

**Recommendation to Assess and Consider Cumulative Impacts
in the
North Carolina Department of Environmental Quality Permitting Process**

**Environmental Justice and Equity Advisory Board
August 10, 2023**

Executive Summary

The Environmental Justice and Equity Advisory Board (EJEAB) finds that low-income and communities of color in the state are experiencing greater disparities and worse health outcomes due to their proximity to multiple sources of exposure to hazardous materials in their lived environment. When making decisions regarding the issuance of permits for either placement of new facilities or expansion of existing facilities, it also is apparent that DEQ has failed repeatedly to consider the multiple sources of exposure to environmental hazards that exacerbate known stressors associated with the socio-economic status of the citizens of these communities. Presentations received by the members of the EJEAB suggest a correlation between the disproportionate concentration of polluting facilities and adverse health outcomes. Unfortunately, many of these communities have endured the continuing assault on daily life for decades.

In developing these recommendations, the EJEAB heard from experts in the field of environmental justice, members of communities directly impacted by the presence of higher levels of polluting sources, academicians, and reviewed current literature and guidance available from both federal and state agencies. Based on these sources, the Board has determined that it is vitally important in permitting decisions to assess how all chemical and non-chemical stressors in a community, independently and cumulatively, impact the health and wellbeing of the residents. In addition, the EJEAB also reviewed how other states assess cumulative impacts. Other states have not only considered the number and types of chemical stressors and timing of exposures (short and long-term exposures) but have also considered in permitting decisions such issues as race, poverty level, psychosocial factors, and access to salutary facilities like parks. In making determinations regarding cumulative impacts, the analysis must include all these factors.

Many tools currently exist that may serve as examples of the kinds of data and analysis that is necessary to identify overburdened communities. North Carolina may take a lesson from all the known tools to develop a system that is both fair and equitable to all citizens of the state. These tools may be used as an example of how to make better decisions while more accurate tools and definitions are developed and consistently evaluated over time.

Conceptually, cumulative impacts are important when considering the effects of chemical and non-chemical stressors on human health and wellbeing. While consideration of all exposures will better inform decisions regarding placement of sources of pollution, reaching consensus on the process and methodology to assess the impact of concentrated permitting of noxious facilities has been challenging and slow. Both the U.S. EPA Office of Research and Development and the Office of Air have issued guidance on how to consider cumulative impacts in permitting

decisions. However, the U.S. EPA has not issued guidelines in more than ten years¹. Those guidelines were drafted and never finalized. While the agency is committed to issuing final guidance on cumulative impacts, the DEQ cannot wait for the perfect set of guidelines. Time is of the essence for far too many communities in our state.

Based on our review of the available resources, the EJEAB makes the following recommendations on action that the DEQ should take to protect the health and well-being of impacted communities in all future permitting decisions.

1. Cumulative Impacts Guidance Development

DEQ should follow the current EPA guidelines and other available resources to inform its assessment of cumulative impacts on affected communities during the permitting process.

2. Regulatory actions

DEQ should seek necessary authority through the legislative and the rulemaking process.

3. Enforcement

DEQ should clarify its existing authority and establish new guidelines to ensure consistency in the enforcement of permit requirements and any additional conditions included upon issuance of all permits.

4. Monitoring and Analysis

DEQ should work to improve data collection, monitoring, and analysis of sources of pollution and use such data to make better decisions regarding permitting.

5. Government-to-Government Consultation

DEQ must make a concerted effort to inform tribal members of the steps in the decision-making process and the relevant data used.

6. Fair Treatment and Meaningful Involvement

DEQ must ensure that potentially affected communities have access to every resource available to participate equitably in the public discourse and deliberation process.

7. Access for Non-English Speakers

DEQ should make all materials available on its website and all meetings available to the public in multiple languages. Citizens should not have to use Google translate to read materials.

8. Coordinate with the N. C. Department of Commerce

DEQ should create a more formal and transparent process with the N. C. Department of Commerce including information on how cumulative impacts are considered in determining the economic and health related costs of new business in overburdened communities so as not to further exacerbate cumulative impacts in identified communities.

9. Health data upgrade to DEQ EJ Mapping Tool

DEQ should work closely with the North Carolina Department of Health and Human Services (DHHS) to assure that its current mapping tool includes the latest data on health status of the North Carolina citizenry. In addition, DEQ and DHHS should work collaboratively to create one common mapping tool for use by community members and others involved in the permit decision-making process.

10. Poultry regulation

¹ Consideration Of Cumulative Impacts In EPA Review of NEPA Documents U.S. Environmental Protection Agency, Office of Federal Activities (2252A) EPA 315-R-99-002/May 1999.

DEQ should work closely with the North Carolina General Assembly (NCGA) and the N.C. Department of Agriculture to ensure that systems are in place for permitting and tracking the expansion of the rapidly expanding industry in the state.

11. Create model laboratories for learning.

Where knowledge gaps exist DEQ should identify opportunities for creating models to determine the best solutions to solve the issue.

Environmental Justice

The U.S. Environmental Protection Agency defines Environmental Justice as the *fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies.*² Fair treatment means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies.

The recommendations contained here are guided by the operational definitions developed for its white paper.³

Cumulative Impacts – the totality of exposures to combinations of chemical and non-chemical stressors and their effects on health, well-being, and quality of life.

Cumulative Impact Assessment – the process of evaluating both quantitative and qualitative data representing cumulative impacts to inform a decision. Both of these serve as guiding principles when considering cumulative impacts during the decision-making process.

More recent definitions have come from the state of New Jersey and the Agency for Toxic Substances and Disease Registry (ASTDR). In 2020 **New Jersey** passed a law defining cumulative impacts relative to siting as *“the environmental impact of the proposed new facility, or expansion of an existing facility, including any cumulative impacts on the burdened community, any adverse environmental effects that cannot be avoided should the permit be granted, and the public health impact on the burdened community of the proposed new facility or expansion of an existing facility”* (NJ, 2020).⁴

ASTDR further defined cumulative impacts as *“the total harm to human health that occurs from the combination of environmental burdens . . . pollution and poor environmental conditions, pre-existing health conditions and social factors . . .* (ASTDR, 2022)⁵

² <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice>

³ Cumulative Impacts Recommendations for ORD Research. United States Environmental Protection Agency Office of Research and Development. January 2022.

⁴*Id.* at 4.

⁵*Id.* at 4.

Recommendations

Recommendation One: Cumulative Impacts Guidance Development

DEQ should follow the current EPA guidelines and other available resources to inform its assessment of cumulative impacts on affected communities during the permitting process.

EPA's Office of Research and Development⁶, Office of Air⁷, and Office of General Counsel⁸ have issued various guidance or documents currently available to inform the consideration of cumulative impacts. In addition, several states and municipalities have issued guidance on cumulative impacts that are readily available for use in developing a process for the NC DEQ. These should serve as tools for DEQ to develop its own guidance for considering cumulative impacts in the permitting process.

Regulatory agencies responsible for environmental hazard identification and assessment of risk generally set limits using single pollutant models within a specific media (e.g., air, water, soil, food). Over the years, this has been an effective way to reduce pollutants of concern and protect public health and the environment. However, this approach does not account for multipollutant exposures within a specific media (e.g., five criteria air pollutants and hazardous air pollutants). Nor does it account for multimedia exposures (e.g., air pollutants and water pollutants) that result from multiple sources. Understanding the cumulative impacts of multiple environmental sources and exposures is essential to ensure "Fair Treatment" of communities.

For cumulative impact assessment, the U.S. Environmental Protection Agency (EPA) provides nine suggested elements:⁹

- a. Community role throughout the assessment, and in particular, identifying problems and potential intervention decision points to improve community health and well-being.
- b. Combined impacts across multiple chemical and non-chemical stressors
- c. Multiple sources of stressors from the built, natural, and social environments
- d. Multiple exposure pathways across media
- e. Community vulnerability
- f. Past exposures, especially during vulnerable ages or life stages
- g. Individual variability and behaviors
- h. Health and well-being benefits/mitigating factors
- i. Evaluation of potential interventions that reduce cumulative impacts and improve community health and well-being.

⁶ Julius, S., S. Mazur, N. Tolve, S. Paul, N. Loschin, A. Geller, A. Shatas, K. Dionisio, B. Owens, S. Lee, J. Williams, J. Hoffman, K. Buck, D. Smith, T. Barzyk, O. Nweke, C. Lee, C. Braverman, AND M. Small. Cumulative Impacts: Recommendations for ORD Research. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-22/014, 2022

⁷ Consideration Of Cumulative Impacts In EPA Review of NEPA Documents U.S. Environmental Protection Agency, Office of Federal Activities (2252A) EPA 315-R-99-002/Updated Dec. 22, 2022.

⁸ EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum. Office of General Counsel U.S. Environmental Protection Agency Washington, D.C. 20460. Publication No.: 360R22002. January 2023.

⁹ Cumulative Impacts Recommendations for ORD Research. United States Environmental Protection Agency Office of Research and Development. January 2022.

Most common approaches for assessing cumulative impact assessment include biomonitoring, health risk assessment, ecological risk assessment, health impact assessment, burden of disease, and mapping of cumulative impacts.¹⁰

Recommendation Two: Regulatory Actions

DEQ should seek necessary authority through the legislative and the rulemaking process.

There are examples of legislation successfully passed in several states that DEQ may use as models to work with supportive elected officials to gain the needed authority to consider environmental justice in its permitting decision-making process.

For example, in 2020, New Jersey became the first state to enact a law that “...requires mandatory permit denials if an environmental justice analysis determines a new facility will have a disproportionately negative impact on overburdened communities”.¹¹ New Jersey has recently issued rules to implement its new law. The purpose of the rule is to ensure meaningful public participation in the Department’s analysis of environmental and public health stressors in overburdened communities and a facility’s contributions thereto; 2. Limit the placement of new facilities that would create a disproportionate impact by causing or contributing to adverse cumulative stressors in an overburdened community; and 3. Reduce environmental and public health stressors in overburdened communities in the permitting of new, expanded, and existing major source facilities by requiring incorporation of measures to avoid, minimize, and/or reduce facility contributions thereto.¹²

Governmental Authority

The federal government plays a significant role in setting the standard for how cumulative impacts should be defined and analyzed. However, it has been slow to take action to provide direction in this area. EPA has the primary responsibility for issuing guidance. In May 2022, The EPA Office of General Counsel issued EJ Legal Tools to Advance Environmental Justice (EJ Legal Tools).¹³ And the EPA Office of General Counsel issued EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum¹⁴ in January 2023. The latter document discusses a variety of federal statutory and regulatory provisions and builds on the cumulative impact discussion in the EJ Legal Tools to Advance Environmental Justice (EJ Legal Tools) issued earlier.

¹⁰ Solomon GM, Morello-Frosch R, Zeise L, Faust JB. Cumulative Environmental Impacts: Science and Policy to Protect Communities. *Annu Rev Public Health*. 2016; 37:83-96. doi: 10.1146/annurev-publhealth-032315-021807. Epub 2016 Jan 6. PMID: 26735429.

¹¹ Environmental Justice Law, Rules and Policy. <https://www.nj.gov/dep/ej/policy.html>
<https://www.nj.gov/dep/ej/docs/ej-rule-overview-proposed.pdf>.

¹² New Jersey Administrative Code 7:1C-1.3. April 17, 2023.

¹³ *EPA Legal Tools to Advance Environmental Justice*. Office of General Counsel. U. S. Environmental Protection Agency. May 2022. Publication No. 360R22001 <https://www.epa.gov/ogc/epa-legal-tools-advance-environmental-justice>.

¹⁴ *EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum*. Office of General Counsel. U. S. Environmental Protection Agency. January 2023. Publication No.: 360R22002. <https://www.epa.gov/ogc/epa-legal-tools-advance-environmental-justice>.

In addition to the guidance issued from the Office of General Counsel on cumulative impacts, the Office of Research and Development (ORD) and the Office of Air (OAR) issued their own guidance for considering cumulative impacts. ORD issued Cumulative Impacts Research: Recommendations for EPA's Office of Research and Development in September 2022.¹⁵ The report was an interdisciplinary undertaking with representatives from ORD, the Office of Environmental Justice (OEJ), and EPA regional offices.

The report and recommendations submitted in the report were shaped in part by the guidance issued by the EPA, the Office of Research and Development, and the Office of Air.

Recommendation Three: Enforcement

DEQ should clarify its existing authority and establish new guidelines to ensure consistency in the enforcement of permit requirements and any additional conditions included upon issuance of all permits.

While the U. S. EPA has primary authority to enforce federal environmental regulations, the agency has the authority and delegates its authority to state environmental agencies to implement and enforce federal regulations required of all state agencies receiving federal funding. States generally adopt a law that is at least as restrictive as the federal regulation. In addition, state law takes precedence over federal law. Unfortunately, the North Carolina Environmental Policy Act or SEPA was changed in 2009 to limit the amount of authority DEQ would have.

Further, DEQ should take two additional actions. One, clarify its obligations under Title VI of the Civil Rights Act of 1964 so that customers and communities understand their rights and responsibilities under federal regulations. Second, use its environmental justice assessment not only for outreach but also for determining adherence to its obligations under Title VI.

North Carolina DEQ Authority to Consider Cumulative Impacts in Solid Waste Permits

The North Carolina Solid Waste Management Program §(130A-294) authorizes and directs DEQ to engage in research, conduct investigations and surveys, make inspections, and establish a statewide solid waste management program. Further, the program gives DEQ the authority to deny an application for a permit for a solid waste management facility if the Department finds that the *cumulative impacts* of the proposed facility and other facilities in the area of the proposed facility would violate the criteria set forth in the program (130A-294(a)(c)(7)). While the agency has this authority by statute, it appears that the authority to consider cumulative impacts to deny a permit has never been used to protect impacted communities living near any solid waste facility.

DEQ should use the authority under this statute to extend consideration of cumulative impacts in all its permitting processes.

¹⁵ U.S. EPA. *Cumulative Impacts Research: Recommendations for EPA's Office of Research and Development*. United States Environmental Protection Agency. U.S. Environmental Protection Agency. Washington, D. C., EPA/600/R-22/014A, 2022. [Cumulative Impacts Research \(epa.gov\)](https://www.epa.gov/cumulative-impacts-research).

Recommendation Four: Monitoring and Analysis

DEQ should work to improve data collection, monitoring, and analysis of sources of pollution and use such data to make better decisions regarding permitting.

One extremely important way to mitigate cumulative as well as individual impacts is to modernize the permitting process such that it addresses current trends and data on the impact of known environmental hazards on human health and the environment. The permitting process currently in use was established over 35 years ago, during a time when detecting technologies were not available and many harmful chemical, physical and biological pollutants were unknown as to their chemical and physical make-up and their impact on human health. Though the permitting process has been updated, intermittently, the issue of cumulative impacts is absent from the assessment and monitoring process. Modernizing the permitting process includes increasing the capacity to monitor harmful effects of pollutant exposures emitted from manufacturing sites and will provide critical data for inclusion in new and renewal permit applications.

The U. S. EPA Office of Research and Development (ORD) issued a report that focuses on recommendations to enhance cumulative impact research that are applicable across the National Research Programs and includes recommendations for how ORD can provide management support to facilitate this complex research. The recommendations from ORD fall into five broad categories. They are:

- 1) Establish the decision context and partner engagement;
- 2) Address scientific considerations for meeting partner needs;
- 3) Empower local decision and actions through science;
- 4) Support science translation and delivery; and
- 5) Provide research management support for cumulative impact assessment.

ORD acknowledges that EPA has historically implemented its regulatory authorities under environmental statutes by evaluating risks and effects to single pollutant exposure. However, it recognizes the need to expand beyond single pollutants/single exposure because individuals, communities, and tribes are exposed to numerous pollutants over time. ORD further acknowledges that evaluation “requires an accurate and realistic assessment of the effects from the combined exposures to chemical and non-chemical stressors (i.e., cumulative impacts) that inform decision-making at all levels.”¹⁶

California developed its definition in 2004 to include considerations of “exposures, public health or environmental effects . . . in a geographic area . . . from all sources . . . taking into account sensitive populations and socio-economic factors, where applicable and to the extent data are available.” (Cal/EPA, 2004)¹⁷

¹⁶ See *id.* at 2.

¹⁷ U.S. EPA. *Cumulative Impacts Research: Recommendations for EPA’s Office of Research and Development*. United States Environmental Protection Agency. U.S. Environmental Protection Agency. Washington, D. C., EPA/600/R-22/014A, 2022. p. 4. [Cumulative Impacts Research \(epa.gov\)](https://www.epa.gov/cumulative-impacts-research).

In 2017 the Minnesota Pollution Control Agency described the necessary elements for analyzing cumulative impacts as sensitivity, additivity, multiple pathways, multiple sources, non-chemical stressors, and community vulnerability (MPCA, 2018) ¹⁸

In April 2023, New Jersey issued its environmental justice regulations. The state looked at three board areas to develop its baseline comparison method. Through that process the state identified 26 environmental and public health stressors. They then compare the overburdened community (OBC), or an adjacent block grant's (ABG) greatest stressed OBC neighbor, to both the State and relevant county non-OBC 50th percentile levels for each environmental and public health stressor, relying on whichever is most protective (e.g., lower) in each instance to establish the basis of comparison. Finally, a two-step comparison approach is used to determine if an area's environmental and public health stressors are "higher than" its geographic point of comparison.¹⁹

ORD recognizes the need to collect and analyze data that may be used to make better decisions regarding permits or other programs/policies that may affect the most impacted communities. It has developed a list of questions that should guide development of a cumulative impacts assessment including:

- 1) What is the baseline condition for the identified population/community? This should include socioeconomic, environmental, and health data as available, including information on pre-existing vulnerabilities and historical exposures.
- 2) What are racial/ethnic and income gaps in the baseline environmental/health condition (e.g., concentration, exposures, or incidence) that need to be addressed?
- 3) What are the responsible stressors, their sources, and exposures?
- 4) How are baseline conditions and stressors projected to change in the future?

Recommendation Five: Government-to-Government Consultation

DEQ must make a concerted effort to inform tribal members of the steps in the decision-making process and the relevant data used.

EPA consults on a government-to-government basis with federally recognized Tribes. Under federal guidelines the defining features of a Tribal consultations are:

- Notice to Tribes provided at least 30 days in advance of the first scheduled consultation session and containing sufficient detail of the topic to be discussed to allow tribal leaders an opportunity to fully engage in the consultation
- Federal decision-maker participation
- Discussion between Tribes and Federal decision-makers
- Record of proceedings (transcript or meeting notes)
- Federal response to Tribes regarding how Tribal input was incorporated into the final Federal decision.

¹⁸ *Id.* at 4.

¹⁹ New Jersey Department of Environmental Protection EJMAP: Technical Guidance April 12, 2023.

Although North Carolina has only one tribe federally recognized by the EPA – the Eastern Band of Cherokees – DEQ should work closely with the North Carolina Commission of Indian Affairs to assure that the tribes represented in the state are given similar rights as those given to federally recognized tribes. North Carolina should assure that before they make any final permitting decision, where Native American tribes exist, DEQ should make every effort to consult with the appropriate authority in each tribe.

DEQ should review NCGS143B-404 to determine its ability, under the current statute, to conduct meaningful government to government consultation.²⁰ If appropriate authority does not exist then DEQ should work with the NC General Assembly to develop consultation guidelines that will allow it to conduct state-level government to government consultation that furthers the ability to address environmental justice concerns on tribal lands.

Recommendation Six: Fair Treatment and Meaningful Involvement

DEQ must ensure that potentially affected communities have access to every resource available to participate equitably in the public discourse and deliberation process.

As the EJEAB has seen and heard from residents of EJ communities and other concerned citizens there is the need for redoubled efforts to guarantee community participation and community voices in the permitting consideration and decision-making process in the state. Community engagement and active participation necessarily *makes* the possibility more likely than not that any process for considering cumulative impacts *will* consider not only socio-economic but physical and mental impacts on the community at large.

To ensure community participation in the permit decision-making, DEQ must work to build and/or rebuild trust in the community by connecting earlier on in the process. The agency must seek community input as soon as possible once a permit application is submitted. Engaging community members midway in the process only leads to further distrust of the process. Community input at the beginning of any decision-making process allows community members to have input and possible impact, rather than making preliminary decisions and then engaging the community at a point where their input will not have an impact on the final decision. To have trust in the process, transparency as well as constant communication is required with affected individuals and communities so that their concerns are reflected.

DEQ engagement must be embedded in a multi-channel communication strategy and education campaign that includes but is not limited to open dialogue with scientific experts and community activists, YouTube Videos, email and text messaging, radio and television infomercials, and public appearances in churches and other community-based institutions. And the information communicated through these channels must be translated into languages that align with the state's linguistic diversity.

²⁰ [NC Gen Stat § 143B-404 \(2022\)](#).

Recommendation Seven: Access for Non-English Speakers

DEQ should make all materials available on the website and all meeting materials available to the public in multiple languages. Citizens should not have to use Google translate to read materials.

North Carolina has a large non- or limited-English speaking population whose concerns must be considered in every forum. DEQ should create a site on its website as well as provide hard copies of materials translated into the major languages of citizens in the state. Every effort should be made to reach and ensure active participation in public forums by the state's linguistically diverse groups.

In addition, as a part of its outreach DEQ staff should assure that they have a roster of places of worship, social media, public broadcast outlets or other cultural centers that serve limited English-speaking communities. This process should be developed with the input of impacted communities and could serve as a more reliable outlet to provide information about any upcoming events as well as providing basic information for the use of the community. This effort would help to further inform DEQ of additional linguistic needs and available platforms.

To be effective and to assure that all affected communities may participate in the permit decision-making process, DEQ must do a better job of both outreach and translation of materials into the most prevalent non-English speaking communities in the state. In addition, DEQ should work to remove any real or perceived barriers that would prevent the immigrant community or other non-English speakers from participating in DEQ meetings or other processes.

Recommendation Eight: Coordinate with the N. C. Department of Commerce

DEQ should create a more formal and transparent process with the N. C. Department of Commerce including information on how cumulative impacts are considered in determining the economic and health related costs of new business in overburdened communities so as not to further exacerbate cumulative impacts in identified communities.

With great fanfare on October 7, 2022, North Carolina celebrated National Manufacturing Day, and proudly embraced its newfound recognition and ranking as “America’s Best State for Business.”²¹ Indeed, an increased number of manufacturing firms found North Carolina an ideal place to develop and grow. And much has been publicized about the benefits to the state, including good paying jobs and a stronger tax base. However, these benefits often are accompanied by harm to our most vulnerable North Carolinians--poor people and people of color who live in distressed rural and urban environments, where these industries are sited that emit toxic pollutants during the manufacturing process.

²¹ CNBC Names North Carolina As America’s Top State for Business in 2022.

<https://governor.nc.gov/news/press-releases/2022/07/13/cnbc-names-north-carolina-america-s-top-state-business-2022#:~:text=CNBC%20has%20named%20North%20Carolina,where%20the%20winner%20was%20revealed.&text=Jul%2013%2C%202022-,CNBC%20has%20named%20North%20Carolina%20as,State%20for%20Business%20in%202022.>

Already plagued with a variety of adverse social, health and other environmental issues triggered by environmental, political, and lack of access to adequate health care, educational, political, and economic empowerment, and the impact of climate change, each new manufacturing facility adds to the hazardous environmental exposures of these communities. NC officials and agencies have been complacent in alleviating these exposures, although it is clear they have the authority to address these adverse effects.²² Specifically, the lack of clean air and water, exposure to increased noise pollution, increased greenhouse gas emissions, the deleterious effect of hog and other animal farming, wood pelleting, destruction of the natural environment, the impact of climate change and other environmental hazards have severely contributed to the lack of clean air, water and land in these communities. Scholarly studies demonstrate that any one of these environmentally hazardous exposures severely impact human health. Yet, environmental justice communities are impacted by multiples of these exposures. Consequently, these communities have higher rates of environmentally induced morbidities such as cancer, heart disease, stroke, diabetes, asthma, infant mortality, and low birth weight infants, as well as increased overall mortality rates, especially when compared to their counterparts who live in communities where these exposures are lacking.²³

Accordingly, the EJEAB is concerned that little has been done to mitigate cumulative impacts and the increasing hazardous effects they have due to the increased siting of manufacturing facilities in environmental justice communities. The Board considers this concern as a major focus of its advisory role to the Secretary of DEQ.

Recommendation Nine: Health data upgrade to DEQ EJ Mapping Tool

DEQ should work closely with the North Carolina Department of Health and Human Services (DHHS) to assure that its current mapping tool includes the latest data on health status of the North Carolina citizenry to accurately assess community vulnerabilities. In addition, DEQ and DHHS should work collaboratively to create one common mapping tool for use by community members and others involved in the permit decision-making process.

The UNC-CH Gillings School of Global Public Health found, comparing various tools across the country to indicators in the NC tool, that relevant health data available through the NC Department of Health and Human Services was excluded. The addition of this data would not only better inform permitting decisions by DEQ but also the general public.

Tools that are in place in other states may serve as models that DEQ may use to further improve the current tool on which they depend for outreach to affected communities. The level of data available in the tool now is not sufficient to accurately identify the communities within a census tract with higher levels of disease that would be directly impacted by permitting decisions. Further this information may also guide DEQ in its ability to include additional conditions to better protect surrounding communities.

²² Federal Delegation of Authority to States. <https://www.law.cornell.edu/uscode/text/5/302>.

²³ Gochfeld M, Burger J. Disproportionate exposures in environmental justice and other populations: the importance of outliers. *Am J Public Health*. 2011 Dec;101 Suppl 1(Suppl 1):S53-63. doi: 10.2105/AJPH.2011.300121. Epub 2011 May 6. PMID: 21551384; PMCID: PMC3222496.

Currently, the existence of two tools in the state, one at DEQ and one at DHHS, makes finding and understanding the implications for impacted communities leads to the possibility that relevant information will not be considered or may be misunderstood by those using the information for decision making.

If DEQ and/or DHHS do not have the authority to create one tool that combines all this information, then DEQ should seek authority to create such a tool as quickly as possible to better inform their decisions. Doing so will ensure that health impacts on vulnerable populations will be included.

Recommendation Ten: Poultry regulation

DEQ should work closely with the North Carolina General Assembly (NCGA) and the N.C. Department of Agriculture to ensure that systems are in place for permitting and tracking the expansion of the rapidly expanding industry in the state.

New poultry operations are growing at an alarming rate in North Carolina and leaving their impact on many communities across the state. Still the impact on already overburdened communities is much more apparent.

In May 2023, the Charlotte Observer and the Raleigh News and Observer ran series on the fast-expanding poultry industry in the state.²⁴ The articles pointed out the lack of any substantial regulation for either the placement or size of this industry across the state. While many of these facilities are most often co-located in communities already overburdened with sources of pollution, they are also located in areas where they would not normally be found. Waste from these operations are seeping into waterways and into the groundwater. Compared to other states with these animal feeding operations, North Carolina is the least regulated. In fact, the reporters polled ten states, including six among the nation's top ten poultry producers, and found all disclosed more information on regulated poultry farming more rigorously than North Carolina.²⁵ And what occurs in states with more protections, including South Carolina, shows what North Carolina is lacking.²⁶

Some of the findings include, but are not limited to the following:²⁷

About 230,000 North Carolinians now live within a half-mile of a poultry farm. But residents have no formal ability to challenge where these farms rise. . .

Proximity to big poultry barns can increase the risk of illness for people living within three-quarters of a mile and reduce home values within a mile, studies say.

²⁴ Off, Gavin; Wagner, Adam; Alexander, Ames, 2023. *Big Poultry How a Secretive Industry Rules the Roost in North Carolina*. <https://www.newsobserver.com/news/state/north-carolina/article267887592.html>.

²⁵ *id.*

²⁶ *id.*

²⁷ *id.*

Poultry waste washes into North Carolina streams and rivers, scientists say. That can contribute to algae blooms and fish kills. But with all the secrecy, knowing where and how often is impossible to know.

These are all glaring environmental quality and health concerns. DEQ must work to gain the authority to permit and post locations of poultry houses across the state.

Recommendation Eleven: Create model laboratories for learning.

Where knowledge gaps exist DEQ should identify or actively work to create opportunities for models that may serve to study a problem and determine the best solutions to solve the issue.

The EJEAB has learned through this review process that there are many issues that are present in the state that must be addressed in a meaningful way. We believe that we must be creative when trying to find solutions to these problems. The knowledge gaps still exist although there has been research to give some answers to practitioners.

For those problems for which there appears not to be a solution, DEQ should partner with other state agencies, academic institutions, foundations, or other interested partners with the requisite expertise to develop models for study to develop solutions that may be deployed across the state. In addition to the partners mentioned, DEQ should consider public-private partnerships, where appropriate, to bring additional resources to improve conditions in impacted communities.