



NATURAL RESOURCES DEFENSE COUNCIL

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Comments on the Illinois Volkswagen Settlement Draft Beneficiary Mitigation Plan

Introduction

The Natural Resources Defense Council (NRDC) thanks the Illinois Environmental Protection Agency (IEPA) for the opportunity to comment on the Illinois Draft Beneficiary Mitigation Plan (BMP), released for comment on February 27. NRDC provides the following recommendations on the use of the \$108.7 million in funds that the state of Illinois received from the environmental mitigation trust (EMT) established by the Volkswagen (VW) consent decree. In brief, the EMT presents a significant opportunity for Illinois to reduce harmful nitrogen oxide (NO_x) emissions and particulate matter (PM), especially in environmental justice communities that bear disproportionate pollution burdens, reduce the state's dependence on petroleum-based fuels, and modernize Illinois's transportation sector. The VW EMT

should be allocated to support a critical transformation of the transportation sector from petroleum-based fuels, to clean electricity in Illinois. This transformation should meaningfully reduce transportation emissions, particularly for communities that are disproportionately burdened by pollution. We recommend that the IEPA incorporate the following in its next revision to the BMP:

- 1) Invest the full 15 percent on light-duty zero emission supply equipment**
- 2) Create a specific allocation for overburdened environmental justice communities**
- 3) Establish a formal, more iterative stakeholder process**
- 4) Revise the current online VW survey**

Comments on Draft Beneficiary Mitigation Plan

As a member of the Charge Up Midwest coalition, NRDC has been active in developing policies at the intersection of transportation electrification and utility regulation in Michigan, Minnesota, Missouri, and Ohio. We are a signatory to a settlement with American Electric Power Ohio that would invest \$10 million to deploy almost 400 charging stations across the state. NRDC is involved within the Missouri EV Collaborative, a multi-stakeholder electrification group, that has provided comments to the Missouri Department of Natural Resources, recommending the creation of a direct current fast charging (DCFC) network across the state. We have also advised the Michigan Public Service Commission and the Minnesota Public Utilities Commission in their efforts to advance transportation electrification.

While these comments focus on deficiencies in the draft plan, we commend the IEPA on their \$10 million carve out for electric school buses. In comparison to other Midwestern states, Illinois' beneficiary mitigation plan provides the largest dedicated funding allocation for zero emission vehicles serving the youth population.¹ School buses provide an excellent use-case for medium-duty battery

¹ <http://epa.ohio.gov/Portals/42/documents/VW/OH%20Draft%20VW%20Beneficiary%20Mitigation%20Plan.pdf>

electric vehicles: low speed, and low torque scenarios show significant emission reductions compared to diesel.² Zero emission school buses will ensure that fewer children will suffer from asthma attacks and respiratory diseases caused by exposure to harmful diesel air pollution. These reductions will not only help protect our children, but also ensure fewer sick days in school districts across the state and fewer days of missed work for parents.³ Currently, electric school bus models are offered by four companies – Blue Bird, eLion, Trans Tech, and Starquest.⁴ However, Illinois should further its commitment to zero emission vehicles beyond the school bus segment, as recommended below.

- 1) IEPA should dedicate fifteen percent (or \$16.2 million), the maximum amount allowed, towards light-duty plug-in electric vehicle charging stations, because EVs are the most promising way to reduce NO_x emissions from the single largest mobile source.**

An investment in light-duty charging infrastructure with EMT funds will help narrow the existing EV infrastructure gap and will put Illinois on the path towards long-term emissions reductions, as light-duty vehicles are the largest single source of mobile source NO_x emissions in the state.⁵ When charging on the electrical grid in Illinois, EVs will have 40 percent fewer lifecycle NO_x emissions than the typical gasoline vehicle within two years.⁶ Thus, near-term investments in EV infrastructure will deliver immediate benefits to Illinois and deliver future emissions savings.

Based on an analysis by the National Association of State Energy Officials and the National Association of Clean Air Agencies, the plurality of NO_x emissions in Illinois comes from on-road light-duty vehicles (28 percent, 84,000 tons) followed by on-road heavy-duty vehicles (27 percent, 79,000 tons), while locomotives contribute just under 15 percent of total mobile NO_x emissions (See Figure 1).⁷ These

² <https://www.sciencedirect.com/science/article/pii/S0360544215016837>

³ <https://www.atsjournals.org/doi/abs/10.1164/rccm.201410-1924OC#.VrgOrTYrLeR>

⁴ <https://www.veic.org/Media/success-stories/types-of-electric-school-buses.pdf>

⁵ <http://www.vwclearinghouse.org>

⁶ Analysis by Atlas Public Policy using Argonne National Laboratory's GREET model v1.3.0.13239 (<https://greet.es.anl.gov>).

⁷ <https://vwclearinghouse.org/>

numbers demonstrate the need to prioritize emissions coming from on-road sources and the greater potential to see improved air quality by investing charging infrastructure for light-duty vehicles. Light-duty EVs reduce NOx emissions by 50-90 percent per gasoline vehicle replaced.⁸

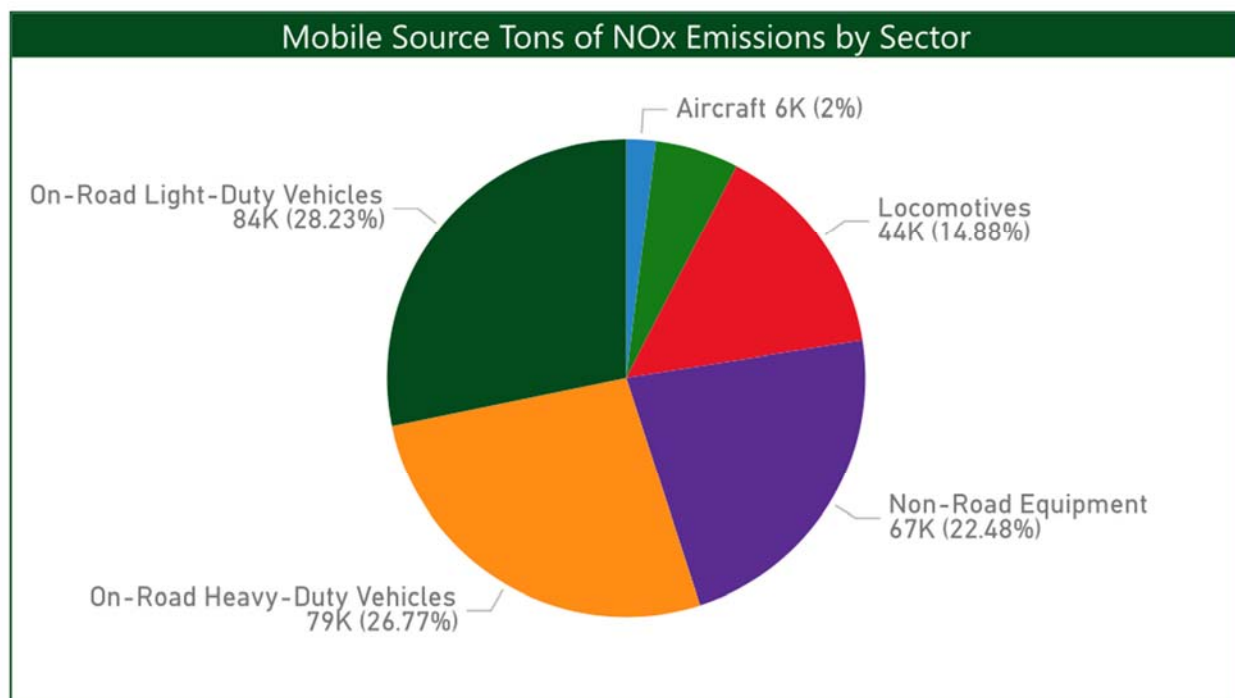


Figure 1: Illinois Mobile Emissions

Illinois needs more light duty vehicle charging stations. An analysis performed by MJ Bradley and Associates estimates there are about 12,300 EVs in Illinois today.⁹ There are only 391 public charging stations with 847 charging outlets in the state of Illinois, and the vast majority of those are “Level 2” stations only suitable for long-dwell time locations where cars are parked for many hours.¹⁰ Further, fast charging barely exists in Illinois. Only two public DCFC charging locations in Illinois have more than one charging port of the same connector (see Figure 2).

⁸http://www.swenergy.org/data/sites/1/media/documents/publications/documents/2017_EV_Emissions_Update_Wasatch_Front_Jan-2017.pdf

⁹ <https://mjbradley.com/sites/default/files/IL%20PEV%20CB%20Analysis%20FINAL%2026sep17.pdf>

¹⁰ https://www.afdc.energy.gov/fuels/electricity_locations.html#/find/nearest?fuel=ELEC, April 18, 2018

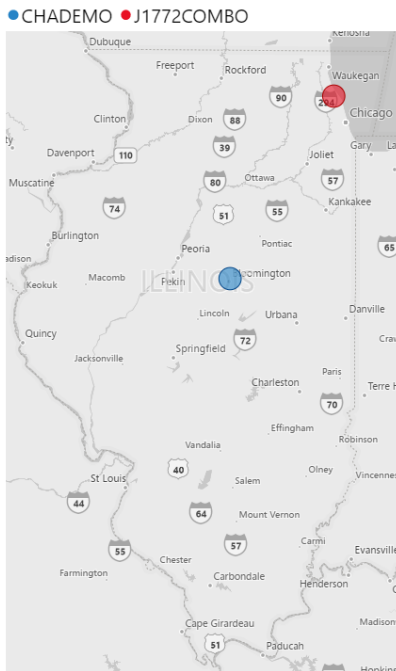


Figure 2: Non-Tesla DCFC charging locations with more than one port of the same connector (source: Atlas EV Hub, www.atlasevhub.com)

Second-generation electric vehicles such as the Chevrolet Bolt EV, which offer longer ranges at affordable price points are now available, but the lack of robust public charging infrastructure could inhibit mass adoption. Without more charging stations, some Illinois citizens will be reluctant to purchase EVs. Studies have shown that the availability of public EV charging infrastructure is a key driver of EV adoption in metropolitan regions.¹¹ Prospective EV owners will be hesitant to purchase EVs unless they are certain that there is an adequate public charging network available, and private companies and utilities will not invest in EV charging infrastructure unless they are certain there is an adequate market to make a reasonable profit. Reliable access to fast charging will need to exist for long-range EVs to compete with gasoline vehicles, and today's infrastructure is not up to the challenge. A \$16.2 million investment in light-duty charging infrastructure could play a key role in jumpstarting the transportation electrification market. Over 70 percent of states with beneficiary mitigation plans have

¹¹ https://www.theicct.org/sites/default/files/publications/EV-charging-best-practices_ICCT-white-paper_04102017_vF.pdf

already made this commitment by designating the full 15 percent towards EV infrastructure, including Michigan, Minnesota, Missouri, and Ohio.

While Electrify America has targeted the Chicago metro area to deploy approximately \$13 million worth of charging stations, it will only provide a small share of the infrastructure necessary to increase EV adoption in the region and will not provide infrastructure in much of the rest of the state. More money is needed from the EMT to help narrow the gap of EV charging infrastructure, especially in areas that will not be served by Electrify America's nascent deployment. To this point, Electrify America has only identified seven DCFC charging hubs and approximately twenty Level 2 charging hubs in multi-unit dwellings and workplaces across Chicago. Although Electrify America hopes to eventually install an additional 100-200 charging outlets within the greater Chicago area, the state of Illinois will still need at least 23,000 charging outlets by 2030, over 20 times the amount the state currently has in addition to the tentative Electrify America commitment.¹² Even with investments from Electrify America, there is still a long way to go to satisfy future charging needs.

Electrify America also has no public obligation to serve disadvantaged communities. Of the seven proposed charging hubs, five have been designated within suburbs outside of Chicago. In addition, Electrify America will likely target the most profitable locations first, potentially shutting out the neighborhoods that are most affected by diesel-related pollution from considering EVs. Although Electrify America has pledged to install four multi-unit dwelling charging hubs, it is not nearly enough for the Chicagoan population since 60 percent of Chicagoans live in multi-unit dwellings. Within this planning framework, most residents are not accounted for, particularly low-income residents who in many cases live in these multi-unit dwellings. Electrify America's network, which is focused around the Chicago metro area will also leave large swaths of the state underserved. We recommend the IEPA

⁶ <https://www.nrel.gov/docs/fy17osti/69031.pdf>

dedicate the full 15 percent towards EV charging infrastructure to jumpstart the incoming EV market. Funds should be used to create a practical charging corridor throughout the state to address the “range anxiety,” so that no driver is afraid of running out of fuel no matter where they are in the state. To stretch Environmental Mitigation Trust dollars further, we strongly recommend IEPA seek to partner with the state’s electric utilities, which are well situated to provide supporting electrical infrastructure, allowing IEPA to create a more robust network as a result.

This is in line with what other states are doing. For example, the Missouri EV collaborative released a joint proposal for VW funds to create a minimum practical charging network across the entire state with an estimated cost of \$6.8-14.4 million with the cost split among utilities, nearby communities, and VW funds (See Figure 3). And in Michigan, the Charge Up Midwest coalition also proposed a similar plan at the Public Service Commission’s EV Technical Conference. By collaborating with these nearby states that have already shown interest in a network, Illinois could partner with its electric utilities and private companies to help create a Midwestern EV corridor to allow EV drivers to travel from state to state without the fear of running out of fuel.

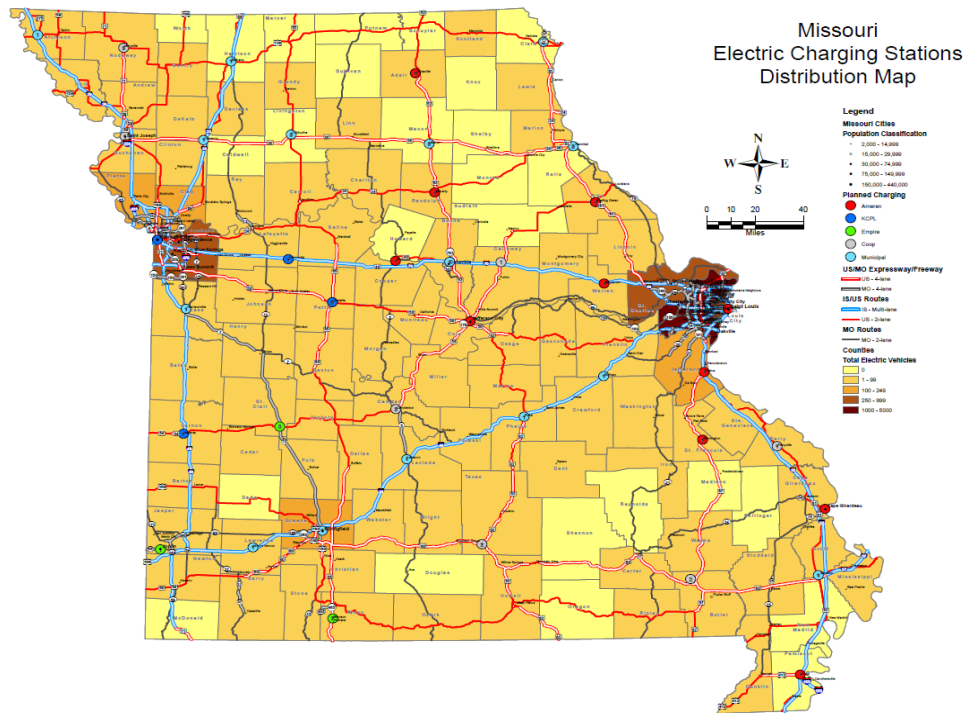


Figure 3: EV Collaborative Proposal for Statewide Charging Network

- 2) IEPA should clarify how it will prioritize underserved areas and should consider criteria to target areas that are cumulatively burdened by poor socio-economic conditions along with regional and local air pollution and other environmental factors.

IEPA should provide greater specificity as to how the plan will reduce air pollution in environmental justice communities and prioritize addressing pollution in communities facing the greatest cumulative burdens beyond what is currently proposed. IEPA has designated three large priority areas within the state, but more granularity is needed to ensure that funds will drive change in the localities within these areas that are most burdened by the cumulative impacts of pollution. The set of criteria IEPA used to identify priority areas do not fully encapsulate the environmental justice problems associated with diesel vehicles that are compounded by poor socio-economic status and other vulnerabilities. Within the Chicagoland area, which is designated as nonattainment for ozone, the areas with the most VW registrations do not correlate with such environmental justice areas. Thus, even though reductions in NO_x levels in one part of the ozone nonattainment area can positively affect ozone

levels in nearby burdened areas, only targeting such reductions will not effectively address local pollution burdens from diesel vehicles that fall disproportionately on low-income communities and communities of color and contribute to the high cumulative burdens faced by these communities.

IEPA should make specific investments in overburdened communities that suffer from high levels of NO_x, PM, and other harmful diesel-related emissions as well as other sources of pollution, and that are most vulnerable to the negative impacts of pollution, to achieve the greatest overall benefit to environmental justice communities. Such an approach will not only reduce ozone regionally, but also benefit vulnerable communities saddled with disproportionate burdens linked to diesel vehicles.

NRDC specifically recommends that the IEPA consider delegating funds to specific communities based on cumulative impacts analysis consistent with the state's definition of an environmental justice community. Cumulative impacts analysis does not focus on one or a handful of environmental exposure metrics in isolation, but instead takes a more comprehensive look at pollution and community vulnerability factors to assess the areas most burdened by environmental pollution. For example, Figure 4 is a map generated by using US EPA's EJSCREEN tool that considers only levels of diesel PM, as block group percentile rankings relative to other block groups in Illinois.¹³ With this limited picture, the Downtown Loop area and major highways are highlighted as "overburdened communities." Yet, this simplification does not encapsulate the populations that are most greatly impacted by diesel pollution from a cumulative view. The Downtown Loop area is a primarily commercial sector that amasses large amounts of air pollution due to daily commuting. Low-income residential communities of color outside of downtown and along highway corridors, in contrast, bear a significantly larger environmental and socio-demographic burden, of which diesel air pollution is a significant part.

¹³ A similar picture would result from mapping solely vehicle-related NO_x emissions in the Greater Chicago area. (Note that EJSCREEN does not include a NO_x-ozone indicator; its contribution is only captured in the general ozone indicator, the modeling of which is dominated by regional patterns.)

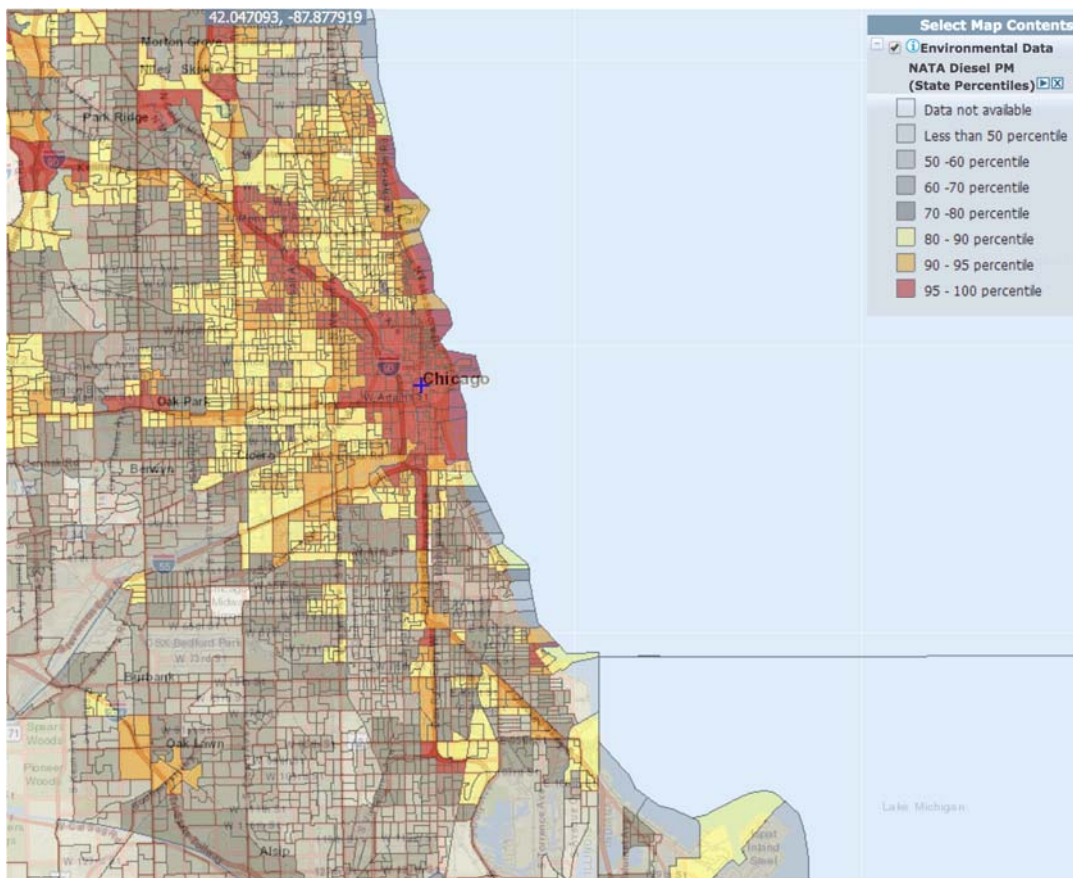


Figure 4: Diesel PM indicator in Chicago, US EPA EJSCREEN 2017

By incorporating a wider set of vulnerability factors, high priority areas within the Chicago region shift. Figure 5 below, also generated using the EJSCREEN tool, depicts an indicator called the EJ index for diesel PM. This index, created by the US EPA, combines information on diesel PM levels with rates of poverty and percentage of minority population, based on the understanding that socio-demographic factors can combine with environmental exposures to produce heightened vulnerability. Thus, in the more comprehensive picture shown in Figure 5, areas cumulatively burdened by diesel PM and population vulnerability (as captured by minority and poverty status) lie outside of downtown, in West Chicago, along the I-55 corridor, and in the Calumet region in particular along highway routes.

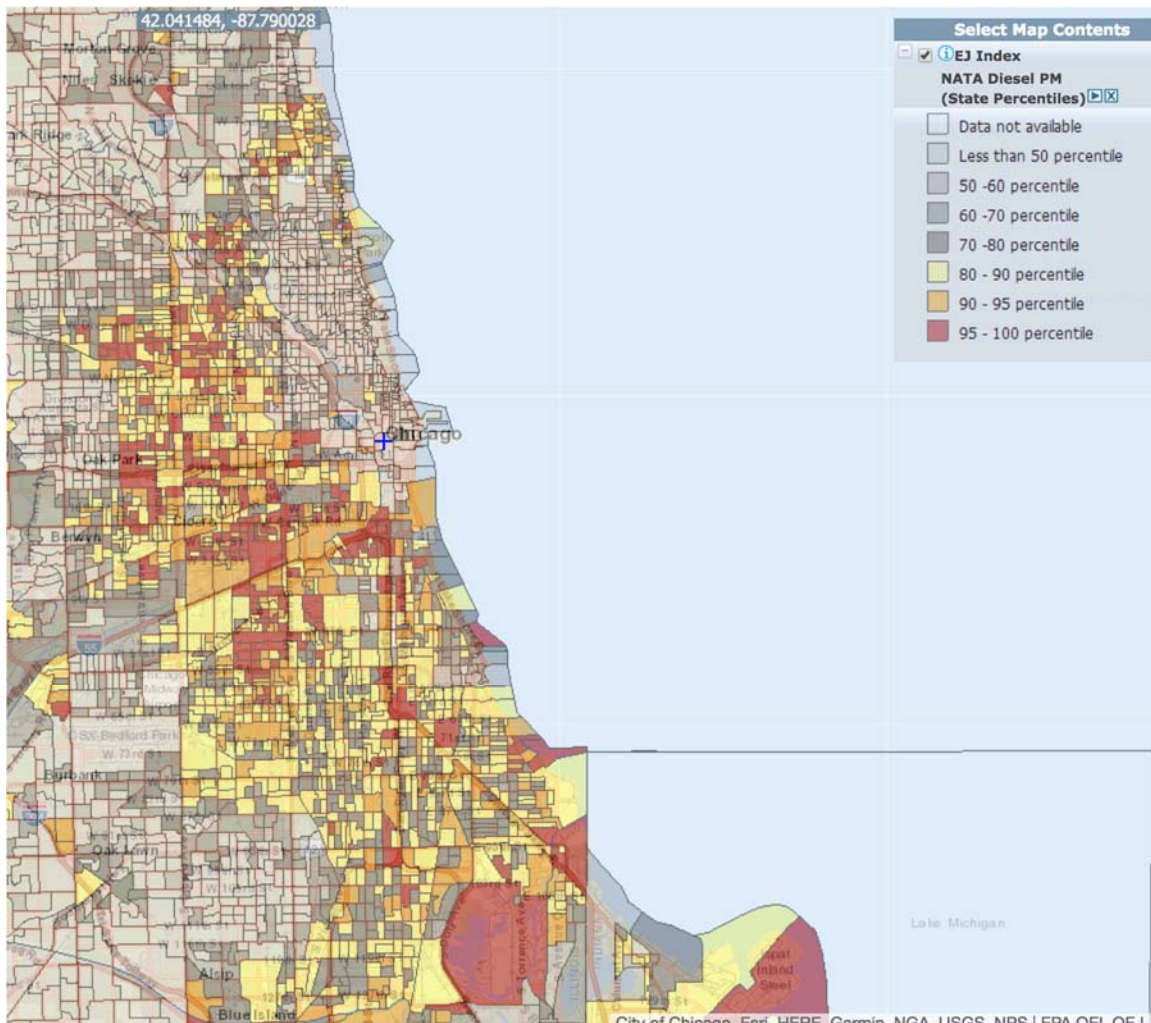


Figure 5: Diesel PM Environmental Justice Index in Chicago, US EPA EJSCREEN 2017

The differences between the two preceding figures illustrate the importance of considering socio-demographic factors that can heighten vulnerability, along with environmental exposures. US EPA’s EJSCREEN tool can be a starting point for such a cumulative impacts approach. To best leverage the tool to identify priority areas for present purposes, we recommend considering not only US EPA’s EJ index for diesel PM, but also the other ten EJ indices provided by the tool. These other indices cover a range of environmental exposures that also contribute to the cumulative pollution burden (such as traffic proximity and hazardous facilities). Similarly, although the formula for deriving EJ indices in EJSCREEN only incorporates poverty and minority status as population information, additional socio-

demographic indicators (such as educational attainment, population under age five, and population over age 65) are available through the EJSCREEN tool and should be considered as well. Further, environmental and population information available only in Illinois (and therefore excluded from US EPA's EJSCREEN) should also be taken into account. In this regard, we understand that the IEPA is currently exploring the development of a state-level environmental justice screening tool. We support that endeavor and the new tool's use to the extent possible here.

In addition to taking a cumulative impacts perspective to identify target areas, IEPA should prioritize vehicle types that most adversely affect local conditions to best address the contribution of air pollution to cumulative impacts in these areas. Within the areas that stand out from a cumulative burdens perspective, we recommend investment in, for example, cleaning up the medium- and heavy-duty trucks that pass through these communities on a daily basis and can cause significant diesel particulate matter hot spots.¹⁴ Light commercial urban delivery vans, medium-duty regional delivery trucks, and refuse trucks are all promising targets for electrification within these overburdened areas. The low speed of these vehicles eases battery requirements in addition to their stop and go routes allows for greater fuel efficiency through regenerative braking, further improving the technology's effectiveness in reducing harmful pollution.¹⁵

3) IEPA should establish a formal stakeholder process and seek continual improvement through cycles of funding and feedback.

Other states in the Midwest have established forums and begun formal discussions on how to allocate their respective EMT funds with some states such as Minnesota taking over a year to gather

¹⁴ <https://www.ucsusa.org/clean-vehicles/vehicles-air-pollution-and-human-health#.WtilUSOZMRE>
<https://phys.org/news/2017-06-unveil-hyper-local-air-pollution.html>

¹⁵ https://www.theicct.org/sites/default/files/publications/Zero-emission-freight-trucks_ICCT-white-paper_26092017_vF.pdf

input before drafting its BMP.¹⁶ To provide transparency and opportunity for all stakeholders to comment, Illinois should initiate a similar process.

The Missouri Department of Natural Resources (MoDNR) created a VW Trust Advisory Committee that held meetings to gather input prior to writing the draft plan. The committee was voluntary and open to anyone with an interest. In addition, MoDNR set up two different surveys to gather feedback for their recent beneficiary mitigation plan. The first asked for feedback on the overall goals of the plan, much like the IEPA is doing, and the second requested comments on implementation guidelines. Specifically, the MoDNR asked for comments on selection process, target areas, contingencies, and timing of awards and fund disbursement.¹⁷ The Minnesota Pollution Control Agency (MPCA) divided VW funds into three different phases between 2018-2027 with specific allocations per phase.¹⁸ The plan itself only focused on funding for Phase 1 (2018-2019) so that the MPCA can gather public input and overall learnings to inform the next round of funding. Based on this structure, the Minnesota VW plan has built in transparency and frequent project evaluation to modify allocations to best suit the state. The Ohio Environmental Protection Agency also created a provision within its beneficiary mitigation plan, which actively seeks revision. In the case that a major revision is a necessary at any point in the ten-year period, a public notice will be sent to various stakeholders, and the agency will enact a 30-day public comment period.

IEPA should set up a formal process for parties to share input and ensure that the final plan reflects the perspectives of Illinois stakeholders, particularly those representing communities most affected by long-term transportation pollution. In addition, a phased funding structure should be more

¹⁶ <https://www.pca.state.mn.us/sites/default/files/aq-mvp2-32c.pdf>

¹⁷ <https://www.surveymonkey.com/r/implementationguidelines>

¹⁸ <https://www.pca.state.mn.us/sites/default/files/aq-mvp2-32a.pdf>

explicitly established to ensure that the plan goes through multiple iterative periods that guarantee the most optimal use of the VW funds.

4) IEPA should revised the current VW survey or create another survey to elicit more robust feedback.

The current survey fails to provide stakeholder an adequate forum to elicit public feedback and should be modified or overhauled to better reflect a more diverse set of opinions. Although the survey asks 22 questions, almost half of them are only available to participants that plan to propose a project. With such a setup, the survey will greatly favor those proposing projects over all other participants, especially those within low-income communities.

Several of the questions often pigeonhole the possible answers a participant can give and do not encompass the complexity involved with these issues. Four questions require a participant to choose only one “top priority.” One question asks the participant to choose their top impacted community, but this question places the participant in a position to ultimately prioritize certain communities over others. In addition, some of the selections for this question are intertwined with each other, but there is no option to select more than one. Rather than ask the participant to pick only one top choice, a checklist function could be implemented to allow a participant the option to select more than one option per question. An “other” category should be included in each of these questions in the case that the participant would like to offer another alternative.

After the release of its VW plan, the MoDNR created two surveys to elicit feedback.¹⁹ Based off these surveys, we suggest that the IEPA consider including a final question that asks the participant for free-response comments and final thoughts. We also recommend that the IEPA include more clarity in its questions with specific regard to ones that ask about category funding allocations and geographical

¹⁹ <https://dnr.mo.gov/env/apcp/vw/documents/vw.second.survey.posted.april2018.pdf>
<https://dnr.mo.gov/env/apcp/vw/documents/inactive.online.comment.form.pdf>

preferences. One of the MoDNR surveys asks participants to write down their ideal allocation spread amongst the various vehicle types and geographical zones across the state. The IEPA VW survey should include more freedom to offer general input and reasoning for decisions, as well as more clarity on the existing questions and how they specifically relate to funding allocations and geographical preference.

Conclusion

Illinois's portion of the overall EMT presents the state with a significant opportunity to reduce its transportation sector emissions now and for decades to come. The state should seek to make an impact that can be long lasting and transformative. By funding widespread electrification and charging infrastructure and specifically targeting underserved areas through a set carve out of VW funds, the IEPA has the potential to initiate changes that make the most impact for the state.

To ensure the robust participation of all interested parties and those that expect to submit funding proposals, a more collaborative and iterative process of developing a final plan should be implemented in the long-term. We look forward to working with the IEPA and all associated stakeholders in the future.

Respectfully submitted,

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