

CUMULATIVE IMPACT ANALYSIS IN AIR PERMITS

MCTA Lunchtime Webinar & Panel Discussion
September 26, 2024



CIA Regulation Development

2021 Climate Roadmap Law directs MassDEP to conduct stakeholder process and propose regulations within 18 months requiring cumulative impact analysis in certain air permits

August 2021 to April 2022

Held six sets of public stakeholder meetings from August 2021 to April 2022



December 2022 to April 2023

Filed draft regulations on December 29, 2022, held four public hearings, and accepted public comment until April 7, 2023



March 2024 to July 2024

Final regulations promulgated March 29, 2024 and apply to permit applications filed on and after July 1, 2024



Applicability

- New facility that requires a comprehensive plan application (CPA) in or near EJ populations
 - Non-major source CPAs in or within 1 mile of EJ population
 - Major source CPAs in or within 5 miles of EJ population
- Existing facility with a CPA that requires new or modified CPA if emissions would increase ≥ 1 ton/year (excluding CO₂e)
- Does not apply to CPA that would temporarily increase emissions to facilitate an emissions decrease within 2 years

CIA Steps

Steps	Description
1. Public Notice and Involvement	At least 60 days prior to filing a CPA, develop project fact sheet, notify EJ populations, local officials, and MassDEP and provide public outreach and involvement.
2. Assessment of existing community conditions	Describe the existing conditions of nearby EJ populations using environmental, public health, and socioeconomic indicators, including conditions and concerns raised by EJ populations.
3. Air quality dispersion modeling	Conduct air dispersion modeling for criteria pollutants that would be emitted by the proposed project, taking into account emissions from other significant air pollution sources, added vehicle emissions, and existing air quality background.
4. Air toxics risk characterization	Characterize cumulative risks of harm from air toxics that would be emitted by the proposed project, taking into account emissions from other significant air pollution sources.
5. Evaluation of proposed project cumulative impacts	Evaluate and describe how air pollutant emissions could affect existing environmental and public health conditions.
6. CIA report and public notice	Prepare CIA report and submit it to MassDEP with the CPA and notify EJ populations and the public of their availability and how the public can submit informal comments.
7. MassDEP review and proposed decision	MassDEP will review the CIA report and CPA and issue a proposed decision for a 60-day formal public comment period.
8. MassDEP final decision	After review of public comments, MassDEP will issue a final decision on the CPA.

Public Notice & Involvement

- At least 60 days prior to submitting a CPA application, applicant must provide notice of the proposed project to DEP Regional Office, EJ Director, local officials, EJ populations
- Notice must include a Fact Sheet using DEP template that describes proposed project, nearby EJ populations, and applicant contact information for submitting comments or requesting public involvement activities
- Applicant must meet with Regional Office to discuss public outreach and involvement measures and development of CIA
- Applicant must undertake measures to provide outreach and meaningful involvement opportunities for nearby EJ populations

Public Notice & Involvement

- CIA Report must include a description of the notice and public involvement measures conducted and a summary of public comments received and written responses to the public comments
- Applicant should document actions taken and summarize the key questions and concerns identified during the public involvement process.
- Questions and concerns raised by the public during the public engagement also should be integrated into the assessment of existing community conditions and addressed as applicable in the assessment of cumulative impacts from the proposed project.
- Meaningful public involvement is essential to a successful CIA!!

Assess Existing Community Conditions

- Applicants must collect data on 33 environmental, health, and socioeconomic indicators to characterize nearby EJ populations
- Applicant must document concerns raised by EJ population in the community assessment
- Community assessment would include data tables, maps of indicators, and narrative description of community conditions

Indicators

Pollution Burden

Air Quality/Climate Indicators

- PM2.5
- Ozone
- Diesel PM
- Traffic Proximity
- Air Toxics Cancer Risk
- Air Toxics Respiratory Hazard Index
- Impervious surface

Nearby Regulated Sites

- Air permitted sites
- Solid waste facilities
- Large quantity hazardous waste generators
- Large quantity toxic users
- Toxics Release Inventory sites
- Hazardous waste treatment, storage, and disposal facilities
- Wastewater Treatment Plants
- Freight yards
- Airports
- Port Facilities

Indicators

Population Characteristics / Vulnerabilities

Health Indicators

- Asthma prevalence in schools
- Elevated blood lead
- Low birth weight
- Premature deaths
- COPD
- Coronary heart disease

Socioeconomic Indicators

- Poverty/low-income
- Community of Color
- English language isolation
- Younger (< 5 years old)
- Older (>65 years old)

Sensitive Receptor Locations

- Schools (k-12)
- Child/Day care and pre-schools
- Long-term care residences
- Public housing
- Prisons

Air Quality Dispersion Modeling

- Applicant must conduct air dispersion modeling of criteria pollutants to estimate effect on air quality and EJ populations
- Submit modeling protocol for MassDEP approval
- Model potential emissions from proposed project, including any added vehicle emissions (owned or leased), any existing facility emissions, and emissions from nearby significant permitted air sources
- Add background concentrations from nearby air monitoring stations
- Compare to Massachusetts and National Ambient Air Quality Standards (NAAQS)
- Results must include graphical display of modeled concentrations in nearby EJ populations

Air Toxics Risk Characterization

- Applicant must conduct cumulative air toxics risk characterization with emissions from facility and emissions from nearby significant permitted air sources (where data available)
- Can use MATRiST or their own dispersion modeling and refined risk characterization
- MATRiST adds up the cancer risks and noncancer risks posed by each air toxic and compares to health-based risk limits
 - Cumulative cancer risk must not exceed excess lifetime cancer risk of 10 in 1 million
 - Cumulative non-cancer risk must not exceed hazard index of 1
- Risk characterization results should describe potential risk of harm to nearby EJ populations and include graphical display of calculated risk levels for air toxics of particular concern

Impacts of Project on Community Conditions

- Applicant must describe potential impact of emissions on existing conditions in the community based on the indicators and any mitigation measures
- Description of potential impacts is a qualitative analysis
- If project went through MEPA, applicant must consider relevant analyses and findings from MEPA review process, including any "finding of disproportionate adverse effect"

Permit Application includes CIA Report

- After conducting the CIA, the Applicant files the air permit application, including the CIA report, with MassDEP
- Applicants must notify the nearby EJ populations of the availability of the application within 3 days of submittal
 - Public may ask questions or submit comments to Applicant and MassDEP
- After its review, MassDEP issues a proposed permit decision for formal 60-day public comment period
- After the public comment period, MassDEP issues a final decision to approve or deny the CPA

CIA Guidance and Tools

- **Guidance on Conducting Cumulative Impact Analysis** – including public outreach, assessment of existing community conditions, and analysis of cumulative impacts
- **CIA Mapping Tool** – maps and data for EJ communities (block groups), regulated facilities, and sensitive receptors needed for the assessment of existing community conditions
- **Indicator Data** – spreadsheets with pollution and health data for all EJ neighborhoods in MA
- **Massachusetts Air Toxics Risk Screening Tool (MATRiST)** – spreadsheet tool that can be used to estimate cumulative air toxics risks from proposed projects

Program Review

- Program review required by December 31, 2025
- Convene stakeholders in late 2024 to begin scoping program review.