ROCKY VIEW COUNTY

AGGREGATE DEVELOPMENT PERFORMANCE STANDARDS

ROCKY VIEW COUNTY

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DISCLAIMER

The purpose of this document is to outline performance standards that new or expanding aggregate development operations in Rocky View County are expected to meet as a condition of development permit approval. Development permit renewal applications 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 Rocky View County (the "County") policies, bylaws, and no part or section should be read individually.

Although the expectation is that new or expanding aggregate development operations in Rocky View County will meet the performance standards set out in this document, it is the operator's responsibility to ensure the standards are compiled with. Use of Aggregate Development Performance Standards does not absolve an operator or any other party from the obligation to exercise their professional judgement and follow good engineering and 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. The County may, in its discretion, grant a variance in relation to the requirements of these performance standards from time to time. Any party making a request to vary the Aggregate Extraction Performance Standards must submit to the County written request with a detailed written report under the seal of a Professional Engineer and/or qualified professionals demonstrating that the requested variance will not cause an increased level of impact on adjacent dwellings or institutional uses. The County's decision to vary the Aggregate Extraction Performance Standards or not will be final.

Municipal standards and guidelines may be amended from time to time. Before relying upon any municipal bylaw, policy, standard or guideline you 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 be used to assess compliance with the stated Plan requirements and standards.

The County will make reasonable efforts to view and update the 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.

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INTRODUCTION

Aggregate is generally described as any of sand, rock, gravel, or crushed stone and is commonly used in the construction of roads, buildings, and other infrastructure. Aggregate is typically extracted from the ground through surface excavation pits using heavy machinery. In the Province of Alberta, the regulation of aggregate development is split between the province and municipalities. There are many overlapping codes and regulations at the provincial and federal levels, which have varying requirements for the aggregate industry depending on the size of the aggregate development site, the ownership of the land on which the site is located, and whether the operator is from the public or private sector. Generally, municipalities have regulated aggregate development through land use bylaws and development permits.

The Aggregate Development Performance Standards document provides a robust framework for the assessment and implementation of aggregate development. The document sets minimum standards and requirements to ensure consistency in how aggregate development is managed by the County. Notwithstanding this, Council reserves the power to either raise or lessen the requirements in accordance with statutory policy. Additionally, engagement standards for aggregate development applications and procedures for review and reporting are addressed within this document.

Where required, the County may request additional standards be met due to the unique landscape, resource type, and development pressure that may be present in specific areas throughout the County. Where there is any discrepancy between Provincial and County regulations, those of the province will take precedent. Unless explicitly stated, all requirements shall be required as part of redesignation, master site development plan and development permit applications.

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1 APPLICANT ENGAGEMENT REQUIREMENTS

Pre-Application Consultation

1.01 Community consultation shall be required for all new or expanding aggregate development prior to submitting an application to the County.

1.02 At minimum, one open house event shall be conducted to present the details of the proposal to adjacent landowners or community.

a) the event shall be advertised through press notices, mailed letters in accordance with the requirements of Standard 1.04. The usage of signage in accordance with Standard 1.07 may also be utilized;

b) notification of the open house event shall be given a minimum of three week's notice;

c) the open house event shall be held at a venue that is easily accessible by the adjacent landowners and/or community; and

d) alternate opportunities for information provision and discussion for those landowners unable to attend the open shall be made readily available.

1.03 An Engagement Summary Report shall be submitted with the application, outlining the consultation undertaken, all feedback received, and how comments and concerns raised in the engagement process have been addressed.

Mailed Letters

1.04 Letters sent in accordance with Standard 1.02, shall be mailed at a minimum to:

a) all landowners within a 1.61 kilometre (one mile) radius of the proposed site. Any properties located wholly or partially within this radius shall be included within the circulation; and

b) all landowners adjacent to any proposed haul routes.

1.05 Notices shall be mailed a minimum of three weeks in advance of the open house (invitations must be postmarked a minimum of 21 days prior to the date of the community event).

1.06 Letters shall provide an alternate opportunity for information provision and discussion for those landowners unable to attend the open house.

Signage

1.07 All applications for new or expanding aggregate development shall comply with County Council Policy C-327 (Circulation and Notification Standards), relating to the placement of signage informing the public of the application's submission.

Engagement Plan

1.08 All applications for new or expanding aggregate development shall include an Engagement Plan, which sets out how the Applicant/Owner will engage with landowners materially affected by the proposal. The Plan shall include:

a) proposals for continued consultation following submission of an application including:

i. update letters and/or meetings;

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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 project website to report on key events, monitoring and milestones;
ii. use of update letters to landowners within a 1.61 kilometre (one mile) radius;
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 shall submit a quarterly engagement report outlining all communications received in respect to both extraction and hauling of aggregate and the responses provided to any submissions.

Development Permit Application

1.09 Applicant shall be required to submit an updated Engagement Plan if any details have changed from the original Engagement Plan submitted as part of Standard 1.08.

2 TECHNICAL ASSESSMENT OF APPLICATIONS

2.01 All technical documents submitted as part of applications for aggregate development shall address the seasonal and annual fluctuations that could occur within the development, and shall assess the impact of the development based on the maximum daily operating capacity of the site, together with comparative calculations of average operating conditions undertaken through the life 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 For all proposed aggregate development applications, the County may request third party review of submitted technical documents to ensure adequate assessment of the development's impacts. The cost of third party review shall be agreed upon between the County and the Applicant/Owner, and shall reflect the actual cost of review with expenses as set out within the Master Rates Bylaw. The review fee shall be paid for by the Applicant/Owner prior to a decision being made on the application. Third party reviews may only be requested on the following technical reports:

a) Noise Impact Assessments;
b) Air Quality Impact Assessments;
c) Environmental Assessments;
d) Surface and Groundwater Assessments; and
e) Traffic Impact Assessments.

2.04 In the event that the Applicant/Owner does not consent to payment of a third party review cost, the technical document in question shall be noted as not having been assessed, which may affect determination of the application.

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3 ANNUAL REPORTING

3.01 All aggregate developments shall submit annual reports that 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) any technical study or plan, if amended;
g) projection of aggregate extracted;
h) status of the operation;
i) any reclamation activity that has taken place;
j) any additional reporting requirements as outlined in any:
  i. approved master site development plan;
  ii. approved direct control district; or
  iii. issued development permit.
k) Any additional information deemed necessary by the County.

3.02 Aggregate development identified as a Class I pits shall include the five-year reports required by the provincial government as part of the annual reports for the specific reporting year.

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.

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Performance Standards

4 ACOUSTICS

Noise Impact Assessment

4.01 All applications for aggregate development shall include a Noise Impact Assessment, undertaken by a qualified acoustic professional, in accordance with the survey methodology outlined in Appendix C of this document.

4.02 Noise Impact Assessments shall consider the cumulative noise exposure from all existing and proposed aggregate sites within a ± 8.05 kilometre (five-mile) radius, as well as any additional source of noise.

4.03 With the exception of daytime temporary operations described below, recorded sound levels shall not exceed the following for aggregate operations:

a) daytime (7:00 a.m. to 10:00 p.m. on weekdays, 9:00 a.m. to 10:00 p.m. on weekends):

i. 55dB LAeq (1-hour, free-field), or 10dB 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 50dB, site-specific sound levels recorded at the nearest, or most impacted, dwelling(s) or institutional building(s) shall not exceed 5dB above the ambient sound level.

b) nighttime (10:00 p.m. to 7:00 a.m. on weekdays, 10:00 p.m. to 9:00 a.m. on weekends):

i. 45dB LAeq (1-hour, free-field) or 5dB above recorded ambient sound levels (measured as LA90, 1-hour, 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 40dB, site-specific sound levels recorded at the nearest, or most impacted, dwelling(s) or institutional building(s) shall not exceed 5dB above the ambient sound level.

c) the lowest sound level limit, after respective 10dB and 5dB allowable adjustments, shall be 45dB for daytime recordings and 40dB LAeq (1-hour, free-field) for nighttime recordings. Ambient sound levels recorded below 35dB LAeq (1-hour, free-field), shall be noted, but increased to 35dB LAeq (1 hour, free-field) for the purposes of the Noise Impact Assessment.

Temporary Daytime Operations

4.04 An increased daytime sound level of up to 65dB LAeq (1-hour, 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 it is clear that 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 65dB LAeq, this Standard shall not apply.

4.05 Daytime temporary operations shall be limited to the following activities:

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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.

4.06 The Applicant/Owner shall be required to notify the County of a temporary operation being undertaken and that the notification shall include detailed activities occurring on site, including but not limited to the 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 provide written notice to the County that the temporary operation has concluded.

4.07 The increased daytime sound level for temporary operations shall only be allowed between the hours of 7:00 a.m. and 5:00 p.m. on weekdays, with no such operations on statutory holidays or weekends.

Noise Mitigation Plan

4.08 All applications for aggregate development shall include a Noise Mitigation Plan, which shall specify measures that will be taken to limit sound levels as far as practicable and, at a minimum, meet the sound level limits set out within this Plan.

4.09 In preparing the Noise Mitigation Plan, preference shall be given to hard mitigation over soft mitigation 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.

Blasting Mitigation Plan

4.10 Where blasting operations may be undertaken within an aggregate development, a Blasting Mitigation Plan shall include an assessment of the potential noise, vibration, safety and nuisance impacts of such operations. The Blasting Mitigation Plan shall also outline measures to limit the identified impacts of blasting including, at a minimum:

a) a commitment to notify the County and nearby landowners of any blasting operations, at least 48 hours prior to the activity occurring;
b) installation of temporary and/or permanent signage notifying the public of blasting activities within the site;
c) confirmation that all employees/contractors directly involved in the blasting operation hold a Surface Mine Blaster certificate issued by the Alberta Government;
d) installation of controls 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; and
e) responding to landowner complaints associated with blasting operations, including noise and vibration monitoring where necessary.

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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.

Blasting Control 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.

Noise Monitoring Program

4.11 All applications for aggregate development shall include a Noise Monitoring Program that includes a commitment to undertake noise surveys at appropriate intervals with assessment against set sound level limits for dwelling survey locations identified within the Noise Impact Assessment.

4.12 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 provide a sufficient representative sample of the sound environment with the subject development operating. The interval length will be determined by the County.

4.13 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 noise survey being undertaken for complaint-responsive or intermittent, short-term monitoring.

4.14 Where exceedances are noted within any submitted noise 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.

4.15 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. This shall include a commitment by the Applicant/Owner to investigate all reasonable complaints received by the County relating to human and livestock impacts, and where the complaint is substantiated by the County, to submit to the County a set of remedial actions to correct the offending activity and reduce noise to the approved sound levels. 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.

4.16 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 timescale specified by the County. The Applicant/Owner shall inform the County when all required remedial actions are completed.

5 AIR QUALITY

Air Quality Impact Assessment

5.01 All applications for aggregate development 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.

5.02 Air Quality Impact Assessments shall consider the cumulative air quality exposure from all existing and proposed aggregate sites within a five-mile (±8.05 kilometre) radius as well as any additional source of emissions.

5.03 All applications for aggregate development shall reduce emissions to the lowest practicable level, in accordance with the guidelines of the South Saskatchewan Region Air Quality Framework (July 2014). Emission levels for aggregate operations shall, at a minimum, meet the following criteria:

a) $PM_{2.5}$ 24-hour average 27 µg/m³ (Canadian Ambient Air Quality Standards);
b) PM_{10} 24-hour average of 45 µg/m³ (World Health Organization);
c) TSP 24-hour average 100 µg/m³ (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.

5.04 All Air Quality Monitoring 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).

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Emissions Mitigation Plan

5.05 All applications for aggregate development shall include an Emissions Mitigation Plan that specifies measures that will be taken to limit emissions as far as practicable and, at a minimum, meet the air quality criteria set out within the Standard 5.03.

5.06 In preparing the Emissions Mitigation Plan, preference shall be given to hard mitigation over soft mitigation measures. However, the submitted Emissions Mitigation Plan shall include a combination of measures best suited to the proposal and its location.

5.07 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 the Air Quality Impact Assessment.

Air Quality Monitoring Program

5.08 All applications for aggregate development 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 Alberta Government's Air Monitoring Directive (2016).

5.09 Monitoring duration and frequency shall be dependent on the site's proximity to dwellings or institutional buildings 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.

5.10 Monitoring reports detailing compliance with the approved air quality level limits set out in the above standards 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.

5.11 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.

5.12 Within the Air Quality Monitoring Program, the Applicant/Owner shall set out a complaints procedure that details any air quality complaints from the public will be managed. This shall include a commitment by the Applicant/Owner to investigate all reasonable complaints received by the County relating to human and livestock impacts and, where the complaint is substantiated by the County, to submit to the County a set of remedial actions to correct the offending activity and reduce emissions to the approved air quality limits. 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.

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5.13 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.

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.

6 TRAFFIC SAFETY

Traffic Impact Assessment

6.01 All applications for aggregate development that would create traffic movements to and from a site shall include a Traffic Impact Assessment (TIA), prepared by a Qualified Transportation Engineer, in accordance with the Rocky View County Servicing Standards.

6.02 In addition to the details required by the County Servicing Standards, the TIA shall provide details of the haul routes to and from the site (including a haul route plan), with a forecast of the proportion of the overall traffic movements that would travel along each route, and a breakdown of the predicted market destinations. Recommendations shall be made for any required improvements to the road network to safely accommodate the traffic generated.

6.03 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

6.04 Where a TIA has previously formed part of an application approval for a subject aggregate development, the development permit application shall include an update to that TIA, ensuring the updated document meets the TIA requirements set out above.

Traffic Management Plan

6.05 All applications for aggregate development 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;

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 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;

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 leave the site in a state that will prevent aggregate materials or debris from being deposited on the road network.

Road Use Agreement/Development Agreement

6.06 In obtaining development permit approvals for new, expanding or existing aggregate development, the Applicant/Owner may be required to enter into a Development Agreement 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; and

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b) the requirement to upgrade and repair designated roads affected by the hauling operations of the aggregate development, to the satisfaction of the County.

6.07 In obtaining development permit approvals for new, expanding or existing aggregate development, the Applicant/Owner may be required to enter into a Road Use Agreement that covers 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.

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

7 VISUAL AND LANDSCAPES

Visual and Landscape Impact Assessment

7.01 All applications for new or expanding aggregate development shall include a Visual and Landscape Impact Assessment, undertaken by an appropriately qualified landscape professional. The Assessment shall identify the following:

a) character of the existing landscape (e.g. historical development and land use pattern);
b) notable landscape features;
c) topography, including elevation levels, both within the site and surrounding area;
d) anticipated visual and landscape impacts of the proposed activities;
e) anticipated level of vegetation removal required;
f) any historical changes to the landscape;
g) consideration of the phasing of extraction and reclamation, and how landscape impacts may change over the life of the operation; and
h) all significant sight lines into the proposed site.

7.02 Appropriate photo montages, cross-sections, and site plans should be included within the required Visual and Landscape Impact Assessment to clearly illustrate the potential visual impacts of the proposal.

Landscaping Plan

7.03 All applications for aggregate development 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;

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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 at least one year;
e) submission and implementation of a maintenance schedule for existing and proposed vegetation on-site;
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;
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.

7.04 The Landscape Plan shall include site plans showing the location of all existing and proposed landscaping and other screening measures within the site.

7.05 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.

7.06 All subsequent Landscape Plans submitted with development permit renewals shall provide an update to the initial Landscape Plan, and provide proposed visual and landscape measures for a minimum of five years subsequent to the date of the renewal application submission.

8 AGRICULTURE

8.01 To minimize the loss of the County's productive and versatile agricultural land, aggregate development 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.

8.02 Where a proposed application is adjacent to any parcel zoned for agricultural uses as per the County's Land Use Bylaw, the proposal should consider the County's Agricultural Boundary Design Guidelines. Proposals shall consider appropriate measures to implement such as the construction of berms and fences and the placement of the operating site.

8.03 Where an application for new or expanding aggregate development is within 400 metres of a Confined Feeding Operation, an Agricultural Impact Assessment shall be prepared and will include:

a) impacts to livestock from:
i. dust;

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ii. noise;
iii. light;
iv. sound;
v. vibration; and
vi. biosecurity.

b) impacts to agricultural production and activity resulting from end use reclamation plans including the location of end-pit lakes;

c) site specific mitigation that can be implemented to minimize impacts to Agricultural producers and activities; and

d) other reasonable factors that the County may consider to be appropriate.

9 NATURAL AND HISTORIC ENVIRONMENTS

Environmental Features

9.01 All applications for new or expanding aggregate development shall follow the framework of environmental assessment set out within the Rocky View County Servicing Standards, and proposals shall be compliant with all applicable Provincial and Federal legislation relating to the protection of environmental features.

9.02 Where a submitted environmental assessment report identifies valued ecosystem components that may be affected by the development, the environmental assessment report shall outline measures to mitigate, or compensate for, any potential adverse impacts caused.

9.03 The County shall circulate all applications for aggregate extraction and associated development to Alberta Environment and Protected Areas, or its succeeding provincial office, for comment.

Riparian Policy Areas

9.04 Development within riparian areas should be avoided. Where aggregate development is within the County's Riparian Policy Area, it shall be in accordance with the provisions set out within County Council Policy C-419 (Riparian Land Conservation and Management Policy), the Land Use Bylaw and Municipal Development Plan.

9.05 Trees shall not be removed from approved aggregate development that are within 30.0 metres (± 98.4 feet) of the top of the bank of a watercourse or water body, or within a Riparian Policy Area or Environmentally Significant Area without prior written approval from the County. Any proposal to remove trees within a Riparian Policy Area and/or Environmentally Significant Area shall:

a) denote the area of tree removal, provide an estimation on the number of trees being removed, the reason for removal and, where appropriate, mitigation and/or compensation measures; and

b) be endorsed by a qualified arboricultural, landscape or geotechnical professional, as appropriate.

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The County's **Riparian Policy Area** is based on interpretation of Alberta Environment and Protected Area's guideline document 'Stepping Back from the Water: A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region'. The County's Riparian Policy Area includes 30- or 60-metre setbacks from identified watercourses depending on the surficial geology of the subject area.

Historical Resources

9.06 All applications for new or expanding aggregate development shall follow the framework of historical resource assessment set out within the Rocky View County Servicing Standards, and proposals shall be compliant with all applicable Federal and Provincial legislation relating to the protection of historical features.

9.07 The County shall circulate applications for all aggregate extraction and associated development to Alberta Arts, Culture, and Status of Women , or its succeeding provincial office, for comment.

10 GEOTECHNICAL INVESTIGATION REPORT

10.01 All applications for new or expanding aggregate development shall submit a Geotechnical Investigation Report, prepared by a qualified Geotechnical Engineer, which follows the framework of assessment set out within the Rocky View County Servicing Standards.

10.02 In accordance with the requirements of the Rocky View County Servicing Standards, the Geotechnical Investigation Report shall, at a minimum, include recommendations on:

a) safe slope gradients for extraction areas, internal haul routes, and reclaimed lands; and
b) compaction densities, methods, and layer thickness for backfill and any imported fill, which will be provided through a Deep Fill Report. Compaction shall reflect the proposed after-use of the land, as identified by the approved Reclamation Plan.

10.03 The recommendations of the Geotechnical Investigation Report shall be incorporated into the site's extraction operations and reclamation plans.

11 WATER

Stormwater

11.01 All applications for aggregate development shall include a Stormwater Management Report (SWMR).

11.02 In accordance with the County Servicing Standards, a conceptual-level SWMR shall be submitted for redesignation applications, providing a strategy on how surface water will be managed within the development. A comprehensive SWMR, also in accordance with the County Servicing Standards, shall be required for all development permit applications for aggregate development.

11.03 For existing aggregate development sites that have an existing SWMR approved by the County, or similar stormwater plan approved by the Province, the Applicant/Owner shall provide an update to that existing report/plan according to any changes in site operations that may have occurred since that report/plan was approved.

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11.04 All applications for aggregate development and associated SWMRs shall be compliant with the relevant watershed management plans, provincial legislation, and guidelines relating to surface water flow and quality.

Groundwater

11.05 All applications for new or expanding aggregate development shall provide a Groundwater Investigation Report that includes an assessment of the impact the proposed extraction and/or processing will have on groundwater quality and levels within both the site itself and the hydrologically connected lands. The Groundwater Investigation Report shall be undertaken by a qualified hydrological professional and shall include measurements of the groundwater table within the site. Groundwater readings shall be:

a) taken from a minimum of three test wells within the site;
b) taken to a depth below the proposed floor of the extraction area; and
c) provided with a report, summarizing readings 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.

11.06 A Groundwater Monitoring Plan shall be required where extraction is to be undertaken at or less than 5.0 metres above the identified groundwater table. A Groundwater Monitoring Plan shall be undertaken, in accordance with the methodology outlined in Appendix D.

11.07 All proposals shall be compliant with the relevant provincial legislation and frameworks relating to water flow and quality.

11.08 All proposals that impact a water body or when the work will divert and use surface or groundwater will obtain an approval under the *Water Act* RSA 2000, c W-3**.**

Surface Water and Groundwater Mitigation Plan

11.09 All applications for aggregate development shall provide 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 ground water features. The 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. The Groundwater Mitigation Plan shall include 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;
b) identification of any proposed water usage within the site and how used water will be stored, recycled, and/or discharged; and
c) a summary of any required provincial approvals under the *Water Act* for applicable operations on-site, and a commitment to obtaining those approvals prior to proceeding with operations.

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12 EROSION AND SEDIMENT CONTROL

12.01 All applications for aggregate development shall minimize sedimentation occurring at the affected site. At the redesignation stage, an Erosion and Sedimentation Control Strategy shall be provided that outlines the broad measures that will be implemented on-site to minimize sedimentation, to the satisfaction of the County. At the subsequent development permit stage, a detailed Erosion and Sedimentation Control Report shall be submitted in accordance with the County Servicing Standards.

12.02 Erosion and Sediment Control Strategies shall:

a) avoid using a "one size fits all" approach to managing erosion and sediment control. Except for simple housekeeping practices, the planning and identification of strategies to employ is very much site specific;

b) consider all erosion and sedimentation processes rather than a focus on water run-off. Dust generation, wind erosion, and operational activities also result in the transport of material that results in offsite impacts;

c) always plan and implement practices to control erosion at the source rather than at the site boundary;

d) always identify and recognize high value ecological resources, infrastructure, and property adjacent to and affected by construction sites;

e) always consider site specific soil types, seasonal variations in climate, and topography;

f) respond to operational conditions that change over the course of the development on-site;

g) ensure a program of timely inspection and maintenance of Erosion and Sediment Control practices; and

h) adhere to relevant Federal, Provincial and Municipal legislation and standards.

12.03 Where necessary, the County may refer an application to the Agricultural Service Board and/or the Soil Conservation Officer acting under the *Soil Conservation Act*, RSA 2000, c S-15 to advise on the impact of topsoil removal.

13 LIGHTING

13.01 All lighting placed on land in association with aggregate development shall be in accordance with the Land Use Bylaw.

13.02 Notwithstanding the requirements of the Land Use Bylaw, all development permit applications for aggregate development that require night-time operations shall require a Lighting Plan to be submitted, to the satisfaction of the County. The Lighting Plan shall indicate the location and direction of all external lighting on-site, and provide details on shielding of lighting fixtures.

13.03 At the discretion of the County, the Applicant/Owner will also be required to include an assessment that demonstrates the light spread will not cause a nuisance to nearby land users or environmental impact.

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14 HOURS OF OPERATION

General

14.01 All applications for aggregate development shall specify hours of operation for both extraction and processing operations, and hauling operations. The hours of operation specified within applications shall align with the guidelines set out in Standards 14.03, 14.04, and 14.05.

14.02 Where hours of operation beyond these guidelines are requested, a rationale shall be provided, and the impact upon surrounding land users and road safety shall be adequately addressed within the application.

Extraction and Processing Operations

14.03 The hours of operation for aggregate development 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

14.04 The import or export of materials associated with activities at an aggregate development site 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

14.05 The scheduled maintenance of plant, machinery, equipment or vehicles associated with an aggregate development may be considered outside of the guideline hours of operation stated in Standards 14.03 and 14.04, subject to the Applicant/Owner committing to giving the County no less than 48 hours' notice for each incidence of scheduled maintenance. Restrictions on scheduled maintenance operations and the prior notification process shall be imposed through the conditions of any development permit.

15 WEED CONTROL

15.01 All aggregate development shall be undertaken in accordance with the provisions of the *Weed Control Act*, SA 2008, c-W-5.1, and all development permit applications for such development shall provide a Weed Control Plan that includes:

a) initial and ongoing identification and documentation of weed species present prior to any ground disturbance during development and post development for the entire site;

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b) identification of control methods throughout the life of the permitted operations, ensuring that all noxious and restricted weeds are prevented from going to seed; and

c) identification of the party responsible for weed control during the life of the permitted operations.

16 SITE SECURITY AND EMERGENCIES

16.01 All applications for aggregate development shall provide a comprehensive Site Security Plan. The Site Security Plan should outline the measures that will be implemented to restrict access to the site. At a minimum, the Security Plan shall include details on:

a) measures to restrict public access;

b) measures to restrict wildlife and where necessary livestock;

c) site signage; and

d) any additional security feature deemed necessary to the specific site.

16.02 All applications for aggregate development shall provide an emergency management plan that details emergency response procedures.

17 RECLAMATION

Interim Reclamation

17.01 Where an aggregate development 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.

17.02 If aggregate development does not resume within a timescale specified by the County in its approval of the Interim Reclamation Plan, which shall be no more than five years from the date of the Plan approval, the Applicant/Owner shall be required to submit an alternative Reclamation Plan for permanent reclamation of the site. The alternative Reclamation Plan shall include the information required within Standard 17.03.

Final Reclamation

17.03 All applications for aggregate development 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;

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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.

17.04 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.

17.05 For existing aggregate development sites that have an existing Reclamation Scheme approved by the County and the Province, the Applicant shall update that existing scheme to meet the above information requirements.

17.06 All applications shall include 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.

17.07 Upon reclamation of an aggregate development, the Applicant/Owner shall apply for redesignation of the lands to an appropriate agricultural land use district, subject to such agricultural uses being compatible with the requirements of the Land Use Bylaw and 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.

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APPENDIX A: DEFINITIONS

Aggregate means any sand, gravel, clay, or marl that is excavated from the surface of a site, either in a processed or unprocessed form, but does not include such material that is expected to be unsuitable for sale.

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. For the purposes of this document, ambient noise levels shall be measured as LA90.

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.

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 relative loudness of sounds in air as perceived by the human ear. It denotes decibels that have been A-weighted to reduce the measurement of low-frequency sound that is inaudible to the human ear.

dB(C) means C-weighted sound. It estimates the sensitivity of human hearing at noise 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.

Development means:

- **a)** an excavation, stockpile or the creation of them;
- **b)** a building or an addition to, or replacement or repair of a building, and the construction or placing in, on, over or under land of any of them;
- **c)** a change of use of land or a building, or an act done in relation to land or a building, that results in or is likely to result in a change in the use of the land or building; or
- **d)** a change in the intensity of use of land or a building, or an act done in relation to land or a building, that results in or is likely to result in a change in the intensity of use of the land or building.

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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.

Environmentally Significant Area means land that the Province of Alberta has identified as areas that are important to the long-term maintenance of biological diversity, physical landscape features and/or other natural processes, both locally and within a larger spatial context.

Expanding Aggregate Development 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 noise measurement that is taken at a distance from any sound-reflecting surfaces such as walls, fencing, or other physical barriers.

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 Aggregate Extraction and/or Processing Site means a site, or any part of a site, in which development relating to an aggregate development permit, or other works to which a condition of that 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 noise recording. It is the average sound energy recorded over a specified period. For example, LAeq (1 hour) means the average sound energy recorded over a 1 hour period.

LA90 means a noise measurement used to establish the ambient noise level in an area. It represents the noise level that has been exceeded for 90% of the time under which a noise recording has been taken.

Land Use Bylaw means Bylaw C-8000-2020, the Land Use Bylaw, as amended or replaced.

Low Frequency Noise refers the incidence where a clear tone is present below and including 250 Hz and the difference between the overall C-Weighted sound level and overall A-weighted sound level exceeds 20dB.

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.

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Microgram (µg) means the widely used unit of measurement for particulate matter in assessing air quality and represents one billionth (1×10−9) of a kilogram, one millionth (1×10−6) of a gram, or one thousandth (1×10−3) of a milligram.

Municipal Development Plan (MDP) means Bylaw C-7280-2013, Municipal Development Plan (County 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 Hydrological Professional means an individual practicing as a hydrological 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.

$PM_{2.5}$ 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 $PM_{2.5}$ and PM_{10} are inhalable and, therefore, have potential health impacts.

PM_{10} means particulate matter 10 micrometers or less in diameter. It is used as a standard in the measurement of air quality. Both $PM_{2.5}$ and PM_{10} 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 Policy Area means the lands adjacent to naturally occurring watercourses that the County has deemed necessary to protect by limiting certain forms of development within this area.

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.

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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 any part of the environment that is considered important by the proponent, public, scientist and government involved in the assessment process. Importance may be determined on the basis of cultural values or scientific concern.

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APPENDIX B: SUMMARY OF GOVERNMENT LEGISLATION, GUIDELINES, BYLAWS AND STANDARDS IMPOSED ON AGGREGATE DEVELOPMENT IN ROCKY VIEW COUNTY

There are numerous overlapping codes and regulations at the Provincial and Federal levels that have varying requirements for the aggregate industry depending on the size of the aggregate extraction 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 operators are likely to have to consider when planning or operating a site:

- *Environmental Protection and Enhancement Act*, RSA 200, c E-12 (EPEA);
- *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
- *Municipal Government Act*, RSA 2000, c M-26;
- *Community Aggregate Payment Levy Regulation*, Alta Reg 263/2005;
- *Public Lands Act*, RSA 2000, c P-40;
- *Water Act*, RSA 2000, c W-3;
- *Weed Control Act*, RSA 2000, c W-5.1;
- *Pipeline Act*, RSA 2000 c P-15
- *Public Highways Development Act*, RSA 2000, c P-38;
- *Oil and Gas Conservation Act*, RSA 2000, c O-6;
- *Historical Resources Act*, RSA, c H-9;
- *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;
- *Canadian Environmental Assessment Act*, 2012 S.C. 2012, c. 19, s. 52;
- *Public Health Act*, RSA 2000, c P-37; and
- *Nuisance and General Sanitation Regulation*, Alta Reg 243/2003.

Provincial Legislation

Similar to other provinces in Canada, the jurisdiction of aggregate development within Alberta generally falls to the provincial government. As such, the provincial government has put into place several acts to aid in the responsible development of aggregate extraction and processing operations.

The *Environmental Protection and Enhancement Act* (EPEA) presides over all aggregate extraction proposals within Alberta, and provides for the enactment of other regulations. Aggregate extraction on all public land, and on private land where the development is less than 5 hectares in area, is governed by the EPEA, together with the *Conservation and Reclamation Regulation* and *Water Act*. Such sites are categorized as Class II pits by Alberta Environment and Protected Areas (EPA).

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Class I pits are those on private land that are greater than or equal to 5 hectares in size. They are subject to the requirements of the Code of Practice for Pits, the EPEA, and the Conservation and Reclamation Regulation.

Each pit over 5 hectares must be registered with AEP. An Activities Plan, which covers multiple aspects of the aggregate operation, is required to be submitted for approval with details to the satisfaction of the Province. The Code of Practice for Pits sets out the requirements for the Activities Plan, and lists numerous items to be addressed, including pit water monitoring and discharge measures, groundwater levels, soil movements, reclamation, and control over infrastructure and access.

Section 619 of the *Municipal Government Act* (MGA) states that a license, permit approval, or other authorization granted by a provincial agency prevails over any statutory plan, land use bylaw, and/or subdivision/development decision made by the municipality under Part 17 of the Act (Planning and Development). Section 619 also requires that a municipality must approve an application to the extent that it complies with a provincially issued approval. However, Section 619 largely seeks to prevent inconsistency between the municipal and provincial level, and it does not prevent a municipality from dealing with the same issues covered by provincial regulation, as long as it is possible for a developer to comply with both sets of requirements.

As an example, an aggregate operator may propose to meet a number of performance standards set out within an Activities Plan approved by Alberta Environment and Protected Areas under the Code of Practice for Pits, but a municipality could subsequently impose further, more stringent requirements covering the same subject areas (e.g. water quality, noise, air quality etc.) at the planning and development stage. As long as there is no conflict between the municipal and provincial requirements, the two regulatory regimes are independent of one another.

Municipal Bylaws and Standards

The Code of Practice for Pits advises that the municipal role with respect to aggregate operations is to control land use, and deal with issues such as hours of operation, buffers, noise, dust, haul routes, and traffic control through the development permit process. However, the municipal role has the potential to go beyond this, and the MGA allows for a more thorough approach to be taken on aggregate development by municipalities.

The South Saskatchewan Regional Plan (SSRP) has also guided the development of this document and others. The SSRP has policies relating to aggregate such as “identify areas of existing and future extraction of surface materials and mineral resources and determine appropriate land uses in the vicinity of these resources.” The SSRP also provides guidance with respect to cumulative effects, historic resources, air quality, water, and biodiversity. This document is consistent with the direction and intent of the policies and guidelines set out within the SSRP on these matter.

In addition to the Aggregate Extraction Performance Standards, operators proposing to undertake aggregate development within Rocky View County are currently bound by the following bylaws and standards:

1. **Rocky View County Bylaw No. C-XXXX-2025, Municipal Development Plan**

The Municipal Development Plan is the County’s highest order of municipal statutory planning document. The document provides strategic growth direction, overall guidance for land use planning,

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and service delivery policy. The Municipal Development Plan outlines the requirements of aggregate master site development plan that are required as part of aggregate development submissions. Higher level policies that must be adhered to are also included within the Municipal Development Plan.

2. **Rocky View County Bylaw No. C-8000-2020, the Land Use Bylaw**

The Land Use Bylaw provides a set of regulations for development within the County, and establishes land use districts (zones) within which land can be categorized, with development requirements for each district. In the past, the County has utilized both general land use districts and site-specific districts called Direct Control Districts to identify aggregate development.

With respect to general regulations that affect most types of development, irrespective of the land use district in which it falls, there are several regulations relevant to aggregate development, including those covering lighting, signage, riparian protection, and landscaping. All development falls under the Enforcement regulations set out within the Land Use Bylaw, and such policies will guide the action to be taken on any non-compliance within an aggregate site.

3. **County Servicing Standards (Approved via Council Resolution 188-13)**

The Servicing Standards provide guidance with respect to the design and servicing of development, including information on road standards, water and wastewater servicing, and stormwater management. The Standards also provide a guide on the content of technical studies, such as Biophysical Impact Assessments and Traffic Impact Assessments that must accompany some development proposals, including aggregate development.

4. **Rocky View County Bylaw No. C-8549-2024, the Regional Transportation Off-Site Levy Bylaw**

The Regional Transportation Off-Site Levy Bylaw was established to require developers to contribute towards the cost of funding construction of new or expanded roads within the County. The Bylaw applies to a variety of new development and subdivision proposals, including aggregate development, and sets out a base levy to be charged per acre/hectare of development area, in addition to special area levies for development near important road improvement areas.

5. **Rocky View County Bylaw No. C-7748-2018, the Community Aggregate Payment Levy Bylaw [CAP Levy Bylaw]**

The *Municipal Government Act* permits municipalities to impose a charge a upon aggregate development of up to $0.40 per tonne of extracted aggregate from a site. In 2018, Rocky View County passed the Community Aggregate Payment (CAP) Levy Bylaw allowing the County to collect the levy to be used towards the payment of infrastructure and other costs in the municipality. The CAP Levy Bylaw is guided in part by the *Community Aggregate Payment Levy Regulation*, Alta Reg 263/2005. The CAP Levy Regulation was reviewed by the Province in December 2024 and has extended it without change through till December 31, 2029.

6. **Rocky View County Bylaw No. C-XXXX-2025, the Aggregate Site Monitoring Bylaw**

The Aggregate Site Monitoring Bylaw was established to allow the County (or third party appointed representatives) to conduct site inspections of aggregate development. The site inspections may be either complaint driven or scheduled (Bylaw sets the maximum number of yearly inspections). The purpose of conducting the inspections is to both follow up on complaints to ensure remedial action is

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being taken, as well as confirming that items detailed throughout this standards document are being adhered to.

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APPENDIX C: NOISE IMPACT ASSESSMENT METHODOLOGY

General Guidance

Standard 4.03 sets sound level limits for outdoor noise, taking into consideration that the attenuation of noise through the walls of a dwelling should decrease the indoor sound levels to where normal sleep patterns are not disturbed.

Aggregate operators are encouraged to adopt and incorporate a best practices approach to noise management into their operating procedures. This may include such things as taking regular fence-line measurements around the site to determine if there are any significant changes to sound emanating from the facility and improving notification measures to neighbours of a planned noisy event.

It is suggested that new developments are designed with a suitable margin of safety (for example, 5 dB(A) LAeq below the sound levels set out within Standard 4.03 to cover absolute worst-case situations, possible low frequency noise, and a lapse of established mitigation measures to meet performance levels.

Noise Impact Assessment (NIA)

As part of an application for an aggregate development, the Applicant must show that the facility meets the requirements set out in Standard 4.01. It is advised that Applicants retain all supporting information relating to relevant surveys for reference if a noise complaint is received by the County.

An acceptable NIA report submitted to the County for the purpose of demonstrating compliance with Standard 4.01 must include (at a minimum) the following information:

(a) The direction and distance to the nearest or most impacted dwelling(s) and institutional building(s), together with identification of the sound level limit to be applied to the dwelling(s) or institutional building(s) in accordance with Standard 4.03 and a description of how that noise limit was calculated.

Noise Survey Locations

All noise surveys and modelling undertaken for the purposes of demonstrating an aggregate development's compliance with Standard 4.03 shall identify (on a map) the nearest or most impacted dwelling(s) and institutional building(s) and shall undertake ambient sound level recordings to establish the ambient sound levels at those dwellings and institutional buildings.

The number of dwellings and institutional buildings where recordings for ambient sound levels are undertaken shall be dependent on the characteristics of the aggregate development and other factors such as surrounding topography and intervening land uses. Generally, where there are several dwellings and/or institutional buildings located on a similar line of direction from an aggregate development that share a similar noise environment, recordings shall be taken from the nearest of those dwellings/ institutional buildings to establish the ambient levels for all properties. The acoustic specialist undertaking the sound level recording shall follow industry established practices in determining the number of required noise survey locations for any

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assessment undertaken and shall describe their methodology for selection of noise survey locations in the relevant noise report submitted to the County.

Appropriate noise modelling shall be undertaken to determine limits for the selected noise survey locations in accordance with Standard 4.03. The identified limits shall be carried forward within any planning or development permit approval and compliance with the limits shall be monitored in accordance with any Noise Monitoring Program approved by the County.

Sound level recordings shall be undertaken 15 metres from the selected dwelling(s)/ institutional building(s) (or other appropriate free-field location) and under representative conditions. The 15 metre requirement may be altered if it is physically impossible or acoustically illogical. Another measurement location may also be chosen if the affected dwelling or institutional building is not an appropriate location or if the owner of the dwelling/ institutional building does not consent to the sound level recording being undertaken on their property. In such cases, those undertaking the ambient sound level recording shall note the recorded sound level and, using industry-recognized acoustic techniques, shall calculate the estimated ambient sound level at the affected dwelling or institutional building.

Noise Impact Assessments undertaken shall not only consider existing dwellings and institutional buildings, but also those permitted by the County that are under construction at the time of any survey being undertaken.

(b) Identification of all significant sources of noise from the proposed or existing facility and their associated sound power/pressure levels. Indication shall be given on the location from which the sound data is derived; for example, manufacturer specifications, field measurements or estimates. It should be noted that use of any estimates or extrapolation techniques can lead to inaccuracies and therefore is less reliable than actual field measurements made once the equipment is in place. When using manufacturer's data for expected performance, where appropriate, this data shall be modified to account for actual operating conditions. In identifying all significant sources of noise, the frequency and location (e.g. fixed or mobile) of each noise source shall also be indicated.

(c) Survey methodology information including:

- type of model used (models or hand calculations may be used to obtain the predicted sound level;
- standards selected, source directivity considerations;
- ground absorption conditions;
- meteorological parameters;
- terrain parameters selected;
- reflection parameters; and
- any adjustments made. (Documentation of power level calculation assumptions made must be provided, e.g., source size considerations).

(d) Justification of survey methodology and a description of the steps implemented to reduce uncertainty in sound level measurement and calculation.

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Noise Modelling

Differences can occur in predicted noise levels from noise modelling depending on such factors as the noise propagation algorithm used, input parameters, and sound pressure level calculations. The acoustic specialist conducting the noise modelling has the flexibility to choose the appropriate model. However, acknowledgement should be given within any submitted assessment of the limitations of the chosen model.

The chosen model must incorporate the following parameters:

- geometric spreading;
- barrier effects;
- atmospheric absorption;
- ground attenuation; and
- specific wind speed/direction.

Note that consideration should be given to

- source identification:
  - source size and location;
  - Isolation;
  - sound power level (PWL)-SPL spectrum data; and
  - Intermittency;
- mild downwind and/or temperature inversion conditions.

The following must be used in modelling summertime conditions for an acceptable NIA:

- wind speed: 5.0 to 7.5 km per hour (km/hr);
- wind direction: from the aggregate development to the dwelling(s)/ institutional building(s);
- temperature: 0 to 25 degrees Celsius;
- relative humidity: 70 to 90 per cent; and
- topography and ground cover: consistent with site conditions.

Noise modelling within the Noise Impact Assessment shall assess the noise impacts of a development as it will be implemented. For example, predicting sound levels of plant and machinery according to their operating levels and their potential to be moved around a site.

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:

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	Just Perceptible	Clearly Perceptible	Highly Perceptible
Tonal Sounds	+2dB	+4dB	+6dB
Impulse Sounds	+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.

Determining the Ambient Sound Level

Ambient sound level surveys shall be undertaken to determine the sound levels that currently exist in an area and to determine the level of allowable adjustment that can be applied under the limits stated in Standard 2.03. The ambient sound level shall include all current noise sources, other than those that are not typical of the usual local noise environment. For the purposes of assessment against Standard 2.03, ambient sound level recordings shall be taken as LA90 to exclude infrequent noise sources and give a realistic measurement of average sound levels.

An ambient sound level survey shall, at a minimum, consist of a continuous sound monitoring survey over the proposed/existing hours which the aggregate extraction and/or processing development are undertaken, with separate measured ambient sound levels presented for the daytime (7:00 a.m. to 10:00 p.m.) and (where applicable) nighttime (10:00 p.m. to 7:00 a.m.) periods.

The ambient sound level recording must be taken without the proposed/existing aggregate extraction and/or processing development operating.

Noise Survey Instrumentation

Instrumentation used to conduct sound monitoring surveys must 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 LAeqs over the time periods required and must meet the minimum technical specifications in the International Electrotechnical Commission (IEC) standard 61672-1:2013, or its latest revision, for Class I sound level meters.

Low Frequency Noise

A-weighting measurements typically discount the lower frequencies. Therefore, lower frequency noise may be a problem in some situations where the dB(A) value is meets the limits set out within Standard 2.03, 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.

Excluded Matters

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

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APPENDIX D: GROUNDWATER MONITORING PLAN METHODOLOGY

General Guidance

As part of Standard 11.06, a Groundwater Monitoring Plan is required where proposed extraction takes place below the determined water table. Aggregate operators are expected to utilize industry best practice standards to protect the quality of ground water.

Determining Water Table Level

Standard 11.05 establishes that a Groundwater Investigation Report shall be prepared for all new or expanding aggregate development. The Groundwater Investigation Report shall detail the groundwater table. When a proposed operation is expected to extract below this level a Groundwater Monitoring Assessment shall be prepared.

Sampling Timing

Groundwater samples shall be collected on a semi-annual basis (autumn and spring) by an independent qualified hydrological professional. Where an independent qualified hydrological professional deems it acceptable, sample collection may be reduced to an annual basis. The Applicant/Owner shall provide the qualified hydrological professionals recommendation to County within five business days of receiving it.

Sampling Procedures

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

Testing

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

- datalogger download and programming;
- groundwater sampling;
- groundwater analysis (routine and dissolved metals); and
- water well inspections.

Water levels shall be recorded and referenced to geodetic elevation.

Annual Reporting

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

- description of information;
- map of groundwater monitoring network and description of monitoring program;
- summary of geodetic water levels and interpretation of groundwater flow system; and
- summary of analytical data as required and interpretation of the data collected since the monitoring program began, including:
    - plots showing trends in parameter concentration;
    - comparison of measured parameter concentration to Canadian Drinking Water Standards;

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- remedial action, if required; and
- recommendations for changes to the groundwater monitoring program.

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 reporting 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 sand and gravel operations shall be artificially recharged utilizing deep recharge pits (sumps) to a depth in contact with the formation and aquifer. Artificial recharge will 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.

A *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.

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