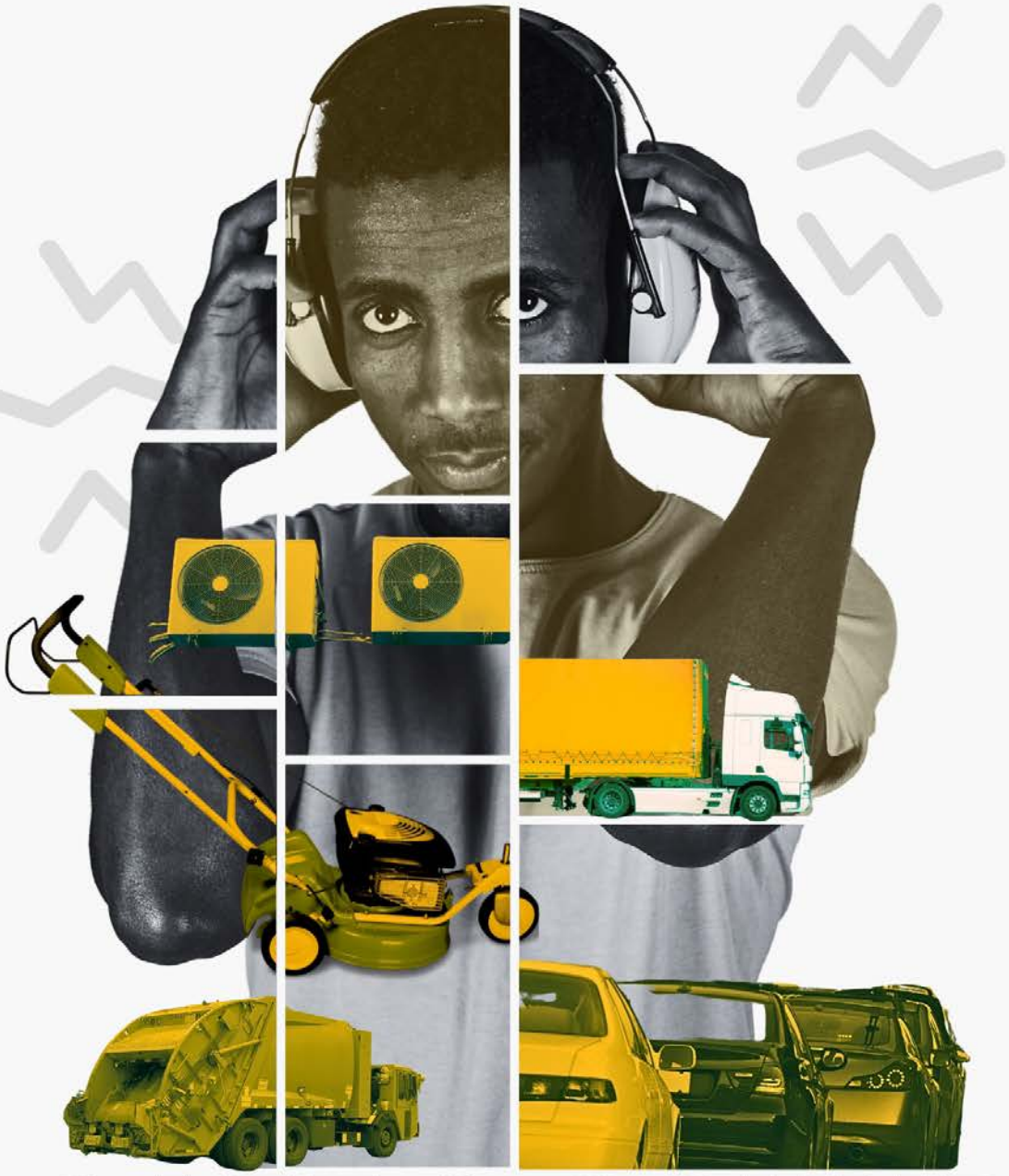

# SAFE & SOUND

## HOW THE ENVIRONMENTAL PROTECTION AGENCY CAN PROTECT US FROM DANGEROUS NOISE

**WILL DOBBS-ALLSOPP | JAMES GOODWIN | SASHA KLIGER**

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GOVERNING FOR IMPACT

Center for Progressive Reform

# Safe and Sound: How the Environmental Protection Agency Can Protect Us From Dangerous Noise


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Corporate and other entrenched interests devote vast resources to pursuing their policy agendas — resources that advocates representing everyday, working Americans often lack. This imbalance holds grave implications in the regulatory sphere, where successful advocacy requires access to expertise about agency laws and the rulemaking process. Governing for Impact seeks to fill this gap at the federal level. Through collaboration with partners, we help drill down on the nitty gritty details of executive branch policy development and implementation. Learn more at https://governingforimpact.org/.


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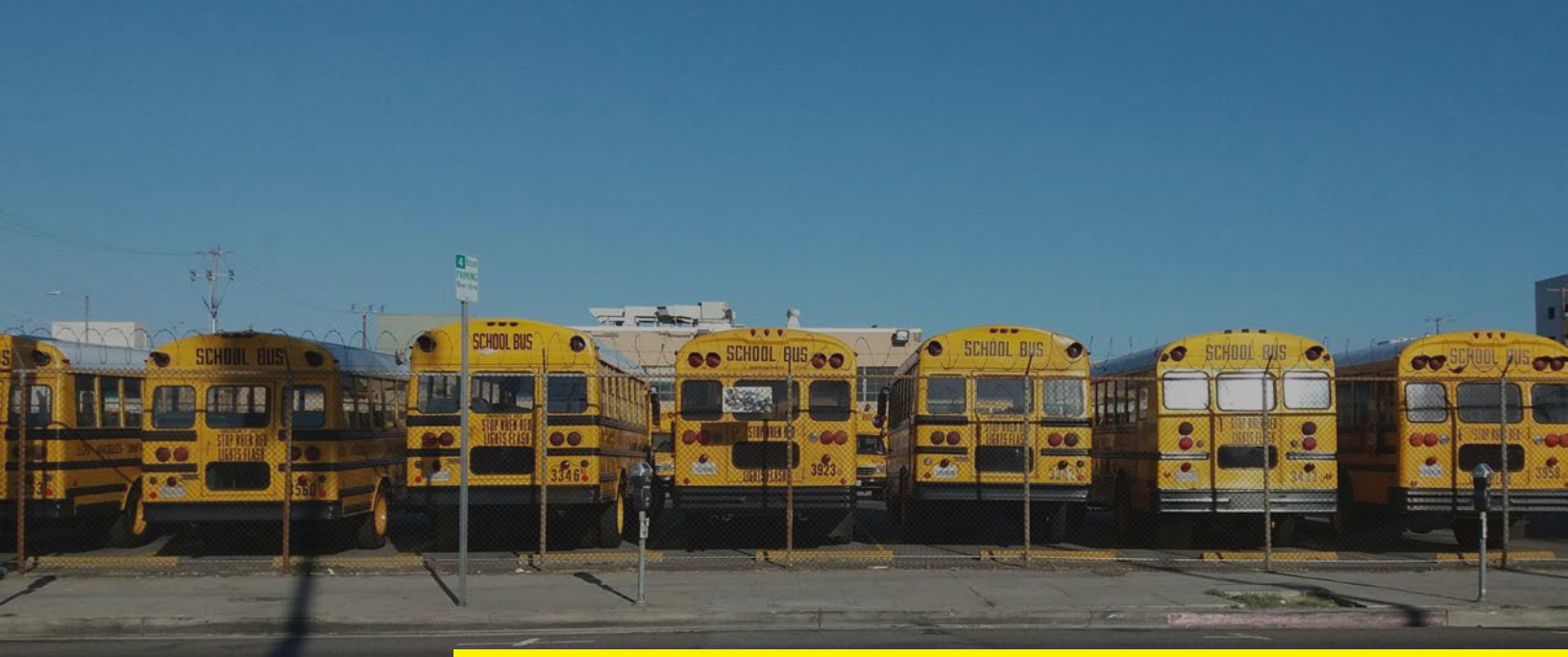



# Executive Summary

Many mistake noise for an everyday annoyance. Yet for several decades now, scientific research has clearly established a link between excessive noise and various public health harms, including preventable hearing loss, heart disease, stroke, and hypertension. As the title of a recent New York Times summary of the dangers of noise pollution puts it, "Noise Could Take Years Off Your Life." Of even greater concern, research is starting to reveal the extent to which low-wealth communities and communities of color bear a disproportionate share of harmful noise pollution.

Lawmakers long ago recognized the harms posed by excess noise. As it did with the Clean Air Act for air pollution and the Toxic Substances Control Act for toxic chemicals, Congress enacted a statute — the Noise Control Act (NCA) of 1972 — to empower the U.S. Environmental Protection Agency (EPA) to limit harmful noise emissions. But though the law remains on the books, the agency has not enforced it since the Reagan administration stripped the relevant EPA office of its funding in the early 1980s.

This report calls for reviving the EPA's noise control mandate by using existing EPA funding or appropriating new monies. And while the NCA primarily aims to reduce noise emissions, it simultaneously offers the potential to secure strategic ancillary benefits — particularly on the climate and worker safety fronts.

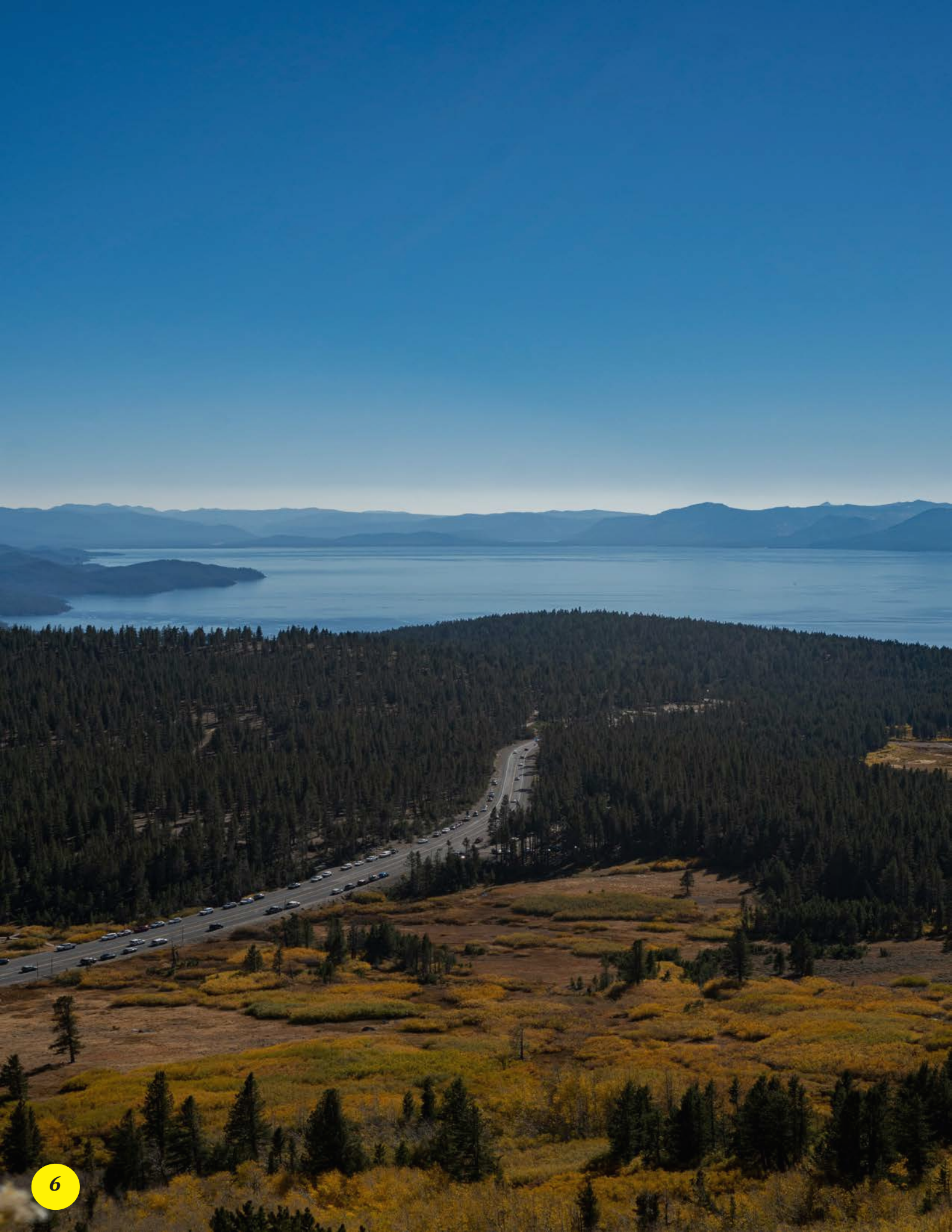
After providing background on the health harms of noise pollution and the NCA's history, the report outlines the statute's core authorities. The report concludes by proposing a policy agenda for a reinvigorated EPA noise program:

- **Regulatory agenda.** In certain situations, the NCA empowers the EPA to prohibit the sale of new commercial products that do not meet best-in-class noise reduction technology. Priority actions might include setting new or strengthened noise emissions standards for the following sources of noise, which would likely also yield impressive carbon emissions reductions given advances in electrification technologies:

    - Portable air compressors
    - Gas-powered lawn equipment
    - Diesel-powered buses
    - Diesel-powered trucks, including garbage trucks and snow plows
    - Crypto mining

- **Labeling and low-emissions product development.** The EPA should work to revive its labeling and low-emissions certification programs. As it reinstates these programs, officials should take advantage of the opportunity to consider important reforms, such as adopting a more intuitive suite of sound measurement tools in place of decibels.

- **Research agenda and technical assistance.** As it develops and coordinates research on the impacts of excessive noise and solutions to address them, the EPA should ensure that this knowledge is distributed equitably and is informed by meaningful public engagement, especially from members of structurally marginalized and other noise-impacted communities. It should also leverage its expertise to support efforts by local and state governments to address excessive noise emissions.

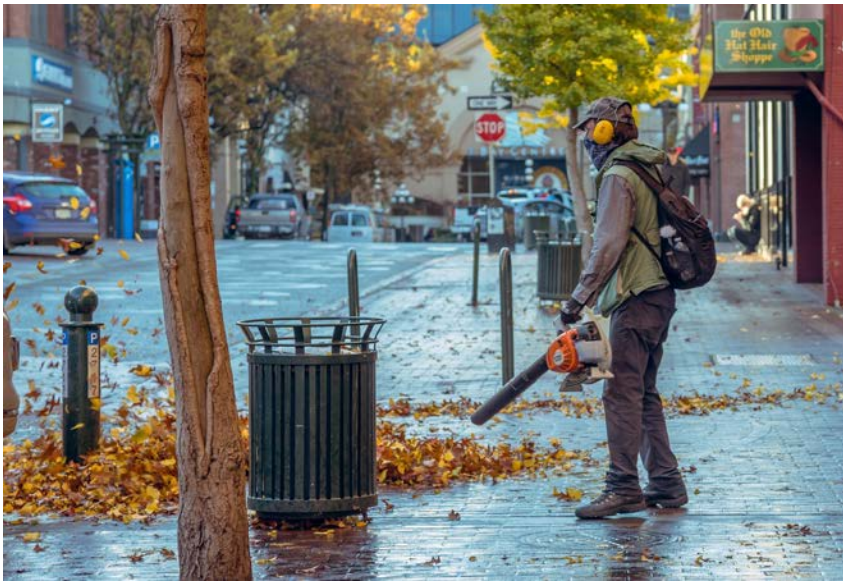


# Introduction

In 2019, Patricia Callahan, a middle-aged woman who suffers from post-traumatic stress disorder (PTSD) and clinical depression, moved to Murphy, a rural town along the edge of the Appalachian Mountains of western North Carolina, in search of peace and quiet. Not long after, a cryptocurrency mine started operating about a quarter of a mile away from Patricia's home. The mine, and the constant loud droning whir it generates, has completely shattered her life. "It's more than just my hearing. It affects my whole body, triggering PTSD symptoms," she told a reporter with *Popular Mechanics*.[1]

Patricia is not alone. The mine, operated by California tech firm PrimeBlock, has thrown the entire community of Murphy into disarray. Nearly 800 households are located within a mile of the mine, which is really just a collection of prefabricated sheds filled with large computers that must be constantly cooled by enormous industrial-sized fans. These fans are extremely loud, generating up to 95 decibels of noise — about as loud as a motorcycle. Residents have reported trouble sleeping and new cases of anxiety and depression.[2]

Many mistake noise for an aesthetic harm — the neighbor's leaf blower, the conventional thinking goes, is mostly just an annoyance. But, as a recent *New York Times* investigation, "Noise Could Take Years Off Your Life. Here's How," documents, excessive noise poses grave threats to human health.[3] Individuals exposed to even common levels of environmental noise can suffer both auditory (*e.g.*, loss of hearing) and non-auditory (*e.g.*, increased risks of heart disease, stroke, and hypertension) health harms. According to the American Public Health Association, the health of more than 100 million Americans is at risk.[4]



As the story of Murphy shows, excessive noise emissions represent a significant threat to the general welfare not unlike that of more "conventional" environmental and public health harms, such as toxic air pollution or hazardous chemicals. Undue and harmful noise affects communities across the socioeconomic spectrum. But, like traditional environmental and public health threats, excessive noise pollution disproportionately harms structurally marginalized communities. A growing body of research consistently shows that low-wealth communities and communities of color across the United States are more likely to be exposed to sources of noise pollution, and thus suffer the attendant harms at disproportionate rates.

The good news is that Congress long ago recognized the harms that excess noise poses. As it did with the Clean Air Act for air pollution and the Toxic Substances Control Act for toxic chemicals, Congress enacted a statute — the Noise Control Act (NCA) of 1972 — to empower the U.S. Environmental Protection Agency (EPA) to limit harmful noise emissions. The statute, bolstered by a 1978 amendment, establishes a comprehensive federal regulatory framework for addressing noise pollution. In certain cases, it allows the EPA to prohibit the sale of dangerously loud products that do not comply with best-in-class noise reduction technology. It also enables the EPA to serve as a vital hub for noise research, education, and technical assistance initiatives.

In the era of climate crisis, the NCA offers a powerful suite of regulatory authorities to help decarbonize certain difficult-to-abate sectors. The NCA empowers (and sometimes obliges) the EPA to prohibit the sale of new products that cannot meet noise emission standards, established by taking into account the "best available technology." Today, the most cost-effective quiet technologies are often electrified alternatives to products traditionally run on loud, internal combustion engines, which of course also emit carbon dioxide and other dangerous pollutants.

To take one example discussed below, noisy fossil-powered lawn equipment emits 30 million tons of carbon dioxide each year — the equivalent of the annual emissions generated by 6 million cars.[5] Using the NCA, the EPA could begin shifting this and other industries to quieter and zero-emission electric alternatives.

The bad news is that the NCA has gone almost entirely unenforced for more than four decades. Throughout the 1970s, the EPA office responsible for implementing the NCA, the Office of Noise Abatement and Control (ONAC), worked dutifully to establish noise standards, coordinate research, and help fund noise reduction initiatives in communities across the country. But in the early 1980s, the ONAC lost its funding — a victim of the Reagan administration's broader deregulatory agenda. Ever since, federal noise abatement efforts have effectively ceased while the public health harms of our noisy environments have been allowed to mount.

Though the office has sat unfunded for decades, Congress has never repealed the NCA itself. A growing movement, led by public health nonprofits such as Quiet Communities and Utah Physicians for a Healthy Environment, hopes to revive the ONAC. Notably, Quiet Communities recently filed a lawsuit that seeks to compel the EPA to carry out its "nondiscretionary duties" under the NCA.[6]

But lawmakers and federal officials need not depend on the courts to right this wrong. Instead, this report argues that Congress should use the appropriations process to revive the NCA — much as it recently did in a similar context with the Federal Energy Regulatory Commission's Office of Public Participation. (The EPA should also assess whether it can tap existing funding to pursue NCA activities.)

The report begins by reviewing the important policy implications of excessive noise pollution. Next, it reviews the history of the NCA's early implementation and provides an introduction to the statute's key provisions. Finally, it proposes a policy and research agenda for a newly reconstituted ONAC, with an eye toward potential ancillary climate and worker safety benefits.

# A Note on Decibels

Decibels, and in particular "A-weighted decibels," are the prevailing unit of measurement for sound, but they are not easy to understand or sufficiently informative:

*Decibels don't add up.* A 40 decibel sound is not twice as loud to the human ear as a 20 decibel sound, but four times as loud; and an 80 decibel sound is 16 times as loud as a 40 decibel emission. That's because decibels follow a logarithmic scale rather than a linear scale (see: inches or liters), and don't directly measure perceived loudness (technically, they measure energy). One consequence is that, especially when discussing how to mitigate high levels of noise emissions, absolute decibel reductions that to our linearly trained minds appear modest are much more significant than they appear. In general, a 10 decibel increase represents a doubling in loudness to the human ear.[7]

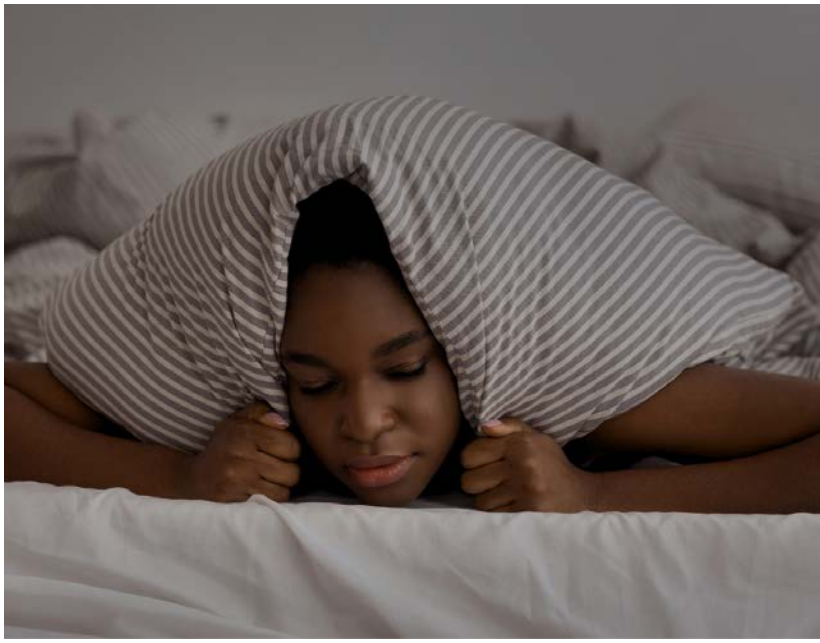
*Not all sounds "sound" the same.* Research suggests that different kinds of noise emissions (*e.g.*, those involving sharp fluctuations, such as intermittent trains, or strong low frequency components, as in gas leaf blowers) appear to have different physiological effects in different contexts. The steady thrum of an air conditioner differs from the staccato bursts of firecrackers, which differ from the whine of an ambulance siren. Yet the A-weighted decibel does not account for these differences.[8]

*How sound travels.* In general, sounds with strong low frequency components, like those from some lawn and garden equipment, construction equipment, and modified vehicle exhaust systems, travel further and penetrate barriers more easily than higher-pitched sounds. At closer distances, though, higher-pitched sounds can cause greater risks to hearing. Such differences can have important implications for the health impacts of noise. Yet, once again, A-weighted decibels do not account for these kinds of differences.[9]

For these reasons, some noise experts have advocated for creating a more comprehensive suite of noise metrics to reflect the impact of noise on people.[10] As described below, one project for a revived ONAC could be to conduct research and issue labeling requirements that move the country toward a superior noise measurement system.[11]

# Noise: A Long-Neglected Public Policy Challenge

Almost no part of the United States is fully insulated from the threat of excessive noise, even if the particular sources of dangerous noise pollution vary by geography, population density, and circumstance. Whatever the source, too many Americans continue to encounter excessive noise too often.



Noise pollution poses both auditory and non-auditory health harms. According to the American Public Health Association and other experts, persistent exposure to excess noise can increase not just the incidence of hearing loss, but also that of heart disease, stroke, hypertension, anxiety, and depression.[12]

The auditory harms of noise pollution, though intuitive, remain underappreciated. Hearing loss — the third most common chronic physical condition in the United States — in later life is due mostly to noise-induced hearing loss (NIHL), the only form of entirely preventable hearing loss.[13] NIHL most often derives from a lifetime of exposure to unsafe levels of noise, although it can also result from a single loud incident.[14] Approximately 25 percent of Americans between the ages of 20 and 69 suffer from NIHL and between 17-23 percent of teenagers have hearing loss greater than 15 decibels.[15] Hearing loss is associated with increased risks of social isolation and depression, and in older age potentially even Alzheimer's and Parkinson's diseases.[16] Estimates place the annual medical costs of treating hearing loss between $3 and $13 billion.[17]

Noise pollution also poses less obvious, though arguably more potent, non-auditory health harms, primarily through two related mechanisms: stress and sleep disruption.[18] As the APHA has noted, "[t]hese responses set off a cascade of physiological responses involving increases in stress hormone levels, blood pressure, heart rate, and other risk factors that, in turn, raise the risks of stroke, hypertension, ischemic heart disease, myocardial infarction, metabolic disturbances, and related mortality."[19] For example, one major study following 4 million people concluded that starting at just 35 decibels, the risk of heart attack increases by nearly 3 percent for every additional 10 decibels of traffic noise exposure.[20] (For perspective, nearly one third of Americans live in areas exposed to average noise levels of at least 45 decibels).[21]

Estimates suggest that approximately 145 million Americans are at risk of noise-related hypertension, which can lead to increased risk of heart disease and stroke.[22] Workplace noise, such as in an auto manufacturing plant, spikes blood pressure and heart rates, likely with harmful long-term effects.[23] A study revealed that patients at Massachusetts General Hospital who live in noisy communities are more likely to experience major cardiac events within the next five years, even

after controlling for a range of environmental and behavioral factors.[24] And nighttime exposure to loud aircraft noise may be tied to fatal cardiac events in the subsequent two-hour period.[25] Meanwhile, reducing environmental noise by just 5 decibels has been estimated to lower instances of hypertension by 1.4 percent and heart disease by 1.8 percent, resulting in cost savings of $3.9 billion per year.[26]

The health harms of noise pollution can negatively affect the broader economy, too. By increasing fatigue (from sleep disruption) and impacting concentration, noise pollution can contribute to productivity losses and learning impairment.[27] This may prove especially harmful to children.[28] A major decade-long study of 6,000 American schools found that those located near major airports reported lower standardized test scores, which were subsequently improved upon the installation of sound insulation.[29] Similarly, exposure to train and aircraft noise has been associated with diminished reading comprehension among children.[30]

As with other public health issues in the United States, the available research indicates that low-wealth communities and communities of color across the country are more likely to be exposed to harmful noise pollution.[31] A 2017 study demonstrated that urban communities with almost no low-wealth residents averaged 3 decibels of nighttime noise lower than communities where half the residents live below the poverty line. Neighborhoods where roughly three-fourths of the residents are Black were exposed to 4 decibels more noise than those with almost no Black residents.[32] (Recall that, given that perceived loudness roughly doubles with every 10 decibel increase, these seemingly small disparities are still significant). Students in schools estimated to be most exposed to road or aviation noise were "significantly more likely" to be eligible for free meals and to be Hispanic, Black, or Asian/Pacific Islander.[33] Still, more research is necessary to comprehensively document noise pollution inequities, identify harmful noise sources, and conceive of mitigation policies.

What makes these disproportionate exposures to excessive noise especially concerning is how they contribute to and interact with myriad other cumulative stressors that members of structurally marginalized communities face. For instance, low-wealth communities and communities of color are already burdened by inadequate access to healthcare, food insecurity, higher rates of unemployment or underemployment, and disproportionately greater exposures to various types of air pollution.[34] Not surprisingly, members of these communities also exhibit higher rates of hypertension, heart disease, and other forms of health impairments.[35] Consequently, addressing noise pollution must be part of the broader strategy to remedy the racial and socioeconomic health disparities that pervade American society.

# Environmental and Climate Synergies

While the Noise Control Act primarily aims to reduce noise emissions, it simultaneously offers the potential to secure exciting climate benefits.

Decarbonization (and reducing emissions of other toxic air pollutants) will require electrifying activities previously conducted by combusting fossil fuels. Because electrified alternatives tend to be quieter than their combustive precursors, the NCA's noise reduction authorities also offer the EPA the ability to reduce emissions in hard-to-abate sectors. Take, for example, two harmfully noisy products that the ONAC had on its regulatory agenda prior to being shuttered: gas-powered lawn equipment and buses.

According to the EPA, in 2020, gas-powered lawn equipment emitted more than 30 million tons of carbon dioxide — the equivalent of the annual emissions of 6 million cars.[36] Running a gasoline lawn mower produces nearly as much carbon dioxide as a sedan[37]; and a 2011 study found that gas leaf blowers emitted more pollutants than a Ford F-150.[38]

As Environment America has calculated, fossil-powered lawn equipment is arguably even more dangerous when it comes to the sector's annual emissions of nitrogen oxide and fine particulate matter (PM 2.5), which is equivalent to the annual emissions of 30 million and 234 million cars, respectively.[39] In 2017, the California Air Resources Board estimated that ozone emissions from gas-powered lawn equipment would exceed that of all passenger cars in the state by 2020 — a projection that helped persuade the state legislature to adopt a phased-in ban in 2021.[40]

Fortunately, the NCA empowers the EPA to set noise emissions standards that would effectively prohibit the sale of many gas-powered lawn devices in favor of quieter, electric alternatives coming onto the market.[41] Such a standard would not just begin eliminating carbon emissions from a difficult-to-reach sector, but also protect landscape professionals and ordinary citizens from exposure to highly toxic pollutants.

Diesel school buses are estimated to emit 5 million tons of carbon dioxide per year,[42] in addition to other harmful pollutants that likely harm student health and adversely impact learning outcomes.[43] Because electric buses are at least four times quieter than diesel alternatives,[44] the NCA likely allows the EPA to set a noise emission standard that would effectively prohibit the sale of new diesel buses, thereby phasing out a dangerous source of carbon and toxic emissions. (Such a standard might complement the new funding for electric buses provided in the Infrastructure Investment and Jobs Act and the Inflation Reduction Act[45]).[45] The NCA would similarly allow the EPA to revise its noise standard for medium- and heavy-duty trucks or set emissions limits on diesel-powered garbage trucks and snowplows. Combined, medium- and heavy-duty vehicles, including trucks and buses, account for 29 percent of climate emissions from the vehicle sector (despite only comprising 5 percent of vehicles).[46]

No doubt — given the symbiotic relationship between decarbonization, electrification, and noise mitigation — a revived ONAC could identify numerous other instances where NCA noise standards could effectively secure key environmental wins (to say nothing of advancing other worthy causes, like public and worker safety).

# History: The Noise Control Act

Founded in 1970, the EPA's ONAC administered the NCA from the statute's passage in 1972 through the office's shuttering during the Reagan administration. This section relates the origins of the NCA and chronicles the Reagan administration's successful efforts to eliminate the program's funding.

### *Origins and the Quiet Communities Act*

The 1970 amendments to the Clean Air Act first established the ONAC[47] and tasked it with investigating the effects of noise on public health and welfare.[48] The ONAC's subsequent report documented the prevalence of, and harms from, unwanted sound. The report estimated that, amid a population of approximately 200 million Americans, roughly 40 million people were exposed to noise capable of inducing hearing loss, while transportation and aircraft noise reduced the value of 44 million people's homes.[49]

The 1970 law further directed ONAC to propose legislative language, if warranted, to address the noise emission harms identified in its report. In 1972, Congress enacted the NCA, which adopted the ONAC's proposed language virtually unchanged.[50] Lobbying from the railroad and motor vehicle industries, which hoped to secure federal preemption from the disparate noise emissions standards then arising at the state level, helped to spur Congress to take swift action.[51] The NCA established a program for regulating certain sources of noise emissions (which included the industry-favored preemption provisions), and it charged the ONAC with issuing labeling requirements, developing low noise emission products, and coordinating federal noise reduction efforts.

The NCA as passed in 1972 did not include funding for technical assistance or grants to states and localities.[52] Nor did it endow the EPA with robust research capacities.[53] Congress responded to these shortcomings by enacting the Quiet Communities Act of 1978, which amended the NCA to additionally direct the EPA to engage in a program of research, technical assistance, and discretionary grants to support local noise control efforts.[54]

### *Disbanding the ONAC*

During its relatively brief existence, the ONAC pursued a remarkable variety of noise abatement initiatives, described in the subsequent section. But its progress was cut short in 1981, when Reagan administration officials decided to recommend Congress eliminate the ONAC's funding less than a decade after the NCA's enactment, and ordered the office's shuttering.[55] While some have suggested Congress implicitly endorsed the administration's decision,[56] we have found no evidence that Congress affirmatively ratified defunding the office.[57]

As legal scholar Sidney A. Shapiro has chronicled, a variety of factors contributed to the decision to ramp down the office.[58] The move came during an era of increasing distrust of, if not outright antagonism toward, government's role in shaping the economy. Instead, policymakers and intellectuals came to embrace the neoliberal notion that unfettered markets were better vehicles for advancing social welfare.[59] For its part, the Reagan administration encouraged neoliberalism's rise as an intellectual basis for its efforts to drastically reduce the size of the administrative state. This campaign was best exemplified by the deregulatory ambitions of then-EPA administrator Anne Gorsuch.[60] Needless to say, this ideological backdrop provided a fertile environment for those seeking to defund the ONAC.

The office had also recently engendered opposition from the waste management industry, which objected to the ONAC's promulgation of a final noise emission standard for garbage trucks in 1979.[61] The ONAC estimated that the regulation would decrease the adverse effects of noise from the trucks by 74 percent and improve conditions for close to 19 million people.[62] Citing a 10 percent increase in cost per truck, industry groups characterized the standard as "incredibly burdensome."[63] The National Solid Waste Management Association (NSWMA) unsuccessfully petitioned the D.C. Circuit to stay the regulation.[64] The group testified in Congress that the regulation was arbitrary and unworkable,[65] and "applaud[ed] the Reagan administration for its recommendation to the Congress that the EPA Noise Office budget be slashed…[and recommended that the Committee] eliminate entirely the Federal regulatory role in noise abatement[.]"[66]

Meanwhile, the ONAC did not enjoy a strong political constituency of its own to counter the White House's and NSWMA's opposition.[67] The sectors that had initially supported the NCA in order to obtain federal preemption of conflicting local regulations had no objections to stripping the ONAC's funding so long as the NCA's preemption provisions remained intact.[68] And even some career EPA officials believed that other forms of pollution posed more dire threats to public health and welfare than noise.[69]

After the ONAC lost funding, the EPA withdrew some pending noise standards and the garbage truck regulation.[70] Technically, some noise emissions standards remain on the books, including for interstate rail carriers,[71] motor vehicles engaged in interstate commerce,[72] motorcycles,[73] and portable air compressors.[74] And it appears that the EPA never finalized its proposal to de-identify several products, like power lawn mowers, as major sources.[75] But enforcement appears to have effectively ceased.[76] And the EPA has pursued minimal noise abatement activity since the ONAC's disbandment.

Today, the EPA retains the legal authority to promulgate new standards and engage in enforcement activities, but it lacks dedicated funding and staff to do so. The pending litigation by the advocacy group Quiet Communities seeks to compel the EPA to fulfill its mandates under the NCA.[77]

# Statutory Overview

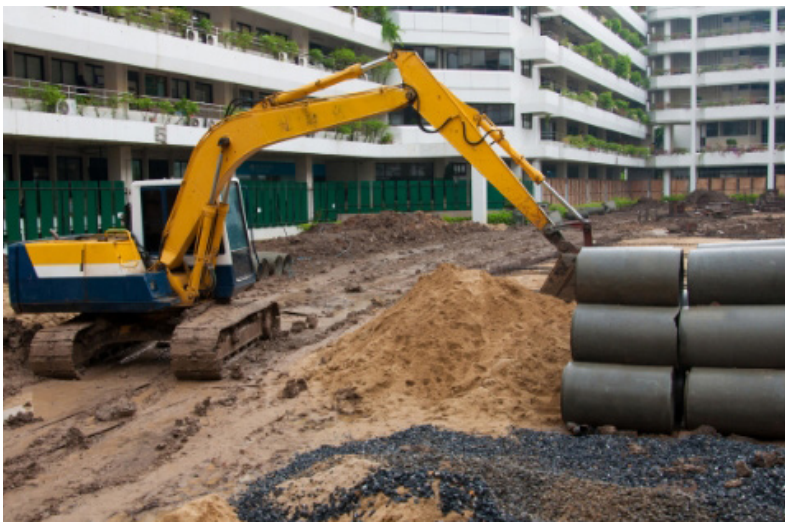
The NCA provides the EPA with three types of authorities: (1) noise emissions regulation; (2) labeling and new product development; and (3) research, education, federal coordination, and technical support.

### *Noise emissions regulations*

Among its core authorities, the NCA empowers (and in certain cases, requires) the EPA to prohibit the sale of new commercial products that fail to meet potentially stringent noise emission standards predicated, in part, on the noise reductions achievable through the application of the "best available technology."[78] As is the case with the relevant provisions of the Clean Air Act on which the NCA was modeled, this choice of regulatory standard reflects Congress's judgment that the NCA should avoid a "command and control" approach to addressing excess noise emissions. Instead, the best available technology standard is designed to allow regulated industries some flexibility to meet the standard using alternative or innovative technologies and approaches.

The NCA (alongside other statutory provisions) also creates regulatory regimes for reducing noise emissions from motor vehicles, railroads, and aviation — although it does so through joint-programs with other federal agencies that differ from the statute's commercial product regime.

### *Commercial products*



Section 5(a) of the NCA obliges the EPA to periodically issue reports synthesizing the known impacts and harms from exposure to noise pollution (known as noise "criteria") as well as ascertaining the levels of environmental noise certain areas should aim to maintain in order to "protect the public health and welfare with an adequate margin of safety."[79,80] In the 1970s, the EPA published two documents in response to these obligations: the "Criteria Document," which represented "an appraisal of available knowledge relating to the health and welfare effects of noise," and the "Levels Document," which identified levels of noise requisite to protect public welfare.[81]

Using these reports, NCA Section 5(b) directs the EPA to identify "products (or classes of products) which in [its] judgment are major sources of noise."[82] Once identified, major sources of noise can spur mandatory standard-setting.[83] During the ONAC's existence, the EPA identified portable air compressors, buses, motorcycles, pavement breakers, power lawn mowers, rock drills, tractors, and three different truck categories as major sources of noise.[84]

Section 6(a), the mandatory standard-setting provision, requires the EPA to use notice-and-comment rulemaking to promulgate noise emissions standards for previously identified major

sources of noise if such standards are "feasible" and the product or product class falls in one of the following categories: "(i) Construction equipment. (ii) Transportation equipment (including recreational vehicles and related equipment). (iii) Any motor or engine (including any equipment of which an engine or motor is an integral part). (iv) Electrical or electronic equipment."[85]

For example, in 1974, the EPA identified portable air compressors, used to store high-pressure air to inflate and power construction equipment,[86] as a major source of noise.[87] The EPA determined that the most significant noise emissions from air compressors came from engine exhaust, engine casings, air intake, and cooling fans.[88] Because portable air compressors fall into the category of construction equipment, the EPA promulgated mandatory noise emissions standards under Section 6(a) for the product.[89]

The regulation, still in place today, requires that portable air compressors produce an average sound level of not more than 76 decibels.[90] In addition to air compressors, the ONAC promulgated final regulations for motorcycles, commercial trucks, and garbage trucks — some of which notionally remain in effect. It additionally issued proposed standards for buses and tractors but lost its funding before it could finalize those regulations.[91]

Separately, Section 6(b) of the NCA provides the EPA with an additional set of discretionary authorities to issue "feasible" standards for other (non-major) sources of noise that do not meet the criteria for mandatory regulation under Section 6(a) but nonetheless "are requisite to protect the public health and welfare."[92]

Any standards promulgated by the EPA under Section 6 of the NCA — whether mandatory or discretionary — need to be "performance standard[s],"[93] meaning that the EPA determines the level of noise emissions the product can generate but does not prescribe the method by which manufacturers must meet those emissions requirements. Further, in setting Section 6 standards, the EPA is required to take into account the following: (i) "the magnitude and conditions of use of such product (alone or in combination with other noise sources)"; (ii) "the degree of noise reduction achievable through the application of the best available technology"; and (iii) "the cost of compliance."[94]

Precedents concerning analogous provisions in the Clean Air Act (CAA) offer some guidance as to how the EPA might weigh these statutory factors. Take, for example, the NCA's "*achievable* through the application of the *best available* technology" criterion. Section 111 of the CAA somewhat analogously instructs the EPA to issue "standards of performance" for new and existing stationary sources of air pollution that are "*achievable* through the application of the best system of emission reduction" that "has been *adequately demonstrated*" (emphasis added).[95] The D.C. Circuit has held that "[a]n *achievable* standard … while not at a level that is purely theoretical or experimental, need not necessarily be routinely achieved within the industry prior to its adoption" (emphasis added).[96] This definition of "achievable" might reasonably apply in the NCA context as well.

Distinctions drawn from the CAA can also prove informative. For example, in the same case, the D.C. Circuit panel held that:

> "An *adequately demonstrated* system is one which has been shown to be reasonably reliable, reasonably efficient, and which can reasonably be expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way."[97] (Emphasis added).

Given that "available" is a less demanding metric than "adequately demonstrated," the NCA appears to provide the EPA more latitude than the D.C. Circuit's above construction of CAA Section 111.

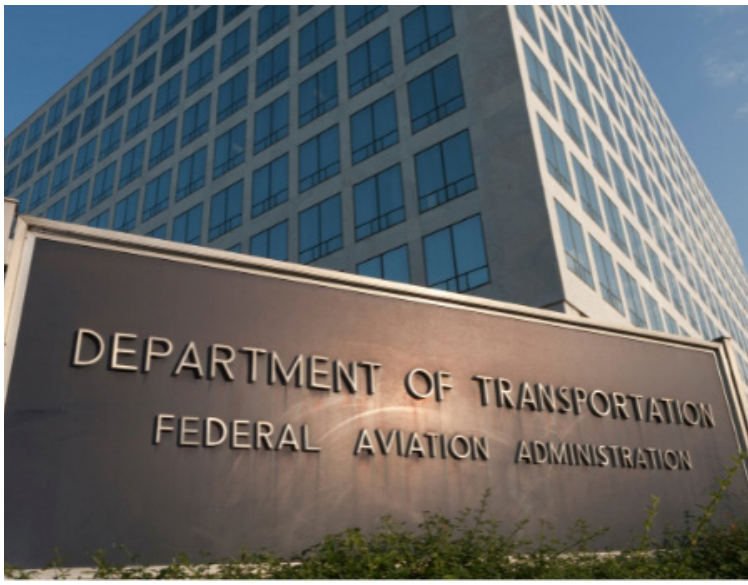
Finally, in establishing standards, the NCA also commands the EPA to "give appropriate consideration to standards under other laws designed to safeguard the health and welfare of persons, [including the Clean Air Act and the Federal Water Pollution Control Act.]"[98] This includes examining how noise emissions standards would interact with other regulatory schemes: whether they might further or impede other regulatory goals, or whether regulations under other laws might be sufficient to address noise harms.

### *Motor vehicles, railroads, and aviation*

Section 17 of the NCA obliges the EPA to establish additional noise emission standards for railroads.[99] Such regulations should include standards for noise emissions "resulting from operation of the equipment and facilities" of such carriers and "reflect the degree of noise reduction achievable through the application of the best available technology, taking into account the cost of compliance."[100] For example, railroad emissions standards still in effect, last updated in a 1980 rulemaking, restrict locomotives manufactured after 1979 to emitting 70 decibels of noise while idling.[101] During its tenure, the ONAC finalized five railroad emissions standards.[102]

Though the EPA retains the authority to determine the ultimate noise emission standard, under Section 17, it does so in consultation with the Department of Transportation ("DOT") "in order to assure appropriate consideration for safety and technological availability."[103] After the EPA sets a noise emission standard, the NCA directs the DOT to promulgate enforcement regulations.[104]

Section 18 of the NCA establishes an identical regulatory scheme for setting noise emissions standards that apply to motor carriers.[105] Like those set for railroad carriers, these standards must "reflect the degree of noise reduction achievable through the application of the best available technology, taking into account the cost of compliance."[106] The EPA must also consult with DOT about these regulations, and DOT is required to promulgate its own regulations to enforce these noise emission standards.[107] The ONAC only ever finalized one motor vehicle standard.[108]




The EPA possesses no direct regulatory authority over the aviation industry concerning noise. Instead, it is limited to proposing regulatory proposals for the Federal Aviation Administration's (FAA) consideration, albeit proposals to which the FAA must at least respond in the *Federal Register*.[109] The ONAC attempted to push the FAA to set standards for aircraft — by 1978 it had sent over 11 proposals — but failed to persuade the aviation regulator to take action.[110]

### *Enforcement, preemption, and judicial review*

The NCA prohibits manufacturers, under pain of civil and criminal penalties, from distributing products that are not in compliance with EPA noise emissions standards.[111] It also requires

manufacturers to warrant their products' compliance with any existing standards.[112] In addition, the EPA Administrator can "issue an order specifying such relief as he determines is necessary to protect the public health and welfare," but only after providing the person in violation of the NCA with notice and the opportunity for a hearing under the Administrative Procedure Act.[113]

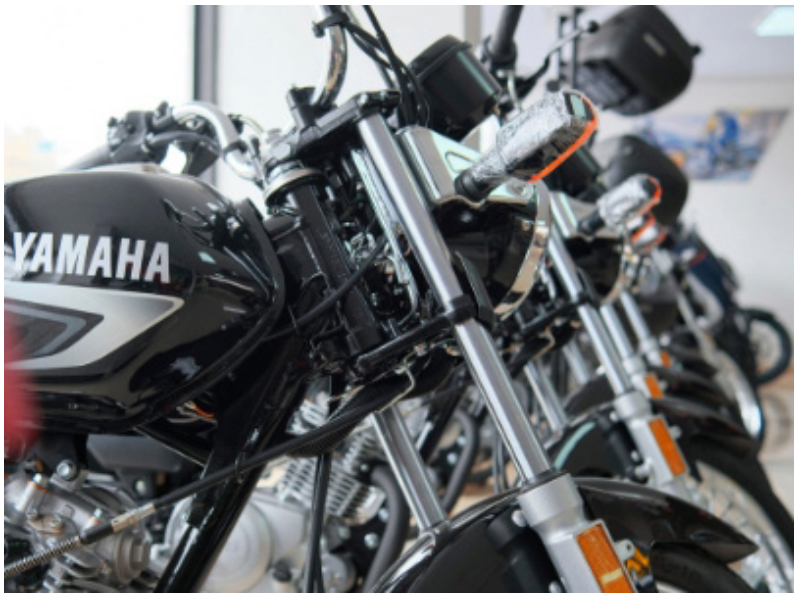
Interestingly, the NCA grants the EPA Administrator subpoena power in order to carry out any of their duties under the statute.[114] The administrator may issue subpoenas "for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and he may administer oaths."[115]

States and localities cannot set noise emission standards targeting any products for which the EPA has set Section 6 standards unless they are identical to those issued by the EPA.[116] The same is true for the component parts of any products regulated by agency standards.[117] States can, however, continue efforts to control environmental noise and noise emissions through licensing, regulation, and restrictions on use.[118]

Standards set under the railroad or motor carrier provisions enjoy a stronger preemptive effect than Section 6 standards for general commercial products. As with Section 6 product standards, states and localities cannot set their own noise emissions standards for railroads or motor carriers unless they are identical to those determined by the EPA.[119] However, in the case of railroad and motor carriers, states also cannot impose licensing requirements, additional regulations, or use restrictions unless the EPA, after consultation with DOT, "determines that such standard, control, license, regulation, or restriction is necessitated by special local conditions and in not in conflict with regulations promulgated under [Sections 17 or 18]."[120]

Notably, the NCA includes a broad citizen suit provision.[121] Subject to constitutional standing requirements, the provision empowers citizens to sue the EPA for failing "to perform any act or duty under this chapter which is not discretionary."[122] This is the basis for Quiet Communities' ongoing lawsuit.[123]

The provision also allows individuals to sue private actors violating "any noise control requirement,"[124] as the public health organization Utah Physicians for a Healthy Environment is attempting to do in another ongoing case. Their complaint alleges that a set of Harley-Davidson dealerships in Utah have repeatedly violated the EPA's NCA standards for motorcycles.[125] If successful, the lawsuit may pave the way for organizations and communities to more fulsomely enforce the few NCA standards that remain in effect, or even to target upstream distributors of manufacturing parts that enable NCA violations.




Finally, litigants can only challenge noise emissions standards in the D.C. Circuit.[126] In addition, any state or locality can petition the agency to revise a previously issued standard on "the grounds

that a more stringent standard… is necessary to protect the public health and welfare."[127] The EPA must publish any such petitions in the *Federal Register* and respond within 90 days.[128]

### *Labeling requirements and low-emission product development*

Section 8 of the NCA requires the EPA to designate products or classes of products as those that either emit noise "capable of adversely affecting the public health or welfare,"[129] or, conversely, that are "sold wholly or in part on the basis of [their] effectiveness in reducing noise."[130] For any products determined to be either harmful or protective under this section, the EPA must prescribe labeling regulations ensuring that the user of these products be given notice of either the "level of noise the product emits, or of its effectiveness in reducing noise, as the case may be."[131]

In 1978, the EPA promulgated some general regulations related to labeling, which are still in effect today.[132] For all products identified under this section of the NCA, the EPA regulation requires labels to include a "Noise Rating" or "Noise Reduction Rating."[133] In addition, the rule describes EPA testing and enforcement procedures.[134] During the ONAC's tenure, the EPA only ever identified Hearing Protective Devices as a class of product requiring labeling.[135]

Section 15 of the NCA instructs the EPA to establish a certification process for identifying "low noise emission products," which emit noise "in amounts significantly below the levels specified in noise emissions standards [promulgated under Section 6.]"[136]

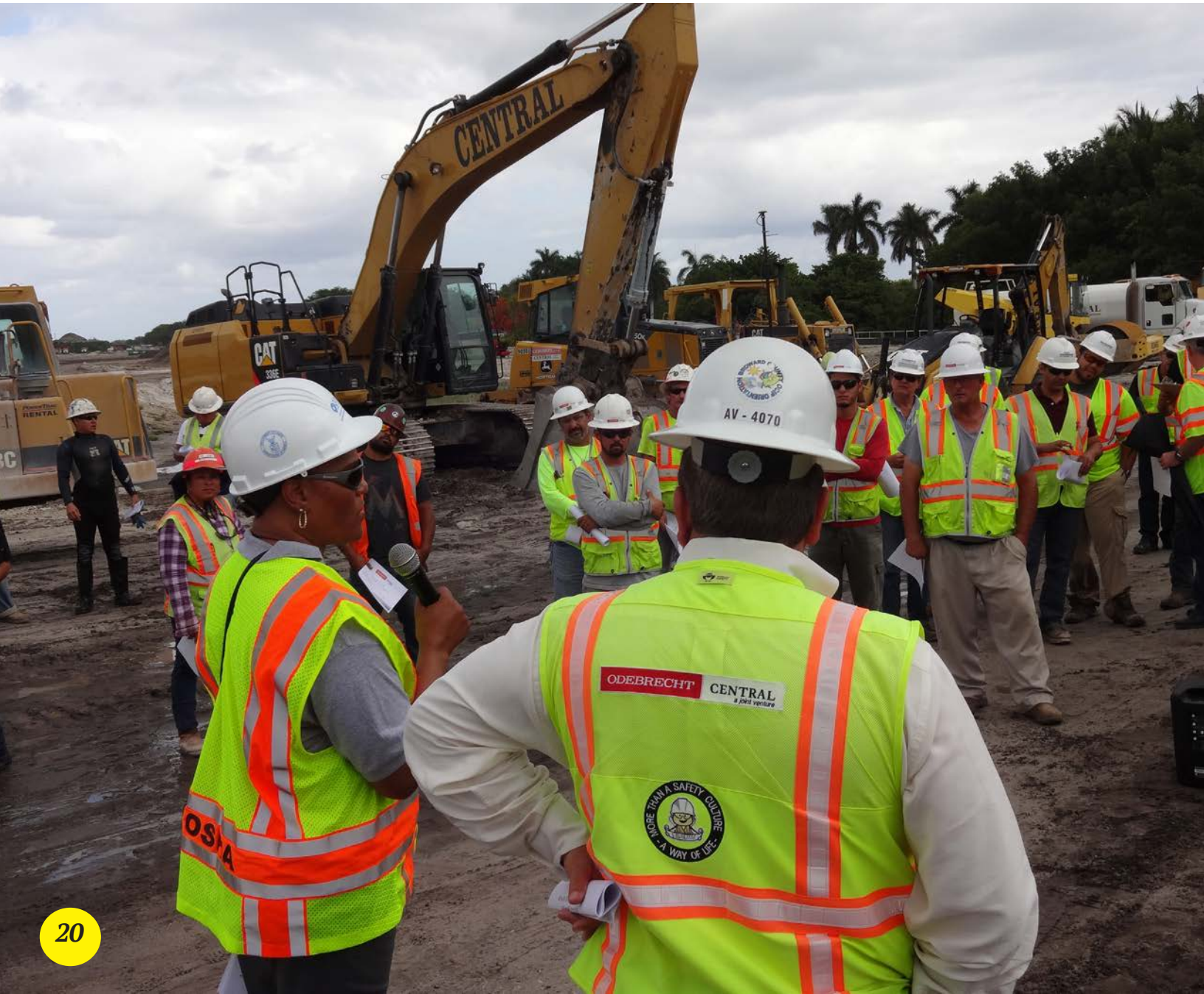
After the EPA determines that a product qualifies for low noise emissions status, other federal government agencies must purchase or lease the low noise emissions version of any product certified under Section 15 under certain circumstances.[137] For example, after finalizing its air compressor and truck regulations, the ONAC sought to establish criteria under which certain of those products could qualify as "low noise emitting" and thus receive priority in federal procurement.[138] (Again, those efforts were never finalized due to the Office's subsequent de-funding).

### *Federal coordination and technical support*

The NCA charges the EPA with coordinating "the programs of all Federal agencies relating to noise research and noise control," as well as with periodically publishing a report of federal noise reduction activities.[139] Pursuant to this charge, if the EPA believes another federal agency is promulgating inadequate noise emissions regulations, it can compel that agency to publish a report in the *Federal Register* responding to the EPA's criticisms.[140] During the 1970s, the ONAC developed an information exchange program that published other agency actions and accomplishments related to noise abatement.[141] It provided all agencies with a list of federal government personnel working on noise control.[142]

The Quiet Communities Act of 1978 (QCA) amended the NCA to promote the development of state and local noise control programs through the use of grants, contracts, and other federal support.[143] The QCA amendments direct the EPA to pursue these goals by conducting or financing noise research, disseminating informational and educational materials to the public, establishing regional technical assistance centers, and administering a grant program for state and local governments.[144]

After the QCA's enactment, the ONAC developed programs to support local and state governments in their efforts to control noise emissions.[145] Through EPA regional offices, the federal government provided funds and technical assistance to create local noise control programming,[146] hosting more than 110 training workshops.[147] The ONAC conducted surveys and research on local noise abatement efforts.[148] It even drafted model ordinances and state legislation, which were incorporated into 24 states' noise control programs by 1980.[149] The EPA also launched a widespread public education campaign about the effects of noise, creating training modules for high school students, as well as for adults working in positions where they were required to frequently operate noisy equipment.[150] And it established a set of research panels to direct investigations into the harms of excess noise pollution and potential future applications of its regulatory powers.[151]



# Reviving the Noise Control Act

The first step to reviving implementation of the NCA is to resurrect the ONAC. As noted above, despite the ONAC's shuttering, the NCA was never repealed. As such, all that would be required for the ONAC to resume its former activities would be for Congress to restore its funding through the regular appropriations process.[152] Restoring the office to its 1980 funding levels would require just $30 million — a 0.3 percent increase to the EPA's annual budget.[153]

It's also possible, depending on the extent of the EPA's transfer and reprogramming authority, that the agency may be able to redirect existing appropriations to the project.[154] Indeed, in the years since the ONAC's closure, the EPA has at least occasionally taken action under its NCA authorities (presumably without new NCA appropriations). In 1986, for example, the EPA amended its noise regulations for trucks and motor vehicles.[155] And in 2009, the agency proposed to revise its labeling standards for hearing protection devices (but apparently never finalized the rule).[156]

As it happens, there is recent precedent for reviving a long-moribund office: the Federal Energy Regulatory Commission's (FERC) Office of Public Participation (OPP), designed to support meaningful public engagement in FERC proceedings.[157] Congress first authorized the OPP as part of the 1978 Public Utility Regulatory Policies Act (PURPA). But Congress never appropriated funds for the OPP to carry out its statutory mission, leaving the office in a similar position to the ONAC. That all changed with the passage of the consolidated appropriations bill for fiscal year 2021, which included report language directing FERC to immediately begin establishing and operating the OPP. Significantly, the report specifically directs FERC to use "annual charges and filing fees," as authorized by relevant law, to provide funding for the OPP's operations.[158]

Over the next several months, FERC took critical steps to finally establish the OPP. These included conducting extensive public outreach to inform its implementation efforts. The OPP also began hiring staff, including a Director and Deputy Director. As required by the consolidated appropriations act report language, FERC issued a report to Congress in June 2021 detailing its initial efforts to establish the OPP and laying out plans for how the office will operate to carry out its statutory mission through the end of Fiscal Year 2022.[159]

### *An agenda for a revived ONAC*

As a threshold matter, a revived ONAC should reproduce updated Criteria and Levels documents to reflect the past several decades of research into the public health and welfare harms of excessive exposure to noise pollution.[160] Next, the office will need to begin planning a policy and research agenda.

The natural institutional vehicle for accomplishing the former is the Unified Agenda of Federal Regulatory and Deregulatory Actions, which is overseen by the White House Office of Information and Regulatory Affairs. For the last 30 years, agencies have used the Unified Agenda process to set and communicate to the public their priorities for regulatory action in the year ahead. In the summer of 2023, the Biden administration introduced a new innovation for agency regulatory agenda-setting through its guidance to agencies on "Broadening Public Participation

and Community Engagement in the Regulatory Process." Recognizing the crucial role that members of the public should play in helping agencies to identify regulatory priorities, this document directs agencies to discuss whether and to what extent public input informed the inclusion of specific items on their respective regulatory agendas.[161]

Working with political leadership at the EPA, a reconstituted ONAC would need to quickly begin developing its own subagency entries for the agency's broader regulatory agenda. The bulk of these entries would be either new technology-based noise emissions standards or updates to existing ones. Given that the range of products warranting noise emissions standards — whether new or updated — is likely to exceed the ONAC's limited resources, the agency will need to prioritize which products it targets first. Available scientific and health-based research should, of course, help guide these decisions. Importantly, though, public input should also play a role, as indicated in the Biden guidance. The ONAC should therefore design and implement a public outreach strategy to inform its initial entries in the EPA's semiannual regulatory agendas.

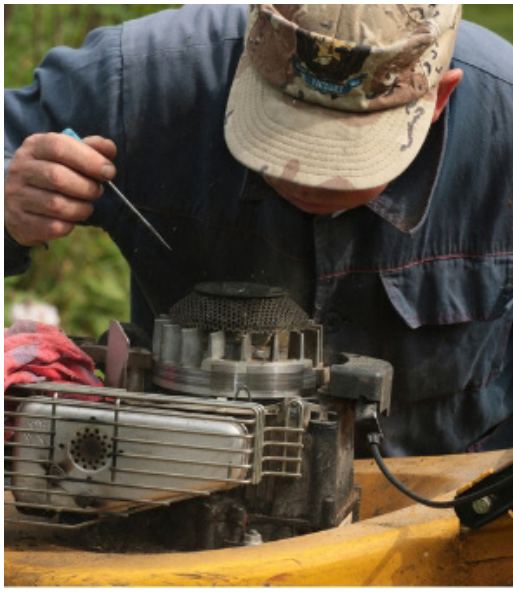
Next, we briefly propose some regulatory and research initiatives a restored ONAC could pursue:

### *Commercial product and transportation regulations*

To start, the ONAC will need to consider using its updated Criteria and Levels documents to identify a new set of major sources of noise pollution. It appears that EPA failed to finalize its 1982 proposal de-identifying several product categories as "major sources" of noise, so those identifications should still remain in effect.[162] However, it is likely that technological innovation and advances in scientific understanding of noise harms will subject a broader array of commercial products to the designation today.

Once identified, the NCA requires the EPA to promulgate emissions standards for major noise sources under certain conditions. Of course, as noted above, the agency also retains the discretionary authority to craft noise emissions standards for non-major sources that meet statutory standards. To understand the potential impact of these proposals, it is important to recall that NCA standards only apply to new products; existing products need not meet emissions standards.

A non-comprehensive list of commercial products that a revived ONAC could update or set noise emission standards for includes:



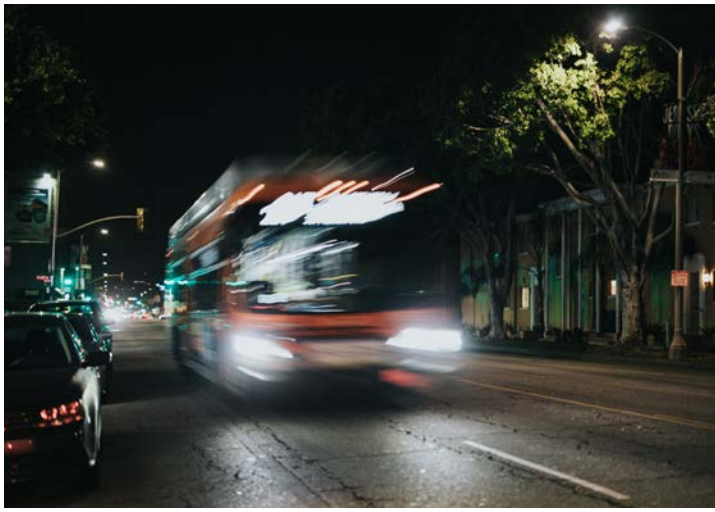
- **Portable air compressors.** As noted above, one of the first noise emission standards that the ONAC issued was for portable air compressors in 1976, still in effect.[163] Enforcing or tightening this standard would help protect workers who are especially vulnerable to safety hazards and exploitation: Portable air compressors are common equipment in the construction industry, where workers often do not belong to a union and may be hesitant to raise safety complaints due to precarious immigration status.[164]

- **Gas-powered lawn equipment**. This category of products includes leaf blowers, lawn mowers, and weed and hedge trimmers, which can generate sounds over 80 decibels — and even in excess of 100 decibels in some cases.[165] The ONAC identified power lawn mowers as a major noise source in 1977 but only proposed (rather

than finalized) revoking the status in 1982,[166] which likely means that the original identification still holds. As a result, the ONAC may have an obligation to promulgate new standards for lawn mowers. The ONAC could additionally identify as major sources other lawn equipment products in this category, or it could issue emissions standards pursuant to its discretionary authority.

New rulemaking would address similar social justice concerns as would an updated rulemaking for portable air compressors. The profile of those at risk — workers in the landscaping industry — is similar to that in the construction industry.[167] These workers similarly lack sufficient labor market power to demand safer equipment absent new standards. Further, and as described in more detail elsewhere in this report,[168] strong standards that effectively required the electrification of all lawn equipment would produce significant ancillary climate benefits.

- **Buses**. The ONAC identified buses as a major source of noise emissions in the 1970s before proposing a revocation of that finding in 1982; it had even proposed (but not finalized) emissions standards before the office's shuttering.[169] Like for power lawn mowers, because the EPA failed to finalize its revocation of major source status, the EPA may have a non-discretionary duty to set new noise emissions standards.



A revived ONAC should prioritize bus standards for multiple reasons. While the World Health Organization recommends that roadway noise not exceed 53 decibels, the typical diesel bus produces noise emissions in the range of 80 to 85 decibels.[170] Fortunately, technological innovation has yielded an array of quieter busing options. A noise emission standard could be set to effectively require the use of hybrid buses, which tend to emit noise in the range of 70 to 75 decibels.[171] Or better still, the ONAC could set it at about 65 decibels, which generally only electric buses could meet.[172] (To once again offer some perspective on the decibel scale's logarithmic nature, a 20 decibel reduction amounts to a sound four times quieter.)

From a noise reduction perspective alone, such a standard would deliver important social justice benefits, as urban communities that are disproportionately inhabited by low-income families and people of color are more likely located adjacent to heavily trafficked bus routes and bus terminals.[173] Members of these communities are also disproportionately represented among bus riders and drivers.[174]

Additionally, as discussed above, a strong standard would also make a significant contribution to achieving our climate reduction goals and other public health goals related to air pollution.[175] Children, especially, suffer from repeated exposure to diesel bus exhaust — according to the World Resources Institute, the impact on children's lungs is similar to that of maternal smoking.[176]

- **Trucks**. Along with portable air compressors, trucks were another class of products for which the ONAC managed to issue noise emissions standards that remain in effect.[177] A reconstituted ONAC should consider strengthening this standard to account for advances in technology, as well as issuing new standards applicable to garbage trucks and snowplows. In particular, the ONAC could pursue standards that would effectively require trucks to operate with hybrid engines or an electronic powertrain.

  A strengthened noise emissions standard for trucks would have nearly identical social justice implications as a new bus standard. Low-income communities and communities of color are disproportionately located adjacent to areas where truck traffic is heaviest, especially highways and ports.[178] Trucks also represent a major source of carbon dioxide and other more conventional air pollution[179] and threaten the health of truck drivers and nearby communities.[180] Consequently, strong noise emissions standards could deliver invaluable public health, worker safety, and climate co-benefits.

- **Crypto mining**. Cryptocurrency mining operations obviously did not exist during the ONAC's initial tenure. Nevertheless, these operations represent a significant new source of noise that the ONAC, if revived, should consider addressing through its discretionary performance standard authority. Crypto facilities emit a low-frequency hum of up to 95 decibels, largely stemming from the fans and other apparatuses required to cool the massive computers dedicated to mining.[181] A performance standard might effectively require that mining operations install superior, conventional cooling technology, or, more creatively, shrink mining operations.[182] One effect of such a standard might be to encourage the use of less energy-intensive crypto currencies.[183]

  Unlike many sources of noise explored above, crypto mining raises an entirely different kind of social justice concern. In particular, they tend to be located in economically impoverished parts of rural America.[184] These communities experience similar underlying social and economic stressors as their urban counterparts, including high unemployment, inadequate access to healthcare, and increased rates of disease, such as hypertension and diabetes.[185] These crypto mines are also becoming a huge source of carbon emissions.[186] As such, a noise emissions standard might likewise offer important climate benefits as well.

### *Labeling and low-emissions product development*

An early task for a revived ONAC should be to consider whether to use its labeling authority to transition the nation to a more intuitive sound measurement system.[187] It is clear that the ONAC would enjoy the legal authority to do so. The NCA empowers the EPA to issue labeling

requirements for certain products and instructs that those requirements shall specify "the methods and units of measurement to be used."[188] The agency might also consider whether it should require noise warnings to include comparisons to common noises, to better inform consumers unfamiliar with the decibel system.

Additionally, once the ONAC revives its low-emission certification program, certain obligations kick in regarding federal procurement. With some exceptions, agencies must purchase certified low noise emission products in lieu of louder alternatives if the General Services Administration concludes the former cost less than 125 percent more.[189]

Of course, the president retains a great deal of authority independent from the NCA to dictate procurement priorities. For example, the president could issue an executive order expanding the NCA's procurement obligations for federal agencies to federal contractors and subcontractors. Jump-starting a market for low-emission products would likely yield beneficial developments in the private sector, too, including stimulating innovative research, as it has in other contexts.[190]

***Research and technical support***

As previously noted, a newly funded ONAC should begin its research efforts by updating its NCA Criteria and Levels documents.

How many Americans are exposed to what kinds of dangerous noise pollution, or the full extent of the public health outcomes that are attributable to noise pollution, remains unknown in the U.S. context. Without a functioning ONAC to coordinate and fund national research, American studies of noise pollution pale in comparison to peer nations. (That is not to say, however, that the science is uncertain: While the United States has lagged, others, especially in Europe, have thoroughly documented how noise harms human health and well-being.) The dearth of data concerning how noise pollution operates in the culturally and historically specific American context remains a major gap in the field. Consequently, the ONAC should ensure that its research agenda gives adequate attention to research that advances "information justice" — or research that would have a demonstrable benefit for structurally marginalized communities.[191]

The APHA recommends a similar investigative agenda, including "research support for surveillance of environmental noise and its effects on healthy lives lost and disability-adjusted life-years lost in the United States due to noise exposures, develop[ing] research-based standards for acceptable levels of environmental noise, and ensur[ing] incorporation of noise as a factor in research on health inequities."[192] Finally, it might also behoove the ONAC to expend resources to identify noise emissions reduction methods that will also yield ancillary climate, air quality, or safety benefits — both to build a coalition of stakeholders and to maximize public benefits.

The ONAC should plan its statutorily compelled research agenda by heeding the Foundations for Evidence-Based Policymaking Act of 2018 ("Evidence Act"). One of the law's most important components is its requirement that agencies (and its encouragement that sub-agencies like the ONAC) create and update a "learning agenda" every four years (in conjunction with each agency's existing process for developing four-year strategic plans). As the Evidence Act recommends, public input should play a critical role in helping to shape the office's research priorities.

One of the most important roles a newly funded ONAC could play is to create and disseminate an array of educational materials. As noted previously, most Americans do not appreciate the grave personal and public health harms that arise from excess exposure to noise pollution. Educating the public and key stakeholders will not only draw attention to an underappreciated health risk, but also help build a political constituency for the office's mission.

Finally, if funding allows, the ONAC should renew its technical assistance and grantmaking programs for state and local officials.

### *Additional noise reduction initiatives*

Beyond the NCA, noise advocates could ask Congress to adopt new noise programs, or at least to help finance noise reduction initiatives through new tax breaks adopted via the budget reconciliation process. On the administrative front, the Occupational Safety and Health Administration's (OSHA) existing workplace health standard for noise is far too high: 90 decibels for an eight-hour workday. Though the OSHA standard-setting process often takes years, advocates could petition the agency to revise its standard in a bid to raise awareness about the dangers of excess noise. Advocates could also request that the National Institute for Occupational Safety and Health conduct further research into noise harms.

Of course, advocates could also seek legislative action at the state and local level. While the focus of this report has been on the suite of regulatory authorities the NCA confers upon the EPA, the statute anticipates localities will impose their own hours-of-use, property line, and land use regulations on harmful noises. That is why, for example, the ONAC helped draft model legislation during its existence — a cost-effective means of securing public health advances once state and local officials are properly attuned to the health harms from noise. Adopting state laws or local ordinances may be a more expeditious route toward, say, ameliorating the noise harms of crypto mines than waiting for federal regulators to act.

One potentially interesting way for a state or locality to pressure the EPA to rekindle its dormant NCA authorities would be to invoke Section 6(f) of the Act, which obliges EPA to respond "with a detailed explanation" in the *Federal Register* to a petition from "a State or political subdivision" to strengthen an existing noise standard. For example, a state could petition the agency to revise one of the few ONAC standards still technically in effect, like for portable air compressors or medium- and heavy-duty trucks.

Finally, private individuals, public interest organizations, and local and state officials could follow in the footsteps of Utah Physicians for a Healthy Environment and attempt to enforce existing NCA standards against non-compliant actors.

# Conclusion

For too long, the federal government has neglected its obligations to protect Americans from the grave harms of excess noise. Fortunately, the Noise Control Act provides regulators with the necessary tools to begin rectifying that failure — as well as to secure significant environmental, safety, and climate co-benefits. With just a small investment, lawmakers and agency officials can revive the EPA's Office of Noise Abatement and Control, ensuring Americans enjoy quieter, healthier, and safer communities.

# Endnotes

[1] Wudan Yan, *The Unrelenting Roar of a Crypto Mine Tore This Town Apart*, Popular Mechanics, Jan. 5, 2023, https://www.popularmechanics.com/science/health/a42011194/crypto-mine-noise-murphy/ (last visited Nov. 28, 2023).

[2] *Id.*

[3] Emily Baumgaertner et al., *Noise Could Take Years Off Your Life. Here Are the Health Impacts*, N.Y. Times, June 9, 2023, https://www.nytimes.com/interactive/2023/06/09/health/noise-exposure-health-impacts.html (last visited Dec. 6, 2023).

[4] Policy Statement, Am. Public Health Assoc., Noise as a Public Health Hazard, Jan. 7, 2022, *available at* https://apha.org/Policies-and-Advocacy/Public-Health-Policy-Statements/Policy-Database/2022/01/07/Noise-as-a-Public-Health-Hazard.

[5] Tony Dutzik et al., Lawn Care Goes Electric, 4 (Enviro. Am., U.S. P.I.R.G. Edu. Fund, Frontier Group, 2023), *available at* https://publicinterestnetwork.org/wp-content/uploads/2023/10/Lawn_Care_Goes_Electric_Oct23.pdf.

[6] Compl., Quiet Communities, Inc. v. EPA, No: 1:23-CV-1649 (D.D.C. 2023), available at https://www.epa.gov/system/files/documents/2023-06/noise%20control%20act%20lawsuit.623.pdf [hereinafter Quiet Communities Complaint].

[7] Baumgaertner et al., *supra* note 3.

[8] *Id.*; Danielle Vienneau et al., *Transportation Noise Exposure and Cardiovascular Mortality: 15-years of Follow-Up in a Nationwide Prospective Cohort in Switzerland*, 158 Env't Int'l. 106974 (2022), *available at* https://www.sciencedirect.com/science/article/pii/S0160412021005997?via%3Dihub; Danielle Vienneau et al., Intermittency Ratio: A Metric Reflecting Short-Term Temporal Variations of Transportation Noise Exposure, 26 J. Exposure Sci. & Envtl. Epidem. 575 (2016), available at https://www.nature.com/articles/jes201556.

[9] *See, e.g.*, Chris Pollock, Geoffrey Sparks, & Jamie L. Banks, *Lawn and Garden Equipment Sound: A Comparison of Gas and Battery Electric Equipment*, 3 J. Envitl. & Toxicological Stud. 1 (2018), *available at* https://www.sciforschenonline.org/journals/environmental-toxicological-studies/article-data/JETS-2-118/JETS-2-118.pdf; Erica Walker & Jamie L. Banks, *Characteristics of Lawn and Garden Equipment Sound: A Community Pilot Study*, 1 J. Envitl. & Toxicological Stud. 1 (2017), https://sciforschenonline.org/journals/environmental-toxicological-studies/article-data/JETS-1-106/JETS-1-106.pdf.

[10] Nat'l Acad. Engineering, Technology for a Quieter America (Comm. Tech. for Quieter Am., 2010), *available at* https://nap.nationalacademies.org/catalog/12928/technology-for-a-quieter-america#:~:text=Suggested%20Citation,DC%3A%20The%20National%20Academies%20Press.

[11] Another challenge, which perhaps no replacement system could fully account for, is duration. In general, longer durations of noise are more harmful than shorter ones.

[12] Policy Statement, Am. Public Health Assoc, *supra* note 4; Thomas Münzel et al., *Cardiovascular Effects of Environmental Noise Exposure*, 35 Euro. Heart J. 829 (2014), *available at* https://academic.oup.com/eurheartj/article/35/13/829/634015?login=false.

[13] Policy Statement, Am. Public Health Assoc, *supra* note 4; Ctrs. for Disease Control & Prevention, *Preventing Noise-Induced Hearing Loss*, June 17, 2021, https://www.cdc.gov/ncbddd/hearingloss/noise.html (last visited Dec. 6, 2023).

[14] Policy Statement, Am. Public Health Assoc, *supra* note 4; Daniel Fink & Jan Mayes, *Too Loud! Non-Occupational Noise Exposure Causes Hearing Loss*, 43 Proc. Meetings Acoustics 040002 (2021), *available at* https://pubs.aip.org/asa/poma/article/43/1/040002/836279/Too-loud-Non-occupational-noise-exposure-causes.

[15] Ctrs. for Disease Control & Prevention., *supra* note 13.

[16] Policy Statement, Am. Public Health Assoc, supra note 4; Jennifer Weuve et al., *Long-Term Community Noise Exposure in Relation to Dementia, Cognition, and Cognitive Decline in Older Adults,* 17 Alzheimers Dement. 525 (2021), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8720224/; Piers Dawes et al, *Hearing Loss and Cognition: The Role of Hearing Aids, Social Isolation and Depression*, 10 PLoS ONE (2015), *available at* https://researchers.mq.edu.au/en/publications/hearing-loss-and-cognition-the-role-of-hearing-aids-social-isolat.

[17] Policy Statement, Am. Public Health Assoc, *supra* note 4; Matthew G. Huddle et al., *The Economic Impact of Adult Hearing Loss: A Systematic Review*, 143 JAMA Otolaryngol Head Neck Surg., 1040 (2017), *available at* https://pubmed.ncbi.nlm.nih.gov/28796850/. *See also* Nicholas S. Reed et al, Trends in Health Care Costs and Utilization Associated With Untreated Hearing Loss Over 10 Years, 145 JAMA Otolaryngol Head Neck Surg., 27 (2019), *available at* https://pubmed.ncbi.nlm.nih.gov/30419131/.

[18] David H Zald & José V Pardo, *The Neural Correlates of Aversive Auditory Stimulation*, 16 NeuroImage 746 (2002), *available at* https://www.sciencedirect.com/science/article/abs/pii/S1053811902911158?via%3Dihub; Johannes Herzog

et al., *Acute Exposure to Nocturnal Train Noise Induces Endothelial Dysfunction and Pro-Thromboinflammatory Changes of the Plasma Proteome in Healthy Subjects*, 114 Basic Res. Cardiol 46 (2019), *available at* https://doi.org/10.1007/s00395-019-0753-y; Münzel et al, *supra* note 12; Monica S. Hammer, Tracy K. Swinburn, & Richard L. Neitzel, *Environmental Noise Pollution in the United States: Developing an Effective Public Health Response*, 122 Env't Health Persp. 115 (2014), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3915267/.

[19] Policy Statement, Am. Public Health Assoc, *supra* note 4.

[20] Vienneau et al., *supra* note 8; Baumgaertner et al., *supra* note 3.

[21] Baumgaertner et al., *supra* note 3.

[22] Policy Statement, Am. Public Health Assoc, *supra* note 4.

[23] Vienneau et al., *supra* note 8. The Occupational Safety and Health Administration (OSHA) has taken some steps to address the harms of workplace noise exposure, including a recordkeeping standard and a standard for general industry. *See* Occupational Safety & Health Admin., U.S. Dept. of Labor, *Occupational Noise Exposure: Standards,* https://www.osha.gov/noise/standards (last visited Dec. 6, 2023).

[24] Baumgaertner et al., *supra* note 3; Michael T. Osborne et al., *A Neurobiological Mechanism Linking Transportation Noise to Cardiovascular Disease in Humans*, 41 Euro. Heart J. 772 (2020), *available at* https://academic.oup.com/eurheartj/article/41/6/772/5643958?login=false.

[25] Apolline Saucy et al., *Does Night-Time Aircraft Noise Trigger Mortality? A Case-Crossover Study on 24,886 Cardiovascular Deaths*, 42 Euro. Heart J. 835 (2020), *available at* https://academic.oup.com/eurheartj/article/42/8/835/6007462?login=false.

[26] Tracy K. Swinburn, Monica S. Hammer, & Richard L. Neitzel, *Valuing Quiet: An Economic Assessment of U.S. Environmental Noise as a Cardiovascular Health Hazard*, 49 Am. J. Prev. Med. 345 (2015), *available at* https://pubmed.ncbi.nlm.nih.gov/26024562/.

[27] Rhiannon Thompson et al., *Noise Pollution and Human Cognition: An Updated Systematic Review and Meta-Analysis of Recent Evidence*, 158 Env't Int'l 106905 (2022), *available at* https://www.sciencedirect.com/science/article/pii/S0160412021005304.

[28] *Id.*; Gary W. Evans, Monika Bullinger, & Staffan Hygge, *Chronic Noise Exposure and Physiological Response: A Prospective Study of Children Living Under Environmental Stress*, 9 Psychol. Sci. 75 (1998), *available at* https://journals.sagepub.com/doi/10.1111/1467-9280.00014.

[29] Policy Statement, Am. Public Health Assoc, *supra* note 4; Nat'l Acad. of Sci., Engineering, & Med., Assessing Aircraft Noise Conditions Affecting Student Learning (2014), *available at* https://nap.nationalacademies.org/catalog/22433/assessing-aircraft-noise-conditions-affecting-student-learning-volume-1-final-report.

[30] Arline L. Bronzaft & Dennis P. McCarthy, *The Effect of Elevated Train Noise on Reading Ability*, 7 Env't & Behavior 517 (1975), *available at* https://sci-hubtw.hkvisa.net/10.1177/001391657500700406; Charlotte Clark et al., *A Meta-Analysis of the Association of Aircraft Noise at School on Children's Reading Comprehension and Psychological Health for Use in Health Impact Assessment*, 76 J. Env. Psychol. 104646 (2021), *available at* https://sci-hubtw.hkvisa.net/10.1016/j.jenvp.2021.101646.

[31] Policy Statement, Am. Public Health Assoc, *supra* note 4; Gabe Samuels & Yonah Freemark, The Polluted Life Near the Highway: A Review of National Scholarship and a Louisville Case Study (Urban Inst., 2022), *available at* https://www.urban.org/sites/default/files/2022-11/The%20Polluted%20Life%20Near%20the%20Highway.pdf.

[32] Joan A. Casey et al., *Race/Ethnicity, Socioeconomic Status, Residential Segregation, and Spatial Variation in Noise Exposure in the Contiguous United States*, 125 Envtl. Health Persp. 077017 (2017), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5744659/; Baumgaertner et al., *supra* note 3.

[33] Timothy W. Collins, Sara E. Grineski, & Shawna Nadybal, *Social Disparities in Exposure to Noise at Public Schools in the Contiguous United States*, 175 Envtl. Res. 257 (2019), *available at* https://www.sciencedirect.com/science/article/pii/S0013935119302828?via%3Dihub; Baumgaertner et al., *supra* note 3.

[34] David R. Williams, Stress and the Mental Health of Populations of Color: Advancing Our Understanding of Race-related Stressors, 59 J. Health Soc. Behavior 466 (2018), *available at* https://pubmed.ncbi.nlm.nih.gov/30484715/; Feeding America, *Food Insecurity in Black Communities*, https://www.feedingamerica.org/hunger-in-america/black-communities (last visited Dec. 6, 2023); U.S. Envtl. Protection Agency, *Study Finds Exposure to Air Pollution Higher for People of Color Regardless of Region or Income*, Sept. 21, 2021, https://www.epa.gov/sciencematters/study-finds-exposure-air-pollution-higher-people-color-regardless-region-or-income (last visited Dec. 6, 2023).

[35]Office of Minority Health, U.S. Dep't Health & Human Serv., *Heart Disease and African Americans*, https://minorityh

ealth.hhs.gov/heart-disease-and-african-americans (last visited Dec. 6, 2023); Ctrs. for Disease Control & Prevention, *Racism and Health*, https://www.cdc.gov/minorityhealth/racism-disparities/index.html (last visited Dec. 6, 2023).

[36] Dutzik et al., *supra* note 5.

[37] Kyle Stock, *Autonomous Electric Lawn Mowers Save Time and Cut Carbon*, Bloomberg, July 20, 2023, https://www.bloomberg.com/news/articles/2023-07-20/best-electric-robot-lawn-mowers-to-save-time-cut-your-grass-and-carbon-output (last visited Dec. 6, 2023).

[38]Press Release, Edmunds, Leaf Blower's Emissions Dirtier than High-Performance Pick-Up Truck's, Says Edmunds' Insideline.com, Edmunds (Dec. 6, 2011), *available at* https://www.edmunds.com/about/press/leaf-blowers-emissions-dirtier-than-high-performance-pick-up-trucks-says-edmunds-insidelinecom.html.

[39] Dutzik et al., *supra* note 5.

[40] David Gorn, *More Pollution Than Cars? Gas-Powered Gardening Equipment Poses the Next Air Quality Threat*, KQED (Feb. 13, 2017), https://www.kqed.org/news/11310630/more-pollution-than-cars-gas-powered-gardening-equipment-poses-the-next-air-quality-threat; Margaret Renki, Op-Ed *The First Thing We Do, Let's Kill All the Leaf Blowers*, N.Y. Times, Oct. 25, 2021, *available at* https://www.nytimes.com/2021/10/25/opinion/leaf-blowers-california-emissions.html.

[41] Stock, *supra* note 37; Alison F. Takemura, *Here's Why Electric Lawn Mowers are Cutting Down the Gas-Fueled Competition, Canary Media*, Oct. 17, 2023, https://www.canarymedia.com/articles/electrification/heres-why-electric-lawn-mowers-are-cutting-down-the-gas-fueled-competition/ (last visited Dec. 6, 2023).

[42] Andrea Marpillero-Colomina, *There's a Big Payoff with an Electrified School Bus Fleet*, Governing, Aug. 28, 2022, https://www.governing.com/next/theres-a-big-payoff-with-an-electrified-school-bus-fleet (last visited Dec. 6, 2023).

[43] Wes Austin, Garth Heutel, & Daniel Kreisman, *School Bus Emissions, Student Health, and Academic Performance* (Nat'l Bureau of Econ. Research, Working Paper No. 25641, 2019), *available at* https://www.nber.org/system/files/working_papers/w25641/w25641.pdf.

[44] Ritu Narayen, *Electric School Buses Do More Than You Think*, RealClear Energy, Mar. 16, 2023, https://www.realclearenergy.org/articles/2023/03/16/electric_school_buses_do_more_than_you_think_887559.html (last visited Dec. 6, 2023).

[45] U.S. Envtl. Protection Agency, *Clean School Bus Program*, https://www.epa.gov/cleanschoolbus (last visited Dec. 6, 2023); Mark Lieberman, *Electric School Buses are Catching on, Helped by Federal Funds and New Emissions Rules*, EducationWeek, Apr. 25, 2023, https://www.edweek.org/leadership/electric-school-buses-are-catching-on-helped-by-federal-funds-and-new-emission-rules/2023/04 (last visited Dec. 6, 2023).

[46] Union of Concerned Scientists, Electric Utility Investment in Truck and Bus Charging: A Guide for Programs to Accelerate Electrification 2 (2019), *available at* https://www.ucsusa.org/sites/default/files/attach/2019/04/Electric-Utility-Investment-Truck-Bus-Charging.pdf.

[47] Noise Pollution and Abatement Act of 1970, 42 U.S.C. §7641 et. seq.

[48] H.R. Rep. No. 92-842, at 4 (1972) [hereinafter NCA House Report].

[49] Sidney A. Shapiro, *Lessons from a Public Policy Failure: EPA and Noise Abatement*, 19 Ecology L.Q 1, 8 (1992).

[50] Envtl. Protection Agency, Report to the President and Congress on Noise xxx (1972); *Compare id.* at B-3-B12 (1972) *with* Noise Control Act, 42 U.S.C. §4901 et. seq.

[51] Shapiro, *supra* note 49, at 7.

[52] NCA House Report, *supra* note 48, at 24; *see also* Shapiro, *supra* note 49, at 9.

[53] S. Rep. No. 95-875, at 3 (1978) [hereinafter QCA Senate Report].

[54] Shapiro, *supra* note 49, at 17–18.

[55] *Id.* at 7, 19.

[56] *See*, *e.g.*, *id.* at 21 ("Once Congress eliminated ONAC's funding…").

[57] For example, it does not appear that Congress drafted the EPA's appropriations bills in the years directly before and after the Reagan team's decision with sufficient specificity to dictate the existence or shuttering of a specific office, like the ONAC. *But see* 42 U.S.C. §4918 (authorizing NCA appropriations for fiscal year 1979).

[58] Shapiro, *supra* note 49, at 19–21.

[59] *See generally* Louis Menand, *The Rise and Fall of Neoliberalism*, The New Yorker, July 17, 2023, *available at* https://www.newyorker.com/magazine/2023/07/24/the-rise-and-fall-of-neoliberalism.

[60] Kevin Boyle, *Ronald Reagan's New Economic Order, and What it Meant for America*, N.Y. Times, April 5, 2022, *available at* https://www.nytimes.com/2022/04/05/books/review/the-rise-and-fall-of-the-neoliberal-order-gary-gerstle.html;

Cally Carswell, *How Reagan's EPA Chief Paved the Way for Trump's Assault on the Agency*, The New Republic, March 21, 2017, *available at* https://newrepublic.com/article/141471/reagans-epa-chief-paved-way-trumps-assault-agency.

[61] Shapiro, *supra* note 49, at 20; Timothy B. Clark, *Regulating Garbage Truck Noise—A Quiet Debate Is Getting Louder*, 12 Nat'l J. 1843, 1843 (1980), *available at* https://bit.ly/4b0vQW8.

[62] Clark, *supra* note 61, at 1843.

[63] *Id.* at 1844.

[64] *Id.* at 1845.

[65] *Reauthorization of the Toxic Substances Control Act; the Noise Control Act; the Research and Development Program of the Environmental Protection Agency; and the Council on Environmental Quality: Hearing Before the Subcomm. on Toxic Substances and Environmental Oversight of the S. Comm. on Env't & Pub. Works*, 97th Cong. (1981) at 4 (testimony of Richard Hanneman, Director of Gov't & Pol'y Affs., Nat'l Solid Waste Mgmt. Ass'n) [hereinafter Hanneman Testimony].

[66] *Id.* at 5.

[67] Shapiro, *supra* note 49, at 20.

[68] *Id.* at 20.

[69] *Id.* at 32.

[70] For a comprehensive list, *see id.* at 10 tbl.1.

[71] 40 C.F.R. §201.

[72] 40 C.F.R. §202.

[73] 40 C.F.R. §205.150.

[74] 40 C.F.R. §204.

[75] *See* Proposed Withdrawal of Products from the Agency's Reports Identifying Major Noise Sources and Withdrawal of Proposed Rules, 47 Fed. Reg. 54108 (Dec. 1, 1982) (to be codified at 40 C.F.R. pts. 204 & 205). The proposed rule lingered on the agency's public regulatory agenda into the 1990s, but the EPA apparently never finalized the decision.

[76] Shapiro, *supra* note 49, at 24.

[77] Quiet Communities Complaint, *supra* note 6.

[78] 42 U.S.C. §4905(c).

[79] Though the scientific community uses the terms criteria and standards interchangeably, in the NCA, Congress intended criteria to include descriptions of the causal relations between noise and public health and welfare outcomes. U.S. Envtl. Protection Agency, Public Health and Welfare Criteria for Noise 1 (1973) [hereinafter 1973 Criteria Report].

[80] 42 U.S.C. §4904(a).

[81] U.S. Envtl. Protection Agency, Noise Control Program – Progress to Date 10 (1979) [hereinafter 1979 Progress Report].

[82] 42 U.S.C. §4904(b). The limited case law available on the NCA suggests that the major source identification process need not specify in detail each product within an eligible class. Recreation Vehicle Indus. Ass'n v. Env't Prot. Agency, 653 F.2d 562, 570 (D.C. Cir. 1981).

[83] 42 U.S.C. §4905(a)(1).

[84] Shapiro, *supra* note 49, at 10 tbl.1.

[85] 42 U.S.C. §4905(a)(1)(C). However, aircraft components and military equipment are exempt from the statute's definition of "product." 42 U.S.C. §4902(3).

[86] HouseTechLab, *What is a Portable Air Compressor Used For?,* https://housetechlab.com/what-is-a-portable-air-compressor-used-for/ (last visited Dec. 7, 2023).

[87] Identification of Products as Major Sources of Noise, 39 Fed. Reg. 22297 (June 21,1974). Air compressors take ambient air and discharge it at a higher pressure, emitting significant levels of noise both from their engines and as they vibrate against the surface they are resting on.

[88] Noise Emission Standards for Construction Equipment, 39 Fed. Reg. 38186, 38187 (proposed Oct. 29, 1974) (to be codified at 40 C.F.R. pt. 204).

[89] *Id.*

[90] Technically, 76 "A weighted" decibels. 40 C.F.R. §204.52.

[91] Shapiro, *supra* note 49, at 10 tbl.1.

[92] 42 U.S.C. §4905(b).
[93] 42 U.S.C. §4905(c).
[94] 42 U.S.C. §4905(c).
[95] 42 U.S.C. §7411(a)(1).
[96] Essex Chemical Corporation v. Ruckelshaus, 486 F.2d 427, 433–34 (D.C. Cir. 1973).
[97] *Id.* at 434.
[98] 42 U.S.C. §4905(c)(1).
[99] 42 U.S.C. §4916(a)(1).
[100] 42 U.S.C. §4916(a)(1).
[101] Again, A weighted decibels. 40 C.F.R. §201.11.
[102] Shapiro, *supra* note 49, at 12 tbl.2.
[103] 42 U.S.C. §4916(a)(3).
[104] 42 U.S.C. §4916(b).
[105] 42 U.S.C. §4917(a).
[106] 42 U.S.C. §4917(a)(1).
[107] 42 U.S.C. §4917(a)(3), (b).
[108] Shapiro, *supra* note 49, at 12, tbl.2.
[109] 42 U.S.C. §44715.
[110] Shapiro, *supra* note 49, at 16; QCA Senate Report, *supra* note 53, at 4.
[111] 42 U.S.C. §4909(a)(1).
[112] 42 U.S.C. §4905(d).
[113] 42 U.S.C. §4910(d).
[114] 42 U.S.C.§4915(d).
[115] *Id.*
[116] 42 U.S.C. §4905(e)(1)(A).
[117] 42 U.S.C. §4505(e)(1)(B).
[118] 42 U.S.C. §4905(e)(2).
[119] 42 U.S.C. §4916(d)(1) (railroads); 42 U.S.C. §4917(c)(1) (motor carriers).
[120] 42 U.S.C. §4916(c)(2) (railroads); 42 U.S.C. §4917(c)(2) (motor carriers).
[121] 42 U.S.C. §4911. Plaintiffs must abide by a 60-day notice requirement. 42 U.S.C. §4911(b).
[122] 42 U.S.C. §4911(a)(2)(A).
[123] Quiet Communities Complaint, *supra* note 6.
[124] 43 U.S.C. §4911(a)(1).
[125] Compl, Utah Physicians for a Healthy Environment, Inc., v. Harley-Davidson of Salt Lake City, LLC, No: 2:22-cv-00473-DBB (D. Utah 2022), *available at* https://www.uphe.org/wp-content/uploads/2022/07/2022-7-18-UPHE-v-Harley-Dealerships-complaint.pdf [hereinafter Utah Physicians Complaint].
[126] 42 U.S.C. §4915(a). Cases in the late 1970s and early 1980s suggest that certain parts of the Act – for example recordkeeping and reporting regulations – lie beyond the reach of judicial review. *See* Chrysler Corp. v. EPA, 600 F.2d 904 (D.C. Cir. 1979); Atlas Copco, Inc. v. EPA, 642 F.2d 458 (D.C. Cir. 1979). It remains unclear whether such a limited approach to judicial review holds favor today.
[127] 42 U.S.C. §4905(f).
[128] *Id.*
[129] 42 U.S.C. §4907(a)(1).
[130] 42 U.S.C. §4907(a)(2). Notably, these products are not limited to those for which the EPA has set standards under Section 6 or identified as major sources of noise under Section 5. NCA House Report, *supra* note 48, at 16.
[131] 42 U.S.C. §4907(a)(2).
[132] 40 C.F.R. §211.
[133] 40 C.F.R. §211.104.

[134] 40 C.F.R. §211.109 (including inspection and monitoring).

[135] 40 C.F.R. §211.201 et seq.

[136] 42 U.S.C. §4914(a–b).

[137] 42 U.S.C. §4914(c–d).

[138] 1979 Progress Report, *supra* note 81, at 15; Low Noise Emissions Products; Proposed Criteria and Data Requirements, 42 Fed. Reg. 27422 (May 27, 1977) (to be codified at 40 C.F.R. pts. 203, 204, & 205).

[139] 42 U.S.C. §4903(c).

[140] 42 U.S.C. §4903(c).

[141] U.S. Envtl. Protection Agency, Noise Control Program – Progress to Date 1980, 27 (1980) [hereinafter 1980 Progress Report].

[142] 1979 Progress Report, *supra* note 81, at 20.

[143] 42 U.S.C. §4913.

[144] *Id.*

[145] Shapiro, *supra* note 49, at 17.

[146] 1979 Progress Report, *supra* note 81, at 1–2.

[147] 1980 Progress Report, *supra* note 141, at 2.

[148] 1979 Progress Report, *supra* note 81, at 1–2.

[149] 1980 Progress Report, *supra* note 141, at 2; *see also* Shapiro, *supra* note 49, at 18.

[150] 1979 Progress Report, *supra* note 81, at 6.

[151] *Id.*

[152] Of course, there may be useful intermediate steps, too. The leading noise control advocacy organization, Quiet Communities, recently sued the EPA in a bid to force the agency to redirect existing funding toward "perform[ing] its nondiscretionary statutory duties as lawfully imposed by Congress." Quiet Communities Complaint, *supra* note 6, at 2. However, even if the EPA, either at its own behest or Quiet Community's, can fulfill some of its NCA duties without new funding, a full-throated commitment to reducing noise emissions will likely require new appropriations.

[153] 1980 Progress Report, *supra* note 141, at 32 (adjusted for inflation).

[154] *See* Michelle D. Christensen, Transfer and Reprogramming of Appropriations: An Overview of Authorities, Limitations, and Procedures (Cong. Res. Serv., R40398, 2013), *available at* https://crsreports.congress.gov/product/pdf/R/R43098/4.

[155] *See* Shapiro, *supra* note 49, at 23; 40 C.F.R. §202.11-.21 (1991) (stating that regulations were amended on Jan. 8, 1986).

[156] Product Noise Labeling Hearing Protection Devices, 74 Fed. Reg. 39150 (proposed Aug. 5, 2009) (to be codified at 40 C.F.R. pt. 211).

[157] Another recent but perhaps less dramatic example of an agency that Congress revived is the Administrative Conference of the United States (ACUS). ACUS is an independent agency first created by Congress in 1968 that is charged with studying and making recommendations for improving the operations of federal agencies. Congress eliminated its funding 1995, but later revived the agency in 2004. Federal Regulatory Improvement Act of 2004, Pub. L. No. 108-401, 118 Stat. 2255, 2256.

[158] Conf. Rep. No. 116-260 (Div. D), at 117 (2000), *available at* https://www.appropriations.senate.gov/imo/media/doc/Division%20D%20-%20Energy%20and%20Water%20Statement%20FY21.pdf#page=153.

[159] U.S. Fed. Energy Reg. Comm'n, The Office of Public Participation (2021), *available at* https://www.ferc.gov/media/ferc-report-office-public-participation.

[160] For the best existing aggregation of noise harm research, *see* Policy Statement, Am. Public Health Assoc, *supra* note 4.

[161] Memorandum from Richard L. Revesz, Admin., Off. of Info. & Reg. Affairs, to the Heads of Executive Departments and Agencies on Broadening Public Participation and Community Engagement in the Regulatory Process, (July 19, 2023), *available at* https://www.whitehouse.gov/wp-content/uploads/2023/07/Broadening-Public-Participation-and-Community-Engagement-in-the-Regulatory-Process.pdf.

[162] *See* Proposed Withdrawal of Products from the Agency's Reports Identifying Major Noise Sources and Withdrawal of Proposed Rules, 47 Fed. Reg. 54108 (Dec. 1, 1982) (to be codified at 40 C.F.R. pts. 204 & 205).

[163] 40 C.F.R. §204.

[164] Leah Ford & Jeffrey Freund, *The Connection Between Unions and Worker Safety*, U.S. Dep't of Labor Blog, May 11, 2022, https://blog.dol.gov/2022/05/11/the-connection-between-unions-and-worker-safety (last visited Dec. 7, 2023); Nicole Prchal Svajlenka, Undocumented Immigrants in Construction (Ctr. for Am. Progress Feb. 2021), *available at* https://www.americanprogress.org/wp-content/uploads/sites/2/2021/02/EW-Construction-factsheet.pdf.

[165] Noise Free America, *Lawn and Garden Equipment*, https://noisefree.org/sources-of-noise/lawn-and-garden-equipment/ (last visited Nov. 21, 2023).

[166] Shapiro, *supra* note 49, at 10 tbl.1.

[167] Elizabeth Trovall, *Seasonal Foreign Workers Fill Critical Landscaping Jobs, Enabled by Easier Access to Visas*, Marketplace, Apr. 27, 2023, https://www.marketplace.org/2023/04/27/seasonal-foreign-workers-fill-critical-landscaping-jobs-enabled-by-easier-access-to-visas/ (last visited Dec. 7, 2023).

[168] *See supra* text accompanying notes 36-41.

[169] Shapiro, *supra* note 49, at 10 tbl.1.

[170] Nat'; Ctr. for Biotech. Info., Nat'l Library of Med., WHO Housing and Health Guidelines: Table 8.11 - Recommendations of the WHO Environmental Noise Guidelines for the European Region, https://www.ncbi.nlm.nih.gov/books/NBK535301/table/ch8.tab11/ (last visited Dec. 7, 2023); Edmonton Trolley Coalition, *Noise Pollution*, http://www.trolleycoalition.org/noise.html (last visited Dec. 7, 2023).

[171] Jason C. Ross & Michael A. Staiano, A Comparison of Green and Conventional Diesel Bus Noise Levels (2007), *available at* https://www.staianoengineering.com/images/NC07_Ross_Staiano_-_A_comparison_of_green_and_conv.pdf.

[172] Narayen, *supra* note 44.

[173] *See, e.g.*, Charles R. Johnson, Jr., & Glenn S. Johnson, *Environmental Justice and Title VI of the Civil Rights Act of 1964: A Case Study on the Siting of MTA's Bus Depot in Harlem, New York*, 19 Race, Gender & Class 196 (2012).

[174] Monica Anderson, *Who Relies on Public Transit in the U.S.*, Pew Research Ctr., April 7, 2016, https://www.pewresearch.org/short-reads/2016/04/07/who-relies-on-public-transit-in-the-u-s/ (last visited Dec. 7, 2023); Zippia, *City Bus Driver Demographics and Statistics in the U.S.*, https://www.zippia.com/city-bus-driver-jobs/demographics/ (last visited Dec. 7, 2023).

[175] *See supra* text accompanying notes 42-45.

[176] Christina DeConcini & Jillian Neuberger, *Electrifying the US School Bus Fleet: How to Put Children First in the Zero-Emission Transition*, World Resources Inst., Apr. 21, 2022, https://www.wri.org/insights/electrifying-us-school-bus-fleet-how-put-children-first-zero-emission-transition (last visited Dec. 7, 2023).

[177] 40 C.F.R. §205.

[178] Wendy Q. Xiao, *The Road to Racial Justice: Resolving the Disproportionate Health Burden Placed on Communities of Color by Highway Pollution*, 52 Colum. Hum. Rts. L. Rev. 911 (2021), *available at* https://hrlr.law.columbia.edu/hrlr/the-road-to-racial-justice-resolving-the-disproportionate-health-burden-placed-on-communities-of-color-by-highway-pollution/; Ben Tracy, *'We Have a Death Sentence': Diesel Emissions Disproportionately Harm People of Color and Poor Neighborhoods, Experts Say*, CBS News, Apr. 21, 2022), https://www.cbsnews.com/news/air-pollution-minorities-poor-neighborhoods/ (last visited Dec. 7, 2023).

[179] Cong. Budget Off., Emissions of Carbon Dioxide in the Transportation Sector 5 (2022), *available at* https://www.cbo.gov/system/files/2022-12/58566-co2-emissions-transportation.pdf; Union of Concerned Scientists, *How to Eliminate Pollution from Heavy-Duty Vehicles*, Feb. 11, 2022 (Updated Apr. 29, 2022), https://www.ucsusa.org/resources/heavy-duty-vehicles-and-nox (last visited Dec. 7, 2023).

[180] *See, e.g.*, Diane Bailey, Zach Goldman, & Maria Minjares, Driving on Fumes: Truck Drivers Face Elevated Health Risks from Diesel Pollution (Nat. Resources Defense Council Issue Paper, 2007), *available at* https://www.nrdc.org/sites/default/files/driving.pdf.

[181] Earthjustice, *Cryptocurrency Mining in Texas*, Sep. 12, 2023, https://earthjustice.org/feature/cryptocurrency-mining-texas (last visited Dec. 7, 2023); Yan, *supra* note 1.

[182] Zack Voell, *We Hear You: Bitcoin Mining Noise Pollution is a Solved Problem*, Bitcoin Magazine, June 2, 2022, https://bitcoinmagazine.com/business/solving-bitcoin-mining-noise-pollution (last visited Dec. 7, 2023).

[183] Zifa Mae, *Crypto Goes Green: The Most Energy-Efficient Cryptocurrency, Reviewed*, changelly blog, Mar. 22, 2023, https://changelly.com/blog/most-green-cryptos/ (last visited Dec. 7, 2023).

[184] Yan, *supra* note 1.

[185] Olugbenga Ajilore & Caius Z. Willingham, The Path to Rural Resilience in America (Ctr. for Am. Progress,

2020), *available at* https://www.americanprogress.org/article/path-rural-resilience-america/; Robert A. Harrington et al., *Call to Action: Rural Health: A Presidential Advisory From the American Heart Association and American Stroke Association*, 141 Circulation e615–e644 (2020), *available at* https://www.ahajournals.org/doi/10.1161/CIR.0000000000000753.

[186] Courtney Linwall, *Crypto Has a Climate Problem*, Nat.. Resources Defense Council, Feb. 3, 2022, https://www.nrdc.org/stories/crypto-has-climate-problem (last visited Dec. 7, 2023).

[187] *See supra* text accompanying notes 7-11.

[188] 42 U.S.C. §4907(b).

[189] 42 U.S.C. §4914(c).

[190] *See*, *e.g.*, U.S. Gen. Servs. Admin, *Environmentally Preferable Products*, https://www.gsa.gov/climate-action-and-sustainability/buy-green-products-services-and-vehicles/buy-green-products/environmentally-preferable-products (last visited Dec. 7, 2023); U..S Envtl. Protection Agency, Safer Choice, https://www.epa.gov/saferchoice (last visited Dec. 7, 2023).

[191] *See* James Goodwin, *When the System Fosters Racial Injustice*, Envtl. Forum 34 (May/June 2021), *available at* https://cpr-assets.s3.amazonaws.com/documents/regs-racial-justice-goodwin-oped-envforum-050121.pdf.

[192] Policy Statement, Am. Public Health Assoc, *supra* note 4.

[193] Foundations for Evidence-Based Policymaking Act of 2018, Pub. L. No. 115-435, 132 Stat. 5529.

[194] 29 C.F.R. §1910.95.

[195] 29 U.S.C. §669(a)(1).

[196] 1980 PROGRESS REPORT, *supra* note 141, at 2.

[197] *See* Utah Physicians Complaint, *supra* note 125.