

Standards and Guidelines for Cumulative Impact Analysis (CIA)

Executive Office of Energy and Environmental Affairs

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I. Introduction

A. Background

As Massachusetts accelerates its transition to a clean energy future, it must do so in a way that protects public health, promotes equity, and ensures that new clean energy projects do not exacerbate the environmental burdens already experienced by certain communities. Understanding and accounting for cumulative impacts is essential to making equitable, health-conscious decisions about energy infrastructure. Rather than evaluating a proposed project in isolation, a cumulative impacts framework considers how multiple environmental and social indicators interact and build over time in a given area. Evaluating proposed projects within the context of these existing conditions help decisionmakers better understand whether a project could contribute to or exacerbate environmental and public health burdens – particularly in communities that are already burdened.

Understanding cumulative impacts is essential to making equitable, health-conscious decisions about energy infrastructure.

Certain communities experience a disproportionate concentration of environmental burdens as a result of historical discriminatory housing practices, including redlining and exclusionary zoning, as well as siting decisions that placed polluting facilities, transportation infrastructure, and other industrial uses in or near these neighborhoods. Over time, these patterns have contributed to cumulative environmental and public health burdens that are not captured when projects are evaluated in isolation. Therefore, incorporating cumulative impact considerations into energy planning and permitting will be critical as the Commonwealth strives to address the longstanding inequities in environmental exposure and infrastructure development.

As the Commonwealth continues to lead on clean energy and climate policy, the Department of Public Utilities (“DPU”), the Energy Facilities Siting Board (“EFSB”), and the Department of Energy Resources (“DOER”) will each play a critical role in ensuring that energy infrastructure is sited and permitted in a way that accounts for the full range of project impacts on a community. Requiring project applicants to assess cumulative impacts supports more transparent, science-based and data-driven decision-making by recognizing historical inequities, reducing exposure to compounding burdens, and promoting more equitable distribution of environmental and economic benefits.

The Office of Environmental Justice and Equity’s Standards and Guidelines for Cumulative Impact Analysis (“CIA”) are intended to provide a clear and consistent framework for integrating cumulative impacts and environmental justice considerations into the preparation of a CIA, as well as into siting and permitting decision processes for energy infrastructure projects. While much of the language in these guidelines are directed towards the development of CIA for clean energy facilities, the EFSB will also require CIAs for facilities that do not qualify as clean energy facilities (i.e., fossil fuel facilities) under its jurisdiction. G.L. c. 164, § 69G, as amended by Section 53 of the Acts of 2024, Chapter 239. The principles here within are thereby applicable to those facilities

as well. Developers pursuing a consolidated local permit for small clean energy infrastructure projects reviewed by a local government are not required to conduct a CIA under these Standards and Guidelines, though a small clean energy infrastructure project reviewed by the EFSB is required to conduct a CIA.

B. Key Terms

- **Burdened Area (“BA”):** A census block group, which is subject to an existing unfair or inequitable environmental burden or related health consequence. These conditions are determined using the MassEnviroScreen score of 75 or greater or an annual median household income of 65 percent or less of the statewide annual median household income.
- **Community Benefit Agreement (“CBA”):** A legally binding, negotiated agreement between a project applicant and a community, often represented by a coalition of community groups or a local government body, which outlines benefits the communities will receive.
- **Community Benefit Plan (“CBP”):** A non-legally binding document which outlines how a project will engage with and benefit local communities during development and operation of an energy facility.
- **Cumulative Impact Analysis (“CIA”):** The process to assess cumulative impacts, benefits, and burdens required to be completed by certain applicants of energy infrastructure facilities in accordance with G.L. c. 164, § 69G, and 980 CMR 15.00.
- **Elevated Indicator:** An Indicator that is above the 50th percentile statewide in Massachusetts, prior to consideration of additional Project Impacts, for a Clean Energy Infrastructure Facility (“CEIF”). For Fossil Fuel-Related Energy Infrastructure, each Indicator is treated as an Elevated Indicator. For purposes of 980 CMR 15.00, an Elevated Indicator is identified solely in those areas where a Project’s SGA intersects one or more Burdened Areas.
- **Environmental Justice (“EJ”):** The equal protection and meaningful involvement of all people and communities with respect to the development, implementation, and enforcement of energy, climate change, and environmental laws, regulations, and policies and the equitable distribution of energy and environmental benefits and burdens.
- **Environmental Justice Principles:** Principles that support protection from environmental pollution and the ability to live in and enjoy a clean and healthy environment, regardless of race, color, income, class, handicap, gender identity, sexual orientation, national origin, ethnicity or ancestry, religious belief or English language proficiency, which includes: (i) the meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies, including climate change policies;

and (ii) the equitable distribution of energy and environmental benefits and environmental burdens.

- **Indicator:** A statistical measure, which is used to evaluate a census block group’s environmental exposures, environmental effects, climate effects, sensitive populations, and socioeconomic factors.
- **Key Stakeholders:** At a minimum, public interest groups, organizations serving the local community in the vicinity of a proposed project that could be affected by a proposed project, project abutting residents (both owners and renters) and businesses, community-based organizations, elected or appointed municipal officials (e.g., mayor or town/city manager, relevant Council/Select Board members, Chair(s) of the Conservation Commission, Planning Board, Zoning Board, and Head of the Department of Public Works), regional planning officials, representatives of labor groups (e.g., union locals, building trades councils, central labor councils, and the Massachusetts AFL-CIO) and apprenticeship programs, and federally recognized, state-acknowledged or state-recognized Tribes.
- **MassEnviroScreen:** A GIS-based mapping tool developed and administered by the Office of Environmental Justice and Equity that uses Indicators to produce an MassEnviroScreen Score and provide Indicator data for every census block group across the Commonwealth.
- **Meaningful Engagement:** Early, continuous, accessible, and culturally competent public communication that allows for community input to inform decision-making and public policy.
- **Specific Geographical Area (“SGA”):** An area in which a proposed facility would be located, including the Proposed Site/Route and the Noticed Alternative Site/Route, and is determined based on facility-specific radial distances from the Facility boundary, as established by the EFSB.
- **Project Impact:** An effect on the environment, socioeconomic and public health conditions, or climate change resiliency, resulting from construction and operation of the Project. A Project Impact can be either positive or negative.

C. Legislative and Regulatory Context

Several key legislative, regulatory, and planning frameworks guide the integration of CIA into clean energy decision-making. Together, they reinforce the need for an equity-centered approach that identifies and mitigates disproportionate harm while ensuring the fair distribution of benefits across areas.

- i. **2024 Climate Act:** The 2024 Climate Act in Massachusetts, officially entitled *An Act promoting a clean energy grid, advancing equity, and protecting ratepayers*, establishes a critical framework for advancing clean energy development while addressing systemic inequities in environmental and social impacts. The 2024 Climate

Act Statute at M.G.L. Chapter 164, §69G, as amended by Section 53 of the Acts of 2024, Chapter 239 defines the following:

“Cumulative Impact Analysis,” a written report produced by the applicant assessing impacts and burdens, including but not limited to any existing environmental burden and public health consequences impacting a specific geographical area in which a facility, large clean energy infrastructure facility or small clean energy infrastructure facility is proposed from any prior or current private, industrial, commercial, state or municipal operation or project; provided, that if the analysis indicates that such a geographical area is subject to an existing unfair or inequitable environmental burden or related health consequence, the analysis shall identify any: (i) environmental and public health impact from the proposed project that would likely result in a disproportionate adverse effect on such geographical area; (ii) potential impact or consequence from the proposed project that would increase or reduce the effects of climate change on such geographical area; and (iii) proposed potential remedial actions to address any disproportionate adverse impacts to the environment, public health and climate resilience of such geographical area that may be attributable to the proposed project. Said cumulative impact analysis shall be developed in accordance with guidance established by the Office of Environmental Justice and Equity established pursuant to section 29 of chapter 21A and regulations promulgated by the board.

This legislation defines a CIA and highlights the importance of incorporating CIA into planning and decision-making processes to ensure that the burdens and benefits of clean energy projects are equitably distributed. The Act emphasizes the need to remediate disproportionate adverse impacts, aligning with its broader goals of protecting ratepayers and accelerating an equitable transition to a sustainable and inclusive energy grid.

- ii. **Clean Energy Goals and Siting Process:** Massachusetts's ambitious clean energy goals, including achieving net-zero emissions by 2050 and fostering a sustainable energy future, necessitate a thoughtful and equitable approach to project planning and siting. As the Commonwealth accelerates its transition to clean energy, the need for CIA becomes increasingly vital to ensure that clean energy infrastructure does not disproportionately impact already burdened communities. By incorporating CIA into the siting process, Massachusetts will align its clean energy initiatives with environmental justice principles and thus promote equity while advancing sustainability and reducing greenhouse gas emissions.
- iii. **EEA Office of Environmental Justice and Equity:** The Massachusetts Office of Environmental Justice and Equity (“OEJE”), as established by M.G.L. c. 21A, is responsible for implementing environmental justice principles, as defined in section 62 of chapter 30. OEJE, “shall develop standards and guidelines governing the potential use and applicability of: (i) community benefit plans and agreements; and (ii) cumulative impact analyses in developing energy infrastructure with input from representatives of utilities, the renewable energy industry, local government,

environmental justice community organizations, environmental sectors and other representatives as deemed appropriate by the office”. The CIA is a critical tool in this effort. By integrating CIA into planning and decision-making, OEJE seeks to prevent and mitigate disproportionate harm and promote meaningful community engagement. This approach aligns with the OEJE's mission to embed equity into all policies and programs at EEA and its agencies, ensuring that clean energy initiatives and other environmental efforts contribute to healthier, more resilient communities across the Commonwealth.

II. What is a Cumulative Impact Analysis (CIA)?

The 2024 Climate Act requires that applicants proposing certain energy facilities, including clean energy and fossil fuel infrastructure, conduct a CIA in communities that are experiencing an unfair or inequitable environmental burden and associated public health consequences. This analysis must evaluate existing environmental burdens and public health consequences, projected impacts from the proposed facility, potential climate-related effects, and propose remedial actions if it is determined that the proposed project will create a disproportionate adverse effect. Ultimately, this analysis will culminate in a report submitted to the EFSB. This guidance describes the principles and steps applicants should follow in conducting the analysis and documenting their findings.

CIA is a key tool for identifying and addressing disproportionate environmental and health burdens on disadvantaged communities and supports more equitable, informed decision-making.

To understand which communities are experiencing an unfair or inequitable environmental burden or related public health consequence, it is important to consider both the past and present conditions of a community. This includes examining environmental exposures, environmental effects, climate risks, and population characteristics that may influence how environmental stressors affect community members, particularly those which affect pollution and climate burden, and population characteristics must be assessed.

Environmental and climate burdens are not distributed evenly across communities. Historic land use decisions and infrastructure siting have concentrated polluting facilities and transportation corridors in certain neighborhoods. Policies and practices such as redlining and patterns of disinvestment have also shaped where environmental hazards are located and limited access to resources that support public health.

At the same time, social determinants of health – such as income, language access, educational attainment – can also influence a community’s vulnerability to environmental harms. Considering these factors together provides a more comprehensive understanding of the complex conditions communities experience and informs an effective assessment of cumulative impact.

To assist in identifying such areas, OEJE has created the MassEnviroScreen, which aggregates five categories of indicators— environmental exposures, environmental effects, climate risks, sensitive populations, and socioeconomic factors – to produce a single cumulative burden score. This tool establishes whether a community should be designated as a Burdened Area (“BA”). Communities with higher scores indicate higher cumulative burdens, signaling the need for additional, protective analysis. The MassEnviroScreen is the starting point to determine whether additional analysis is needed.

The MassEnviroScreen also provides the baseline data for the indicators for which applicants will need to evaluate their project impacts against, to determine if the project will result in a disproportionate adverse effect. The applicant will evaluate each indicator separately to understand whether a community is disproportionately impacted in comparison with other communities.

The CIA process should result in a report that both outlines the cumulative impacts in a community in the vicinity of a proposed project and informs actionable remedial measures to resolve any disproportionate adverse effects on communities. Additionally, the CIA report should highlight any localized improvements that may result from the siting of the project. Based on the findings of the CIA report, mitigation measures should be proposed to address identified disproportionate adverse effects. If adequate mitigation measures are not incorporated into the project application, the EFSB may deny the permit or incorporate permit conditions that address any outstanding disproportionate adverse effects. This approach helps to ensure that energy facility siting and permitting decisions prioritize both community protections from disproportionate burdens and the equitable distribution of benefits.

The CIA process is designed to provide greater oversight and protection for communities experiencing significant environmental burdens and social vulnerability. Identifying communities which are experiencing an unfair or inequitable environmental burden or related health consequence was a key element of the 2024 Climate Act. It is important to note that communities not designated as BAs through the MassEnviroScreen are not left without safeguards. Pre-filing engagement procedures, site suitability assessment, other EFSB requirements and tools available during the review process ensure that other conditions of community concern are also thoroughly evaluated.

III. MassEnviroScreen

OEJE has developed the MassEnviroScreen, to identify the most environmentally vulnerable or burdened communities in Massachusetts. This mapping tool generates a cumulative burden score for each community – defined at the census block group level – based on a list of 30 Indicators which fall into one of the following categories: environmental exposures, environmental effects, climate risks, sensitive populations and

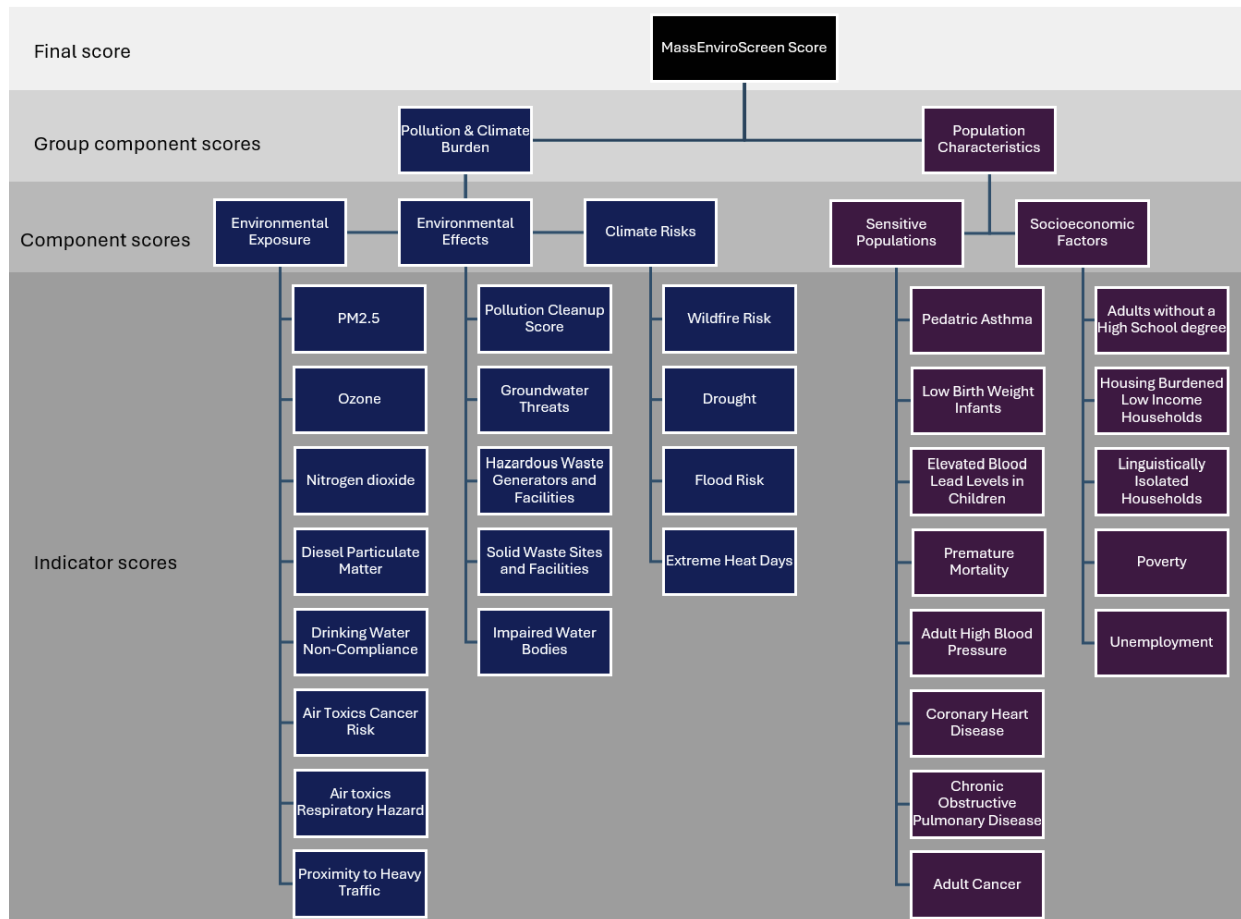
socioeconomic factors. The full list of indicators which inform this cumulative burden score is below in Figure 1.

Each community's cumulative burden score is a numerical value ranging from 0 to 100, where higher scores indicate greater cumulative burden. These scores represent percentile ranks, meaning the score reflects the percentage of communities with an equal or lower score. For example, a census block group with a MassEnviroScreen score of 75 has a cumulative burden equal to or greater than 75% of the block groups statewide. A score of 75 or above is used by MassEnviroScreen as a key threshold to designate BAs.

BAs are census block groups that meet one or both of the following criteria:

- A cumulative burden score (i.e., MassEnviroScreen Score) of 75 or greater, or
- The annual median household income is 65 percent or less of the statewide annual median household income.

Figure 1: MassEnviroScreen Score Indicators



An online interactive map that is publicly available displays the cumulative burden score for every community across Massachusetts. The map clearly highlights which communities meet the criteria for BA. Users can click on any census block group to view its MassEnviroScreen cumulative burden score as well as the component sub-scores. This tool will serve as a central resource to support the CIA process. By integrating this tool into the CIA process, applicants, agencies, stakeholders, and decision-makers will have access to a common, reliable, data-driven foundation for understanding existing burdens and evaluating how proposed projects may contribute to or mitigate those burdens.

Selection of the Burdened Area Criterion

A key component of the 2024 Climate Act is to identify areas that experience “an unfair or inequitable burden” from environmental, health, and climate-related indicators. Importantly, the 2024 Climate Act does not limit attention only to communities facing the absolute worst or most extreme burdens. Instead, it directs attention to all communities that may be disproportionately affected by environmental or health impacts and to ensure that new clean energy projects and fossil fuel infrastructure do not exacerbate existing inequities. Using the 75th percentile as the threshold for identifying BAs reflects a thoughtful balance between accuracy, equity, and practicality. By selecting the 75th percentile, Massachusetts ensures that neighborhoods experiencing significant, and not just extreme levels of environmental and socioeconomic stress, are recognized in state programs and planning efforts.

This approach builds on national and state-level precedents, while adapting to the environmental and social landscape of Massachusetts. The Centers for Disease Control and Prevention (“CDC”) and Agency for Toxic Substances and Disease Registry’s Environmental Justice Index (“EJI”) – ranks each U.S. census tract on a composite index based on dozens of environmental, health, and demographic indicators. Under EJI’s methodology, the tool displays EJI scores as both percentiles and labeled ratings, designating scores between the 75th to 100th percentile to be high.¹

California’s CalEnviroScreen – one of the most influential cumulative impact tools – adopts a similar approach by designating the top 25% of tracts as “disadvantaged communities” for the purposes of state programs and investments². Other states have elected to choose higher thresholds – such as the 80th percentile – to narrow their focus to only the top tier of BAs. A higher threshold would focus only on the most acute cases and presents risks of overlooking neighborhoods experiencing significant chronic, but not extreme cumulative burdens.

The following table summarizes EJ and cumulative burden screening tools that are either currently in use or under active development across multiple states. While some of these tools are used for regulatory purposes such as siting and permitting, it should be noted that others are intended for different uses, including planning, public health assessments,

resource allocation, and community outreach. State-level methodologies are evolving rapidly, and new initiatives continue to emerge. Descriptions and thresholds are based on the most current publicly available documentation; states may revise methodologies or continue to issue updated guidance. Thresholds represent the values at which a community is classified as a BA; however, each state employs its own terminology and geographic units for this designation.

Table 1: Comparison of Burden Area Thresholds Across States

State	EJ Screening Tool	Threshold for Designation
New York ³	NYS Disadvantaged Communities Map	≥ 71.1 percentile
California	CalEnviroScreen	≥ 75 th percentile
Maryland ⁴	MDEnviroScreen	≥ 75 th percentile
Colorado ⁵	Colorado EnviroScreen	≥ 80 th percentile
Pennsylvania ⁶	PennEnviroScreen	≥ 80 th percentile
Washington ⁷	Washington Environmental Health Disparities Map	≥ 80 th percentile*

In Massachusetts, the commitment to EJ and proactive equity planning means acknowledging both the communities already experiencing severe burdens and exposures, and those at risk of worsening disparities. Pollution and climate burdens, and social vulnerability tend to be spread across many communities, rather than concentrated in only a small handful. Relying solely on a higher threshold such as the 80th percentile would only capture the most extreme cases and risk leaving out many communities that still face significant cumulative challenges. Given that percentile-based scores are relative measures, the 75th percentile serves as a policy-driven filter to flag communities for deeper review, engagement, and potential remedial action. A 75th percentile threshold aligns with national best practices while reflecting specific conditions in Massachusetts and EJ policy.

Additionally, Massachusetts recognizes that economic vulnerability alone can create significant challenges for communities, particularly in rural areas. Population-based data presents gaps in capturing accurate on-the-ground conditions in sparsely populated areas and mobile communities. Many cumulative burden indicators are inherently biased towards urban settings, where traditional sources of pollution tend to cluster. As a result, rural communities with low population density may experience significant economic disadvantages or limited access to resources yet not rank highly in percentile-based cumulative burden scores. To address these gaps, any census block group with a median household income at or below 65 percent of the statewide median is automatically designated a BA. This recognizes that economic hardship itself can exacerbate vulnerability to environmental exposures and effects, limit adaptive capacity, and

* The [Washington Environmental Health Disparities Map](#) uses decile-based composite scores rather than percentiles. For purposes of this guidance, Washington's scores have been converted to percentile equivalents. In Washington's approach, census tracts ranked in decile 9 or above are considered the equivalent of BAs, which correspond roughly to the 80th percentile and above.

constrain community resilience. Other states like New York have similarly recognized the importance of including an income threshold as a separate criterion⁸.

Limitations of MassEnviroScreen

While the MassEnviroScreen tool provides a valuable and transparent resource for understanding cumulative impacts, it is important to recognize that it is a screening tool with inherent limitations. The tool relies on statewide publicly available datasets, which is a critical component to ensure the tool is transparent and accountable to the public. Publicly available data may not capture every localized condition at a hyper-local scale. Additionally, the spatial resolution of the data, often aggregated to the census block group, means that specific neighborhoods within a block group may experience disproportionately high burdens and social vulnerabilities that are not fully reflected in the MassEnviroScreen score. For these reasons, the MassEnviroScreen is intended as a screening tool and starting point for analysis, to be supplemented with community engagement and local information to provide a complete understanding of cumulative impacts in a given area.

The MassEnviroScreen does not indicate whether any indicator is above any regulatory threshold. The percentiles in MassEnviroScreen indicate how environmental conditions in one community compare to those in other communities across Massachusetts. Some of the environmental exposure indicators included in MassEnviroScreen represent pollutants that are regulated by federal and state authorities. These measured levels may fall within established regulatory thresholds considered acceptable by those agencies, even if the community ranks in a high percentile in the screening tool. However, communities are exposed to multiple pollutants and indicators simultaneously. Regulatory thresholds are typically developed by evaluating individual pollutants one at a time, under controlled assumptions. Regulatory thresholds are therefore not designed to account for combined effects of multiple chemical exposures or the interaction between environmental and social indicators. The purpose of a CIA is to evaluate those combined burdens, not only to consider whether a single pollutant exceeds an individual regulatory limit. Including these indicators therefore helps the CIA process identify differences in exposure, risk, and vulnerability across communities in Massachusetts.

Data Maintenance

OEJE will update the underlying datasets incorporated into MassEnviroScreen on a biennial basis, or every two years, to the extent that updated data is publicly available from the original sources. The purpose of these updates is to incorporate the most recent available data for existing indicators, maintain accuracy in outputs, and ensure transparency regarding data vintages. Data updates will replace existing indicator datasets with newer versions where available but will maintain the existing indicator definitions, weighting structure, methodology and overall framework of the tool. These updates will not introduce new indicators, remove existing indicators, or modify the methodological approach used to calculate scores. As such, these updates are

administrative in nature and are intended to keep the tool current and relevant. Because they do not change the structure or methodology of MassEnviroScreen, OEJE does not anticipate a formal public process for these routine data refreshes. However, OEJE will publish updated technical documentation identifying the date of each data source, noting any material changes in data availability, and changes to BA designations. OEJE will also clearly indicate the effective date of each updated version of the tool, maintain an archive of prior versions, and publicly announce updates to both the EFSB and the broader public.

Tribal Considerations

The impact of land displacement is a historical harm in Tribal communities and must be understood within the broader historical and cultural context. OEJE has made meaningful progress in initiating government-to-government engagement with Tribal leaders in Massachusetts. Continued and sustained collaboration with Tribes and Tribal-serving organizations is necessary to understand how the cumulative environmental burdens and related health consequences they may experience can be accurately reflected in the MassEnviroScreen. With respect to the first iteration of the MassEnviroScreen, Tribal lands will be included as a contextual layer within the assessment tool. The Tribal lands represented within the first iteration of MassEnviroScreen are limited to the Hassanamisco Reservation, Mashpee Wampanoag Tribe Trust Land, and the Wampanoag Tribe of Gay Head (Aquinnah) Trust Land. OEJE recognizes that, given the history of colonization and displacement in Massachusetts, focusing solely on these lands does not fully capture the geographic areas of cultural, spiritual, or community significance to Tribal communities. OEJE will continue to work collaboratively with Tribal communities to refine and enhance this data layer in future iterations of the tool.

IV. Petition Process for a CIA

While MassEnviroScreen provides a statewide, science-based and data-driven method to identify communities experiencing cumulative burdens, no screening tool can fully capture every local condition or emerging concern. This section outlines the process by which a group of ten or more residents residing in, or businesses with a mailing address in, a census block group that intersects the Specific Geographical Area (“SGA”) may request the EFSB require an applicant to conduct a CIA for such census block group. At least one member of the group must also be a Key Stakeholder. This process is intended to ensure that communities with credible concerns regarding potential cumulative impacts from environmental exposures, climate risks, or other public health concerns have a mechanism for requesting additional analysis when they assert that MassEnviroScreen does not fully capture the local conditions.

A ten-member group seeking such a review should raise the request during the pre-filing stage by submitting a written request to both the applicant’s designated representative

and the Director of the DPU's Department of Public Participation ("DPP"), with a copy to the EFSB Siting Director. This initial step allows the applicant the opportunity to voluntarily include the requested area in its CIA and incorporate the results in the CIA report submitted with its application. If the applicant declines to conduct the requested analysis during pre-filing, the group may submit a formal petition to the EFSB Siting Director. The request shall include a statement describing the group's specific interest in the proposed Project, and a description of the extraordinary circumstances which support the request. This petition must be filed no later than fourteen (14) days after the applicant submits its application; petitions received after this period will not be considered.

The petition must explain the extraordinary circumstances supporting the request. Examples of circumstances that may warrant consideration include:

- **Recent or emerging environmental burdens not reflected in current datasets:** For example, a community may have experienced the recent siting or expansion of several large facilities, infrastructure projects, or pollution sources that are not yet reflected in the datasets used in MassEnviroScreen.
- **Localized significant environmental exposures that are not reflected in MassEnviroScreen data:** Certain environmental conditions – such as proximity to a specific industrial facility, freight corridor, or other concentrated pollution source – may affect a small enough area in ways that are not fully reflected in geographic data at the census block group scale.
- **Documented inaccuracies in underlying data:** In rare circumstances, a petitioner may demonstrate that one or more underlying datasets used in MassEnviroScreen contain significant inaccuracies for the project area that would materially affect the cumulative burden score.

The EFSB Siting Director will review the petition and will grant the request only if extraordinary circumstances are shown to exist regarding the requested census block group. The EFSB Siting Director's determination is final and not subject to appeal. If the petition is granted, the applicant must conduct a CIA for the requested area and submit a revised CIA report reflecting the results of the analysis within 60 calendar days. This petition pathway provides Key Stakeholders with a structured means of ensuring that extraordinary circumstances receive appropriate consideration within the review process.

V. Cumulative Impact Analysis Process

Applicants proposing a project in a SGA containing a BA are required to complete a CIA during the pre-filing stage of the EFSB process and submit the CIA report with their

application to the EFSB.[†] In the pre-filing process, OEJE will collaborate with the DPP and can assist applicants in determining whether a project's SGA includes any BAs.

The CIA process should be grounded in community engagement from the very beginning of the siting process. Energy facility developers are required to incorporate community input early in the process, including consultation during the pre-filing phase. This engagement ensures that the concerns and needs of affected communities are integrated into the project's planning, development and decision-making, and that the CIA reflects the concerns identified.

It is also important to recognize that clean energy infrastructure differs fundamentally from traditional fossil fuel facilities. Clean energy projects, such as solar, wind, storage, and transmission upgrades, are intended to support statewide reductions in greenhouse gas emissions, improve air quality, strengthen system reliability, and advance the transition to a clean energy system. Some clean energy projects may also bring localized improvements – such as reducing reliance on older, higher emitting facilities in or near certain communities. In contrast, fossil fuel facilities tend to generate ongoing emissions, combustion-related pollutants, and other operational impacts that contribute directly to cumulative environmental burdens. In recognition of these differences, certain elements of the CIA may vary to account for the distinct characteristics, operational profiles, and potential impacts associated with different types of energy infrastructure projects. These distinctions are intended to ensure that cumulative impact considerations are evaluated in a manner that is appropriate, consistent, and responsive to the nature of the facility under review.

The CIA process follows a series of research and analytical steps to comprehensively evaluate cumulative impacts.

The following sub-sections provide further guidance on each of these steps.

Step 1: Identify the SGA in which a proposed facility would be located

Project applicants must first identify the SGA of the proposed project. The SGA of a project is defined by the geographic location of the project and its physical footprint, as well as a radius around the project determined by the EFSB. The SGA shall be bounded by a perimeter line that is the distance(s) indicated in EFSB regulations 980 CMR 15.05(1)(b). Table 2 below describes the proposed radii of different energy technologies subject to review for CIA.

[†] Some applicants will also be required to complete a site suitability assessment. Per the 2024 Climate Act, transmission and distribution projects are not required to complete a site suitability assessment, unless they are sited in “newly established public rights of way.”

Table 2: SGA Distances

Facility Type	Radial Distance from Facility Boundary
Transmission and Distribution Line (Part of an LCTDIF or SCTDIF)	1/4 Mile
Clean Energy Storage Facility (LCESF or SCESF)	1 Mile
Substation (Part of an LCTDIF or SCTDIF)	1/2 Mile
Ground-Mounted Photovoltaics (LCEGF or SCEGF)	1/2 Mile
Onshore Wind Facility or Anaerobic Digester (LCEGF or SCEGF)	1 Mile
Liquefied Natural Gas Facility (§ 69J)	1 Mile (no Air permit) 2 Miles (non-Major Air Permit)
Gas Pipeline (§ 69J)	1 Mile
Fossil Generating Facility (§ 69J ^{1/4})	2 Miles (non-Major Air Permit) 5 Miles (Major Air Permit)
Gas Compressor Station (§ 69J, as part of a Gas Pipeline)	1 Mile (no Air permit) 2 Miles (non-Major Air Permit) 5 Miles (Major Air Permit)

Step 2: Determine if the Project's SGA Overlaps with any BAs

The project applicant must then examine whether the SGA overlaps or intersects with one or more BAs as identified by the MassEnviroScreen. If the SGA does not overlap with any BAs, the project applicant can terminate the CIA process and issue their CIA report. If the SGA overlaps or intersects with one or more BAs, then the project applicant must continue to develop a CIA report for those relevant BAs. Further analysis is only required in the identified BAs intersecting a project's SGA, not the entire SGA.

Applicants should refer to the EFSB's CIA Report Template for detailed information regarding the preparation of a CIA Report. The CIA Report Template provides guidance to Applicants and other Key Stakeholders engaged in preparation or review of a CIA Report pursuant to 980 CMR 15.00.

Step 3: Catalog Indicators for any BAs within the SGA.

Using data from MassEnviroScreen, the project applicant must document in its CIA report (1) the baseline percentile values for all indicators, and (2) highlight any indicator values that are above the 50th percentile (“Elevated Indicators”) per census block group in the SGA. This comprehensive inventory establishes the existing conditions using quantitative data, which will be used to assess the project’s incremental impact. The project applicant should engage with Key Stakeholders to discuss conditions on the ground and lived experiences, in order to validate and contextualize the data gathered from MassEnviroScreen.

Step 4: Identify Project Impacts on Elevated Indicators and Determine if there is a Disproportionate Adverse Effect

The applicant must then assess and document the potential impact of the proposed project on each Elevated Indicator. For the purposes of fossil fuel-related energy infrastructure, every indicator should be treated as an Elevated Indicator, meaning that fossil fuel facilities will need to assess and document the potential impact of the proposed project on all 30 indicators. The impact assessment should be comprehensive and include community input gathered from Step 3.

For each Elevated Indicator, the applicant must determine if the project will:

1. Worsen the condition of that indicator during either the construction phase or the operation phase of the project,
2. Have no impact on the condition of that indicator during those same phases, or,
3. Improve the condition of that indicator during those same phases.

In BAs, even incremental increases above the 50th percentile may compound existing stressors. The purpose of the CIA is to not wait until a community crosses an extreme threshold before acting, rather to prevent additional disproportionate burdens from accumulating in places that are already overburdened. If the project is likely to materially exacerbate an Elevated Indicator, this impact will be considered a disproportionate adverse effect, triggering a requirement for remedial action. Positive impacts on elevated indicators must also be clearly documented, as beneficial effects are an important component of the CIA and contribute to a complete understanding of how the project interacts with existing community conditions. For purposes of making such an assessment, the Applicant may consider the Project Impacts inclusive of any measures to avoid, minimize, or mitigate Project Impacts that the Applicant has made a firm commitment to undertake.

Step 5: Propose Mitigation for Any Disproportionate Adverse Effects

If the proposed facility is determined to cause a disproportionate adverse effect on an Elevated Indicator within a BA, the applicant is required to propose remedial actions, by following the mitigation hierarchy. The mitigation hierarchy is a statutory framework that ensures that projects first seek to prevent harm by avoiding impacts where possible, minimize unavoidable impacts, and address remaining effects through appropriate

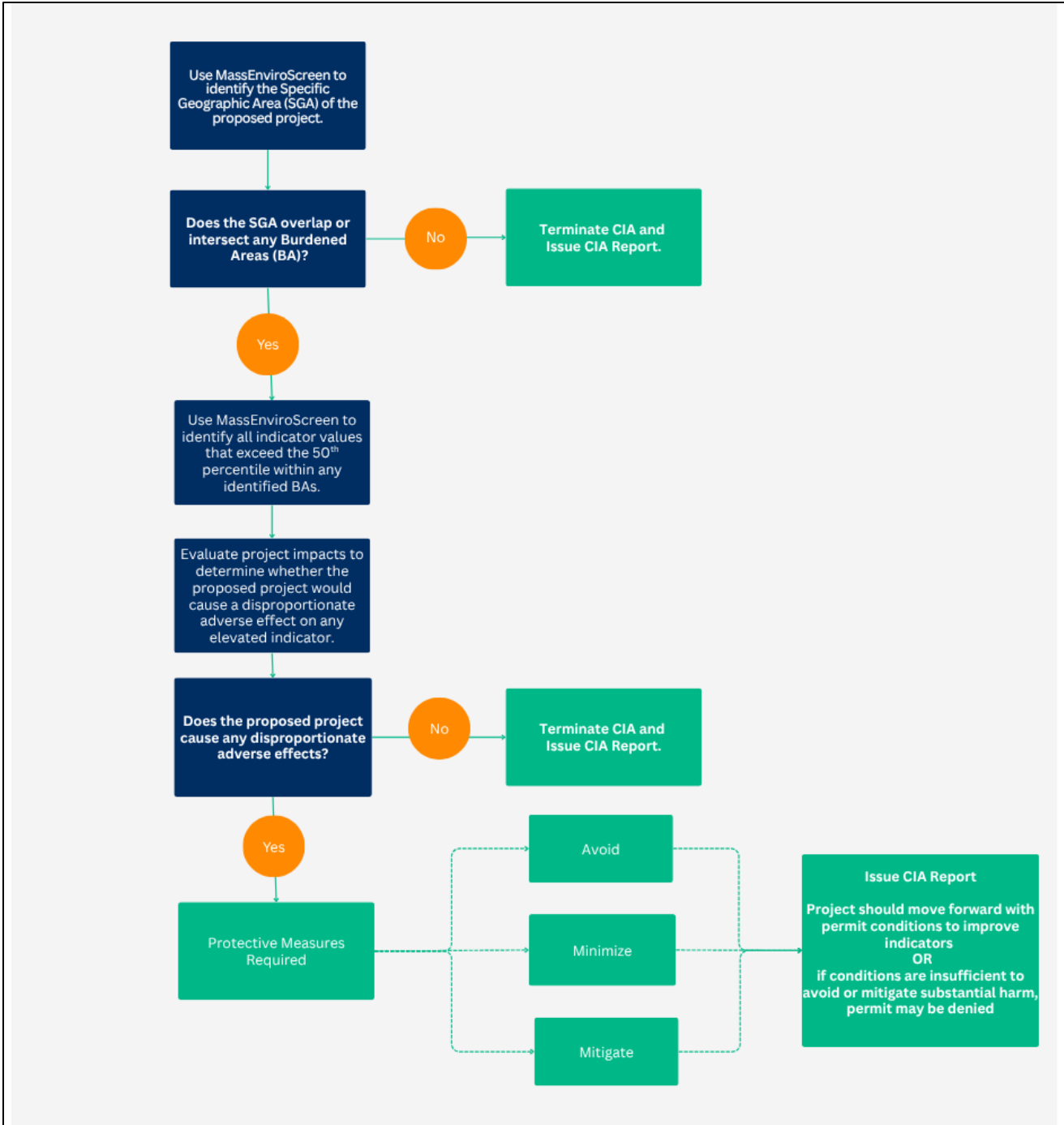
mitigation measures to the extent practicable, which may include rehabilitation, restoration, or offsets.

To demonstrate how this hierarchy could be applied in practice, consider the example of tree preservation and removal during project development:

- **Avoid:** The applicant should first explore all feasible options to avoid negative impacts on the BA, for example, preserving existing trees that provide critical shade and contribute to local air quality, or designing the project footprint or access routes to maintain tree canopy to help prevent harm before it occurs.
- **Minimization:** Where impacts cannot be avoided, such as the need to remove certain trees, the applicant should seek to minimize harm. This could include limiting tree removal to the smallest necessary area, avoiding the cutting of trees in especially sensitive or highly visible locations, or scheduling removal to minimize ecological disruption.
- **Mitigation:** For impacts that remain despite avoidance and minimization, the applicant must implement mitigation measures to compensate for loss or damage. For example, if a significant number of trees must be cut, the applicant could restore or rehabilitate the community's tree canopy by planting new trees as part of a community tree canopy enhancement program designed to increase local tree canopy cover and improve biodiversity. Priority should be given to on-site mitigation, such as planting new trees within the project area or nearby. If on-site mitigation is not feasible, off-site mitigation should be pursued, planting trees elsewhere in the BA to provide similar environmental and social benefits. Permit conditions in an EFSB final decision will include enforceable mitigation measures designed to alleviate existing cumulative impacts and preemptively address prospective impacts from a proposed project.

These examples demonstrate the stepwise application of the mitigation hierarchy to systematically identify, evaluate, and implement measures that effectively reduce disproportionate adverse effects. Applicants must demonstrate they have thoroughly applied avoidance, minimization, and mitigation measures to the extent practicable. This standard requires that any residual impacts remaining do not materially increase the cumulative burden on the affected community. Applicants must provide clear evidence of the measures taken and justify any residual effects. While a zero-impact threshold is not required, project applicants should attempt to have the lowest impacts to the extent practicable. If impacts cannot be adequately avoided, minimized, or mitigated, the EFSB will consider CIA as one among other factors which could lead to a denial of the permit.

The flow chart below summarizes the steps within the CIA process.



VI. Engaging the Community in the CIA Process

- 1. Why Community Engagement Matters:** Community engagement is a cornerstone of an effective CIA. Involving community members ensures that the analysis reflects the lived experiences, concerns, and priorities of those directly affected by proposed projects. By fostering transparent communication and active participation between the applicant and community, the EFSB processes can identify hidden challenges, build trust, and incorporate community perspectives into decision-making processes. Engaged communities are essential to promoting environmental justice, addressing inequities, and creating policies that lead to equitable and sustainable outcomes for all. Communities can be allies in supporting clean energy projects in their neighborhoods. Engagement that occurs early and often has the potential to prevent project delays.
- 2. How to Involve Local Residents and Organizations:** A meaningful engagement process includes outreach efforts such as public forums, surveys, and stakeholder meetings to gather diverse input, foster collaboration, and build trust. It is important that community engagement is done authentically, and that applicants find avenues to incorporate the feedback and lived experiences that are learned through these efforts. It's also imperative that communication is done early, broadly, often and continuously. By empowering local voices and leveraging the expertise of community organizations, the siting process can create more inclusive policies that reflect the needs of affected communities.
- 3. Sharing Information:** Effective communication of CIA findings is essential for transparency between EFSB and the communities hosting facilities. Sharing information in accessible formats ensures that all stakeholders can understand and engage with the results. This includes utilizing strategies such as public meetings, simplified reports, language access services, visually engaging infographics, and digital platforms. By presenting findings in ways that are clear, inclusive, and tailored to community needs, the DPU and EFSB can promote meaningful participation, address concerns, and align decisions with environmental justice principles.
- 4. How to Integrate Qualitative Data into the Analysis:** Incorporating qualitative data is essential for a comprehensive cumulative impact. Qualitative data, such as personal testimonies, community narratives, and stakeholder interviews, provide valuable context that complements quantitative metrics. This approach captures the lived experiences and perceptions of impacted populations, offering a deeper understanding of the social and cultural dimensions of cumulative impacts. By recognizing qualitative data through methods like interviews, focus groups, and public consultations, the EFSB can ensure that policies reflect the realities of affected communities, promote equity, and align with environmental justice principles. In cases where quantitative indicators suggest an area is not burdened or at-risk, qualitative data can provide a different perspective—helping to identify and protect communities from additional adverse impacts. Qualitative data, which includes community input, should also inform the assessment of potential adverse impacts, as noted earlier, as

well as the identification of the most appropriate remedial actions. Applicants should apply a fit-for-purpose approach to assessing, addressing, and aligning cumulative impacts with the specific requirements of the decision or action it is intended to inform.

- 5. Community Benefit Plans and Agreements:** While an effective CIA should help to inform meaningful CBP or CBA, a community benefit does not substitute any required mitigation measures. Mitigation is a mechanism to address any impact of the project. It is meant to keep an area at or near its current “status quo.” CBAs should be developed to ensure that communities affected by proposed developments receive tangible, equitable benefits that address their specific and local needs and priorities in addition to required mitigation. By fostering transparent collaboration between project developers and residents, a CBA can promote environmental justice, bring meaningful benefits to an area, and strengthen trust. Please refer to [OEJE’s Standards and Guidelines for Community Benefit Plans and Agreements](#) for more details on how to develop a meaningful CBP or CBA.

VII. Resources[‡]

- [Interim Framework for Advancing Consideration of Cumulative Impacts](#) : A foundation of information and resources that can support EPA’s programs in developing and implementing approaches to incorporate analysis and consideration of cumulative impacts into their work, with the goal of achieving results that improve health and quality of life in America’s communities.
- [Guidance on Conducting Cumulative Impact Analysis](#): Guidance released by the Massachusetts Department of Protection (DEP) on how to conduct a cumulative impact assessment including public outreach, assessment of existing community conditions, and analysis of cumulative impacts.

¹ "4 Environmental Justice Tools." National Academies of Sciences, Engineering, and Medicine. 2024. Constructing Valid Geospatial Tools for Environmental Justice. Washington, DC: The National Academies Press. doi: 10.17226/27317.

² California Office of Environmental Health Hazard Assessment. (2026). *SB 535 disadvantaged communities*. <https://oehha.ca.gov/calenviroscreen/sb535>

³ New York State Department of Environmental Conservation, New York State Climate Justice Working Group 2023 Disadvantaged Communities Criteria Final Report.

⁴ Maryland Code, Environment Article, § 1-701.

⁵ Colorado Department of Public Health and Environment (CDPHE). Colorado EnviroScreen tool. 2024. Available at <https://cdphe.colorado.gov/enviroscreen> (English) and <https://cdphe.colorado.gov/enviroscreen-es> (Spanish).

⁶ Pennsylvania Department of Environmental Protection. Pennsylvania Environmental Justice Mapping and Screening Tool (PennEnviroScreen) Methodology Documentation. 2023. Available at <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=5603905&DocName=PENNSYLVANIA>

[‡] OEJE is providing these as additional resources for informational purposes and does not necessarily endorse the statements within.

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⁷ State of Washington, Office of Financial Management. “Uniform Approach for Identifying Overburdened Communities and Vulnerable Populations to Direct and Track Investments under the Healthy Environment for All and Climate Commitment Acts”. June 26, 2024. Available at https://ofm.wa.gov/wp-content/uploads/sites/default/files/public/budget/info/Approach_for_IdentifyingOBCs_JUNE26.pdf

⁸ New York State Department of Environmental Conservation, New York State Climate Justice Working Group 2023 Disadvantaged Communities Criteria Final Report.