



Rocky View County  
**AGGREGATE DEVELOPMENT  
PERFORMANCE STANDARDS**

DECEMBER 2025



ROCKY VIEW COUNTY



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# Introduction



ROCKY VIEW COUNTY

## DISCLAIMER

The purpose of this document is to outline the performance standards that aggregate extraction and/or processing operations in Rocky View County (“the County”) are expected to meet as part of their master site development plan and development permit applications, as well as conditions of development permit approval. Applications for the renewal of development permits for existing operations that are not expected to be completed within 3 years at the time of approval are also expected to comply with these standards. These standards are to be read in whole, in conjunction with other County policies, bylaws, and no part or section should be read individually.

Although it is anticipated that all new or expanded aggregate extraction and/or processing operations within the County will conform to the performance standards set forth in this document, ultimate responsibility for ensuring full compliance with these standards rests solely with the operator. Use of Aggregate Development Performance Standards does not absolve an operator or any other party from the obligation to exercise professional judgement and follow sound engineering, mining and industry standards.

The provisions within this document shall be in addition to and not in substitution for any federal, provincial or municipal legislation, regulation or requirement relating to aggregate operations.

New technology or practices exist which may result in a request to vary the Aggregate Development Performance Standards. Any party making a request to vary the Aggregate Development Performance Standards must submit a written request to the County with a detailed report under the seal of a Professional Engineer and/or qualified professional demonstrating the variance would not result in an increased level of impact on adjacent dwellings or institutional uses.

Municipal standards and guidelines may be amended from time to time. Before relying upon any municipal bylaw, policy, standard or guideline confirm that you have reviewed the most recent version of the document and understand its contents. In the event that any provincial or municipal statute, standard, or guideline referred to in this document is replaced or amended, the replacement or amended statute, standard, or guideline shall apply for assessing compliance.

The County will make reasonable efforts to view and update this document from time to time to allow for appropriate revisions to be made to references to provincial and municipal statutes, standards, and guidelines. The County does not warrant or guarantee the completeness or accuracy of any of the information provided in this document. The County does not assume responsibility or accept any liability arising from the use of the information in this document, which users rely upon at their own risk.

## WHAT IS AGGREGATE?

In Alberta, aggregate is defined as “any sand, gravel, clay, or marl that is excavated from a pit, whether in a processed or unprocessed form, but does not include reject” by the Alberta Code of Practice for Pits. Under the provincial Environmental Protection and Enhancement Act, a pit is defined as “an operation on or excavation from the surface of the land, including by stripping off the overburden, for the purposes of removing, opening up or proving sand, gravel, clay or marl, and includes any associated infrastructure, but does not include a mine or a quarry.” Heavy machinery is used across the province to extract various aggregate products. As a fundamental construction material, aggregate plays a critical role in building and maintaining roads, buildings, and other key infrastructure.

## FUNCTIONALITY OF THIS DOCUMENT

In Alberta, the regulation of aggregate development and/or processing operations is shared between the provincial government and municipalities. Federal legislation may also apply in certain cases, depending on the nature and location of the activity

Municipalities typically regulate aggregate operations through land use bylaws and the issuance of development permits. To support the County’s ability to assess and manage aggregate operations, the Aggregate Development Performance Standards document was created. It establishes a clear framework of minimum standards and requirements that must be met by aggregate operations. Where warranted by the local landscape, resource type, or development pressures, the County may impose additional conditions. In the event of a conflict between any provincial and County regulations, provincial regulations shall take precedence.

While this document outlines baseline expectations, operators are encouraged to exceed them where feasible to enhance environmental stewardship and community well-being. Recognizing that each operation is unique, the County’s Municipal Development Plan and *Land Use Bylaw* allow an operator to request a relaxation of applicable standards, provided specific criteria are met. In such cases, the operator must submit a Terms of Reference to Council before submitting a formal application. A relaxation of standards will only be granted if approved by Council. If a relaxation is approved for a master site development plan or redesignation application, the relaxation may also apply to the associated development permit.

## HOW TO READ THIS DOCUMENT

This document uses three distinct phrases to clarify when specific items are required as part of an application. They are:

- Where the phrase “all applications for aggregate extraction and/or processing” is used, the item must be included in the application package for all master site development plan, redesignation, and development permit applications.
- Where the phrase “all applications for new or expanding aggregate extraction and/or processing” is used, the item is required only for master site development plan and redesignation applications.
- Where the phrase “all development permit applications for aggregate extraction and/or processing” is used, the item is required only for development permit applications



# Application Requirements & Standards



ROCKY VIEW COUNTY

## 1.0 ENGAGEMENT

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- 1.01** Community consultation shall be required for all new or expanding applications for aggregate extraction and/or processing prior to submitting a master site development plan application to the County.

### Open House Events

- 1.02** At a minimum, one open house event shall be held to present the details of the proposed new or expanding aggregate extraction and/or processing use to adjacent landowners and general community.
- 1.03** Open house events shall be advertised through mailed letters sent in accordance with Standards 1.07 to 1.10.
- 1.04** An open house event may also be advertised through:
- a) traditional or social media advertising in accordance with Standard 1.11; and/or
  - b) outdoor signage in accordance with Standard 1.12.
- 1.05** An open house event shall be held at a venue that is easily accessible by the nearby landowners and general community.
- 1.06** Alternate opportunities for providing information and engaging in discussion will be made readily available for landowners unable to attend an open house.

### Mailed Letters

- 1.07** Mailed letters sent as part of an open house advertisement shall be postmarked a minimum of 21 days prior to the date of the event.
- 1.08** Applicants shall be responsible for circulating the mailed letters. However, the content of the mailed letters shall be sent to the County 14 days prior to circulation to provide for reasonable time for review.
- 1.09** Mailed letters shall be circulated, at minimum to:
- a) all landowners within a 1.6 kilometre (one mile) radius of the subject land boundaries for the new or expanding aggregate extraction and/or processing site. Any properties located wholly within or partially within this radius shall be included within the circulation; and
  - b) all landowners adjacent to any projected haul routes.
- 1.10** Mailed letter shall outline alternate options for information and engagement for landowners unable to attend an open house.

## Traditional or Social Media Advertising

- 1.11** Applicants shall be responsible for advertising through any form of media. However, the content of the media advertising shall be sent to the County 14 days prior to circulation to provide for reasonable time for review.

## Outdoor Signage

- 1.12** Applicants shall be responsible for the placement of outdoor signage for the purposes of advertising an open house event. Applicants shall comply with the County's Council Policy C-327 (Circulation and Notification Standards) and any provincial standards when placing an outdoor sign.

## Engagement Summary

- 1.13** All applications for new or expanding aggregate extraction and/or processing shall include an Engagement Summary Report that details the consultation activities undertaken, advertising methods utilized, all feedback received, and how comments and concerns raised in the engagement process have been addressed.

## Engagement Plan

- 1.14** All applications for new or expanding aggregate extraction and/or processing shall include an Engagement Plan, which details how the Applicant/Owner will engage with landowners materially affected by the proposal. The Engagement Plan shall include:
- a) proposals for continued consultation following submission of an application including:
    - i update letters and/or meetings;
    - ii direct dialogue with the most affected landowners; and
    - iii appointment of company representative(s) to respond to stakeholder concerns.
  - b) proposals for engagement during establishment and operation of the development, which may include:
    - i use of a public project website to report on key events, monitoring and milestones;
    - ii use of update letters to landowners within a 1.6 kilometre (one mile) radius of the site;
    - iii the hosting of stakeholder meetings and/or formation of a stakeholder committee; and
    - iv appointment of a key engagement contact person to lead dialogue with stakeholders.

- c) an acknowledgement that the Applicant/Owner must submit quarterly engagement reports summarizing all communications received regarding aggregate extraction and hauling activities, along with the responses provided to those submissions.

## Engagement Plan Updates

- 1.15** All development permit applications for aggregate extraction and/or processing shall be required to submit an updated Engagement Plan if any details have changed from the Engagement Plan submitted in accordance with Standard 1.14.

## 2.0 TECHNICAL ASSESSMENTS OF APPLICATIONS

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- 2.01** All technical documents submitted with all applications for aggregate extraction and/or processing shall account for seasonal and annual fluctuations within the proposed development area. These documents shall also assess potential impacts based on the site's maximum daily operating capacity and include comparative calculations that reflect average operating conditions over the full lifespan of the development.
- 2.02** At the discretion of the County, through development permit conditions, limits may be imposed on the maximum operating capacity of a site based on the technical assessments provided to the County.
- 2.03** At the discretion of the County, a third-party review may be required for specific technical documents submitted as part of all applications for new or expanding aggregate extraction and/or processing. This review is intended to ensure a thorough assessment of potential impacts. The County may request third-party reviews only for the following technical documents:
  - a) Noise Impact Assessments;
  - b) Air Quality Impact Assessments;
  - c) Environmental Assessments;
  - d) Stormwater Management Reports;
  - e) Groundwater Impact Assessments; and
  - f) Traffic Impact Assessments.
- 2.04** The cost of an aggregate third-party reviews shall be the responsibility of the Applicant/Owner. This cost will reflect the actual expense of the review, including any applicable charges as outlined in the *Master Rates Bylaw*. The review fee must be paid by the Applicant/Owner prior to a final decision being made on the application. If the Applicant/Owner does not consent to the payment of aggregate third-party reviews, the relevant technical document will be noted as unassessed, which may impact the completeness and evaluation of the application.

## 3.0 ANNUAL REPORTING

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- 3.01** All approved aggregate extraction and/or processing operations shall submit annual reports to the County. Annual reports shall include the following:
- a) updated site plans;
  - b) all quarterly engagement reports;
  - c) all noise monitoring reports;
  - d) all air quality monitoring reports;
  - e) all groundwater monitoring reports;
  - f) technical documents, if amended;
  - g) projection of aggregate extracted;
  - h) status of the operation;
  - i) all reclamation activities that have occurred;
  - j) all additional reporting requirements as outlined in any approved:
    - i. master site development plan;
    - ii. direct control district; and/or
    - iii. development permit.
  - k) any additional information deemed necessary by the County.
- 3.02** In any year that a five-year report is required by the Government of Alberta for Class I aggregate pits, the five-year report shall be submitted as a component of the corresponding annual report.
- 3.03** All annual reports shall be submitted no later than two months after the cease of operations of the reporting year, unless otherwise stated as a condition of an:
- a) approved master site development plan;
  - b) approved direct control district; or
  - c) issued development permit.



# Performance Standards



ROCKY VIEW COUNTY

## 4.0 ACOUSTICS

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### Noise Impact Assessment

- 4.01** All applications for aggregate extraction and/or processing shall include a Noise Impact Assessment, undertaken by a qualified acoustic professional, in accordance with the Noise Impact Assessment methodology outlined in Appendix C of this document.
- 4.02** Noise Impact Assessments shall account for cumulative noise exposure from all existing and proposed aggregate extraction and processing operations, as well as any foreseeable developments with an active development permit or application within a 4.8 kilometre (three mile) radius.
- 4.03** All Noise Impact Assessments shall include two modelling scenarios:
- a) predicting noise without mitigation measures being in place (worst case); and
  - b) demonstrating noise after the implementation of the proposed mitigations measures identified in the Noise Mitigation Plan (residual).
- 4.04** With the exception of daytime temporary operations as described below, recorded sound levels shall not exceed the following for aggregate extraction and/or processing operations:
- a) daytime and evening (6:00 a.m. to 10:00 p.m. on weekdays (Monday to Friday); 9:00 a.m. to 10:00 p.m. on weekends (Saturday to Sunday)):
    - i 45 dB LAeq,1hr (free-field), or 5 dB above recorded ambient sound levels (measured as LA90), whichever is the lesser, at the nearest, or most impacted, dwelling(s) or institutional building(s);
    - ii where the recorded ambient sound levels are above 40 dB, site-specific sound levels recorded at the nearest, or most impacted, dwelling(s) or institutional building(s) shall not exceed 5 dB above the ambient sound level.
  - b) nighttime (10:00 p.m. to 7:00 a.m. on weekdays (Monday to Friday); 10:00 p.m. to 9:00 a.m. on weekends (Saturday to Sunday)):
    - i 35 dB LAeq,1hr (free-field) or 5dB above recorded ambient sound levels (measured as LA90,1hr, free-field), whichever is the lesser, at the nearest, or most impacted, dwelling(s) or institutional building(s);
    - ii where the recorded ambient sound levels (measured as LA90) are above 30 dB, site-specific sound levels recorded at the nearest, or most impacted, dwelling(s) or institutional building(s) shall not exceed 5 dB above the ambient sound level.
  - c) the lowest sound level limit, after respective 10 dB and 5 dB allowable adjustments, shall be 35 dB for daytime recordings and 30 dB LAeq,1hr (free-field) for nighttime recordings.

- 4.05** Where an aggregate extraction or processing operation exceeds the following noise levels during operation, the Applicant/Owner shall implement additional mitigation measures:
- a) 45 dB during daytime and evening hours;
  - b) 35 dB during nighttime hours.

## Temporary Daytime Operations

- 4.06** An increased daytime sound level of up to 55 dB LAeq,1hr (free-field), recorded at the nearest, or most impacted dwelling(s) or institutional building(s), for a total maximum period of 30 days (accumulated either in separate or consecutive days), shall be allowed for temporary operations in each calendar year. The increased sound level shall be used only to facilitate essential site preparation and reclamation works where these works will have a benefit to site operations and/or the local environment. Where ambient sound levels recorded within the Noise Impact Assessment are already above 55 dB LAeq, a 5 dB above ambient sound condition will apply.
- 4.07** Daytime temporary operations shall be limited to the following activities:
- a) soil-stripping;
  - b) the construction, maintenance and removal of berms and landscaping features;
  - c) construction of new permanent landforms;
  - d) site access construction and maintenance; or
  - e) any other infrequent works that are considered by the County to be necessary to attain environmental or amenity benefits in the long-term operation of the site.
- 4.08** The Applicant/Owner shall be required to notify the County of a temporary operation being undertaken. The notification shall include, at minimum:
- a) a detailed description of the temporary activities occurring on site; and
  - b) an estimated time and duration of the temporary activity.
- The County should be notified at least 48 hours before the temporary operation begins. Upon completion of the work, the Applicant/Owner shall submit written notice to the County that the temporary operation has concluded.
- 4.09** Increased daytime sound levels associated with temporary operations shall be permitted only between 7:00 a.m. and 5:00 p.m., Monday through Friday. Such operations shall not occur on Saturdays, Sundays, or statutory holidays.

## Noise Mitigation Plan

- 4.10** All applications for aggregate extraction and/or processing shall include a Noise Mitigation Plan outlining the measures that will be implemented to meet the criteria set out in Standard 4.04. Applicants are encouraged to minimize noise impacts as much as reasonably practicable, beyond the minimum requirements where possible.
- 4.11** The Noise Mitigation Plan should consider procedures in the following areas:
- a) planning, layout, and phasing;
  - b) equipment selection and specifications;
  - c) operational controls;
  - d) maintenance and housekeeping;
  - e) haul routes and traffic management;
  - f) training and culture;
  - g) blasting and vibration management; and
  - h) monitoring and verification.
- 4.12** Preference shall be given to hard mitigation measures over soft mitigations measures as identified in the reference box below. However, the submitted Noise Mitigation Plan shall include a combination of measures best suited to the proposal and its location.

### Hard Noise Mitigation Measure Examples

- a. Enclosure of louder activities within buildings;
- b. Construction of berms or other noise barriers between the site and neighbouring properties;
- c. Replacement, as far as possible, of tonal alarms with visual or broadband noise alarms;
- d. Installation of noise dampening apparatus on plant and machinery;
- e. Appropriate surfacing and grade of internal haul roads; and
- f. Siting of plant and machinery areas away from neighbouring properties.

### Soft Noise Mitigation Measure Examples

- a. Limitations on working hours;
- b. Regular maintenance of all plant and machinery;
- c. Use of plant and machinery that is suited to its application;
- d. Ongoing plant operator training and management of driver behaviour; and
- e. Planning of operations according to weather conditions, particularly wind strength and direction.

## Noise Monitoring Program

- 4.13** All applications for aggregate extraction and/or processing shall include a Noise Monitoring Program that includes a commitment to undertake sound surveys at appropriate intervals with assessment against set sound level limits for dwelling survey locations identified within the Noise Impact Assessment.

- 4.14** Monitoring duration and frequency shall be dependent on the site's proximity to the nearest, or most impacted, dwelling(s) or institutional building(s). It may range from short-term monitoring (e.g. intermittent or complaint-responsive) for sites that are remote from dwellings or institutional buildings to long-term monitoring (e.g. for the entire duration of the aggregate development) for those that are close to dwellings or institutional buildings. The monitoring duration shall submit sufficient representative sample of the sound environment with the subject development operating. The interval length will be determined by the County.
- 4.15** Noise monitoring reports detailing compliance with the approved sound level limits set out in above standard shall be submitted to the County at the following intervals:
- a) every three months for continuous or long-term monitoring; or
  - b) within 21 days of the sound survey being undertaken for complaint-responsive or intermittent, short-term monitoring.
- 4.16** Where exceedances are noted within any submitted sound survey report, the Applicant/Owner shall investigate the exceedance, and shall submit within the report any remedial actions taken, or to be taken, to the County for approval.
- 4.17** Within the Noise Monitoring Program, the Applicant/Owner shall set out a complaints procedure that details how any noise complaints from the public will be managed, including a commitment to investigate all reasonable complaints received by the County, where a complaint can be substantiated. In the event that a complaint is submitted directly to the Applicant/Owner, the Applicant/Owner shall forward the complaint to the County within one business day of receipt.
- 4.18** Where remedial actions are required following a monitoring survey report or substantiated complaint, they shall be implemented in accordance with the details of any approval given and within the timeline specified by the County. The Applicant/Owner shall inform the County when all required remedial actions are completed.

## 5.0 BLASTING

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- 5.01** Where a blasting operation may be undertaken for an aggregate extraction and/or processing operation, a Blasting Mitigation Plan shall be submitted. The Blasting Mitigation Plan shall include the following:
- a) an assessment of the potential noise, vibration, safety and nuisance impacts generated from blasting activities;
  - b) measures to limit the identified impacts of blasting including, at a minimum:
    - i a commitment to notify the County and landowners within a 1.6 kilometre (one mile) radius around the subject aggregate extraction and/or processing site, at least 48 hours prior to the activity occurring;

- ii installation of temporary and/or permanent signage notifying the public of blasting activities within the site;
  - iii confirmation that all employees/contractors directly involved in the blasting operation hold a Surface Mine Blaster certificate issued by the Government of Alberta;
  - iv installation of controls such as those identified below to limit the amount of flying material that may cause injury or damage to persons or property from such material, both within and outside of the site;
- c) an acknowledgment to respond to landowner complaints associated with blasting operations, including noise and vibration monitoring where necessary.

#### **Blasting Mitigation Measure Examples**

- a. Restrictions on where blasting may occur within a site including setbacks from property boundaries;
- b. Implementation of good blasting design for the material being extracted;
- c. Appropriate use of stemming techniques;
- d. Appropriate use of explosive being used for the site; and
- e. Use of blasting mats around detonation areas.

- 5.02** Blasting operations shall only be permitted between 7:00 a.m. and 5:00 p.m., Monday through Friday. Such operations shall not occur on Saturdays, Sundays, or statutory holidays.

## **6.0 AIR QUALITY**

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### **Air Quality Impact Assessment**

- 6.01** All applications for aggregate extraction and/or processing shall include an Air Quality Impact Assessment, undertaken by a qualified air quality professional, in accordance with the guidance set out within the Alberta Air Quality Model Guidelines as amended or replaced.
- 6.02** Air Quality Impact Assessments shall account for cumulative emissions exposure from all existing and proposed aggregate extraction and processing operations, as well as any foreseeable developments with an active development permit or application within a 4.8 kilometre (three mile) radius.
- 6.03** All Air Quality Impact Assessments shall include two modelling scenarios:
- a) predicting emissions without mitigation measures being in place (worst case); and
  - b) showing emissions after the implementation of proposed mitigation measures identified in the Emissions Mitigation Plan (residual).

- 6.04** All applications for aggregate extraction and/or processing shall reduce emissions to the lowest practicable level, in accordance with the guidelines of the South Saskatchewan Region Air Quality Framework. Emission levels for aggregate operations shall, at a minimum, meet the following criteria:
- a) PM<sub>2.5</sub> 24-hour average 27 µg/m<sup>3</sup> (Canadian Ambient Air Quality Standards);
  - b) PM<sub>10</sub> 24-hour average of 45 µg/m<sup>3</sup> (World Health Organization);
  - c) TSP 24-hour average 100 µg/m<sup>3</sup> (Alberta Ambient Air Quality Objectives);  
and
  - d) all other air pollutants of concern shall be assessed, if required, against the thresholds stated within the Alberta Ambient Air Quality Objectives.

## Emissions Mitigation Plan

- 6.05** All applications for aggregate extraction and/or processing shall include an Emissions Mitigation Plan, outlining the measures that will be implemented to meet the criteria set out in Standard 6.04. Applicants are encouraged to minimize emissions as much as reasonably practicable, beyond the minimum requirements where possible.
- 6.06** Preference shall be given to hard mitigation measures over soft mitigations measures as identified in the reference box below. However, the submitted Emissions Mitigation Plan shall include a combination of measures best suited to the proposal and its location.
- 6.07** The Emissions Mitigation Plan shall identify thresholds, and a strategy for temporarily shutting down site operations in the event of adverse weather conditions or unexpected site incidents, to prevent exceedances of the limits identified within Standard 6.04.

### Hard Mitigation Measure Examples for Emissions

- a. Paving of internal haul roads;
- b. Enclosing processing plant within buildings;
- c. Siting of plant and machinery away from neighbouring properties;
- d. Provision of landscaping around the perimeter of the site, or around the dust emitting activity;
- e. Installing dust suppression and containment measures on plant and machinery;
- f. Seeding and landscaping of berms and other open areas not directly affected by extraction operations;
- g. Installing emission reduction technology on site vehicles; and
- h. Use of conveyors to reduce vehicle movement around site;

### Soft Mitigation Measure Examples for Emissions

- a. Spraying of stockpile and plant areas during dry and windy conditions;
- b. Arranging product and soil stockpiles in a way that limits dust creation;
- c. Use of plant and machinery that is suited to its application;
- d. Continual plant operator training, and management of driver behaviour;
- e. Compliance with the Code of Practice for Asphalt Paving Plants (as amended) in the use of such plant; and
- f. Planning of operations according to weather conditions, particularly wind strength and direction, including site shutdowns where necessary.

## Air Quality Monitoring Program

- 6.08** All applications for aggregate extraction and/or processing shall include an Air Quality Monitoring Program that includes a commitment to undertake air quality surveys at appropriate intervals, with assessment against set limits identified within the Air Quality Impact Assessment. The Monitoring Program shall be in accordance with the guidance set out within the Government of Alberta’s Air Monitoring Directive, as amended or replaced.
- 6.09** Monitoring duration and frequency shall be dependent on the site’s proximity to the nearest or most impacted, dwelling(s) or institutional building(s) and other relevant geophysical or meteorological considerations. It may range from short-term monitoring (e.g. intermittent or complaint-responsive) for sites that are remote from dwellings or institutional buildings, to long-term monitoring (e.g. for the entire duration of the aggregate development) for those that are close to dwellings or institutional buildings. The interval length will be determined by the County.
- 6.10** Air quality monitoring reports detailing compliance with the approved air quality level limits set out within the Air Quality Impact Assessment shall be submitted to the County at the following intervals:
- a) every three months for continuous or long-term monitoring; or
  - b) within 21 days of the air quality monitoring being completed for complaint-responsive or intermittent short-term monitoring.
- 6.11** Where exceedances are noted within any submitted air quality monitoring report, the Applicant/Owner shall investigate the exceedance, and shall submit within the report any remedial actions taken, or to be taken, to the County for approval.
- 6.12** Within the Air Quality Monitoring Program, the Applicant/Owner shall set out a complaints procedure that details how any air quality complaints from the public will be managed, including a commitment to investigate all reasonable complaints received by the County, where a complaint can be substantiated. In the event that a complaint is submitted directly to the Applicant/Owner, the Applicant/Owner shall forward the complaint to the County within one business day of receipt.
- 6.13** Where remedial actions are required following a monitoring report or complaint, these shall be implemented in accordance with the details of any approval given and within the timescale specified by the County in that approval. The Applicant/Owner shall inform the County when all required remedial actions are completed.

## 7.0 TRAFFIC SAFETY

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### Traffic Impact Assessment

- 7.01** All applications for aggregate extraction and/or processing that would create traffic movements to and from a site shall include a Traffic Impact Assessment, prepared by a Registered Professional Engineer, in accordance with the County’s Servicing Standards.

- 7.02** In addition to the details required by the County's Servicing Standards, the Traffic Impact Assessment shall provide:
- a) details of the haul routes to and from;
  - b) the site (including a haul route plan);
  - c) provide a forecast for the proportion of overall traffic movements that travel along each routes; and
  - d) a breakdown of the predicted market designations.
- 7.03** The Traffic Impact Assessment will provide recommendations for any required improvements to the road network to safely accommodate the traffic generated.
- 7.04** The Traffic Impact Assessment shall demonstrate, to the satisfaction of the County, the following:
- a) access arrangements would be safe and appropriate to the proposed development;
  - b) the impact of the traffic generated would not compromise road safety; and
  - c) the surrounding road network would be able to accommodate the traffic that could be generated.

## Traffic Impact Assessment Update

- 7.05** All development permit applications for aggregate extraction and/or processing shall be required to submit an updated Traffic Impact Assessment, in accordance with the requirements outlined in Standard 7.02, where a Traffic Impact Assessment has previously been approved for a subject site.

## Traffic Management Plan

- 7.06** All applications for aggregate extraction and/or processing that may create additional traffic movements to and from a site shall submit a Traffic Management Plan that demonstrates the proposal would not materially interfere with or affect the use and enjoyment of properties adjacent to the site. The Traffic Management Plan shall include:
- a) measures for controlling the driving behaviour of aggregate haulers (both third party haulers, and those employed directly by the operator) together with disciplinary procedures for non-compliance. The use of In-Vehicle Monitoring Systems should be proposed by Applicants/Owners;
  - b) evidence of driver training requirements for aggregate haulers that will access the site;
  - c) evidence that drivers are provided an orientation to the requirements of any applicable road use agreements with the County;
  - d) evidence of membership in a truck registry program, such as the Alberta Sand and Gravel Association Truck Registry. Vehicles with a gross vehicle weight of less than 14,600 kg will be exempt from meeting this requirement;

- e) a commitment to avoid the use of engine retarder brakes where:
  - i) signs prohibiting the use of engine retarder brakes are posted; and
  - ii) within 500 metres of a dwelling;
- f) evidence of, or commitment to obtain, any required road use permits or approvals from the County or Alberta Transportation and Economic Development (or any succeeding provincial office);
- g) measures to control the impacts of traffic movements associated with the site upon local residents, agricultural traffic and other road users;
- h) measures to prevent vehicles parking or queuing within the public road network, including, where appropriate, a vehicle waiting/parking area within the site;
- i) proposals to reduce safety conflicts between site traffic and other road users on the roads surrounding the site;
- j) a commitment to prohibit the overloading of trucks;
- k) measures to prevent the generation of dust from truck and other equipment traveling on County roads; and
- l) measures to ensure all vehicles leaving a site are in a state that will prevent materials or debris from being deposited on the road network.

## Development Agreement/Road Use Agreement

- 7.07** As a condition of a development permit approval for aggregate extraction and/or processing use, the Applicant/Owner may be required to enter into a Development Agreement with the County that may cover the following matters:
- a) implementation of any necessary off-site road improvements or intersection upgrades identified in an approved Traffic Impact Assessment;
  - b) the requirement to upgrade and repair designated roads affected by the hauling operations of the aggregate development, to the satisfaction of the County; and
  - c) any other matter the County deems necessary.
- 7.08** As a condition of a development permit approval for aggregate extraction and/or processing use, the Applicant/Owner may be required to enter into a Road Use Agreement with the County that may cover the following matters:
- a) protection and maintenance of the County's road network where a proposed haul route will not be upgraded to an adequate commercial / industrial standard for any reason;
  - b) protection and maintenance of completed infrastructure improvements for the duration of hauling activities following issuance of a Final Acceptance Certificate by the County for any completed off-site road improvement or intersection upgrade;

- c) hauling over road ban weight restrictions, which are applied seasonally by the County across the network, for any reason; and
- d) provision of a refundable security, which may be drawn upon in the event that the Applicant/Owner fails to repair road damage attributed to their hauling activities;
- e) any other matter the County deems necessary.

**7.09** Where a Development Agreement or Road Use Agreement already exists for a subject aggregate site, the County may require amendments to the agreement(s) to ensure coverage of the above matters.

## 8.0 VISUAL AND LANDSCAPES

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### Visual and Landscape Impact Assessment

- 8.01** All applications for new or expanding aggregate extraction and/or processing shall include a Visual and Landscape Impact Assessment, undertaken by a qualified landscape professional. The Landscape Impact Assessment shall identify the following:
- a) character of the existing landscape (e.g. historical development and land use pattern);
  - b) notable landscape features;
  - c) existing topography, including elevation levels, both within the site and surrounding area;
  - d) anticipated visual and landscape impacts of the proposed activities;
  - e) any anticipated changes to topography;
  - f) anticipated level of vegetation removal required;
  - g) any historical changes to the landscape;
  - h) consideration of the phasing of extraction and reclamation, and how landscape impacts may change over the life of the operation; and
  - i) all significant sight lines into the proposed site.
- 8.02** Visual and Landscape Impact Assessments should include appropriate photo montages, cross-sections, and site plans to clearly illustrate the potential visual impacts of the proposal.

## Landscaping Plan

- 8.03** All applications for aggregate extraction and/or processing shall include a Landscape Plan that outlines the measures that will be taken to minimize the proposal's impacts on visual amenity and landscape character. Such measures should include, but not be limited to:
- a) screening of primary sightlines into the site, through berms and landscaping;
  - b) retaining important landscape features and boundary treatments;
  - c) locating plant and machinery areas appropriately, according to the topography of the site;
  - d) ensuring progressive reclamation and aftercare of reclaimed areas for a minimum of one year, subject to review;
  - e) submission and implementation of a maintenance schedule for existing and proposed on-site vegetation;
  - f) ensuring the appearance, design, and mass of any buildings on-site are sensitive to the surrounding areas;
  - g) minimizing the plant and stockpiling site footprint;
  - h) removing any equipment, vehicles, or plant/facility from the site when not in use for a prolonged period of time;
  - i) identifying how and where stripped topsoil can be retained on site for future reclamation; and
  - j) ensuring the site is kept in an orderly and tidy manner.
- 8.04** The Landscape Plan shall include site plans showing the location of all existing and proposed landscaping and other screening measures within the site.
- 8.05** The initial Landscape Plan submitted should identify proposed visual and landscape measures for a period of 10 years from the date of commencement of the proposed operations, or for the life of the operation, whichever is the lesser period.

## Landscaping Plan Update

- 8.06** All renewals of applications for development permits for aggregate extraction and/or processing shall submit an updated Landscaping Plan from the initial Landscaping Plan that shows the proposed visual and landscape measures will suffice for a minimum of five years subsequent to the date when the renewal application is submitted.

## 9.0 AGRICULTURE

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- 9.01** All applications for new or expanding aggregate extraction and/or processing shall look to minimize the loss of the County's productive and versatile agricultural land. Aggregate extraction and/or processing on agricultural lands shall meet the following criteria:
- a) placement of ancillary plant and buildings associated with extraction shall be upon areas of lower relative agricultural quality within the site;
  - b) progressive reclamation techniques shall be adopted to reduce the time that agricultural land is lost to aggregate development; and
  - c) commitment shall be made to reclaiming the lands back to their previous agricultural quality or better. Where this is not possible, it should be demonstrated that another beneficial land use will be secured through site reclamation to offset the loss of agricultural land.
- 9.02** All applications for new or expanding aggregate extraction and/or processing within 400 metres of a confined feeding operation shall prepare an Agricultural Impact Assessment that will include the following:
- a) quantify impacts to livestock from:
    - i dust;
    - ii noise;
    - iii light;
    - iv sound;
    - v vibration; and
    - vi biosecurity.
  - b) quantify impacts to agricultural production and activity resulting from end use reclamation plans including the location of end-pit lakes;
  - c) site specific mitigation plan to minimize impacts to agricultural producers and activities; and
  - d) any other factors the County considers reasonable and appropriate.
- 9.03** All applications for aggregate extraction and/or processing on a site adjacent to a parcel zoned for agricultural use, as defined in the County's *Land Use Bylaw*, shall consider the County's *Agricultural Boundary Design Guidelines*. The application shall also consider implementing appropriate aesthetic measures, such as the construction of berms or fences, and thoughtful placement of the operating site.

## 10.0 NATURAL AND HISTORIC ENVIRONMENTS

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### Environmental Features

- 10.01** All applications for new or expanding aggregate extraction and/or processing shall include an Environmental Assessment Report that adheres to the framework established in the County's Servicing Standards. Applications shall be compliant with all applicable provincial and federal legislation relating to the protection of environmental features.
- 10.02** Where a submitted Environmental Assessment Report identifies Valued Ecosystem Components that may be affected by the proposal, the Environmental Assessment Report shall outline measures to mitigate or compensate for any potential impact caused.
- 10.03** The County shall circulate all applications for aggregate extraction and/or processing and associated development to the Alberta Ministry of Environment and Protected Areas (or any succeeding provincial office) for comment.

### Riparian Protection Areas

- 10.04** Aggregate extraction and/or processing activities should be avoided within Riparian Protection Areas as defined in the County's *Land Use Bylaw*. Any proposed activities shall be in accordance with all applicable provincial legislation, the County's *Land Use Bylaw*, the County's *Municipal Development Plan*, and County Council Policy C-419 (*Riparian Land Conservation and Management Policy*).
- 10.05** The removal of trees shall not be permitted for aggregate extraction or processing within a Riparian Protection Area, as defined in the County's *Land Use Bylaw*, unless written approval is obtained from the County. All applications for aggregate extraction or processing that propose the removal of trees within a Riparian Protection Area shall include:
- a) site plan clearly identifying the proposed area of tree removal, including an estimate of the number of trees to be removed;
  - b) rationale outlining the necessity of the tree removal;
  - c) description of proposed mitigation measures and/or compensation measures; and
  - d) written endorsement by a qualified arboricultural, landscape or geotechnical professional, as appropriate.

### Historical Resources

- 10.06** All applications for new or expanding aggregate extraction and/or processing shall include a Historical Resource Impact Assessment that adheres to the framework established in the County's Servicing Standards. All applications for aggregate extraction and/or processing shall be compliant with all applicable federal and provincial legislation relating to the protection of historical features.

- 10.07** All Applicants/Owners are encouraged to consult the Government of Alberta's most current listing of historic resources prior to submitting an application.
- 10.08** The County shall circulate applications for all aggregate extraction and/or processing to the Alberta Ministry of Arts, Culture, and Status of Women (or any succeeding provincial office) for comment.

## 11.0 GEOTECHNICAL

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- 11.01** All applications for new or expanding aggregate extraction and/or processing shall include a Geotechnical Evaluation Report that adheres to the framework established in the County's Servicing Standards and is prepared by a registered professional engineer.
- 11.02** In addition to the requirements set out within the County's Servicing Standards, the Geotechnical Evaluation Report shall, at minimum, include recommendations on:
- a) safe slope gradients for extraction areas, internal haul routes, and reclaimed lands; and
  - b) mitigation measures to be protective of any neighboring assets such as roads, buildings, etc. that may be impacted by the activities.
- 11.03** The recommendations outlined in the Geotechnical Evaluation Report shall be incorporated into both the Operations Plan and the Reclamation Plan submitted as part of an application for aggregate extraction and/or processing.

## 12.0 WATER

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### Surface Water

- 12.01** All applications for new or expanding aggregate extraction and/or processing shall submit a conceptual-level Stormwater Management Report that adheres to the framework established in the County's Servicing Standards.
- 12.02** All development permit applications for aggregate extraction and/or processing shall submit a comprehensive Stormwater Management Report that adheres to the framework established in the County's Servicing Standards.
- 12.03** Where an existing site has a Stormwater Management Report previously approved by the County, or a similar stormwater plan approved by the Province, the Applicant/Owner shall submit an updated report or plan reflecting any changes in site operations since the original approval.
- 12.04** All applications for aggregate extraction and/or processing and associated Stormwater Management Reports shall be compliant with any relevant watershed management plans, provincial legislation, and guidelines relating to surface water flow and quality.

## Groundwater

- 12.05** All applications for new or expanding aggregate extraction and/or processing shall submit a Groundwater Impact Assessment that assess the impacts the proposed activities will have on groundwater quality and levels within both the site itself and hydrogeological connected lands. The Groundwater Impact Assessment shall be undertaken by a qualified hydrogeological professional and shall include:
- a) a statement on the underlying water table;
  - b) installation of a minimum of three piezometers/monitoring wells within the site, installed to a depth below the proposed floor of the extraction area;
  - c) assessment of the static groundwater table within the site, supported by groundwater level measurements taken upon completion of drilling, one day after drilling, seven days after drilling, 14 days after drilling, one month after drilling, and once a month thereafter for 11 consecutive months;
  - d) determination of the groundwater flow direction, hydraulic conductivity and gradient; and
  - e) assessment of baseline groundwater quality through collection and analysis of groundwater samples by an accredited environmental laboratory for general chemistry parameters, metals, and any other analyte deemed appropriate by a qualified hydrogeologist professional.
- 12.06** All aggregate extraction and/or processing activities shall be undertaken at minimum of 1.0 metres above the identified groundwater table as detailed in the Groundwater Impact Assessment.
- 12.07** All applications for new or expanding aggregate extraction and/or processing shall include a Groundwater Monitoring Plan, where the proposed activities will take place between 1.0 to 5.0 metres above the groundwater table. A Groundwater Monitoring Plan shall be undertaken in accordance with the methodology outlined in Appendix D.
- 12.08** All applications for aggregate extraction and/or processing shall be compliant with the applicable provincial legislation and frameworks relating to water flow and quality.
- 12.09** All applications for aggregate extraction and/or processing that impact a water body or when the work will divert and use surface or groundwater will obtain approval under the *Alberta Water Act*.

## Surface Water and Groundwater Mitigation Plan

- 12.10** All applications for aggregate extraction and/or processing shall submit a Surface Water and Groundwater Mitigation Plan, the detail of which shall be dependent upon the scale and type of development proposed and its anticipated impacts upon surface water and groundwater features. The Surface Water and Groundwater Mitigation Plan shall include:

- a) identification of any potentially polluting substances to be brought onto the site, and measures to ensure that such substances are stored in a way that cannot result in contamination of ground or surface water;
- b) a site plan showing the storage location of all potentially polluting substances and a contingency plan describing proposed procedures to remedy any contamination on-site;
- c) identification of any proposed water usage within the site and how used water will be stored, recycled, and/or discharged; and
- d) a summary of any required provincial approvals under the *Alberta Water Act* for applicable operations on-site, and a commitment to obtaining those approvals prior to proceeding with operations.

## 13.0 EROSION AND SEDIMENT

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**13.01** All applications for new or expanding aggregate extraction and/or processing shall submit an Erosion and Sedimentation Control Strategy that outlines measures that will be implemented on-site to minimize sedimentation to the satisfaction of the County. An Erosion Control Strategy shall:

- a) avoid applying a “one-size-fits-all” approach to erosion and sediment control. Except for basic housekeeping practices, the planning and selection of control strategies should be tailored to the specific site conditions;
- b) consider all erosion and sedimentation processes, rather than focusing solely on water runoff. Dust generation, wind erosion, and operational activities can also contribute to the transport of materials that cause off-site impacts;
- c) plan and implement practices to control erosion at the source rather than at the site boundary;
- d) identify and recognize high value ecological resources, infrastructure, and property adjacent to and affected by construction sites;
- e) identify measures for off-site mud control;
- f) consider site specific soil types, seasonal variations in climate, and topography;
- g) respond to operational conditions that change over the course of the development on-site;
- h) ensure a program of timely inspection and maintenance of erosion and sediment control practices; and
- i) adhere to relevant federal, provincial and municipal legislation and standards.

- 13.02** All development permit applications for aggregate extraction and/or processing shall include an Erosion and Sediment Control Report.
- 13.03** Where necessary, the County may refer an application to the Agricultural Service Board and/or the Soil Conservation Officer acting under the Alberta Soil Conservation Act to advise on the impact of topsoil removal.

## 14.0 LIGHTING

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- 14.01** All lighting associated with aggregate extraction and/or processing shall comply with the requirements of the County's *Land Use Bylaw*.
- 14.02** All development permit applications for aggregate extraction and/or processing that anticipate nighttime operations shall require a Lighting Plan be submitted to the satisfaction of the County.
- 14.03** A Lighting Plan shall include a:
- a) description of the location and direction of all external lighting on-site;
  - b) description of measures taken to shield direct glare onto adjacent properties; and
  - c) projection of light patterns in relation to adjacent properties, roadways and developments.

## 15.0 HOURS OF OPERATION

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### General

- 15.01** All applications for aggregate extraction and/or processing shall specify the proposed hours of operation for extraction, processing, and hauling activities. The proposed hours shall align with the guidelines set out in Standards 15.03 to 15.05.
- 15.02** Where an application for aggregate extraction and/or processing proposes operation hours beyond these guidelines, a rationale shall be provided, and the potential impacts on surrounding land users and road safety shall be fully addressed within the application.

### Extraction and Processing Operations

- 15.03** The hours of operation for aggregate extraction and/or processing shall only take place within the hours specified by the County through development permit conditions. In considering appropriate permit conditions, the County shall take into consideration the following guidelines for hours of operation:
- a) 6:00 a.m. to 7:00 p.m., Monday to Friday;
  - b) 9:00 a.m. to 5:00 p.m., on Saturdays; and
  - c) no operations on Sundays or statutory holidays.

## Hauling Operations

- 15.04** The hours of operation for hauling operations associated with the import and export of materials shall take place only within the hours specified by the County through development permit conditions. In considering appropriate permit conditions, the County shall take into consideration the following guidelines for hours of operation:
- a) 7:00 a.m. to 7:00 p.m., Monday to Friday;
  - b) 9:00 a.m. to 4:00 p.m., on Saturdays; and
  - c) no hauling on Sundays or Statutory Holidays.

## Maintenance Operations

- 15.05** The scheduled maintenance of plant, machinery, equipment or vehicles associated with aggregate development and/ or processing may be considered outside of the guideline hours of operation stated in Standards 15.03 and 15.04, subject to the Applicant/Owner committing to providing the County no less than 48 hours' notice for each incident of scheduled maintenance. Restrictions on scheduled maintenance operations and the prior notification process shall be imposed through the conditions of any development permit.

## 16.0 WEED CONTROL

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- 16.01** All applications for aggregate extraction and/or processing shall adhere to the provisions of the *Alberta Weed Control Act*.
- 16.02** All development permit applications for aggregate extraction and/or processing shall submit a Weed Control Plan that includes:
- a) an initial pre-construction identification and documentation of weed species identified as either prohibited noxious or noxious in the *Alberta Weed Control Act* prior to any ground disturbance;
  - b) identification of control methods throughout the life of the site, ensuring all prohibited noxious or noxious weed species are prevented from going to seed; and
  - c) identification of the party responsible for weed control during the life of the site.

## 17.0 SITE SECURITY AND EMERGENCIES

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- 17.01** All applications for aggregate extraction and/or processing shall submit a Site Security Plan. The Site Security Plan should outline the measures that will be implemented to restrict access to the site. The Site Security Plan shall, at minimum, include:
- a) measures to restrict public access;
  - b) measures to restrict wildlife and where necessary livestock;

- c) site signage; and
- d) any additional security features deemed necessary to the specific site.

**17.02** All applications for aggregate extraction and/or processing shall submit an Emergency Management Plan that details emergency response procedures.

## 18.0 RECLAMATION

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### Interim Reclamation

**18.01** Where an aggregate site has been inactive for one year, over and above seasonal fluctuations in activity, the County may request an Interim Reclamation Plan to ensure that the extraction area and associated infrastructure does not generate adverse amenity, safety, or environmental impacts. The Interim Reclamation Plan shall include a timeline for interim reclamation and shall include measures to:

- a) prevent unauthorized access to the site;
- b) lessen and stabilize slopes around the extraction void;
- c) remove stockpiles, plant, and machinery from the site;
- d) backfill worked-out areas;
- e) ensure all backfill areas and soil storage are appropriately seeded;
- f) ensure litter removal, weed control, and boundary treatment maintenance; and
- g) where appropriate, establish perimeter landscaping.

**18.02** If aggregate development does not resume within the timeframe specified by the County in its approval of the Interim Reclamation Plan, which shall not exceed five years from the date of approval, the Applicant/Owner shall submit an alternative Reclamation Plan for the permanent reclamation of the site. The alternative Reclamation Plan shall include all information required under Standard 18.03.

### Final Reclamation

**18.03** All applications for aggregate extraction and/or processing shall include a Reclamation Plan that includes the following information:

- a) a pre-extraction topographical survey plan, with cross-sectional drawings where the site has significant changes in grade across the subject land;
- b) a conceptual reclamation plan, showing proposed gradients across the site, final surface elevations, intended landscaping, wetlands, and drainage;
- c) a reclamation phasing plan, illustrating the sequence and anticipated timescales for reclamation;
- d) an assessment of the potential after-uses and the provision of associated plans, where applicable;

- e) an assessment of the likely volume of soils, overburden, and other reclamation materials available within the site for reclamation;
- f) details of the phased removal or alteration of buildings, structures, and internal roads, together with access provisions for the reclaimed site, and proposals for the decommissioning of any water wells on-site;
- g) details of progressive reclamation techniques, showing how the footprint of extraction and associated operations will be minimized by prompt reclamation of previously worked-out areas;
- h) a soil storage, handling, and placement strategy, together with details regarding the management of aggregate by-products;
- i) an assessment of any impacts of reclamation upon groundwater resources (including quality and groundwater rebound);
- j) details of final landscaping and habitat creation to remain on site following reclamation;
- k) proposal of any measures to enhance reclaimed land become established, including maintenance of the reclaimed lands; and
- l) a commitment to submitting site plans on an annual basis throughout the life of extraction and reclamation operations showing all soil movements and reclamation works undertaken in the previous year.

**18.04** The Reclamation Plan shall also confirm whether any imported fill would be required to achieve the desired final landform. If so, the Reclamation Plan shall include the likely volume of fill required, and details on placement of the material. Unless specifically assessed as part of any redesignation and development permit application for aggregate development, the importation of fill will require a separate development permit controlled by the requirements of the *Land Use Bylaw*.

**18.05** For existing aggregate sites that have an existing Reclamation Plan approved by the County and the Province, the Applicant/Owner shall update that existing scheme to meet the above information requirements.

**18.06** All applications for aggregate extraction and/or processing shall include statements that the Applicant/Owner shall make reasonable efforts to ensure that the land be returned to a state in which it contributes to and enhances the natural environment. This may be achieved through habitat creation and landscaping that is sensitive to the local environment.

**18.07** Upon reclamation of an aggregate extraction or processing site, the Applicant/Owner shall apply for redesignation of the lands to an appropriate agricultural land use district, provided that such agricultural uses are compatible with the requirements of the County's *Land Use Bylaw* and the prevailing land uses in the surrounding area. Redesignation proposals for non-agricultural land uses shall be assessed in accordance with the relevant planning policies adopted by the County at the time of the application. All costs associated with redesignating the land back to an agricultural use shall be borne by the Applicant/Owner.



# Appendix A: Definitions



ROCKY VIEW COUNTY

## APPENDIX A: DEFINITIONS

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**Aggregate extraction and/or processing** means development for the removal, extraction, or primary processing of any sand, silt, gravel, shale, clay, marl, limestone or gypsum that is excavated from the surface of a site, whether in a processed or unprocessed form, but does not include such material that is expected to be unsuitable for sale. Typical facilities or uses would include gravel pits (and associated crushing operations), asphalt processing, sand pits, clay or marl pits.

**Ambient Sound Level** means the total recorded sound level from all sources that currently exist in an area, excluding sound from the use or development being assessed. It includes sounds from other adjacent land uses (such as aggregate extraction, industrial, commercial, and agricultural), transportation sources, animals, and nature. Ambient sound level can use various sound level indices such as Leq, L90, LFmax etc.

**Animal Health Care Service** means a development such as a hospital or shelter used for the temporary or overnight accommodation, care, treatment, or impoundment of animals both considered as domestic pets or farm animals. This would include pet clinics, animal veterinary clinics and veterinary offices with or without outdoor pens, runs and enclosures, but not kennels.

**Berm** means a constructed barrier of overburden or topsoil, seeded and often planted with trees and shrubs.

**Blasting Operation** means the controlled use of explosive materials or other methods to break up hard rock deposits within a pit, allowing for extraction and further processing of the material. The blasting operation starts when the charge is placed and ends when all explosives' materials are removed from the blasted area.

**Child Care Facility** means a development for the provision of care, instruction, maintenance or supervision of seven or more children under the age of 13 years, by persons other than one related by blood or marriage, for periods not exceeding 24 consecutive hours and includes all day-care centres, early childhood services, nurseries and after-school or baby-sitting programs which meet this definition.

**Confined Feeding Operation** means fenced or enclosed land or buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing and any other building or structure directly related to that purpose but does not include residences, livestock seasonal feeding and bedding sites, equestrian stables, auction markets, race tracks or exhibition grounds.

**dB** means decibel, which is a widely used unit of measurement for sound energy.

**dB(A)** means a widely used unit of measurement that reflects the amplitude of sounds in air as perceived by the human ear. It denotes decibels that have been A-weighted to replicate the frequency response of a human ear from a microphone measurement.

**dB(C)** means C-weighted sound. It estimates the sensitivity of human hearing at sound levels above 85 dB(A). The C-weighted sound level is more sensitive to sounds at low frequencies than the A-weighted sound level and is sometimes used to assess the low-frequency content of complex sound environments, however, octave and third-octave band levels should be used where appropriate for a robust assessment of the frequency content of a sound.

**Dwelling** means any building or structure used principally for human habitation and which is supported on a permanent foundation or base. The building or structure must not be mobile and should have features that indicate a degree of permanence, such as electrical power or a domestic water supply. A building or structure used principally for human habitation, located on land either owned by the Applicant or on land owned by another aggregate operator that is accessory to an aggregate extraction and/or processing development, shall not constitute a dwelling for the purposes of this document.

**Educational Facility** means any building used for instruction of enrolled students, including any nursery school, public or private school, college, university, or career and technical education school.

**Expanding Aggregate Extraction and/or Processing** means any development that would extend beyond the site boundaries defined by a previous land use and/or master site development plan approval, or by an existing development permit approval.

**Free-field** means a sound measurement that is taken at a distance from any sound-reflecting surfaces, such as walls, fencing, or other physical barriers, typically where the reflective surface is greater than 3.5 m from the microphone.

**Groundwater Table** means the level below which the ground is saturated with water in a given vicinity.

**Hard Mitigation** means a mitigation measure which is a physical, technical or engineered solution to reducing impacts of a development. Examples may include the construction of berms, landscaping or installation of dust suppression equipment on machinery.

**Inactive** means a site, or any part of a site, in which development relating to a development permit for aggregate extraction and/or processing, or other works to which a condition of that development permit relates, is not being carried out to any substantial extent.

**Institutional Building** means a development that is used for institutional uses limited to animal health care services, child care facilities, educational facilities, medical treatment services, religious assembly and special care facilities.

**LAeq** means the equivalent continuous level when taking a sound recording. It is the average sound energy recorded over a specified period. For example, LAeq,1hr means the average sound energy recorded over a 1-hour period.

**LA90** means the sound level that has been exceeded for 90% of the time under which a sound recording has been taken. This can be used as a potential representation of the underlying background sound in an acoustic environment.

**Land Use Bylaw (LUB)** means Bylaw C-8000-2020, the *Land Use Bylaw*, as amended or replaced.

**Low Frequency Noise** means the incidence where a clear tone is present below and including 250 Hz. This may or may not be tonal. A high-level assessment could be completed by if the difference between the overall C-weighted sound level and A-weighted sound level is trending towards 20 dB. For accurate assessment, octave band analysis should be used.

**Medical Treatment Service** means a development providing room, board, and surgical or other medical treatment for the sick, injured, or infirm including out-patient services and accessory staff residences. Typical facilities would include hospitals, sanitariums, nursing homes, convalescent homes, psychiatric hospitals, auxiliary hospitals, and detoxification centres.

**Microgram ( $\mu\text{g}$ )** means the widely used unit of measurement for particulate matter in assessing air quality and represents one billionth ( $1 \times 10^{-9}$ ) of a kilogram, one millionth ( $1 \times 10^{-6}$ ) of a gram, or one thousandth ( $1 \times 10^{-3}$ ) of a milligram.

**Municipal Development Plan** means Bylaw C-8653-2025, the Municipal Development Plan), as amended or replaced.

**Overburden** means material below the topsoil layer and above the aggregate to be extracted. This material often comprises loose sediment and material that is not an economically viable resource for extraction.

**Qualified Acoustic Professional** means an individual practicing as an acoustics professional in Alberta, holding a professional designation.

**Qualified Air Quality Professional** means an individual practicing as an air quality professional in Alberta, holding a professional designation.

**Qualified Hydrogeological Professional** means an individual practicing as a hydrogeological professional in Alberta, holding a professional designation.

**Qualified Landscape Professional** means a certified member of the Alberta Association of Landscape Architects holding an endorsement stamp or a County approved landscape professional.

**Registered Professional Engineer** means a professional licensed by the Association of Professional Engineers and Geoscientists of Alberta in their relative field.

**PM<sub>2.5</sub>** means particulate matter 2.5 micrometers or less in diameter. It is used as a standard in the measurement of air quality, and represents the finer particles that are found in air. Both PM<sub>2.5</sub> and PM<sub>10</sub> are inhalable and, therefore, have potential health impacts.

**PM<sub>10</sub>** means particulate matter 10 micrometers or less in diameter. It is used as a standard in the measurement of air quality. Both PM<sub>2.5</sub> and PM<sub>10</sub> are inhalable and, therefore, have potential health impacts.

**Progressive Reclamation** means the method of restoring and reclaiming an aggregate site in phases concurrent with extraction activities, as opposed to reclaiming a site once extraction is completed in its entirety. Overburden and other reclamation materials are backfilled into the void left by previous activities, and then returned to the intended end use.

**Religious Assembly** means a development owned by a religious organization used for worship and related religious, philanthropic, or social activities and includes accessory rectories, manses, meeting rooms, classrooms, dormitories, and other buildings. Typical facilities would include churches, chapels, mosques, temples, synagogues, parish halls, convents, and monasteries.

**Riparian Protection Area** means the lands adjacent to naturally occurring watercourses, which the County has deemed necessary to protect by limiting certain forms of development within this area. The purpose and intent of the riparian protection area is to conserve and manage riparian lands. The riparian protection area is based on the Province of Alberta's "Stepping Back from the Water Guidelines: A Beneficial Management Practices Guide for New Development near Water Bodies in Alberta's Settled Region" as amended or replaced from time to time.

**Site** means any area of a lot or parcel upon which aggregate extraction and/or processing development is proposed or is undertaken.

**Soft Mitigation** means a mitigation measure that principally relies on the management techniques and behaviours of those undertaking a development to reduce the impacts of the development, rather than being a physical measure. Examples may include limiting hours of operation, driver training, or planning operations according to weather conditions.

**Special Care Facility** means a development which provides for the care or rehabilitation of one or more individuals in the case of a half-way house for five or more individuals in all other cases, with or without the provision of overnight accommodation, and includes nursing homes, geriatric centres, and group homes, but does not include hostels, child care facilities, and senior citizens housing.

**TSP** means total suspended particles and is a collective measurement unit for all airborne particles that are less than 100 micrometers in size.

**Topsoil** means the uppermost soils that comprise the surface of land, which are usually organically enriched.

**Valued Ecosystem Components** means an environmental element of an ecosystem that is identified as having scientific, ecological, social, cultural, economic, historical, archaeological or aesthetic importance. The value of an ecosystem component may be determined on the basis of cultural ideals or scientific concern.



# Appendix B: Summary of Government Legislation, Guidelines, Bylaws and Standards



ROCKY VIEW COUNTY

## APPENDIX B: SUMMARY OF GOVERNMENT LEGISLATION, GUIDELINES, BYLAWS AND STANDARDS

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There are numerous overlapping legislations, regulations and codes at the provincial and federal levels that have varying requirements for the aggregate industry depending on the size of the aggregate extraction and/or processing site, the ownership of the land on which the site is located, and whether the operator is from the public or private sector. The following is a list of some of the legislation and regulations that aggregate Applicant/Owners are likely to have to consider when planning or operating a site:

### Federal

*Species at Risk Act*, SC 2002, c. 29

*Migratory Birds Convention Act*, SC 1994, c. 22

*Fisheries Act*, RSC 1985, c F-14

*Canadian Navigable Waters Act*, RSC 1985, c. N-22

*Impact Assessment Act*, SC 2019, c. 28, s-1

*Federal Policy on Wetland Conservation*

*Fish and Fish Habitat Protection Policy*

### Provincial

*Environmental Protection and Enhancement Act*, RSA 2000, c E-12

*Water Act*, RSA 2000, c W-3

*Public Lands Act*, RSA 2000, c P-40

*Municipal Government Act*, RSA 2000, c M-26

*Weed Control Act*, RSA 2000 c W-5.1

*Historical Resources Act*, RSA c H-9

*Public Health Act*, RSA 2000, c P-37

*Pipeline Act*, RAS 2000 c P-15

*Public Highways Development Act*, RSA 2000 c P-38

*Oil and Gas Conservation Act*, RSA 2000, c O-6

*Activities Designation Regulation*, Alta Reg 276/2003

*Code of Practice for Pits* [made under the EPEA and Conservation and Reclamation Regulation Alta Reg 115/93

*Conservation and Reclamation Regulation*, Alta Reg 115/1993

*Nuisance and General Sanitation Regulation*, Alta Reg 243/2003

*Water (Ministerial) Regulation*, Alta Reg 205/98

*Approvals and Registrations Procedure Regulation, Alta Reg 113/93*

*Community Aggregate Payment Levy Regulation, Alta Reg 263/2005*

*Alberta Wetland Policy*

*Environmental Protection Guidelines for Pits*

*South Saskatchewan Regional Plan*

## Federal Legislation

Several federal acts and policies may affect aggregate operations by imposing environmental protection requirements that must be addressed throughout project planning and execution. The Species at Risk Act and the Migratory Birds Convention Act require operators to avoid adverse impacts on listed species, their habitats, and migratory birds, including nests, particularly during sensitive periods such as breeding seasons. The Fisheries Act, along with the Fish and Fish Habitat Protection Policy, regulates activities that may result in the harmful alteration, disruption, or destruction of fish habitat, which may include waterbodies or wetlands located near aggregate sites.

Where aggregate operations interact with navigable waters, the Canadian Navigable Waters Act may apply, potentially requiring federal approvals or mitigation measures to preserve navigation rights. For larger-scale or high-impact projects, the Impact Assessment Act may trigger a federal environmental review to assess potential cumulative or significant effects. Additionally, the Federal Policy on Wetland Conservation promotes the protection and sustainable use of wetlands, and may necessitate the avoidance, minimization, or compensation of wetland impacts resulting from aggregate extraction and associated activities.

## Provincial Legislation

In Alberta, as in other Canadian provinces, the regulation of aggregate development generally falls under provincial jurisdiction. To support the responsible development of aggregate extraction and processing operations, the provincial government has established a range of legislation, policies, regulations and guidelines. Private aggregate pits in Alberta are categorized into two groups: Class I and Class II, primarily based on size.

Class I pits are, at minimum, 5 hectares (12.5 acres) in size and are regulated under the Environmental Protection and Enhancement Act (EPEA) and its associated regulations. Class I pits are listed in the EPEA's schedule of activities that require approval under the EPEA. As such, any proposed Class I pit must receive approval from a designated director in accordance with the EPEA, thereby registering the pit.

In 2004, the Government of Alberta released the Code of Practice for Pits, which outlines specific requirements that Class I pits must follow, including the application process to obtain EPEA approval. Additionally, Class I pits must comply with the Conservation and Reclamation Regulation, which establishes the steps required for reclamation at the end of a pit's life.

In certain cases, activities associated with Class I pits may also fall under the scope of the Water Act. Where applicable, applicants must obtain additional approval under the Water Act before proceeding.

In contrast, Class II pits are smaller than 5 hectares (12.5 acres) and therefore do not require approval or registration under the EPEA. They are also not required to comply with the Code of Practice for Pits. However, Class II pits must follow the Environmental Protection Guidelines for Pits and all applicable provisions of the Water Act.

Since all pits, regardless of size, are designated as “specified lands” under Part 6 of the EPEA, Class II pits are also responsible for complying with the Conservation and Reclamation Regulation, which outlines the requirements for reclamation after the end of the pit’s operational life.

As a landowner, the provincial government may lease land to aggregate operators for resource extraction or operate a pit directly. When the provincial government leases land to private operators, the regulations of the Public Land Act and the EPEA must be followed.

If the Province decides to operate the pit itself or delegates operation to a private operator to meet provincial needs, activities are regulated under the *Public Works Act*. However, the environmental provisions of the EPEA also apply to provincially operated pits.

As a landowner, the provincial government can also lease their land to aggregate operators to extract the resource or be the operator themselves. Where the provincial government leases land to private operators, the regulations of the Public Land Act and EPEA shall be adhered to. Where the Province determines that they themselves will operate the pit or delegate the pit operation to a private operator for the purposes of meeting provincial needs the *Public Works Act* regulates activities. However, the environmental components of the EPEA also govern provincial pits.

In rare instances, the Natural Resource Conservation Board (NRCB) may be authorized to approve a private project. Although not explicitly identified within the Natural Resource Conservation Board Act, the minister may, through an Order in Council, refer an aggregate project to the NRCB for review.

When the NRCB grants approval for such proposals, Section 619 of the *Municipal Government Act* (MGA) states that any license, permit, approval, or other authorization issued by a provincial agency takes precedence over statutory plans, land use bylaws, or subdivision and development decisions made by a municipality under Part 17 of the MGA (Planning and Development). Section 619 further requires municipalities to approve land use applications to the extent that they comply with a provincially issued approval.

However, Section 619 primarily aims to prevent conflicts between municipal and provincial decisions and does not prohibit municipalities from addressing the same issues covered by provincial regulations, provided applicants can meet the requirements of both levels.

## Municipal Legislation

The Code of Practice for Pits advises that the municipal role in aggregate operations primarily involves controlling land use and addressing issues such as hours of operation, buffers, noise, dust, haul routes, and traffic control through the development permit process. However, the municipal role can extend beyond these responsibilities, as the MGA allows municipalities to take a more comprehensive approach to aggregate development. As a response the County has developed this document to provide for a proactive approach in the management of future and existing aggregate operations.

In addition to the Aggregate Development Performance Standards, aggregate operations within the County must comply with the following legislation.

### 1. Rocky View County Bylaw C-8653-2025, Municipal Development Plan

The Municipal Development Plan is the County's highest-level statutory planning document. It provides strategic direction for growth, overall guidance for land use planning, and policies for service delivery. The Municipal Development Plan policies related to aggregate development can be categorized as follows:

- General: Establish general policies for the management of aggregate operations.
- Locational Criteria: Include a 1.6-kilometre buffer zone around lands identified as residential within an adopted area structure plan, and a 2.0-kilometre buffer zone around designated provincial parks.
- Application Requirements: Define the requirements for master site development plan applications referring back to this document and allow applicants to request relaxation of certain application requirements.
- Application Reviews: State that the County may request third-party reviews of technical information submitted as part of an application.

### 2. Rocky View County Bylaw C-8000-2020, the Land Use Bylaw

The County's *Land Use Bylaw* provides regulations governing development uses within the County and establishes land use districts where specific types of development are permitted. Historically, the County has utilized both standard districts identified within the *Land Use Bylaw* and site-specific districts known as Direct Control Districts. The *Land Use Bylaw* now includes a specific definition for aggregate extraction and processing activities. Moving forward, all proposed aggregate activities will require Council approval to redesignate the subject land to the Special – Natural Resource district.

The *Land Use Bylaw* now contains specific development permit application requirements for aggregate extraction and processing activities, which reference this document. Similar to the Municipal Development Plan, the *Land Use Bylaw* also allows applicants to request relaxations of these application requirements. Additional regulations have been introduced to address sites nearing completion and small-scale operations.

### 3. County Servicing Standards

The County's Servicing Standards establish the minimum design guidelines for all construction and development projects within the County and are intended to assist all parties involved in project completion. The Servicing Standards also outline the procedural requirements for specific items referenced in this document, such as Traffic Impact Assessments and Environmental Assessments, to be considered complete.

### 4. Rocky View County Bylaw C-8549-2024, the Regional Transportation Off-Site Levy Bylaw

The *Regional Transportation Off-Site Levy Bylaw* was established to require developers to contribute toward the costs of constructing new or expanded roads within the County. The bylaw applies to various new development and subdivision proposals, including aggregate development, and establishes a base levy charged per acre or hectare of development area, along with special area levies for developments near key road improvement zones.

### 5. Rocky View County Bylaw C-7748-2018, the Community Aggregate Payment Levy Bylaw

The MGA permits municipalities to impose a charge on aggregate development of up to \$0.40 per tonne of aggregate extracted from a site. In 2018, the County passed the *Community Aggregate Payment Levy Bylaw*, which allows the County to collect this levy to fund infrastructure and other municipal costs. The CAP Levy Bylaw is guided in part by the Community Aggregate Payment Levy Regulation (Alta Reg 263/2005). This regulation was reviewed by the Province in December 2024 and has been extended without change until December 31, 2029.

### 6. Rocky View County Bylaw C-8635-2025, the Aggregate Site Monitoring Bylaw

The *Aggregate Site Monitoring Bylaw* was established to authorize designated officers, operating under the Chief Administrative Officer, to conduct inspections of aggregate sites. The bylaw permits up to four inspections of an aggregate site within a 12-month period. Additional inspections may be carried out on a complaint-driven basis.

The purpose of these inspections is to ensure compliance with the conditions of an approved development permit. Where contraventions are identified, the County will work with the operator to address the issues; however, enforcement action may be taken if necessary.

# Appendix C: Noise Impact Assessment Methodology



ROCKY VIEW COUNTY

## APPENDIX C: NOISE IMPACT ASSESSMENT METHODOLOGY

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### General Guidance Introduction

Standard 4.01 requires that all applications for aggregate extraction or processing include a Noise Impact Assessment. The Noise Impact Assessment shall be conducted using the methodology described below and must be led or directly supervised by a qualified acoustic professional with demonstrated experience in environmental acoustics. The supervising professional is responsible for the methods, assumptions, and conclusions of the assessment. In addition to the requirements outlined below, the County encourages Applicant/Owners to adopt and incorporate best practices for noise management into their operational procedures.

Standard 4.04 sets out sound level limits for operations of a pit. Applicants/Owners are expected to not exceed these sound level limits, unless permitted during approved temporary daytime operations. Where exceedances are identified through a noise monitoring program, the Applicant/Owner shall outline remedial actions and execute them within a timeline approved by the County.

It is suggested that new aggregate extraction and/or processing developments are designed with a suitable margin of safety to cover absolute worst-case situations, possible low frequency noise, and a lapse of established mitigation measures to meet performance levels.

### Noise Impact Assessment (General)

As part of all applications for aggregate extraction and/or processing, a Noise Impact Assessment shall be completed. The Noise Impact Assessment shall provide details of the following:

- quantify existing sounds conditions;
- predict noise from the proposed activities; and
- evaluate significance and compliance against the County's noise criteria as outlined in Standard 4.04.

For noise, the potential significance would be based on the difference of the sound from the proposed activities (including any subjective corrections and cumulative contributions from other similar natured sounds) and the baseline sound conditions at receptor locations.

### Baseline Noise Surveys (Instrument Details)

As part of the Noise Impact Assessment, initial baseline noise surveys shall be conducted. Instrumentation used to conduct baseline noise surveys shall be able to measure the A-weighted (dB(A)) (or C-weighted (dB(C)) for low frequency noise investigations) continuous energy equivalent sound level (LAeq) of steady, intermittent, and fluctuating sounds. It must be able to accumulate the data and calculate the LAeq,T, LA90,T and LAFmax over the time periods required and must meet the minimum technical specifications in the International Electrotechnical Commission standard 61672-1:2013, or its latest revision, for Class I sound level meters. The Noise Impact Assessment shall provide details for the specification of instrumentation specifications and calibration records. Sensitivity checks for key assumptions such as ground factor, terrain, barriers, operating hours, and haul volumes shall also be included.

A-weighting measurements typically discount the lower frequencies. Therefore, lower frequency noise may be a problem in some situations where the dB(A) value meets the limits set out within Standard 4.03, but the concern is a dominant low frequency that increases annoyance levels at nearby dwellings or institutional buildings. Due to the complexity of determining lower frequency noise, this is a specialized investigation. In the event of a complaint being received that indicates the potential for low frequency noise impacts, the aggregate operator shall agree upon a scope of investigation with the County.

Although audio recordings are not required as part of the Noise Impact Assessment, they are recommended to enhance the data collected. Noise instruments should utilize windshields and tripods when applicable. As part of the Noise Impact Assessment setup photos shall be included.

### Baseline Noise Surveys (Instrument Placement)

As part of the Noise Impact Assessment, initial baseline noise surveys shall be conducted using noise instruments that meet the requirements listed above. The baseline noise surveys shall include continuous unattended monitoring results supported by observations and commentary, as applicable. Continuous unattended monitoring shall be conducted for a minimum of five (5) consecutive days, covering both week (Monday to Friday) and weekend days (Saturday to Sunday). Ideally these five (5) consecutive days should occur within seasonal changes, such as spring/summer and fall/winter, as appropriate.

It is encouraged that the Applicant/Owner engage with nearby landowners to seek consent to place instruments on their lands to collect recordings. The intent is to collect data for select dwelling(s) and/or institutional building(s). If a landowner consents to instruments being located on their lands, the instruments shall be placed, a minimum of 15 metres from the dwelling(s) and/or institutional building(s).

### Baseline Noise Surveys (Data Collection)

For each day data is collected, the data shall be segmented into:

- daytime: 7:00 a.m. to 7:00 p.m.
- evening: 7:00 p.m. to 10:00 p.m.
- nighttime: 10:00 p.m. to 7:00 a.m.

This data should be summarized and concluded in a way to evaluate a representative sound level for an instrument. The following metrics must be reported for each receptor and period: LAeq,T, LA90,T, and LAFmax ideally with frequency analysis (octave or third-octave band spectra as appropriate) of the acoustic environment to understand how sounds from the proposal will contribute to the frequency content of the baseline sound conditions.

Meteorological data, including wind speed and direction, temperature, humidity, and precipitation, shall be recorded concurrently and used to screen or flag recorded noise data. Data affected by precipitation or wind speeds above 5 m/s should be excluded unless justification is provided. Overall, at least 80% of the data collected during the baseline noise surveys should be usable.

If the noise has specific characteristics such as being tonal (having a noticeable pitch), impulsive (sudden), or intermittent (starting and stopping), include any justified corrections for these. Use the corrections below to

calculate the final result. Then compare the rating level to the background level and to any relevant absolute noise limits. Finally, provide a clear, plain-English summary of the noise impact, and include notes about any uncertainty in the data or assessment.

## Modelling

The Noise Impact Assessment shall provide for the two modelling scenarios identified in Standard 4.03. The first modelling scenario shall predict and demonstrate worst-case scenario noise levels with no mitigation measures in place. The second scenario shall predict and demonstrate the worst-case scenario noise level with the identified mitigation measures in place as outlined in the Noise Mitigation Plan, required as per Standard 4.10. The worse-case scenario shall include simultaneous operation of a relevant plant, start-up and load conditions, and hauling movements. The scenarios should be split into day, evening, and nighttime as identified above.

The Noise Impact Assessment shall be modeled using a platform capable of implementing ISO 9613-2 (outdoor sound propagation). The modelling shall also take into account the following parameters:

- a) identification of terrain, buildings, barriers, façade reflection, where relevant;
- b) an application of conservative ground factors by surface types. The following ground factors shall be:
  - i  $G \leq 0.7$  for soft soils and grass;
  - ii  $G \leq 0.3$  for exposed rock, compacted aggregate and paved areas; and
  - iii  $G \leq 0.1$  for acoustically hard pavements and water.
- c) geometric spreading;
- d) atmospheric absorption;
- e) ground attenuation; and
- f) wind patterns.

Consideration shall be given to the following items:

- a) source identification being:
  - i source size and identification;
  - ii isolation;
  - iii sound power level (PWL)-SPL spectrum data; and
  - iv intermittency.
- b) Mild downwind and/or temperature inversion conditions.

Additionally, where distinct events are expected at night, report predicted LAFmax statistics and compare them to the County's nighttime criteria as applicable.

## Modelling (Perceived Corrections)

Noise modelling shall note the presence of any frequent impulse and/or tonal sounds that could be generated by the aggregate development operations, such as reversing alarms on vehicles. Where appropriate, the following corrections shall be applied to the forecast sound pressure level in order to recognize the increased potential for community disturbance in the generation of tonal and impulse sounds:

	JUST PERCEPTIBLE	CLEARLY PERCEPTIBLE	HIGHLY PERCEPTIBLE
<b>TONAL SOUNDS</b>	+2dB	+4dB	+6dB
<b>IMPULSE SOUNDS</b>	+3dB	+6dB	+9dB

The correction(s) applied shall depend on the subjective assessment of how perceptible the tonal or impulse is. Where the specific sound has both tonal and impulse characteristics, both corrections may be applied depending on their combined ability to affect noise perception and tolerance. If one feature is more dominant, it may be more appropriate to apply a single correction.

## Modelling (Cumulative Impacts)

As stated in Standard 4.02, the Noise Impact Assessment shall also consider potential cumulative impacts from adjacent concurrent aggregate or industrial sites within the study area, along with road and rail traffic attributable to the proposal. The Noise Impact assessment shall report the proposal-only contributions separately from the cumulative totals. The methods used to combine baselines source with the proposal shall be described. Key assumptions should be considered as part of the modelling.

The modelling for the Noise Impact Assessment shall consider any reasonably foreseeable development with active permits or have an active application, where the scale and timing of information is available and state the assumptions used.

The cumulative impacts shall model proposal-attributable traffic and material flow changes on the shared haul routes. However, only account for unrelated background traffic through the measured baselines to avoid double counting in predictions.

It is expected that the cumulative impacts shall combine sound levels (LAeq) from different sources using energy-based summation. Do not include character penalties (e.g., for tonal or impulsive noise) in the LAeq itself. These should only be applied when determining rating levels for evaluating impact, after all sources have been combined.

It is expected that the to anchor the assessment to the baseline noise surveys to avoid gradual increases (“background creep”). If a new third-party noise source appears at a later date, it shall be identified and quantified separately. It is expected that any external noise source, if it’s proposal-only contribution is within 10 db of the loudest source at a receptor. If it is not included, an explanation for why it was excluded shall be provided.

The Noise Impact Assessment shall consider a predicted worst-case scenario where all major sources of noise are operating concurrently.

## Baseline Noise Surveys (Mapping)

As part of the Noise Impact Assessment, a map shall be created to provide context for the site and location of all recording instruments. The map shall include the following:

- a) location of all potential noise sources on the subject site;
- b) location of all other any reasonably foreseeable development with active permits or have an active application, where the scale and timing of information is available and state the assumptions used;
- c) location of all recording instruments being used. Map should specify the height and coordinates of the instruments;
- d) location of all nearby dwelling(s) and/or institutional building(s) within a 4.8 kilometre (3 mile) radius of the site measuring from the site boundary. Note the perceived most impacted dwelling(s) and/or institutional building(s); and
- e) justification of all ground classifications used as part of the modelling.

## Assessment

Noise should be assessed over specific time periods using standard acoustic metrics. During the day and evening, use LAeq,1hr as the measurement period. At night, use LAeq,15min. The background noise level should be measured using LA90,T, which represents typical ambient conditions in the absence of short-term noise events. To evaluate noise impact, compare the rating level, which is the proposal LAeq,T adjusted for any relevant sound characteristics such as tonality, impulsivity, or intermittency, to the LA90,T background level.

For each receptor and time period, the assessment should report the background noise level (LA90,T), the proposal noise level (LAeq,T), and any justified corrections for character. These corrections reflect whether the noise has a distinct pitch (tonal), occurs suddenly (impulsive), or starts and stops in a noticeable way (intermittent). After applying any appropriate corrections, calculate the resulting rating level. This rating level should then be compared to both the background level and any applicable absolute noise limits. Both proposal-only and cumulative noise levels, which include existing environmental noise, must be reported in the same table for each receptor and time period.

The difference between the rating level and the background level helps indicate the potential impact of the noise. If the rating level is equal to or below the background level (0 decibels or less), the impact is considered low and generally acceptable. If it is 1 to 3 decibels above the background, the impact is minor and usually acceptable, although it is recommended to consider the local context and apply basic mitigation measures where possible. A rating level 4 to 6 decibels above the background suggests an adverse impact is likely. In this case, mitigation and operational controls should be implemented, and design changes or time limits may need to be considered. When the rating level is 7 to 9 decibels above background, a significant adverse impact is likely. This typically requires strong mitigation measures, operational restrictions, or a redesign of the noise source. If the rating level is 10 decibels or more above the background, the impact is considered very significant and is generally unacceptable unless substantial changes to the design or location of the source are made.

The rating level is calculated by taking the proposal LAeq,T at the receptor and adding any justified corrections for tonality, impulsivity, or intermittency. These corrections are based on how the noise is experienced at the receptor, not just at the source. Whether assessed through objective measurements or supported by credible subjective judgment, corrections should be applied only when justified. Do not automatically add all possible penalties. Instead, combine corrections carefully, using professional judgment, and provide clear evidence to support each one.

In situations where the rating level falls close to the boundaries between different impact categories, professional judgment should be used to determine the most appropriate interpretation. The context of the receptor must be considered, including sensitivity, land use, and the existing noise environment. All decisions and interpretations must be fully explained and supported with documentation in the report.

For noise sources that may create noticeable individual events at night, such as alarms or sudden machinery start-ups, include an assessment of LAFmax values. Compare these peak levels to any applicable night-time noise criteria set by the County or regulatory authority.

Each assessment should conclude with a clear, plain-language summary of the likely noise impact, including whether the proposal is expected to comply with the relevant noise criteria. The summary should also address any uncertainties in the assessment, such as limitations in measurement data, assumptions made during modelling, or environmental conditions that may influence the results.

## Excluded Matters

Where this document is silent on an item relating to an appropriate noise recording and reporting method, the Applicant/Owner shall follow the guidance set out within Directive 038: Noise Control, adopted by the Albert Energy Regulator and Rule 012, adopted by the Alberta Utilities Commission.

### Noise Impact Assessment Checklist

As a generality the Noise Impact Assessment shall include the following:

- baseline noise survey results using data collection procedures as outlined above;
- initial set up photos;
- modelling showing two distinct scenarios as outlined above;
- assessment of cumulative impacts;
- mapping of site as outlined above; and
- any other matter the County deems significant.

The Noise Impact Assessment can be enhanced through the use of audio recordings.



# Appendix D: Groundwater Monitoring Plan Methodology



ROCKY VIEW COUNTY

## APPENDIX D: GROUNDWATER MONITORING PLAN METHODOLOGY

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### General Guidance

Standard 12.06 requires that all activities occur at a minimum of 1.0 metre above the identified groundwater table. In accordance with Standard 12.07, all applications for aggregate extraction or processing shall include a Groundwater Monitoring Plan where the proposed activities are located between 1.0 and 5.0 metres above the identified groundwater table. The Groundwater Monitoring Plan shall be conducted using the methodology described below.

### Qualified Professional

The activities included as part of the Groundwater Monitoring Plan shall be undertaken by a qualified hydrogeological professional. This includes Professional Engineers (P.Eng.) with a specialization in hydrogeology or a practitioner with graduate-level qualifications and demonstrated experience in hydrogeological assessments or similar.

### Determining Water Table Level

Standard 12.05 states that as part of the Groundwater Impact Assessment, the groundwater table level should be explicitly stated. This measurement shall be used as the reference for the Groundwater Monitoring Plan.

### Sampling Timing

Groundwater samples shall be collected on a semi-annual basis (autumn and spring) by an independent, qualified hydrogeological professional. Where deemed acceptable by the hydrogeological professional, sampling may be reduced to an annual basis. The professional's justification shall be submitted to the County within five business days of being received by the Applicant/Owner.

### Sampling Procedures

The independent qualified hydrogeological professional shall utilize scientifically acceptable purging, sampling, and preservation techniques. Groundwater elevation levels shall be monitored through a data logger that is programmed to take readings every hour.

### Testing

Testing shall include the following and any additional testing as recommended by an independent qualified hydrogeological professional:

- a) geodetic referenced groundwater elevation levels;
- b) analysis of groundwater samples for general chemistry parameters, metals and any other analyte deemed appropriate.

## Annual Reporting

An independent qualified hydrological professional shall prepare an annual groundwater monitoring report which shall include the following information:

- a) description of information;
- b) map of groundwater monitoring network and description of monitoring program;
- c) summary of geodetic water levels and interpretation of groundwater flow system; and
- d) summary of analytical data as required and interpretation of the data collected since the monitoring program began, including:
  - i plots showing trends in parameter concentration;
  - ii comparison of measured parameter concentration to Canadian Drinking Water Standards;
  - iii remedial action, if required; and
  - iv recommendations for changes to the Groundwater Monitoring Plan.

The annual groundwater monitoring report shall summarize all data collected to evaluate trends and highlight areas of concern. This report shall be submitted as part of the annual report to the County as outlined in Section 3.

All reports shall be made available to the public upon request. The County, or a third party appointed by the County, shall review the results of the analysis and may, in collaboration with Alberta Environment and Parks, require further necessary actions to ensure that water quality and flows are compliant with applicable Provincial and Federal requirements.

## Additional Considerations

To prevent permanent dewatering of the aquifer, temporary dewatering (groundwater diversion) of groundwater during aggregate extraction and/or processing operations shall be artificially recharged, under the direction of a qualified hydrogeologist professional, utilizing deep recharge pits (sumps) to a depth in contact with the formation and aquifer, to prevent the decline of groundwater levels within the buried sand and gravel aquifer. Groundwater levels will be measured periodically in all wells to measure the performance of the artificial recharge.

An *Alberta Water Act* authorization shall be obtained prior to any groundwater being diverted or pumped anywhere except back into the deep recharge pits (sumps).

To prevent the run in of contaminants to a pit where gravel is being extracted adjacent to a rail line or road, surface diversion berms shall be constructed to divert contaminants in the event of a surface spill, if required.

**Rocky View County**

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