control measures" that could lead to the attainment of the NAAQS, including the use of "reasonably available control technology (RACT)."[6] Per longstanding Supreme Court precedent and EPA regulations, the federal Clean Air Act grants CARB "considerable latitude" and "discretion" over how exactly the NAAQS are to be achieved.[7]**

2 Cal. Air Res. Bd., *California Map for Local Air District Websites*, https://ww2.arb.ca.gov/california-map-local-air-district-websites.

3 *Cal. Bldg. Indus. Assn. v. San Joaquin Valley Air Pollution Control Dist.*, 178 Cal. App. 4th 120, 125 (2009) (citing *Train v. Nat. Res. Def. Council*, 421 U.S. 60, 64–65 (1975) and *Safe Air For Everyone v. EPA*, 475 F.3d 1096, 1099–1100 (9th Cir. 2007)).

4 Cal. Air Res. Bd., *California State Implementation Plans*, https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/about.

5 *Cal. Bldg. Indus. Assn.*, 178 Cal. App. 4th at 125 (citing *Safe Air For Everyone*, 475 F.3d at 1099).

6 42 U.S.C. § 7401.

7 *Train*, 421 U.S. at 86–87 ("We also believe that Congress, consistent with its declaration that '(e)ach State shall have the primary responsibility for assuring air quality' within its boundaries, § 107(a), left to the States considerable latitude in determining specifically how the standards would be met. This discretion includes the continuing authority to revise choices about the mix of emission limitations."); *see Union Elec. Co. v. EPA*, 427 U.S. 246, 268 (1976) ("Congress plainly left with the States, so long as the national standards were met, the power to determine which sources would be burdened by regulation and to what extent."); *see also* 40 C.F.R. §§ 51.100(n), 51.101(e) (2024).

*Indirect sources rules are stationary source regulations that are designed to control air pollution from mobile source activity that is generated by or attracted to a stationary source, and over which a stationary source has some degree of control.*

**Under the California Clean Air Act, the California Air Resources Board (CARB) is authorized to set the California ambient air quality standards (CAAQS), which may be stricter or broader in scope than the EPA's national ambient air quality standards (NAAQS).[8] Local air districts have legal authority and "primary responsibility for control of air pollution from all sources other than vehicular sources," while CARB retains primary responsibility for the control of vehicular sources of air pollution, and local air districts "may establish stricter standards than those set by law or by the state board for nonvehicular sources."[9] Indirect source rules (ISRs) are just one of many regulatory approaches that local air districts may adopt to regulate emissions caused by stationary sources of air pollution (e.g., warehouses, ports, rail yards), including the emissions that these stationary sources cause by attracting vehicular sources of air pollution (e.g., cars, trucks) to the surrounding area—referred to as "indirect source emissions." The delineation of legal authority, with CARB regulating vehicular sources of air pollution and local air districts regulating non-vehicular sources, is not absolute. For example, although local air districts have "primary responsibility" over nonvehicular sources, CARB "has the authority to adopt measures specifically to reduce emissions of toxic air contaminants from non-vehicular and vehicular (mobile) sources" alike through Airborne Toxic Control Measures (ATCM), which "can include process requirements, emissions limits, or technology requirements" and for which local "air districts have statutory enforcement requirements once CARB adopts a non-vehicular ATCM."[10]**

## A. What are indirect source rules (ISRs)?

Indirect sources rules are stationary source regulations that are designed to control air pollution from mobile source activity that is generated by or attracted to a stationary source, and over which a stationary source has some degree of control. Such air pollution can be thought of as indirect stationary source emissions.[11] Common stationary sources that cause indirect source emissions include warehouses, ports, rail yards, parking structures, office complexes, shopping malls, sports and entertainment venues, and large residential buildings. Courts have held that local air districts may regulate to control both the *direct* emissions of stationary sources (e.g., emissions from warehouses' gas-powered heating systems) and their *indirect* emissions from mobile sources that they generate or attract (e.g., vehicular emissions from trucks transporting goods to and from warehouses and cargo-handling equipment moving goods at ports).[12]

8 Cal. Air Res. Bd., *California Ambient Air Quality Standards*, https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards; *see* Cal. Health & Safety Code § 39027 (defining "emissions standards" as "specified limitations on the discharge of air contaminants into the atmosphere").

9 Cal. Health & Safety Code § 39002; *see also id.* §§ 40001(a) ("Subject to the powers and duties of the state board, the districts shall adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards in all areas affected by emission sources under their jurisdiction, and shall enforce all applicable provisions of state and federal law."), 41508 ("Any local or regional authority may establish additional, stricter standards than those set forth by law or by the state board for non-vehicular sources.").

10 Cal. Air Res. Bd., *Overview of CARB and Air District Strategies*, https://ww2.arb.ca.gov/capp/cst/rdi/overview-of-carb-and-air-district-strategies.

11 For example, California's definition of an "indirect source" is "[a]ny facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard." Cal. Air Res. Bd., *Community Air Protection Program Blueprint 2.0* (Oct. 2023), at 129, https://ww2.arb.ca.gov/sites/default/files/2024-04/BP2.0_FULL_FINAL_ENG_2024_04_09.pdf.

12 *See, e.g., Nat'l Ass'n of Home Builders v. San Joaquin Valley Unified Air Pollution Control Dist.*, 627 F.3d 730 (9th Cir. 2010); *Cal. Bldg. Indus. Assn. v. San Joaquin Valley Air Pollution Control Dist.*, 178 Cal. App. 4th 120 (2009).

A report by the San Diego County Air Pollution Control District catalogs some of the ways that indirect source emissions can be caused by stationary sources:[13]

- "Sources such as warehouses, distribution centers and ports are primary destinations for trucks engaged in delivering, loading and/or unloading cargo. These freight hubs indirectly cause air pollution due to the emissions from diesel-fueled trucks, trains, ships, off-road equipment, and other mobile sources they attract, including trucks with diesel-fueled refrigeration systems used for transporting perishable goods."
- "Freight facilities commonly use diesel-fueled cargo handling equipment (such as forklifts and yard tractors) to maneuver cargo onsite and transfer it onto or off the trucks, trains, and ships."
- "Employee passenger vehicles [] contribute to the facility's indirect source emissions."
- "For ports, ocean-going vessels are the largest contributor of indirect source emissions."
- "Heavy-duty diesel trucks are the largest contributor to the indirect source emissions associated with warehouses and distribution centers."

***The hallmark of any ISR is that the entity regulated by the rule, to which compliance obligations attach, is the stationary source.***

Indirect source rules can control such emissions using a range of approaches. For example, an ISR might require that a new stationary source reduce NOx emissions by incentivizing carpooling by its employees or by installing EV charging infrastructure to facilitate the use of zero-emission vehicles. Alternatively, an ISR can offer regulated entities the option of simply paying a mitigation fee to fund government-run programs that reduce the presence of or harm caused by air pollution (i.e., by installing HEPA filters in government buildings or subsidizing the installation of solar panels in public schools). The hallmark of any ISR is that the entity regulated by the rule, to which compliance obligations attach, is the stationary source. The ultimate goal and effect of ISRs is to reduce mobile source air pollution emissions induced by the stationary source, using tools under the control of the stationary source.

Though relatively novel, ISRs are well-founded under both federal and state law. Federally, the Clean Air Act expressly permits states to adopt ISRs under § 110(a)(5) of the Act, which "authorizes the states to adopt 'any indirect source review program'" and which defines an indirect source as "'a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution.'"[14] In California, state law explicitly recognizes local air districts' authority to regulate indirect source emissions in multiple provisions of the Health and Safety Code.[15] For example, the Code establishes that a local air district can "adopt and implement regulations to . . . reduce or mitigate emissions from indirect and areawide sources of air pollution."[16]

These strong statutory foundations are supported by general notions of local and state police power. Local air districts' police power provides legal authority for the adoption of ISRs as regulations that benefit the health and safety of district residents. In California, for example, courts have explicitly held that a local air district regulation "represents a lawful and proper exercise of the police power" if it was enacted "'to protect the order, safety, health, morals and general welfare of society'" and "is not arbitrary, unreasonable or discriminatory," in a case upholding a local air district rule limiting "noxious gases discharged by vehicles, industrial establishments and incinerators."[17]

13 Cal. Health & Safety Code § 40100.6.5(a)(6); *see* San Diego County Air Pollution Control Dist., *Options and Considerations for Reducing Indirect Source Emissions at Warehouses, Distribution Centers, and Ports* (May 2023), https://www.sdapcd.org/content/dam/sdapcd/documents/rules/rule-workshops/060823/ISR-Framework-English.pdf.

14 *Nat'l Ass'n of Home Builders*, 627 F.3d at 733–34 (quoting 42 U.S.C. § 7410(a)(5)(A)(i), (C), and (D)).

15 *See* Cal. Health & Safety Code §§ 39002, 40000, 40001, 40702, 40716, 40920, 40100.6.5.

16 *Id.* § 40716(a)(1).

17 *Lees v. Bay Area Air Pollution Control Dist.*, 238 Cal. App. 2d 850, 857 (1965) (quoting *In re Rameriz*, 193 Cal. 633, 649–650 (1924)) (citing *Northwestern Laundry v. Des Moines*, 239 U.S. 486 (1916)).

The California Health & Safety Code § 40001(a) recognizes the delegated police power wielded by local air districts, which have the sweeping legal authority to "adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards in all areas affected by emission sources under their jurisdiction," whether those emissions are direct or indirect. In short, the legal authority of local air districts to adopt ISRs is established by the state Legislature's delegation of its police power to local air districts, which are tasked with protecting public health and safety. This legal authority is expressly recognized by both the federal Clean Air Act and related state statutes, and has been upheld every time it has been challenged in court.

At bottom, ISRs are also consistent with longstanding legal principles that govern "but-for" causation—an omnipresent legal construct in many substantive areas of law including tort and criminal law. ISRs hold stationary sources accountable for the emissions indirectly caused by those stationary sources' attraction of mobile sources like cars and trucks, because those emissions would not occur "but for" the presence of the stationary source. ISRs simply apply the legal standard for "actual causation"—also known as "cause-in-fact"—to stationary sources of indirect source emissions. ISRs are just one of many regulatory tools that local air districts may use to regulate stationary sources and the air pollution that they cause, whether that pollution is emitted from the stationary sources directly or via the vehicles that they attract.

## B. What ISRs have been adopted by local air districts?

Two local air districts in California have pioneered the use of ISRs to control emissions from a range of types of stationary sources, including large developments, warehouses, and freight rail yards. These rules, adopted by the San Joaquin Valley Air Pollution Control District ("San Joaquin Valley") and the South Coast Air Quality Management District ("South Coast"), are described below, along with a fourth ISR now under development that would control emissions from marine ports.[18]

18 These California air district ISRs go beyond the scope of regulations in Oregon and Washington D.C. that impose a permitting requirement on facilities that cause indirect source pollution. Specifically, Oregon's permit rule requires certain parking facilities that cause indirect source emissions to obtain a permit from the state and—only if the state determines that a facility will cause a violation of Oregon's federal Clean Air Act obligations—establish its own "Indirect Source Emission Control Program" involving various air pollution mitigation measures. *See* Or. Admin. R. § 340-254-0040, https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1561. Likewise, D.C.'s permit rule requires a permit without creating a specific compliance program or imposing concrete regulatory burdens on polluting facilities. *See* D.C. Mun. Regs. tit. 20, § 207 (2000), http://dcrules.elaws.us/dcmr/20-207. Because California's air district ISRs are more substantive and pioneered a new direction for use of ISR authority, we focus on them here.

*San Joaquin Valley's ISR requires building developers to reduce by certain percentages the NOx and PM10 emissions from mobile sources associated with the development, with provisions aimed at both the construction and operation phases.*

## San Joaquin Valley's ISR ("Large Development Projects ISR")

In 2005, the San Joaquin Valley Air Pollution Control District became "the first air agency in the nation to control emissions from indirect sources," adopting the Large Development Projects ISR.[19] This ISR applies to any large buildings—whether industrial, commercial, or residential—that are newly constructed as well as any existing large buildings that are expanded or converted to a new use (e.g., by adding more units to a residential building or converting purely-industrial buildings into mixed-use housing).[20] The ISR requires building developers to reduce by certain percentages the NOx and PM10 emissions from mobile sources associated with the development, with provisions aimed at both the construction and operation phases of the development.[21] The ISR gives developers choices in how to achieve those reductions; options to control emissions include, for example, using "the cleanest available off-road construction equipment, including the latest Tier diesel or electric equipment," and installing and using EV "charger(s) at the project site to promote the use of low or zero-emission vehicles."[22] The ISR has been remarkably successful and has been credited with avoiding tens of thousands of tons of NOx and PM10 emissions since its adoption.[23]

Here's how the rule works in more detail.[24] The ISR applies to large development projects that are subject to an approval by a public agency and either "result in the construction of a new building, facility, or structure" or "the reconstruction of a building, facility, or structure for the purpose of increasing capacity or activity."[25] Notably, projects predating the adoption of the ISR remain unregulated unless they undergo a reconstruction that increases their capacity or activity, like adding apartment units or rezoning a building from industrial to residential use. The ISR requires large development projects to reduce their total NOx and PM10 emissions—"including area source and mobile emissions" as well as direct emissions—by 20% and 45%, respectively, during the construction stage and by 33.3% and 50% during the operation stage "when compared to unmitigated project baseline emissions."[26] San Joaquin Valley uses the California Emissions Estimator Model (CalEEMod) to calculate the projected emissions levels of large development projects subject to the ISR, evaluating each new or reconstruction project in the district—a practice that might be less feasible if attempted by mostly-urban districts with many more large development projects.[27]

19 SJVAPCD Rule 9510; SDCAPCD Report, *supra* note 13, at 7; *see generally* San Joaquin Valley Air Pollution Control Dist., *About the District*, https://ww2.valleyair.org/about/ (explaining that SJVAPCD includes all of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare counties and part of Kern county).

20 SJVAPCD Rule 9510, § 3.13 (defining "large" by establishing square footage thresholds that differ based on zoning type, such as residential projects with 50 or more units or heavy industrial projects of 100,000 square feet or more).

21 *Id.* § 6.0.

22 San Joaquin Valley Air Pollution Control Dist., *Emission Reduction Clean Air Measures* (Aug. 18, 2022), at 1, https://ww2.valleyair.org/media/ob0pweru/clean-air-measures.pdf.

23 San Joaquin Valley Air Pollution Control Dist., *Indirect Source Review Program 2024 Annual Report* (Dec. 19, 2024), at 4, https://ww2.valleyair.org/media/shmpiyrd/final-isr-annual-report-2024.pdf.

24 More specifically, SJVAPCD's Large Development Projects ISR was established by two rules: Rule 9510 titled "Indirect Source Review," which was adopted in 2005 and amended most recently in 2018, and Rule 3180 titled "Administrative Fees for ISR," adopted in 2005 and amended most recently in 2019. *See* San Joaquin Valley Air Pollution Control Dist., *Indirect Source Review Rule Overview*, https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview; San Joaquin Valley Air Pollution Control Dist., Rule 9510: Indirect Source Review (ISR) (adopted Dec. 15, 2005; most recently amended Dec. 21, 2017; in effect Mar. 21, 2018), https://ww2.valleyair.org/media/cjlnn0u1/r9510-a.pdf (hereinafter "SJVAPCD Rule 9510"); San Joaquin Valley Air Pollution Control Dist., Rule 3180: Administrative Fees for ISR (adopted Dec. 15, 2005; most recently amended Apr. 19, 2018; in effect July 1, 2019), https://ww2.valleyair.org/media/jool5mh1/r3180-a2.pdf (hereinafter "SJVAPCD Rule 3180").

25 SJVAPCD Rule 9510, § 3.13.

26 *Id.* §§ 3.28, 6.0.

27 San Joaquin Valley Air Pollution Control Dist., *Frequently Asked Questions Rule 9510 Indirect Source Review (ISR)* (Apr. 30, 2020), https://ww2.valleyair.org/media/5v3fdh1d/isr_faq_4-30-20.pdf; *see* Cal. Air Pollution Control Officers Assoc., *California Emissions Estimator Model*, https://www.caleemod.com/.

**WHAT IS THE CALIFORNIA EMISSIONS ESTIMATOR MODEL?**

**The California Emissions Estimator Model (CalEEMod) is a computer model that calculates emissions of criteria pollutants and greenhouse gases from a variety of land uses, including residential, commercial, retail, and industrial projects, as well as calculating the benefits of implementing mitigation measures that reduce emissions.[28] CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA), a nonprofit association comprised of air pollution control officers from all 35 local air districts in California.[29] The model can quantify emissions and the impact of emission mitigation measures during both the construction and operation phases of new development and redevelopment projects in California, doing so by integrating data from statewide databases like CalEnviroScreen, Cal-Adapt, and the Healthy Places Index (HPI) "to identify potential climate risks and environmental burdens within the project vicinity" and analyze potential "measures to reduce emissions."[30]**

**CalEEMod allows users to enter information about a development project into an online tool, through "a series of screens within modules and submodules, each designed with an individual purpose to define features of a project (e.g., construction schedule and equipment, operational activity)"; then, based on that data and the type of land use elected, the model will estimate emissions and the impact of potential emission reduction measures.[31] The model's website states it "provides a uniform and integrated platform for government agencies, land use planners, and professionals to collectively analyze air quality emissions, climate risks, and health and environmental burdens of new projects and plans," with the ultimate goal that, "when assessed comprehensively and holistically, projects and plans can be designed and built to support healthier neighborhoods and more equitable and resilient communities."[32]**

*Compliance can be achieved by incorporating "on-site District approved air friendly project design elements," including locating the project near existing or planned bus stops or using a fleet of cleaner-burning or more fuel-efficient construction equipment.*

Compliance can be achieved by incorporating "on-site District approved air friendly project design elements," which include things like locating the project near existing or planned bus stops or using a "Construction Clean Fleet," defined as a fleet of cleaner-burning or more fuel-efficient construction equipment that reduces construction emissions by significant amounts as compared with statewide averages.[33] Other San Joaquin Valley-approved compliance instruments include the construction of bicycle-enhancing infrastructure like paths, parking, and storage; the provision of shuttle services to and from transit stations, public transit subsidies, and preferential parking for carpool and vanpool vehicles; limiting the parking supply; the establishment of employee ridesharing and telecommuting programs; and the installation of solar panels, EV charging stations, and alternative fuels infrastructure (i.e., natural gas and hydrogen fuel cell stations).[34] Alternatively, compliance can be achieved by "paying an off-site fee that will be used to fund off-site emission reduction projects," like the replacement of old heavy duty off-road vehicles, wood burning stoves, and old school buses with newer, cleaner versions of those sources of air pollution.[35] The current off-site fee rate is $9,350 per ton for NOx and about $9,000 per ton for PM10.[36]

28 *See* San Joaquin Valley Air Pollution Control Dist., *Emissions Assessment Models and Calculators*, https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview/emissions-assessment-models-and-calculators/.
29 *See* CAPCOA, *California Emissions Estimator Model*, *supra* note 27; Cal. Air Pollution Control Officers Assoc., Home, https://capcoa.org/.
30 CAPCOA, *California Emissions Estimator Model*, *supra* note 27.
31 Cal. Air Pollution Control Officers Assoc., *California Emissions Estimator Model FAQ*, https://www.caleemod.com/faq.
32 *Id.*
33 SJVAPCD, *Frequently Asked Questions Rule 9510 Indirect Source Review (ISR)*, *supra* note 27.
34 SJVAPCD, *Emission Reduction Clean Air Measures*, *supra* note 22, at 1.
35 SJVAPCD, *Frequently Asked Questions Rule 9510 Indirect Source Review (ISR)*, *supra* note 27.
36 *See id.*; *see also* SJVAPCD Rule 9510, § 7.2.

The rule was enacted in order to help San Joaquin Valley meet air quality targets that have been notoriously difficult for the district to satisfy. The San Joaquin Valley district has been out of attainment for ozone and particulate matter for decades, failing to meet both state and federal ambient air quality standards for those air pollutants. Importantly, "mobile source emissions make up over 85% of the Valley's NOx emissions, the primary driver in the formation of particulate matter (PM) and ozone pollution."[37] The district has acknowledged that it "has no regulatory authority to control tailpipe emissions from motor vehicles"—which belongs exclusively to CARB and U.S. EPA—so instead it turned to its authority to regulate stationary sources of indirect source emissions with the aim of "reduc[ing] vehicle miles traveled."[38] San Joaquin Valley also cites as a source of authority for its ISR a provision of California law providing that San Joaquin Valley's board "shall adopt, by regulation, a schedule of fees to be assessed on areawide or *indirect* sources of emissions that are regulated, but for which permits are not issued, by the district to recover the costs of district programs related to these sources."[39]

With these goals in mind, the district has stated that its ISR is intended "to encourage developers to incorporate clean air measures and reduce emissions of NOx and PM10 from new development projects" because "new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled."[40] San Joaquin Valley's ISR has become an important part of the district's submission to CARB for inclusion in California's State Implementation Plan (SIP).[41]

By all accounts, the rule has been quite successful at achieving air pollution reductions cost-effectively. The district calculates that the rule has avoided over 22,000 tons of NOx and PM10 emissions since its adoption.[42] San Joaquin Valley touts that it "has achieved more than 20,736 tons of reductions in NOx and PM10 emissions through the investment of over $180 million dollars" in San Joaquin Valley's emission reduction grants and incentives programs, which are funded by the fees imposed by the ISR and related donations from regulated developers who decide to go above and beyond their compliance obligations and enter into voluntary agreements to donate to San Joaquin Valley.[43] In the most recent annual reporting period, San Joaquin Valley "achieved emission reductions via grants and incentives clean-air projects totaling 1,615 tons NOx and 227 tons PM10, for a combined total of 1,842 tons, at a cost-effectiveness of $9,857 per ton of emissions reduced."[44]

San Joaquin Valley's ISR has withstood legal challenge. In a published decision, the Ninth Circuit Court of Appeals upheld the rule as a valid exercise of the district's authority to regulate air pollution under the federal and state Clean Air Acts.[45] The court recognized the ISR as consistent with local air district authority to regulate stationary sources of air pollution and rejected claims that the rule, instead, invalidly targeted mobile sources:

37 SJVAPCD, *Frequently Asked Questions Rule 9510 Indirect Source Review (ISR)*, *supra* note 27.
38 *Id.*
39 SJVAPCD, *Indirect Source Review Rule Overview*, *supra* note 24 (citing Cal. Health & Safety Code § 40604(a)).
40 *Id.* (also noting that "although newer, cleaner technology is reducing the per-vehicle pollution, the emissions increase from new development putting more vehicles on Valley roads partially offsets the emission reductions gained from technology advances"); *see* U.S. EPA, *Basic Information about NO2*, https://www.epa.gov/no2-pollution/basic-information-about-no2 ("NO2 along with other NOx reacts with other chemicals in the air to form both particulate matter and ozone.")
41 SJVAPCD, *Indirect Source Review Rule Overview*, *supra* note 24; *see* U.S. EPA, *California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants*, https://www3.epa.gov/airquality/greenbook/anayo_ca.html (showing that San Joaquin County is still in nonattainment for particulate matter that is 2.5 micrometers or less in diameter (PM2.5) but is no longer in nonattainment for the overlapping but broader category of PM10 that the SJVAPCD ISR regulates); San Joaquin Valley Air Pollution Control Dist., *Ambient Air Quality Standards & Attainment Status*, https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/.
42 SJVAPCD, *Indirect Source Review Program 2024 Annual Report*, *supra* note 23, at 4.
43 *Id.* at 4–5.
44 *Id.* at 5.
45 *Nat'l Ass'n of Home Builders v. San Joaquin Valley Unified Air Pollution Control Dist.*, 627 F.3d 730, 737 (9th Cir. 2010).

The Rule, after all, measures the emissions it regulates by reference to a particular development site. The "baseline" amount of emissions, and the required reduction in emissions from that baseline, are both calculated in terms of the development as a whole. The Rule and the emissions reductions it requires are site-based rather than engine- or vehicle-based. *See* 42 U.S.C. § 7410(a)(5)(C) (requiring that an indirect source review program be a "facility-by-facility" review). It regulates an indirect source as a whole.[46]

***The Ninth Circuit held that San Joaquin Valley's ISR and the emissions reductions it requires are site-based rather than engine- or vehicle-based.***

The Ninth Circuit explained that the dispositive factor establishing that San Joaquin Valley's ISR "is a proper indirect source review program" is the fact that the ISR "does not target vehicles or engines" but rather "targets emissions, and requires emissions reductions, from a development site as a whole."[47]

## South Coast's Rules 2305 and 316 ("Warehouse ISR")

In 2021, South Coast adopted an ISR that aims to reduce smog-forming emissions by ten to fifteen percent from warehouse-related sources, such as freight trucks.[48] The Warehouse ISR covers about 3,300 of the largest warehouses in the district. It was adopted via the promulgation of two rules, one of which targets particulate matter and NOx caused by freight operations and the second of which sets a fee to provide funding for the implementation and administration of compliance activities.[49] The purpose of this set of rules is to help the district reduce emissions from the goods movement sector, which is growing rapidly in the South Coast Air Basin such that the total inventory of warehousing space increased by 41% over the last decade.[50]

The Warehouse ISR requires operators of warehouses greater than or equal to 100,000 square feet in size to report information about their building, their tenants, and their operations and associated truck activity. The ISR imposes compliance obligations on a subset of those warehouse operators—those "who operate at least 50,000 square feet of the warehouse for warehousing activities."[51] Those warehouse operators undertake compliance obligations in proportion to the number of truck trips made to and from their facility each year, with trips by larger Class 8 trucks (e.g., semi-trucks weighing >33,000 pounds) being weighted as 2.5 trips due to their higher levels of emissions.[52] The more truck trips are taken to a regulated warehouse, the more compliance points the warehouse must accrue. [53]

46 *Ibid.*
47 *Id.* at 738–39.
48 Press Release, South Coast Air Quality Mgmt. Dist., South Coast AQMD Governing Board Adopts Warehouse Indirect Source Rule (May 7, 2021), https://www.aqmd.gov/docs/default-source/news-archive/2021/board-adopts-waisr-may7-2021.pdf.
49 Rule 2305, titled the "Warehouse Indirect Source Rule—Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program," target indirect source emissions of particulate matter and NOx caused by freight operations; and Rule 316, titled "Fees for Rule 2305," sets a fee schedule according to which the regulated warehouses provide funding for the implementation and administration of the compliance activities required by Rule 2305. *See* S. Coast Air Quality Mgmt. Dist., *WAIRE Program*, https://www.aqmd.gov/home/rules-compliance/compliance/waire-program; S. Coast Air Quality Mgmt. Dist., Rule 2305: Warehouse Indirect Source Rule—Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program (adopted May 7, 2021), https://www.aqmd.gov/docs/default-source/rule-book/reg-xxiii/r2305.pdf (hereinafter "SCAQMD Rule 2305"); S. Coast Air Quality Mgmt. Dist., Rule 316: Fees for Rule 2305 (adopted May 7, 2021; most recently amended May 3, 2024), https://www.aqmd.gov/docs/default-source/rule-book/reg-iii/r316.pdf (hereinafter "SCAQMD Rule 316"); *see generally* S. Coast Air Quality Mgmt. Dist., *About South Coast AQMD*, https://www.aqmd.gov/aq-spec/aboutscaqmd (explaining that SCAQMD includes "all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties" and contains "over 16.8 million people—about half the population of the whole state of California").
50 S. Coast Air Quality Mgmt. Dist., *WAIRE Program Annual Report* (Oct. 2024), at 4, https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/annual_report_waire_program_102024.pdf?sfvrsn=c6288561_9.
51 SCAQMD Rule 2305(d)(1).
52 *Id.* Warehouse operators must track the number of truck trips made to and from their warehouses each year "using methods that provide a verifiable and representative record." SCAQMD Rule 2305(d)(1)(B).
53 Annual truck trips are used to calculate warehouse operators' compliance obligation by requiring 0.0025 points per annual truck trip; the rule provides for a gradual ramp-up to this obligation by phasing it in gradually from 2022 to 2026. SCAQMD Rule 2305(d)(1)(A) and Table 2.

Warehouse operators can fulfill their annual points-based compliance obligation in any of three ways.

- First, warehouse operators can take actions listed on a South Coast-provided "menu" of emissions-reducing implementation measures, including buying and using zero-emission (ZE) or near-zero-emission (NZE) on-road trucks and off-road cargo-handling equipment, installing and using zero-emission charging and fueling infrastructure and solar panels, and installing indoor air filters "in residences, schools, daycares, hospitals, or community centers."[54]
- Second, warehouse operators may propose custom plans that are specific to each warehouse and assign points to proposed onsite or offsite actions that reduce emissions relative to baseline levels; once custom plans are approved by South Coast, warehouse operators can earn points by taking actions listed on their custom plan just like actions listed on the South Coast-provided menu.[55]
- Third, warehouse operators can, instead of earning points, fulfill their compliance obligation "through payment of a mitigation fee in the amount of $1,000 for each WAIRE Point"; these fees fund clean technology projects in the area surrounding the warehouse operator.[56]

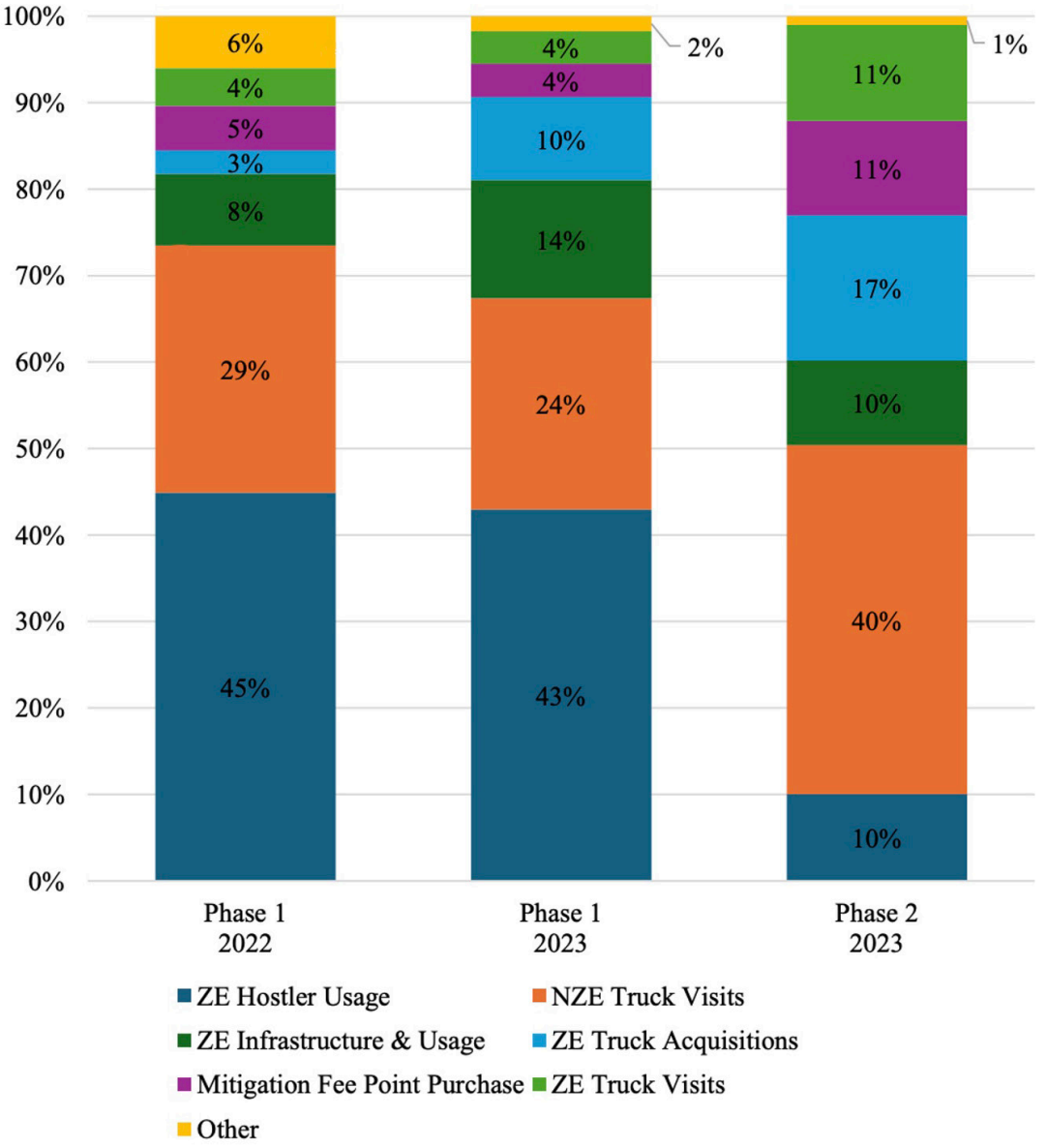
***South Coast reported that mitigation fees accounted for "approximately 5% of the total" points earned by warehouse operators during the first two years of the Warehouse ISR's implementation.***

South Coast reported that mitigation fees accounted for "approximately 5% of the total" points earned by warehouse operators during the first two years of the ISR's implementation (2022 and 2023), amounting to "approximately $29.7 million in mitigation fees."[57] South Coast will award funds from mitigation fees based on solicitations from third parties, which may also solicit grant money from the $500 million Climate Pollution Reduction Grant that South Coast received from the EPA to invest in zero-emission infrastructure.[58] South Coast also requires recipients of funds from mitigation fees to employ specific pro-labor practices and, notably, ensure that any "ZE charging or fueling infrastructure for on-road vehicles that are not yard trucks" that recipients build are "available for public use."[59]

The Warehouse ISR had a phased implementation schedule, applying to warehouses greater than or equal to 250,000 sq ft. in size in 2022 (Phase 1), then expanding to warehouses between 250,000 and 150,000 sq ft. in size in 2023 (Phase 2), and all warehouses greater than or equal to 100,000 square feet in size in 2024 (Phase 3).[60] The WAIRE Program's most recent annual report parses how warehouse operators chose to fulfill their compliance obligations in 2022 and 2023:[61]

54 SCAQMD Rule 2305, Table 3.
55 SCAQMD Rule 2305(d)(4).
56 SCAQMD Rule 2305(d)(5); *see* SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50 at 25 ("The WAIRE Mitigation Program will fund projects that achieve and/or facilitate emission reductions in the same SRAs [Source Receptor Areas] and counties in which the mitigation fees were paid. If sufficient projects are not identified in each individual SRA relative to the available funding, funds may be directed either to an adjacent SRA in the same county or held for a subsequent funding cycle.").
57 SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 19.
58 *Id.* at 27; *see* Press Release, U.S. EPA, Biden-Harris Administration Announces Nearly $500 Million for Effort to Cut Transportation- and Goods Movement-Related Climate Pollution in Southern California (July 22, 2024), https://www.epa.gov/newsreleases/biden-harris-administration-announces-nearly-500-million-effort-cut-transportation-and.
59 SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 27 ("Any recipients of WAIRE Mitigation Fee Program funds for projects that involve construction work must use a skilled and trained workforce as defined in Public Contract Code section 2601 to perform such work. . . . Any recipients of WAIRE Mitigation Fee Program funds for projects that involve the installation of [EV] infrastructure shall: 1) be installed by a contractor with the appropriate license classification . . . and at least one electrician on each crew, at any given time, holds an [EV] Infrastructure Training Program certification, and 2) meet a requirement that at least 25 percent of the total electricians working on an [EV] infrastructure project installing a charging port supplying 25 kW or more, at any given time, hold [EV] Infrastructure Training Program certification, consistent with the Public Utilities Code section 740.20. . . . Any recipients of WAIRE Mitigation Fee Program incentives shall disclose any labor violations in the three years prior to receiving funding and during the life of the funded project.").
60 SCAQMD Rule 2305, Table 1.
61 SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 39.

**Figure A-5: Total Earned WAIRE Points Menu Items and Mitigation Fees (Normalized)**




**Source: Image reproduced from S. Coast Air Quality Mgmt. Dist., WAIRE Program Annual Report (Oct. 2024), at 39, https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/annual_report_waire_program_102024.pdf.**

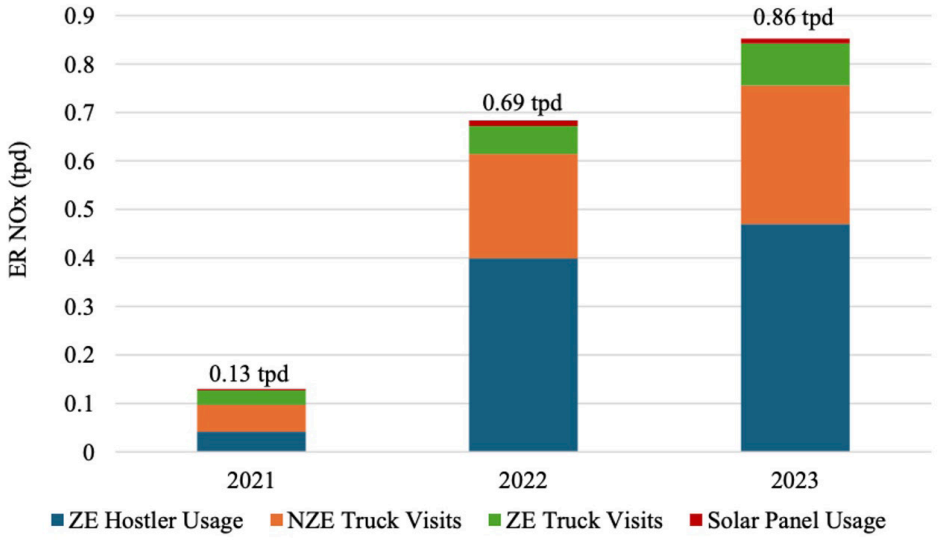
*About 90% or more of compliance was achieved through direct implementation of emission reduction measures by regulated entities, rather than through payment of mitigation fees.*

Figure A-5 shows that in all three phases (i.e., across all cohorts of regulated entities in 2022 and 2023), at least half of all compliance points were awarded for a combination of near-zero-emission (NZE) truck visits and zero-emission (ZE) hostler usage ("hostlers" are a common type of cargo-handling equipment used for moving cargo containers, also referred to as "yard trucks"). Across all three phases, about 90% or more of compliance was achieved through direct implementation of emission reduction measures by regulated entities, rather than through payment of mitigation fees. The fact that only about 10% or less of compliance was achieved via mitigation fees bodes well for the potential for ISRs like South Coast's Warehouse ISR to have an appreciable impact on air pollution in local communities immediately surrounding regulated entities.

When adopting the rule, local air regulators expected its benefits to far outweigh its costs. South

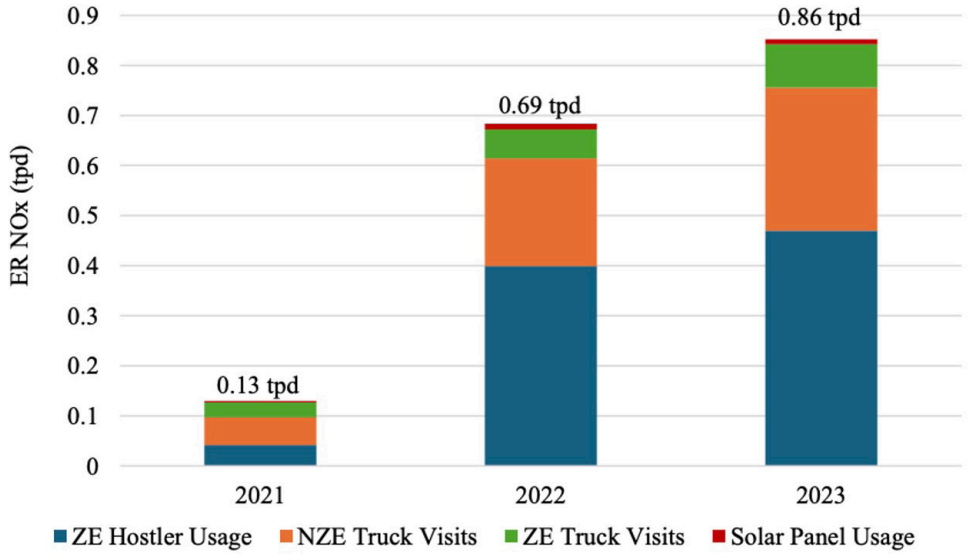
Coast's socioeconomic impact assessment in the lead-up to the ISR's adoption in 2021 estimated that the ISR would "result in 150 to 300 fewer deaths, 2,500 to 5,800 fewer asthma attacks, and 9,000 to 20,000 fewer work loss days from 2022-2031" with an "expected total discounted monetized public health benefits rang[ing] from $1.2 to $2.7 billion" over that time period.[62] Since implementation began in 2022, South Coast has reported "strong adoption and implementation of actions that contribute to emission reductions" in the last three years, as illustrated in WAIRE Program's most recent annual report:[63]

**Figure 18: NOx Emission Reductions from Reported Actions (tpd)**




**Source: Image reproduced from S. Coast Air Quality Mgmt. Dist., WAIRE Program Annual Report (Oct. 2024), at 24, https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/annual_report_waire_program_102024.pdf.**

**Figure 19: DPM Emission Reductions from Reported Actions (tpd)**




**Source: Image reproduced from S. Coast Air Quality Mgmt. Dist., WAIRE Program Annual Report (Oct. 2024), at 24, https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/annual_report_waire_program_102024.pdf.**

62 S. Coast Air Quality Mgmt. Dist., *Second Draft Socioeconomic Impact Assessment for Proposed Rule 2305 and Proposed Rule 316* (Apr. 2021), at ES-9, https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr-2305_sia_2nd-draft_4-7-21.pdf.

63 SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 22, 24.

Though critics had speculated that the Warehouse ISR might harm industry if adopted, the number of warehouses in the South Coast Air Basin has grown robustly since the rule's adoption, with South Coast's analysis revealing that the ISR "had minimal impact on warehousing demand," as predicted in South Coast's Final Socioeconomic Impact Analysis for Rule 2305.[64] Compliance with the rule appears to be fair, with room for improvement as rule implementation continues.[65] South Coast has engaged in considerable public outreach to warehouses about their compliance obligations and has pursued enforcement actions against non-compliant warehouses. Specifically, as of August of last year, "South Coast AQMD inspectors have visited over 2,323 warehouse locations to provide outreach material" and "through mid-October 2024, staff identified over 350 facilities that submitted late reports or failed to submit" and have thus "issued over 350 Notices of Violation (NOVs)" as well as conducted "desk audits" and "unannounced site visits" to verify information reported by warehouse operators.[66] If South Coast's "inspectors observe a potential violation, a Notice to Comply (NC) may be issued to request information or to order the facility to take corrective action"; if noncompliance persists, "a NOV may be issued" and "referred to the South Coast AQMD Office of General Counsel for settlement negotiations" and, "if no settlement is reached, a civil lawsuit may ultimately be filed in superior court."[67] South Coast has stated that "violators of air quality rules can face civil penalties of up to $11,700 per day of noncompliance with greater penalties available for negligent and intentional violations."[68]

***Like San Joaquin Valley's ISR, South Coast's Warehouse ISR has withstood legal challenge.***

Like San Joaquin Valley's ISR, the Warehouse ISR has withstood legal challenge. Trade organizations representing trucking companies and commercial airlines brought suit soon after the rule was finalized, alleging that the ISR was preempted by federal law and contrary to state law.[69] The U.S. District Court for the Central District of California granted summary judgment in favor of South Coast on all of the plaintiffs' federal claims, and summarily dismissed with prejudice the plaintiffs' state law claims pursuant to a joint stipulation of the parties.[70] The plaintiffs did not file an appeal of either dispositive order, and the Warehouse ISR has not otherwise been challenged in court.[71] NRDC, one of the many environmental groups that intervened in that case in support of South Coast, described the court's order upholding the ISR as "a resounding confirmation of South Coast's legal authority to adopt indirect source rules throughout the southern coast" and noted that the order "opens the door for similar measures in other parts of California and the nation" that are also suffering from indirect source pollution.[72]

64 *Id.* at 4.

65 *Id.* at 37 (finding that just over 40% of warehouses ≥250,000 sq. ft. have submitted the required ISR program reports and initiated compliance actions, while just under 30% of warehouses between 150,000 and 250,000 sq. ft. have submitted the required reports and initiated compliance actions).

66 *Id.* at 28.

67 *Ibid.*

68 S. Coast Air Quality Mgmt. Dist., *South Coast AQMD Issues Violations for Warehouses in Noncompliance with Rule 2305* (Feb. 2024), https://www.aqmd.gov/home/research/pubs-docs-reports/newsletters/jan-feb-2024/warehouse-compliance.

69 *Cal. Trucking Ass'n v. S. Coast Air Quality Mgmt. Dist.*, No. LA CV21-06341 JAK (MRWx), 2023 WL 9622548 (C.D. Cal. Dec. 14, 2023); *see* SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 31.

70 *Cal. Trucking Ass'n*, No. LA CV21-06341 JAK (MRWx), 2023 WL 9622548, *at *1; Cal. Trucking Ass'n v. S. Coast Air Quality Mgmt. Dist.*, No. LA CV21-06341 JAK (MRWx), Order Re Joint Stipulation and Consent Motion to Dismiss with Prejudice, Dkt. 167 (C.D. Cal. Jan. 18, 2024).

71 SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 31; Air Plan Approval; California; South Coast Air Quality Management District, 89 Fed. Reg. 73,568 (Sept. 11, 2024), https://www.federalregister.gov/documents/2024/09/11/2024-20349/air-plan-approval-california-south-coast-air-quality-management-district.

72 Nat. Res. Def. Council, *California Trucking Association v. South Coast Air Quality Management District et al.* (Apr. 9, 2024), https://www.nrdc.org/court-battles/california-trucking-association-v-south-coast-air-quality-management-district-et.

The Warehouse ISR is now an approved component of California's SIP. The U.S. EPA approved the Warehouse ISR as part of California's SIP in September 2024, rendering the rule federally enforceable by EPA and citizens pursuant to the federal Clean Air Act § 304.[73] EPA's press release accompanying its approval touted the availability of ISRs as a valuable regulatory tool for local air districts to use to comply with the federal Clean Air Act, stating that "indirect sources, such as warehouses, ports, and rail yards, all contribute to pollution and therefore must be addressed so our communities can breathe cleaner air," including through South Coast's "larger multi-pronged strategy to reduce emissions associated with indirect sources and improve public health."[74]

## South Coast's Rule 2306 ("Freight Rail Yards ISR")

*The U.S. EPA approved the Warehouse ISR as part of California's SIP in September 2024, rendering the rule federally enforceable by EPA and via citizen suits.*

The South Coast air district has also adopted a rule aimed at reducing harmful pollution from the trains, trucks, cargo-handling equipment, transport refrigeration units, and other sources of indirect source emissions at rail yards.[75] The Freight Rail Yards ISR was adopted by the district in August 2024, after years of developing the ISR in consultation with community members and environmental groups.[76] It applies to all new and existing rail yards in the South Coast Air Basin and "requires NOx emission reductions for each rail yard," mandating that "operators share zero-emission infrastructure plans with South Coast, helping to chart a path for wide-scale zero-emissions infrastructure buildout."[77] The rule has not yet gone into effect and is unlikely to do so in the near future, for reasons discussed below.

The rule would apply to about 25 rail yards in the South Coast Air Basin "where locomotive switching activities occur or where cargo is loaded or unloaded from railcars for transportation to or from the rail yard using the rail yard operator's locomotives." These rail yards would be "required to achieve up to 82 percent emissions reductions by 2037 through a variety of actions including using cleaner technologies or lower emitting equipment associated with rail yards."[78] The Sierra Club projected that the ISR, in conjunction with other state regulations, would "reduce NOx emissions by over 9 tons per day between 2025 and 2050 and prevent around 275 premature deaths annually."[79] South Coast estimates that rail yard-related emissions overall "contribute about 9% of total smog-forming emissions" in the South Coast Air Basin.[80]

However, this rule is in limbo. It was drafted such that it would become effective only if and when U.S. EPA approves its inclusion in the California State Implementation Plan and grants the required authorizations for CARB's associated regulations on locomotives and drayage truck fleets.[81] On January 13, 2025—one week before the inauguration of Donald Trump—CARB withdrew its

73 *Id.*; Air Plan Approval; California; South Coast Air Quality Management District, 89 Fed. Reg. 73,568.
74 Press Release, U.S. EPA, EPA Approves South Coast AQMD's Groundbreaking Rule to Reduce Southern California Air Pollution Associated with Warehouses (Sept. 11, 2024), https://www.epa.gov/newsreleases/epa-approves-south-coast-aqmds-groundbreaking-rule-reduce-southern-california-air.
75 Press Release, S. Coast Air Quality Mgmt. Dist., South Coast AQMD Governing Board Adopts Rail Yards Indirect Source Rule (Aug. 2, 2024), https://www.aqmd.gov/docs/default-source/news-archive/2024/rail-yards-isr--august-2-2024.pdf; Press Release, Sierra Club, Clean Air Victory: New Rule Will Curb Deadly Pollution From Southern California Railyards (Aug. 2, 2024), https://www.sierraclub.org/press-releases/2024/08/clean-air-victory-new-rule-will-curb-deadly-pollution-southern-california.
76 S. Coast Air Quality Mgmt. Dist., Rule 2306: Freight Rail Yards (adopted Aug. 2, 2024), http://www.aqmd.gov/docs/default-source/rule-book/recent-rules/r2306-080224.pdf (hereinafter "SCAQMD Rule 2306"); Press Release, SCAQMD, South Coast AQMD Governing Board Adopts Rail Yards Indirect Source Rule, *supra* note 75; *see* SoCal Communities for AQMD Action, *Railyards*, https://actnowaqmd.com/initiatives/railyards.
77 Press Release, Sierra Club, Clean Air Victory, *supra* note 75.
78 Press Release, SCAQMD, South Coast AQMD Governing Board Adopts Rail Yards Indirect Source Rule, *supra* note 75.
79 Press Release, Sierra Club, Clean Air Victory, *supra* note 75.
80 Press Release, SCAQMD, South Coast AQMD Governing Board Adopts Rail Yards Indirect Source Rule, *supra* note 75.
81 *Id.*; *see* SCAQMD Rule 2306(k) ("Effective Date").

requests to U.S. EPA for those authorizations, for both its In-Use Locomotive Regulation and its Advanced Clean Fleets Regulation (which includes the Drayage Truck Requirements that must be approved by the U.S. EPA before the ISR becomes effective).[82] Therefore, the Freight Rail Yards ISR is currently stalled.

## South Coast's Proposed Rule 2304 ("Commercial Marine Ports ISR")

The ports of Los Angeles and Long Beach are critically important pillars of the region's economy. They are also, collectively, the largest NOx emitter in the South Coast region. Diesel emissions from cargo-moving trucks, ships, trains, and equipment at the Los Angeles-Long Beach ports "are the largest single source of smog-forming pollution in the nation's smoggiest region."[83] As the Los Angeles Times editorial board has noted, "communities of color in harbor-area neighborhoods [surrounding the ports] suffer higher rates of asthma, cancer and other life-threatening illnesses."[84] To tackle these issues, South Coast is currently developing Proposed Rule 2304, the Commercial Marine Ports ISR.[85]

The proposed rule would, if adopted, require the Ports of Los Angeles and Long Beach to each prepare and submit to South Coast a Port Wide Charging and Fueling Infrastructure Plan ("Plan"), no later than August 1, 2027.[86] These Plans would include details on how the Ports will install charging and fueling infrastructure to support the ongoing clean energy transition, and develop and follow a comprehensive port wide infrastructure plan with milestones and target dates for each source of air pollution at the Ports: drayage trucks, cargo-handling equipment, on-port switchers, harbor craft, and ocean-going vessels.[87] Absent special justification, the Plans must set targets of 100% ZE cargo-handling equipment by 2030 and 100% ZE drayage trucks by 2035.[88] The Plans must also assess the anticipated energy demand and supply from existing infrastructure and future infrastructure projects; estimate the cost of adding charging infrastructure and clean fueling stations to "green" the on-port energy supply and identify potential funding sources; assess the workforce needed to build out that clean energy infrastructure and the expected impact on the on-port workforce once that infrastructure is in operation; and describe potential environmental impacts, as well as any existing or future CEQA and/or NEPA documents to be relied upon by the Plan.[89] After the Plans are submitted, South Coast would approve or disapprove of these Plans,

82 Letter from Cal. Air Res. Bd. to U.S. EPA, *Re: Withdrawal of California's Request for Authorization, Pursuant to Clean Air Act Section 209(e)(2), of the In-Use Locomotive Regulation, Docket ID EPA-HQ-OAR-2013-0574* (Jan. 13, 2025) (citing 89 Fed. Reg. 14,484 (Feb. 27, 2024)), https://www.epa.gov/system/files/documents/2025-01/ca-loco-carb-withdrawal-loco-ltr-2025-1-13.pdf; Letter from Cal. Air Res. Bd. to U.S. EPA, *Re: Withdrawal of California's Request for a Waiver, Pursuant to Clean Air Act Section 209(b), and Request for Authorization, Pursuant to Clean Air Act Section 209(e)(2), for the Advanced Clean Fleets (ACF) Regulation, Docket ID EPA-HQ-OAR-2023-0589* (Jan. 13, 2025) (citing 89 Fed. Reg. 57,151 (July 12, 2024)), https://www.epa.gov/system/files/documents/2025-01/ca-acf-carb-withdrawal-ltr-2025-1-13.pdf; *see also* Cal. Air Res. Bd., Advanced Clean Fleets, https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets ("At this time, CARB is evaluating next steps. CARB is not enforcing the existing portions of the ACF Regulation that require a federal waiver or authorization, such as the portions of the ACF Regulation that apply to high priority and drayage fleets. However, not all elements of the ACF Regulation require a federal waiver or authorization. The state and local government fleets portion of the ACF Regulation remains unaffected. Because CARB is committed to reducing air pollution to protect public health, we encourage affected industries to continue reducing their emissions and we look forward to continued partnership in these efforts.").

83 L.A. Times Editorial Board, *Editorial: SoCal air quality officials haven't acted to cut port pollution. They escaped to a desert resort instead*, L.A. Times (May 13, 2024), https://www.latimes.com/opinion/story/2024-05-13/port-pollution-retreat-south-coast-air-quality-management-district.

84 *Id.*

85 S. Coast Air Quality Mgmt. Dist., Proposed Rule 2304: Commercial Marine Ports (adopted Aug. 2, 2024), https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr-2304_commercial-marine-ports_initial-prelim-draft-rl_v2025-02-21_for-pdf.pdf (hereinafter "SCAQMD Proposed Rule 2304").

86 S. Coast Air Quality Mgmt. Dist., Presentation: Working Group Meeting, Proposed Rule 2304 – Commercial Marine Ports (Feb. 28, 2025), https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr2304-wgm-11-presentation.pdf.

87 *Id.*

88 SCAQMD Proposed Rule 2304(e)(1)(C).

89 SCAQMD Proposed Rule 2304(e)(2).

including by assessing the likelihood of their milestones being achieved by their target dates.[90] Once approved, the Ports would submit Plan Implementation Progress Reports annually until all of the elements of the Plans are installed and fully operational.[91]

This effort began in February 2022, when South Coast initiated the rulemaking process for a Ports ISR, which previously focused on container terminals only with a subsequent rulemaking planned for non-containerized terminals; now, the Proposed Rule addresses both container and non-containerized terminals.[92] Rule development has been met with significant controversy. Representatives from the Ports and shipping industry groups have portrayed this kind of potential regulation as too challenging and too costly, and instead have proposed collaborative, voluntary measures involving South Coast.[93] Progress on the Ports ISR has been slowed by what some characterize as a coordinated opposition effort in which "shipping industry lobbyists have been waging war against the ISR concept and have convinced some port officials to join them."[94] At South Coast's 2024 annual retreat, Governing Board Chair Vanessa Delgado expressed that she was "reluctant to impose more regulations on the ports when it will be hard enough for them to meet their existing obligations."[95] Nevertheless, the Ports ISR remains under development and the rulemaking process continues apace. Two in-person community meetings are to be held in late spring or early summer 2025 and the Board is anticipated to consider adopting the rule at a public hearing in the third quarter of 2025.[96]

## C. Ongoing legislative efforts

***Pro-ISR bills can be helpful to direct local air districts to exercise their existing authority or to directly establish statewide ISRs implemented and enforced by state-level environmental agencies.***

Some states and cities are considering the adoption of pro-ISR bills, often inspired by examples from California air districts. New legislation is not needed to provide air districts with the authority to adopt ISRs, because (as discussed in Sections II and III) current law provides sufficient authority to adopt ISRs. Nevertheless, pro-ISR bills can be helpful to direct local air districts to exercise their existing authority in these directions or, as with the New York and New Jersey bills described below, to directly establish statewide ISRs implemented and enforced by state-level environmental agencies. These legislative efforts have been backed by environmental and public health advocates and are attracting the support of lawmakers eager to do more to address harms felt by overburdened communities, especially in light of the e-commerce boom. We discuss four such efforts below, focusing on proposed legislation in New York, New Jersey, California, and New York City.

In New York state, a pro-ISR bill called the Clean Deliveries Act would require the review and control of indirect warehouse emissions, inspired in part by South Coast's existing warehouse rule.[97] The bill establishes an ISR for warehouses with 50,000 or more square-feet, as well as any warehouse owned or operated by any person who in aggregate owns or operates 500,000

90 SCAQMD, Presentation: Proposed Rule 2304 (Feb. 28, 2025), *supra* note 86.
91 *Id.*
92 S. Coast Air Quality Mgmt. Dist., Presentation: Working Group Meeting, Proposed Rule 2304 – Indirect Source Rule for Commercial Marine Ports – Container Terminals (Jan. 24, 2024), https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr2304_wgm-no-6.pdf.
93 L.A. Times Editorial Board, *supra* note 83.
94 Fernando Gaytan, *No More Delays: Clean Up SoCal Port Pollution*, Earthjustice (Sept. 24, 2024), https://earthjustice.org/experts/fernando-gaytan/no-more-delays-clean-up-socal-port-pollution.
95 L.A. Times Editorial Board, *supra* note 83.
96 SCAQMD, Presentation: Proposed Rule 2304 (Feb. 28, 2025), *supra* note 86.
97 The Clean Deliveries Act passed the N.Y. state Senate in 2024 but did not pass the Assembly before the legislative session ended. The bill's sponsors plan to reintroduce it this year and are hopeful that the bill will pass in 2025. *See* N.Y. Senate, *N.Y. Sen. Bill S2127A*, https://www.nysenate.gov/legislation/bills/2023/S2127/amendment/A (titled N.Y. Assem. Bill A1718C in the Assembly); Earthjustice, *In Final Days of Legislative Session, New York Senate Heeds Call for Cleaner Air and Corporate Accountability by Passing the Clean Deliveries Act* (June 6, 2024), https://earthjustice.org/press/2024/in-final-days-of-legislative-session-new-york-senate-heeds-call-for-cleaner-air-and-corporate-accountability-by-passing-the-clean-deliveries-act.


square-feet of warehouse space in the state.[98] The bill directs the state to review emissions from those warehouses and require warehouse operators to choose from an array of compliance options to minimize or mitigate the air pollution that they cause, as well as commission a study of the feasibility, benefits, and costs of implementing low- and zero-emissions areas for air pollution hotspots.[99] The bill states that operators must develop "an air emissions reduction and mitigation plan requiring warehouse operators to minimize pollution" by adopting measures such as "acquiring zero-emission vehicles & charging infrastructure; installing solar panels and/or batteries on-site; considering alternative transportation modes for incoming or outgoing trips where appropriate; or paying additional fees."[100] The bill also provides "enhanced protections for warehouses operating in disadvantaged communities or that impact schools and similar facilities"; requires new warehouse development or re-development projects to obtain a permit; and mandates that warehouse operators report data related to truck traffic and emissions mitigation measures.[101] While the New York bill was largely based on South Coast's Warehouse ISR, there is a novel provision imposing labor protections for the regulated entities' employees.[102]

In New Jersey, a pro-ISR bill called the Warehouse and Port Pollution Reduction Act was introduced in 2024 and remains in committee; advocates hope to pass it by the end of the current two-year 2024-2025 legislative session.[103] The bill requires the state Department of Environmental Protection to "establish an indirect source review program for regulated facilities" with the goal of "reduc[ing] air pollution emissions from regulated facilities to zero by 2050."[104] Proponents of

98 *See* N.Y. Sen. Bill S2127A § 74-0101(2) (2024), https://legislation.nysenate.gov/pdf/bills/2023/S2127A.
99 *See* Press Release, Earthjustice, ElectrifyNY Coalition Launches Mega-Warehouse Watchlist (Dec. 9, 2024), https://earthjustice.org/press/2024/electrifyny-coalition-launches-mega-warehouse-watchlist.
100 *Id.*
101 *Id.*
102 N.Y. Sen. Bill S2127A § 74-0103(2) (2024) (requiring that, "when considering alternatives to truck or van trips for incoming or outgoing trips, the warehouse operator will consult impacted and displaced employees in selecting an alternative to truck or van trips and will only utilize such alternative upon agreement with the impacted and displaced employees" and, if applicable, their "exclusive bargaining unit representative" if "the bargaining unit or terms of the collective bargaining agreement is impacted").
103 N.J. Legislature, *Bill S3546, Session 2024–2025*, https://www.njleg.state.nj.us/bill-search/2024/S3546; Earthjustice, *New Jersey Lawmakers Propose to Cut Air Pollution from Warehouses and Ports* (July 5, 2024), https://earthjustice.org/press/2024/new-jersey-lawmakers-propose-to-cut-air-pollution-from-warehouses-and-ports.
104 N.J. Sen. Bill 3546(3) (2024), https://pub.njleg.state.nj.us/Bills/2024/S4000/3546_I1.PDF.

*Proponents of the New Jersey bill have stated that it "builds upon similar indirect source review efforts in states such as California that are already seeing success in the fight against diesel pollution."*

the bill have stated that it "builds upon similar indirect source review efforts in states such as California that are already seeing success in the fight against diesel pollution, and would provide cleaner air for everyone in New Jersey."[105] The New Jersey bill is written expansively to apply to both warehouses and ports. Specifically, the bill applies to warehouses with "100,000 square feet or more of business area"; warehouses in an overburdened community with "50,000 square feet or more of business area"; and any "facility that generates 50 or more truck trips per day, including a port or any part of a port."[106] The bill requires the Department to carry out air pollution monitoring of certain facilities, especially those in overburdened communities, including "fence-line monitoring," "analysis of satellite data," "monitoring of land use, on-site combustion, truck counts and ages, idling and hoteling duration, and other emissions sources," and "identification of defeat devices" (i.e., devices that inhibit or bypass a vehicle's emissions controls).[107] The bill also requires the "determination of the annual emissions rate for criteria air pollutants from the regulated facility and the expected concentration increases of criteria air pollutants."[108]

In California, the state legislature is considering a bill to clarify that ISRs may be adopted statewide, not only at the local air district level. The bill provides that CARB has the authority to regulate indirect source emissions caused by stationary sources through the adoption of ISRs, but would not directly adopt any ISRs itself.[109] Additionally, for any ISRs adopted by CARB in the future, the bill would require CARB "to establish a schedule of fees on facilities and mobile sources to cover the reasonable costs of implementing and enforcing the regulations."[110] Finally, the bill would "require the state board to establish a statewide reporting program to quantify emissions and annually collect related information from indirect sources of emissions."[111]

105 Press Release, Environmental Defense Fund, New Jersey State Legislators Introduce Bill to Reduce Air Pollution Linked to Warehouses and Ports (July 1, 2024), https://www.edf.org/media/new-jersey-state-legislators-introduce-bill-reduce-air-pollution-linked-warehouses-and-ports.
106 N.J. Sen. Bill 3546(2) (2024).
107 N.J. Sen. Bill 3546(5)(f) (2024).
108 *Id.*
109 Cal. Assem. Bill 914 (2025), https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260AB914; *see* Cal. Energy Transition, *Bill Would Regulate Emissions from "Indirect" Sources* (Mar. 26, 2025), https://www.californiaenergytransition.com/p/bill-would-regulate-emissions-from.
110 Cal. Assem. Bill 914 (2025).
111 *Id.*

Lastly, cities can jump into the ISR mix, too. In New York City, for example, the City Council is considering a proposal to amend the municipal code to require the City-level environmental agency "to promulgate an indirect source rule to reduce emissions attributable to the use of indirect sources, such as warehouses or other structures that attract mobile sources of air pollution, such as vehicles."[112] This effort is still at an early stage, having been introduced in December 2024 and first discussed in a February 2025 committee hearing.

# III. Assessing the Opportunity Presented by Indirect Source Rules

Drawing lessons from these California cases and from consideration of ISRs by other air districts, in this section we assess the opportunities presented by indirect source rules and some of the barriers to their adoption. First, we conclude that ISRs are on very strong legal footing and give our bases for this conclusion. Second, we discuss the flexible and durable nature of ISRs to meet pressing air quality needs. Third, we ask why ISRs are not yet more common, given their legal strengths and the urgent need for additional progress toward achieving air quality across much of the country.

## A. ISRs are on a strong legal footing under federal law, as recognized by federal courts and key agencies including U.S. EPA

The legal authority of states and air districts to adopt ISRs under the federal Clean Air Act is now well established. Section 110 of the federal Clean Air Act authorizes states to include ISRs in their State Implementation Plan (SIP), stating that "any State may include in a State implementation plan . . . any indirect source review program" and the EPA "Administrator may approve and enforce, as part of an applicable implementation plan, an indirect source review program which the State chooses to adopt and submit."[113] The Act goes on to define "indirect source" as "a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution" as well as "parking lots, parking garages, and other facilities subject to any measure for management of parking supply."[114] As affirmed by the Ninth Circuit in its case upholding San Joaquin Valley's Large Development Projects ISR, these Clean Air Act provisions amount to a grant of authority to states and local air districts to regulate stationary sources for the control of mobile source emissions via indirect source rules.[115]

This authority extends to all air districts regardless of attainment status. The Act defines "indirect source review program" to include "such measures as are necessary to assure, or assist in assuring, that a new or modified indirect source will not attract mobile sources of air pollution, the emissions from which would cause or contribute to air pollution concentrations" either "exceeding any national primary ambient air quality standard" or "preventing maintenance of any such standard."[116] Thus, the Act allows for ISRs in areas of nonattainment for one or more NAAQS, as well as in attainment areas

112 N.Y. City Council, *Summary of Int. No. 1130-2024*, https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=7041944&GUID=64DA152F-2B02-4AA3-B716-AF327DD61032.

113 42 U.S.C. § 7410(a)(5)(A) and (B).

114 *Id.* § 7410(a)(5)(C).

115 *Nat'l Ass'n of Home Builders v. San Joaquin Valley Unified Air Pollution Control Dist.*, 627 F.3d 730, 737, 739 n.8 (9th Cir. 2010) (holding the Large Development Projects ISR to be a legally-authorized regulatory tool by which local air districts may regulate stationary sources of air pollution—like construction sites—based on both their direct emissions and the indirect source emissions that they cause, because § 110(a)(5) "is a grant of power to the states," including local air districts).

116 42 U.S.C. § 7410(a)(5)(D).

*Courts have repeatedly held that properly designed ISRs are distinct from vehicle emissions standards and are not federally preempted.*

so long as the ISRs meet the low bar of "assist[ing] in assuring" that the area remains in attainment.[117]

Opponents of ISRs typically argue that such rules are preempted by federal law, often relying on provisions of the Clean Air Act or other federal statutes that limit the ability of states and localities to set emissions standards for, or otherwise regulate, mobile sources. Those arguments have been rejected in all of the cases in which they have, to date, been raised—with courts repeatedly holding that properly designed ISRs are distinct from vehicle emissions standards.

For example, South Coast's adoption of the Warehouse ISR was challenged in federal court by the California Trucking Association (CTA) and Airlines for America (A4A), trade organizations representing trucking companies and commercial airlines, respectively, that are involved in the freight industry.[118] The plaintiffs alleged, among other things, that the ISR was preempted by the federal Clean Air Act (CAA), the federal Airline Deregulation Act (ADA), and the Federal Aviation Administration Authorization Act (FAAAA) for a range of reasons, including that the ISR amounted to an unlawful local emissions standard. In rejecting those arguments, the court held that the Warehouse ISR "does not command that any businesses only purchase vehicles with particular emission characteristics"—which would be preempted by the federal Clean Air Act—because regulated warehouses "can comply with the Rule by taking actions unrelated to the purchase of ZE and NZE trucks" and the factual record shows that "almost 30% of warehouse operators stated that they did not anticipate acquiring or using ZE or NZE trucks or yard trucks to comply with the Rule" at all.[119]

That court also held that the Warehouse ISR is not preempted by the ADA or the FAAAA because the ISR does not meaningfully interfere with the business operations of air carriers; for example, the court held that although the ISR "may increase air carriers' costs of doing business, either when they pay the mitigation fee, acquire or using ZE and NZE trucks, or comply . . . in other ways," "this evidence is insufficient" to establish federal preemption of the ISR unless the ISR "interferes with the relationship between air carriers and their customers"—which it does not.[120]

117 *Id.*
118 *Cal. Trucking Ass'n v. S. Coast Air Quality Mgmt. Dist.*, No. LA CV21-06341 JAK (MRWx), 2023 WL 9622548 (C.D. Cal. Dec. 14, 2023); *see* SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 31.
119 *Cal. Trucking Ass'n*, No. LA CV21-06341 JAK (MRWx), 2023 WL 9622548, at *21, *23.
120 *Id.* at *29.

The court found "no basis to support an inference that these statutes disrupt the balance of federal and state authority over pollution control that was established in the CAA and other statutes."[121] In so holding, the court relied on longstanding precedent in which "the Supreme Court and the Ninth Circuit have already held that the control of air pollution is an activity that is traditionally within the state police power."[122]

Preemption arguments were also rejected by the Ninth Circuit in its decision clearing the way for San Joaquin Valley's Large Development Projects ISR.[123] There, plaintiffs claimed that the Rule amounted to a standard for control of emissions from vehicles, which are preempted by § 209(e)(2) of the Clean Air Act (except in limited circumstances not relevant to the case). The Ninth Circuit upheld the Rule, basing its holding on the fact that "the Rule and the emissions reductions it requires are site-based rather than engine- or vehicle-based" and thus the Rule "regulates an indirect source as a whole."[124] Because the ISR "is targeted at a development site as a whole, its standard or requirement relates to emissions from an indirect source, not from nonroad vehicles or engines," it reasoned. Thus, the Rule is not an emissions standard "relating to the control of emissions from [nonroad] vehicles or engines," and is not preempted by § 209(e)(2).[125]

***The Ninth Circuit has held that because San Joaquin Valley's ISR "is targeted at a development site as a whole, its standard or requirement relates to emissions from an indirect source, not from nonroad vehicles or engines" and is thus not an emissions standard that would be federally preempted.***

The Ninth Circuit emphasized the need to conceptualize emissions from construction equipment in two different ways, depending on who is being targeted by the relevant regulation: as direct emissions caused by and attributable to the construction equipment itself in the context of regulations targeting such equipment, or as indirect source emissions caused by and attributable to the construction site in the context of regulations targeting such sites. The Ninth Circuit concluded that emissions from construction equipment cannot only be viewed through the lens of direct emissions, because doing so would strip all meaning and legal effect from the federal Clean Air Act's § 110(a)(5) authorizing the creation of indirect source review programs by local air districts:

> The Act, by allowing states to regulate indirect sources of pollution, necessarily contemplates imputing mobile sources of pollution to an indirect source as a whole. If an indirect source review program could not attribute the emissions from mobile sources, while they are stationed at an indirect source, to the indirect source as a whole, states could not adopt any indirect source review program. What allows Rule 9510 to qualify as an indirect source review program under section 110(a)(5) is precisely what allows the Rule to avoid preemption under section 209(e)(2): its site-based regulation of emissions. In this way, the two sections do not conflict, but rather fit together neatly like two interlocking puzzle pieces.[126]

In short, the validity of ISRs under federal law has been recognized without exception by federal courts.

121 *Id.* at *29.
122 *Id.* at *20.
123 *Nat'l Ass'n of Home Builders v. San Joaquin Valley Unified Air Pollution Control Dist.*, 627 F.3d 730, 737 (9th Cir. 2010).
124 *Ibid.*
125 42 U.S.C. § 7543(e)(2), Clean Air Act § 209(e)(2); *Nat'l Ass'n of Home Builders*, 627 F.3d at 734 (also explaining that plaintiffs argued that 42 U.S.C. 7543(e)(1), Clean Air Act § 209(e)(1), explicitly preempted states from adopting emissions standards for new engines smaller than 175 horsepower used in construction equipment or vehicles, in addition to 42 U.S.C. 7543(e)(2)'s requirement that states obtain authorization from EPA before setting standards for all other nonroad vehicles or engines).
126 *Nat'l Ass'n of Home Builders*, 627 F.3d at 739.

## B. ISRs are also well founded under California law

Local air districts' authority to regulate indirect sources of air pollution is also very robust under California law. Such authority is expressly codified in multiple provisions of the California Health and Safety Code, including §§ 39002, 40000, 40001, 40702, 40716, 40920, and 40100.6.5. For example, § 40716(a)(1) establishes that a local air district can "adopt and implement regulations to . . . reduce or mitigate emissions from indirect and areawide sources of air pollution" and "[e]ncourage or require the use of measures which reduce the number or length of vehicle trips," while § 42311(g) authorizes local air districts to "adopt, by regulation, a schedule of fees to be assessed on areawide or indirect sources of emissions which are regulated, but for which permits are not issued, by the district to recover the costs of district programs related to these sources." The California Court of Appeal has held that these state laws provided local air districts "specific statutory authority to regulate and assess fees on indirect pollution sources."[127] Moreover, the California legislature has affirmed this authority through a recent enactment: AB 423 (2019) instructs the San Diego County Air Pollution Control District to "consider adopting an indirect source rule" and to publish an exploratory report on ISRs, which shows that the Legislature views ISRs as valid and worthwhile exercises of local air districts' legal authority.[128]

CARB has explicitly recognized local air districts' authority to adopt ISRs, describing the specific duties of local air districts under California law as follows:

> Regional actions are largely controlled by air districts, and include regulations, rules, guidance, and stationary source permitting. The 35 local air districts are generally responsible for addressing criteria air pollutants and toxic air contaminants from industrial and commercial stationary sources, and sources of residential air pollution, such as wood burning. Nearly all stationary equipment that emits into the atmosphere requires an air district permit. Air

127 *Cal. Bldg. Indus. Assn. v. San Joaquin Valley Air Pollution Control Dist.*, 178 Cal. App. 4th 120, 136 (2009).
128 Cal. Health & Safety Code § 40100.6.5(a)(6).

districts also have the authority to adopt transportation control measures and indirect source review rules to help reduce criteria air pollutants and toxic air contaminants from mobile source traffic and congestion.[129]

CARB has also acknowledged the validity of ISRs by adopting community emissions reduction plans (CERPs) by communities proposing the use of ISRs to remedy the environmental injustices that CERPs—and the statute authorizing them, AB 617 (2017)—were created to address. In 2021, CARB approved a CERP by the Portside Community of Barrio Logan, West National City, Logan Heights, and Sherman Heights that proposed studying the potential for an ISR to mitigate indirect source emissions from local warehouses, distribution centers, and port terminals.[130] Similarly, in July 2024, CARB approved a CERP by the International Border Community of San Ysidro and Otay Mesa that proposed a strategy that would "reduce emissions from indirect sources, including heavy-duty vehicles, operating in Otay Mesa and San Ysidro," but stopping short of specifying the exact stationary sources to which the proposed ISR would apply (e.g., warehouses, ports).[131]

***The California Court of Appeal upheld San Joaquin Valley's Large Development Projects ISR, rejecting plaintiffs' arguments that the fee component of the ISR violates California's stringent laws governing regulatory fees.***

Courts in California have interpreted ISR authority to be robust. The California Court of Appeal has upheld the only ISR ever to be reviewed by that court, the San Joaquin Valley's Large Development Project ISR. Importantly, that court assessed and rejected arguments that the fee component of San Joaquin Valley's ISR violates California's stringent laws governing regulatory fees.[132] Plaintiffs in that case made several arguments attacking the ISR, including its fee structure.

First, the plaintiffs alleged that the ISR's fees were not valid regulatory fees but rather were development fees subject to the requirements of the Mitigation Fee Act, which were not fulfilled prior to the ISR's adoption. The court rejected plaintiffs' claim, finding that the ISR's fees conform to the definition of "regulatory fees" in California case law as fees "charged for the associated costs of regulatory activities [that do] not exceed the reasonable cost of carrying out the purposes and provisions of the regulation."[133] The court recognized that San Joaquin Valley "is specifically required to assess fees on indirect sources of emissions in the San Joaquin Valley to recover the costs of District programs related to these sources" per California Health & Safety Code § 40406, which mirrors the definition of "regulatory fees" in relevant case law.[134] The court held that the ISR's fees were not "development fees" subject to the Mitigation Fee Act, clarifying that "'a fee does not become a "development fee" simply because it is made in connection with a development project,'" but rather "approval of the development project must be conditioned on payment of the fee," which it is not in the context of San Joaquin Valley's ISR.[135] The court concluded that the ISR's fees are "regulatory in nature" and "designed to mitigate growth in air pollution from new development in order to achieve and maintain federal air quality standards."[136]

Second, the plaintiffs argued that, "even if the ISR fees qualify as regulatory fees, they are invalid" because "the District did not employ a valid method for creating the fees, did not estimate

129 Cal. Air Res. Bd., *Community Air Protection Program Blueprint 2.0*, *supra* note 11 (emphasis added).
130 Cal. Air Res. Bd., *Portside Environmental Justice Neighborhoods*, https://ww2.arb.ca.gov/capp/com/cip/portside-environmental-justice-neighborhoods.
131 San Diego County Air Pollution Control Dist., *International Border Communities of San Ysidro and Otay Mesa, Community Emissions Reduction Program* (Mar. 2024), https://www.sdapcd.org/content/dam/sdapcd/documents/capp/meetings/int--border/reports/IBCSC%20CERP%2003.29.24.pdf; *see* Cal. Air Res. Bd., *International Border Communities of San Ysidro and Otay Mesa Community Emissions Reduction Program Approval*, https://ww2.arb.ca.gov/resources/documents/international-border-communities-san-ysidro-and-otay-mesa-community-emissions.
132 *Cal. Bldg. Indus. Assn.*, 178 Cal. App. 4th at 125.
133 *Id.* at 130.
134 *Id.* at 126.
135 *Id.* at 131 (quoting *Barratt American, Inc. v. City of Rancho Cucamonga*, 37 Cal. 4th 685, 699 (2005)) (citing Cal. Gov't Code §§ 66001(a–b), 66005(a), 66006(c)).
136 *Ibid.*

or compute the total costs of the ISR program, and does not have a basis for fairly apportioning the fees.[137] The court rejected all of plaintiff's arguments and concluded that the fees were "validly imposed under the police power for the purpose of legitimate regulation," "do[] not exceed the amount required to carry out the purposes and provisions of the regulation," and are "not levied for unrelated revenue purposes."[138] The court found that "the administrative record provides considerable evidence in support of the District's determination" of the "appropriate computer model" by which it would calculate the fees; the District's "estimate[s of] the emission reduction cost through a careful analysis of past and future emission reduction projects"; and the District's "show[ing] that the fees charged are reasonably related to the amount of pollution, or 'burden,' attributable to each new development [because] the more a new development increases air pollution, the more the developer pays."[139]

***The California Court of Appeal emphatically affirmed San Joaquin Valley's legal authority to adopt the Large Development Projects ISR, citing various provisions of the California Health & Safety Code.***

Third, the plaintiffs "assert[ed] that the District lacked the authority to impose these fees" because San Joaquin Valley "exceeded its authority in adopting the ISR regulations."[140] The court emphatically affirmed San Joaquin Valley's legal authority to adopt the ISR, citing California Health & Safety Code § 40716(a)(1) establishing that a local air district can "adopt and implement regulations to . . . reduce or mitigate emissions from indirect and areawide sources of air pollution" and "[e]ncourage or require the use of measures which reduce the number or length of vehicle trips."[141] The court also cited § 42311(g) authorizing local air districts to "adopt, by regulation, a schedule of fees to be assessed on areawide or indirect sources of emissions which are regulated, but for which permits are not issued, by the district to recover the costs of district programs related to these sources," and § 40604, specifically requiring San Joaquin Valley to adopt such a schedule of fees.[142] In short, the court held that San Joaquin Valley "has specific statutory authority to regulate and assess fees on indirect pollution sources," which "is precisely what it did in adopting the ISR rules."[143]

To be sure, California law does include some constraints on the creation and implementation of ISRs to which air districts in California must pay careful attention. None of those statutory constraints, however, poses a serious obstacle to the adoption and enforcement of strong ISRs in California. California Health & Safety Code § 40717.5 mandates, for example, that ISRs "require an indirect source to reduce vehicular emissions only to the extent that the district determines that the source contributes to air pollution by generating vehicle trips that would not otherwise occur."[144] This requirement could allow ISRs to be challenged for overbreadth, based on allegations that an ISR is targeting vehicle trips that would have occurred even if the regulated entity did not exist. Such a legal challenge seems unlikely to succeed so long as an ISR applies only to vehicle trips that undeniably occur for the purpose of visiting the regulated entity, as in the rules adopted by San Joaquin Valley and South Coast.

Section 40717.5 also requires ISRs to "make reasonable and feasible efforts to assign responsibility for existing and new vehicle trips in a manner that equitably distributes responsibility among indirect sources," as well as "take into account the feasibility of implementing" the rule and "consider [its] cost-effectiveness."[145] These requirements mandate due consideration but do

137 *Id.* at 125.
138 *Id.* at 131.
139 *Id.* at 133–35.
140 *Id.* at 125, 136.
141 *Id.* at 136.
142 *Ibid.*
143 *Ibid.*
144 Cal. Health & Safety Code § 40717.5.
145 *Id.* Section 40717.5 also requires that ISRs "not place any requirement on public agencies or on indirect sources that would duplicate any requirement placed upon those public agencies or indirect sources as a result of another rule or regulation adopted pursuant to Section 40716 or 40717," like other ISRs or transportation control measures (TCMs).

not require any particular substantive outcome, so ISRs will likely survive scrutiny based on this provision as long as the enacting air district shows that its ISR was drafted in an open and thorough process that touched on the factors of equitable distribution, feasibility and cost-effectiveness.

And finally, California Health & Safety Code § 40440 contains some potentially limiting language whose meaning is not yet settled. California law explicitly authorizes local air districts to adopt ISRs in areas with "high-level, localized concentrations of pollutants or with respect to any new source that will have a significant effect on air quality."[146] The meaning of the term "high-level, localized concentrations of pollutants" in this context is not defined, and the term "significant effect on air quality" is vaguely defined by statute as "a substantial, or potentially substantial, adverse change in the environment."[147] Law firms representing industry have already begun to suggest that these terms may provide avenues to resist regulation, claiming, for example, that South Coast's Warehouse ISR "potentially rests on shaky legal ground" because "its applicability is not limited to South Coast areas with particularly high localized NOx or DPM concentrations."[148] Notably, however, such claims were not actually pressed in litigation over the Warehouse ISR, and they seem particularly inapt where (as in South Coast) the area covered by the rule is an area of nonattainment. Especially given the widespread nonattainment of at least one of the NAAQS and/or CAAQS in the most-populated areas of California, § 40440's restrained language will not likely limit ISR authority in any significant way.

## C. ISRs are flexible and durable tools that can be used in a variety of ways to help meet air pollution requirements and public health goals

Indirect source rules are especially useful because of their flexibility, durability, and ability to affect mobile source emissions—which, as noted above, local air districts often cannot regulate directly. These characteristics make them an increasingly attractive choice to advocates, regulators, and other stakeholders as a means to meet elusive air quality goals and protect local communities from public health harms.

As illustrated by the California examples described above, ISRs can take myriad forms. Many types of programs to reduce mobile source emissions from a stationary site can be incorporated into an ISR, so long as the rule regulates a stationary source, is directed at that source as a whole, and avoids federally preempted forms of control. Such programs could include:

- whole-site pollution reduction mandates;
- programs to encourage commuting to worksites by public transit, carpooling, biking, walking, or work-from-home arrangements, including by providing preferential parking for EVs and carpool vehicles;
- programs to install and support ZEV infrastructure on site, such as EV chargers;
- programs that reduce truck idling or other emissions-intensive practices on site; and
- programs that present a flexible menu of compliance options that include these ideas or others.

The ability to charge fees provides another important flexibility. All of the California ISRs on the books today rely at least in part on a fee element that serves at least two functions: It gives

146 *Id.* § 40440.

147 Cal. Pub. Res. Code § 21068.

148 Michael S. McDonough et al., Pillsbury Winthrop Shaw Pittman LLP, *Southern California's New Indirect Source Rule for Warehousing Operations Tests Jurisdictional Waters* (June 29, 2021), https://www.pillsburylaw.com/en/news-and-insights/southern-california-rule-warehousing-operations-test-jurisdictional-waters.html.

regulated sites additional choice in how to meet compliance obligations, and it raises money for the enacting district to spend on additional pollution reduction projects.

Critically, ISRs can be used to target both new and existing sources of air pollution. This was affirmed in litigation over the South Coast Warehouse ISR, in which the court rejected plaintiffs' argument that the federal Clean Air Act's indirect-source-review provision—42 U.S.C. § 7410(a)(5)(D)—only allows ISRs to regulate "new or modified" sources of indirect source emissions. The court held that the Act establishes that "the set of permissible rules 'includ[es]' regulation of new and modified indirect sources," but does not limit ISRs from being applied to existing sources of indirect source emissions as well.[149] The court cited the Act's legislative history declaring that the indirect-source-review provision allows for ISRs to apply to all sources of indirect source emissions: "'An indirect source review program is one which provides for the review of new, existing or modified indirect sources.'"[150]

For these and other reasons, ISRs can be robust tools to address the urgent needs of environmental justice and frontline communities. This is especially true in California, where local air districts have wide-ranging authority to advance environmental justice (EJ) by protecting public health in frontline communities—those impacted first and worst by poor air quality.[151] Pursuant to AB 617 (2017), local air districts are expressly required to address air quality concerns in overburdened communities, and collaborate with CARB on emissions reporting, monitoring, and plans to reduce exposures and emissions in those communities through Community Emission Reduction Programs (CERP).[152] Local air districts are uniquely empowered to pursue EJ because they have the legal authority to "establish stricter standards than those set by law," including the federal and California Clean Air Acts, or those set "by the state board [(CARB)] for nonvehicular sources" of air pollution.[153] This decentralized approach has the benefit of allowing motivated local air districts to adopt regulatory approaches like ISRs, which can help combat local environmental injustices and advance efforts to meet statewide air quality goals.

***In California, local air districts have wide-ranging authority to advance environmental justice (EJ) by protecting public health in frontline communities—those impacted first and worst by poor air quality.***

Not surprisingly, then, EJ organizations have made ISRs a top advocacy priority, particularly in the South Coast Air Basin. South Coast has acknowledged that "all six of the AB 617 communities [i.e., frontline communities] within [its] jurisdiction identified impacts from neighborhood truck traffic or diesel mobile sources as an air quality priority for their respective communities."[154] Environmental and EJ groups celebrated the passage of South Coast's Warehouse ISR in 2021, acknowledging that "the majority of [regulated] warehouses are not placed in areas where online shopping is done, meaning those who are closest to warehouses disproportionately suffer negative health impacts and are the most physically harmed by the pollution pumped out of diesel equipment and trucks" that the ISR aims to mitigate.[155] Environmental justice advocates representing communities living near rail yards that emit diesel particulate matter, NOx, and other pollutants were also a key force behind the adoption of South Coast's Freight Rail Yards ISR in August 2024.[156]

149 *Cal. Trucking Ass'n v. S. Coast Air Quality Mgmt. Dist.*, No. LA CV21-06341 JAK (MRWx), 2023 WL 9622548, at *24 (C.D. Cal. Dec. 14, 2023).
150 *Ibid.* (quoting H.R. Conf. Rep. 95-564, at 126 (1977), reprinted in 1977 U.S.C.C.A.N. 1502, 1507).
151 "[Local air] districts shall adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards in all areas affected by emission sources under their jurisdiction," and "district rules and regulations may . . . provide for the prevention and abatement of air pollution episodes which . . . cause discomfort or health risks to, or damage to the property of, a significant number of persons or class of persons." Cal. Health & Safety Code § 40001.
152 Assem. Bill 617, 2017 Reg. Sess., Ch. 136, 2017 Cal. Stat., https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB617.
153 Cal. Health & Safety Code § 41508; U.S. EPA, *Criteria Air Pollutants* (Oct. 22, 2024), https://www.epa.gov/criteria-air-pollutants.
154 SCAQMD, *2024 WAIRE Program Annual Report*, *supra* note 50, at 44.
155 Press Release, Sierra Club, Earthjustice, People's Collective for Environmental Justice, and Partnership for Working Families, Southern California's Air District Votes to Electrify & Clean Up Air Pollution from Mega Warehouses (May 7, 2021), https://www.sierraclub.org/press-releases/2021/05/southern-california-s-air-district-votes-electrify-clean-air-pollution-mega.
156 Press Release, SCAQMD, South Coast AQMD Governing Board Adopts Rail Yards Indirect Source Rule, *supra* note 75; *see* SoCal Communities for AQMD Action, Railyards, *supra* note 76.

As the Warehouse and Freight Rail Yards ISRs show, these tools can help local air districts address harmful emissions from the goods movement industry—a task that is becoming more urgent in light of changes to that industry and to retail sales. As e-commerce continues to overtake retail, fueled by rapidly-advancing logistics technology, the health of communities that live near these goods movement nodes suffers. This dynamic was articulated in the San Diego County Air Pollution Control District's exploratory report on ISRs, which concluded that "[t]he widespread emergence of online purchasing and rapid delivery services is contributing to a strong demand for warehouse space near populated areas, heightening concerns over the potential impacts on air quality and public health [that] emphasize the need for actions to help minimize the public health impacts caused by freight operations."[157] ISRs can help address these concerns.

*ISRs provide a locally-controlled and relatively durable approach to reducing important sources of emissions at a time when other methods of controlling mobile source emissions are under threat of federal rollback and are being challenged in litigation.*

Finally, it is worth noting that ISRs provide a locally-controlled and relatively durable approach to reducing important sources of emissions at a time when other methods of controlling mobile source emissions are under threat of federal rollback and are being challenged in litigation. The success of ISRs is not dependent on the strength of federal vehicle emissions standards or even on the status of California's own emissions standards for vehicles. Unlike California's vehicle emissions standards, ISRs do not require U.S. EPA approval of a waiver of preemption under the Clean Air Act. Nor do they require incorporation by U.S. EPA into a SIP. ISRs may be pursued, enacted, and enforced regardless of the outcome of current controversies over federal and state emission standards.

## D. Why are ISRs not more common? What are the main barriers to their adoption?

Given the flexibilities and benefits of ISRs, along with the undeniable need by many local air districts to do more to come into attainment of air quality standards, why aren't ISRs more prevalent? We can see at least a few reasons why ISRs have not yet gained widespread adoption: They remain relatively new tools; they can be resource-intensive to develop and implement; they can be costly to comply with; and, perhaps as a result of those characteristics, they remain politically controversial in some arenas.

First, ISRs are still relatively new and innovative regulatory approaches. Though authority for ISRs has long existed, it was not until 2005 that the San Joaquin Valley promulgated its pioneering Large Development Projects ISR, driven by extreme local air quality challenges and a dearth of strategies to meet those challenges. Litigation over the validity of that pathbreaking ISR played out in the courts through at least 2010, when the Ninth Circuit upheld the rule. It is perhaps not surprising that other air districts might have held off pursuing ISR strategies until seeing how that court challenge and rule implementation fared, taking lessons from San Joaquin Valley about what worked, what didn't, and why.

Second and relatedly, ISRs can be relatively resource-intensive to develop, implement, and enforce. Capacity needs include staff time, legal expertise, and, depending on an ISR's structure, often an ability to reliably model whether and how emissions from regulated sites would be reduced by rule implementation—and then to assess whether, in fact, emissions have been reduced. Modeling needs, in particular, can be intensive, especially if ISRs are structured to require whole-site emission reductions by some percentage as compared with baseline conditions (as the early ISR rules have been).

For example, San Joaquin Valley's Large Development Projects ISR requires new construction or expansive reconstruction projects to reduce NOx and PM10 emissions by 20% and 45%, respectively, during the construction stage and by 33.3% and 50% during the operation stage "when compared

157 SDCAPCD Report, *supra* note 13, at 3.

to unmitigated project baseline emissions" (i.e., the projected emissions that would occur if the developers took no environmentally-protective measures).[158] San Joaquin Valley employs a case-by-case approach to calculate each project's compliance obligation (the amount of NOx and PM10 emission reductions required by the ISR). San Joaquin Valley uses the California Emissions Estimator Model (CalEEMod) to *individually* calculate the projected baseline emissions of *each* new construction or expansive reconstruction project in the district—a practice that might be less feasible if attempted by mostly-urban districts with many more large development projects.[159] At least one large urban air district in California has concluded that a similar approach would not be feasible in its region because the approach is too resource-intensive, and would involve "individual project-by-project reviews of all types of new land development, which is well outside the scope of [the district's] current measure and programmatic capabilities."[160]

Similarly, the Bay Area Air Quality Management District (BAAQMD) has taken initial steps to assess a potential ISR for its district.[161] BAAQMD's stationary source committee predicted that it would require 3 full-time employees "plus significant legal support" working over three years to develop a rule similar to South Coast's Warehouse ISR, but did not include in its presentation how those predictions were made.[162] The committee also predicted "challenges related to existing and future indirect source efforts, including both legal and technical implementation challenges," but did not elaborate on what those challenges were in its presentation.[163]

A third reason why ISRs may not yet be common relates to costs of compliance. Depending on an ISR's structure and requirements, ISRs can require a relatively high cost of compliance for regulated industries, especially if the rule is likely to induce fleets to adopt ZEV vehicles, which have a high initial cost of acquisition—though, notably, the predicted costs of such rules are still typically outweighed by their societal cost savings. At least one local air district that has yet to adopt ISRs has emphasized the cost of compliance as a factor to consider before adoption. The San Diego County Air Pollution Control District (SDCAPCD) has researched, but not yet adopted, ISRs. The district released a report in May 2023 titled "Options and Considerations for Reducing Indirect Source Emissions at Warehouses, Distribution Centers, and Ports."[164] The district's report "evaluated potential strategies to control and reduce indirect source emissions from warehouses, distribution centers and ports," and elicited "public input and direction from the Governing Board."[165] The district acknowledged that, just like other California districts that have adopted ISRs, it "does not yet meet the federal or State ozone standards or the State fine PM [PM2.5] standard and must further reduce air pollution to reach attainment."[166]

SDCAPCD's staff concluded that adopting an ISR similar to South Coast's Warehouse ISR is "feasible and could be successfully implemented in San Diego County, providing much-needed emission reductions from the freight sector," but noted that "such a rule is predicted to be the costliest measure the District has ever enacted in terms of the compliance costs per pound of reduced emissions" in relative terms, given the District's history of passing highly cost-effective

158 SJVAPCD Rule 9510, § 6.0.
159 SJVAPCD, *Frequently Asked Questions Rule 9510 Indirect Source Review (ISR)*, *supra* note 27; *see* CAPCOA, *California Emissions Estimator Model*, *supra* note 27
160 SDCAPCD Report, *supra* note 13, at 9.
161 Bay Area Air Quality Mgmt. Dist., *Stationary Source Committee Update to the 2024-2025 Regulatory Agenda* (Sept. 11, 2024), https://www.baaqmd.gov/~/media/files/board-of-directors/2024/ssc_presentations_091124_op-pdf.pdf.
162 *Id.*
163 *Id.*
164 SDCAPCD Report, *supra* note 13.
165 *Id.* at 2.
166 *Ibid.*

rules like the 2020 NOx rules for small and medium boilers, and stationary engines, which were all achieved with cost-effectiveness values under $7 per pound of emissions reduced—an extremely low cost.[167] The staff report concluded that the technological feasibility of adopting a warehouse ISR in San Diego County is bolstered by the ever-increasing availability of heavy-duty zero-emission vehicles as well as San Diego County's relatively "smaller population of warehouses with at least 100,000 sq. ft. of indoor floor space (approximately 240 [in SDCAPCD] vs. 3,300 in South Coast)."[168] Relative to some of SDCAPCD's other NOx-related rulemakings, the staff report predicted that the potential warehouse ISR will have significantly higher $-per-pound cost-effectiveness values than those rules, with a cost-effectiveness value of $62 to $116 per pound of NOx reduced compared to the <$7 per pound cost-effectiveness achieved by those 2020 NOx rules.[169]

*Most fundamentally, we suspect that the main barriers to adopting ISRs are political, fed by a combination of opposition to new regulation by influential industries; regulatory capacity constraints and risk aversion; and continuing questions about whether ISRs are necessary in light of other approaches to controlling emissions.*

That said, the staff report still found the potential warehouse ISR to be cost-effective in absolute terms, because "the resulting public health benefits would be expected to outweigh the potential costs of compliance by a ratio of up to 2.5:1, like South Coast's rule," and avoid as many as "16 premature deaths, 317 asthma attacks, and 1,092 lost workdays" over a ten-year period.[170] The staff report also noted that the potential warehouse ISR would have a cost-effectiveness value "comparable" to those of some "mobile source regulations recently adopted by CARB" as well as those of some of SDCAPCD's own incentive funding programs that subsidize "voluntary adoptions of zero-emission equipment" with cost-effectiveness values reaching up to $261 per pound of NOx.[171] The staff report emphasized that the costs of rule development and administration could be recovered through imposing fees on regulated warehouses, and would include a one-time rule development cost of $250,000, a one-time web portal development cost of $200,000, and an annual web portal maintenance cost of $25,000 borne by SDCAPCD; the cost of two additional staff members to administer the program; and annual reporting obligations costing regulated warehouses approximately $1,000 per year.

Lastly, and most fundamentally, we suspect that the main barriers to adopting ISRs are political. Political difficulties are fed by a combination of opposition to new regulation by influential industries; regulatory capacity constraints and risk aversion; and continuing questions about whether ISRs are necessary in light of other approaches to controlling emissions. Some of these dynamics are illustrated by San Diego's consideration of how to reduce emissions from its port. SDCAPCD has expressed a preference for decreasing indirect source emissions at the Port of San Diego via a voluntary memorandum of understanding (MOU) in which the Port agrees to implement "emissions reduction, facilitative, and health-protective mitigation measures," instead of adopting a Ports ISR like that currently being developed by South Coast.[172] In support of this preference, SDCAPCD's staff has noted the litigation risks and resource burdens that would accompany a port ISR.[173]

We expect, however, that political will for more robust use of ISRs is likely to grow significantly in the coming months and years, and for good reason: ISRs are more well developed than ever, and alternatives to ISRs are becoming less certain. Existing ISR implementation is creating a

167 *Id.* at 11, 13.
168 *Id.* at 12.
169 *Id.* at 14.
170 *Id.* at 12–13.
171 *Id.* at 14–15; San Diego County Air Pollution Control Dist., *Clean Air For All: Moyer/FARMER/CAPP Grants*, https://www.sdapcd.org/content/sdapcd/grants/moyer.html.
172 SDCAPCD Report, *supra* note 13, at 19.
173 *Id.* at 18–19.

path for other air districts to walk and is showing that these rules are viable and can be effective. Recent case law has put ISRs on very strong legal footing, reducing litigation risks for districts that adopt such rules. Simultaneously, alternative approaches to reducing these targeted emissions are looking less effective and reliable, as both mobile source emissions standards and voluntary approaches come under fire or underperform.[174] For these reasons, advocates and community members are continuing to build the case for ISRs in the many communities where new, more robust regulation is needed and warranted to meet federal and state air quality mandates.

# IV. Recommendations

We conclude that ISRs are legally sound tools that air regulators could adopt widely and swiftly in order to help address mobile sources of pollution that might otherwise be difficult to abate. ISRs have the potential to empower air districts to better comply with the federal Clean Air Act and related state statutes, meet ambitious emission reduction targets, and pursue environmental justice by foregrounding the needs of directly affected communities living near stationary sources of air pollution that cause significant indirect emissions. With federal and California emission standards for cars, trucks, and other mobile sources under current threat of rollback, these stationary source tools may become even more important.

*Recent case law has put ISRs on very strong legal footing, reducing litigation risks for districts that adopt such rules. Simultaneously, alternative approaches to reducing these targeted emissions are looking less effective and reliable, as both mobile source emissions standards and voluntary approaches come under fire or underperform.*

In order to advance the adoption of ISRs to better regulate indirect source emissions caused by stationary sources, we make the following recommendations.

- Most fundamentally, **air districts** inside and outside of California should consider adopting ISR tools more widely than they have done to date. These tools can be especially useful for addressing air pollution hotspots that occur because of stationary sources that attract significant mobile source activity, such as warehouses, transit nodes, ports, major employment centers, and other major traffic-inducing developments. Notably, such air pollution hotspots occur in districts across the country regardless of air quality attainment status; thus, ISRs can be useful in both attainment and nonattainment areas. ISRs can also be effective in controlling pollution in both the construction and operational phases of stationary source projects, and can be applied to both existing and new sources. They may be adopted at a variety of jurisdictional levels: by cities, local air districts, and states.

- Because ISRs are a relatively underutilized regulatory tool, air districts often will not yet have much in-house expertise and experience in their development and implementation. **State environmental agencies** and others should support air district capacity to develop, implement, and enforce these rules. State agencies could, for example, provide direct monetary, technical, or legal resources for rule development; create model rules to serve as templates across multiple air districts; and develop and make available to local air districts the technical modeling tools needed to assess compliance with ISRs. Some of these forms of support could also, or instead, be

174 For example, the prolonged delay in development of South Coast's Ports ISR is attributable, in part, to failed attempts to negotiate an MOU with the Ports of L.A. and Long Beach, which may caution against SDCAPCD pursuing the same strategy with the Port of San Diego. Reviewing the saga of the South Coast Ports ISR, the L.A. Times Editorial Board has criticized South Coast's Governing Board for having "chosen to delay and waste time in fruitless talks rather than impose regulations." L.A. Times Editorial Board, *supra* note 83.

provided by **expert groups, nonprofits, or academic institutions**. For example, San Joaquin Valley relied heavily on the California Emissions Estimator Model (CalEEMod) in developing and implementing its ISR. That model allows the district to easily and reliably calculate the projected baseline emissions of each new construction or reconstruction project. State environmental agencies and universities, especially public universities, could help develop similar modeling tools for other states.

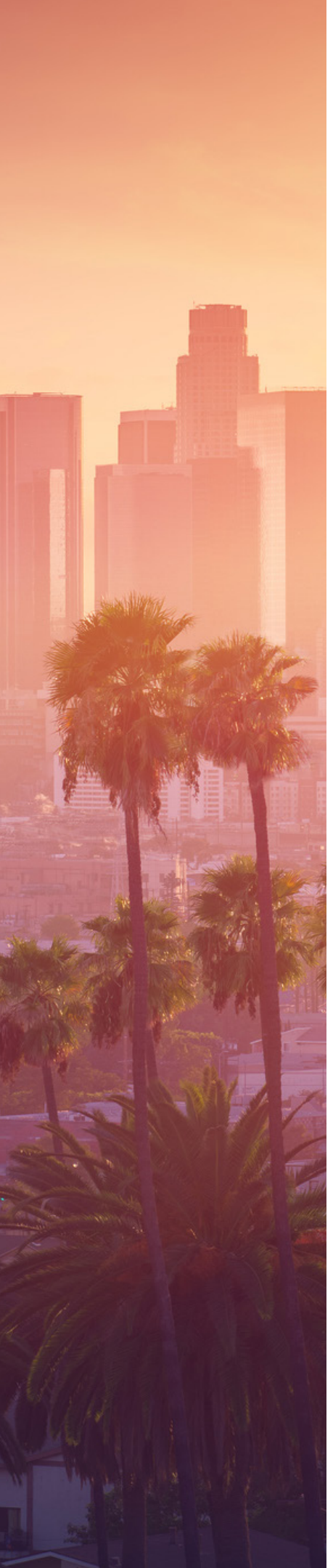
*ISRs are effective and well-tested regulatory tools that deserve to be used more often and more robustly by local air districts and state environmental agencies across the country.*

- **State legislatures and local governing bodies** can weigh in to advance the adoption of ISRs to help meet air quality goals. The bills currently under consideration in the New York and New Jersey legislatures, as well as in the New York City Council, show how political leaders can encourage, or require, environmental regulators to do more with the set of regulatory tools addressed in this paper. State legislatures should also consider whether it would be useful to clarify aspects of state law, where that law may be unclear with respect to the authority for ISRs. For example, in California there is some question about whether the state's Air Resources Board may adopt a statewide ISR, and under what circumstances. The California legislature could easily resolve this question in favor of statewide authority, as proposed in AB 914 (2025), which would ease the burden on local air districts (but which might, of course, raise questions of local control).

- **Local communities, advocates, and other stakeholders** can educate community members about ISRs and be vocal in encouraging their adoption. The political will to adopt such rules has not often been robust; that is likely one reason why ISRs have not been more widely embraced. As noted above, however, ISRs are now well established as effective regulatory tools, and at the same time alternatives to ISRs seem potentially less durable than ever. These dynamics could lead to a more widespread use of ISRs due to being better understood, especially in districts with significant hotspot pollution caused by mobile sources.

# V. Conclusion

ISRs are effective and well-tested regulatory tools that deserve to be used more often and more robustly by local air districts and state environmental agencies across the country. ISRs can help state and local air regulators meet clean air and public health goals and mandates, especially in areas where air quality is impeded by under-controlled mobile sources of local air pollution, such as in neighborhoods close to warehouses, ports, and other mega facilities with significant mobile source activity.



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## ABOUT THE EMMETT INSTITUTE ON CLIMATE CHANGE AND THE ENVIRONMENT

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