DMN-4
Mining Projects and Climate Change Considerations

New York State Department of Environmental Conservation
DEC Program Policy

Issuing Authority: Patrick Foster	**Title:** Deputy Commissioner, Office of Remediation and Materials Management
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I. Summary:

This policy describes the requirements for analyses developed pursuant to Section 7(2) of the Climate Leadership and Community Protection Act (CLCPA)[1] and for compliance with the Community Risk and Resiliency Act (Chapter 355 of the Laws of 2019), as amended by CLCPA Section 9 (CRRA) (see Chapter 106 of the Laws of 2019). This policy applies to applications for mined land reclamation (MLR) permits and bluestone exploration authorizations (BEA), as well as related Department Initiated Modifications (DIMs).

II. Policy:

Consistent with DEC Commissioner's Policy CP-49: Climate Change and DEC Action (CP-49),[2] this policy provides instructions for applicants and DEC staff when preparing and reviewing the CLCPA and CRRA analyses submitted to DEC in support of applications for MLR permits and BEAs. The required analyses ensure that DEC decisions concerning MLR permits and BEAs comply with the requirements of CLCPA Section 7(2) and CRRA, and DEC's policies implementing these statutes. To ensure compliance with Section 7(3)[3] of the CLCPA, mining projects that require a permit administered under the Uniform Procedures Act (UPA)[4] that include sources and activities that may result in GHG emissions or co-pollutants, directly or indirectly, that are located within or likely to affect or cause a disproportionate burden on a disadvantaged community will be subject to the processes and procedures of Division of Environmental Permits Program Policy 24-1: Permitting and Disadvantaged Communities (DEP 24-1).[5]

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[1] The requirements for analyses developed pursuant to Section 7(3) of the CLCPA will be reviewed pursuant to other applicable DEC policies.

[2] CP-49 is available on DEC's website at https://extapps.dec.ny.gov/docs/administration_pdf/cp492022.pdf.

[3] Section 7(3) of the CLCPA requires that DEC and other state agencies and entities not disproportionately burden disadvantaged communities when considering and issuing permits and requires that all agencies and entities prioritize reduction of GHG emissions and co-pollutants in disadvantaged communities as identified pursuant to subdivision 5 of section 75-0101 of the Environmental Conservation Law.

[4] BEAs are not permits and are not administered under UPA.

[5] DEP 24-1 provides direction to agency staff when reviewing permit applications associated with sources or activities in or likely to affect a disadvantaged community, that result in GHG or co-pollutant emissions. DEP 24-1 is available on DEC's website at https://dec.ny.gov/sites/default/files/2024-05/prgrmpolicy24dash1.pdf.

III. Purpose and Background:

The CLCPA went into effect January 1, 2020 (Chapter 106 of the Laws of 2019) and includes requirements to achieve a reduction in statewide greenhouse gas (GHG) emissions of 40% by 2030 and 85% by 2050 from 1990 levels (Environmental Conservation Law [ECL] 75-0107). The CLCPA requires DEC to specify statewide emission limits that correspond to those reduction requirements that have been promulgated under 6 NYCRR Part 496 (Part 496) and to promulgate regulations to ensure compliance with the emission limits. The CLCPA also established a Climate Action Council and required a Scoping Plan to be developed to identify and make recommendations on regulatory measures and other state actions that will ensure the attainment of the statewide GHG emission limits. The Scoping Plan was finalized on December 19, 2022.

When issuing permits, CLCPA Section 7(2) requires DEC, as well as other state agencies and entities to consider whether their permitting decisions, and other actions, are inconsistent with, or will interfere with, the attainment of the statewide GHG emission limits established in ECL Article 75. Further, if deemed inconsistent, a detailed justification, including the identification of alternatives and GHG mitigation measures, must be created to proceed with a decision.

CP-49 provides direction to agency divisions, offices, and regions regarding the incorporation of climate change considerations into agency activities. In 2022, DEC finalized a revised CP-49 to reflect requirements under the CLCPA. The revised CP-49 includes guidance for implementing provisions related to the CLCPA and CRRA. CP-49 outlines the steps to be taken for administrative decisions by all divisions of DEC to comply with the requirements of CLCPA Section 7(2) and is the basis for this policy. CP-49 also directs DEC to incorporate climate change considerations and adaptation strategies into aspects of its activities and comply with the specific requirements of the CLCPA and CRRA. Other applicable guidance documents may also be important when incorporating climate change considerations and adaptation strategies.

This policy describes how the Division of Mineral Resources will address CLCPA Section 7(2) and CRRA requirements for applications for MLR permits and BEAs issued pursuant to the Mined Land Reclamation Law (MLRL) under Article 23 Title 27 of the ECL.

This policy is not intended to create any substantive or procedural rights enforceable by any party in administrative or judicial litigation. DEC reserves the right to deviate from this policy when, in its judgment, doing so would result in a net benefit to the people or environment of New York State.

IV. Responsibility:

The Division of Mineral Resources (DMN) is responsible for implementing this policy and reviewing MLR permits and BEA applications. The Division of Air Resources (DAR), however, is responsible for reviewing Air Title V (ATV) permit applications, Air State Facility (ASF) permit applications, and Air Facility registration applications (where DEC determines an analysis is necessary or appropriate to ensure CLCPA consistencies). DMN will coordinate with other DEC programs as necessary for mine sites requiring multiple permits and approvals. DAR will take the lead on the CLCPA analysis for any facility[6] that requires a DAR permit or requires an approval in addition to the MLR permit. Permittees

[6] Facility as defined in 6 NYCRR Part 200.1 – all emission sources located at one or more adjacent or continuous properties owned or operated by the same person or persons under common control. Mine sites, delineated by a Life of Mine boundary, may be part of a larger facility, as defined by 6 NYCRR Part 200.1.

and/or applicants are responsible for providing complete CLCPA and CRRA analyses that meet the requirements of this policy.

V. Procedure:

1. CLCPA Section 7(2) – Greenhouse Gas Emissions

a. Applicability

This policy applies to all applications for the following types of permit actions and bluestone exploration authorizations received by DEC after the issuance date of this policy, and pending applications to the extent feasible, including modifications and renewals to existing permits. This policy also applies to DIMs of existing permits.

i. Applications that must include site-specific CLCPA analysis include the following project types:

1. A proposal that requires both a new MLR permit[7] and an ECL Article 19 ATV or ASF permit;
2. A proposal that modifies an existing MLR permit for a mine with an ATV or an ASF permit;
3. A proposal that requires a new MLR permit and an Air Facility registration, if DEC determines an analysis is necessary or appropriate to ensure CLCPA consistency;
4. A proposal that modifies an existing MLR permit for a mine with an Air Facility registration, if DEC determines an analysis is necessary or appropriate to ensure consistency with the CLCPA; and
5. A renewal of an existing MLR permit for a mine with an ATV permit, ASF permit, Air Facility registration, where newly discovered material information or a material change in the environmental conditions, relevant technology, or the Mined Land Reclamation Law or its implementing regulations, or changes in circumstances related to the project were not previously considered, if DEC determines an analysis is necessary or appropriate to ensure CLCPA consistency.

ii. The following applications are not likely to interfere with the attainment of statewide GHG emission limits and, therefore, do not typically require further analysis unless DEC determines based on the specific facts of the application at issue that the application could result in a new source of or an increase in GHG emissions:

1. A BEA is limited in scope (i.e., exploration is limited to a maximum of a 1-acre area and stone removal cannot exceed 500 tons per year) and timeframe (i.e., 1 year). The area covered by the BEA must be reclaimed at the end of the statutory timeframe or a new MLR permit application must be submitted, at which time, this policy will be applied, if determined to be necessary.
2. A renewal of an MLR permit with no significant changes in operations that would have no anticipated change in emissions, unless project specific facts support a determination that there is a potential for an increase in GHG emissions. An application for renewal that includes a new emission source or change in operations that may increase emissions that would result in a new or modified ATV or ASF permit or Air Facility registration should

[7] As used in this policy, a “new MLR permit” refers to a permit issued to new mining project that has not been previously permitted by DEC.

be treated as an MLR permit modification application and may be subject to CLCPA analysis, as outlined above.

3. A proposal for a new or modified MLR permit that is deemed a "minor project" under the Uniform Procedures Act (UPA)[8] subparagraph 621.4(h)(2)(i) because any onsite processing of mining products consists only of those activities that are exempt from ASF permit and Air Facility registration requirements and are limited in scope.
4. A proposal to modify an MLR permit that is a lateral or vertical expansion that is deemed a "minor project" under UPA[9] subparagraphs 621.4(h)(2)(ii) and (iii) when there is no change in onsite processing of mining products, because there would be no new source or increase in GHG emissions.
5. A proposal for a new or modified MLR permit that is deemed a "major project"[10] under UPA when there is no processing (i.e., bankrun sand and gravel) taking place, processing involves screening only, or processing is limited to a temporary plant onsite less than 90 consecutive days per year. In these cases, the processing activities are exempt from the ATV or ASF permit or Air Facility registration requirements due to the limited scope or duration of the operation of the plants and other associated onsite activities required to supply the plant and load out processed aggregate to customers.
6. A proposal to transfer or modify the MLR permit to increase the authorized permit term affected area that does not include material or substantial changes in the operations, is ministerial in nature and there is no anticipated change in emissions.

iii. Department Initiated Modifications (DIM) of MLR permits that include administrative changes in permit conditions, addition of permit conditions to ensure compliance with the approved plans or applicable environmental standards and regulations are not likely to interfere with the attainment of statewide GHG emission limits and, therefore, do not typically require further analysis.

[8] Pursuant to 6 NYCRR subparagraph 621.4(h)(2)(i) (Uniform Procedures Act), effective December 26, 2023, projects that meet all of the following criteria are considered minor mining projects:

(a) total acreage affected by mining for entire mining site is less than five acres regardless of length of mining period.
(b) total depth of mine from floor to top of mine face is less than 20 feet.
(c) any on-site processing of mining products consists of only those activities that are exempt from air contamination source permits pursuant to section 201-3.2(c)(28) and (29) of this Title.
(d) there is no mining within 100 feet of any surface waters.
(e) there is no mining of consolidated minerals.
(f) there is no mining within 500 feet of any dwelling; and
(g) there is no mining below the water table at the mine site.

See Footnote 9 for other minor mining project criteria.

[9] Pursuant to 6 NYCRR 621.4(h)(2)(ii) and (iii) minor mining projects also include:

(ii) no more than once every five years, lateral expansions of a life-of-mine boundary beyond the limits approved in the permit by up to five acres or 10 percent, whichever is less, where the expanded area would remain more than 100 feet from any surface waters and more than 500 feet from any dwelling; and
(iii) no more than once every five years, vertical expansion of an existing mine that remains above the seasonally high-water table.

[10] Major mining projects are all mining projects not listed or designated as minor in 6 NYCRR 621.4(h)(2).

b. Determining Scope of Covered Projects

It is important that each CLCPA analysis prepared to meet the requirements of Section 7(2) includes the potential GHG emissions from each portion of the project. Projects subject to this policy are as follows:

i. For an MLR permit application for a new mine that requires a CLCPA analysis, the project scope includes all emission sources proposed at the mine site that have the potential to emit GHGs. Typical emission sources at mine sites include, but are not limited to, diesel or gasoline powered mobile equipment, free-standing generators, processing equipment with on-board generators, and blasting.

ii. For an MLR permit application for a modification of an existing mine that requires a CLCPA analysis, the scope of the CLCPA analysis incudes any new or modified emission sources that have the potential to emit GHGs, including increases in emissions of GHGs from existing equipment. It does not include existing equipment whose operations are not being changed unless deemed necessary by DEC to address CLCPA consistency.

iii. Modifications that could result in increases in GHGs include, but are not limited to, proposals to add a portable or permanent processing equipment not previously approved or utilized on the mine site, increasing operating hours of the mine thereby increasing the operational time for existing equipment, increasing the duration of operation of crushing such that a temporary plant becomes permanent.

iv. For an application to renew or transfer an MLR permit where DEC has determined that newly discovered material information or a material change in the environmental conditions, relevant technology, or applicable laws or regulations, changes in circumstances related to the project that were not previously considered, DEC may require an applicant to submit additional information to ensure the requirements of Section 7(2) are met. The scope of the project will be determined by DEC based on the facts surrounding the project.

c. CLCPA Analysis Requirements

For MLR applications that require a CLCPA analysis, the applicant must provide calculations of the GHG emissions from the project in units of carbon dioxide equivalent (CO2e), that includes the direct emissions as well as any reasonably foreseeable upstream or downstream emissions known to be attributable to the project, including upstream emissions attributed to production, transmission, and use of fossil fuels or imported electricity.

When an applicant is required to submit a CLCPA analysis pursuant to this policy, the analysis must include a comprehensive review of the GHG emissions from the project, including any potential alternatives and GHG mitigation measures. If required, the analysis must include the following information:

- Identification of all new or modified direct emission sources[11] from mining activities. Typical sources of emissions at mine sites include, but are not limited to, mobile equipment (e.g., dozers, excavators, loaders, haul trucks, drill rigs), and stationary equipment (e.g., generators, processing equipment with on-board generators).
- Calculations describing each new or modified emission source's direct GHG emissions on potential to emit (PTE) and actual emissions bases (i.e., metric tons/year) using appropriate emissions factors. Emission factors can be found in the most recent version of the *NYS Statewide GHG Emissions Report Appendix: Emission Factors for Use by State Agencies and Applicants*, USEPA's AP-42: *Compilation of Air Emissions Factors, EPA's GHG Emissions Factor Hub*, and manufacturers' data. The calculations describing the project's PTE GHG and projected actual emissions in units of CO_2e should be performed using the 20-year global warming potentials (GWP20) found in Part 496.
    - The direct GHG emissions must be determined using the volume of fuel product (fuel), higher heating value of product and the appropriate emissions factor.
    - To determine the GWP20, the direct GHG emissions must be multiplied by the 20-year global warming potentials provided in Part 496.

  The calculations should reflect all aspects of the project. For modifications that include proposed changes in the hours of operation of the mine, calculations should reflect any changes in the duration of operations (per day/month/year).
- Assessment of any reasonably foreseeable indirect GHG emissions. Indirect emissions are emissions that are a consequence of the mining activity. Indirect emissions may occur at sources owned or controlled by another entity. An example of an onsite indirect emission is the release of GHGs from methane bearing lithologies exposed during mining activities. Truck traffic transporting aggregate to an offsite secondary manufacturing operation is an example of an offsite indirect emission. Indirect emissions do not include upstream and downstream emissions accounted for in the next two bullet items.
- Assessment of upstream GHG emissions attributable to the mine site. Sources of upstream GHG emissions include those associated with the extraction, production and transmission of fossil fuels imported into the state for use at the mine site, and those emissions associated with the generation of electricity imported into the State for use at the mine site, if the project is known by the applicant to use power imported into the State.
    - To calculate upstream emission for fuel used at the mine site that originates from out-of-state, the applicant should consult and use factors provided in the most current version of the document entitled: *NYS Statewide GHG Emissions Report Appendix: Emission Factors for Use by State Agencies and Applicants*.
- Assessment of any reasonably foreseeable downstream GHG emissions. Sources of GHG emissions downstream from the mine site that may be considered include, but are not limited

[11] Blasting is not required to be included in the GHG emission analyses since emissions from this activity are difficult to foresee and quantify because operational flexibility is needed to 1) address safety issues, 2) optimize blasting efficiency, and 3) adjust to changes in site specific conditions, such as differing lithology or presence of groundwater. Also, production is based on market demand that cannot be reasonably foreseen. In addition, blasting design needs flexibility in order to ensure compliance with standard permit limits concerning ground vibration and air blast. DEC does not approve individual blast plans or designs and does not oversee the implementation of such plans or designs.

to, the following sources when the mine site and those emission sources are considered a single facility (as defined by 6 NYCRR 200.1): a cement plant receiving limestone from the mine site; lightweight aggregate kiln receiving shale from the mine; or concrete or blacktop plants receiving aggregate from the mine.

Downstream emissions do not typically include emissions from the shipment or end use of commercial goods or projects produced for sale, including secondary manufacturing not controlled by the applicant; therefore, the transport or end use of mineral products does not typically need to be included in the analysis. The demand for mineral products in secondary manufacturing and other end uses of mineral products (e.g., aggregates) is dependent on such things as the construction market and government infrastructure budgets, which are difficult to forecast.

If the application for an MLR permit is submitted with an ATV, ASF permit or Air Facility registration application, a single CLCPA analysis should be submitted addressing the criteria above as well as the criteria described in DEC Program Policy DAR-21.

d. Considering Consistency with the CLCPA

Following the submittal of the application materials, including a CLCPA analysis that meets the requirements of this policy, DMN staff must evaluate the information presented to determine whether the project is inconsistent with, or will interfere with, the State's ability to meet the statewide GHG emission limits promulgated in Part 496.

Reasons that a proposal may be found to be inconsistent with or interfere with Part 496 include the following:[12]

- The project creates or enables a **significant** new source of GHG emissions. An example of a significant new source of GHG emissions is a proposed new mine site with aggregate processing co-located with a new cement plant, requiring a new MLR permit and new ATV permit.
- The project **significantly** increases the current level of GHG emissions at the mine site. An example of a significant increase in current levels of GHG emissions is a proposed modification to an existing mine site to allow for the colocation of a blacktop plant that was not previously present at the site, requiring modification of the MLR permit and a change from an Air Facility registration to an ASF permit.
- The project would increase demand for, or use of, a GHG-emitting facility.
- The approval of the application would interfere with a GHG reduction strategy.[13] This could include a project that:
  - reduces market demand for, or access to, GHG reduction technologies;
  - makes it more difficult or expensive for the State to reduce GHG emissions;

[12] The reasons outlined in this list are consistent with the information presented in *Considering Consistency with Emission Limits* section of CP-49. CP-49 applies to the broad universe of projects that would require DEC review under CLCPA including projects that go beyond the scope of activities typically related to Mined Land Reclamation Permits and Bluestone Exploration Authorizations. Mining-specific project examples have therefore been provided, where possible, to assist staff in identifying the types of mining-related project scenarios that are most likely to fit the reasons described.

[13] The majority of mining projects, based on their nature, are unlikely to interfere with a GHG reduction strategy. Exceptions to this might include, but may not be limited to, mining projects that will support the fossil fuel industry or would support an industry that would impact the electric generation sector.

- facilitates the expanded or continued use of fossil fuels through new energy infrastructure development; or
- interferes with the attainment of the zero-emissions electric generation sector by 2040 requirement.

- The approval would be inconsistent with the Scoping Plan, DEC guidance, regulations, or other published information that details how statewide emissions limits will be achieved.

If DMN staff determines that approval of the project is not inconsistent with and will not interfere with the State's ability to meet the statewide emission limits contained in Part 496, then staff must document this determination and may continue with normal processing of the application. See the discussion in the Permitting section under V.1.g below.

e. Justification for Inconsistent Projects

If the CLCPA analysis shows that the project would result in an increase in GHGs that would interfere with the statewide emission limits contained in Part 496, the application cannot be approved unless the applicant provides sufficient information to support a justification.

When presenting information to support a potential justification, the applicant must provide the following:

- Current level of GHG emissions from the action, inclusive of the full scope of GHG emissions defined in the statute, including all the applicable GHGs and the upstream GHG emissions from imported fuels as well as reasonably foreseeable downstream and indirect emissions;
- Projected future GHG emissions in 2030 and 2050 from the action with description of the applicant's anticipated GHG emission reduction strategies;
- An explanation of the alternatives (that do not create GHG emissions or result in less GHG emissions) and mitigation measures considered, where they were found to be feasible, and to what extent they will be implemented;
- A description of the environmental, economic, and/or social harm associated with the absence of the project and any benefits to the citizens of the state resulting from the project; and
- An explanation of any additional factors or circumstances that provide justification for the project despite the inconsistency with the CLCPA.

Potential examples of justification may include, but are not limited to, the following:

- A demonstration that the lack of the project within the State would result in emission leakage in excess of emissions from the project (e.g., the applicant would transfer operations to a neighboring state).
- A finding that the absence of the project will result in economic, social, or environmental harm to the public.
- A finding that the project is needed to improve or maintain the safety and reliability of transportation infrastructure.

f. Identification of Alternatives and Mitigation

If the project is determined to be inconsistent with or would interfere with the attainment of the statewide GHG emission limits and there is a potential justification for the project, then any alternatives that lower GHGs must be assessed by the applicant and included in the CLCPA analysis. Alternatives can be no action (meaning there are no feasible alternatives), or the use of lower emissions technologies to reduce GHGs. For each potential alternative, the application should discuss any technical or economic barriers to implementation. In general, the assessment of alternatives should be a good-faith accounting of potential options and any technical barriers to their implementation.

Additionally, if the applicant concludes that there are no feasible alternatives to the project, the applicant must describe mitigation measures that will be employed to reduce GHGs. Any mitigation option must result in measurable GHG emissions reductions that are in addition to actions already required by law or regulation. Further, mitigation measures must be real, quantifiable, permanent, verifiable, and enforceable. Mitigation should result in a reduction in the GHG emissions that is at least equivalent to the increases in potential GHG emissions from the project or must ensure that the project is reducing GHG emissions over time consistent with the requirements of the CLCPA. Accordingly, it may be necessary for the applicant to consider implementation of more than one mitigation measure to achieve the necessary reduction. Finally, mitigation must be undertaken at the project site, i.e., mine site, or in the surrounding community wherever possible.

Examples of Mitigation Measures include but may not be limited to:

- Address GHGs from fossil-fuel consumption on site by producing power from wind, solar, or other non-emitting projects at the project location.
- Reduce existing onsite haulage by use of electric-powered conveyors.
- Replace existing petroleum-powered processing or mining equipment with electric-powered processing or mining equipment.
- Replace existing petroleum-powered mobile vehicles (e.g., haul trucks and loaders) with hybrid or electric-powered vehicles.

In each case, the applicant should provide enough detail for DEC staff to understand and evaluate the reasoning behind the decision to implement or reject a potential alternative or mitigation measure.

g. Permitting

The Uniform Procedures Act requires, where applicable, the applicant to provide information to explain whether the project will be inconsistent with, or will interfere with, the attainment of statewide GHG emission limits. An application is incomplete until such information is provided to DEC. When DEC determines an application to be complete, staff will process the application, as follows:

i. DEC will process MLR permit and BEA applications that are considered consistent with the CLCPA.

ii. DEC can continue to process MLR permit applications that are found to be inconsistent with the CLCPA in the following circumstances, provided the application meets all other applicable laws and regulations:
   - When DEC determines detailed justification potentially exists for the project, and potential mitigation is found to result in a reduction in the GHG emissions that is at least equivalent to the increases in potential GHG emissions from the project or the project is reducing GHG emissions over time consistent with the requirements of the CLCPA.

- When DEC determines that the potential justification for the project is leakage (e.g., the facility would transfer operations to a neighboring state) or significant social or economic harm to the public is anticipated, and GHGs are mitigated to the maximum extent practicable.
- When DEC determines detailed justification potentially exists for the project, and there is no feasible alternative, but GHG emissions have been mitigated to the maximum extent practicable.

iii. Should the applicant propose, and DEC accept, an alternative or mitigation measure that requires the imposition of one or more permit conditions to ensure proper implementation or operation, site-specific conditions will be included in the MLR permit under review. The resulting permit condition(s) must adhere to established regulations, procedures, and guidance for the development of permit conditions.

DEC can deny the application, consistent with the procedures in 6 NYCRR Part 621 if DEC determines that the project is inconsistent with the emission limits contained in Part 496 and that sufficient justification does not exist for a project that is inconsistent with the CLCPA, or that the alternatives and mitigation are not adequate.

2. CRRA – Future Physical Climate Risk

To comply with CRRA the applicant for a major mining project must demonstrate consideration of future physical risk due to climate change. Future physical risks at mine sites have been identified and may include sea level rise, storm surge, flooding, changes in average and peak temperatures and changes in average and peak precipitation, depending on the location of the mining project.

An applicant's consideration of these risks must be demonstrated on a department-approved form. The form will direct applicants to current department-approved resources and climate projections (e.g., regional sea level rise projections, NYS Climate Impact Assessment, NYS Flood Risk Management Guidance, Flood Insurance Rate Maps) that can be used to gather information regarding the climate-related changes anticipated for the mine's geographic location for the duration of the life of the mine.

When considering sea level rise, storm surge and flooding, applicants and DEC should consider mines to be non-critical facilities, which are designed to survive flooding and regain functionality within an acceptable period, at acceptable costs.[14] During a flood or storm surge, aggregate processing plants at mines typically do not need to remain operational. Although mines supply aggregate for flood response and recovery efforts (e.g., sand for sandbags), stockpiled material may be used for immediate response. Mines would need to be accessible shortly after flood waters recede and recovery efforts begin however, and processing plants need to be operational soon thereafter. Although temporary flooding may be acceptable, applicants must still consider the placement of stockpile areas, fuel storage, permanent structures, and stationary equipment within the mine to minimize negative impacts.

When considering changes in average and peak temperatures, applicants must consider aspects of mine operation and reclamation that could be impacted by higher temperatures in the future. Impacts may include, but are not limited to, increased dust, loss of working days due to heat, availability of process water, or revegetation failure. Applicants should also consider any adaptation strategies such as heat and drought-tolerant seed mixes, forest-based reclamation, or use of nature-based features.

[14] As defined by the New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act

When considering changes in average and peak precipitation, applicants must consider aspects of mine operation and reclamation such as whether existing or proposed stormwater controls are sized to fit increased precipitation, whether slope grades are safe and gentle enough to withstand erosion that may result from increased precipitation, or whether water pumping mechanisms are sized to handle the projected higher capacity.

An applicant for a major mining project must consider the duration of the life of the mine in the context of the forementioned future physical climate risks. For example, a mine located in Ulster County operating today versus in 2080 would experience (i) under medium projection scenarios, an 25 inch increase in sea level[15] if located within the extent of sea level rise, (ii) a projected increase in average annual temperature of 5.4 to 9.6 degrees Fahrenheit over the baseline of 47.7 degree Fahrenheit (1971-2000)[16], (iii) a projected increase of about 38 to 77 days when temperatures reach over 90 degree Fahrenheit compared to the baseline of 9 days[17], (iv) a projected increase of 6 to 14 precent in average annual precipitation over the baseline of 46.0 inches[18], and (v) mean change of 25 percent in a 24-hour 100-year rainfall amount under RCP 8.5[19]. These changes have the potential to increase erosion and flooding at the mine site and can impact reclamation. Applicants should consider these risks and propose adaptation strategies to ensure that mines and their reclamation efforts are resilient in the future.

When reviewing an applicant's consideration of future physical climate risks, DMN staff should determine if these risks may have the potential to significantly impact public infrastructure and services, private property not owned by the applicant, disadvantaged communities, or natural resources. An example of a potential significant risk is a mine site with reclamation slopes that have the potential to be unstable under projected increased precipitation, resulting in a potential slope failure that could impact adjacent properties. If a major mining project results in potential significant risks, DEC may require the applicant to mitigate against them.

Examples of potential mitigation measures that could be employed at a mine site include the following:

- Site planning or design that keeps petroleum bulk and equipment storage out of the floodplain;
- Including gentler grades and grade breaks in the reclamation plan;
- Sizing stormwater controls appropriately to handle increased precipitation;
- Installing appropriately sized pumping mechanisms to handle projected higher capacity;
- Phasing of mining and reclamation or concurrent reclamation; or
- Alternative planting plans with species tolerant of drought and high precipitation events.

[15] 6 NYCRR Part 490.4(a) available at https://dec.ny.gov/sites/default/files/2023-12/6nycrrpart490adopted2017.pdf

[16] Observed and Projected Climate Change in New York State, Table 1, available at https://extapps.dec.ny.gov/docs/administration_pdf/ccnys2021.pdf

[17] Observed and Projected Climate Change in New York State, Table 2, available at https://extapps.dec.ny.gov/docs/administration_pdf/ccnys2021.pdf

[18] Observed and Projected Climate Change in New York State, Table 3, available at https://extapps.dec.ny.gov/docs/administration_pdf/ccnys2021.pdf

[19] Cornell's Statewide Maps of Projected Changes viewer. RPC 8.5 is the highest baseline emissions scenario in which emissions continue to rise throughout the twenty-first century.

Any climate-related mitigation measures or best management practices that the applicant chooses to implement or that DEC requires be implemented, must be clearly described in the Mined Land-Use Plan that accompanies the MLR permit application and must be summarized or referenced on the department-approved CRRA form.

VI. Related References

CLCPA; and 6 NYCRR Part 496, Statewide Emission Limits

CRRA; and 6 NYCRR Part 490, Projected Sea-level Rise, and implementing guidance

6 NYCRR Parts 420-425, and 621

CP-49, Climate Change and DEC Action

DAR-21, The Climate Leadership and Community Protection Act and Air Permit Applications

DEP 24-1, Permitting and Disadvantaged Communities

New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act (2020)
https://www.dec.ny.gov/docs/administration_pdf/crrafloodriskmgmtgdnc.pdf

New York State Climate Justice Working Group Disadvantaged Communities Criteria
https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria

Emission Factors for Use by State Agencies and Applicants of the 2023 NYS Statewide GHG Emissions Report, Sectoral Report #1
https://www.dec.ny.gov/docs/administration_pdf/ghgappxclcpaemissfctrs22.pdf

EPA's GHG Inventory Guidance for Direct Emissions from Mobile Combustion Sources
https://www.dec.ny.gov/docs/administration_pdf/ghgappxclcpaemissfctrs22.pdf