2019-2021
Maryland State Agency Environmental Justice Scorecard

A comprehensive content analysis of nine Maryland state agencies to score their overall commitment towards environmental justice

COMMUNITY ENGAGEMENT, ENVIRONMENTAL JUSTICE, & HEALTH

About CEEJH

CEEJH's primary focus is to provide engagement to highly and differentially exposed populations and underserved communities. Our work has included the development of and participation in partnerships with community-based organizations, environmental advocacy groups, health practitioners, and policymakers (federal, state, and local government) to reduce local contamination, improve environmental quality, and enhance community health and sustainability.

ceejhcenter@gmail.com

Center Director's Message

Dr. Sacoby Wilson is a Full Professor with the Maryland Institute for Applied Environmental Health in the University of Maryland, College Park School of Public Health. Dr. Wilson has over 20 years of experience as environmental health scientist in the areas of exposure science, environmental justice, environmental health disparities, community-based participatory research, water quality analysis, air pollution studies, built environment, industrial animal production, climate change, community resiliency, and sustainability. He works primarily in partnership with community-based organizations to study and address environmental justice and health issues and translate research to action.

Sacoby Wilson, PhD, MS

"In the state of Maryland, too many communities of color experience violence, oppression, and toxic trauma due to environmental injustices. While CEEJH previously released a Legislative Scorecard for the Maryland General Assembly, we also identified a need to track state agencies to determine steps each agency can take to better address environmental injustices. Government transparency and public accessibility of EJ resources are major drivers of environmental justice. This scorecard can be deployed every year to track state agency progress and to identify which agencies improve or worsen their scores over time."

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Executive Summary

A major contributor to environmental injustice is political disenfranchisement. Communities of color are more likely to lack the social capital necessary to participate in the political process. Despite the growth in public concern for environmental justice (EJ), many communities do not have the power to hold their government agencies accountable for decisions that impact public health and well-being. Similar to the Biden administration's push to incorporate EJ efforts through federal government agencies, there is a need to embed this crucial work at the state agency level in Maryland.

Through the development of a Maryland State Agency Scorecard, we can track Maryland state agency actions to advance EJ, by focusing attention on five key areas: (1) community engagement; (2) commitment to protect the environment both from past policies and protections for the future; (3) prioritization of those impacted by environmental racism; (4) existing resources towards building environmental literacy; and (5) proactive EJ work. The methodology, results, and recommendations for agencies to take better EJ action are presented in this report.

We performed an extensive search into publicly available documents from the state agencies that address the five key EJ areas. We sent scores to agencies and gave them an opportunity to provide more information, to possibly improve their score.

Introduction

Maryland's path towards environmental and climate justice, and the alleviation of racial segregation and energy inequities, has been accelerated by the global COVID-19 pandemic, an economic crisis, and protests for racial justice. These events have elucidated historic and growing inequities for communities isolated from power and meaningful involvement in policymaking. Recognizing the benefits of other scorecards, such as the 2020 California Environmental Justice Alliance (CEJA) EJ Scorecard, we developed an EJ scorecard for Maryland state agencies.
We tracked agency actions to advance EJ, by focusing attention on five key areas: (1) community engagement through the establishment of an EJ office and transparency; (2) commitment to protect the environment both from past policies and protections for the future; (3) prioritization of those impacted by environmental racism; (4) existing resources towards building environmental literacy; and (5) proactive EJ work

Background on Environmental Justice

According to Dr. Bunyan Bryant, "environmental justice is served when people can realize their highest potential, without experiencing the 'isms" (1).This directly addresses the underlying causes of inequity. Government structures and policies can institutionalize and reinforce the "isms" (racism, classism, sexism, ableism, etc.) that perpetuate inequitable environmental, social, health, and economic outcomes. Additionally, the communities that bear the negative externalities of environmental decision-making are also politically disenfranchised, systematically marginalized, and excluded (2, 3).
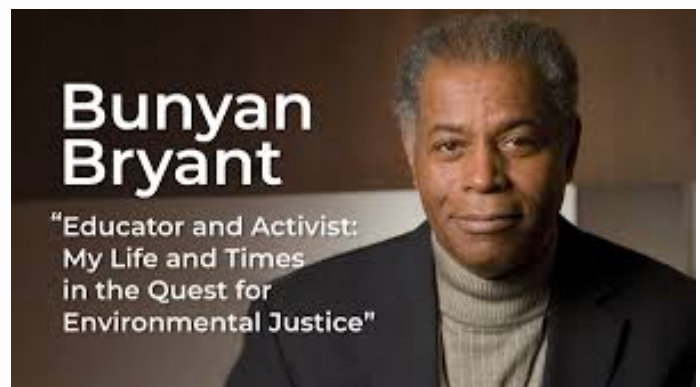

Dr. Bunyan Bryant, author of "Educator and Activist: My Life and Times in the Quest for Environmental Justice

Racial and Economic Segregation

In the state of Maryland, there are disproportionate impacts of environmental burden on low-wealth communities, communities of color, under-resourced communities, and those in vulnerable life stages (4, 5), These disparities exacerbate existing environmental health inequities and contribute to environmental injustice. For example, racial and economic segregation is a concern in Baltimore City. The legacy of racist zoning and land-use planning policies in Baltimore, largely attributed to the Baltimore Segregation Law of 1910, has given rise to a hypersegregated "black butterfly" spatial distribution, whereby predominantly African American communities occupy areas with elevated rates of poverty and crime, and face food apartheids (6).

Redlining contributes to the existing economic segregation seen in Baltimore. For example, over 50% of children residing within inner Baltimore live under the federal poverty line. According to the Urban Institute, per-home sale prices in predominantly white neighborhoods are significantly higher than those in black neighborhoods (7). In addition, studies have shown that living in low-income, segregated neighborhoods, may negatively affect the development of children and well-being of families (8). These populations are more likely to remain in these neighborhoods than their non-black counterparts.
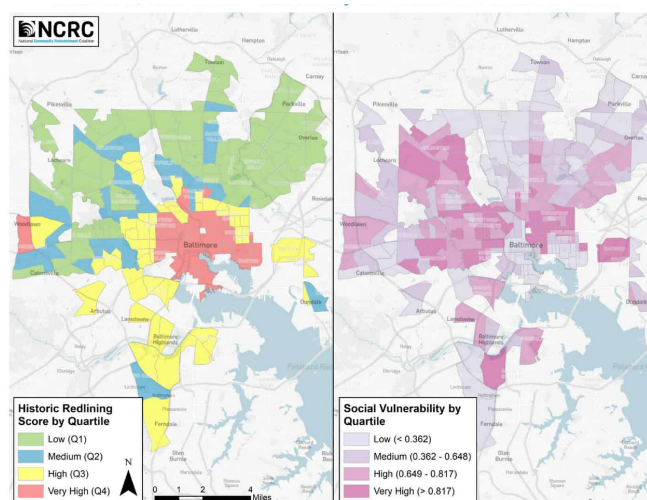
Social Vulnerability in Baltimore, MD in Relation to Redlining

Energy-Related Inequities

In addition to racial and economic segregation, energy burden disparities are also pronounced across the state of Maryland (9). People of color are more likely to be vulnerable to landlord policies, with just 54% owning homes in Maryland as compared with 77% of Whites (10). Maryland also has one of the highest rates of vacant lots in the country, particularly in Baltimore, the Eastern Shore and Western Maryland (11). Electric vehicle infrastructure is also lacking in the state (12). Specifically in the Western and Eastern Shore regions of Maryland, there is a lack of ZEV charging stations (13).

Baltimore presents a case of energy injustice due to the number of incinerators (14), power plants (15), and heavily trafficked roadways (16). These have contributed to increased air pollution, which has been correlated with the urban heat island effect and overall excessive heat (17). Between 2012 and 2018, 28% of Maryland's heat-related deaths occurred in Baltimore (18), whose population is predominantly Black (19), demonstrating the differential burden of energy injustice on communities of color in the state of Maryland.

In Baltimore, incinerators are the largest source of pollution in the city, leading to 5% and 13% increases in cancer mortality and asthma rates, respectively, for fenceline African-American neighborhoods (20). Brandywine is another majority Black (72%) community experiencing poor air quality, due to five nearby power plants within a 13-mile radius of the town, placing it in the top 99th percentile nationwide in terms of facility saturation (21).

Wheelabrator Incinerator in Baltimore

Power plants in Brandywine, MD. Ranks 99th percentile nationwide in powerplants per capita

Key Terms: Environmental Racism

Benjamin Chavis, former head of the United Church of Christ's Commission on Racial Justice, coined the term "environmental racism," after his involvement with the 1982 protests against the siting of a hazardous waste landfill in Warren County, North Carolina. Chavis defines environmental racism as the racial discrimination in environmental policy-making and enforcement of regulations and laws, the deliberate targeting of communities of color for toxic waste facilities, and the history of excluding people of color from leadership of the environmental movement (26). This is contradictory to the environmental justice movement, which promotes meaningful involvement of these groups across the entire political and decision-making cycle.

1982 Warren County Protests that sparked the environmental justice movement

Purpose/Rationale

Maryland's path towards environmental justice has been accelerated by a global pandemic, economic crisis, and protests for racial justice. These events have elucidated historic and growing inequities for communities isolated from power and meaningful involvement in policy making. The COVID-19 pandemic led to nationwide lockdowns in order to control contagion, resulting in a dynamic shift from in-person sessions to virtual Zoom environments (27). Despite challenges and hurdles conducting community engagement in virtual or hybrid environments, overarching principles of environmental justice, such as community engagement, should continue to guide government actions and programs.

Government transparency and public accessibility is a major component of environmental justice. Recognizing the benefits of other scorecards, such as the 2020 CEJA EJ Scorecard, CEEJH sought to develop EJ scorecards for Maryland at the legislative and agency levels. We created the Maryland Agency Scorecard to track state agency actions to advance EJ, by focusing attention on five key areas:

1. Establishment of EJ office;
2. Commitment to protect the environment both from past policies and protections for the future;
3. Prioritization of those impacted by environmental racism;
4. Existing resources towards building environmental literacy; and
5. Proactive EJ work.

Methodology

The MD EJ Agency Scorecard was modeled after the 2020 CEJA EJ Agency Assessment (28). Learning from this prior work, CEEJH staff selected relevant Maryland state agencies, developed scoring criteria, collected and analyzed publicly available data. CEEJH staff then communicated with agencies about their scores, received additional materials from select agencies, and revised those scores accordingly. Each procedural step is explained in further detail below.

Procedure

Selecting Relevant Agencies

After comparing the agencies in the CEJA scoring criteria to Maryland agencies, we identified nine agencies that were relevant for our purposes and to environmental justice: Department of Natural Resources (DNR); Department of Agriculture; Department of Planning; Maryland Department of the Environment (MDE); Maryland Department of Transportation (MDOT); Department of Housing and Community Development (DHCD); Maryland Department of Health (MDH); Maryland Energy Administration (MEA); Public Service Commission (PSC).

Developing Scoring Criteria

The nine agencies were reviewed across five criteria developed from the 17 Principles of Environmental Justice and CEJA's 8 Principles of Collaboration (29, 30). CEEJH staff analyzed these principles, ranking and voting on which criteria points to include, and ultimately synthesized 21 criteria together to make our five EJ scoring criteria. We focused on racial and social equity, particularly agency proactiveness in acknowledging and rectifying environmental racism.

Robert Bullard speaking at the 1st National People of Color Leadership Summit in Washington D.C.

Procedure

Data Collection and Analysis of Agency Materials

Agencies were evaluated for each criterion on an ordinal scale of 0-5 points. Assessment took place via qualitative content analysis of publicly available information from each agency's website and included news releases, educational materials, annual reports, and event calendars. In order to reduce individual bias and strengthen the scoring method, each agency was scored twice by two different team members independently from each other. Both scores were averaged to determine the final score for each agency, represented by a letter grade, based on CEJA methods. These letter grades used cutoffs as follows: 5 = A; 4 = B; 3 = C; 2 = D; and 1 = F. This allowed for better standardization of each agency.

Agency Follow Up and Additional Analysis

Agencies were contacted with information about the project and process and they were also provided with their scores for 2019, 2020, and 2021. The goal of such communication was to open a dialogue and also allow agencies to provide additional resources, if desired. Each agency scored in this project was contacted initially. If no reply was received, a follow up attempt was made. Not all agencies responded to CEEJH communication attempts.

Several agencies replied and were connected with Dr. Wilson, where the project was explained in further detail. Agencies were then asked to submit additional documentation that the scorers may have missed or that may not have been publicly available. In the event where agencies provided additional information that was not previously available to the public, the new content was evaluated by the same criteria to reassess the final score. Those updated scores replaced the previous scores for accuracy. During the evaluation process, each rater wrote justifications for each criterion score. Those justifications were later used for the explanatory text found in the results section below which combines that of all raters.

Agency EJ Scoring Criteria

The five EJ scoring criteria are as follows:

CRITERION 1 - AGENCY STAKEHOLDER ENGAGEMENT and TRANSPARENCY on EJ

Does the agency have a solid, established form of connection with the community including having an EJ office and officer with a direct line of contact (ex: asking for key stakeholders' opinions, town hall meetings)? Is the agency committed to being transparent with the public about their work (in general)?

CRITERION 2 - PROTECTION and REPAIR of ENVIRONMENT

Is the agency committed to a "one health" approach in protecting the physical environment (i.e. habitats, trees, ecosystem), animals, and human health by both repairing harm done from past policies and creating further protections via their current policies?

CRITERION 3 - PRIORITIZATION of HEALTH for COMMUNITIES with EJ IMPACT

Does the agency prioritize the health of workers and communities historically impacted by environmental racism?

CRITERION 4 - ENVIRONMENTAL and HEALTH EDUCATION RESOURCES

Does the agency have resources directed towards environmental and health education?

CRITERION 5 - PROACTIVE INITIATIVE on ENVIRONMENTAL JUSTICE

Is the agency proactive in their environmental justice work (i.e. do they have prevention measures, are they taking initiative to solve environmental justice issues)?

To assess each criterion, a point system was used to rate each agency, ranging from 0-5 (see Table 1).

Table 1: Point System for Agency EJ Scoring Criteria

Points	Requirements to Earn Corresponding Points
0 points	(1) no available information about the criteria point at all; and (2) no language referencing EJ on that specific point.
1 point	(1) information available about the criteria point but not in the context of EJ; (2) no language referencing EJ; and (3) the information is not up to date
2 points	(1) mentions "environmental justice" or uses EJ language (e.g., "sacrifice zones," "POC," "health disparities," "inequality/inequity") and (2) little to no commitment to integrating EJ into the criteria point
3 points	(1) has information on an EJ project or proawork; (2) their EJ work is poorly developed: out-of-date, poor process, only targets a small number of constituents, no measurement of outcome or impact
4 points	(1) the information the agency has on their EJ work is up to date (within the past year) 2) the agency has moderate information available on the work they're doing for the criteria point
5 points	(1) centers their information on "environmental justice" and/or EJ language (e.g., "sacrifice zones," "POC,") 2) have detailed, extensive information available on the work they're doing for the criteria point 3) the agency's work for criteria point is effective, up to date, and evidence-based

Results

Results are presented with a summary overview of the agency scores by year, followed by an examination of scores by criterion. Individual agency summaries and score breakdowns are provided next, with discussion of the material used to score each agency.

Table 2 reveals the 2019, 2020, and 2021 agency scores, respectively. After an initial round of scoring, these agencies were given the opportunity to improve their score by providing additional documentation of ways they were promoting environmental justice. Only the DNR, DHCD, MDE, and PSC provided further evidence for us to assess. Updated scores are noted, along with the original scores.

Very few agencies received scores above a failing grade (D or F) each year. MDE consistently had the highest score, followed by DNR, from 2019-2021. The agencies that appear to need the most improvements are the Departments of Energy, Agriculture, and Health. Some agencies appeared to have variable efforts between 2019-2021 in terms of exact scores, though the majority of agency letter grades for each agency increased over the years.

In 2019, the highest agency score was 3.5 (MDE and DNR), while the lowest was 0.5 (Agriculture). For 2020, the highest score was notably higher, at 4.65 (MDE), while the lowest score was even lower at 0.2 (Energy). For 2021, the highest agency score was 4.6 (MDE), while the lowest, 1.2 (DHCD), increased from previous years.

Figure 1 presents a rolling average of agency scores from 2019-2021. Here, we see the "risers" and "fallers" across the study period, with MDE and DNR showing promise, while PSC and DHCD appear to be on the decline. The Department of Agriculture and the Energy Administration scored the poorest from 2019-2020, but according to the percentages across the years, they improved the most out of all the agencies.

Summary of Results

Table 2: Agency Scores by Year

Agency	2019		2020		2021	
	Average Score (out of 5)	Letter Grade	Average Score (out of 5)	Letter Grade	Average Score (out of 5)	Letter Grade
MDE	3.5	C	4.65(initial - 1.5)	B(initial - F)	4.6	B
DNR	3.5(initial - 1.2)	C(initial -F)	4.0(initial - 0.5)	B(initial - F)	4.1	B
PSC	2.7	D	2.7(Initial - 1.2)	D(initial - F)	2.4	D
DHCD	1.9	F	1.9(initial - 0.8)	F(initial - F)	1.2	F
Department of Planning	1.9	F	0.9	F	2.2	D
MDOT	1.8(initial - 0.9)	F(initial -F)	0.5	F	2	D
MDH	1.25	F	0.5	F	2.5	D
Department of Agriculture	0.6	F	0.3	F	1.5	F
Energy Administration	0.5	F	0.2	F	1.8	F

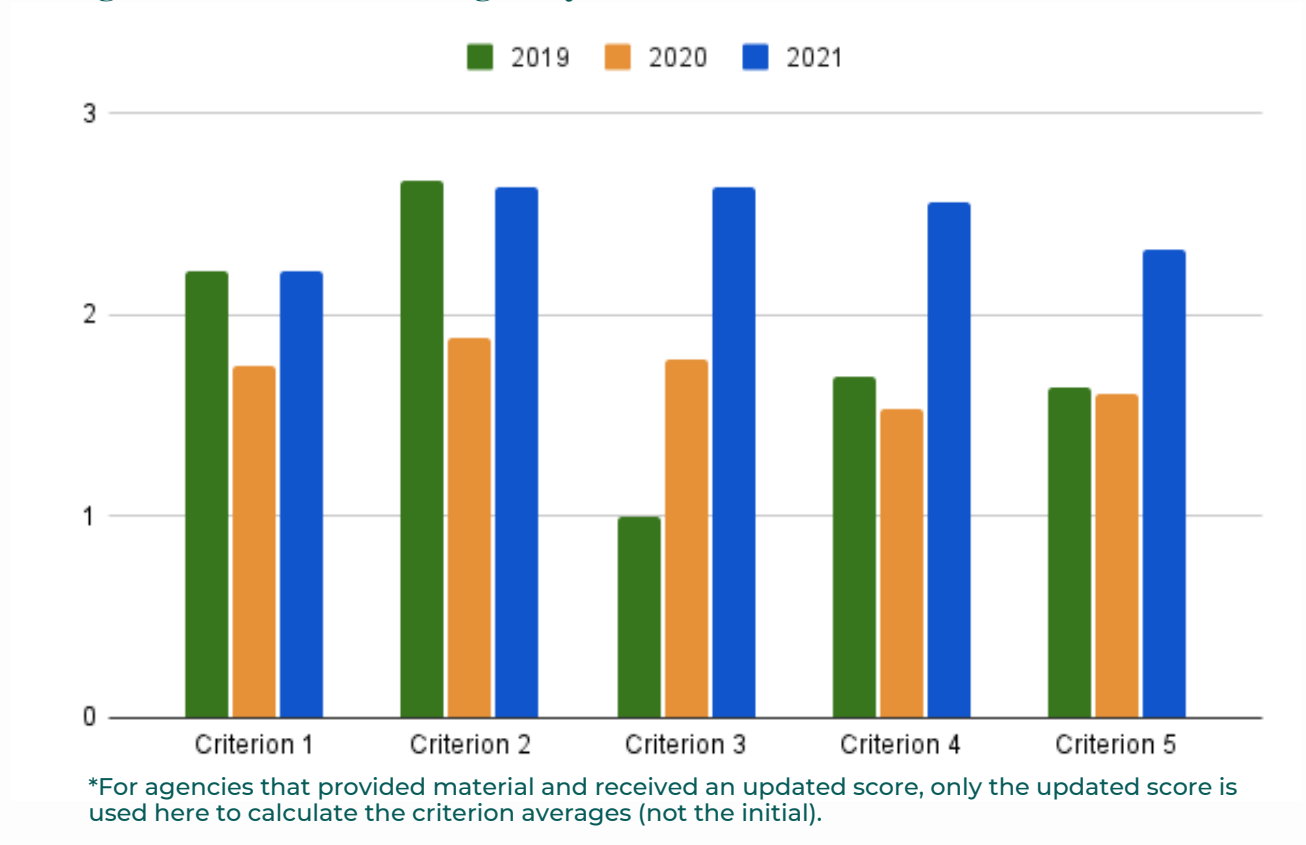## Figure 1: Rolling average of agency scores from 2019-2021
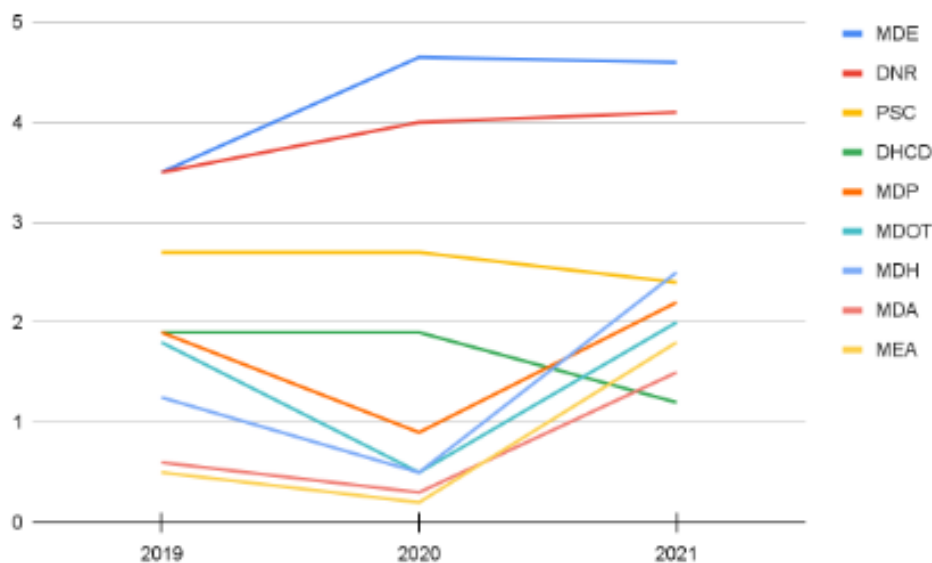
Results by Criterion

Agency efforts on environmental justice varied markedly by criterion (see Table 3). Criterion 2, which focused on protection and repair of the environment, scored the highest across the three years. Criterion 3, Prioritization of Health for Communities with EJ Impact, had the lowest average score in 2019. and transparency on EJ.

For 2020, the lowest average score was seen in Criterion 4, whether agencies had environmental and health education resources. 2021 averages revealed that the agencies scored the lowest in Criterion 5, whether agencies had adequate stakeholder engagement and transparency on EJ.

Figure 2. Overall Averages by Criterion*

*For agencies that provided material and received an updated score, only the updated score is used here to calculate the criterion averages (not the initial).

Criterion 1-Agency Stakeholder Engagement and Transparency on EJ

Criterion 1 assessed whether each agency had a solid, established form of connection with the community, enacted community engagement, and was transparent with the public about their work. Specific aspects of the assessment looked for whether the agency had an EJ office and officer with a direct line of contact with the community, e.g. establishing a forum for asking for key stakeholders' opinions or holding consistent town hall meetings.

Agencies varied as to how much stakeholder engagement and transparency they had. Across all three years, MDE scored highest. Each year, The Energy Administration, Department of Agriculture and DHCD showed consistent need for increase in transparency and engagement. From 2019-2021, a few agencies scored less than 1.

Criterion 1 Results

Table 3. Criterion 1 Agency Scores for 2019-2021

Agency	2019	2020	2021
Environment	5	4.5	4.5
Planning	3	0.5	1.5
Public Service Commission	3	3.5	2.0
Natural Resources	3	3.75	3.5
Health	2	1.0	2.0
Transportation	2	0.5	2.5
Agriculture	1	0.5	1.5
Housing and Community	0.5	1.5	1.0
Energy	0.5	0	1.5

*Agencies submitted additional information and improved their scores; the updated scores are used here

Criterion 2- Protection and Repair of the Environment

Criterion 2 examined whether the agencies demonstrate commitment to protecting the physical environment (i.e., habitats, trees, animals, human life). It is expected that agencies have a strong emphasis on environmental protection and repair, particularly in light of climate change and adverse impacts on public health. To achieve a high score agencies must show evidence of repairing harm done from past policies. In addition, an agency must display current policies which further efforts for protecting the environment to secure its long term health for future generations.

Agencies varied as to how much they focused on protection and repair of the environment through the "one-health" lens. In 2019, the Department of Planning received the highest score, while the Department of Environment scored the highest in both 2020 and 2021. The Department of Natural Resources has steadily improved its rating since 2019. The Departments of Health and Agriculture were rated the lowest for both 2019 and 2020, while the Department of Energy received the lowest score in 2021.

Criterion 2 Results

Table 4. Criterion 2 Agency Scores for 2019-2021

Agency	2019	2020	2021
Environment	3.5	5.0	4.5
Planning	4.5	1.0	2.5
Public Service Commission	3.5	3.0	2.0
Natural Resources	3.5	4.0	4.0
Health	0	0.0	3.0
Transportation	2.5	1.0	2.5
Agriculture	1.5	0.5	1.5
Housing and Community	3	1.5	2.0
Energy	2	1.0	1.5

*Agencies submitted additional information and improved their scores; the updated scores are used here

Criterion 3- Prioritization of Health for Communities with EJ Impact

Criterion 3 assessed whether each agency prioritizes the health of workers and communities historically impacted by environmental injustice.

In 2019, no agency received a mean greater than 3. Although 2020 had similar scores, the Department of Environment proved to be a higher performing outlier, scoring a mean of 4.5. The Department of Health had the top score in 2019, while the Department of the Environment scored highest in 2020. The Department of Environment tied with the Department of Natural Resources for the top score of 4.5 in 2021.

Overall, scores were very low in this criterion. However, the number of agencies scoring lower than a mean of 1 declined each year. Four agencies received a mean score of 0 in 2019 (Planning, Agriculture, Public Service Commission, and Energy) while three of the four agencies received the same score in 2020 (Agriculture, Transportation, and Energy). By 2021, no agency received lower than a mean of 1. This indicates that agencies are improving their materials regarding Criterion 3, but have significant capacity to improve their prioritization of the health of EJ communities.

Criterion 3 Results

Table 5. Criterion 3 Agency Scores for 2019-2021

Agency	2019	2020	2021
Environment	1.0	4.5	4.5
Planning	0	1.5	2.0
Public Service Commission	0	3.0	3.0
Natural Resources	2.5	3.5	4.5
Health	3.0	1.0	3.0
Transportation	1.5	0	2.0
Agriculture	0	0	1.0
Housing and Community	1.0	2.5	1.5
Energy	0	0	2.25

*Agencies submitted additional information and improved their scores; the updated scores are used here

Criterion 4- Environmental and Health Education Resources

This criterion assessed whether the agencies have resources directed towards environmental and health education. To achieve a high score, agencies must show evidence of having community friendly materials created to increase environmental literacy and education. Few agencies performed very well in this criterion, as many agencies possessed very few available resources on the required topics.

The Departments of Natural Resources and Environment scored highly in all three years, particularly in comparison to all other agencies. In 2021, the Department of Health vastly improved its score from previous years. Several agencies had low scores each year, but no agency received a score lower than a 1 in 2021. In 2019 and 2020, most agencies scored below a 2, while the majority scored 2.5 or above in 2021.

Criterion 4 Results

Table 6. Criterion 4 Agency Scores for 2019-2021

Agency	2019	2020	2021
Environment	4.0	4.25	5.0
Planning	2.0	1.0	2.5
Public Service Commission	0	1.0	2.5
Natural Resources	4.5	4.0	4.0
Health	1.25	0.5	4.0
Transportation	1.5	1.0	1.5
Agriculture	1.0	0.5	2.0
Housing and Community	1.0	1.5	1.0
Energy	0	0	2.0

*Agencies submitted additional information and improved their scores; the updated scores are used here

Criterion 5- Proactive Initiative on Environmental Justice

The fifth and final criterion examined whether the agencies are proactive in their environmental justice work (i.e., do they have prevention measures, are they taking initiative to solve environmental justice issues).

The Departments of Natural Resources and the Environment had the highest scores for all three years. On average, these agencies scored two points higher than other Maryland state agencies scored for this project. Meanwhile, the Energy Administration scored the lowest for 2019 and 2020, while the Department of Housing and Community scored the lowest in 2021.

Criterion 5 Results

Table 7. Criterion 5 Agency Scores for 2019-2021

Agency	2019	2020	2021
Environment	4.0	4.25	4.5
Planning	2.0	1.0	2.5
Public Service Commission	0	1.0	2.5
Natural Resources	4.0	4.75	4.5
Health	1.25	0.5	2.0
Transportation	1.5	1.0	1.5
Agriculture	1.0	0.5	1.5
Housing and Community	1.0	1.5	0.5
Energy	0	0	1.5

*Agencies submitted additional information and improved their scores; the updated scores are used here

Agency Summaries

The agency scores for 2019, 2020, and 2021 are derived as an average of each rater's score per criterion. The total score is a summation of all five criteria converted into a percentage. Justification for the criteria scoring is provided for each year. For select agencies, there is a row with updated scores for each year that additional materials were provided for review. The final score to be considered is the updated score.

Agency total scores were derived using the following formula:

(Rater 1 Average of Criterions 1-5 + Rater 2 Average of Criterions 1-5) / 2

When additional documentation was received, both raters re-scored each criterion. The final scores for each agency were calculated using the formula above.

2019-2021 Highest Agency Scorers

Department of Natural Resources

Department of the Environment

Department of Agriculture

The Maryland Department of Agriculture's mission is to provide support to agriculture and the general public via regulatory, service, and educational activities. It seeks to improve agricultural efforts and protect the environment while promoting consumer knowledge and awareness. The goal of the MDA is to encourage profitable environmental and agricultural projects and enhance quality of life.

Table 8. Department of Agriculture Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	1	0.5	0	1	0.5	12%
2020	0.5	0.5	0	0.5	0	6%
2021	1.5	1.5	1	2	1.5	30%

2019: Total Score 12%

The MDA prides itself on being a source of leadership for food, agriculture and related resources in efforts to promote a nourishing environment for citizens. However, as analyzed through our aforementioned criteria, the MDA lacks strong commitment to community engagement (e.g. no EJ officer, town halls). There is no mention of Diversity, Equity, and Inclusion efforts, particularly in support of employees and agriculture laborers historically impacted by environmental racism. If the mission of MDA is to promote citizen health, the agency must improve within-house EJ development and accountability.

Department of Agriculture

2020: Total Score 6%

The only entity at the MDA that is responsible for the dissemination of information to the general public is the Regulatory Information Center. The Regulatory Information Center is responsible for providing information to the public regarding enforcement actions taken to respond to state law violations related to the environment. The MDA makes no mention of any action related to environmental racism within the past year. The MDA also fails to include any information regarding the history of worker rights and safety. With this being the case, there is no evidence of whether the MDA prioritizes the health, empowerment, and economic mobility of their workers. Moreover, the MDA 2020 Annual Report makes no mention of environmental justice and lacks specific language related to EJ on their website. Considering all of these shortcomings, it is apparent that Environmental Justice is not a primary concern of the MDA.

2021: Total Score 30%

MDA displays commitment to environmental and animal welfare, but does not incorporate environmental justice in their initiatives. The majority of the information around environmental protection is centered around promoting business. The agency offers many environmental education resources around agriculture and conservation, but these resources do not contain any environmental justice language and include very little information on climate change. Community outreach in Black, Indigenous, and People of color (BIPOC) and low-income communities is limited. Urban Agriculture and Community stakeholder relationships can be strengthened. Similar to 2020, the 2021 MDA Annual Report makes no mention of environmental justice, indicating that EJ continues to not be a priority for the MDA. The strongest environmental justice initiative found was the agency's comment on Climate Solutions Now of 2021. The comment suggested that MDA wished to be a member of the Commission on Environmental Justice and Sustainable Communities (CEJSC). However, MDA did not become a member of CEJSC.

Energy Administration

The Maryland Energy Administration (MEA) "advises the governor and general assembly on all energy matters, promoting affordable, reliable and cleaner energy. MEA develops and administers programs and policy to support and expand all sectors of the state's economy while benefiting all Marylanders and implementing legislation." Key works of the MEA include EmPower Maryland Energy efficiency, the publication of a community solar guide, and incentives for clean and green energy transitions.

Table 9. Energy Administration Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	0.5	2	0	0	0	10%
2020	0	1	0	0	0	4%
2021	1.5	1.5	2.25	2	1.5	36%

2019: Total Score 10%

MEA had the lowest score among evaluated agencies. There is evidence of community engagement through four annual Strategic Energy Investment Advisory Board Listening Sessions as Required under 2019 Senate Bill 52, and some partnerships between the state and local nonprofits. Though MEA has many initiatives for renewable energy, with programs based on income, there are no educational initiatives or language pertaining to environmental justice.

Energy Administration

2020: Total Score 4%

In terms of environmental justice, the MEA lacks a solid form of community connection. At this time, the agency does not have an environmental justice officer or office. Although most of their programs are sustainable, they do not address issues of environmental racism in energy distribution, thus resulting in their low score.

2021: Total Score 36%

The MEA reflects very little community engagement or dedication to energy equity in their initiatives. Their environmental protection efforts focus on transitioning to clean energy and reducing greenhouse gas emissions, which is partially a response to policies enacted in Climate Solutions Now of 2022. It should be noted that most pages on the MEA website do not have publication dates, making it difficult to discern scores for 2021, compared to other years. Throughout their materials, MEA had no mention of environmental justice and public health. Educational resources are available on different energy sources, but have no mention of pollution or impact on public health. The agency does have beneficial programs targeted towards low-to-moderate income groups, such as the Low-to-Moderate Income Energy Efficiency Grant. However, content analysis indicates that this grant program is the extent of their environmental justice commitment.

Department of the Environment

The Maryland Department of the Environment (MDE) was created to protect and preserve the state's air, water and land resources and safeguard the environmental health of Maryland's citizens. MDE works to implement environmental laws and regulations; it also provides technical assistance to Maryland industry and communities for pollution, growth issues, and environmental emergencies.

Table 10. Department of the Environment Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	5	3.5	1	4	4	70%
2020	2.5	1.5	1.5	1.5	0.5	30%
2020 Updated	4.5	5	4.5	4.25	5	93%
2021	4.5	4.5	4.5	5	4.5	92%

2019: Total Score 70%

MDE had the highest scores among evaluated agencies for 2019, 2020, and 2021, and its evaluation for 2019 yielded the only passing score (70%) within our assessment. MDE has leadership and programs devoted to environmental justice, including the CEJSC. The CEJSC Annual Report shows demonstrated outcomes for case studies, provides recommendations for environmental justice, and outlines plans for community engagement, though the Commission's objectives could benefit from more specificity. The website is well organized and navigable with a wealth of resources. There is also a Citizen's Guide to Public Participation. The Greenhouse Gas Reduction Act (GGRA) plan has a chapter on social equity with a section on environmental justice and equity. The Maryland Commission on Climate Change (MCCC) has specific provisions to reach out to low, low-moderate, communities of color to ensure GGRA does not have disproportionate impact. MCCC has also provided recommendations for considering communities with environmental justice concerns and acknowledging disproportionate burdens.

Department of the Environment

2020: Total Score 93%

Scoring highest of all agencies for all three years, MDE is praised for its Environmental Justice Policy and Implementation Plan. This plan describes MDE's aims to address economic and public health impacts with a particular focus on addressing environmental justice concerns in communities disproportionately impacted by air pollution and climate change. There will be an environmental justice officer as well as an environmental justice workgroup thus expanding upon their established community connection through means such as surveys and workgroups. MDE has two environmental Nonprofit Organization Representatives in the agency and takes part in the Commission on Environmental Justice and Sustainable Communities. The agency has a moderate amount of resources directed towards environmental health education through its Education, Communication, and Outreach Working Group. MDE has invested significant amounts of money into the Wastewater Treatment Plant fund, the Wastewater Treatment Plant fund, and the Department of Agriculture (MDA) Cover Crop Program fund, thus providing significant financial support for repairing the physical environment. Lastly, mention of mediating disparate impact and restoring infrastructure in EJ communities establishes a context of environmental justice.

2021: Total Score 92%

The MDE continues to display its commitment to environmental justice through community partnerships, educational resources, and environmental preservation efforts. MDE is consistent in their approach towards equity and inclusion. They ensure that community members are active stakeholders, conducting regularly scheduled meetings with community partners. Unlike other agencies, MDE openly mentions their EJ officers and has an established EJ Workgroup. In their outreach methods, the agency has incorporated accessible EJ tools and community friendly education resources. MDE actively prioritizes the health of all Marylanders, especially "minority populations" and communities that have been historically overburdened by Environmental Injustice. They make sure to consider the outcomes of poor environmental health and Climate Change have on overburdened populations. All of their resources are up to date with impactful and accurate Environmental Justices terminology. In addition to their own EJ work, MDE collaborates with several community based programs and educational organizations aiding them in their EJ efforts.

Department of Health

The Maryland Department of Health seeks to "support and improve the health and safety of all Marylanders through disease prevention, access to care, quality management, and community engagement." The goal of MDH is to promote "lifelong health and wellness for all Marylanders."

Table 11. Department of Health Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	2	0	3	1.25	0	25%
2020	1	0	1	0.5	0	10%
2021	2	3	3	4	2	50%

2019: Total Score 25%

The MDH promotes the safety and wellbeing of all Maryland residents. Utilizing disease prevention, access to care, quality management, and community engagement is a great way to start to EJ work; however, incorporating social determinants of health and environmental factors into decision making would greatly improve the MDH's quality of care. It has been shown that environmental inequities and dispositions subsequently contribute to health disparities. To better protect Maryland residents, the MDH should incorporate environmental protection policies. By working to prevent environmental exposures such as wildfires, flooding, and toxic waste, MDH would improve their Criteria 5 score while achieving their mission of producing better health outcomes.

Department of Health

2020: Total Score 10%

IThe MDH had little to no language or programs referencing environmental justice within their annual reports, programs, or leadership structure. Initiatives demonstrate potential to address issues adjacent to environmental justice, but do not knowledge or address the conditions leading to health inequities. The MDH can better improve their environmental justice work by using microtargeted language to identify and serve systematically marginalized and excluded communities within their programs for "underserved" and "vulnerable" communities. Programs and initiatives can also acknowledge the role of the built and natural environment on human health.

2021: Total Score 50%

The MDH has improved its score over the years through the agency's implementation of environmental justice resources and one-health approach. The agency uses environmental justice language when discussing environmental health disparities, but does not explicitly mention EJ throughout the website on a consistent basis. The Office and Administrations page indicates that MDH has an Office of Minority Health and Health Disparities, but the information for the office and its projects are not up-to-date. The agency overlooks the association between SDOH seen in disadvantaged communities and environmental injustice. This insight is critical for advancing equitable health care in Maryland. Many of their public health initiatives prioritize EJ communities, but once again the agency does not connect their projects to environmental justice. Though this is the case, it is evident that MDH is actively working to improve their environmental justice efforts. The agency does have a serving member on the CEJSC and is seeking to improve their Environmental Public Health Tracking systems. MDH has room to update and develop their environmental health resources to adequately portray their work on environmental justice issues.

Department of Housing and Community Development

The Maryland Department of Housing and Community Development is at the forefront in implementing housing policy that promotes and preserves homeownership and creating innovative community development initiatives to meet the challenges of a growing state.

Table 12. Department of Housing and Community Development, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	0.5	3	1	1	3.5	36%
2020	0.5	0.5	0.5	1	1.5	16%
2020 Updated	1.5	1.5	2.5	1.5	2.5	38%
2021	1	2	1.5	1	0.5	24%

2019: Total Score 36%

The Department of Housing and Community Development centers the wellbeing of community growth and flexibility while maintaining development programs. Most effectively, the department prioritizes outreach for homeless community members and has been active in taking preventative measures. The department has also taken a proactive approach to promoting green spaces and environmentally friendly infrastructure. However, the department has poor overall community outreach efforts and can improve on their over EJ efforts.

Department of Housing and Community Development

2020: Total Score 36%

The department has many programs that aim to aid Marylanders in their housing needs and to improve the overall sense of community. Some of these include the Maryland Mortgage Program, rental housing program, and community revitalization programs. The Sustainable Communities Program seeks to increase stability and living comfort among citizens while other efforts address lead abatement and identification of other hazards, thus addressing matters of community health. In terms of environmental justice work, the DHCD shows some commitment to community engagement and transparency through Project CORE and other community outreach events.Most notably, their Maryland Opportunity Zone program shows DHCD's efforts to invest in and improve opportunity zones. They are vaguely committed to preserving the physical environment with the Keep Maryland Beautiful program, however, do not prioritize combating environmental racism in the past or present.

2021: Total Score 24%

The Department of Housing and Community Development received the lowest agency score in 2021. The agency does not include environmental or health resources and failed to address historically harmful policies (i.e., redlining) in their materials. A representative from the agency serves on the CEJSC, but this information was not found in the materials on the agency's website. The agency operates multiple programs that serve disadvantaged communities, but does not explicitly mention environmental racism or its impacts on human health. Overall, it is apparent that DHCD fails to recognize and reduce environmental injustices, specifically seen in housing disparities, which take place in Maryland's BIPOC and low-income neighborhoods. The agency received a low score due to their lack of educational resources, language referencing environmental justice, and updated EJ initiatives.

Department of Natural Resources

The Maryland Department of Natural Resources' mission is to preserve, protect, restore, and enhance Maryland's natural resources, including waterways and both public and private lands. The agency's mission focuses on sustainability, habitat preservation and restoration, stewardship opportunities, and providing diverse and inclusive recreation opportunities for all Maryland residents, both urban and rural.

Table 13. Department of Natural Resources Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	1	2	1	1.5	0.5	24%
2019 Updated	3	3.5	2.5	4.5	4	70%
2020	0	1	0.5	1	0	10%
2020 Updated	3.75	4	3.5	4	4.75	80%
2021	3.5	4	4.5	4	4.5	82%

2019: Total Score 70%

The DNR formulates their policies and efforts in conjunction with the idea that the health of society and the economy are dependent on the environment. Yet during the initial scoring process, the DNR received a final score of only 24%. Across all criteria points, no initial score above a 2 was awarded. However, direct communication with DNR provided additional documentation to improve the scores substantially, leading to an updated total score of 61%. This agency's strengths include its emphasis on inclusion and access to environmental education, its explicit focus on and commitments to DEIJ initiatives, and numerous environmental protection projects or programs. However, these initiatives seem to be primarily focused on the "DEI" of "DEIJ" and do not appear to center environmental justice in their framing. Overall, it is evident that DNR is taking strides towards EJ initiatives, but must strengthen their transparency and depth in EJ work.

Department of Natural Resources

2020: Total Score 80%

Similar to the scoring for 2020, DNR initially scored quite low but achieved significant improvements in their score following direct communication with the agency. Additional documentation provided by DNR highlighted areas of strength and opportunities for growth. A key piece of the agency's work on environmental justice takes place via the federal Chesapeake Bay program, which includes environmental justice training that actively seeks to maximize workforce Diversity, Equity, Inclusion and Social Justice (DEIJ) (31). Similar to 2019, DNR's strengths include its emphasis on inclusion and access to environmental education, its explicit focus on and commitments to DEIJ initiatives, and numerous environmental protection projects or programs. Again, these initiatives seem to be primarily focused on the "DEI" of "DEIJ"; they would be improved through direct centering of environmental justice in their framing and additional efforts towards transparency.

2021: Total Score 82%

The DNR exhibits strong dedication to environmental justice. The agency offers many comprehensive, diverse, and up-to-date resources on environmental and public health– far more than other agencies reviewed. DNR operates multiple community science programs that involve community members, partnerships with Local schools and Universities. DNR offers multiple educational initiatives that are targeted to benefit youth in underserved communities. The agency has detailed publications of their environmental justice initiatives. However, the agency loses points for accessibility and transparency. Environmental justice-specific pages are not accessible through the main pages of the website and instead must be searched for. Tools like the Park Equity Mapper and MD EJSCREEN are also not available through the main pages. The agency demonstrates many environmental justice initiatives, however, does not make them readily accessible or transparent to the public.

Department of Planning

The Department of Planning's mission is to "provide guidance, analysis, outreach and support to ensure that all of the state's natural resources, built environment and public assets are preserved and protected to achieve its goals for economic, community and environmental vitality" (32). The agency focuses on infrastructure and sustainable development.

Table 14. Department of Planning Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	3	4.5	0	2	4	54%
2020	0.5	1	1.5	1	0.5	18%
2021	1.5	2.5	2	2.5	2.5	44%

2019: Total Score 54%

The Department of Planning aims to support Maryland's natural resources, built environments, and public assets to the best of their ability. Some of these responsibilities include developing landscaping to appeal to community members and incorporating new opportunities to ensure public wellbeing (33). The Department of Planning received a failing final score of 54%. Notable criteria points include Criteria 2 and Criteria 5, where Planning scored above a 4 in both areas. This indicates proactive environmental protection and preservation, making progressive strides towards climate equity. However, the other criterion scores were subpar, indicating that community outreach (as seen through partnerships, treatment of employees, and education) needs significant work. This is disappointing specifically because the department emphasizes the commitment to community wellbeing and support.

Department of Planning

2020: Total Score 18%

The Department of Planning does not have an environmental justice office or an avenue for community feedback as of 2020. However, the department did invest in various projects that supported specific communities like the towns of Galena and Hagerstown. Planning also completed Community Development Special Project grant applications for other Maryland towns and Garrett County (34). These projects show the Departments dedication to community outreach and feedback. The agency had one environmental restorative program for the Chesapeake Bay (35), and was involved in a few other environmental initiatives throughout the year such as the Power Plant Research Program (36). Concerning vulnerable environmental justice communities, Planning had various projects for preserving historic Civil Rights areas, economically disadvantaged communities, and the African American Heritage Preservation Program (37). Despite these many projects, The Department of Planning had a few education programs and materials, with no significant proactive measures in solving environmental justice issues.

2021: Total Score 44%

At this time the Maryland Department of Planning does not have an office for Environmental Justice. However, they do have an officer who is a member of CEJSC. Although the officer acts as an established connection between the Department of planning and CEJSC, this agency fails to fully integrate Environmental Justice in their initiatives. The Department of Planning mentions Environmental Justice in a few of their programs, yet EJ tools, terminologies, and community friendly educational resources are limited. In addition, the Department of Planning does not include health resources. The agency has shown a dedication to sustainable planning, through Smart Growth and community restoration efforts. However, they fail to lead in transparency about historically harmful planning policies, funding, and acts of discrimination which have a lasting impact on BIPOC and low-income communities.

Public Service Commission

The Maryland Public Service Commission's mission is to ensure the public utilities and transportation resources are accessible, safe and reliable to the citizens of Maryland. The PSC carries out this mission mainly by ensuring proper rates for consumers as well as enforcing regulations that align with public interests. The PSC's mission includes a role ensuring that public utilities operate in ways that are "just, reasonable, transparent" and commitments to consider "environmental impacts," "conservation of natural resources and environmental preservation."

Table 15. Public Service Commission Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	1	2	0	0	1.5	16%
2019 Updated	3	3.5	0	0	3	38%
2020	1.5	1	2.5	0	1	24%
2020 Updated	3.5	3	3	1	3	54%
2021	2	2	3	2.5	2.5	48%

Public Service Commission

2019: Total Score 38%

The PSC promotes the use of solar energy, strives to provide energy options for low/low-middle income households, and advances EmPower Maryland. Initial scoring was quite low, but improved somewhat due to additional information provided by PSC. Agency strengths include some focus on clean and renewable energy, as well as an emphasis on increased access and affordability of such energy for low income households. While the agency discusses both the benefits of renewable energy and the environmental and health harms of fossil fuels, there is no mention of equity, race, or other environmental justice language. Additionally, the PSC website is poorly designed and difficult to navigate, hindering the public accessibility of the information. The PSC can improve by updating its public interface and providing more resources and programs that explicitly center environmental justice as a priority. There are also opportunities for the PSC to consider additional metrics for understanding the needs of public utilities users. For example, a report by the PSC measures the number of terminations under the Utility Service Protection Program. Although these trends are important for understanding trends in energy needs, more descriptive data such as percent of income spent on utilities might reflect additional service needs and inform resource and policy focus. Finally, the PSC does not provide relevant resources for environmental or health education; future efforts should consider relevant educational resources related to the agency's mission and the nexus between public utilities, green energy, equity, and health.

2020: Total Score 54%

Similar to 2019, initial agency scores were low but increased due to direct engagement with the agency and additional information-finding. The PSC has a higher score for 2020 than in 2019. Some strengths within the PSC's work include community engagement, focus on low-income communities, and an emphasis on clean energy and greenhouse gas reductions. The PSC actively emphasizes and promotes community engagement and one of their functions is to identify qualifying fossil fuel-fired generating stations that produce excess electrical output and fossil fuel emissions. In this designated function of the PSC, a community liaison is assigned to each community affected by the project being conducted and aided by the PSC. The agency's work also includes supporting diverse businesses and suppliers, working with vulnerable communities (especially low-income), improving energy efficiency, and reducing greenhouse gas emissions. While all of these areas could see growth, specific areas of needed improvement include direct focus on education about environmental justice and the role of public utilities in promoting and harming community and environmental health. Additionally, the PSC should have a more explicit focus on environmental justice, including employing a direct office or officer charged with overseeing and communicating the agency's environmental justice work.

Public Service Commission

2021: Total Score 48%

In the past, Maryland Public Service started community outreach initiatives which specifically aimed to prioritize "minority" and disenfranchised stakeholders. PSC demonstrates investment in equity through Supplier Diversity and cost effective, renewable energy options for low-income customers. Their dedication to improve the environment is also evident through renewable energy, solar energy, and greenhouse gas reeducation efforts. Though these initiatives are steps towards implementing Environmental Justice, PSC has much room for improvement. The agency has published one fact sheet on environmental justice, but it is not accessible from the website without being explicitly searched for– indicating a lack of transparency and commitment towards EJ. Although the agency mentions environmental justice, it is not integrated in their work. EJ resources, terminology, programs, and educational resources were extremely scarce. The agency rarely mentioned the health impacts which clean energy has on low income, BIPOC communities. The PSC also operates the Renewable Energy Portfolio (RPS), which permits waste-to-energy operations like the Baltimore Wheelabrator to receive "clean" energy subsidies while directly harming the health of BIPOC Baltimore residents (38). This agency could benefit from expanding renewable energy efforts and literacy for historically overburdened communities. Installing an EJ office or electing an EJ officer would also be effective. Ultimately, their low score in 2021 is a result of their failure to improve environmental justice in areas such as health equity and updated EJ resources.

Department of Transportation

The Maryland Department of Transportation (MDOT) is an organization of five business units and one Authority: the Secretary's Office, MDOT State Highway Administration, MDOT Maryland Transit Administration, MDOT Motor Vehicle Administration, MDOT Maryland Port Administration, MDOT Maryland Aviation Administration and the Maryland Transportation Authority. MDOT's mission is to "deliver safe, sustainable, intelligent, exceptional transportation solutions in order to connect customers to life's opportunities." The agency conducts this mission through six goals, one of which is environmental stewardship.

Table 16. Department of Transportation Scores, by Criterion

Year	Criterion1 Score	Criterion2 Score	Criterion3 Score	Criterion4 Score	Criterion5 Score	Total Score
2019	2	2.5	1.5	1.5	2	38%
2020	0.5	1	0	1	0	10%
2021	2.5	2.5	2	1.5	1.5	40%

2019: Total Score 38%

MDOT has many environmental initiatives focused on air quality, energy, land and water uses, climate resilience, and pollution prevention, but these programs lack an environmental justice lens. There is evidence of inclusivity to systematically marginalized and excluded communities through many of their initiatives. The Office of Minority Business Enterprise has many programs to " ensure that small, minority- and women-owned firms had the opportunity to participate fully and fairly in both state and U.S. DOT federally funded projects." In addition, there are active efforts to include those with Limited English Proficiency through events like Free Spanish Language Minority Business Certification Application assistance workshops. Lastly, the agency has established an Office of Diversity and Equity. Although these efforts are strengths of MDOT, the department did not score above a 3 for any category because programs did not center environmental justice as a priority. Some documents reflect the need for equity, but environmental racism is not considered nor is the historical significance for these actions to repair past harms.

Department of Transportation

2020: Total Score 10%

MDOT has some work related to protecting the physical environment and continuing health and driver's safety education. However, there was no significant resources committed to being transparent and connected to the community, prioritizing BIPOC and low-income communities, or being proactive in identifying and executing environmental justice projects.

2021: Total Score 40%

MDOT score from 2020 to 2021 has improved tremendously. The agency has displayed exemplary dedication to environmental conservation and protection. They are invested in environmental Stewardship through goals for reducing greenhouse gas emissions in transportation sectors, confronting climate change, eliminating hazardous waste, and minimizing energy usage. Currently, they have strong community engagement efforts, creating opportunities for stakeholders to be involved in decision making processes. Another strength of MDOT is their use of EJ screening tools to target areas for improvement in Maryland transportation systems. Pedestrian and bike rider safety is a priority as well. Though great strides towards environmental health and community engagement have been made, the agency's EJ work has room for improvement. One of their greatest weaknesses is their failure to prioritize the health related impacts in historically marginalized communities which is a result of common modes of Transportation in Urban neighborhoods. Failure to centralize their efforts to fully eradicate environmental racism and improve the health of Low-income BIPOC communities resulted in their low score. In addition to health related material, MDOT lacks community friendly education resources with updated environmental justice terminology, tools, and principles. Lastly, an EJ office or officer would be extremely beneficial to advancing environmental justice efforts in this agency.

Discussion

The scoring conducted provides an initial assessment and benchmark by which to seek environmental justice improvements in the work of nine Maryland State Agencies.

The agencies with the highest rated efforts toward environmental justice from 2019-2021 were the Department of the Environment (overall average = 4.25) and the Department of Natural Resources (overall average = 3.86). Agencies in need of the most improvements included the Department of Agriculture (overall average = 0.8) and the Energy Administration (overall average = 0.83). In terms of most improved agencies, the Department of Health's score increased from 1.25 in 2019 to 2.5 in 2021 (+100%), suggesting they have taken the most EJ measures in recent years. While the Energy Administration scored poorly overall, they also experienced a jump from 0.5 in 2019 to 1.8 in 2021 (+260%). This suggests that while this agency still has a lot of work to do, they have been working to improve their EJ works in recent years as well.

In terms of specific criteria, in 2019 and 2020, agencies received their lowest scores in Criterion 3: prioritization of the health of workers and communities historically impacted by environmental racism." In 2021, agencies scored lowest in Criterion 1: a solid, established form of connection with the community including having an EJ office and officer with a direct line of contact; and transparency with the public about their work."

In 2019 and 2020, agencies collectively scored highest in Criterion 2: commitment to a "one health" approach in protecting the physical environment (i.e. habitats, trees, ecosystem), animals, and human health by both repairing harm done from past policies and creating further protections via their current policies." Contrary to the findings from 2019-2020, In 2021, the agencies collectively scored the highest in Criterion 3, making it the most improved Criterion over the span of 3 years.

Environmental departments in similarly situated states like California present mapping tools like CalEnviroScreen on their website (39). CalEPA also clearly presents its commitment to racial equity and vision statement, without viewers having to circumnavigate the website. However, other states that have been environmental justice pioneers, like New York and its Department of Environmental Conservation, are not as transparent (40). This reveals that, despite efforts to promote environmental justice, state-specific environmental departments need to make this information easily accessible on their webpages.

Discussion

Multiple agencies had publications discussing their EJ work, but these pages were not accessible from the website without an intensive and time-consuming search. For example, the DNR has significantly aided in the development of the Park Equity Mapper and MD EJSCREEN, but these tools were not readily available from the website. These tools can aid the general public, researchers, and urban planners in investigating the cultural, socioeconomic, and health barriers to green space access for people of color and low-wealth community members throughout the state.

While many agencies showed efforts in improving the wellbeing of the community, little mention was made of historical implications and subsequent disproportionate impacts. To reach equitable social justice and environmental justice, acknowledging and addressing driving forces of inequity are essential. Studies have demonstrated a need to reconceptualize environmental racism in the context racial capitalism, in regards to agency scoring (41). For example, (Pulido, 2017) asserts that agencies and corporations do not have to actually address environmental justice issues because they know there will be minor, if any, sanctions (42).

A Flint, Michigan study presented a case of the devaluation of Black Americans, creating a landscape of differential value and local agency inaction. This feeds into the politics of public health argument, the notion that state agencies have limited mobility in promoting environmental justice, when compared to politicians in power (43, 44).

Many agencies received category scores of 4 or 5, however it was not enough to raise the total score above a failing grade. To receive a score of 5, the agency should center their mission statements around environmental justice, and at minimum provide plan(s) for enacting environmental justice projects and programs. Not only should these agencies be proactive in their environmental justice work, but their plans and progress should be transparent and available for public access. Another commonly missing component is the lack of an environmental justice representative and/or office. Introducing an EJ office would help to not only advance EJ efforts, but reflect cohesion throughout the agency as many EJ initiatives work to benefit the greater community.

Limitations

Data Collection

A potential limitation for this evaluation is the data being used. Each agency's website was thoroughly evaluated for available reports, new releases, programs, and educational resources to contribute to scoring. However, some agencies may have additional initiatives that meet our criteria, but these could not be considered if not publicly available. Additionally, most materials available on the agency websites did not include publication dates. This made it difficult for scorers to accurately conduct content analysis for the previous year, as materials may have been uploaded more recently. Government transparency and public accessibility is a major component of environmental justice, yet we found many agency websites falling short. Most agency websites could benefit from updates to improve the interface and better communicate resources, actions, and public meetings.

Additionally, the documentation related to data collection (precisely which agency websites and materials were accessed) could have been stronger and more detailed, in order to preserve an audit trail and ensure consistency between scorers (in the same years and different years).

Scoring

Improvements may be needed to delineate and operationalize the scoring criteria, in order to achieve greater consistency between scorers. Future efforts may include scoring to consensus, including additional scorers, or even calculating inter-rater reliability. According to various statistical guides, one method our team can implement moving forward is to calculate the percentage of items that the raters agree on, also known as percent agreement. We can display a numeric value alongside each criteria between 0 and 1, with 0 indicating no agreement between raters and 1 indicating perfect agreement between raters (45).

Agency Relationships

While CEEJH team members reached out to state agencies, not all agencies responded. It is likely that agency scores could have improved through further engagement with the agencies or by interviewing key stakeholders. Agencies who did submit additional information improved their scores markedly. In 2020, the four top agencies are those who submitted additional information. CEEJH likely has variable relationships and connections with different agencies, and, presumably, preexisting relationships would have heightened the chance that agencies would respond to communication about this project.

Limitations

Agency Selection

It can be argued that some Maryland state agencies are more or less appropriate for this EJ scorecard, as their missions and goals vary in alignment with environmental justice. Future scorecards may take into account the varying purposes and missions of each agency. However, considering the Federal government's Justice40 Initiative and the value of a whole-of-government approach, one could also argue that every state agency has relevance towards environmental justice efforts and, thus, should be held accountable.

COVID-19 Impact on Agency Work

Another limitation is the emergence of the COVID-19 pandemic in 2020. This limited organizational capacity and meetings were limited to virtual events, which was a relatively novel concept at the time. This major global event may have confounded the results of this scorecard, particularly community engagement efforts as government agencies struggled to pivot and utilize web-based meetings to connect with stakeholders (some of whom have challenges with internet and technology access).

Potential Biases

Potential biases may also undermine this scorecard. Though there were several rounds of scoring performed by CEEJH staff, the fact remains that the agencies could not be blinded from raters. As such, there may have been bias present in terms of pre-existing knowledge or perceptions. For instance, a team focused on environmental justice may be more knowledgeable about the Departments of Environment or Natural Resources. To address this limitation in the future, reflexivity and discussions around scorers' agency perceptions would be helpful to confront and minimize biases, in addition to improvements on the standardization of the collection used to score each agency.

Overall Recommendations

Eight recommendations emerged from the 2019-2021 scoring of the nine Maryland state agencies.

1. Require each agency to develop an environmental justice strategic plan

Due to the unique roles, responsibilities, and capacities of each agency, there is no "one size fits all" approach for implementing environmental justice. Thus, each agency should create goals and measurable outcomes that are publicly reported periodically. This should also include how environmental justice language and priorities are integrated into other agency programs and policies. Strategic plans would benefit from having a logic model to outline and track agency inputs, goal outputs, activities to achieve specific objectives, as well as short-term, midterm, and long-term goals. Moreover, the Prince George's County 2025 Plan provides useful examples on potential metric systems for assessing milestone achievement, particularly at a local level. These include: (1) the reduction of lead in or near other sites with vulnerable groups from 63 ppm to <25 ppm by 2025; and (2) reducing the number of wastewater treatment plants that are not meeting the EPA water quality standards from 5% to 0% by 2025 (46).

All Maryland agencies should create their own plan to integrate 2021 Biden Administration executive orders Justice40, which outlines that at least 40% of investments in clean energy and climate benefit disadvantaged (i.e. EJ) communities (47), and Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, which involves internal equity assessments and direct engagement and prioritization of underserved communities (48). Agencies should make financial tracking transparent to ensure equity in resource distribution, particularly as it relates to environmental justice planning.

2. Take an Intersectional Approach: Examine places where forces of power (white supremacy, misogyny, class, etc.) overlap and intersect, and what those effects look like (49)

By addressing the needs of the most vulnerable populations, efforts to improve quality of life will be reflected in less vulnerable populations as well. Where certain identities may be overlooked and ignored (most often in marginalized groups), being intentional about addressing the needs of vulnerable identities will subsequently address disparities and encourage equitable living for all. For example, in ensuring that public sidewalks are wheelchair accessible, not only will the disability community face less hardship, but benefits can be observed for all.

3. Prioritize meaningful community engagement in all agency actions (50)

Community engagement is a key prerequisite for environmental justice–communities must be empowered to express their concerns and provide input on government efforts. Criterion 1 evaluated whether the agency had a solid, direct line of communication with the community. These dialogues should be continuous to develop programming that is responsive to the needs of the community. Thus, additional modes of soliciting feedback from the community is necessary to best inform future decision making (51). This also includes publishing transparent and accessible EJ resources that are readily available to the public from agency websites. Leaving community members out of important decision-making harms attitudes and health outcomes, and is counterintuitive to the EJ movement.

4. Require environmental justice and anti-racism training workshops for agency employees (52)

These modules could include the history of the EJ movement, implicit bias, cumulative impacts, and principles of environmental justice. By the end of trainings, agency employees should have a better understanding of how EJ concepts can be applied to their work.

This should entail including environmental justice metrics to be weighed in performance reviews for both process and impact evaluation. Moreover this should take an intersectional approach to be intentional about addressing the needs of vulnerable identities which will subsequently address disparities and encourage equitable living for all. Federal agencies like the EPA and CDC contain examples of such EJ resources, listed on the Department of the Interior's website (53).

5. Develop screening methodologies to ensure actions do not create or exacerbate health, environmental, or racial inequities

This can prevent further harm to historically disadvantaged groups. While EJ policies and agency actions may appear beneficial on the surface, past policies (e.g. Greenwashing, creation of sacrifice zones or hotspots, and pitfalls of cap-and-trade programs) have actually been counterintuitive to promoting environmental justice (54, 55), Therefore, these hidden disequities need to be filtered out when scoring the agencies, and staff who perform the scoring should be trained on this methodology.

6. Directly acknowledge environmental racism and introduce policies that center restorative action (56)

This includes educational resources and programs that recognize the role of environmental racism in health inequity.

7. Utilize tools such as MD EJSCREEN and EPA EJSCREEN to micro target areas in greatest need of program and policy intervention (57, 58)

Agency employees should be trained to use environmental justice screening and mapping tools to evaluate cumulative impacts of multiple burdens or the paucity of health promoting infrastructure. Developing screening methodologies can ensure that agency actions do not create or exacerbate health, environmental, or racial inequities which harm historically disadvantaged groups. These data can guide equitable decision making, as well as effective microtargeting of previously overlooked communities from lower-resolution analyses.

8. Scale the White House's Justice40 Initiative and the Center for American Progress's recommendations to the state level for Maryland.

This comprehensive list promotes values and needed investment benefits identified by environmental justice advocates in four categories: healthy communities and pollution reduction, climate justice and resilience, just transition, and allowing communities to speak for themselves (59). The nine Maryland agencies scored in this report should adopt and integrate these recommendations within their missions statements, frameworks, and websites These added investments should include climate mitigation and health equity.

In addition to our general recommendations, we have also formulated agency-specific recommendations that include a summary of what initiatives the respective agency has taken already, and steps they can take in the immediate future to promote EJ.

Agency-Specific Recommendations

Department of the Environment (MDE)

Current EJ initiatives in place at the MDE include a Cumulative Impact Workgroup, which is incorporated into the MDE permitting process in a way that is both legal and feasible. Within MDE, the Air and Radiation Administrations hosts monthly meetings with regional stakeholders, community-based organizations, legal teams, and CEEJH staff to discuss progress, challenges, lessons learned regarding hyperlocal air quality monitoring efforts, as well as allow time for impacted residents to voice their concerns (60). Through such meetings and initiatives, the MDE is able to adhere to principles of community-based participatory research, including: the dissemination of findings and knowledge gained to all partners; promoting a co-learning and empowering process; and tending to social inequalities/health disparities (61). MDE has also shown tremendous efforts in Maryland's Renewable Energy transition. Through their Mitigation Work Group, MDE have established the CARES (Clean and Renewable Energy Standard), an action plan for achieving 100% Clean Energy before 2040 (62).

In order to improve their EJ score, the MDE should implement measurable outcomes to track and improve progress across community engagement and initiatives. MDE should also develop educational training and materials that are up-to-date and prioritize and promote the health of those impacted by environmental racism. EJ materials should be accessible from the main pages of the website– without being specifically searched for– to increase transparency.

Department of Natural Resources (DNR)

Currently, DNR's devotion to Environmental Justice is evident through their community outreach efforts, promotion of renewable energy in Maryland, and updated EJ resources. Much of the EJ work of the DNR takes place via the federal Chesapeake Bay Program, which includes documentation defining environmental justice and stating a focus on DEIJ (Diversity, Equity, Inclusion, and Justice) (63). This applies to DNR's own staff, appointees, and volunteers, mission-related work, and partners' performance.

However, at present, DNR's current initiatives appear to primarily focus on DEI. To improve DNR's EJ score, the Bay Program's DEIJ Action Statement should be revised and strengthened such that EJ is centered in its framing. Additionally, DNR should prioritize addressing past and present harms resulting from environmental injustice. One means of doing this is the aforementioned mission-related work included in the Bay Program's DEIJ statement – through this, DNR has several statewide and regional partnerships with organizations like the Greater Baltimore Wilderness Coalition and Maryland Commission on Climate Change (64). Existing documentation primarily describes these partnerships from a perspective centering on diversity and inclusion; however, their initiatives on community health and resilience against climate change indicates that there is room for DNR to prioritize EJ within these partnerships. DNR should also establish a concrete EJ office and appoint a defined officer in order to effectuate the workforce and DEIJ initiatives that are already being carried out by the current DNR. EJ materials and projects like the Park Equity Mapper and MD EJSCREEN should be accessible from the main pages of the website without web users having to do a deeper search.

Department of Planning (MDP)

The MDP considers equity to be an essential component of smart growth, and the focus is embodied in the state development plan. Strategies include resources to advance sustainability and innovative housing partnerships and mechanisms (65). The plan directs MDP's efforts and resources toward a more equitable Maryland. The MDP also provides Equity Planning Guides that serve as resources that Maryland jurisdictions are recommended to reference when considering equity planning for their communities (66). In addition, the Secretary of MDP is a member of CEJSC (67). However, MDP currently lacks an EJ office/officers that specifically support communities in need of assistance in equity planning. More specific assistance and resources should be available to impacted communities beyond guides and handbooks. Additionally, MDP should address racist former policies (i.e., redlining) and acknowledge how these policies contributed to environmental racism. While they have many initiatives dedicated to encouraging environmental health, renewable energy, and climate change mitigation, there is much room for improvement for EJ efforts at MDP.

Department of Transportation (MDOT)

Currently, MDOT has the policy infrastructure in place to promote EJ through, but could use tangible metrics and milestones that hold itself accountable. Additionally, in the FY22, MDOT applied for and secured $1 million in funding for sweeping renovations to the Baltimore Penn Station in order to improve transportation for residents and visitors. These plans include dedicated bus lanes, new pick up and drop off zones, bike lanes and storage, public plazas and green spaces, and kiosks to provide transit riders with information about community and multimodal connections (68). This addresses environmental justice through the lens of transportation/transit equity, but MDOT should focus on explicitly prioritizing EJ in its projects. The agency should create and promote opportunities for community feedback and connection, including input regarding grant application and project descriptions. MDOT should also divest in partnerships with the police and other institutions that have historically committed violence against marginalized communities (69, 70).

Department of Housing and Community Development (DHCD)

Currently, DHCD has shown tremendous attention to environmental care through the implementation of sustainability and energy efficiency in the built environment. Programs such as Project C.O.R.E., Creating Opportunities for Renewal and Enterprise, have created opportunities for community engagement and transparency (71). DHCD's Neighborhood Business Works lending and Opportunity Zone investment programs have given community members financial support and agency (72, 73). Endorsing energy efficiency practices and creating investment programs for small businesses are important for their mission. However, overlooking environmental racism is detrimental towards the future of housing and community development in Maryland. To further revolutionize the built environment for Maryland communities, we recommend that the DHCD develop a team or office that is dedicated to finding ways to integrate EJ through housing and community planning. It is critical that this team is trained in past and present environmental injustices which plagues low-income and BIPOC communities.

Additionally, working to eliminate housing discrimination is key. We recommend that the DHCD uses their platform, initiatives, and economic power to reduce discriminatory housing policies in neighborhoods that are still suffering from environmental racism. In their efforts to restore and revitalize communities, we encourage DHCD to create equal opportunities for all residents to have access to quality housing; taking specific priority over communities that have been historically subjected to disadvantages such as redlining, discriminatory zoning laws, gentrification, food apartheid, and displacement. We encourage DHCD to seek partnership and investment opportunities beyond the realm of businesses. Partnering with community leaders to create inclusive and fair investment opportunities for revitalizing schools, faith-based organizations, elderly housing, care facilities, etc. should be prioritized. This will strengthen community engagement efforts and give residents agency to become stakeholders in the development of their neighborhoods.

Public Service Commission (PSC)

The MD PSC website includes information on Environmental Justice, defining energy equity as generally encompassing the fair distribution of the benefits and burdens of energy production and consumption and impacts utility regulation of planning, siting of energy generation, rate making, affordability, and public engagement (74). PSC councils on numerous natural resource related issues that may impact the environment such as costs and recovery for utility environmental compliance activities. Future recommendations include promoting the transition of renewable energy and using regulatory authority to ensure that siting decisions do not disproportionately impact the environment of certain communities in light of the community's race, color, national origin, or income status. PSC has comprehensive authority over how the costs and burdens of the utility distribution system are recovered from utility ratepayers. However, MD PSC currently lacks committees and task forces that specifically target energy equity and environmental justice to support communities that are disproportionately affected by energy extraction and distribution. While MD PSC displays awareness of EJ issues, the agency should take more aggressive and targeted initiatives to address them.

Department of Health (MDH)

MDH has shown various interests in the environment as it relates to the health and wellbeing of Maryland citizens. Though their interest for environmental public health is evident through Environmental Public Health Tracking (EPHT) and Environmental Public Health Climate Adaptation Tracker (EPHCAT) mapping tools, climate change awareness, renewable energy goals and research initiatives, their work lacks a holistic approach to public health (75). We recommended that MDH start implementing EJ principles in their training of medical staff to address and prevent health inequities. Updating terminology and language surrounding social determinants of health and environmental challenges to include environmental injustices is critical for advancing EJ work. Progressing programs and initiatives to include, empower, and serve systematically marginalized communities will greatly reduce health disparities often seen in the medical field.

We recommend that MDH makes a conscious effort to draw parallels between health disparities experienced in BIPOC communities and environmental impacts.

Lastly, MDH should nurture their relationships with already developed partners such as the CDC, MDE, and the University of Maryland School of Public Health. These agencies are dedicated to EJ initiatives working in both the political and social sectors to ensure environmental equity. MDH could be a valuable asset to these organizations and could benefit greatly from collaborating with them. These are the first steps in redirecting their paths towards incorporating EJ into their mission as a health based organization.

Department of Agriculture (MDA)

Currently, the MDA has not prioritized EJ in any of its programs, communications, or initiatives. There are several potential avenues for improvement. The MDA could better meet the needs of POC and low-income communities and raise its EJ score by establishing councils to specifically serve these communities, much like it has established the Rural Maryland Council. The Rural Maryland Council provides grants, conducts studies, and surveys residents yearly to identify rural issues and concerns, which in turn inform MDA planning (76). To properly address the continued harms of environmental racism, the needs of all vulnerable communities, including rural areas, should be factored into MDA decision making.

The MDA should also expand its public information dissemination beyond the Regulatory Information Center and provide resources to Maryland residents regarding pertinent issues that are often the result of environmental racism, such as food deserts and swamps. In the future, the MDA should also establish a concrete EJ office and appoint a defined officer in order to effectuate workforce concern for environmental justice. Also, worker education programs should be established in order to educate MDA workers about the current disparities that exist between different ethnic groups related to environmental health and justice. Additionally, to best reflect the necessary harmony of agriculture and environmental justice, the MDA should make efforts to incorporate environmental protection and equity into their decision making. This includes increasing regulation and enforcement of over 500 poultry Animal Feeding Operations (AFOs) in the state, as 80% of which have failed water pollution control inspections without penalty from June 2017 to November 2020 (77). Ecological protection is essential if the MDA wants to maintain their goals of restoring resource bases and promoting healthy land management.

Energy Administration (MEA)

MEA is one of the many agencies that display a holistic approach to Climate Change Mitigation through renewable energy education and implementation. They are actively engaged in finding clean energy practices that boost the health of the environment and therefore the health of their constituents. However, many of the MEA's shortcomings stem from a lack of connection and communication with Maryland residents; therefore, to improve their EJ score, the MEA should be more transparent regarding EJ issues and provide resources and information to residents about issues like environmental racism as they relate to energy. For fiscal year 2022, the MEA's Clean Fuel Incentive Program (CFIP), which provides funding to projects that decrease the amount of petroleum used in the state, began considering the equity and EJ impact of program applicants (78). As a result, many of the clean fuel vehicle fleets funded by CFIP benefit communities disproportionately affected by fossil fuels emissions (79). The MEA should not only continue this practice, but extend it to all grants and funding it offers in order to prioritize vulnerable communities and address the harms caused by environmental racism.

MEA must indicate a stronger commitment to environmental protection and climate change mitigation through including more information on its website in regards to clean energy transition. To promote transparency and education, it is recommended that MEA update its resources on energy forms like coal, natural gas, and municipal solid waste to include negative public health impacts. Lastly, creating an environmental justice office to address concerns of constituents and implement clean energy programs for all Marylanders will help MEA develop a strong environmental justice plan.

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