THE ROLE OF DATA AND TECHNOLOGY IN MEANINGFULLY TRACKING ENVIRONMENTAL JUSTICE

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EXECUTIVE SUMMARY

Executive Order 14008 in January 2021 created a "government-wide Justice40 Initiative with the goal of delivering 40 percent of the overall benefits of relevant federal investments to disadvantaged communities." The Order further "initiated the development of a Climate and Environmental Justice Screening Tool, building off EPA's EJSCREEN, to identify disadvantaged communities."

This Executive Order and the momentum following it represent historic progress in centering equity in energy, housing, transportation, workforce development and environmental programs. They provide a vision for how to address environmental racism and other environmental injustices. In response to the RFI issued by OMB "Methods and Leading Practices for Advancing Equity and Support for Underserved Communities Through Government," we aim to provide guidance around program implementation. We will demonstrate how improved data and methodologies can increase the efficacy, scale and scope of environmental justice investment in America.

Environmental Justice as a concept and a movement has always demanded and relied on high quality data and methods for research and action. The Justice40 Initiative is no exception: programs across differing agencies will be reporting on a similar set of parameters, with overlapping sets of data and technology needs. Without significant investment in the digital infrastructure of local, state and federal agencies, a critical gap will remain to effectively and efficiently execute the Administration's vision.

> **This lack of programmatically tailored technology and staffing means that the Administration and agency staff responsible for Justice40 will likely utilize out-of-date, and perhaps contradictory information, operate in unnecessary silos, or suffer from an inability to collaborate due to an absence of common digital infrastructure.**
>
> **As sustainability scientists, data scientists, economists, community advocates and experts working at the intersection of policy and environmental justice, we see great potential to improve the data and methodology used to inform the Justice40 Initiative, and center equity as a priority across federal agency initiatives.**

Currently, the U.S. Digital Service has been tasked with evaluating and designing the Climate and Environmental Justice Screening Tool. It is imperative that the U.S. Digital Service understands current data gaps and additional perspectives that can shed light on biases in the prioritization of where Justice40 investments are to be delivered. If the Climate and Environmental Justice Screening Tool is executed successfully, this would be the foundation from which local, state and federal agencies could access modern digital infrastructure and ensure a long-term commitment for evidence-based policy-making and programmatic delivery for environmental justice initiatives.

There are three main driving factors that inform the importance of investigating data and methodologies behind any environmental justice mapping initiative:

1. Finding and filling data gaps;
2. Data analysts can design and create more robust and user-friendly ways to investigate data and demonstrate tradeoffs in various approaches;
3. With (1), policymakers, agency staff, and the community are better equipped to understand the sources of systematic biases and can better utilize data for decision-making.

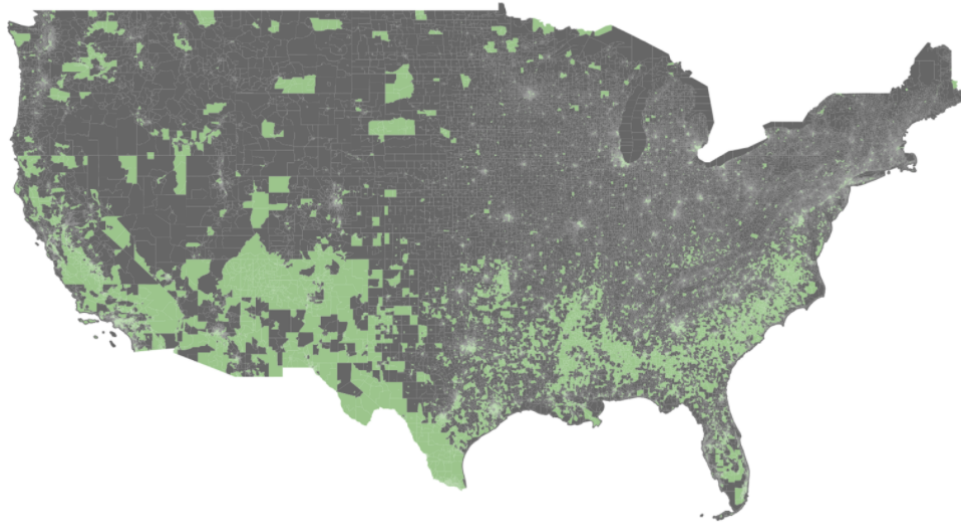## IMPORTANCE OF SOUND DATA & METHODOLOGIES

With EPA's current Environmental Justice Screening Tool, there are several data gaps and methodological biases that result in five significant drawbacks:

1 **Within the development of an Environmental Justice Index, the "Demographic Index" dominates all environmental metrics, leading to a ranking of census blocks driven by economic, not environmental factors within EJSCREEN.** The influence of this index works to the exclusion of environmental factors in surfacing priority areas for remediation or federal investment.

2 **The "Demographic Index" creates "Invisible Communities" by using misleading rankings of risk and hazard.** By benchmarking the Demographic Index against the national average, many of the census blocks with the highest levels of environmental hazard are ranked at the bottom of EJ metrics. This means that communities that are significantly affected by pollution, but don't rank highly within the Demographic Index, could be left behind.

3 **Top EJSCREEN percentiles predominantly focus on urban areas.** Due to both the choice of environmental metrics considered by EJSCREEN and the inclusion of the "Demographic Index," rural areas are entirely excluded from the top "hazard rankings" within EJSCREEN.

4 **There are major environmental justice data gaps, and the existing data in EJSCREEN are predominantly focused on urban issues.** The available data in EJSCREEN predominantly focuses on urban issues, while rural issues are largely ignored. Environmental issues related to agriculture, concentrated animal feeding operations (CAFOs), mining, energy (e.g., power generation, oil and gas pipelines, fracking, waste disposal), water quality data, and many other environmental issues - which are crucial for environmental justice - are not taken into account within EJSCREEN.

5 **Climate Data is not part of EJSCREEN.** Climate data, and developing a sound understanding of the places that will be the most affected by the near-future environmental, social and economic impacts of climate change are key for understanding which communities will be affected the most. Exploring the intersection of climate impacts and environmental justice is key for exploring vulnerabilities and identifying the communities and regions that need the most help.

NEXT STEPS

Moving forward, there will be dozens of datasets utilized to develop the Climate and Environmental Justice Screening Tool and inform how Justice40 will be implemented. This will be a technically intensive endeavor and it is the job of data analysts and programmers to design simple and effective interactions with these datasets to ensure procedural justice. Through these data we are creating proxies of experiences, but can not directly observe justice or environmental change. There will be a tendency to create an algorithm that sums or weights all the data, but as we describe in the following sections that can lead to a new class of problems. We have an opportunity to improve our understanding of environmental injustices, and technical experts must explicitly show the tradeoffs and constraints with data.

> It is important to be clear and transparent by shedding light on potential sources of systematic biases, such as data that may intentionally or unintentionally exclude certain regions, or not reflect the lived experience of impacted communities. This will enable policy makers, community advocates and agency staff to understand the tools and quantitative metrics in a sound and comprehensive manner to inform their work.

This map shows in green the areas within the United states that lie "above" the national average Demographic Index score in the current EJSCREEN tool. These areas, which are concentrated in cities and areas with majority-minority populations are in effect the only areas that will be prioritized by EJSCREEN. All areas in gray, which have negative scores, will by design always be placed at the bottom of EJSCREEN's rankings.
(Source Data, Code)

NEXT STEPS

Improvements to these processes would influence:

1 Justice Screening tools that accurately and effectively communicate where injustices are and helps prioritize investment. Most equity issues emerge in silent agenda setting where the pressing issues and people's lived experience are not represented. It is critical that these issues are not perpetuated in the data that is presented in the Environmental Justice Screening Tool (Addressed in Section II: Current Data Gaps & Methodological Biases to Evaluate Environmental Justice in America).

2 Clear processes and policies that 1) inform how programs can be better implemented to center equity and 2) systematically reflect if goals are achieved and adapt if they are not. This would require diverse and inclusive representation with careful evaluations of what programs exist and why choices are made. (Addressed in Section III: Recommendations for how to center equity in environmental and climate work throughout federal programs).

Justice40 and the accompanying federal initiatives provide an opportunity to partner with communities throughout the process and make direct and tangible investments to improve the lives of all Americans. However, without clear, consistent guidance and shared understanding of how Justice40 will be implemented and what environmental justice means, the federal government is on a path to quickly lose the trust of the community and this initiative will not yield the substantial potential it has.