



September 2022

**Proposed CBM Caledon Quarry
Virtual Information Session
Project Update**

**Thank you for joining!
The meeting will start shortly**

 **Votorantim**
Cimentos

 **CBM Aggregates**



Meeting format



CBM and the project team will provide a presentation with a project update about the proposed Caledon Quarry.



A Q&A session will be held after the presentation is finished.



Your microphone will be muted during the presentation.



Use the meeting chat panel to submit questions or comments throughout the presentation.



Enquiries will be addressed during the Q&A portion of the virtual information session.



The virtual information session is being recorded.



The slide deck will be made available in the project website after the virtual information session.

<http://www.cbmcaledonquarry.ca/>

CBM looks forward to answering your questions and having a meaningful and respectful Q&A session with attendees.

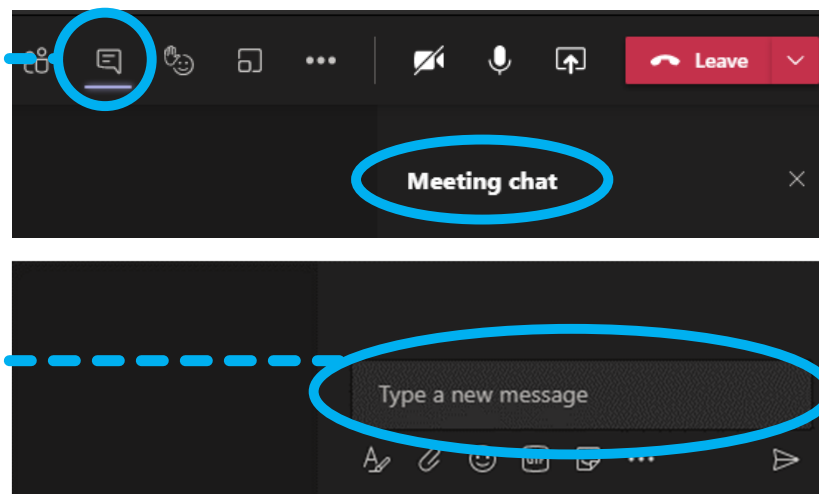
How to Submit Questions (Computer)

Using the Meeting Chat Option (Text)

You can send questions this way at any point during the meeting

On the top menu, click here to open the chat function

Type your message here, and hit enter

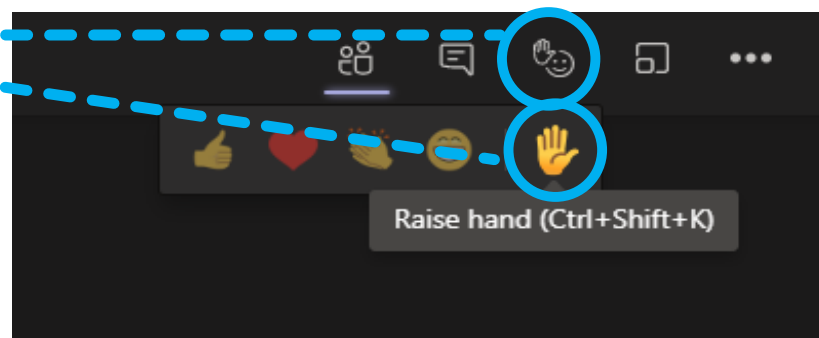


Using the “Raise Hand” Option (Microphone)

This option will only be available during the Q&A session

On the top menu, click here and here to raise your hand

Once you’re done with your question, repeat as above to lower your hand

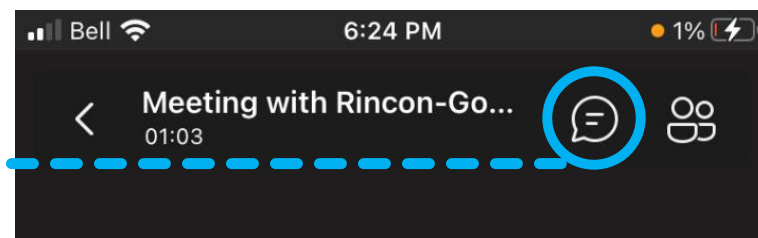


How to Submit Questions (Phone App)

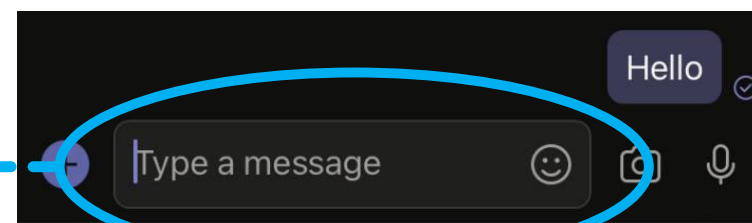
Using the Meeting Chat Option (Text)

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Tap once anywhere in the window, and the top menu will appear. On the top menu, click here to open the chat function



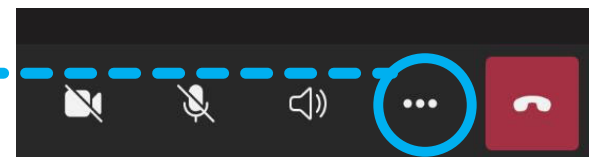
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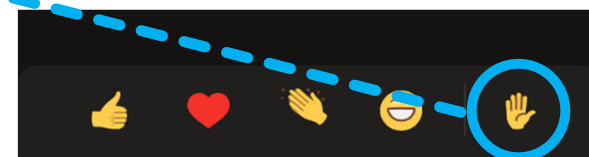
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On the bottom menu, click here and here to raise your hand



Once you’re done with your question, repeat as above to lower your hand



CBM and the Project Team



David Hanratty, Director of Land, Resource & Environment (Presenter)

Mike Le Breton, Land & Resources Manager

Hudson Selles, Land & Environment Manager



Karen Bennett (Presenter)

Sarah Clark



Brian Zeman



Alyson Beal (Presenter)

Heather Melcher

Joe Tomaselli (Presenter)

Dan Corkery (Presenter)

Katie Armstrong (Presenter)

George Schneider

Sara Jarrett

Kevin McGillicuddy



Kevin Powers



Michael Dowdall (Presenter)

Project Overview

- Located in the vicinity of Charleston Sideroad and Main Street/ Regional Road 136, Caledon.
- The area contains the highest quality limestone used for aggregate in the province, and is a protected aggregate area in the Town of Caledon's Official Plan.
- Based on the technical work completed to date the project has been found to be feasible and CBM will be moving forward with an application.
- If the application is approved, aggregate extraction would be completed in stages.
- If approved, CBM would plan to begin extraction north of Charleston Sideroad.
- Areas that may be extracted would then be progressively rehabilitated.

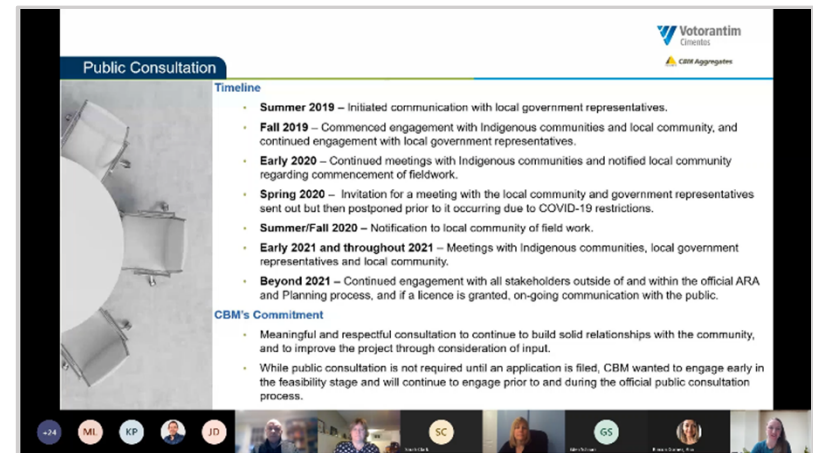
The proposed quarry will require approvals under the *Aggregate Resources Act (ARA)* and the *Planning Act*



General location for the CBM Caledon Quarry

Update on Public Consultation

- Throughout 2021, CBM held nine public consultation virtual information sessions with Caledon residents:
 - On March 9 and 11, CBM hosted three virtual meetings with neighbours living closest to the proposed project site. An invitation to these meetings was hand delivered and sent via email to neighbours located within about 1km from the property boundary of the site.
 - On April 7, CBM hosted a fourth meeting with the greater Caledon community. An invitation was delivered to approximately 2,100 addresses, sent to the resident contact list that had been accumulated to that point, and posted on our website.
 - Four additional meetings were held separately with Residents' Associations in Cataract, Alton, Caledon Village and Belfountain.
 - On December 1, a virtual project update information session was hosted with members of the public. Invitations were delivered to over 2,100 addresses, and via email to addresses are in the project's contact list. The invitation was also published on the project website and emailed to other potentially interested parties.
- In 2022, CBM are hosting this session (Sept 7th) and at least one more session, for the purpose of informing the public on the various study findings, prior to submission of the application

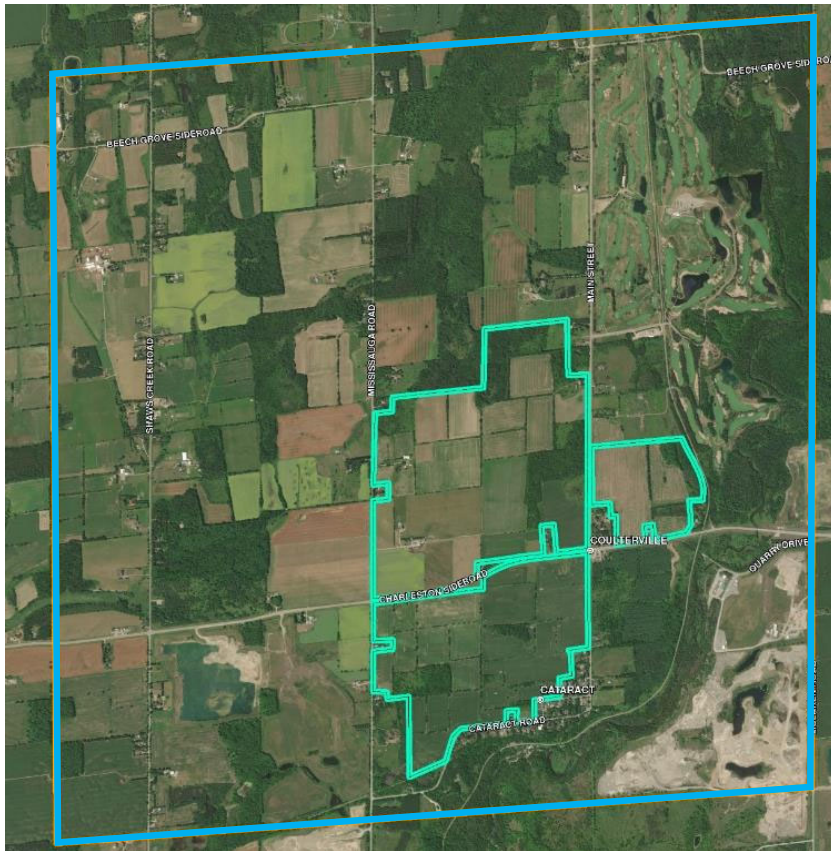


March 2021 Virtual Near Neighbour Meetings

Virtual Information Session Content

- Through 2022, CBM has made progress on defining overall project layout and boundaries. In this session an update will be provided on:
 - The anticipated ARA licence boundary, extraction limits and potential phasing of extraction.
 - Traffic
 - Noise
 - Vibration and Blasting
 - Air Quality
- Future information sessions will be arranged to discuss other ongoing technical disciplines in advance of the application being submitted. CBM will provide advance notice of these information sessions.

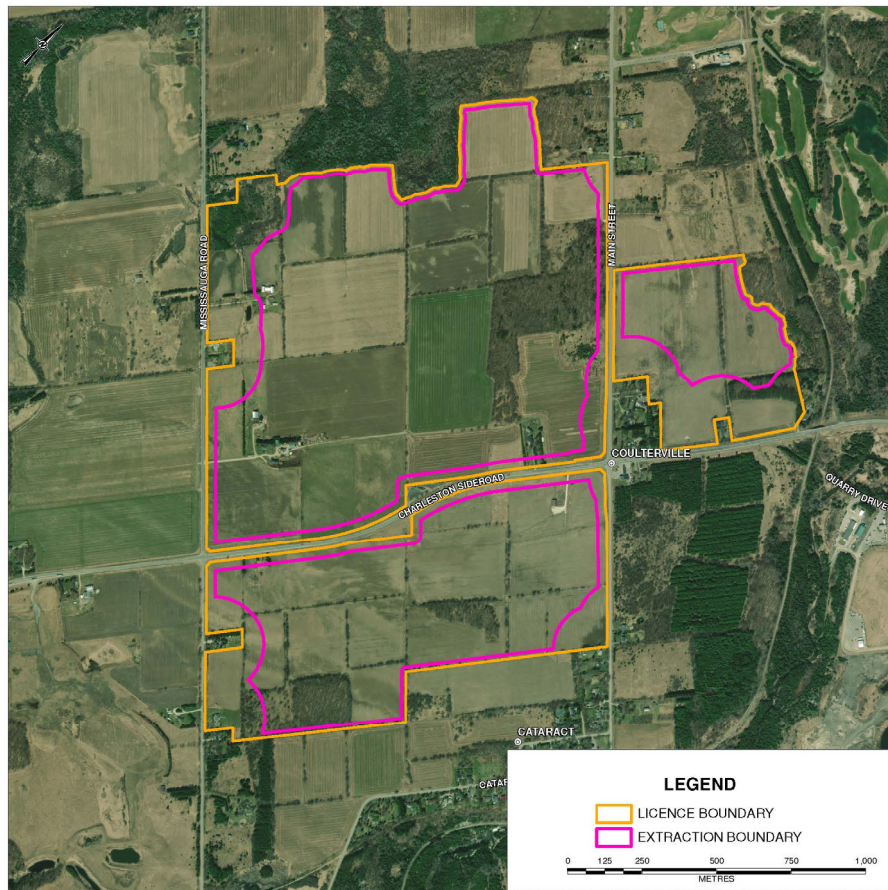
Study Area and Project Location



- Assessments and studies are being completed within the **Study Area*** to understand the existing conditions within the boundary of the **Study Area** as it relates to feasibility of extraction within the **Project Location**.
- The **Project Location** reflects the existing boundaries of the properties being closely examined that are under control of CBM (totaling approximately 321 hectares).
- The **Project Location** is adjacent to both existing and historical aggregate extraction operations.
- As the design for the development has progressed CBM have refined the proposed quarry footprint and have excluded certain areas from the proposed licence application, and the entirety of the life of any potential quarry that may be approved.
- Technical studies have progressed to a point that a proposed Licence Area and Extraction Area can now be defined.

* The extent of the **Study Area**, shown conceptually here, varies depending on the technical study, but it is large enough so that it captures potential cumulative effects with other existing projects and activities that may be located nearby.

Project Location



- The **Licence Area** is the area that would ultimately be applied for under the *ARA* and contains not only the extraction area but any area that is required for setback and land that may be needed for supporting works and activities (totaling approximately 262.4 hectares).
- The project location and **Licence Area** is adjacent to both existing and historical aggregate extraction operations.
- The **Extraction Area** is the maximum area where active extraction would occur (totaling approximately 204.7 hectares). All extraction would occur in three areas: the Main Phase, the Northeastern Phase and the Southern Phase and include a 150 m setback from receptors.
- Berms are to be installed between the **Licence Boundary** and the **Extraction Area** to reduce noise and visual impacts.
- Input for the Licence Area and Extraction Area offsets from sensitive receptors was provided by environmental disciplines including the noise, blasting and vibration, and air quality teams.

Extraction Sequence



- Phasing allows a general counter-clockwise advance in the Main area, and a north to south advance in the South area.
- The proposed tonnage limit is a maximum of 2.5 million tonnes per year, and all studies have assumed this maximum tonnage extraction scenario.
- On average CBM would anticipate extracting approximately 2 million tonnes per year. Based on this the project life would be over 40 years.
 - Permanent processing facility would be installed in Phase 1, north of Charleston Sideroad approximately 5 years after start of operations.
 - The Northeastern phase, across Main Street, would be started approximately 10 years after start of operations.
 - The Southern phase, south of Charleston Sideroad, would be accessed approximately 30 years after start of operations.

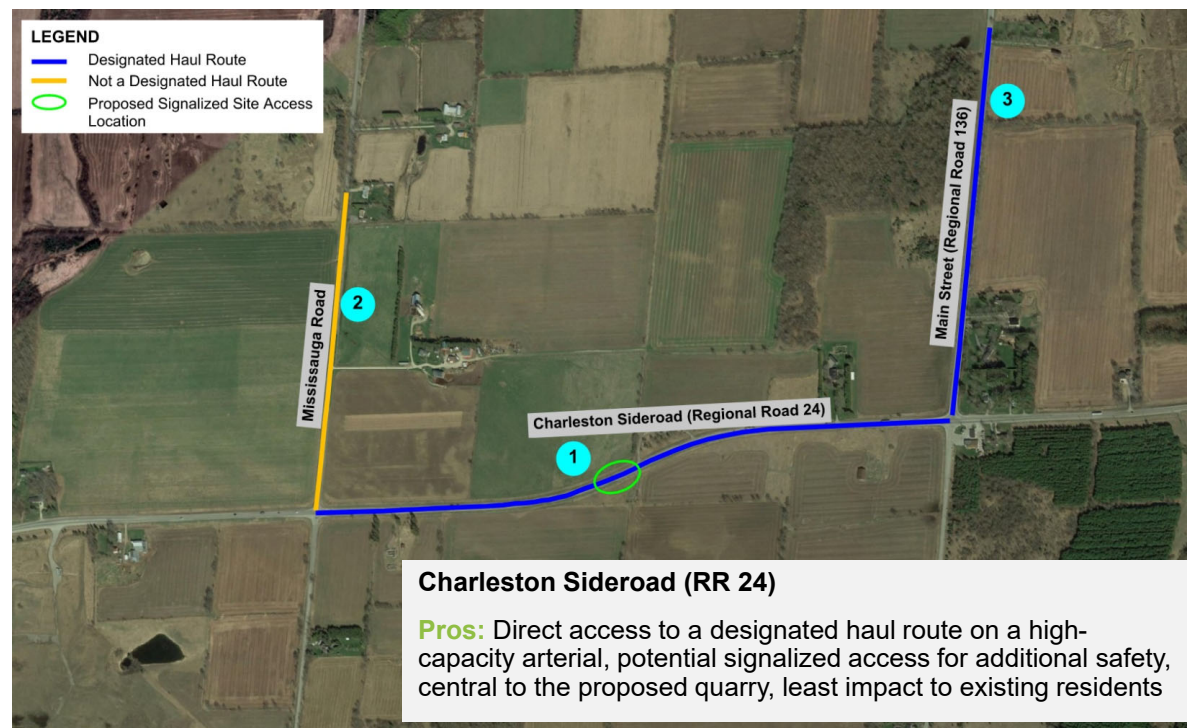
Update on Technical Studies

Traffic

- Liaised with reviewing agencies to confirm Traffic Impact Study Terms of Reference.
- Collected turning movement counts in 2020, 2021, and 2022.

Site Access Considerations

- Three alternative access locations were identified and evaluated as potential accesses for the site:
 - 1) Charleston Sideroad (RR 24)
 - 2) Mississauga Road
 - 3) Main Street (RR 136)
- Each location satisfies sightline and access spacing agency requirements.
- Based on the site access evaluation, **Charleston Sideroad** is the preferred site access location with the **least traffic impact** to the study area.



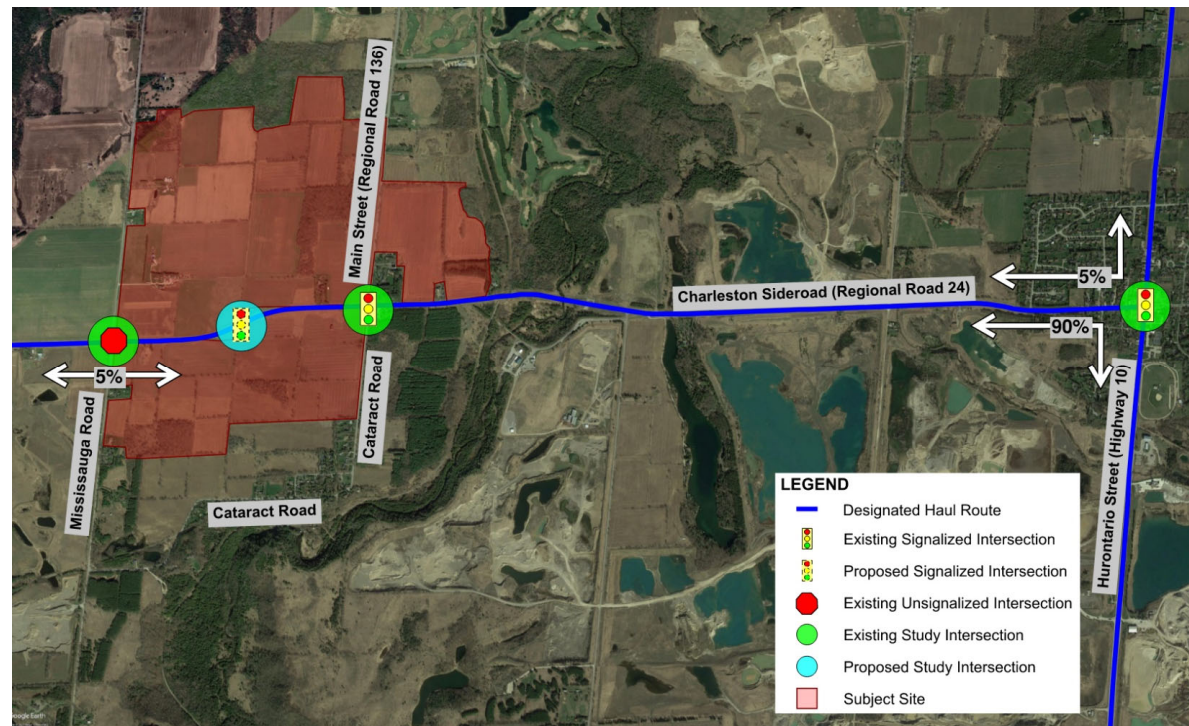
Site Access Location

Update on Technical Studies

Traffic

Addressing Public Comments

- Prior to leaving site, trucks would be inspected and tarped according to Regional guidelines to ensure roads are safe and free of debris / loose aggregate.
- Trucks would be in operation during weekdays and Saturdays only. No truck operations are proposed on Sundays or holidays.
- Approximately 95% of trucks would travel to/from the east on Charleston Sideroad then travel 90% and 5% south and north respectively on Hurontario Street. 5% of trucks would travel to/from west on Charleston Sideroad.
- At Charleston Sideroad & Hurontario Street, to be conservative 2018 pre-COVID MTO traffic counts were adopted as baseline traffic volumes.
- All other intersections adopted 2020 turning movement data with an additional 5% applied to the relevant movements to account for pre-COVID traffic volumes variations.



Off-Site Truck Distribution

Update on Technical Studies

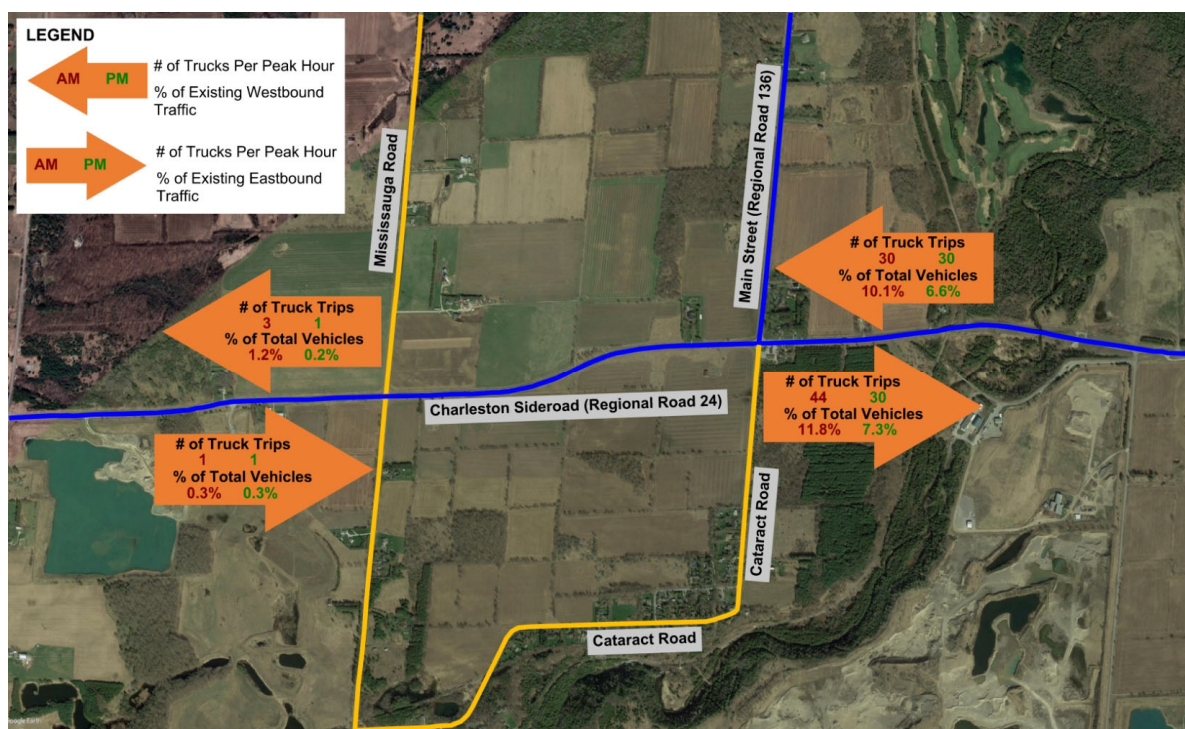
Traffic

Future Truck Volumes

- An annual maximum extraction limit of 2.5 million tonnes will generate an estimated **78** total new **two-way** truck trips during the a.m. peak hours of July, the typical highest haulage month of activity for quarries.

Number of New Trucks In/Out of Site	New Truck Trips (Peak Hour)		
	East of Site AM(PM)[SAT]	West of Site AM(PM)[SAT]	Total AM(PM)[SAT]
Inbound	30 (30) [30]	1 (1) [1]	31 (31) [31]
Outbound	44 (30) [30]	3 (1) [1]	47 (31) [31]
Total	74 (60) [60]	4 (2) [2]	78 (62) [62]

- An **expected** extraction limit of 2 million tonnes results in a maximum **63** total new two-way truck trips during the a.m. peak hours of July.
- Average annual** a.m. peak hour truck trips are estimated to be **58** and **48** with an annual extraction limit of 2.5 million tonnes and 2 million tonnes, respectively.
- Future truck trips are estimated to contribute to a maximum of **12%** of existing vehicle volumes along Charleston Sideroad (with limit of 2.5 million tonnes).



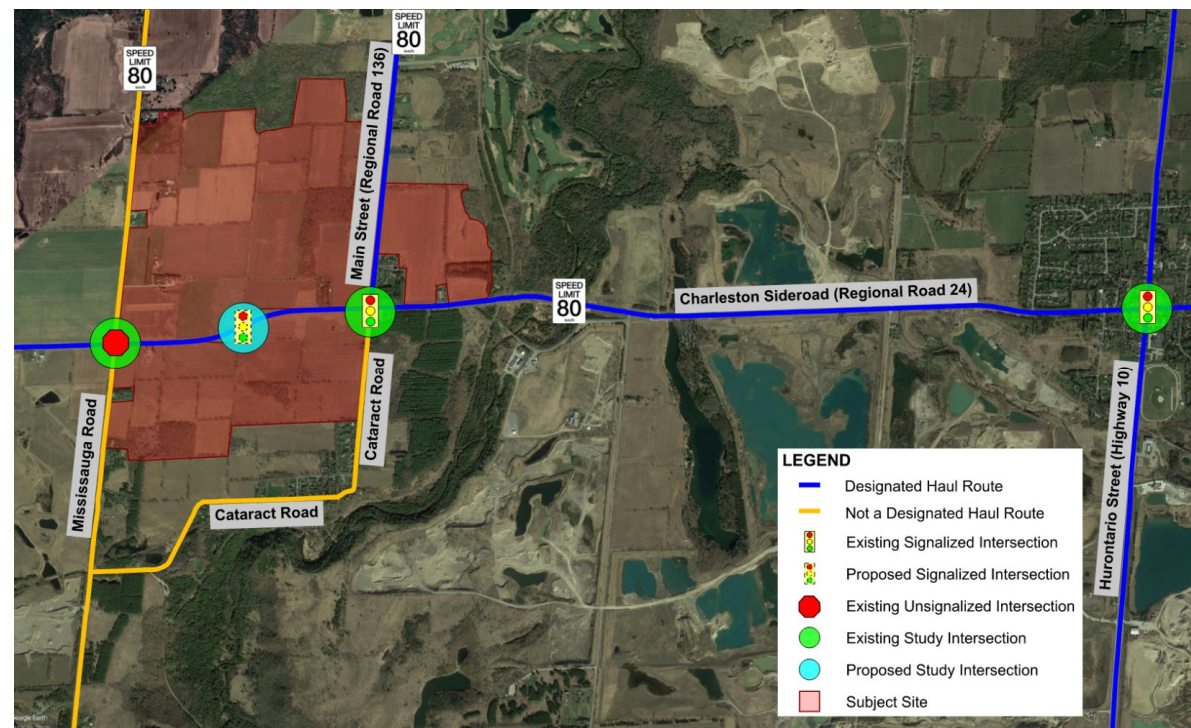
Future Truck Flow Percentages

Update on Technical Studies

Traffic

Preliminary Results and Key Points

- Study intersections operating at overall high quality under existing and future total traffic conditions with **reserve capacity** and **average** traffic delays are projected to accommodate the site-related traffic.
- Site generated traffic does not trigger capacity issues.
- It is anticipated that traffic operations would improve with the implementation of the Caledon Village Bypass.
- Under future total traffic operations, a signal is recommended at the proposed site access on Charleston Sideroad for added safety mitigations and ease of traffic flow.

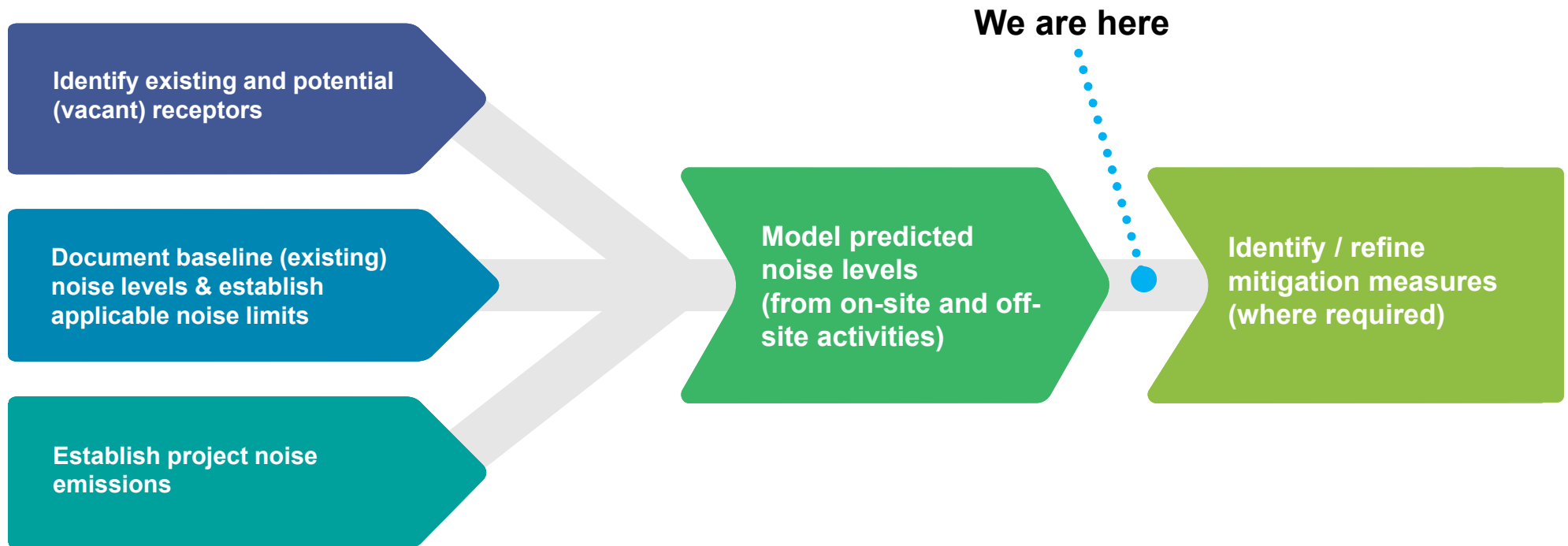


Study Area Road Network

Update on Technical Studies

Noise

Overview of Noise Assessment Approach

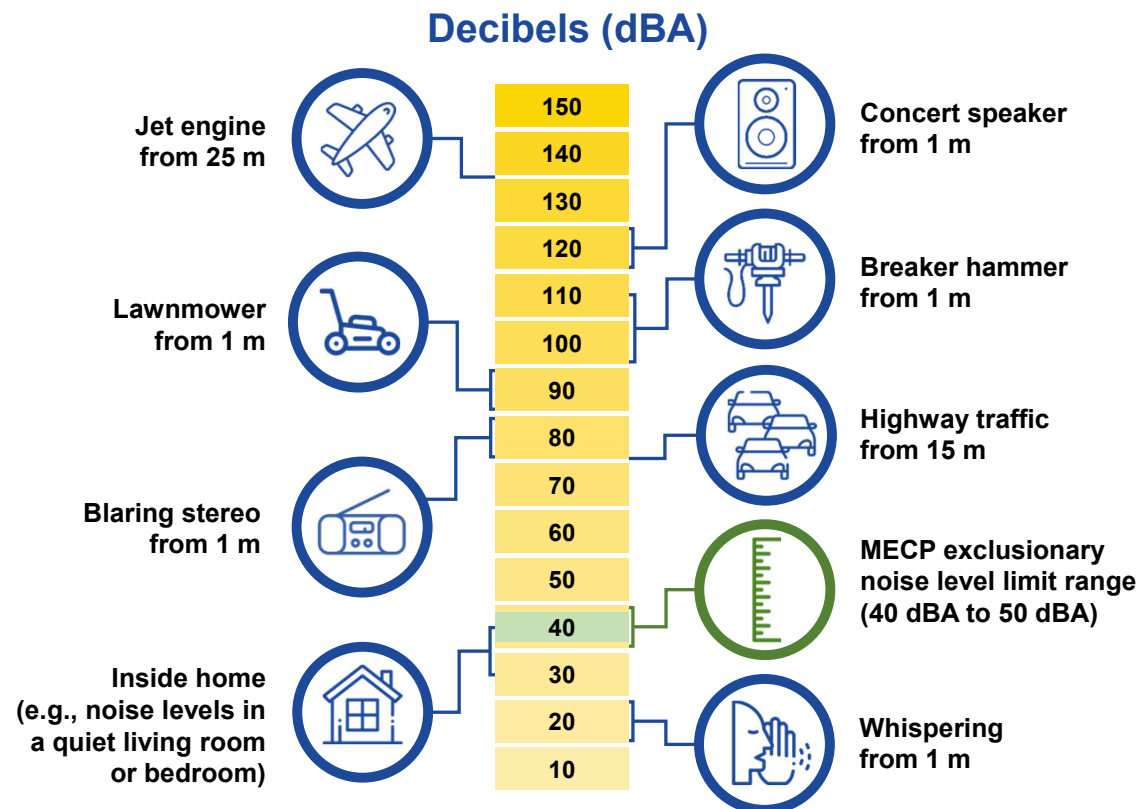


Update on Technical Studies

Noise

Noise Level Concepts

- Noise levels are generally expressed on a logarithmic scale, in units called decibels (dB).
- Environmental noise levels are typically presented as “A-weighted decibels” (or dBA), which approximates the typical hearing response of the human ear.
- Noise level limits are established by the Ministry of Environment, Conservation and Parks (MECP).
- **CBM is required to comply with MECP noise level limits at each receptor location.**
- The graphic shows common day-to-day noise levels.



Update on Technical Studies

Noise

Receptor Classification

- Class 1
 - Background noise dominated by human activity.
- Class 2
 - Background noise dominated by human activity during the day and sound of nature at night.
- Class 3
 - Background dominated by sounds of nature.

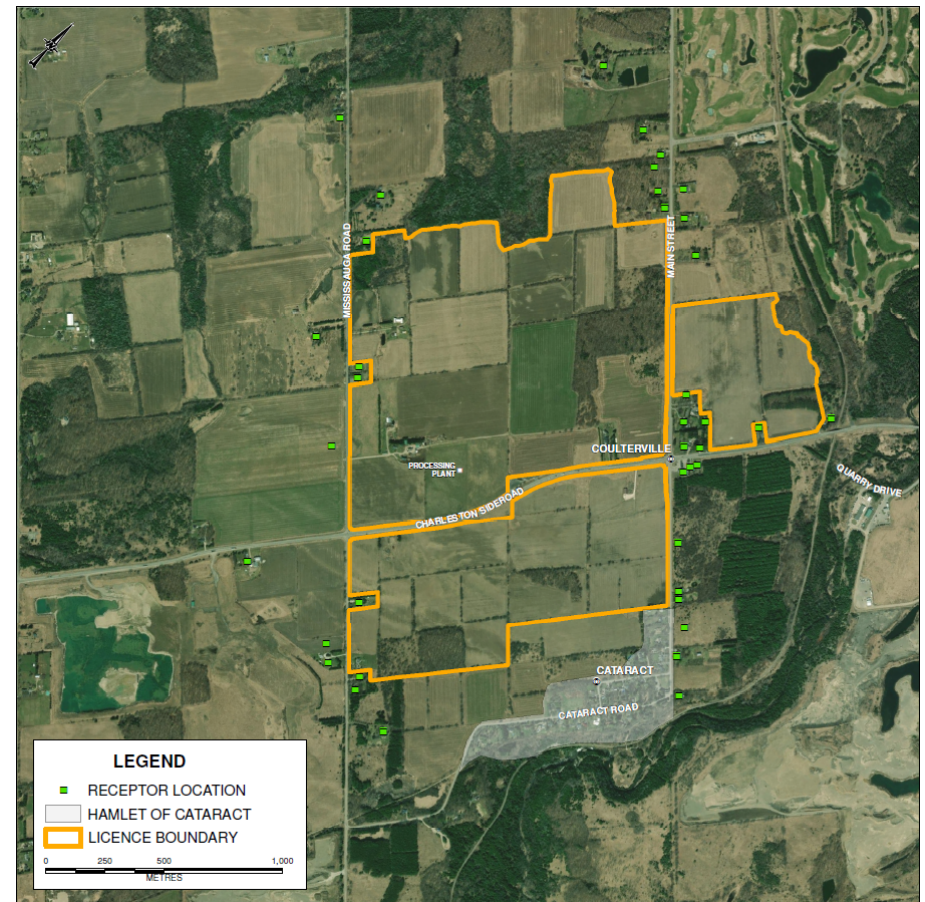


Update on Technical Studies

Noise

Receptors and Baseline Noise Levels

- Review of background information.
- Existing and potential (vacant) receptors have been identified in all directions of the Project Location and representative receptors were chosen in all directions.
- Baseline noise monitoring program was completed in late 2021.
- **Baseline noise levels are comprised of; existing traffic, human activities and sounds of nature.**
- **The area is classified as Class 3 and Class 2 depending on the receptor location in relation to local roadways.**



Representative Noise Receptor Locations

Update on Technical Studies

Noise

Work Completed To-Date

- Worked with the CBM Project team, including blasting, air, water and mine planning, to determine potential extraction footprint and activities.
- Noise Modelling approach:
 - Inputs:
 - Project design information, including extraction phasing.
 - Equipment noise emissions (from similar site, manufacturers' data and database).
 - Sensitive receptor; type, location and height.
 - Terrain Data.
 - Methods
 - Used 3-Dimension noise modelling software implementing MECP approved algorithm (ISO 9613 and ORNAMENT (or similar traffic algorithm)).
 - Output
 - Predicted project noise levels at off-site sensitive receptors.



Update on Technical Studies

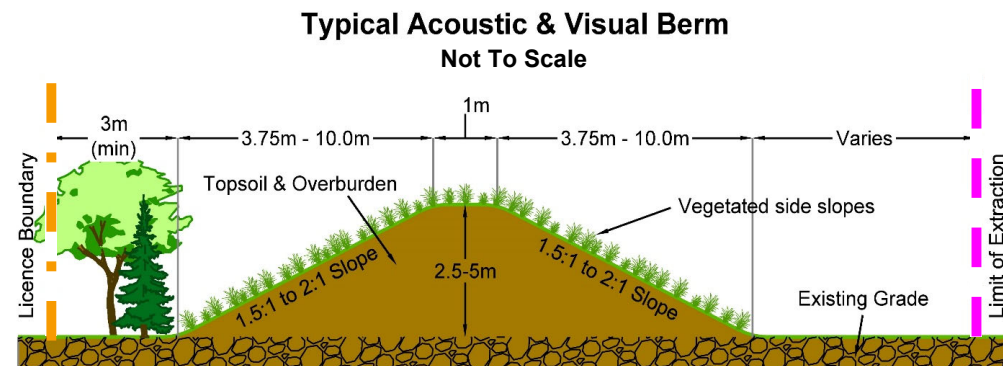
Noise

Current Results

- Extraction can be completed within the proposed area while meeting MECP noise limits. Mitigation will be required for some operations.
- Mitigation examples could include:
 - Property line barriers in certain areas (i.e., Berms).
 - Procurement of quieter equipment.
 - Restrict operations in certain areas.
 - Implementation of localized equipment-specific mitigation, such as: enclosures, local barriers, and silencers.

Work To Be Completed

- Complete a literature review regarding potential effects of noise on livestock, in response to concerns heard through engagement.
- Develop mitigation plan.
- Complete report for inclusion in application submissions under the ARA and *Planning Act*.

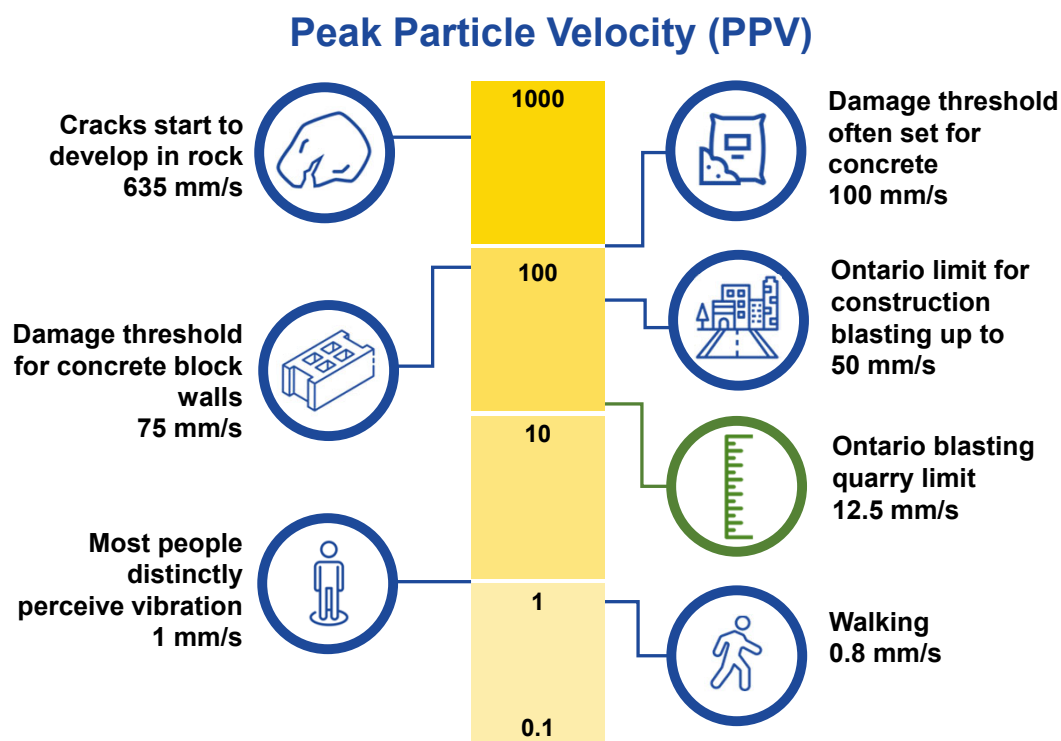


Update on Technical Studies

Vibration and Blasting

Vibration Level Concepts

- The level of vibration is often used as an indicator of the potential to impact people or nearby structures.
- A common measure of the intensity of ground vibration is Peak Particle Velocity (PPV).
- This is a measure of the speed of the ground particles caused as a vibration wave passes.
- The level of vibration is often expressed in units of millimetres per second (mm/s).
- The effect of different levels of vibration is shown in the graphic to the right.
- Ontario limit for quarry blast vibrations at receptors: 12.5 mm/s.
- **CBM would be required to operate the proposed Caledon quarry below Ontario blasting quarry limits.**



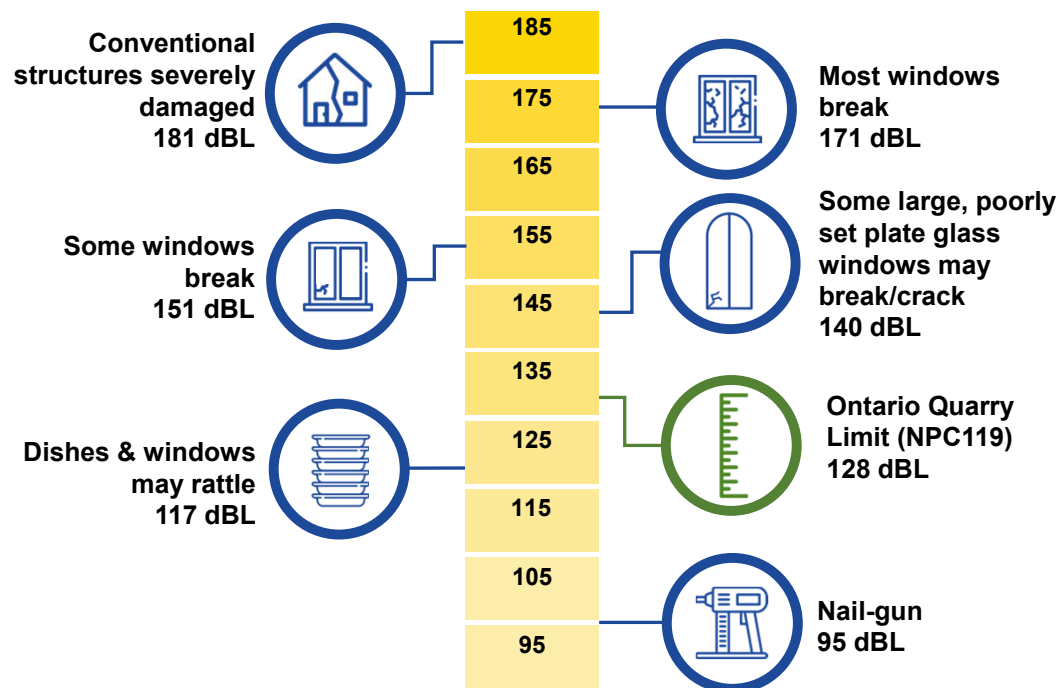
Update on Technical Studies

Airblast Overpressure and Blasting

Airblast Overpressure Level Concepts

- The level of air vibration, known as airblast, is often used as an indicator of the potential to impact people or nearby structures.
- A common measure of the intensity of air overpressure is Peak Sound Pressure Level (PSPL).
- This is a measure of the sound pressure level caused as the airblast wave passes.
- The level of airblast overpressure is often expressed in units of linear decibels (dBL).
- The effect of different levels of airblast overpressure is shown in the graphic to the right.
- Ontario limit for quarry blast airblast at receptors: 128 dBL.
- **CBM would be required to operate the proposed Caledon quarry below Ontario blasting quarry limits.**

Airblast Overpressure (dBL)



Update on Technical Studies

Vibration and Blasting

Work Completed to Date

- Reviewed background information.
- Identified existing and potential (vacant) receptors.
- Compiled two years of blast vibration monitoring data from a similar CBM quarry (Osprey in Collingwood) to enable the development of vibration reduction models.
- Assessed potential blast impact on residences and fish habitat.
- Initiated literature review regarding potential effects of vibration on livestock and pets, in response to concerns heard through public consultation.
- **Flyrock is not permitted to leave the licensed site and each blast will include a detailed design to prevent such an incident from happening.**
- Flyrock has been modelled and confirmed that quarry blasting can be carried out without flyrock leaving the licensed site.



Blast example at CBM's Osprey Quarry near Collingwood



Update on Technical Studies

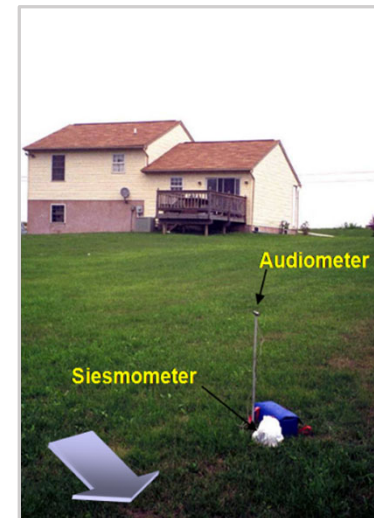
Vibration and Blasting

Preliminary Results and Key Points

- Blast designs were developed that enable vibration and sound from blasting to remain within the MECP / Ontario guidelines and protect the nearby residences from damage.
- **Blasting operations at the proposed Caledon Quarry can be carried out and remain below the MECP / Ontario quarry blasting guidelines.**
- Vibration monitoring results will indicate if the blast design requires changes, such as reducing the explosive charge.
- At aquatic receptors (e.g., the Credit River), estimated vibration and water overpressure levels will be well below Fisheries and Oceans Canada (DFO) guidelines.

Next Steps

- Complete a literature review regarding potential effects of vibration on livestock.



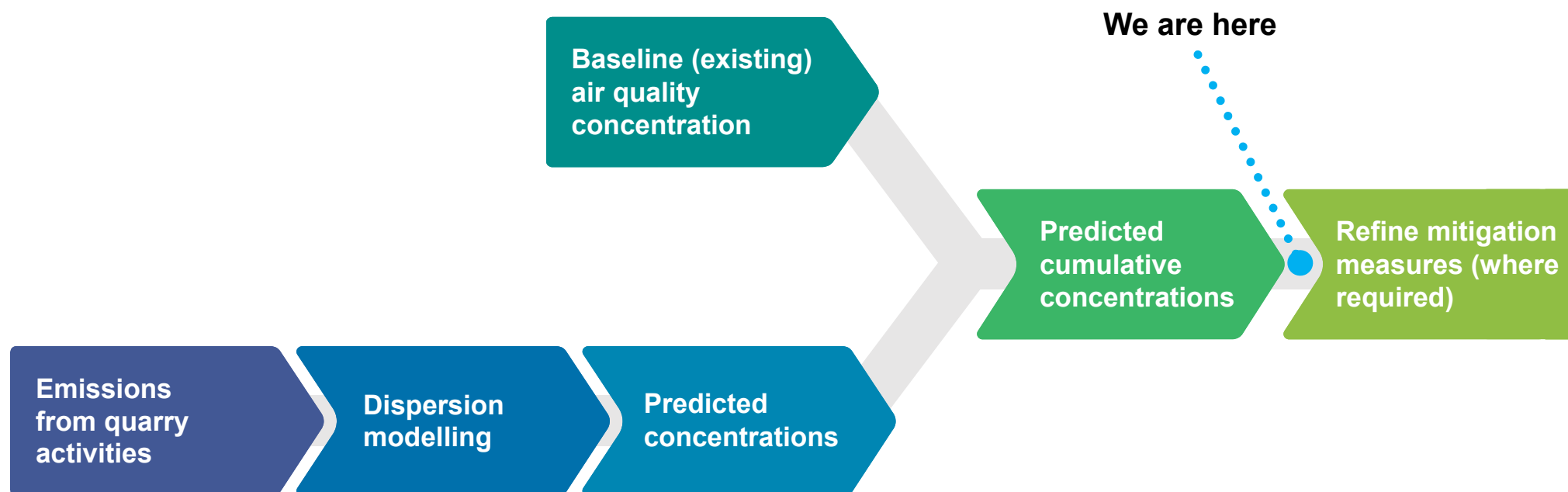
Seismograph with geophone and linear microphone

Type of equipment used during standard compliance monitoring of quarries (e.g., future Caledon Quarry operations, if approved). Used to measure vibrations and air pressure (sound) from the blasts.

Update on Technical Studies

Air Quality

Overview of Air Quality Assessment Approach



Update on Technical Studies

Air Quality

Baseline (Existing) Air Quality

- Focus of the Air Quality assessment is on the following indicators:
 - Dust / Particulate matter (SPM, PM₁₀ and PM_{2.5})
 - Crystalline Silica
 - Nitrogen Oxides (NOx - as an indicator of tailpipe emissions)
- In response to public consultation, CBM installed a monitoring station for dust at the Project Location in October 2021 to collect supplemental site-specific data.
- This station has been collecting monitoring data for dust and meteorological data for the past 10 months and is used to inform the assessment of background/ baseline air quality.



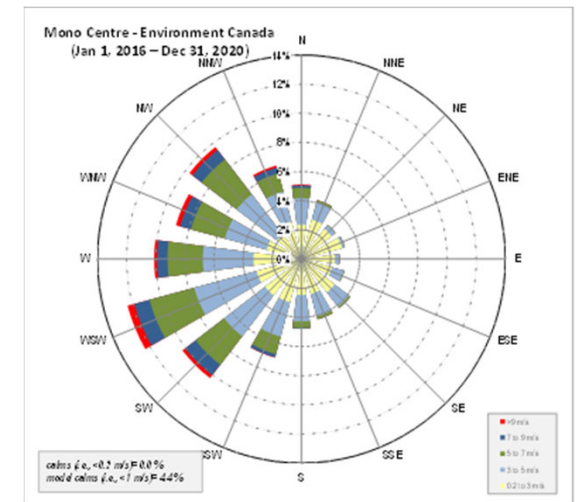
Monitoring station at Project Location

Update on Technical Studies

Air Quality

Baseline (Existing) Air Quality

- Typically Baseline Air Quality is characterized or described using monitoring data from stations maintained by Environment and Climate Change Canada (ECCC).
- The closest ECCC stations to the Site are located in Brampton and Guelph.
- 5 years of data was downloaded and analyzed for comparison to Ontario Ambient Air Quality Criteria (AAQC).
- Baseline Air Quality Monitoring results are below the AAQC, indicating that existing air quality is good.
- On-site monitoring results indicates low levels of ambient dust in the area.



Prevalent wind direction in the Project Location is from the West-Southwest

Update on Technical Studies

Air Quality

Generalized Expected Project Emissions

Material extraction
(drilling and
blasting)

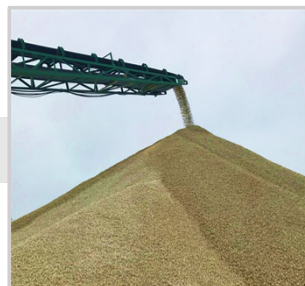
Material handling
and vehicle
movements

Processing plant
(crushed and
screened)

Storage stockpiles
and wind erosion

Shipping of
materials off-site

Off-site



Update on Technical Studies

Air Quality

Dispersion Modelling

Emission rates and source parameters (location, dimensions and operating schedules)

5 years of meteorological data (obtained from MECP)

Terrain Data

Sensitive receptor locations (e.g., residences)

AERMOD
(MECP approved model)

Predicted concentrations at each sensitive receptor for different averaging periods

- 1 hour
- 24 hour
- Annual

Update on Technical Studies

Air Quality

Cumulative Assessment

- Predicted concentrations from the modelling have been added to background (existing) air quality concentrations to estimate cumulative air quality concentrations for each modelled scenario.
- Cumulative air quality concentrations have been compared to Ambient Air Quality Criteria (Federal and Provincial).
- Ambient air quality criteria are not regulatory standards but are used to indicate “good air quality”.
- Predicted concentrations are also being compared to health-based standards to understand potential risk to Human Health as raised during public consultation as a concern.



Update on Technical Studies

Air Quality

Mitigation Measures

- The results of the Cumulative Assessment are being used to inform the development of mitigation measures, particularly for dust.
- Based on the results of the assessment, the sources with the largest potential to impact dust are haul routes within the quarry which can be mitigated with the following examples:
 - Use of watering to suppress dust.
 - Speed limits.
 - Minimizing haul route lengths where possible.
- CBM is required to manage dust on-site.
- **A Dust Management Plan will be prepared with recommended mitigation measures and monitoring taking into account the results of the model.**



Formal Review Process for an Aggregate Licence

We are here

Formal Review Process

PLANNING ACT: OFFICIAL PLAN & ZONING BY-LAW AMENDMENT PROCESS

Pre-consultation with the Region, Conservation Authority, and Town	Preparation of all Required Technical Reports	Applications Submitted to the Town	Town circulates the application to departments and agencies for review	Town Council statutory public meeting	Town staff reviews all information and prepares a report and recommendation to approve or deny application	Town Council makes a decision	If Council decision is appealed this goes to Ontario Land Tribunal (OLT)
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Ongoing Consultation with Indigenous Communities, Agencies and the Public

AGGREGATE RESOURCES ACT (ARA): LICENCE APPLICATION PROCESS (Ministry of Natural Resources and Forestry – MNRF)

Pre-consultation with the MNRF	Preparation of Technical Reports, Site Plans and Summary Statement	Application Submitted to MNRF	Application deemed Complete by MNRF, Notice is posted in the Environmental Registry (EBR)	CBM initiates the notification and consultation process (registered letter to residents, sign on property, notice in local newspapers)	CBM works to address comments and resolve issues raised during the comment period	At the end of the 2-year process or before, CBM documents the process and submits to the MNRF	MNRF makes a decision on the applications. Where there are unresolved objections, MNRF refers the application to OLT
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Initial communications with local government representatives (Summer 2019), Indigenous communities & members of the public (Fall 2019)

Meetings with Indigenous communities, government agencies & members of the public (Throughout 2021 and in 2022)

Next Steps and Contact Information

- Ongoing consultation on individual topics and technical studies (e.g., virtual meetings on additional topics of concern such as water, natural environment, and visual).
- Findings of the technical studies will be posted on the Project website ahead of the submission of the licence application.
- Technical reports will be made available for public comment.

We want to hear from you!

CBM is committed to keeping the community informed about the project
Contact us by phone or e-mail:

David Hanratty, P.Geo.

Director of Land, Resource and Environment, North America
David.Hanratty@vcimentos.com
(705) 930-6180

Mike Le Breton

Land & Resources Manager, Eastern Ontario
Mike.Lebreton@vcimentos.com
(905) 410-2900

Visit the project website: www.CBMCaledonQuarry.ca
Or contact our dedicated Project email: CBMCaledonQuarry@golder.com

Thank you! – Q&A

To ask a question:

- You can use the “raise hand” function in the meeting window, and you will be added to the Q&A queue.
- Once it is your turn, your microphone changed so it can be unmuted, and you’ll be asked to speak.
- You can also submit questions via the meeting chat.
- CBM will also run through questions raised in the meeting chat window.

