



Master Site Development Plan

Hillstone Aggregates | NW-36-26-04-W5M

HILLSTONE AGGREGATES

CIMA+

B&A

Hillstone Aggregates
Aggregate Resource Development
Master Site Development Plan

Continuation of Aggregate Resource Development
on NW-36-26-4-W5M

MSDP: December 2012
Amendment: February 2021
Amendment: 2026

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HILLSTONE AGGREGATES

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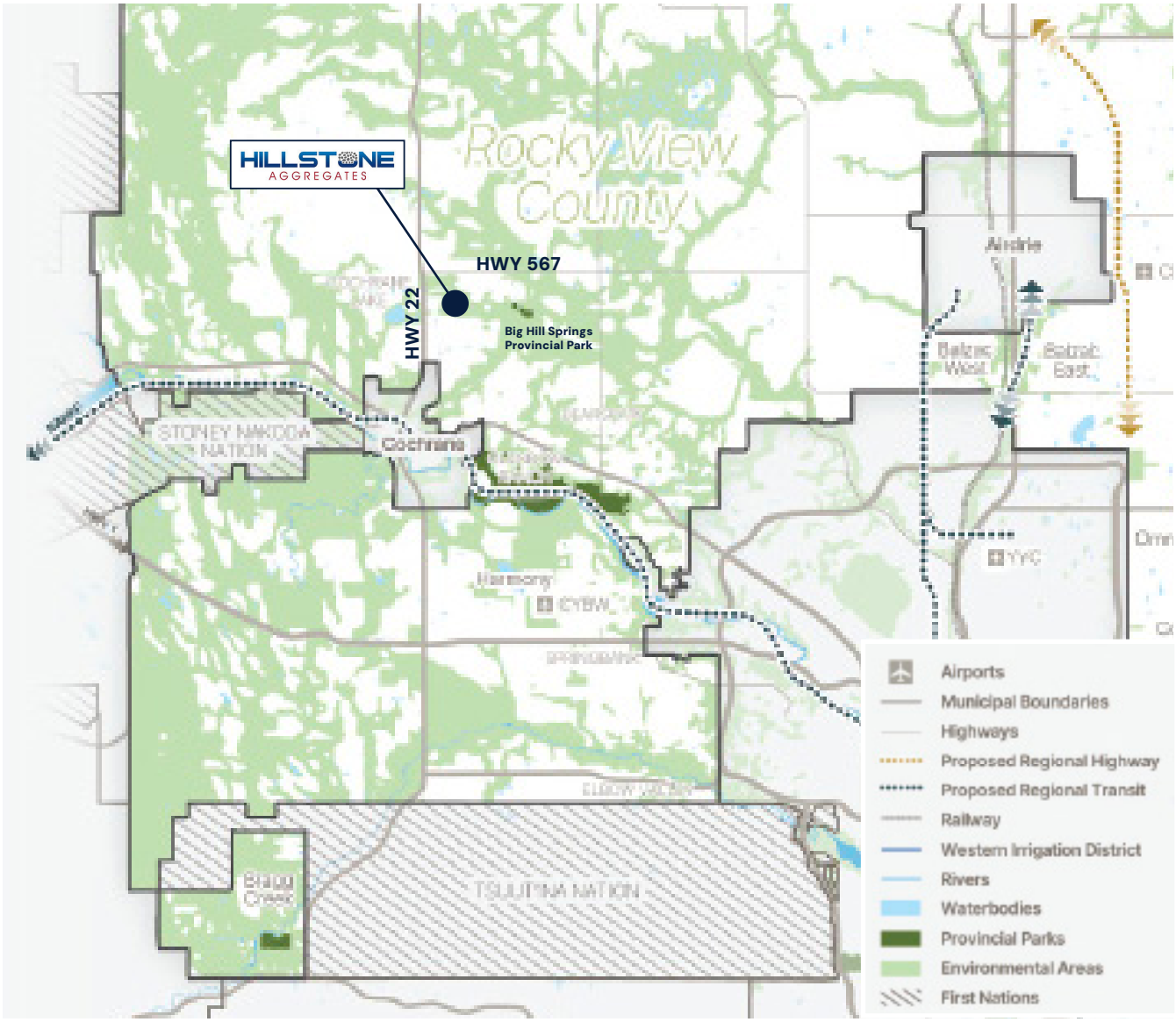
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1.0 OVERVIEW

1.1 INTRODUCTION

Hillstone Aggregates is proposing to expand a current gravel pit located on a quarter section identified as NW 36-26-04-W5M in Rocky View County [Figure 1]. The site has been used for sand and gravel operations since the late 1960s and expanded its operations in the 1980s under the name of Airth Gravel Pit. In 2007, 1189677 Alberta Ltd. purchased the site and continued operations initially as Big Hill Springs Gravel Pit, currently known as Hillstone Aggregates. The site has direct access to Provincial Hwy 567, is within 2 km of Provincial Hwy 22, and municipally addressed as 40217 Big Hill Springs Road [Figure 2].

Figure 1 - Regional Context Map (Country Plan, Map 4, County of Rocky View)



The site is comprised of ±66.58 hectares. As outlined by Table 1, the east ±41.57 hectares is split into three development phases with active development permits and is zoned Special Natural Resource (S-NAT) District (East Lands). The west ±25.01 hectares is currently zoned Agricultural Small Parcel (A-SML) District (West Lands) and proposed to be redesignated as S-NAT. The site is one of a few operating, provincially permitted long-term sources of aggregate in the area. It plays a critical role in the continuous close-to-market supply of aggregate product for use in Rocky View County and the surrounding region [Figure 3].

Figure 2 - Local Context Map

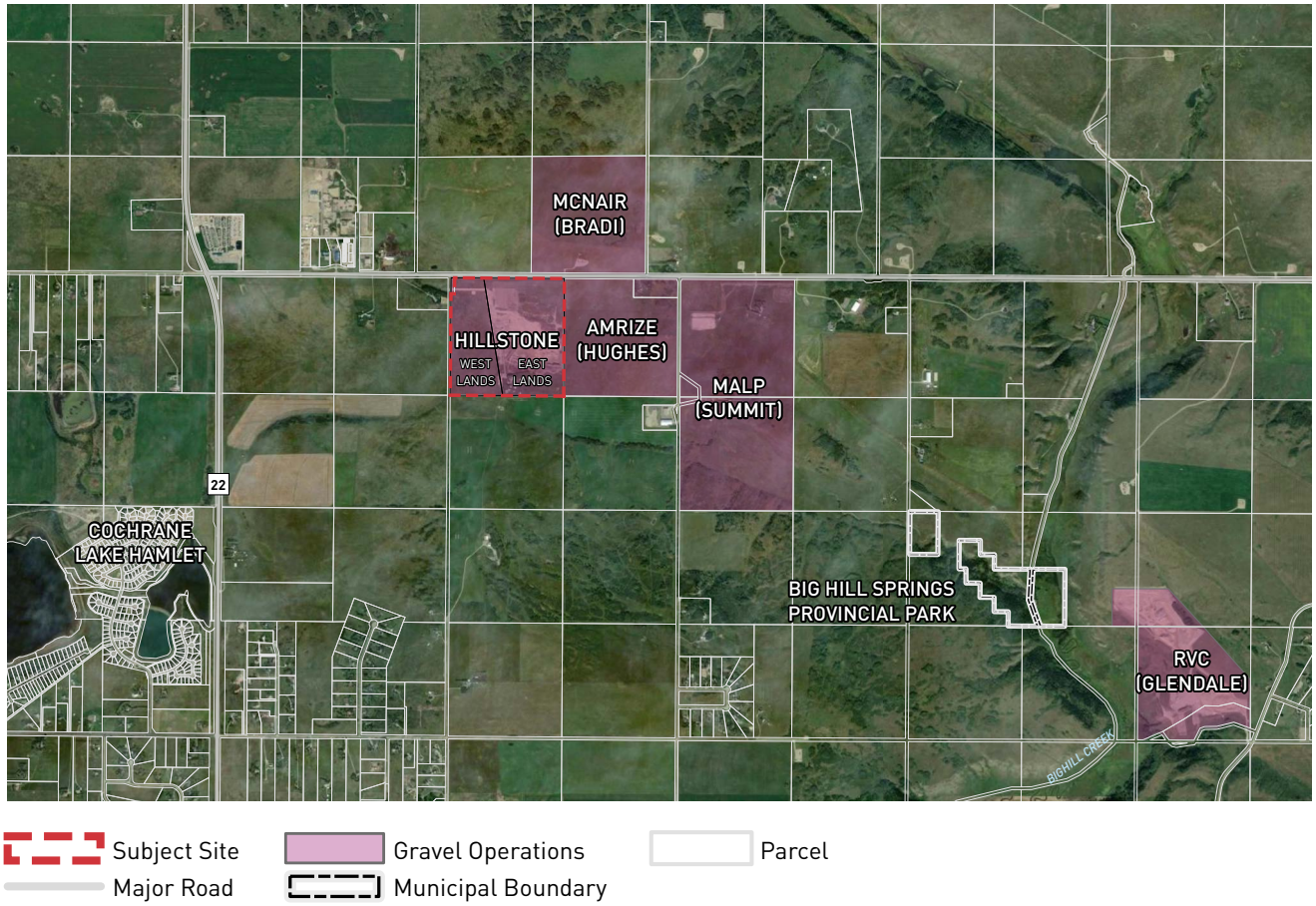


Table 1 – Summary of MSDP Land Area

Summary of MSDP Land Areas	Ha	Acres
Area of West Lands	25.01	61.80
Area of East Lands	41.57	102.72
Total Area	**66.58**	**164.52**

Figure 3 – Site Condition Map



1.2 PURPOSE

Rocky View County recognizes aggregate resource development as an important temporary land use which satisfies local, regional and provincial resource needs for the construction of roads, buildings and other infrastructure. The Municipal Development Plan (MDP, 2025) supports the extraction of natural resources that minimize landscape disruption, impacts on existing communities and encourage collaboration between the County, the industry and affected residents.

The MDP (2025) requires a Master Site Development Plan ("MSDP") for all private aggregate resource developments. The MSDP establishes a policy framework to describe how the proposed aggregate operation will be implemented in accordance with the MDP (2025) requirements for aggregate operations and Policy C-711 Aggregate Development Performance Standards (2025). Originally in 2012, an MSDP was adopted for the subject site as part of the application to redesignate the East Lands to S-NAT and the West Lands to A-SML, and the process required regulatory approvals.

The purpose of the 2026 amendment is to facilitate the redesignation of the west lands to Special, Natural Resources District (S-NAT) in compliance with Land Use Bylaw amendment C-8634-2025, and recognize the completion of the Type II intersection at the northwest corner of the subject parcel with associated closure of the former site access.

1.3 OBJECTIVES

The following are the main objectives of this document:

- Summarize the existing conditions of the subject quarter section and the surrounding area.
- Provide a high-level plan for the development and management of the gravel activity on the quarter section.
- Incorporate benefits and experience gained from operating the pit under the Phase 1-3 Development Permits.
- Document policies and development strategies for extraction and reclamation of ongoing and future operational phases.
- Describe the rationale for further gravel extraction from the site contiguous with Phase 1, 2 and 3.
- Provide background to setting the parameters and policies for Development Permit applications.
- Confirm the expectations of the various governmental jurisdictions and the owners of Hillstone Aggregates.
- Identify the various studies and reports to address the policies established in this document.

1.4 COMMUNITY BENEFITS

Aggregate product is critical for the construction of schools, libraries, hospitals, roads and other public infrastructure, as well as private development such as businesses and residences. Each Albertan uses about 10-15 tonnes of aggregate product per capita annually (Alberta Sand and Gravel Association, Aggregate 101). Aggregate deposits are a non-renewable natural resource and are located in places determined by natural processes. Once a deposit is fully extracted, it cannot be replaced. If urban development occurs at or near a deposit, that deposit becomes inaccessible. It is essential that aggregate deposits are identified and permitted to operate as to prevent the sterilization of these valuable non-renewable resources. Aggregate resource development is a temporary land use. Once marketable aggregate is fully extracted and the land has been reclaimed, the land can successfully return to productive agricultural lands, park space, wetlands or other uses. A robust municipal and provincial regulatory regime, comprehensive review process, extensive operating and end use reclamation requirements, and the implementation of hard and soft mitigation measures, all ensure responsible and safe aggregate resource development in Rocky View County.

The site contains large quantities of marketable aggregate with relatively low overburden, which can be produced with minimal offsite impacts and easy access to haul routes. Market analysis demonstrates that there is continuing demand for aggregate product originating north of Calgary for use in Rocky View County and the surrounding region. Locally produced aggregate product reduces construction costs, haul distances, emissions and offsite impacts. Operators pay the Community Aggregate Payment (CAP) levy, industrial tax base, and off-site levies to Rocky View County.



1.5 GUIDING PRINCIPLES

Responsible operations and business practices have been implemented by Hillstone Aggregates since 2007 and will continue to be based on the following principles:

- Safety of staff and public.
- Respect for neighbours and mitigation of any impacts.
- Timely response to neighbour concerns and requests for information.
- Timely communications with surrounding residences and businesses.
- Environmentally sound practices such as erosion and sediment control, identification of materials and responsible management of soils and aggregates, and the adoption of processes that lead to successful reclamation.
- Continuous monitoring and reporting of all site activities.
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- Timely response to neighbour concerns and requests for information.
- Timely communications with surrounding residences and businesses.
- Environmentally sound practices such as erosion and sediment control, identification of materials and responsible management of soils and aggregates, and the adoption of processes that lead to successful reclamation.
- Continuous monitoring and reporting of all site activities.
- Compliance with regulatory approvals.





1.6 COMMUNITY ENGAGEMENT

Hillstone Aggregates has undertaken public engagement efforts to provide awareness regarding operations and future plans for this site. As part of the 2012 MSDP, several open houses were held covering the land use change to S-NAT and A-SML Districts and future development, which provided valuable input from neighbours and other interested parties. Plans were on display showing current and proposed uses. There were numerous questions that brought on open discussion on activity to date and proposed future activities, which mainly centered on the west-east berm along Highway 567 and vehicle access to the operations.

As part of Hillstone Aggregates' application to renew Phase 1 Development Permit, an open house was held in February 2018. There were no verbal comments or written requests for further information. Another open house was held in June 2018 focusing on a Phase 2 Development Permit. Attendance was limited and no further action was required. The open houses were each advertised with two inserts in the Rocky View Weekly and were accompanied by a mail out to ±150 landowners surrounding the site.

A virtual information session was held on May 8, 2025 to discuss the proposed application to amend the MSDP and to apply for a Land Use Redesignation on the west lands. Landowners within 1 mile of the Hillstone property were notified of the session by mail. Seventeen people registered for this event and 12 people attended. An overview of Hillstone Aggregates' operation as well as the intent of the MDSP amendment and land use application were provided. The session consisted of an approximately 15 minute presentation and one hour for questions. Questions were based on the following topics:

- The process for triggering shutdowns;
- Information session format and attendance;
- The need for additional gravel;
- Questions regarding Phase 6 and inclusion in the application;
- Process for reporting concerns and receiving feedback;
- Status of this application compared to the Aggregate Resource Plan;
- Land reclamation and what is involved; and
- The process for water and noise monitoring.

As a result of feedback during the virtual info session, Hillstone Aggregates decided to pause the MSDP and land use amendment for the proposed Phase 6 lands [Figure 2]. Hillstone will continue to explore operation plans for Phase 6 that will meet County standards and mitigate neighbours' concerns and may bring forward a separate application at a later date.



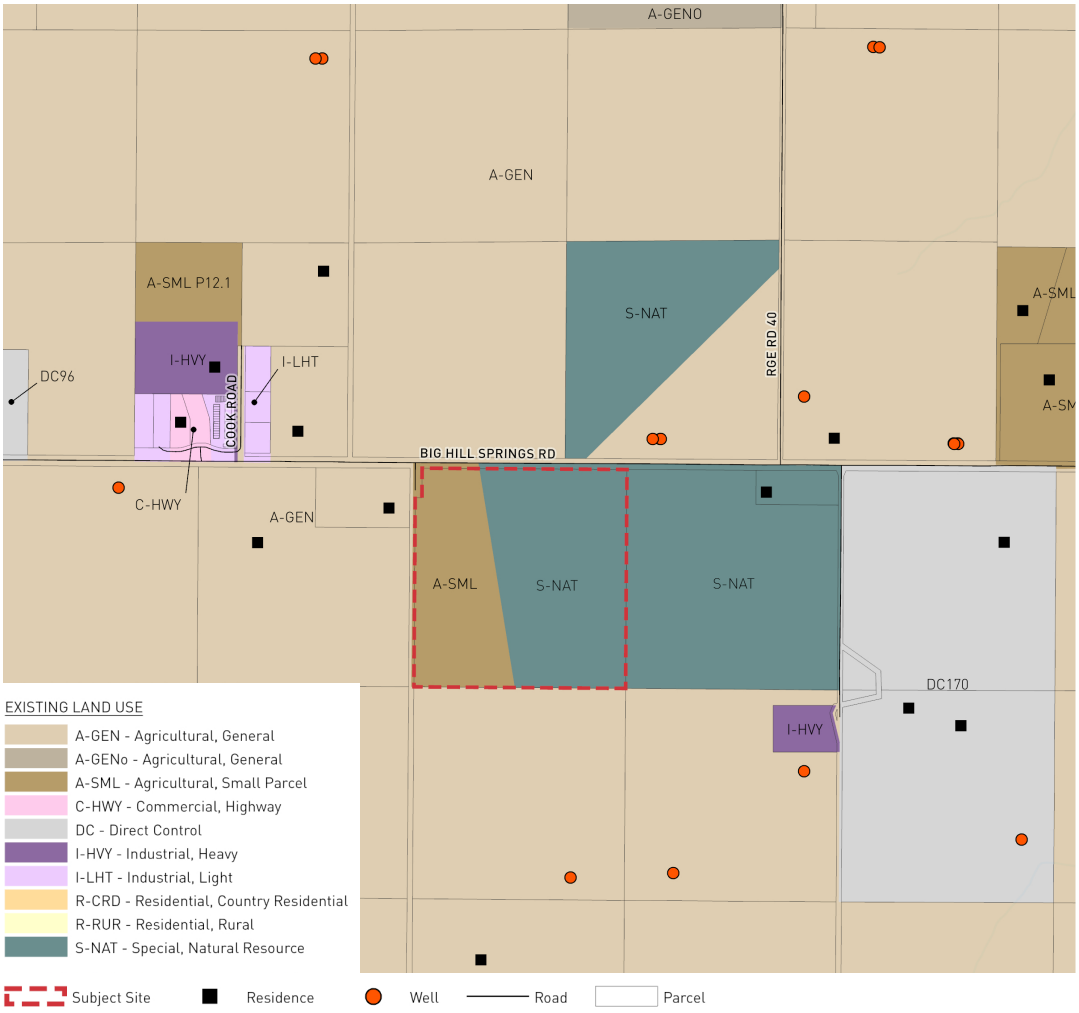
2.0 SITE DESCRIPTION

2.1 CONTEXT

Hillstone Aggregates is located on the south side of Provincial Hwy 567, approximately 2 km east of Provincial Hwy 22. The site is approximately 8 km northeast of Cochrane and 3 km NW of Big Hill Springs Provincial Park [Figure 2]. The majority of the surrounding area is designated as Agricultural (A-GEN) District. Other districts include S-NAT, A-SML. Further west along Provincial Hwy 567 there are Heavy and light Industrial Districts (IHVY and I-LHT) located on north side of the road [Figure 4].

In addition to aggregate resource development on the site, the surrounding lands are predominantly used for agricultural purposes (farming operations and grazing land). There is one residence located south of the subject site, two residences on the quarter section to the west, and 18 other residences within 1.6 km of the site. Other non-residential uses in the area include oil and gas wells, aggregate resource operations, and several industrial and commercial businesses concentrated in two areas west of the site along Provincial Hwy 567 [Figure 4].

Figure 4 - Contextual Land Use Map



2.2 SITE CONDITIONS

The East Lands are currently used by Hillstone Aggregates for Phase 2 and 3 of aggregate operations. A berm is located within the 60 m setback along Provincial Hwy 567 along the East Lands frontage. A similar, smaller berm has been built on the West Lands frontage. There is a scale (dual train) facility, truck staging area, office with portable sanitary facilities and an internal road with access/egress to Provincial Hwy 567.

As marketable aggregate in Phase 2 is exhausted and areas of the land are reclaimed, operations will move south, which is a native pasture and improved pasture area. A quonset, residence and accessory buildings are currently located within Phase 3. All of the remaining accessory buildings within Phase 3 will be demolished prior to excavation of the phase. Tree stands are largely confined to the farmyard in the southwest corner of the East Lands with a few individual trees scattered throughout the parcel. Several wetlands and ephemeral drainages are also present.

Lands adjacent to the site include the following uses:

- **North**: Provincial Hwy 567 runs along the north boundary of the site, with agricultural lands across the highway. The BRADI Gravel Pit and two oil and gas wells are located on NE side of the site [Figure 5].
- **South**: Mainly agricultural land [Figure 6].
- **East**: Approved Special, Natural Resources District (S-NAT) [Figure 7].
- **West:** Mainly agricultural on the balance of the site designated A-SML (West Lands). Agricultural use continues on the section to the immediate west which also has two dwellings [Figure 8].

Figure 5 - View from the site to north



Figure 6 – View from the Hwy 567 to south



Figure 7 – View from the site to east



Figure 8 - View from the Hwy 567 to southwest (current access)



2.3 TOPOGRAPHY

The site is located on the plateau and south-facing slope of a broad valley system. The site is undulating with steeper slopes (22-26% gradient) bisecting the site diagonally. Slopes are present along the west boundary. These slopes are further dissected by the presence of the ephemeral drainages and their associated draws. The south edge of the site, at the base of the slope (0.5-2% gradient) is flat.

2.4 HYDROLOGY

The site is within the Bow River drainage basin, within the Big Hill Springs Creek sub-watershed. The Bow River drainage basin is underlain entirely by the Paskapoo bedrock aquifer system. This aquifer system is located between 131-180 m below grade, and consists of the Dalehurst, Lacombe and Hayes aquifers. Static water depths of five water wells within 1 km radium of the site range from 22.25 m to 24.38 m below ground surface.

There are no rivers, creeks or streams on the site. The nearest water body to the site is an unnamed tributary to the Big Hill Springs Creek, about 2 km southeast. The Big Hill Springs Creek channel is about 3 km northeast and 4.5 km southeast of the site. The Bow River channel is about 9 km south of the site. Any intermittent drainage of undisturbed surface runoff drains to the southeast and southwest following local topography. The site is well drained.

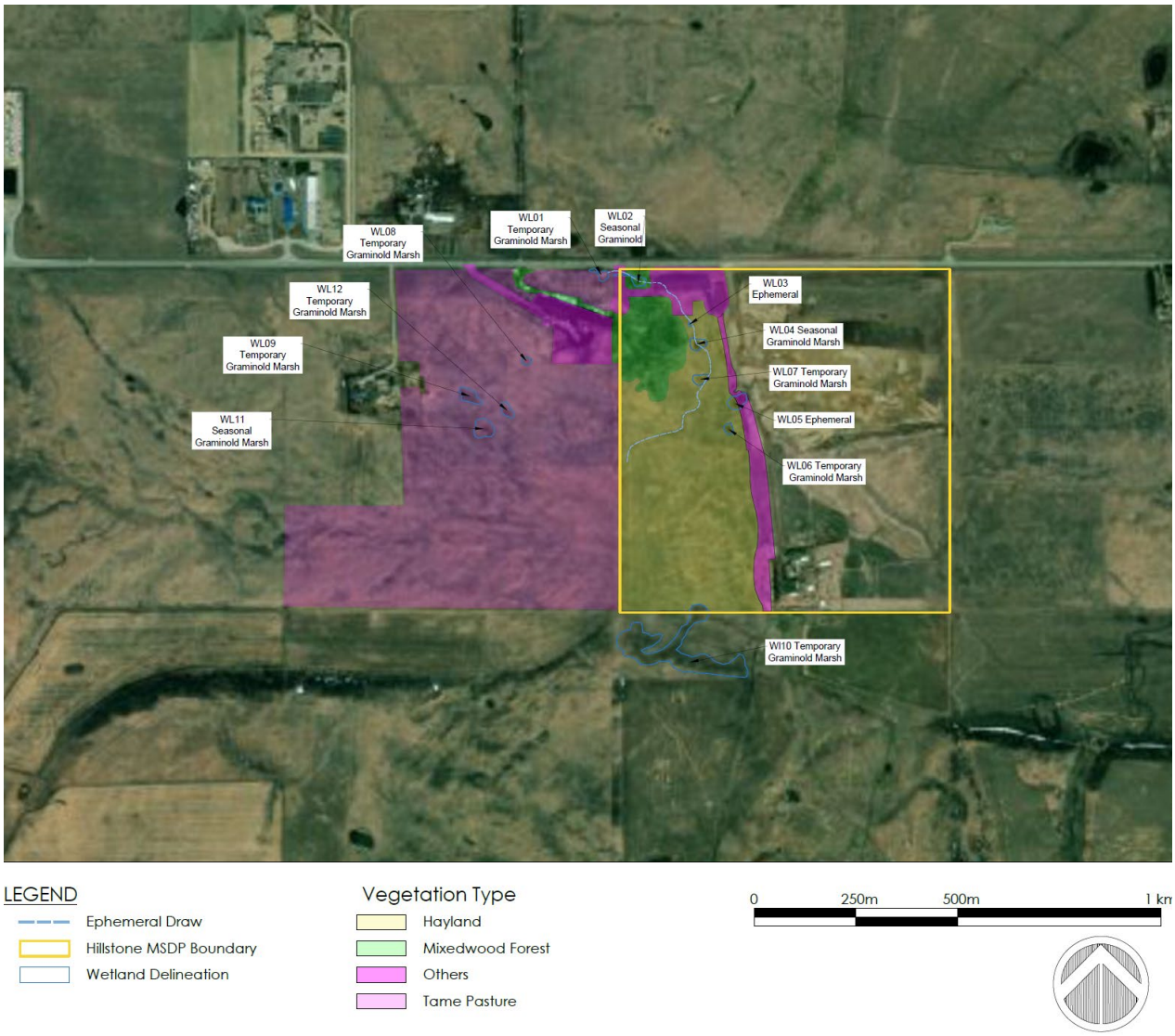
Four ephemeral drainages were recorded, and generally run to the south within the defined valleys in the coulee walls. Drainages are vegetated throughout with smooth brome and Kentucky bluegrass, no scour was observed. Two ephemeral waterbodies, one temporary marsh, and one seasonal marsh were recorded. Wetlands were delineated and functional assessments were conducted for the two marshes. None of the wetlands meet criteria for a Crown land claim.

2.5 VEGETATION

The site is in the Foothills Parkland Natural Subregion of the Parkland Natural Region of Alberta. The vegetation community of this Subregion is highly diverse, due to the landscape's rapid topographic and climatic changes.

Significant portions of the site are hay land, seeded to Timothy and Kentucky bluegrass. The remainder of the quarter section is the former farm site. Remnant patches of fescue grassland are found along some of the coulee breaks. Other vegetation includes numerous mature deciduous (poplar and aspen) and spruce trees within the farm site.

Figure 9 – Existing Environmental Context



2.6 SOILS

- The site is within the Thin Black Soil Zone of southwestern Alberta. The site is dominated by well-drained Ortho Black Chernozemic soils of the Dunvargan series. This series is developed on medium-textured glacial till deposits with variable stoniness throughout the profile. The till thickness over bedrock is variable, especially in proximity to the coulees located within the area. Smaller areas of Gleysol soils, deposited over undifferentiated mineral parent material with variable textures, are commonly found in lower lying or depression areas and are characterized by poor drainage.

- Most of the site is rated for agricultural capability soils as Class 4H(8) to 5W(2). Soils in this class range have severe limitations that restrict the growth of certain vegetation or specified crops or require special management or conservation practices.

- Shallow soil inspection points were conducted across the quarter section. Topsoil ranges from 10-44 cm with an average thickness of 20 cm. Topsoil was black to very dark brown. No mixing of topsoil was noted, but there were areas where coarse material and gravel were observed in the subsoil below 15-18 cm. Soil mottling was noted in both wetland soil samples.

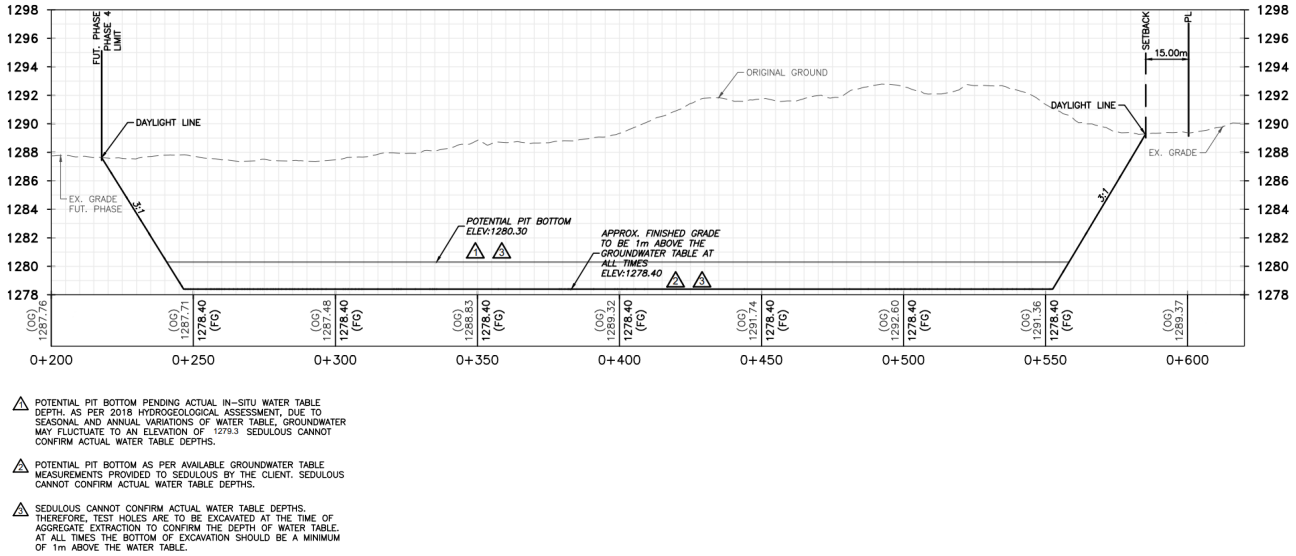
- Surface stoniness was low throughout the site, although stones, gravel and other coast material were frequently encountered below the surface, particularly in the centre part of the East Lands. High cover of surface stones at limited locations. Small shallow excavations were noted throughout the site.



2.7 GRAVEL DEPOSIT

Several test pits and test holes from 2010 to 2015 demonstrate the site contains large quantities of aggregate with low overburden cover. Topsoil varies from 0.10 to 0.45 cm thick and the subsoil layer varies from 0.10 to 0.20 m thick. On average, the topsoil and subsoil layers are together 0.20 m thick. Overburden ranges in depth from 0.3 to 4.0 m, with an average thickness of 3.5 m. Sand and gravel deposits vary in thickness from 12 to 24 m, with an average thickness of 13 m. The overburden ratio varies over the quarter section with a weighted average overburden/gravel ratio of ±1:3.

Figure 10 – Conceptual Cross Section N-S Phase 4



1 POTENTIAL PIT BOTTOM PENDING ACTUAL IN-SITU WATER TABLE DEPTH. AS PER 2018 HYDROGEOLOGICAL ASSESSMENT, DUE TO SEASONAL AND ANNUAL VARIATIONS OF WATER TABLE, GROUNDWATER MAY FLUCTUATE TO AN ELEVATION OF 1279.3 SEDULOUS CANNOT CONFIRM ACTUAL WATER TABLE DEPTHS.

2 POTENTIAL PIT BOTTOM AS PER AVAILABLE GROUNDWATER TABLE MEASUREMENTS PROVIDED TO SEDULOUS BY THE CLIENT. SEDULOUS CANNOT CONFIRM ACTUAL WATER TABLE DEPTHS.

3 SEDULOUS CANNOT CONFIRM ACTUAL WATER TABLE DEPTHS. THEREFORE, TEST HOLES ARE TO BE EXCAVATED AT THE TIME OF AGGREGATE EXTRACTION TO CONFIRM THE DEPTH OF WATER TABLE. AT ALL TIMES THE BOTTOM OF EXCAVATION SHOULD BE A MINIMUM OF 1m ABOVE THE WATER TABLE.



Table 2 – Mining Phase Statistics

Phase	Size	Mineable Area (Total Area -Setbacks)	Status	Years
Phase 1	±16.18 ha (40 ac)	±12.43 ha (30.72 ac)	Mining Complete, Reclamation Ongoing	1-3 (2023-2025)
Phase 2	±16.18 ha (40 ac)	±15.69 ha (38.77ac)	Mining Reclaimation Ongoing & Sales Area	1-2 (2023-2024)
Phase 3	±9.19 ha (22.72 ac)	±8.28 ha (20.47 ac)	Active Process Area	2-3 (2025-2026)
Phase 4	±12.87 ha (31.80 ac)	±11.77 ha (29.08 ac)	Future Mining Area	3-6 (2026-2027)
Phase 5	±12.14 ha (30.00 ac)	±8.89 ha (21.96 ac)	Future Mining Area	6-9 (2028-2031)
Total Pit Size	±66.58 ha (164.52ac)	±57.06 ha (141.00 ac)		

2.8 GEOLOGY/STRATIGRAPHY

Regional and local geological information indicate that the geology beneath the site consists of surficial deposits underlain by bedrock units of the Paskapoo Formation. The surficial deposits consist of a thin till layer over a generally thick sand and gravel deposit. The bedrock consists of sandstone and siltstone of the Paskapoo Formation which is considered as containing extensive aquifer and the primary target for water wells located near the Site.

Parent material in the west portion of the site is moraine (till) deposited by glacial ice. The east portion of the site is stagnant ice moraine, and it is generally low to high relief hummocky topography. In the vicinity of the site, the surficial deposits are interpreted to have 10-30 m thickness and the gravel deposits to have a 5-15 m thickness.

2.9 WILDLIFE

Wildlife species previously reported in the area include the barn swallow, black-billed magpie, blue-winged teal, boreal chorus frog, common raven, red-tailed hawk, Richardson's ground squirrel, savannah sparrow, sora, western meadowlark, and Wilson's snipe. Wildlife species observed during a site visit include the American crow, American goldfinch, American robin, black-billed magpie, Brewer's blackbird, clay-coloured sparrow, red-breasted nuthatch, rock pigeon, savannah sparrow, Swainson's hawk, tree swallow, western meadowlark, northern pocket gopher.

3.0 REGULATORY APPROVALS

3.1 POLICY COMPLIANCES

3.1.1 South Saskatchewan Regional Plan (SSRP)

There is policy in this plan that supports extraction of resources prior to other eventual uses of the land. According to the SSRP, maintaining opportunities for surface materials extraction supports the increasing need for surface materials products to keep pace with the region and the province's population growth. Maintaining opportunities for the development of these resources is critical to the success of surface materials industries.

3.1.2 Municipal Development Plan (MDP)

The County's Municipal Development Plan was approved in September 2025. The purpose of this document is a 20-year growth and development vision for the County. The MDP supports natural resource extraction and development, fore areas that align with the following objectives:

- Minimize landscape disruption and impacts on existing communities and potential new Growth Areas and adverse impact of aggregate resource extraction on existing residents, adjacent land uses, and the environment.
- Mitigate negative environmental impacts.
- Ensure reclamation of the land to its highest and best use and new natural resource developments provide appropriate setbacks to maintain safe use of adjacent lands.
- Encourage collaboration between the County, the aggregate extraction industry, and affected residents to develop mutually agreeable solutions to mitigate impacts of extraction activities.

The County requires an MSDP to provide an effective basis upon which to evaluate future municipal applications for the proposed development, construction, operation and reclamation activities.

This MSDP complies with the relevant policies of the Municipal Development Plan (2025) and addresses the items in Appendix B: Lower-Level Plans and Technical Requirements, B5.0 Master Site Development Plans. The intention of the MSDP is to provide guidance for upcoming Development Permit processes related to the extraction of gravel within this Plan in compliance with the Municipal Development Plan (2025).

3.1.3 Land Use Bylaw (C-8000-2020)

The East Lands are designated Special, Natural Resources (S-NAT). The 2026 MSDP amendment and land use redesignation are being applied for concurrently on the west lands, proposed to be designated Special, Natural Resources in compliance with recent amendment to Land Use Bylaw (C-8634-2025).

Development Permit approvals are generally obtained for each phase of gravel extraction. At the discretion of the County, expiration dates have been placed on the Development Permit approvals and renewals must be sought in these cases. As municipal approvals expire and/or activities evolve on the site, further approvals will be obtained, as required.

3.1.4 Aggregate Development Performance Standards

The Aggregate Development Performance Standards were approved in December 2025. The purpose of this document is to outline the performance standards that aggregate extraction and/or processing operations in Rocky View 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. The standards identify expectations for engagement, annual reporting and operations. The Hillstone Gravel Pit intends to meet these expectations.

3.2 PROVINCIAL APPROVAL

Aggregate resource development in Rocky View County is also regulated by the Province of Alberta under a variety of statutes, regulations and codes of practice. As Provincial authorizations expire and/or activities or requirements evolve, further authorizations will be obtained as required. An update to the Activities Plan was approved by the Province in September of 2024.

3.2.1 Environmental Protection and Enhancement Act (EPEA)

The Code of Practice for Pits applies to privately-owned pit sites that result in a disturbance of more than five hectares (Class 1). Operators are required to register with the Province prior to constructing, operating or reclaiming a Class 1 pit, and provide Five Year Reports. They must also follow the Code of Practice for Pits, their Activities Plan, and any applicable rules and regulations. Hillstone Aggregates is a registered graveloperator. The 5 Year Report, Activities Plan and other ongoing information are regularly provided to the province for review and acceptance.

3.2.2 Water Act

- The Water Act and associated regulations are applicable to all aggregate operations regardless of ownership of the land, unless exempted or excepted by the legislation. Typically, approval is required prior to dewatering, altering surface drainage, constructing an end pit lake, disturbing groundwater, and the use of water. In areas where groundwater is present, a buffer of 1 m is maintained.
- A Water Act authorization has been obtained to disturb certain water bodies on the balance of the East Lands as operations move south beyond Phase 1. Further Water Act approvals will be sought for applicable features prior to progress into Phases 4 & 5. The stormwater plan prepared by Westhoff has been amended to exclude the requirement of any stormwater pond. Hillstone Aggregates does not mine within the groundwater table.





3.2.3 Historical Resources Act

+ The Historical Resources Act serves to protect archeological sites, paleontological sites, historic buildings and other structures, and Aboriginal traditional use sites. If an activity is likely to result in the alteration of, damage to or destruction of a historic resource, the person or company undertaking the activity may be required to conduct a Historical Resources Impact Assessment (HRIA) among other requirements. Hillstone Aggregates has obtained the required authorization under the Historical Resources Act for the entire quarter section.

3.2.4 Alberta Transportation Roadside Development

+ Alberta Transportation requires a Roadside Development Permit for all new or changed developments, within 800 meters of the Provincial highway right-of-way. The north boundary of the site borders Provincial Hwy 567.
+ As a part of the 2021 MSDP amendment, a Traffic Impact Assessment was completed and supporting the functionality of moving the current access to the west boundary of the site. A Type II intersection was constructed at the northwest corner of the subject parcel and the former access site has been fully closed. An update memo to the Traffic Impact Assessment was completed in June of 2025 and another update will be required prior to Phase 5 operations.

3.3 FEDERAL APPROVAL

+ Federal approval is not required as federal lands are not traversed, provincial boundaries are not crossed, and federal funds will not be used for development of the site. Hillstone Aggregates will ensure that all activities abide by federal legislation such as Species at Risk Act and Migratory Birds Convention Act.



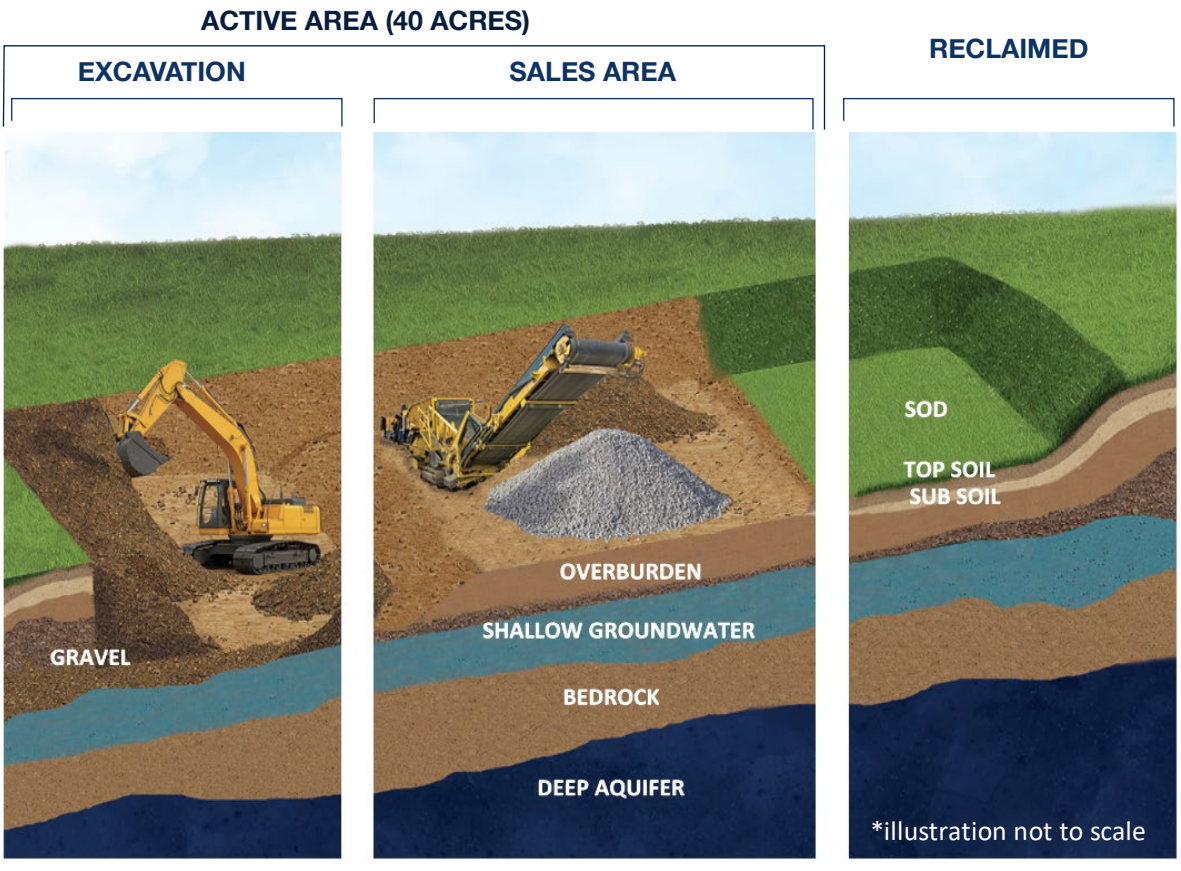
4.0 AGGREGATE EXTRACTION PLAN

4.1 SITE ACTIVITES

Hillstone Aggregates has been operating on the site for over a decade; and anticipates it will take a decade or more to work through all marketable aggregate on the East Lands and complete progressive reclamation. The 2026 amendment is being made to continue aggregate operations within the West Lands.

Hillstone Aggregates' operations have been, and will continue to be, comprised of stripping and grading of topsoil and overburden materials; construction of berms and stockpiles; mining the underlying gravel; crushing and screening; stockpiling and transporting the aggregate product to nearby markets; placing the stockpiled overburden and topsoil in the depleted areas as part of a progressive reclamation process which closely follows operations and approved phasing plans; and seeding the topsoil layer after final reclamation. Washing aggregate is not planned as part of the operation.

It is important to note that most activities do not occur all year round. Topsoil and overburden removal, placement and reclamation, as well as mining, crushing and screening using a portable processing plant, are typically completed during peak season (May to November). Materials are stockpiled on site for sale. The portable processing plant, located on the pit floor, is shut down during the off season except for repairs and maintenance (December to April).



The following describes the day to day workings of the pit. These items will remain substantially unchanged unless authorised by the relevant authority.

- All trucks are owned and operated by others and no trucks remain on site overnight.
- The onsite fuel tank is double walled and meets all environmental regulations, e.g. spill containment and spill kits are on site.
- Dust control is achieved by using purpose made watering equipment, chemical treatment of the gravel haul routes and enforcement of speed limit on site.
- Gravel crushing is intermittent dependent on demand. Quantities of various materials are stockpiled based on anticipated demand.

4.1.1 Hours of Operation

- The hours of operation are outlined within Policy #4.1. Any deviation will only be as a result of a successful application to Rocky View County for a temporary extension of operating hours. No aggregate operations (including crushing activities) will occur on Sundays. Most mining activities only occur from May to November.
- These hours are in alignment with the Noise Control Bylaw (C-5772-2003) and hours align with the pit's operations and the sites receiving gravel from this location.

Policy #4.1: Hours of operation within the site are expected to occur as following:

- **Monday to Friday: 6:00 am to 7:00 pm**
- **Saturday: 9:00am to 5:00 pm**
- **Sunday: Closed**
- **Statutory Holidays: Closed**



4.1.2 Scale, Office and Facilities

A portable scale facility is installed on site near the former property access. This access was closed in Spring 2023 and replaced with an internal gravel access road through Phase 5 and a Type II Intersection connecting the highway and approved by Alberta Transportation and Economic Corridors. A second train has been added which contributes to reducing on site noise and emissions. The facility is used for weighing trucks prior to loading and departure from the site. There is a crew shack and small office for site management, and sanitary facilities for staff and visitors. Facilities are currently in Phase 1, and as operations progress into future phases, they may be moved to ensure safe effective onsite logistics. Any changes in location made to the scale, office and other facilities will be identified at the time of Development Permit. Garbage facilities are provided onsite and removed as required.

Structure	Length	Width
Office	16m	4m
Scale	24m	4m
Lunch Room	20m	4m
Equipment Shed	14m	2m
Storage Tank + Liner	12m	5m
Garage	11m	8m

Policy #4.2: The scale, office and facilities are to be maintained in good working order providing a safe environment for staff and visitors.

Policy #4.3: Any changes in location made to the scale, office and facilities will be outlined at the time of development permit.

4.1.3 Water Usage and Storage

Domestic wastewater requirement for up to 5 onsite employees is managed using contractor supplied portable sanitary facilities. Potable water for employee use will be supplied using contracted water delivery service and is stored in the lunch room.

4.1.4 Pit Infrastructure and Equipment

Two (2) aggregate crushing and screening plants and stockpile areas for finished aggregate products are set up at the bottom elevations of the excavated Pit. Conservation of soil materials and overburden removal will be carried out using front end loader or bulldozer.

Two (2) aggregate crushing and screening plants and stockpile areas for finished aggregate products are set up at the bottom elevations of the excavated Pit. Conservation of soil materials and overburden removal will be carried out using front end loader or bulldozer.

When sufficient depleted areas of the Pit are available, direct stripping and replacement of soils and overburden materials will take place. Interim stockpiling will continue until this time. Stockpile surfaces will be rough graded to reduce the dust source potential. The areas around the stockpiles will be graded to direct surface runoff toward main sand and gravel excavation areas.

Appropriate protection measures (i.e., double-walled AST, liners) will be used for onsite fuel storage required for any Pit equipment.

Except for emergency breakdowns, no onsite maintenance or service facilities will be required for Pit equipment and vehicles.

Machinery	Quantity
Crusher	2
Generator	2
Cone Crusher	2
Screen Deck	2
Jaw Screek	2
Feeder	2
Power Van	2
Conveyors	Multiple
Excavator 700exc	2
Excavator 500exc	1
Wheel Loader	5
Skid Steer	1
Dozer	1
Grader	1

4.2 PHASING

Hillstone Aggregates currently has development permits for Phase 2 and 3 of operations in the East Lands. Reclamation is ongoing to maintain the site's 40 acre disturbed area maximum. The 2026 amendment is being made to continue similar operations on the West Lands. Overall phasing across the entire site occurs in a clockwise direction.

Operations on the East Lands are intended to occur in three phases as shown conceptually in Figure 9. As marketable aggregate in Phase 2 is exhausted, operations will move in a south direction into Phase 3 in accordance with an approved phasing plan. Delineation of the phases will be further detailed at the Development Permit application stage and sized appropriately to meet operational needs in compliance with the MSDP and provincial regulations.

Policy #4.4: Phasing will proceed in a clockwise direction around the quarter section in general accordance with Figure 9. A Reclamation Plan will be completed for each phase and approved by Alberta Environment and Protected Areas and Rocky View County.

Policy #4.5: Total disturbed area shall be limited to ±16 hectares (40 acres) at any time.



Figure 11- Overall Phasing Plan

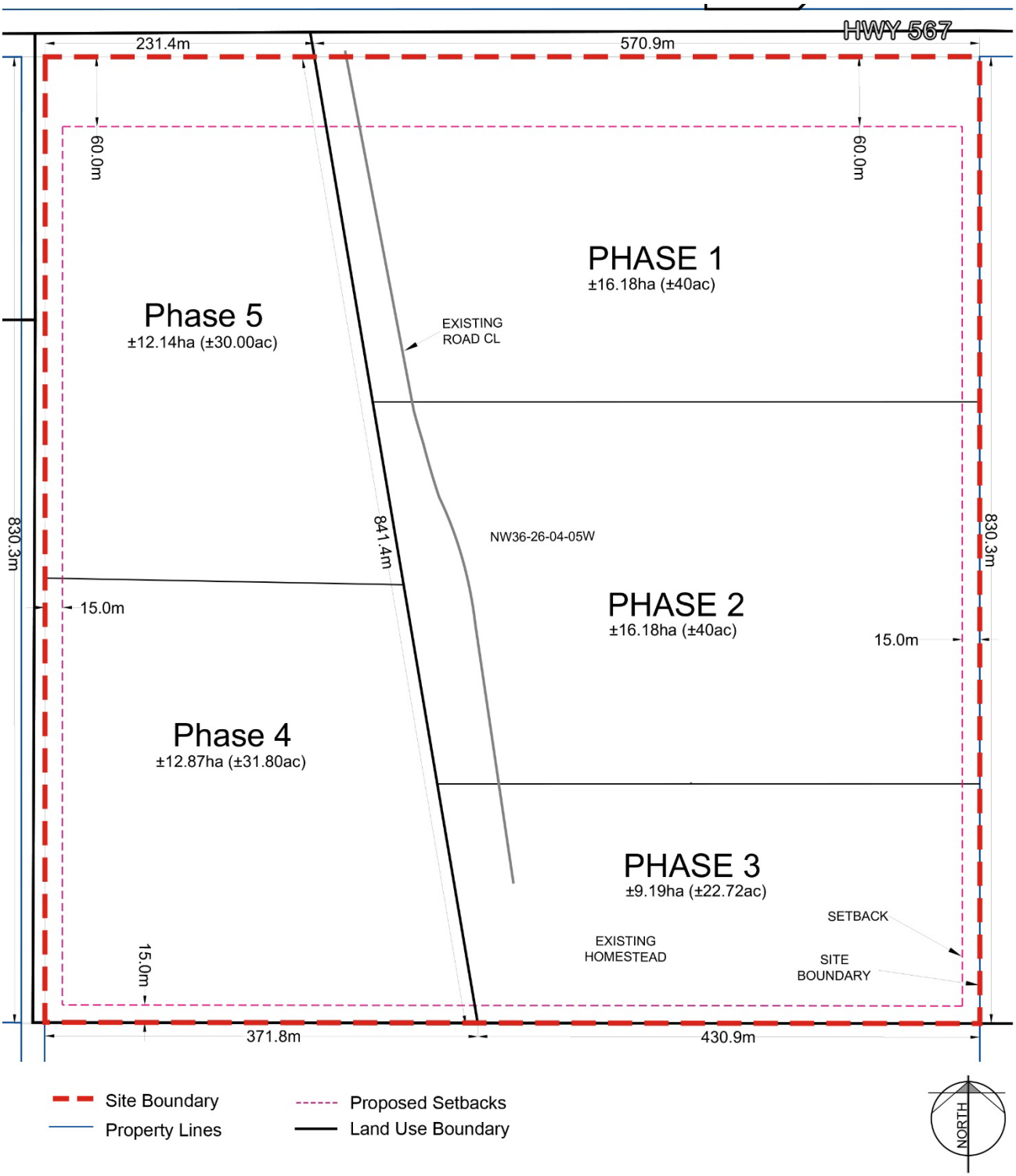


Figure 12- Conceptual Site Plan[12]



[1] Machinery will be moved at will to meet operation needs

[2] This Plan is conceptual only and the plans submitted and approved at the time of Development Permit will take precedence

4.3 BERMS

Berms provide a visual barrier, and a mitigation strategy for dust and noise arising from aggregate operations. Topsoil and overburden materials stripped from the site are used in the construction of temporary berms or stockpiled, and/or in future reclamation processes once extraction activities have been completed. All berms planned to be in place for greater than two years are contoured and seeded to grass. Dust, sediment and erosion, and weed management practices are implemented.

A berm has been completed along Provincial Hwy 567 and the eastern property boundary of Phase 1 and 2. Berm construction proceeds concurrently with progressive stripping of the phase. Stockpiles and berms will be constructed as required.

Policy #4.6: A berm shall be constructed along the property lines within the setback area adjacent to active mining area, as a part of a strategy to abate visual, dust and noise impacts arising from aggregate operations. Berms, overburden or topsoil stockpiles, and similar earthworks, shall be contoured, seeded and maintained using erosion control measures.

Policy #4.7: Berms along the east, south and west property lines shall be a maximum of 4.0m, with a slope ratio of 3:1.



4.4 SITE ACCESS / EGRESS

Previous access to and egress from the site is off Provincial Hwy 567 and located about 570 m from the site's west property line. This access was fully closed and a type II intersection constructed within connect the north-south Right of Way. Traffic generated by operations in future phases is not expected to vary significantly from current operations.

A conceptual design and transportation assessment were completed for the new west access, in conjunction with the two planned accesses to other aggregate resource developments [Figure 10]. The intersections can be accommodated along Provincial Hwy 567 without any conflict of intersection geometry, and the new west site access will provide further separation from the two proposed intersections east of the site.

Based on consultation with Rocky View County and Alberta Transportation, the new access is supported as it would be an acceptable distance from the future proposed access to anticipated but not currently operational aggregate resource developments to the east. Roadside Development Permits will be required from Alberta Transportation for any changes to access and signage.

Policy #4.8: An updated Traffic Impact Assessment shall be submitted in conjunction with the Phase 5 development permit application in compliance with the Traffic Generation Review Memo dated June 4, 2025 by Bunt & Associates.

Policy #4.9: All commercially licensed trucks directly controlled by the operator will participate in the ASGA truck registry program (or equivalent).

Policy #4.10: Hillstone Aggregates shall provide a contact number during operating hours for neighbours within the immediate vicinity to report any concerns related to truck traffic associated with aggregate operations within the MSDP area.

Figure 15- Access on West (BUNT 2020)



4.5 HAUL ROUTE

Highway 567 is a provincial high load corridor and ideally suited to accommodate aggregate resource hauling activities. It is anticipated that product from Hillstone Aggregates will continue to serve three general market areas:

- **Route 1: ±65% to/from the east on Provincial Hwy 567, and Provincial Hwy 2 (QEII) (Airdrie, Balzac, Calgary)**
- **Route 2: ±15% to/from the east on Provincial Hwy 567, and Provincial Hwy 766 and TransCanada Hwy 1A (Calgary)**
- **Route 3: ±20% to/from the west on Provincial Hwy 567, and Provincial Hwy 22 (Cochrane)**

Current traffic generated by Hillstone Aggregates is not expected to vary significantly with future phases. Hillstone Aggregates will continue to have limited impact on the intersections at Provincial Hwy 567/766 and Provincial Hwy 567/22, and any proposed Type IV intersections east of the site.

4.6 NOISE MITIGATION

Hillstone Aggregates is committed to best management and operational practices, and the use of measures associated with aggregate operations, to mitigate noise impacts on adjacent lands. Most noise created during aggregate operations is the result of crushing activities or trucks once they are out of the pit. Trucks without suitable noise mitigation devices (e.g., mufflers) are not allowed on site and reduced speed limits are posted and enforced. Gravel processing occurs after about 15 m of overburden is removed, thus in significantly depressed locations. Crushing and processing equipment is set up entirely on the floor of the pit where the walls of the excavation and any berms, provide extensive sound attenuation.

Hillstone Aggregates has adopted a threshold noise limit of 65 dBA L_{eq} (1-hour) and will use the guidelines and recommendations contained in "AER Directive 038: Noise Control" to manage and mitigate noise emanating from the pit.

Hillstone Aggregates commissioned a new Environmental Noise Impact Assessment in 2024. The results of the baseline monitoring indicated an LeqDay sound level of 62.9 dBA and, as anticipated, the noise climate at the potential receptor location was dominated by traffic noise associated with Highway 567.

- Noise at potential receptor locations were modeled for Overburden Removal, Crushing and Hauling operations. Overburden Removal LeqDay sound levels ranged from 22.6 dBA to 37.8 dBA, crushing at 29.7 dBA to 44.3 dBA and hauling at 17.8 to 35.1 dBA. As all projected LAeq(1-hour) noise levels are below 65dBA, no additional noise mitigation was recommended on site.
- The noise generated by existing Phase 2 aggregate operations will be similar to what can be expected in future phases. As activity moves further south into Phase 3 and beyond, the impact on northerly and westerly neighbours will be diminished. Hillstone Aggregates is fully committed to work with surrounding potential gravel pits with respect to a collaborative approach to the monitoring, recording and sharing of noise measurements.

Policy #4.11: The Hillstone Aggregates will utilize sound attenuation measures for all on-site activities in accordance with industry best practices to mitigate noise impacts upon adjacent lands.

Policy #4.12: Noise levels generated by aggregate operations will be at or below 65 dBA Leq (one hour) at the receptors' location.

Policy #4.13: Hillstone Aggregates will prepare and submit a Noise Assessment and Mitigation Plan that meets the guidelines and recommendations contained in "AER Directive 038" or County requirements at the time of Development Permit application.

Policy #4.14: Hillstone Aggregates will update the Noise Assessment and Mitigation Plan in conjunction with each phase and subsequent Development Permit application.

4.7 VISUAL IMPACT MITIGATION

The 60 m setback is currently in place to the north (the permanent berm) and 15 m setback from the east (temporary berm) of the quarter section will be maintained. In time, a further 15 m setback will be considered on the south boundary. The buffer is used to store topsoil and overburden until it is required for reclamation. These berms will be graded, seeded to grass and maintained, contributing to the pit's aesthetics. The berms also have the important function of restricting visibility to pit operations by passing motorists on Highway 567. An additional berm has been constructed on the West Lands using the specifications of the existing berms, e.g. shaping, seeding, maintenance, etc.

Current uses available on the subject and surrounding quarter sections will be in accordance with the applicable existing land use designation, which predominantly allows for agricultural activities and associated residences. Any potential owners of proposed new dwellings located in this area would be aware of the land use of the subject quarter section and its proximity to a future residence, and the potential issues with being in such proximity.

Policy #4.15: Berms shall be maintained (seeded and mowed) on the north side of the quarter section, and berms will be constructed along the property lines adjacent to active mining areas as the operation proceeds. The berm shall be sufficiently high to restrict visibility to pit operations and to provide a dust and acoustic barrier for the operation without compromising safety.

4.8 DUST MITIGATION

Hillstone Aggregates will ensure operations compliance with the following published standards:

+ Canadian Ambient Air Quality Standards
+ Alberta Ambient Air Quality Objectives

Although aggregate operations result in air emissions, based on experience, they are expected to be below applicable Alberta Ambient Air Quality Objectives and the Canadian Ambient Air Quality Standards (for $PM_{2.5}$). Specifically, $PM_{2.5}$ levels will be no greater than 27 $\propto g/m^3$.

Hillstone Aggregates will undertake several measures to control dust caused by mining and hauling. Topsoil berms/stockpiles will be seeded with approved grass mixture. Weeds will be cleared from long-term (more than two years) stockpiles and berms and seeded to help reduce dust from these passive areas. Gravel haul routes will be treated with water or calcium chloride during periods of anticipated dusty conditions. This water is sourced from runoff collected from the excavation floor or purchased offsite. At no time will groundwater be used for dust abatement efforts, or any other use. A low speed limit is posted on site and enforced. Operations will cease during periods of high winds and when excessive fugitive dust is being generated.

Policy #4.16: Industry standard dust control measures will be used (e.g., seeding, application of calcium chloride or water and other measures as appropriate) to mitigate negative impacts of dust on adjacent lands.

Policy #4.17: An Air Quality Assessment will be provided at Development Permit demonstrating compliance with Provincial and Federal standards. Corrective actions will be undertaken for exceedances resulting from site activities according to recommendations from the study.

Policy #4.18: Air quality monitoring details will be shared with regulatory authorities as required for Development Permit process.

4.9 STORMWATER MANAGEMENT

Westhoff completed a comprehensive Stormwater Management Plan Report (2013). This report identified the pit is of a porous material with a high infiltration rate. No ponds were required either during operations or at final reclamation. An addendum was issued to this report in 2019, in consideration of the expanded phases.

Sedulous Engineering Inc. completed a Conceptual Stormwater Management Report (2026), maintaining assumptions from the approved SWMP (2019), to support continued operations into Phase 4 and Phase 5, after reclamation of Phases 1-3. The report adopts a zero-discharge approach that mimics pre-development hydrology through infiltration, seepage, evaporation, and evapotranspiration.

External run-on will be diverted from extraction areas by berms along the west and south property setbacks, directing runoff to the existing natural depression and drainage system in the southeast corner of the pit. Internal runoff will be managed by infiltration trenches along the southern portions of Phases 4 and 5, preventing runoff from active extraction areas from entering reclaimed phases. Appropriate containment measures outlined in the 2026 Report further supports this strategy.

Policy #4.19: A Site-Specific Stormwater Management Implementation Plan (SSIP) shall be submitted at the Development Permit application stage to detail the specific stormwater management requirements for each Phase.

4.10 GROUNDWATER MANAGEMENT

Regional and local geological and hydrogeological information indicate that the geology beneath the site consists of surficial deposits underlain by bedrock units of the Paskapoo Formation. The surficial deposits consist of a thin till layer over a generally thick sand and gravel deposit. The sand and gravel are generally unsaturated, except occasionally for up to a few meters above the bedrock contact. The bedrock consists of sandstone and siltstone of the Paskapoo Formation which is considered as containing extensive aquifer and the primary target for water wells located near the site.

Several water level measurements conducted at the site between 2012 and 2018 indicate the water table is expected to be at an elevation of between 1,272.1 and 1,286.8 m asl. To ensure no negative impacts, aggregate operations are phased, and the site will be developed as a dry pit with excavation to a depth of 1.0 m above the groundwater table, which is confirmed by excavating a test hole in the area to be mined.

Measuring wells have been preserved from drilling operations in 2012 and 2015. Additional wells are being established on the floor once mining is complete. This has been started in the southeast of Phase 1. These wells are measured and recorded every month. The records indicate that there is little if any fluctuation of groundwater elevations either seasonally or year over year.

Policy #4.20: As a component of operations, Hillstone Aggregates will:

a. Measure the groundwater elevation in all operating measuring wells monthly.

b. A summary of the groundwater elevations will be submitted to Rocky View County as part of the Annual Report.

Policy #4.21: Aggregate operations will be at least 1.0 m above the groundwater table. Groundwater de-watering shall not occur.



4.11 EROSION, SEDIMENT AND WEED MANAGEMENT

An Erosion and Sediment Control (ESC) Plan has been completed by Aggers in 2018. ESC measures are implemented to help settle the movement of mobilized soil particles. The goal is to impede and slow water (surface runoff), and to reduce the water's ability to transport and allow the influence of gravity to settle silt and clay particulars.

Current onsite erosion and sediment control measures include the installation of silt fencing; weed removal; rough-grading berms and stockpiles; once long-term (more than two years) stockpiles and berms have been graded to shape, seeding them to grass; and grading areas in anticipation of high intensity rain and runoff events. Measures are inspected each season by a qualified individual to determine effectiveness and identify maintenance or mitigation needs. With the benefit of time, these measures have been highly successful and will continue to be implemented.

Weed management is an integral component of erosion and sediment control, with the added benefit of mitigating the generation of dust from passive areas. On steeper slopes runoff attenuation barriers (e.g., purpose-made straw bales) will be used.

The site will be monitored for noxious and restricted weeds as defined by Alberta's Weed Control Act and County bylaws. Any such weeds will be controlled by mowing, or herbicide may be applied in accordance with the latest edition of the Environment Code of Practice for Pesticides (Alberta Environment 1998) and the Code of Practice for Pesticides.

Policy #4.22: An Erosion and Sediment Control Plan in alignment with the County Servicing Standards shall be provided at the Development Permit stage and implemented within each Phase of operation.

Policy #4.23: A Weed Management Plan will be provided at the Development Permit stage. Prevention and control measures will be inspected and maintained on a regular basis.



4.12 SOIL SALVAGE AND HANDLING

All soils are to remain on site and will be conserved using industry best practices. The three types of stockpiles (topsoil, subsoil and overburden) will be separated to prevent mixing. Topsoil stockpiles may be placed on ground cleared of brush and scrub. Subsoil stockpiles may be placed on ground cleared of brush, scrub and topsoil. All stockpiles will be rough-graded and contoured to reduce erosion and dust. If a topsoil stockpile is expected to exist for more than two years, it will be seeded.

Policy #4.24: Soil materials will be salvaged in accordance with industry best practice to ensure their conservation.

Policy #4.25: Hillstone Aggregates will submit a Soil Management Plan at the Development Permit stage to detail how topsoil and overburden will be managed within each development phase.

Policy #4.26: All topsoil & overburden excavated within the site shall be stockpiled to be used to reclaim the excavated areas. Stockpiled topsoil & overburden will be placed in the depleted areas in the same order they were removed in accordance with the Code of Practice for Pits in Alberta.



4.13 BIOPHYSICAL CONSIDERATIONS

Westhoff Engineering Resources Inc. completed a Biophysical Overview in 2012 for the quarter section with the primary goal of assessing where further biophysical assessment is needed. Subsequent to the preparation of this Biophysical Overview, the mining plan has been changed to concentrate on the East Lands ± 40 ha (±100 ac). The report provides an overview of existing biophysical conditions based on available desk-top information and reconnaissance-level field surveys to identify features of interest within the quarter section that include native grasslands and wetlands. No unusual facets were found.

Ghostpine completed a Biophysical Impact Assessment in 2017. It was concluded that compensation for disturbance of the temporary and the seasonal marsh located on the East Lands will be required. Due to nature of open pit development and proposed reclaimed landscape, area drainage patterns will change. The development of a wetland mitigation plan will be required affecting wetlands area function. Ghostpine subsequently produced a Wetland Assessment and Impact Report (WAIR) for the balance of the East Lands. Alberta Environment (AEP) have authorised the removal of the Phase 2 environmental features. Compensation has been paid to AEP for two wetlands on the East Lands, one in Phase 2 and the other in Phase 3.

Policy #4.27: Hillstone Aggregates submitted a Biophysical Impact Assessment for Phases 2 and 3 in 2017 in accordance with County policies and procedures. No further study shall be required.

Policy #4.28: A Biophysical Impact Assessment was submitted at the time of land use redesignation of Phases 4 and 5 in 2025 in accordance with County policies and procedures. No further study shall be required.

Policy #4.29: The requirements of relevant provincial legislation (e.g. Code of Practice for Pits, Water Act) and the requirements of the County Servicing Standards will be met to ensure that environmental impacts are minimized.

Policy #4.30: Any proposed disturbances of identified wetlands within the MSDP area shall require approval from Alberta Environment and Sustainable Resource Development in accordance with the requirements of the applicable Provincial Acts and regulations.

Policy #4.31: The development will align with all relevant municipal, provincial and federal legislation, regulations and policies.

4.14 SITE MONITORING BYLAW COMPLIANCE & REPORTING

Hillstone will comply with the Aggregate Site Monitoring Bylaw (C-8635-2025) regarding aggregate site visits and will work with the County to remain in good standing and reduce the amount of necessary visits.

To ensure they maintain open lines of communication regarding bylaw compliance Hillstone provides contact information on their signage and website. Residents can contact Hillstone regarding any concerns and the contact will be recorded, actioned and an update provided. In cases where County Bylaw Enforcement becomes involved, any follow up regarding the issue must be addressed between the resident and bylaw enforcement.

Policy #4.32: Hillstone Aggregates shall comply with bylaw C-8635-2025, Aggregate Site Monitoring Bylaw as amended from time to time.

Policy #4.33: Hillstone Aggregates shall provide a contact number during operating hours for neighbours within the immediate vicinity to report any concerns related to aggregate operations within the MSDP area.

Policy #4.34: Resident concerns regarding dust, noise, and, traffic will be recorded. Incident details and response will be shared in the Annual Operations report delivered to the County in June of each year.

Policy #4.35: In cases where County Bylaw Enforcement becomes involved, any further communication will take place between the resident and County Bylaw Enforcement.

Policy #4.36: All approved aggregate operations shall submit annual reports to the County, as listed in Section 3.0 Annual Reporting, of the Aggregate Development Performance Standards (2025).



5.0 RECLAMATION & LANDSCAPING

Reclamation is ongoing and continuous throughout the life of Hillstone Aggregates' operations. Areas disturbed as the result of aggregate operations will be progressively reclaimed to an equivalent agricultural land capability (e.g. cultivation, hay land, grazing or some combination), or other use as may be approved.

Figure 16 – Phase 1-3 Reclamation

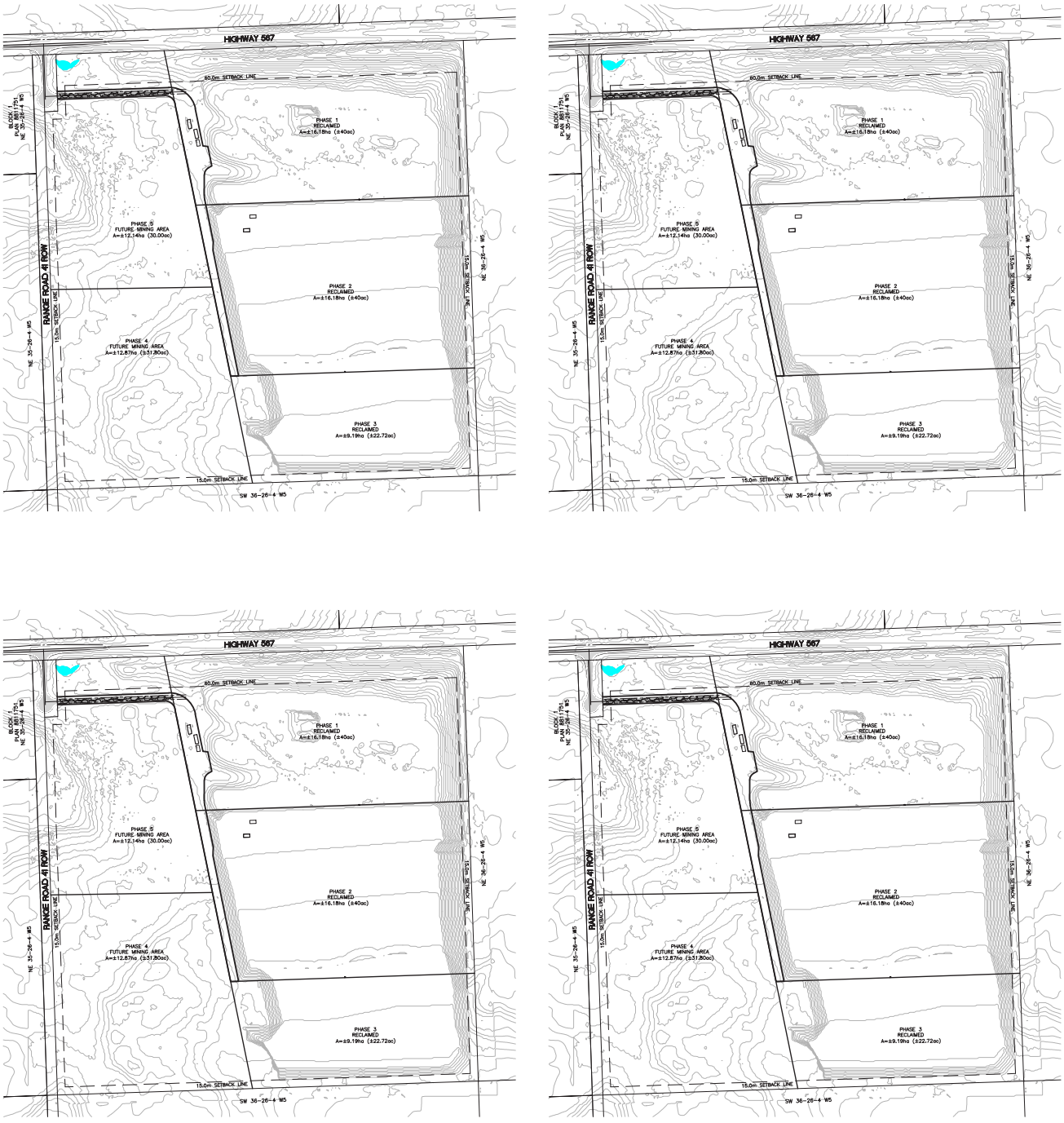
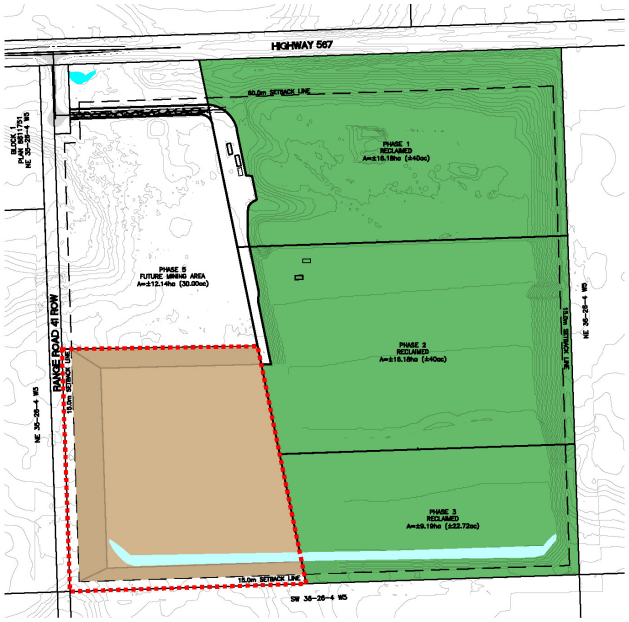
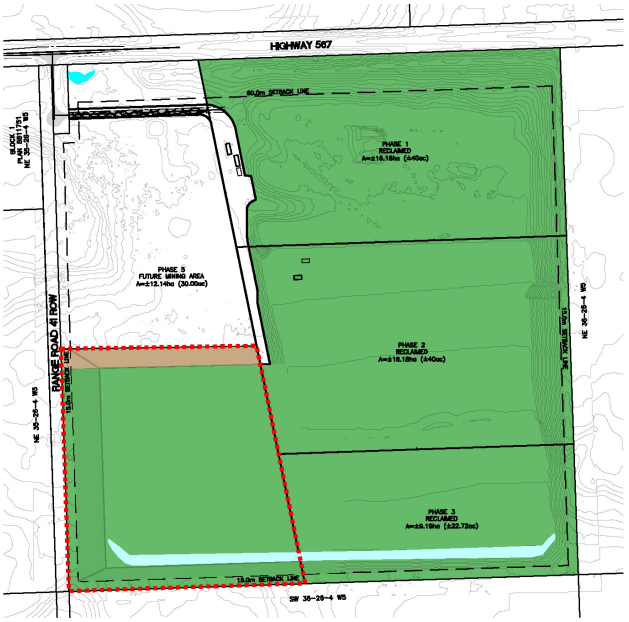


Figure 17 – Phase 4 & 5 Reclamation

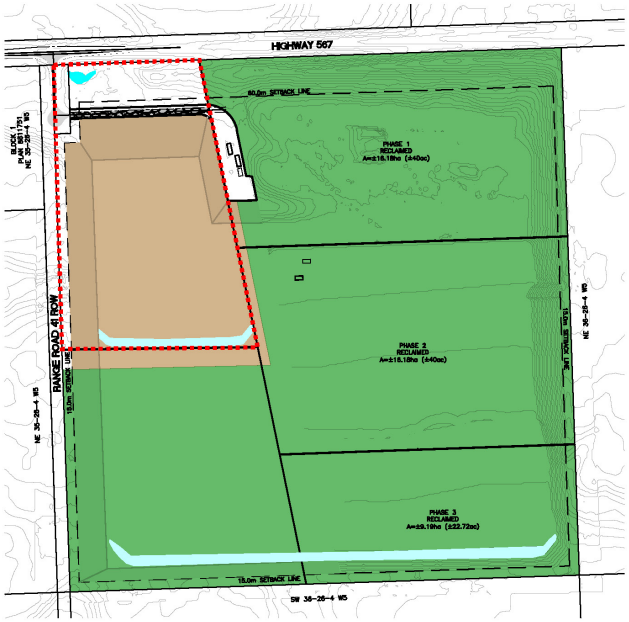
Phase 4 Extraction



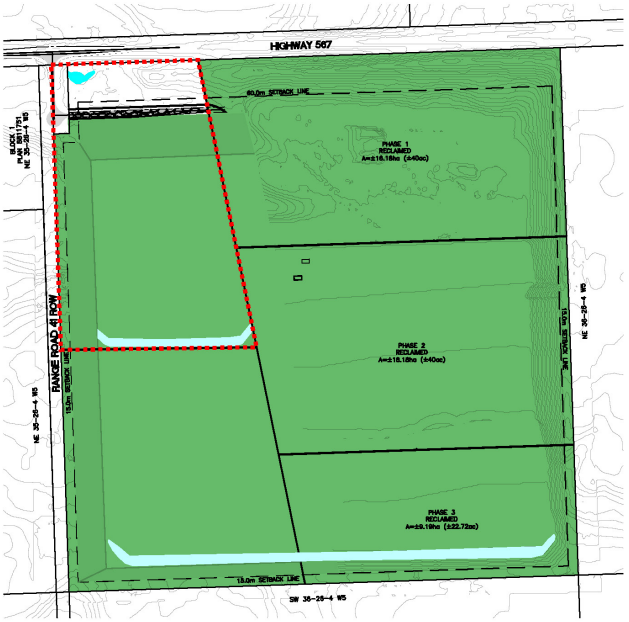
Phase 4 Reclamation



Phase 5 Extraction



Phase 5 Reclamation



Phased Extraction

Reclamation

Active Phase

5.1 SHORT-TERM MAINTENANCE

This type of reclamation covers all areas that are not a component of the final reclamation. Short-term maintenance areas include temporary berms, topsoil stockpiles, overburden stockpiles, fencing and on-site infrastructure. These areas will be sloped to minimize erosion, and for topsoil shall be seeded and mowed.

These areas will be made safe, may be fenced, signed and/or confined by large boulders to restrict access and will be monitored with respect to the potential for erosion. Monitoring will be ongoing and the responsibility of the Operations Manager.

Policy #5.1: All temporary berms and stockpiles scheduled to be moved within two years of construction will be identified, made safe with respect to slopes and receive weed control measures in alignment with County standards to minimize erosion.

5.2 FINAL RECLAMATION

Topsoil stockpiles will be graded to a minimum of ±3H:1V and seeded with a County approved seed mix. Watering is achieved by using a pressured truck-mounted source. During the growing season, monthly inspections are conducted of all stockpiles. Any deficiencies are promptly remedied. The latter may include mowing, weed destruction, watering and/or erosion repairs. Overburden stockpiles planned to be in place more than two years will receive 150 mm cover of topsoil and be treated as above. This type of stockpile is minimized to reduce the volume of double handling.

Final reclamation is completed in stages in part to comply with the requirement to only have ±16 ha (40 ac) active area at any time. Criteria for interim acceptance of reclamation/landscaping will include:

+ Confirmation that the topsoil has been contoured, seeded and watered.
+ No erosion damage that is not deemed to be self-healing within two years.
+ All "bare" patches (i.e. the seeding did not take) of more 15 m^2 have been reseeded and growing to coverage.
+ Where necessary, herbicide has been applied and the area mowed if necessary.
+ All areas of final reclamation have been fenced off.

Policy #5.2: Reclamation will be completed in accordance with Part 5 of the Code of Practice for pits, which sets requirements regarding the conservation of soil and subsoil and characteristics of reclamation.

Policy #5.3: Progressive reclamation will be implemented to ensure that area of disturbance is reasonably minimized at any given time and post-extraction lands are returned to their former agricultural state.

Policy #5.4: A reclamation plan shall be submitted with each development permit application to demonstrate how the mined areas will be returned to their original condition as new mining areas are opened.

Policy #5.5: Reclamation of mined areas shall consist of the replacement of salvaged overburden, subsoil and topsoil with 3:1 side slope around the mined areas.

5.3 LANDSCAPE MANAGEMENT

A Landscape Management Plan was completed for the first phases of the quarter section, identifying considerations focusing on the potential impact for neighbours, dust control and environmental stewardship. It has an initial focus on the perimeter fronting Hwy 567 (the "North Berm"), providing not only a visual buffer but a safe access and egress for the ongoing truck traffic into and out of the gravel pit.

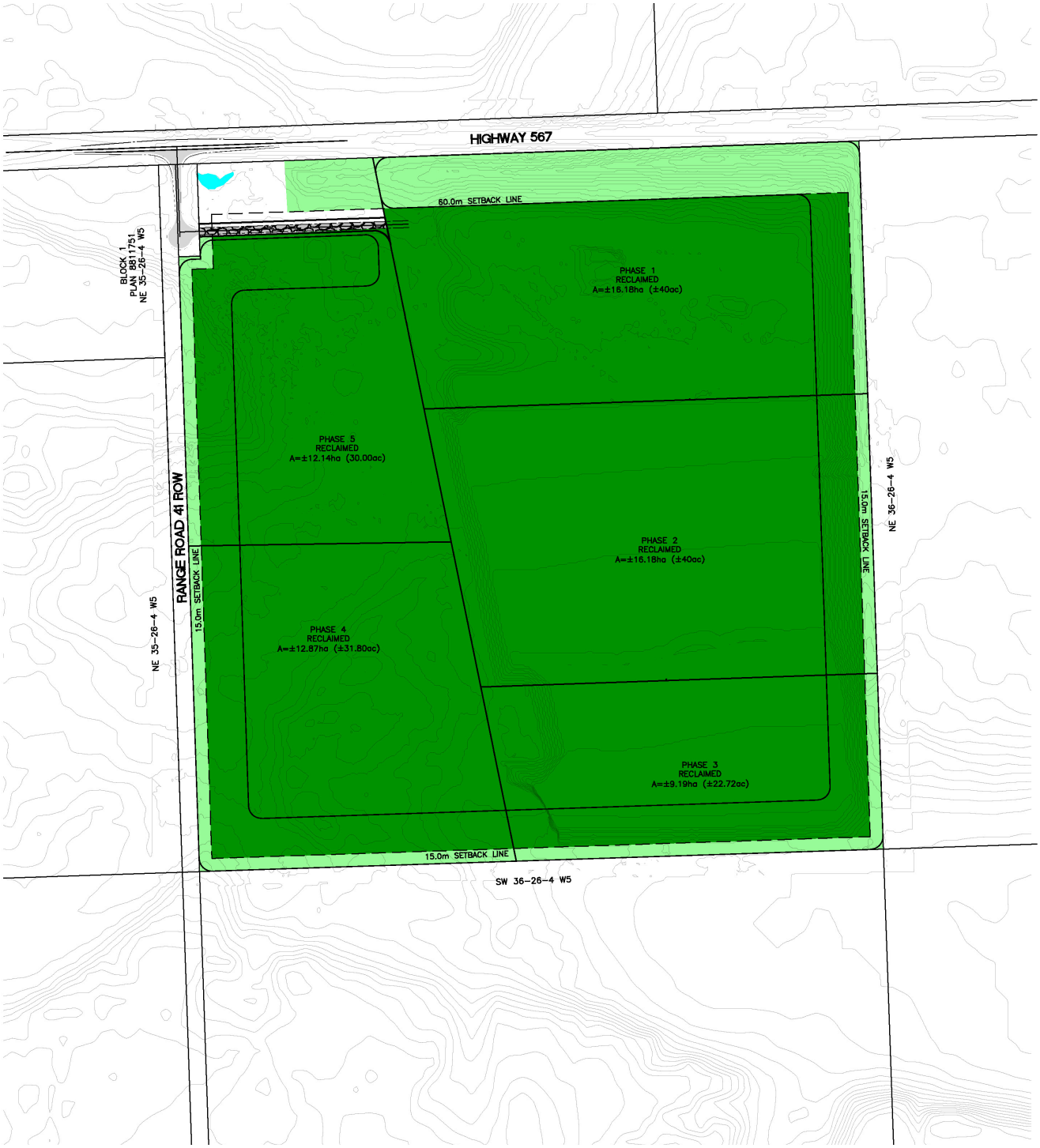
The original berm along Hwy 567 has been surveyed and redesigned. This new design has been implemented, resulting in an improved visual impact for the travelling public and enhanced slope stability. There has been no berm deterioration (erosion) since 2012 despite several intense rain events. The current as-constructed berm shields gravel operations from the travelling public except where priority has been given to safe sight distances for traffic in and out of the Gravel Pit. The south face of the berm continues within the pit and slopes down to the pit floor. Final grading and seeding for most of the berm was completed between 2013 and 2017. Further refinements including shaping, top soiling, seeding and weed killing were completed in 2018.

Further landscaping includes clusters of selected plantings located on the north face of the North Berm, considering the end land use. The reclamation seed mix includes awned wheatgrass, streambank wheatgrass, slender wheatgrass, rough fescue, purple prairie clover and June grass, all as endorsed by Rocky View County Administration.

Continuing phase by phase landscaping plans to respond to actual site conditions and stormwater management concerns, a Landscape Management Plan was completed for Phase 4 & 5 of the quarter section by Sedulous Engineering Ltd. (2026), with a focus on the western interface of the pit to adjacent residents.

Policy #5.6: Hillstone Aggregates will prepare, adopt and maintain a Landscape Management Plan covering slope maintenance, erosion, weed management and seeding to be submitted and approved at future DP stages by Rocky View County and Alberta Environment.

Figure 18 – Landscape Plan



Ultimate Vegetated Perimeter Berm

Grass Establishment in Reclaimed Pit

6.0 CUMULATIVE IMPACT ASSESSMENT

Cumulative effects are changes that are predicted to occur to the natural or social environment that are caused by the interaction of residual effects of the Project. Aggers Technical Services completed a Cumulative Environmental Assessment (CEA) in 2017. Today, no other gravel pits are in operation and cumulative impacts from the operation of other gravel pits are minimal.

Site operations contribute to cumulative effects such as:

- The successive conversion of agricultural land to natural resource extraction (sand and gravel pit operations), although related surface disturbances for this land will be progressively reclaimed. It is assumed that all proponents will make every reasonable effort to follow best management practices for conservation and reclamation activities.
- Wildlife will be displaced by natural resource extraction but is expected to return after reclamation.
- Soil materials will be conserved during progressive reclamation activities to restore disturbed land to equivalent capability (similar land uses, not necessarily equal land use). Tree stands and vegetation may be removed with natural resource extraction, land will be monitored for noxious and restricted weeds.
- The topography of the reclaimed landscape and constructed side-slopes may not be suitable for hayland-pasture but should be suitable for livestock grazing, so there will not be a cumulative effect on grazing. Cumulative effects for hydrology and wetlands will be determined by re-established drainage patterns and the degree of avoidance for wetland areas that can be achieved throughout development.
- Open pit excavations, portable crushing and screening facilities along with stockpiling, loading and hauling activities will contribute to noise, fugitive dust and exhaust emissions in varying degrees relative to intensity and location during development, but will be mitigated by screening berms and other best management practices during natural resource extraction development.
- Haul trucks for aggregate rock products will contribute to increased highway traffic and this could affect other commercial and industrial users. This activity will be mitigated by construction of a required access upgrade(s).

It is anticipated that at the end of the life cycle of aggregate operations on the East Lands, they will be reclaimed and returned to agricultural use or equivalent as approved. This end use does not have any effect upon current planning, nor would it be expected to have any impact on surrounding land uses.

Policy #6.1: Hillstone Aggregates should work with potential future neighbouring operators to reduce cumulative impacts of gravel operations where feasible.

6.1 ASSESSMENT OF CUMULATIVE ASPECTS OF EXTRACTION ACTIVITIES IN THE AREA

On July 11th, 2017, Rocky View County Council directed Mountain Ash Limited Partnership, Lafarge Canada and McNair Sand & Gravel to prepare coordinated development policies in each of their respective MSDP's to:

I. Identify consistent minimum standards that all operations will adhere to;

II. Establish joint measures to minimize and monitor cumulative impacts on the local area, including identifying acceptable mitigation strategies for affected properties within a mile and a half from the property lines of the gravel pits; and

III. Review and adapt transportation access and egress to Highway 567 to maximize safety and result in a design that would allow loaded gravel trucks to maximize their speed to safely merge into Highway 567's lanes as determined by RVC engineering and Alberta Transportation.

Each respective land use application was approved with MSDP's that included development policies to align various operating standards, monitoring programs and infrastructure upgrades. On September 16th, 2019, an Alberta Court of Queen's Bench decision (Docket 1701-12053) set aside RVC Council's land use approval for the Summit Pit; however, the MSDP's remain in place.

Although Hillstone Aggregates has been in operation since before the July 2017 Council direction, the intent of this section is to honor and respect the fundamental motivation of Council's direction. That is, to establish a policy framework that facilitates collaboration between Hillstone Aggregates and other existing/future aggregate operations in the Big Hill Springs area to cumulatively manage the effects of multiple aggregate operations within the same general location.

Accordingly, Hillstone Aggregates anticipates the County will implement the following policy framework at the MSDP and/or development permit stage to facilitate a coordinated approach amongst all existing and proposed aggregate operations within the Big Hill Springs area with respect to operating best practices, transportation improvements, landscaping and visual screening infrastructure, noise, air quality, and groundwater mitigations, and project communications.

6.1.1 Coordination of Operating Best Practices

Hillstone Aggregates is committed to operating Hillstone Aggregates Pit in a manner that limits cumulative negative impacts to surrounding residents.

As such, Hillstone Aggregates is committed to the following:

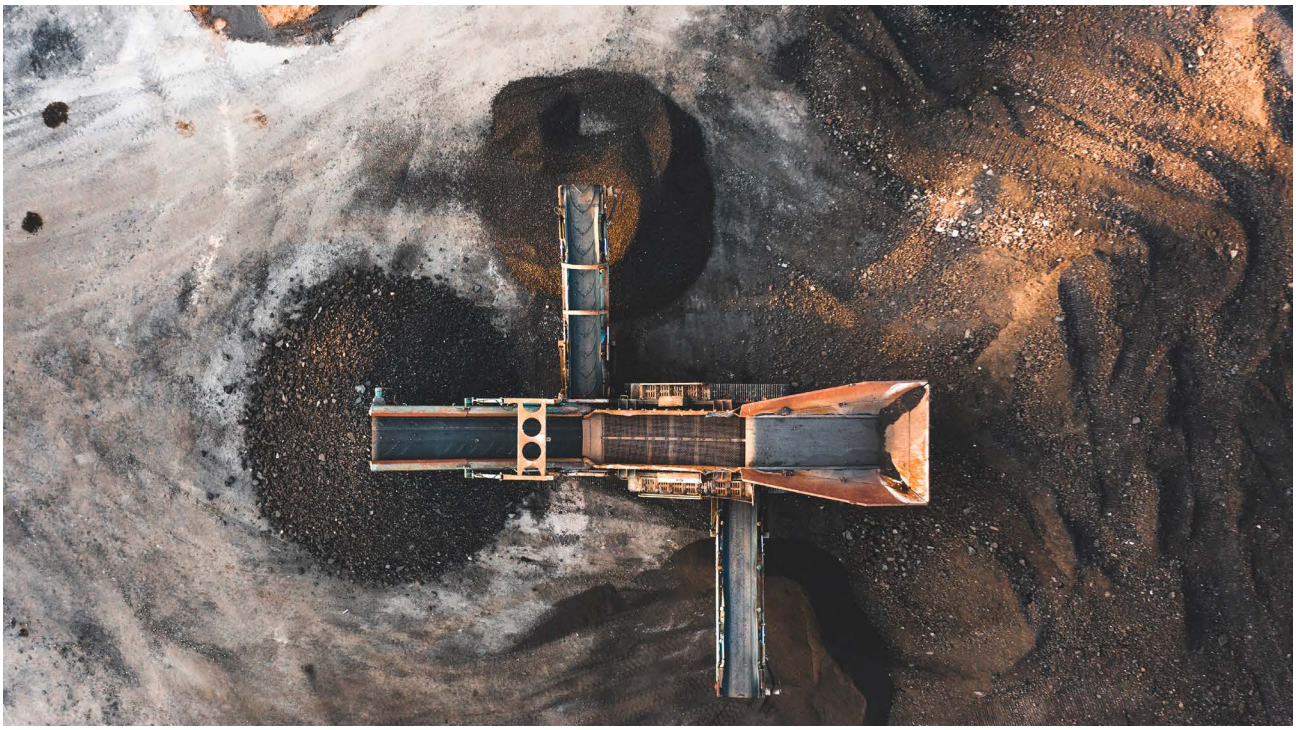
Restricting operating hours within the MSDP area as follows:

- Monday to Friday: 6am to 7pm
- Saturday: 9am to 5pm
- Sundays and/or Statutory Holidays: No operations.

Working collaboratively with other approved aggregate operators to align operating best practices (where possible and practical) with the overall objective of limiting potential nuisances to surrounding residents.

Policy #6.2: Hillstone Aggregates will implement operating best practices within the subject lands as described within this MSDP.

Policy #6.3: Hillstone Aggregates will work collaboratively with other approved aggregate operators within the Big Hill Springs area to collectively align operating best practices (where possible and practical) with the overall objective of limiting nuisances to surrounding residents.



6.1.2 Coordination of Transportation & Traffic Safety Considerations

Hillstone Aggregates is committed to implementing appropriate transportation improvements within and adjacent to the MSDP area with the overall intent of limiting cumulative impacts to surrounding residents.

As such, Hillstone Aggregates is committed to the following:

- Working collaboratively with the County and Alberta Transportation to design and implement appropriate access from Highway 567 to ensure aggregate operations do not negatively affect the function and safety of the municipal and regional transportation network.
- Implementing operating measures to ensure that all vehicles leaving the MSDP area do so in a state that will prevent aggregate materials and other detritus from being deposited onto the roadway and/or highway network.
- Working collaboratively with other approved aggregate producers to jointly assess transportation impacts throughout the lifespan of their project, and where possible and practical, consider the following:
  - Sharing appropriate traffic data to assist other operators to prepare their Traffic Impact Assessments in support of their projects;
  - Aligning common highway access points for multiple aggregate operations;
  - Implementing joint funding arrangements to construct highway intersection upgrades where such improvements provide a proportional benefit;
  - Coordinating the design of project lighting to ensure all lighting within project areas are fully compliant with Dark Sky Guidelines;
  - Coordinating implementation of signage and other roadside indicators to clearly identify specific project areas and promote appropriate way finding between multiple pit areas; and
  - Reducing speed limits (subject to Alberta Transportation).

- Working with other approved aggregate operators in the Big Hill Springs area to:
  - Educate trucking contractors to ensure that queuing will not be tolerated on the highway;
  - Collaborate with local enforcement authorities to ensure queuing activities are monitored and appropriately enforced;
  - Align regional truck haul routes and liaise with Alberta Transportation and the County accordingly; and
  - Participate in the ASGA Truck Registry Program and promote the use of in-vehicle monitoring systems within all commercially licensed trucks servicing local aggregate operations.

Policy #6.4: Hillstone Aggregates will implement transportation upgrades and related operating procedures as described within this MSDP.

Policy #6.5: Hillstone Aggregates shall prepare an update to the Traffic Impact Assessment prepared in support of this MSDP, at each development permit stage, to appropriately consider and assess future ambient traffic conditions.

Policy #6.6: Hillstone Aggregates will work collaboratively with other approved aggregate operators within the Big Hill Springs area (where possible and practical) to share appropriate technical information, proportionally fund and construct transportation improvements, and establish and implement ongoing operating practices with the overall objective of mitigating cumulative impacts.



6.1.3 Coordination of Landscaping & Visual Screening Improvements

Hillstone Aggregates is committed to working with other aggregate operators within the Big Hill Springs area to coordinate the design and function of landscaped screening berms with the overall objective of screening the aggregate operations from view of the public road/highway frontages.

As such, Hillstone Aggregates is committed to the following:

- Coordinating the design of landscaped screening berms where two (or more) aggregate operations abut one another; and
- Coordinating the maintenance program for landscaped screening berms where two (or more) aggregate operations abut one another.

Policy #6.7: Hillstone Aggregates will construct and maintain landscaped screening berms within the subject lands as described within this MSDP.

Policy #6.8: Hillstone Aggregates will work collaboratively with other approved aggregate operators within the Big Hill Springs area to design and maintain landscaped berms (where possible and practical) with the overall objective of screening aggregate operations from the public road/ highway frontages.

6.1.4 Coordination of Noise, Air Quality and Groundwater Mitigation

Hillstone Aggregates is committed to working with other aggregate operators within the Big Hill Springs area to coordinate practices and procedures to mitigate concerns relative to noise, air quality and groundwater with the overall intent of limiting cumulative impacts to surrounding residents.

As such, Hillstone Aggregates is committed to the following:

Noise:

- Restricting noise generated within the site based on industry best practices and the Rocky View County Noise Control Bylaw;
- Restricting noise levels to no more than 65 decibels within the MSDP area, to be measured at noise receptors installed at the project property line;
- Providing advanced notifications to adjacent residents when unique operating conditions might be expected to generate noise in excess of 65 decibels;
- Installing muffler silencers or back-up strobe lights on all equipment operating on-site;
- Installing noise monitoring stations upwind, centrally located and downwind of pit operations;
- Engaging a third party to record data from noise monitoring stations on a 'real time' basis; and
- Establishing protocols & procedures to share data with other aggregate operators and local stakeholders.

Air Quality:

- Implementing dust control measures based on industry best practices including, but not limited to, paving access roads from the Highway to the main site access, applying calcium chloride and/or water on all driving aisles within each pit, and lowering speed limits within project boundaries to 30 km/hr;
- Limiting the area of open excavations to ± 40 ac at a time;
- Implementing progressive reclamation activities as soon reasonably possible following depletion of the aggregate resources within each development phase;
- Implementing dust control measures on all unpaved haul routes and at all aggregate transfer points;
- Implementing daily inspections to ensure dust control measures are in place;
- Suspending pit operations in high wind conditions;
- Developing procedures and protocols to ensure trucks leaving an operation are appropriately securing and covering their load;
- Installing dust monitoring stations upwind, centrally located and downwind of the pit operation;
- Engaging a third party to record data from dust monitoring stations on a 'real time' basis; and
- Establishing protocols and procedures to share data with other aggregate operators and local stakeholders.

Groundwater:

- Ensuring all excavation activities are prohibited closer than 1 m to the depth of groundwater;
- Installing groundwater monitoring wells upstream, centrally located and downstream of pit operations;
- Record data from groundwater monitoring wells on a 'real time' basis; and
- Establishing protocols & procedures to share data with other aggregate operators and local stakeholders.

Policy #6.9: Hillstone Aggregates will establish ongoing monitoring programs relative to noise, air quality and groundwater as described within this MSDP.

Policy #6.10: Hillstone Aggregates shall update the Noise Assessment, Air Quality Assessment and Hydrogeological Impact Assessment prepared in support of this MSDP, at each development permit stage, to appropriately consider and assess future ambient noise, air quality and groundwater conditions.

Policy #6.11: Hillstone Aggregates will work collaboratively with other approved aggregate operators within the Big Hill Springs area (where possible and practical) to share associated monitoring data and align appropriate operating practices with the overall objective of mitigating cumulative effects relative to noise, air quality and groundwater.

6.1.5 Coordination of Ongoing Communications

Hillstone Aggregates is committed to working with other aggregate operators within the Big Hill Springs area to coordinate operating best practices within the MSDP area with other natural resource extraction projects approved by the County with the overall intent of limiting cumulative impacts to surrounding residents.

As such, Hillstone Aggregates is committed to the following:

- Establishing a project website to be updated regularly;
- Publishing results of the ongoing noise monitoring, air quality monitoring and groundwater monitoring;
- Establishing clear expectations regarding how and when expressed complaints are to be addressed; and
- Working collaboratively with other approved aggregate producers to align protocols and procedures regarding project related public communications.

Policy #6.12: Hillstone Aggregates will implement ongoing project communications relative to the Hillstone

Aggregates Pit to ensure adjacent residents and stakeholders are kept appraised of ongoing natural resource extraction operations as described within this MSDP.

Policy #6.13: Hillstone Aggregates will work collaboratively with other approved aggregate operators within the Big Hill Springs area to collectively align communication protocols and procedures (where possible and practical) with the overall objective of ensuring local residents and stakeholders are kept appraised of ongoing aggregate operations in the area.

7.0 COMMUNITY COMMITMENT

Hillstone Aggregates commits to the safe operation of the gravel pit and the safety of their employees, neighbours and the larger community. Through the adoption of these MSDP policies and any future County wide policies relating to natural resource extraction, there will be a level playing field and standard for gravel operators.



Master Site Development Plan

Hillstone Aggregates | NW-36-26-04-W5M