# Applicant Outreach Summary

## Community Outreach on Planning & Development
## Applicant-led Outreach Summary

**Please complete this form and include with your application submission.**

**Project name:** 6020 94 Av SE, Redesignation & DP for "Soil Recycling Facility Operations"

Did you conduct community outreach on your application? (YES) or NO

If no, please provide your rationale for why you did not conduct outreach.

After submission of the application, public engagement was conducted through a direct-email to 12 industrial business operators within a two block radius. Emails were sent and provided a link to the engagement website that was updated with materials and responses to concerns.

**Outreach Strategy**
Provide an overview of your outreach strategy, summary of tactics and techniques you undertook (Include dates, locations, # of participants and any other relevant details)

The application was assessed to be a "1A" engagement rating on the Outreach Assessment Matrix from the City of Calgary requiring 2-3 outreach tools.

This application utilizing four Outreach Tools & Tactics:

- Website for online engagement – EngageCAR.ca
- Email feedback form (on website)
- Direct contact email and phone provided (in email correspondence and website)
- Direct emailing of printed materials to 12 neighbouring businesses on the block and the parcel to the East that shares 60th Street

**Affected Parties**
Who did you connect with in your outreach program? List all groups you connected with. (Please do not include individual names)

Neighbouring businesses were contacted (initially 16 were contacted, 12 emails were received and engaged, 4 'bounced back' as non-operating).

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## Community Outreach for Planning & Development
## Applicant-led Outreach Summary

**What did you hear?**
Provide a summary of main issues and ideas that were raised by participants in your outreach.

Primary concerns of respondents included:
- Street safety (regarding placement of new access and on-street waiting of vehicles for access to site)
- Increased traffic/parking - The proposed new entrance will reduce on street parking on 60 Street SE
- Dust and debris impact from operations on downwind and shared roadway businesses

**How did input influence decisions?**
Provide a summary of how the issues and ideas summarized above influenced project decisions. If they did not, provide a response for why.

Street safety - The entrance is to be maintained at the existing position and the drawings have been updated to reflect this change.

Increased traffic/parking - The entrance is to be maintained at the existing position and the drawings have been updated to reflect this change.

Dust and debris - 60th Street is to be paved and brought up to public roadway standards including trees and landscaping. This upgrade to pavement will reduce movement of dust and debris. The landowner has resumed conducting pavement sweeping weekly for the existing paved area and will expand sweeping to include the new paved areas of 60th street once completed. The addition of trees and landscaping will also improve dust mediation. CAR will continue to use water trucks to reduce dust generation from internal pathways on-site throughout the non-winter seasons.

**How did you close the loop ?**
Provide a summary of how you shared outreach outcomes and final project decisions with those who participated in your outreach. (Please include any reports or supplementary materials as attachments)

Updated drawings and the response alignment with concerns were posted to the website and circulated to the 12 businesses noted as active emails from the initial engagement list.

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# Outreach Materials

## Calgary Aggregate Recycling (CAR)
## Circulation Routes & Operation Locations

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### Materials Drop-Off & Storage

A - Pre-tested, accepted materials are brought on-site in dump trucks through the existing entrance from 60 Street SE to proceed along the East and then South edge of the property (green route).

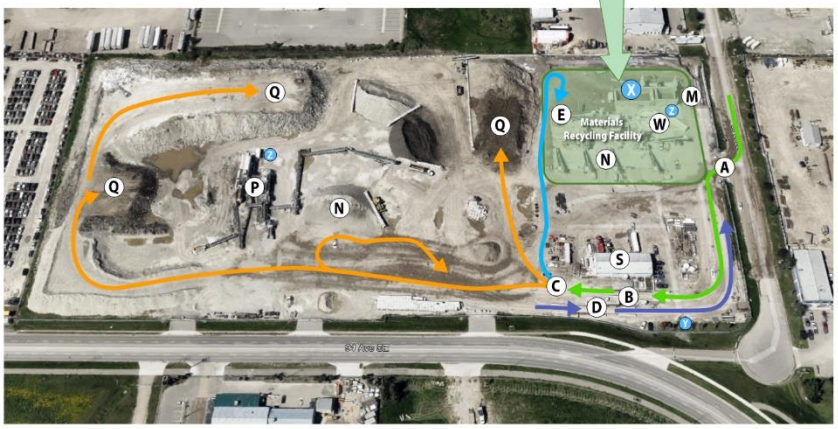
B - Incoming materials are weighed at the scale.

C - After weighing, the trucks either proceed with soil to the unloading area for stockpiles (orange routes), or hydro-vac trucks unload directly to the feeder (blue route to the Feeder & Pre-screening E).

D - After unloading, empty trucks proceed back along their path of origin to exit along the south and east edges of the property back on to 60 Street SE.

### Materials Recycling Facility

Details of the Soil Recycling Facility (E through L) are documented on the following page.




### Outputs

M – Fines cakes are generated from the Plate Press Filtration System (K) and tested prior to delivery to GeoCycle for use in concrete (100% in 2023), or to a Class II Landfill. Uses for this output are being explored to replace interrupted processing by GeoCycle in 2024. In 2024, 75% of the cakes were sent to landfill.

N - Sellable Materials - Washed sand and aggregate, and crushed aggregate are stored for sale for landscaping, road maintenance, construction, and other uses.

W – Recycled water from the Soil Recycling Facility is reused within the system or utilized by hydro-vac vendors for further hydro-vac operations. Surface groundwater from the concrete operations pad is also collected from the site by a liner beneath the concrete. The operational pad is roughly the same area as the green highlighted area on the map to the left.

X - A 600,000 litre water storage tank holds recycled process water and storm water collected on the site for use in the operations of the facility.

Y - Storm water discharge location (used once in 2023 under a Site Drainage Application due to extra overland water collected). No discharge events occurred in 2024.

Z - 400 bbl (18,000 gal) water tanks to store additional water (purchased since discharge event in 2023).

### Additional Operations

P – Aggregate crushing machinery is used to refine materials to targeted aggregate sizes.

Q – Input stockpiles for Asphalt, Aggregate and Concrete Plant and Materials Recycling Facility operations .

S - The shop is where employees gather for safety meetings, lunch, washrooms, and location of fire extinguisher and first aid kit.

## Calgary Aggregate Recycling (CAR)
## Processing Facilities Operations

CALGARY AGGREGATE RECYCLING

### Crushing Facility

P - Aggregate crushing machinery is used to refine materials to targeted aggregate sizes. This separate part of operations on the site intakes and processes concrete, asphalt, and aggregate.


### Materials Stockpiling

The majority of the parcel is utilized for storage of raw, tested input materials and processed materials prior to delivery after sale to the local marketplace. Included into the development permit materials will be a current inventory survey showing the stock piles at a fixed moment in time and a site plan with stockpile elevation (heights) shown for review.

### Wash Facility

E - Feeder & Pre-screening: Materials from the drop-off stockpile are fed into the primary feeding by front-end loader or directly from hydro-vac trucks via the apron feeder. The system consists of two material screen decks that remove materials larger than 6" (5% of materials).

F - Washing & Wet Screening: Materials proceed by conveyor to remove ferrous metals then on to a twin deck screener where it is washed with recycled water from the system to separate sand and soil from the rocks (aggregate). The sand and soil are then pumped to the first hydro cyclone and dewatering screens to recover reusable materials. The first separation of washed coarse aggregate is finalized in this phase and generates a marketable material.

G - Log Washer: Wet-screened aggregate is washed to remove clay and soil, then screened for lightweight debris, and then dewatered and sorted into three aggregate sizes for final materials.

*Further operational details are available in the Soil Reuse Facility Operations Plan (PDF)*

H - Scrubbing & Contaminant Removal: Extracted sand is pumped through this attrition system where a high level of particle impact is implemented to loosen any remaining adhesive contaminants. Freeing the heavy sand particles from the contaminants creates a high-quality, washed sand and allows the suspended solids to be clarified in the water treatment process.

I - Counter Flow Classification: A process of hydro-cycloning separates cleaned sand by weight. The saturated sand goes through a dewatering screen to salvage the water for recycling and reuse and creates up to two specifications of market ready washed sand.

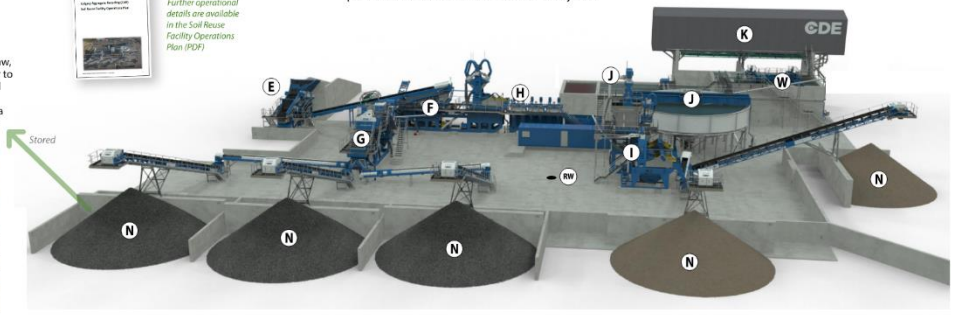
J - Fining & Settling: Wastewater from the washing plant is delivered to the center of the thickener tank and premixed flocculant[1] is added to facilitate settlement. Clean water is overflowed into a gravity fed storage tank where it can be immediately redistributed to the system or stored (W). Particle fines[2] are collected in the bottom of the thickener tank then pumped to a slurry tank for the final stage of treatment. This step recycles up to 90% of process water for immediate re-use in the system.

K - Plate Press Filtration System: Slurry from the thickener tank is dewatered through a filter press, recovering up to 5% additional process water. This process removes fines and results in filter cakes that drop into a containment area for transport off-site.

W - Process water is recycled in the system and stored in a 600,000 litre storage tank located beneath the Plate Press building. Rain water from the concrete pad is also collected into this tank for use in the wash process through a drain and liner system (RW). Rarely, additional water is purchased from a third party provider and trucked into the site to top-up the water tank. On one occasion, a drainage event was permitted by the City to the storm water system, however since that discharge two additional 18,000 gallon tanks have been added for water storage.

*[1] "Flocculant" is a polymer substance that causes small particles in a liquid to clump together into larger clusters, called flocs.*

*[2] "Fines" are defined as process solids, consisting mainly of clay and silt particles that are less than 0.063 mm.*



Calgary Aggregate Recycling (CAR)

## Operational Inputs, Testing, and Outputs

CAR
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**360,390 TONNES**

Total amount of waste diverted from landfills in 3 years of operations *

**Operational Tonnage Summary (Wash Plant)**

| Year | In - Cont | In - Slurry | Total Incoming | Out - Washed | Filtered Out | Diverted | To | Total Diverted (All Materials) |
|---|---|---|---|---|---|---|---|---|
| 2023 | 76,809.15 | 15,572.01 | 92,381.15 | 25,464.49 | 46,001.26 | 21% | GeoCycle | 90% |
| 2024 | 174,089.21 | 26,600.16 | 200,689.37 | 56,154.23 | 68,872.06 | 25% ** | GeoCycle | 91% |
| 2025 | 314,504.64 | 63,192.16 | 377,696.80 | 279,072.08 | 17,431.84 | 0% | *** | 94% |

* Total diverted waste calculated by subtracting landfill materials from total incoming materials
** The GeoCycle lost operation of one kiln in 2024 for processing the fines materials, then could take no materials in 2025.
***Alternative uses for the fines product are being explored to get diversion to 100%.


### Inputs

In accordance with the *Environmental Protection and Enhancement Act*, Calgary Aggregate Recycling Inc. (CAR) has been approved by Alberta Environment and Parks to operate a "Waste Management Facility", under AEP Approval number: 476084-00-00.

The activities conducted at the site are designated under Schedule 1 of the Activities Designation Regulation (Alberta Regulation 276/2003). Schedule 1 – Division.

**Accepted Material Streams**
The following material can be accepted at the facility, provided it meets the criteria from Required Analytical Testing:

- Soil & Contaminated Soils from:
  - construction and demolition sites,
  - municipal land use zones classified as commercial and light industrial,
  - soils from sand and gravel pit operations,
- Non-hazardous hydro-vac material
- Aggregate
- Asphalt *(for crushing, not washing)*
- Concrete *(for crushing, not washing)*
- Debris mixes from construction and demolition sites

**Prohibited Material (Rejected from Processing)**
- Hazardous waste as specified in the Waste Control Regulation, AR 192/96, as amended
- Dangerous oilfield waste
- Municipal solid waste
- Domestic wastewater
- Explosive(s)
- NORM waste (Naturally occurring radioactive material)
- Biomedical waste; and
- Ozone depleting substances

### Inputs Testing

For all materials brought to CAR, the materials generator must complete a material application prior to materials being accepted to the site for input.

All Contaminated Material must be tested and meet the following requirements:

- Analytical data provided must support the non-hazardous solid waste classification
- Analytical data provided must be current (not older than one (1) calendar year)
- It is the responsibility of the waste generator to determine the characteristics of the waste

**Non-Conforming Material**
Any non-conforming material will be rejected. In the event that non-conforming material is identified, CAR will notify the material generator of the issue.

*Extensive testing details are available in the Soil Reuse Facility Operations Plan (PDF)*

### Outputs

**Sellable Materials**
The following materials are generated and sold for use in construction, road maintenance, landscaping, and other applications:


**Reusable Materials**

**Water** - most water is cleaned and reused in the wash process, the rest is provided back to hydro-vac operators for their use.

**Fines Cakes -** This soil-like clay material is diverted for use in concrete manufacturing (whenever possible) and uses for agriculture and landfill maintenance are being explored. The fines consisting mainly of clay and silt particles that are less than 63 microns (µm) or 0.063 mm. The nature of this output material is a usable product in other processes and uses for the materials are being sought. At this time, the fines materials, making up 6% of outpot, unfortunately go to landfill for disposal.

### Output Destinations

**Sand & Aggregates** are sold to end users for landscaping, construction and infrastructure maintenance purposes.

**Water** is provided back to hydro-vac operators for use in their process and reused within the wash process repeatedly.

**Fines** are processed down-stream for use as a concrete additive. New uses for the fines material is being explored with the City of Calgary for landfill separation and coverage, and other users for carbon sequestering, and agricultural purposes.

Calgary Aggregate Recycling (CAR)

## Climate Action Alignment & Outcomes

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### Current Mitigation & Diversions

Calgary Aggregate Recycling operates to divert significant amounts of waste from landfills and reduces carbon emissions significantly. Their operations meet several of the goals as set out in the **Calgary Climate Strategy Pathways** including:

**Consumption and Waste**
City of Calgary is seeking to divert 70% of waste from landfills by 2025 (p. 20). CAR's operations have diverted over 266,000 tonnes of materials from City landfills in the first two years of operations and will continue to assist the City in meeting this goal as many City projects are utilizing the wash facility process.

**Carbon Removal**
Reduction in GHG emissions from waste transportation, reduced virgin materials mining, and reduced virgin materials transportation.

**Water Adaptation**
Reducing water consumption through storm water collection, reuse of water within wash operations, and use of water from hydro-vac inputs instead of using municipal water.



### Greenhouse Gas Emissions Reductions

Green House Gas (GHG) emission reductions are achieved by: providing a shorter distance to CAR than to the Class II landfill locations;
reducing virgin aggregate mining activities; and reduced transportation for virgin aggregate mining materials.

The combination of these methods results in **93% reduction in GHG emissions** over traditional disposal and mining operations.

The closest Class II landfill that accepts materials processed at the CAR facility is located roughly 180 km from Calgary's city centre at the Newell Regional Landfill (shown below). Emission savings calculations use this facility for savings calculations vs. the CAR facility located 22 km from the city centre. Limitations on materials include size (6 inches), chloride and other chemical levels, and oilfield waste (CAR has a special approval for certain oilfield projects).

The total GHG emission reduction is calculated with inclusion of the CAR operation emissions less transportation savings for input materials, aggregate mining activities, and aggregate transportation savings.


**Per Trip Savings Over Landfill**

| | |
|---|---|
| Average Fuel Savings per truckload (L): | 247 Litres |
| Average Carbon Savings per 1000 tonnes of material (TCO2): | 30TCO2e |
| Average GHG Savings per Truck Load (TCO2): | 0.57TCO2e |
| Average Time Saved per Load: | 90 minutes |
| Average Distance Avoided: | 160km |
| Carbon reduction per tonne processed | 0.040 |

**Wash Facility Totals**

| | |
|---|---|
| Processed: | 293,070 tonnes |
| Emission Reductions to date: | 11,723 tonnes |


### Exploring Future Applications

CAR is actively exploring new uses for the fines materials. The Climate Strategy Pathways policies and goals sets out opportunities for partnerships with private industry.

CAR is discussing this goal with Calgary Waste to encourage the use of the fines material for landfill purposes of topping and cell division.

### Future Operations & Expansion

CAR intends to construct a building cover over the process area in the future and is exploring opportunities to integrate 'green' technologies and processes into this future plan including:

- Water collection from new building roof for process use
- Integration of a solar system on the roof of new building to offset grid power use. (The wash process machinery is powered by electricity.)
- Alignment of new building design with City of Calgary Climate Strategy policies for industrial operations for energy efficiency.