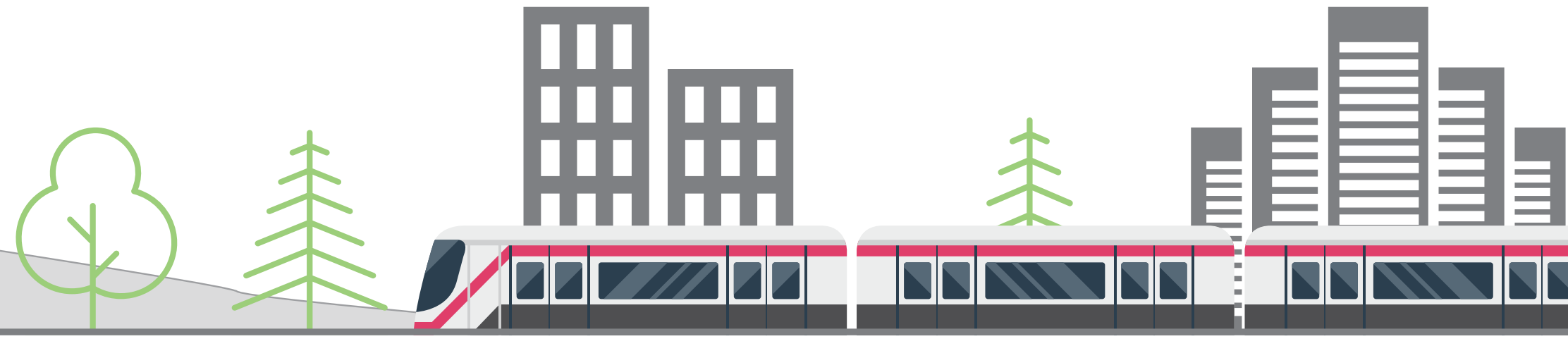
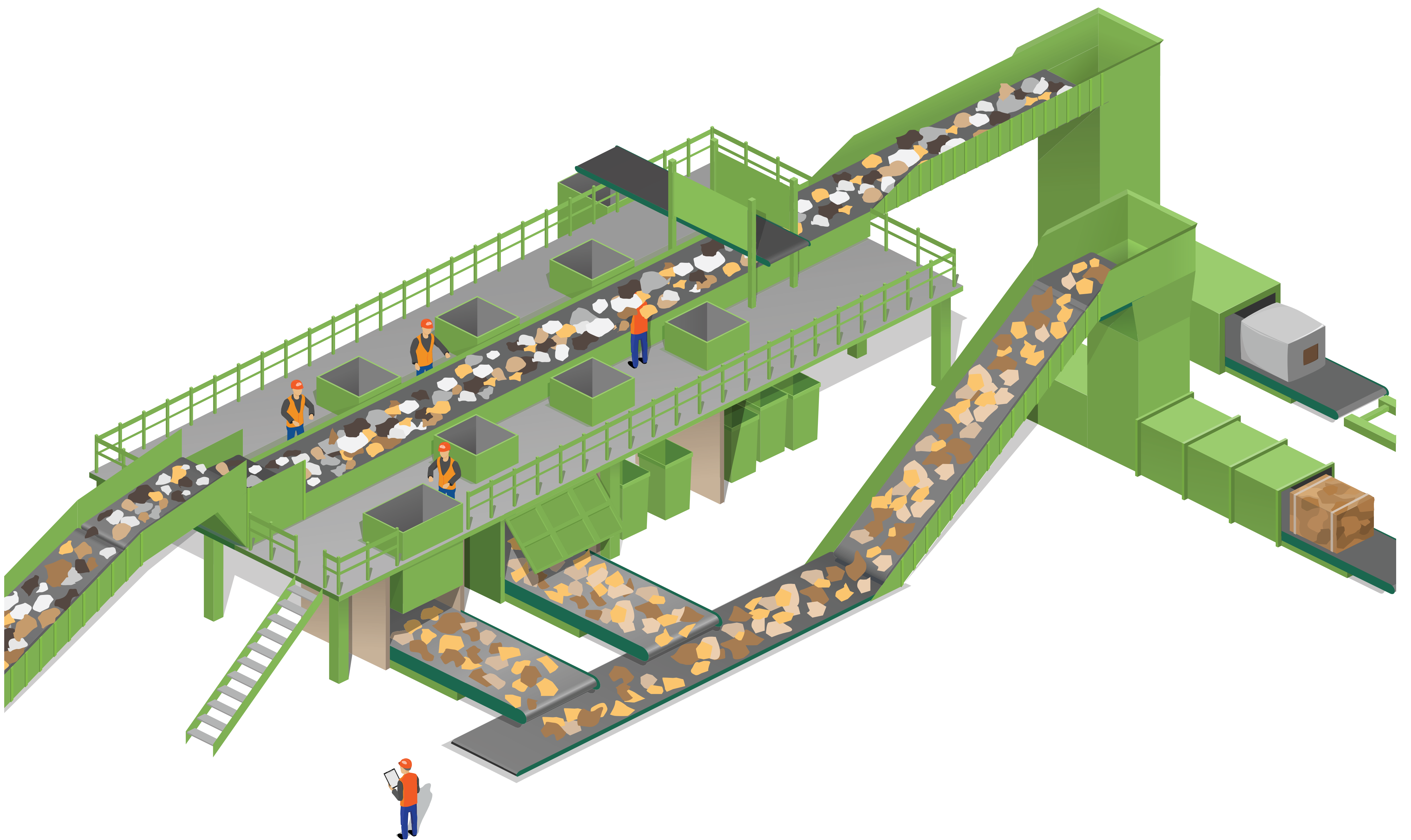


WELCOME



ECCO LANDFILL RECLAMATION OPEN HOUSE



Thank you for joining us today!

We are excited to share details on this project and hear your thoughts.



THE EVENT



WHY WE ARE HERE.

We are here to share the information regarding the proposed landfill reclamation project at ECCO's Calgary facility. Today's open house will allow you to:

DISCOVER WHAT THE PROJECT MEANS FOR THE COMMUNITY AND THE FUTURE OF THE SITE

EXPLORE THE PLANNING POLICY AND FRAMEWORK

LEARN ABOUT THE PROJECT VISION, GOALS AND PRINCIPLES

CONNECT WITH THE PROJECT TEAM TO SHARE YOUR QUESTIONS AND FEEDBACK

We are very interested in receiving feedback from the community, understanding the questions you may have and providing you with the information you are looking for at future sessions.



RULES OF ENGAGEMENT

To facilitate productive and respectful conversations between the project team and community, we've prepared a breakdown of our responsibilities to each other:

RESPONSIBILITIES OF THE PROJECT TEAM

- To notify
- To provide opportunities to engage
- To be clear on the scope of the conversation
- To provide transparent and honest information
- To hold a respectful conversation
- To authentically listen
- To report findings

RESPONSIBILITIES OF THE COMMUNITY

- To be informed
- To participate
- To share your views
- To listen
- To be respectful
- To share opportunities to get involved



THE STORY



ABOUT ECCO



Founded in Calgary, Alberta in 1992 ECCO Recycling & Energy Corporation (ECCO) has dedicated 31 years to being leaders in waste management in Alberta.

Throughout their various business activities, ECCO's overarching goal is to improve waste management practices by diverting waste from landfills and converting it into re-usable commercial and industrial products.



ABOUT TOWNSHIP

Township Planning + Design has been engaged by ECCO to manage the municipal approvals associated with the landfill reclamation and future Transit-Oriented Development.

Township Planning + Design Inc. is a private planning firm specializing in land use planning and community design. We work at all scales from single acreage subdivisions to large-scale multi-use urban developments.

Our years of experience make us a trusted resource in the creation of thoughtful and sensitively planned projects which are highly integrated with servicing requirements and landscape architecture.

ECCO IN THE COMMUNITY

ECCO is highly involved in the surrounding community by supporting a wide array of civic and social initiatives, including:

THE SALVATION
ARMY

YMCA

BOYS & GIRLS CLUBS OF
CALGARY

HERITAGE PARK

EMPLOYMENT
SUPPORT FOR NEW
CANADIANS

GREEN CALGARY

KIDS SPORTS

NEARBY COMMUNITY
ASSOCIATIONS



1960s

Prior to annexation in the early 1960s, the subject site was situated outside of Calgary city limits. Before ECCO owned the site, the lands functioned as a quarry.

1992

ECCO takes ownership of the site.

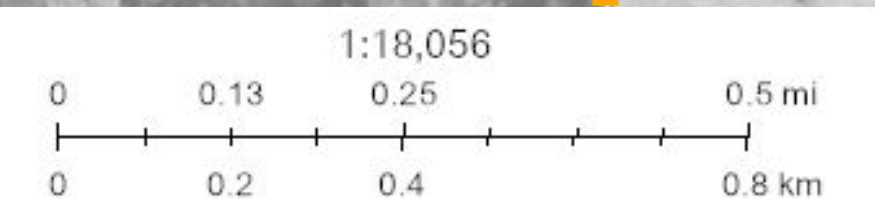
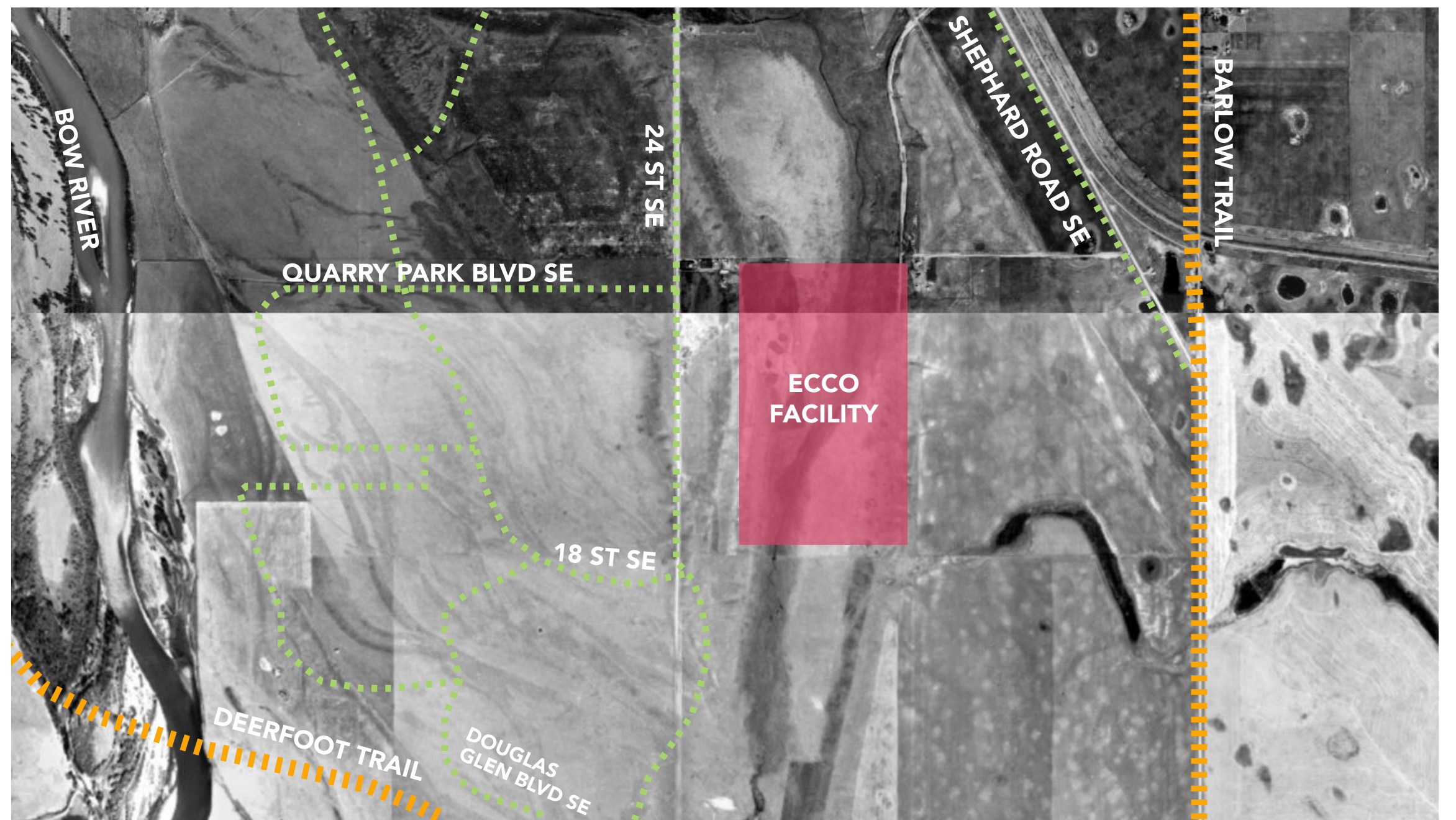
1994

Construction & Demolition Waste Landfill operations start.

2020

Since 1994, ECCO has processed approximately 200,000 tonnes of Construction & Demolition per year. Most of this goes into the landfill, for a whopping total of....

AERIAL PHOTO OF SITE, 1948
CALGARY IMAGERY

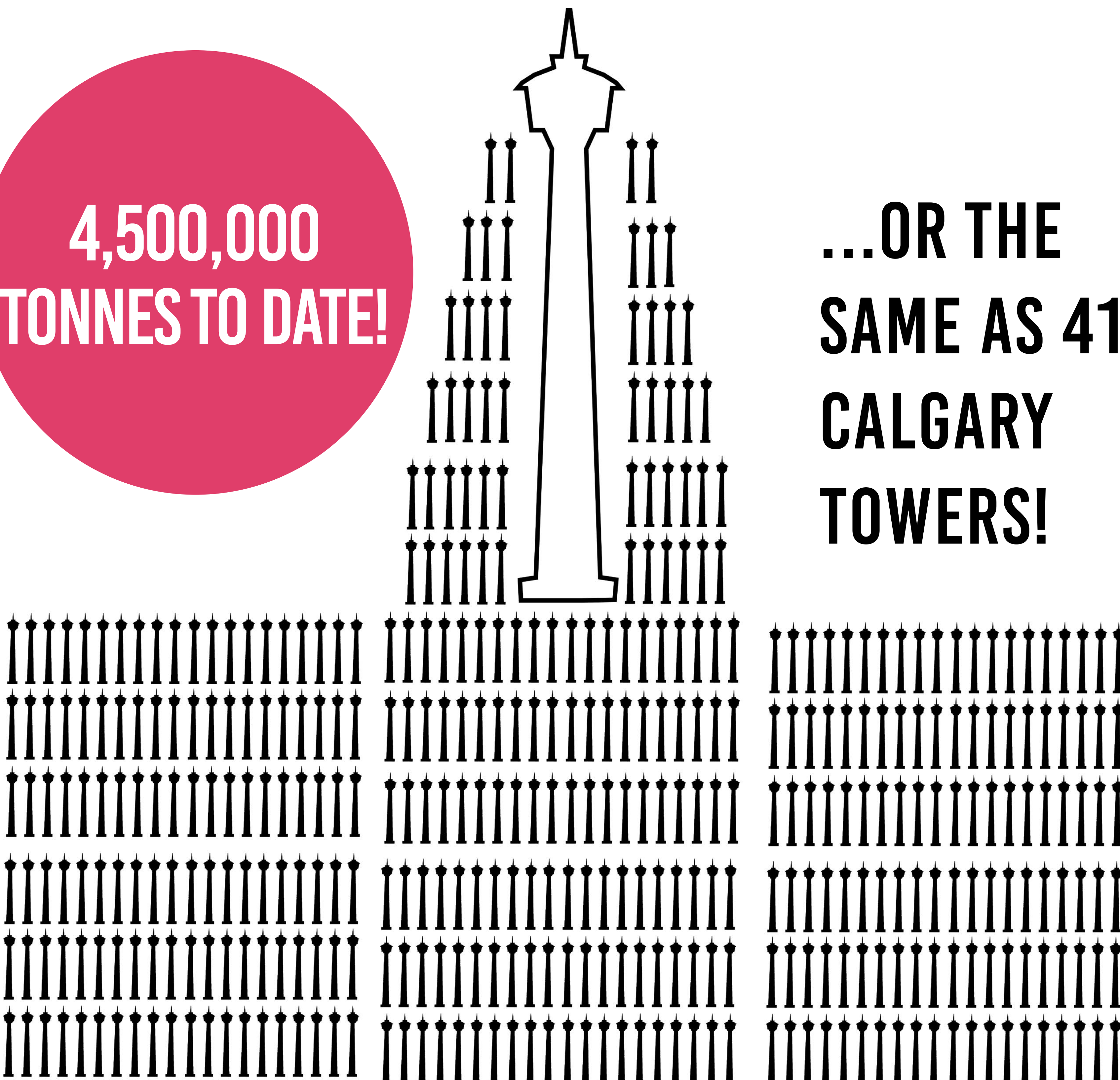


Esri Community Maps Contributors, City of Calgary, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, US Census Bureau, USDA, NRCAN, Parks Canada, The City of Calgary

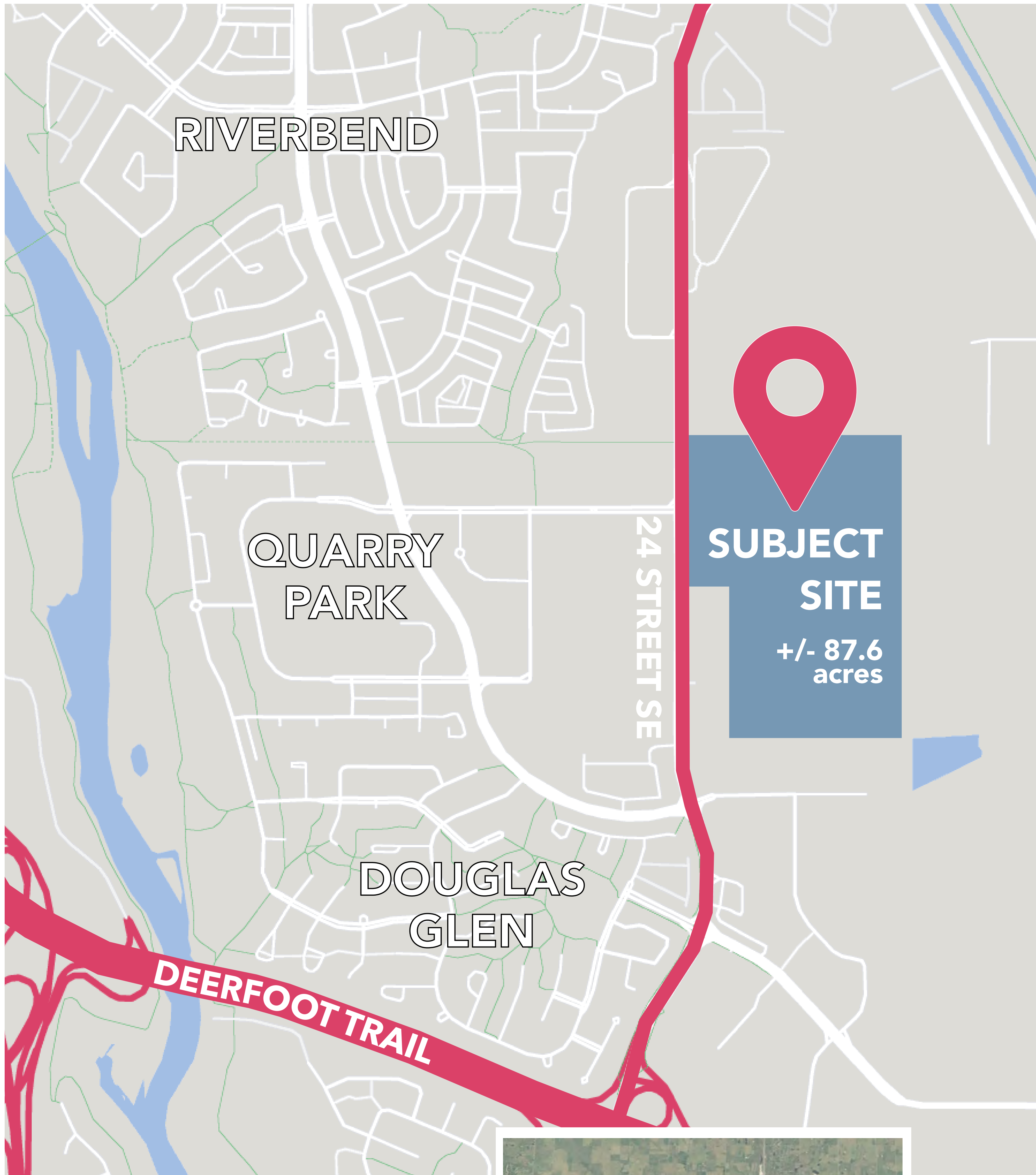
City of Calgary

4,500,000
TONNES TO DATE!

...OR THE
SAME AS 413
CALGARY
TOWERS!

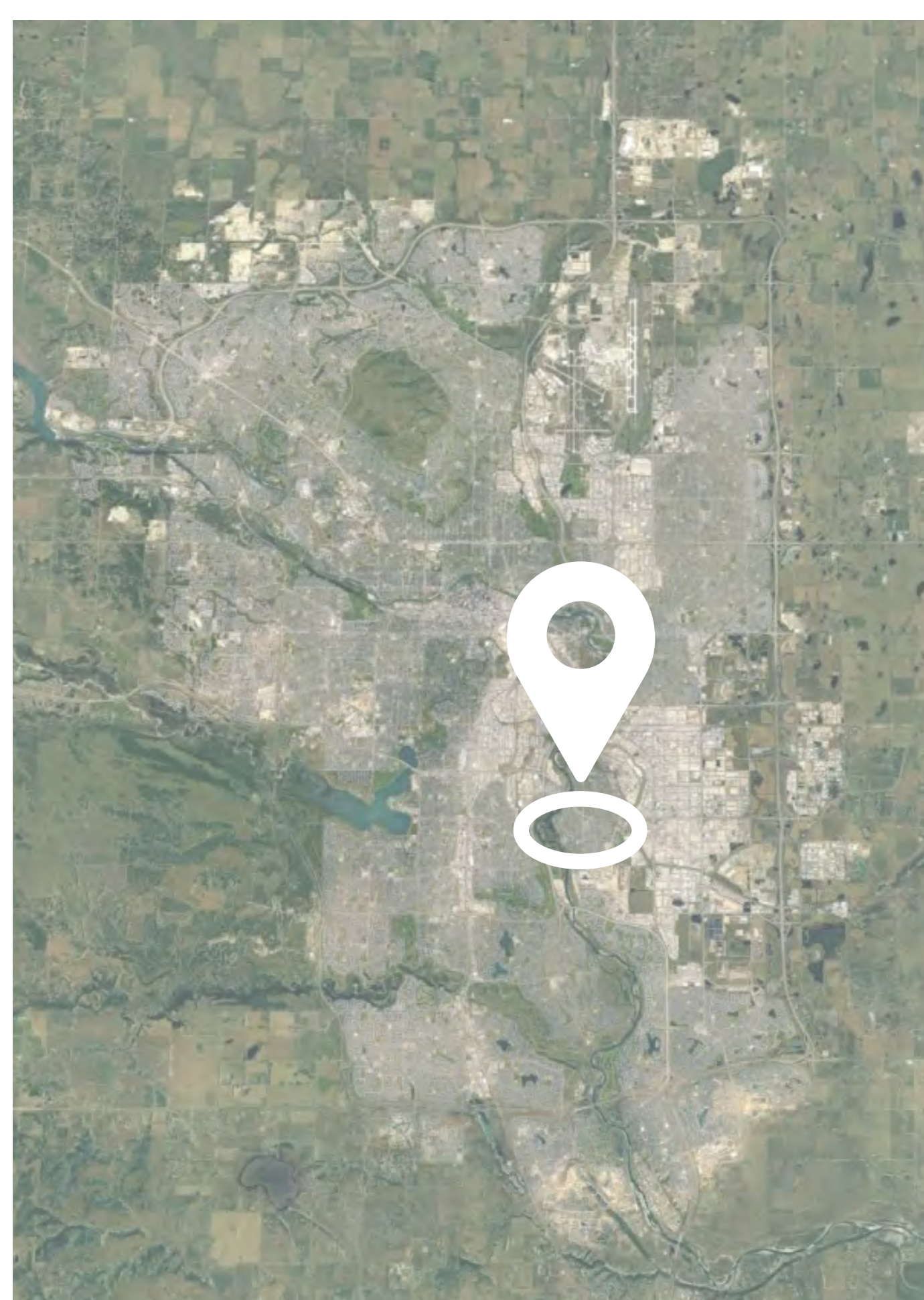


THE SITE



The subject site is located at 10114 24 Street SE, across from Quarry Park Blvd.

Our neighbours are the communities of Riverbend, Quarry Park and Douglas Glen.



THE SITE

ECCO'S FACILITY IS A 'DRY', NON-HAZARDOUS CONSTRUCTION & DEMOLITION WASTE LANDFILL.

Unlike 'wet' landfills, there are no organic waste materials, odours, or any other kind of gas released. Some of the materials contained within the landfill include:

WOOD



METAL



CONCRETE



DRYWALL



The existing facility was approved by Alberta Health and The City of Calgary in 1994. In 2004 Alberta Environment and Protected Areas took over approval for landfills and issued ECCO its Approval.

While the municipal approval expires vary, the provincial approval expires in June 2027. When the provincial approval is renewed, the dry waste disposal area can operate until 2037.

There is currently a Materials Recovery Facility on-site, which opened in 2012. This facility is dedicated to sorting through recyclable materials, separating cardboard, plastics, cans and other recyclable items, allowing them to be channeled to other facilities and manufactured into new products.



THE VISION



THE PROPOSED RECLAMATION INITIATIVE WILL USHER ECCO'S FACILITY INTO THE NEXT PHASE OF ITS LIFESPAN BY TRANSFORMING IT FROM A WASTE MANAGEMENT FACILITY INTO A MATERIAL RECOVERY AND LOW-CARBON FUEL PRODUCTION SITE.



Reclamation allows for innovations such as upcycling waste to Low-Carbon Fuel, recycling materials into wood chips and other recycled products, and the gradual reclamation of the site to enable long-term urban redevelopment.



The transformation of the site benefits the immediate community, local industry, and enables future Transit-Oriented Development on the former landfill site due to its proximity to the future Quarry Park Green Line LRT station.

THIS PROJECT REFLECTS THE CITY'S GOALS AND COMMITMENT TO CLIMATE CHANGE INITIATIVES, SMART AND SUSTAINABLE COMMUNITY BUILDING AND URBAN EVOLUTION.

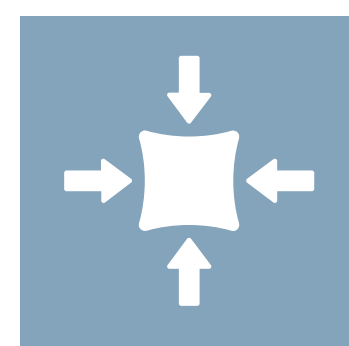
PROJECT PRINCIPLES

Circular Economy & Community Benefit



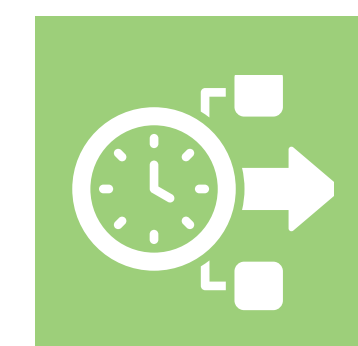
ECCO has supported the city and community by being a key part of the waste management infrastructure and will continue to do so by transforming the landfill from a waste receiving facility towards a more innovative operation that upcycles waste into Low-Carbon Fuel for energy.

Collaboration



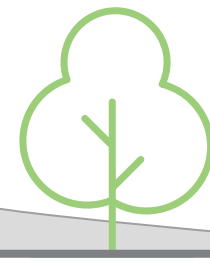
This project brings together many stakeholders. We aim to achieve a positive outcome for all parties involved, while reaching our goal of an approval for complete landfill reclamation and future Transit-Oriented Development on the site.

Future-Focused



By transforming the landfill, we are supporting the future of the communities around the subject site, allowing for new homes, shops and amenities to develop along with the future Green Line LRT.

THE PROJECT



PROJECT GOALS

1

Landfill Reclamation

Revert from hauling in waste, to reclamation and hauling-out material until the site is leveled and cleared of all waste.

2

Materials Recovery Facility Expansion

Addition of a Low-Carbon Fuel Production Facility to upcycle many of the reclaimed materials into Low-Carbon Fuel that will be taken to other approved receiving facilities and used to generate power or heat.

3

Site Remediation

Given the subject site's close proximity to the future Quarry Park Green Line LRT station, once the site has been reclaimed, it is a prime location for a high-density, mixed-use, transit-oriented development.

4

Future-Focused Site

After reclamation, the site will be remediated in alignment with Alberta Environment and Protected Areas requirements.



1

ACHIEVE A DEVELOPMENT PERMIT TO ENABLE OPERATIONAL CONTINUITY WITH AN EXPANDED MATERIAL RECOVERY FACILITY

APPLICATION SUMMARY

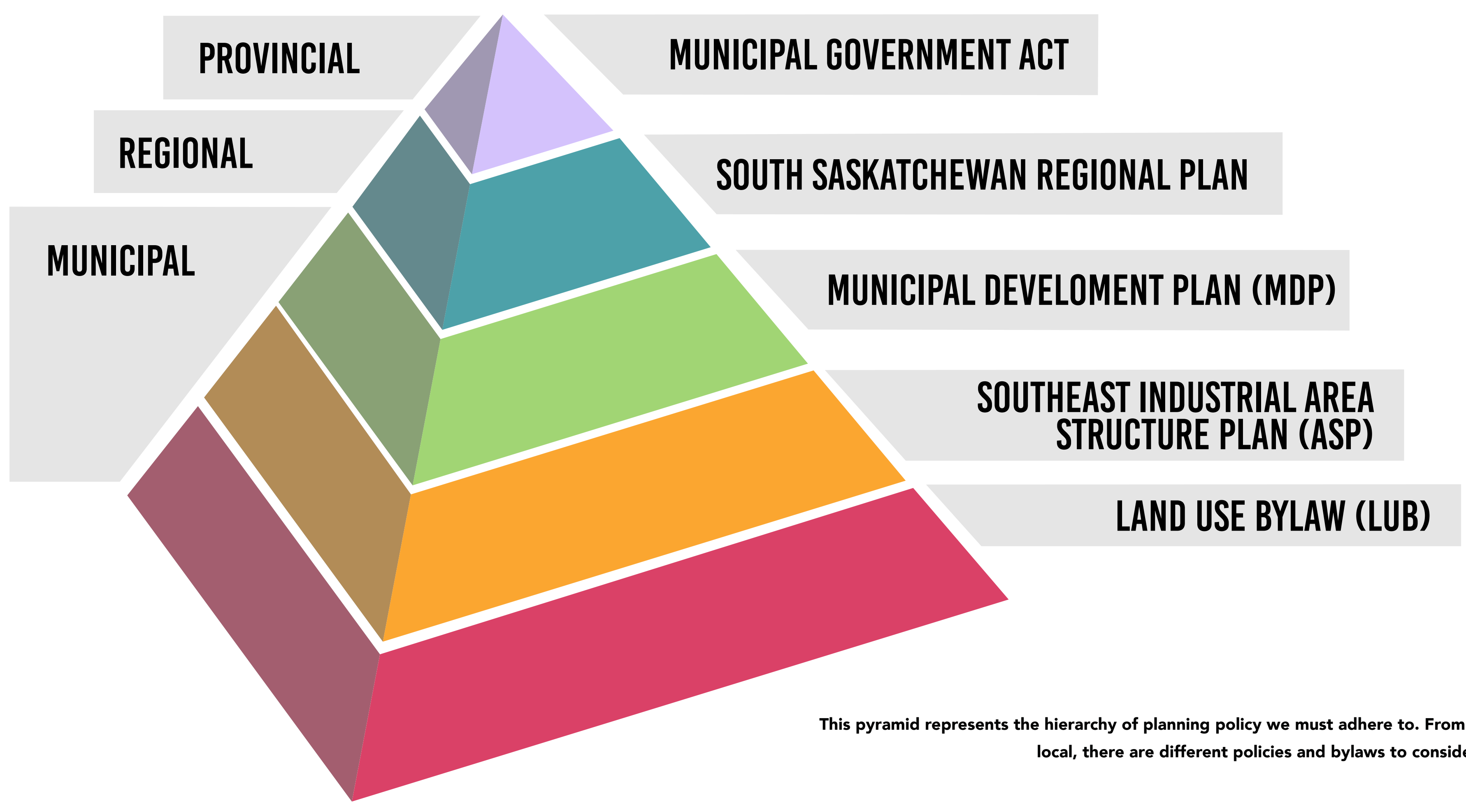
2

AMEND CITY POLICY (MDP + ASP) TO FACILITATE FUTURE TRANSIT-ORIENTED DEVELOPMENT

Landfill Reclamation and expansion of the existing on-site **Materials Recovery Facility**. Landfill Reclamation is the process of removing and recovering the materials currently buried in the landfill for processing in the Materials Recovery Facility to upcycle from waste to **Low-Carbon Fuel**. The Low-Carbon Fuel will be shipped to approved receiving facilities and used to generate power or heat.

Amending City of Calgary planning policies, the Municipal Development Plan (MDP) and the Southeast Industrial Area Structure Plan (ASP), to facilitate a **Transit-Oriented Development** future on the site and enable redevelopment on ECCO's lands post-reclamation.

THE CURRENT POLICY



This pyramid represents the hierarchy of planning policy we must adhere to. From regional to municipal and local, there are different policies and bylaws to consider throughout the project.



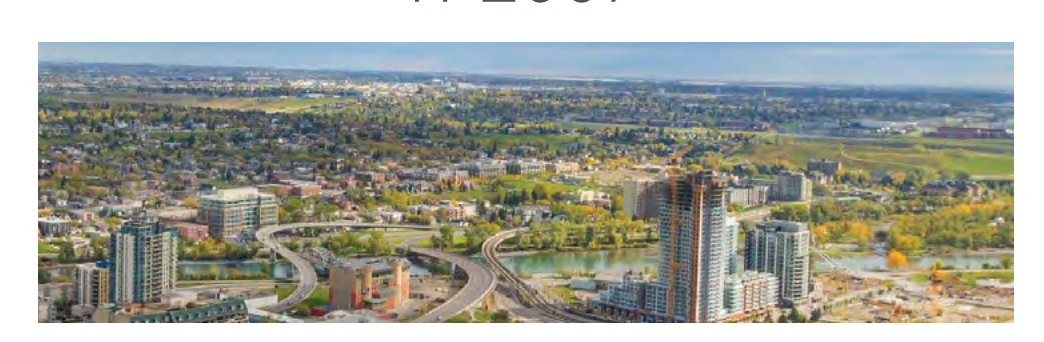
The Municipal Development Plan (MDP) is a document that outlines The City's vision for how Calgary will develop over the next 60 years. The MDP forms an integrated land use and mobility plan that guides Calgary's planning decision-making. ECCO's facility is identified within the MDP as part of the Standard Industrial Area (Fig. 1).



The Southeast Industrial Area Structure Plan (ASP) is a City of Calgary document that outlines the intended uses and future for the area (Fig. 2). The site is encompassed within the boundary of the plan, however it does not identify a specific land use or future direction for the site. It is currently labeled as "Private Dry Waste Landfill" (Fig 2).



Land Use Bylaw 1P2007



The subject site is governed by two Direct Control (DC) land use districts: 104D2009 and 31D2015 (Fig. 3). These bylaws enable the current landfill and recycling activities occurring at the ECCO Facility. In The City of Calgary Land Use Bylaw, the uses occurring on-site are referred to as Dry Waste Disposal and Treatment Facility and Construction and Demolition Materials Recovery Facility.

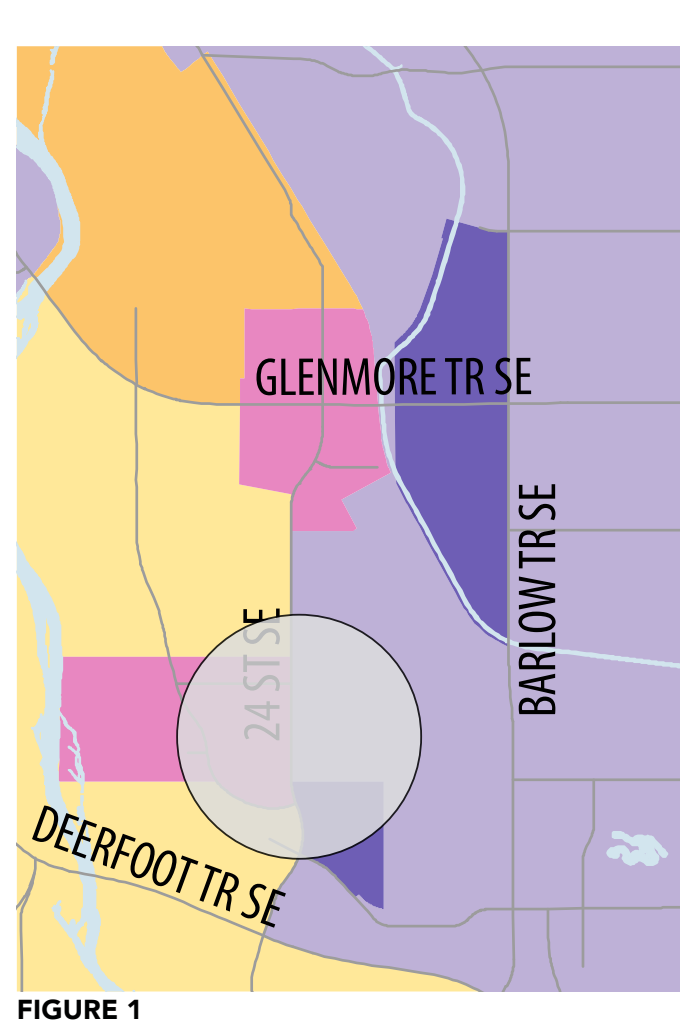


FIGURE 1

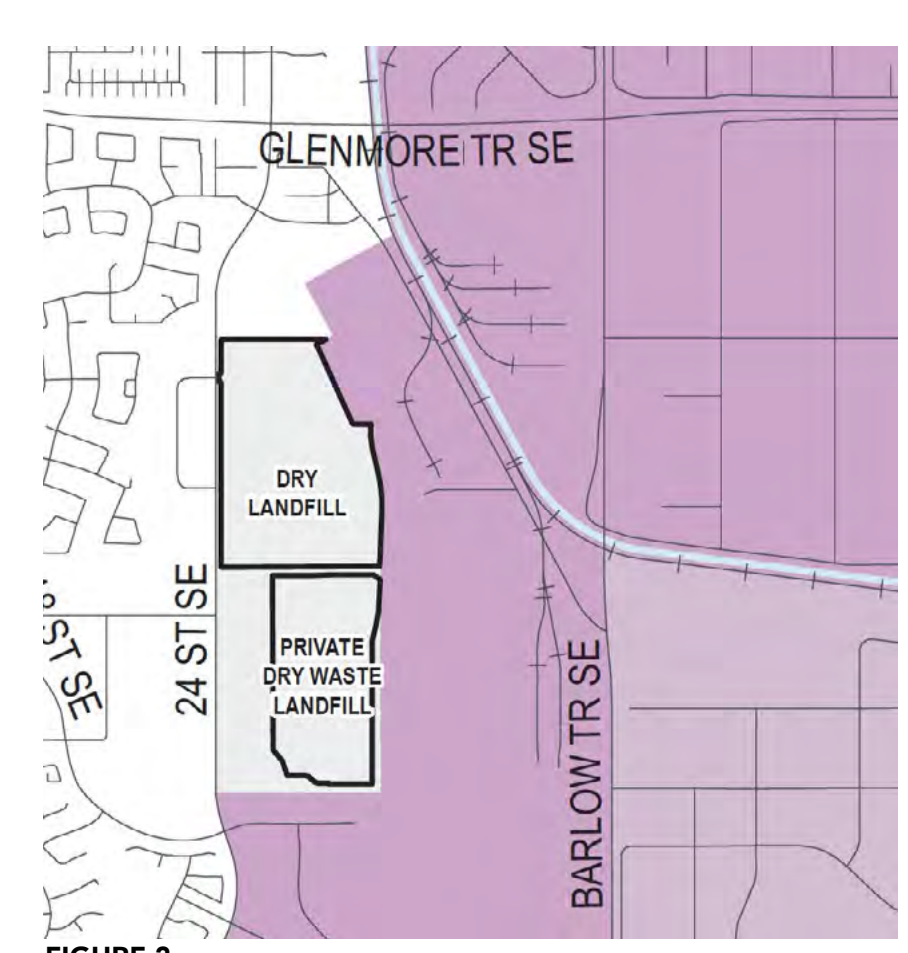


FIGURE 2

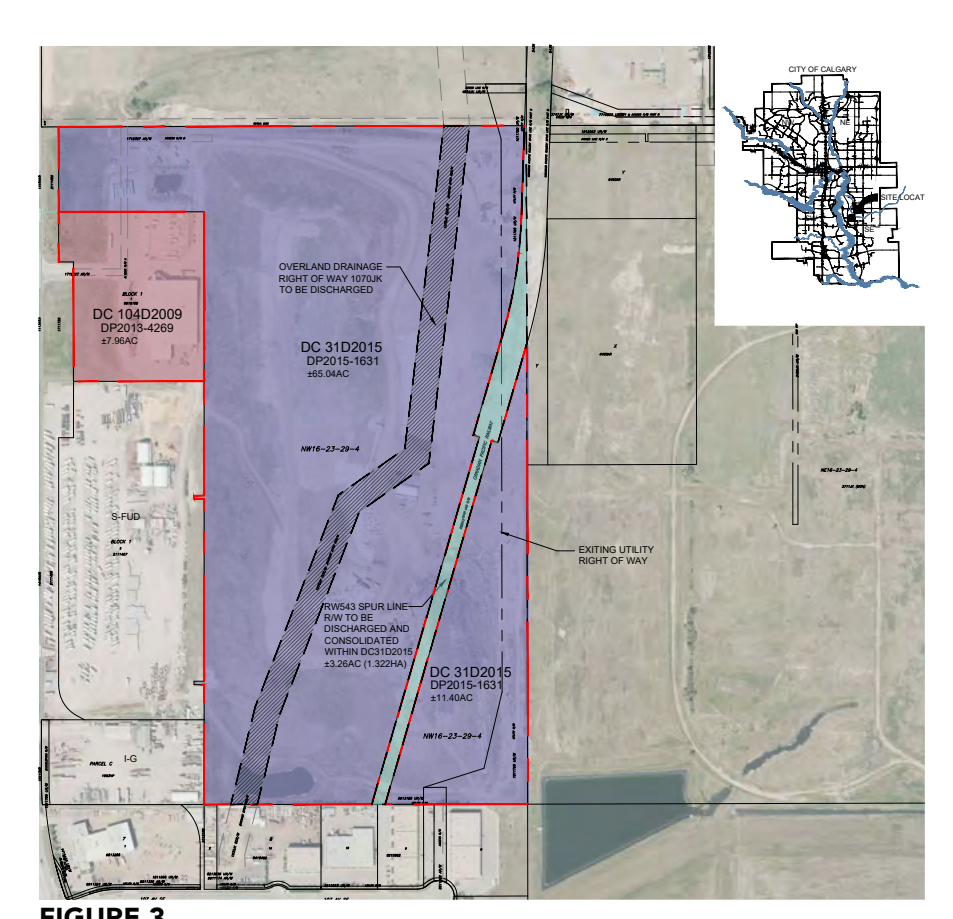
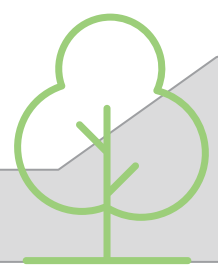
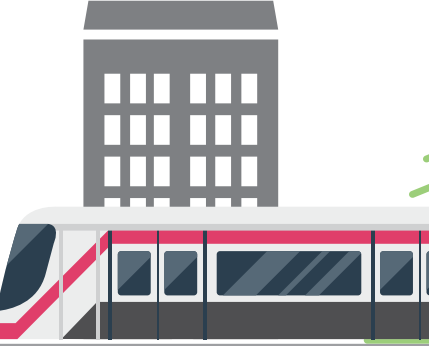


FIGURE 3

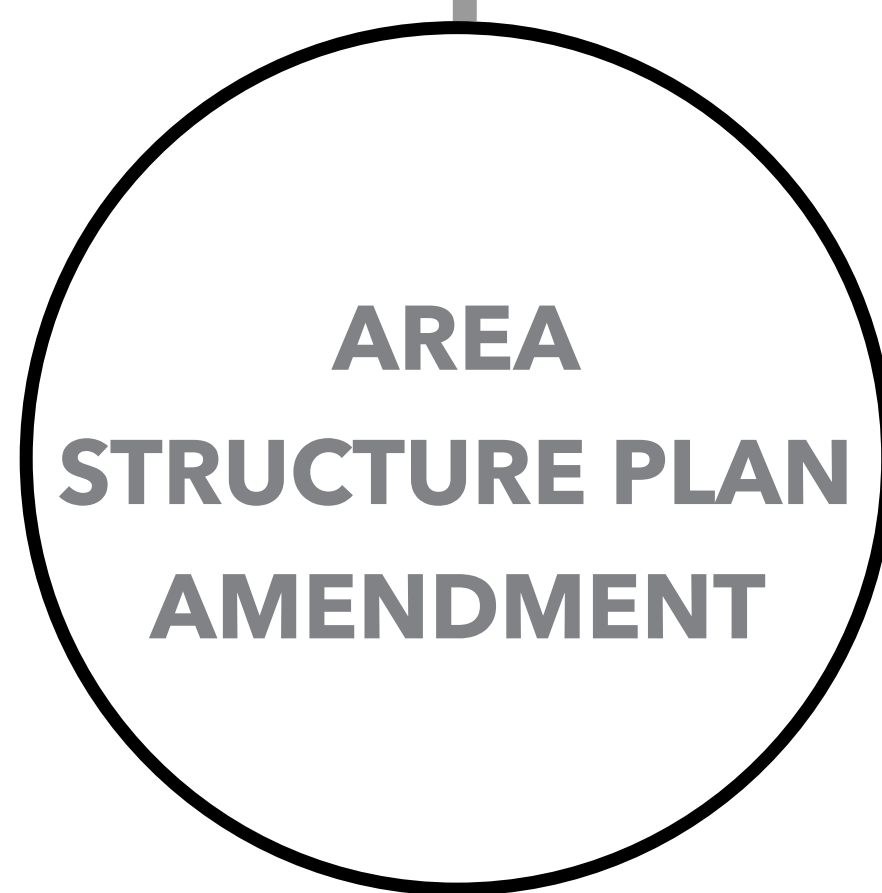
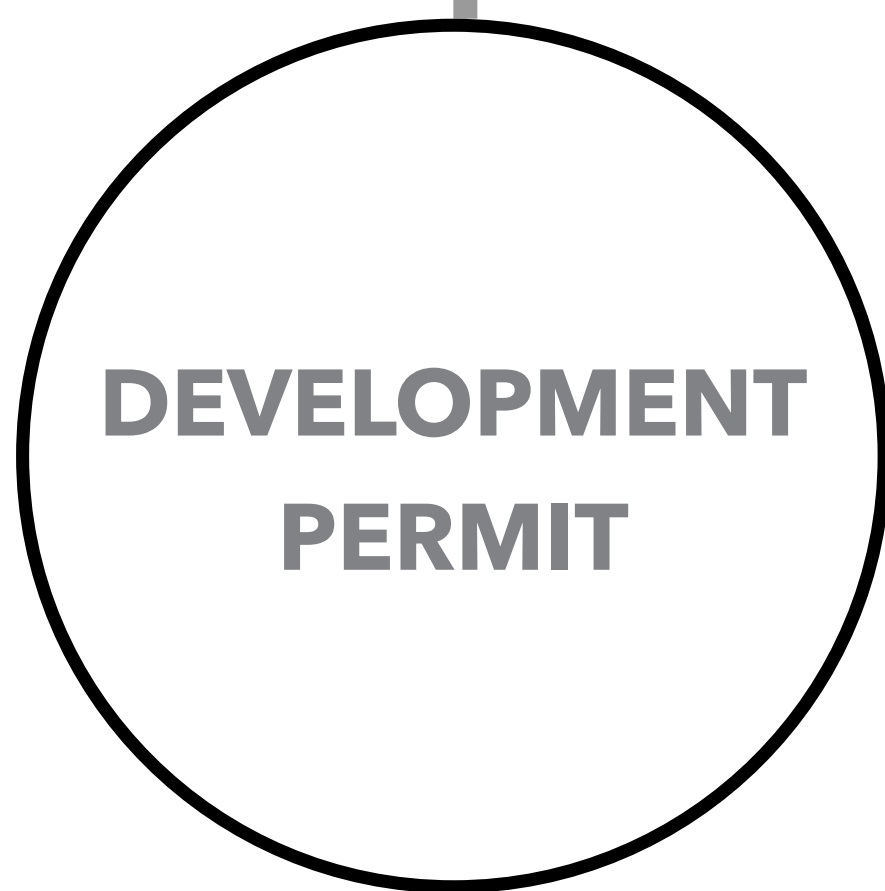
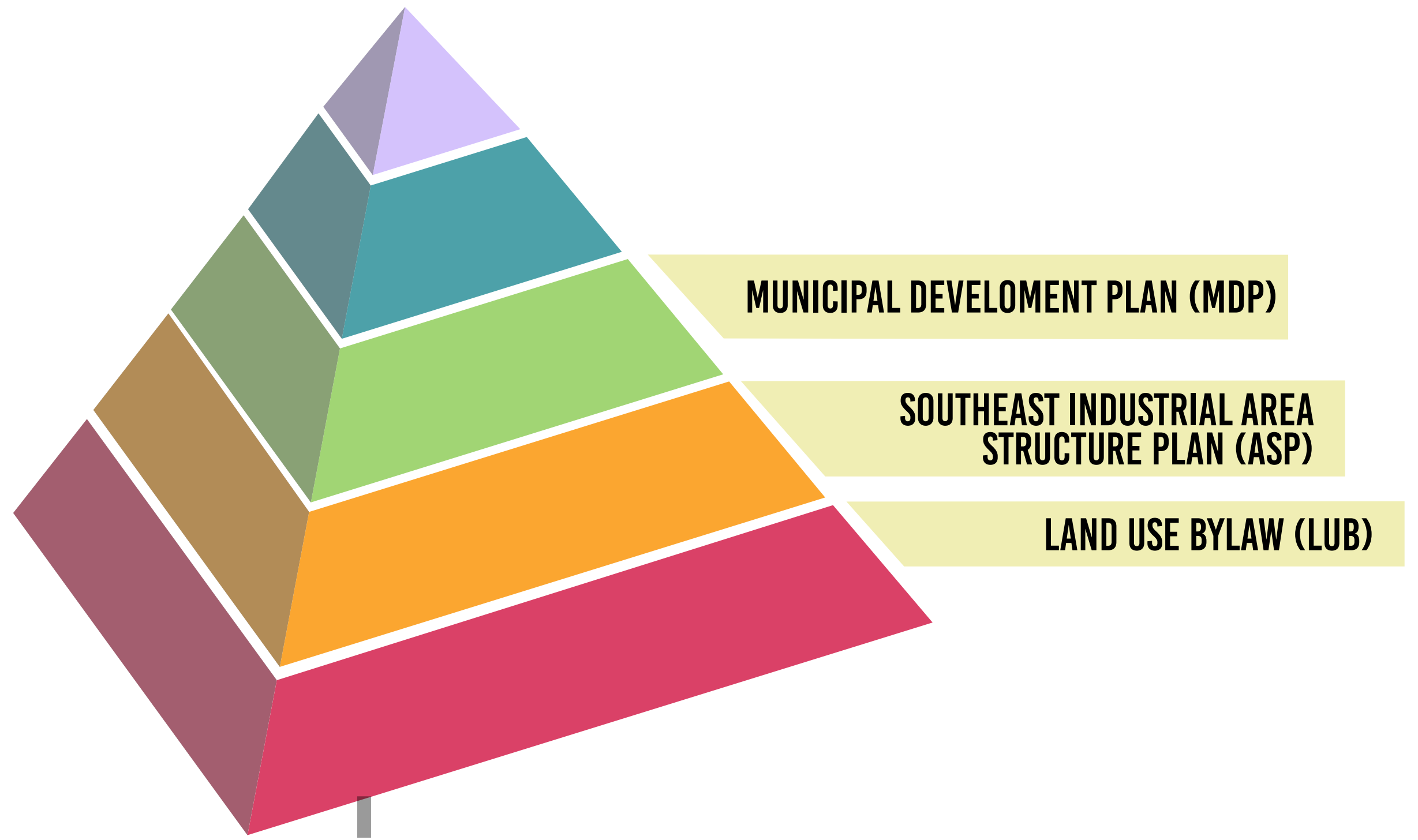




WHAT WE SEEK TO CHANGE



IN ORDER TO ACHIEVE THE PROJECT GOALS, THE APPLICATION SUMMARY ENTAILS SPECIFIC PERMITS AND AMENDMENTS TO ENABLE THE LANDFILL RECLAMATION AND TRANSIT-ORIENTED DEVELOPMENT FUTURE.



The proposed Development Permit will allow for the continued operation and expansion of the Materials Recovery Facility to enable landfill reclamation and recovered material upcycling.

This allows for the landfill reclamation component of the project to operate within the confines of the current land use and does not require land use amendments at this stage.

When the Southeast Industrial Area Structure Plan (ASP) was prepared, the duration of operations at ECCO's facility was unknown.

Therefore, there is no local area planning direction in place for the subject site. It is simply identified as a 'private dry waste landfill'.

Given that ECCO's site is identified as Standard Industrial Area within the MDP, an amendment will be required to enable future Transit-Oriented Development.



THE TECHNOLOGY



REMOVE + RECOVER

Landfill reclamation is a process where a landfill is excavated layer-by-layer to remove and recover materials to create refuse-derived, Low-Carbon Fuel, and reclaim the site by extracting all the materials that currently comprise the landfill.

The proposed project envisions expanding to a larger Materials Recovery Facility, which in addition to sorting through household recyclables, will sort and process the Construction and Demolition material that will be removed and recovered from the landfill.

1 REMOVE

REMOVE COVER SOILS

Cover soils and clay cap are removed, stockpiling the soil types separately for reuse. Soil previously used to cover individual waste cells will be reclaimed for reuse throughout the process.

EXCAVATE VIABLE MATERIALS

The Excavator will conduct a "pre-sort" of material to remove heavier and difficult to process materials such as metal, concrete and asphalt, stockpiling these materials for recycling by a third party.

Other excavated materials, such as wood, shingles and plastics are loaded onto rock trucks for additional sorting and processing.

Non-viable materials are removed and sent to an Alberta Environment and Protected Areas approved landfill for proper disposal.

LOADING + SORTING

Following the pre-sort, mixed loads of materials excavated from the landfill, such as wood, shingles and plastics, are loaded onto rock trucks for transportation to a trommel and conveyor system for additional sorting and processing.

TRANSPORT TO MATERIALS RECOVERY FACILITY

Viable materials coming off the conveyor will be trucked down from the landfill to the on-site Materials Recovery Facility for processing into Low-Carbon Fuel.



2 RECOVER

MATERIALS REMOVED FROM THE LANDFILL ARE TRANSPORTED INTO THE ON-SITE MATERIALS RECOVERY FACILITY

MATERIAL SORTING

Materials are sorted by high-tech machinery and skilled human labour.

APPROPRIATE MATERIALS ARE TURNED INTO LOW-CARBON FUEL

After sorting, materials such as plastic, wood, carpet, textiles and shingles are transformed into Low-Carbon Fuel within the Materials Recovery Facility.

LOW-CARBON FUEL SHIPPING

Low-Carbon Fuel will be shipped to end users approved by Alberta Environment and Protected Areas.

Successful landfill reclamation has previously occurred in Calgary, at the Highfield Landfill location. ECCO's project builds on this initiative by including the on-site production of Low-Carbon Fuel.





RECLAMATION EVOLUTION

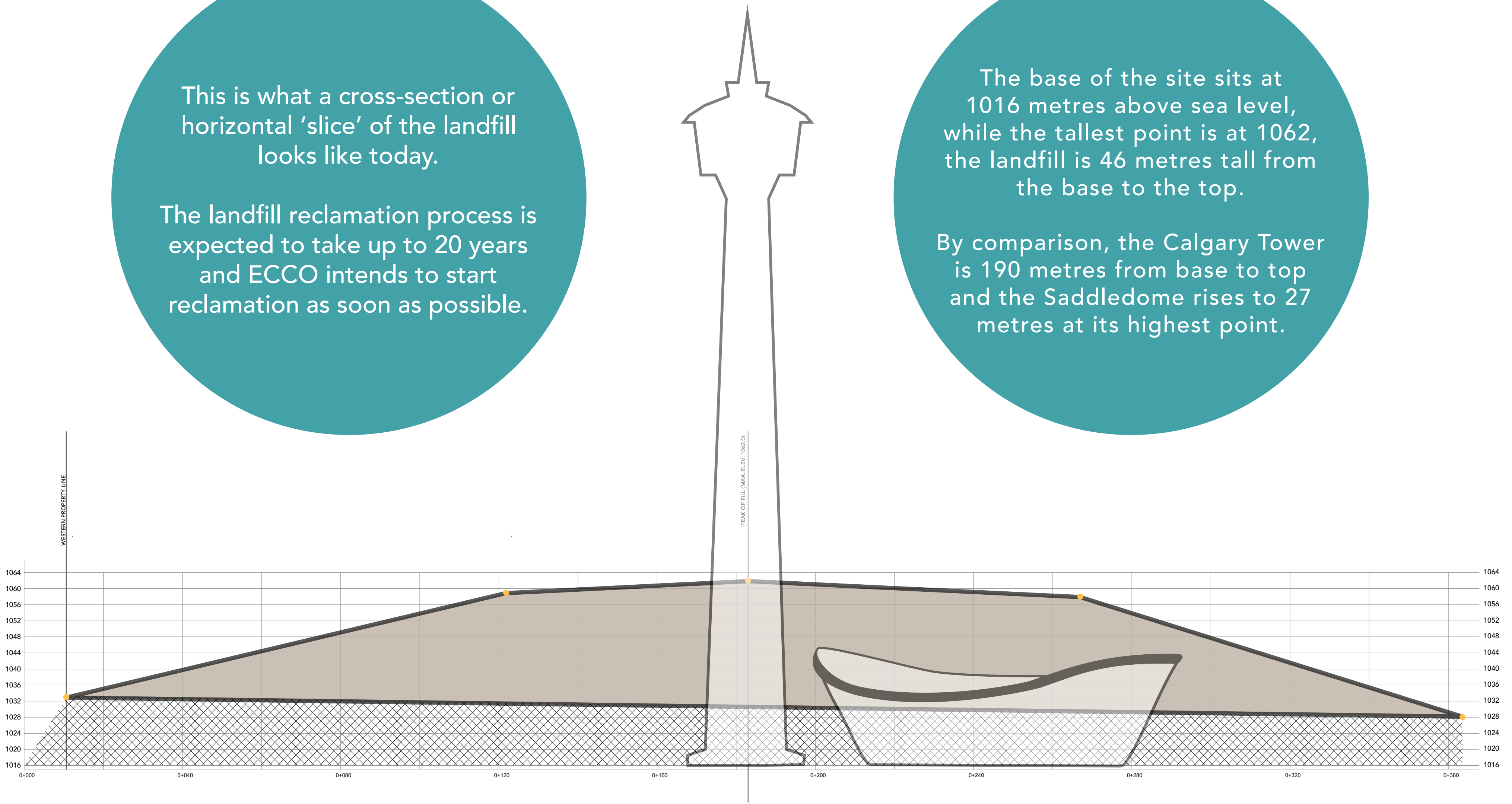


This is what a cross-section or horizontal 'slice' of the landfill looks like today.

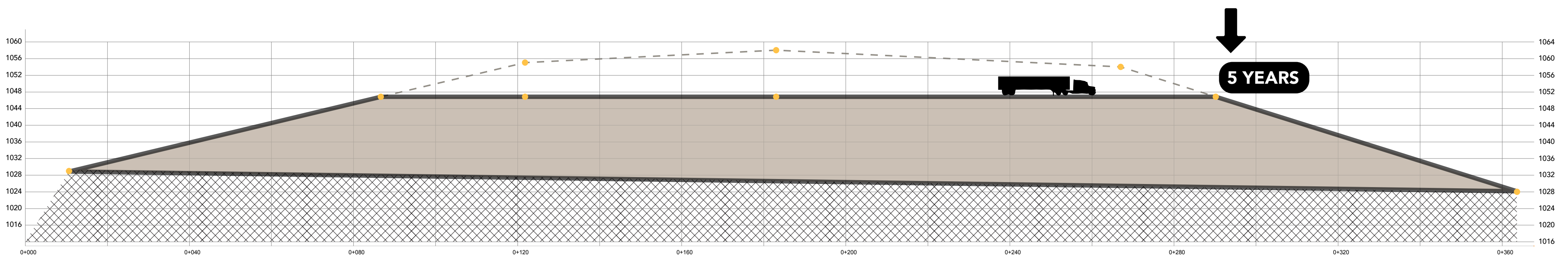
The landfill reclamation process is expected to take up to 20 years and ECCO intends to start reclamation as soon as possible.

The base of the site sits at 1016 metres above sea level, while the tallest point is at 1062, the landfill is 46 metres tall from the base to the top.

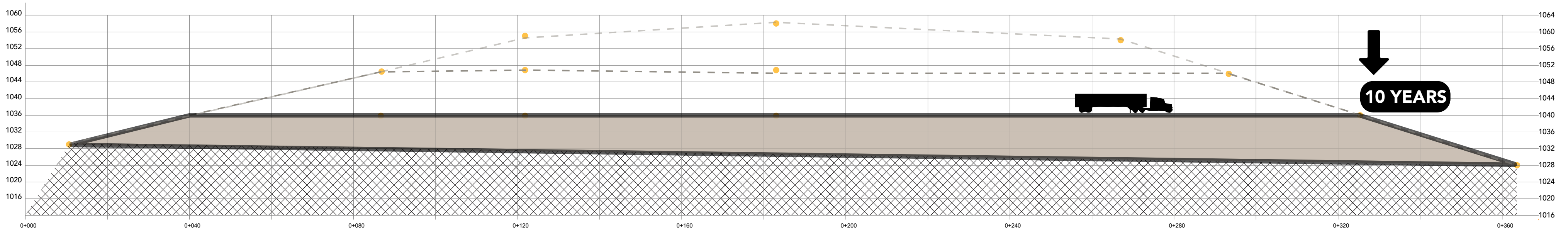
By comparison, the Calgary Tower is 190 metres from base to top and the Saddledome rises to 27 metres at its highest point.



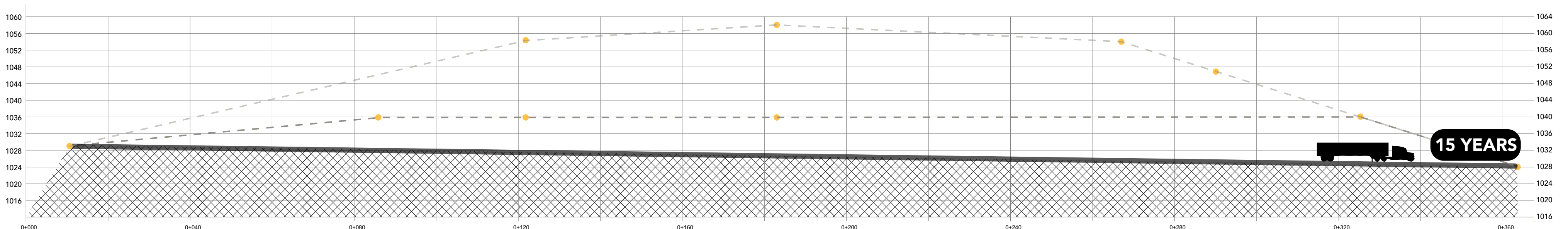
CURRENT CONDITIONS. CROSSSECTION FROM WEST TO EAST, LOOKING NORTH



CONDITIONS IN 5 YEARS. CROSSSECTION FROM WEST TO EAST, LOOKING NORTH

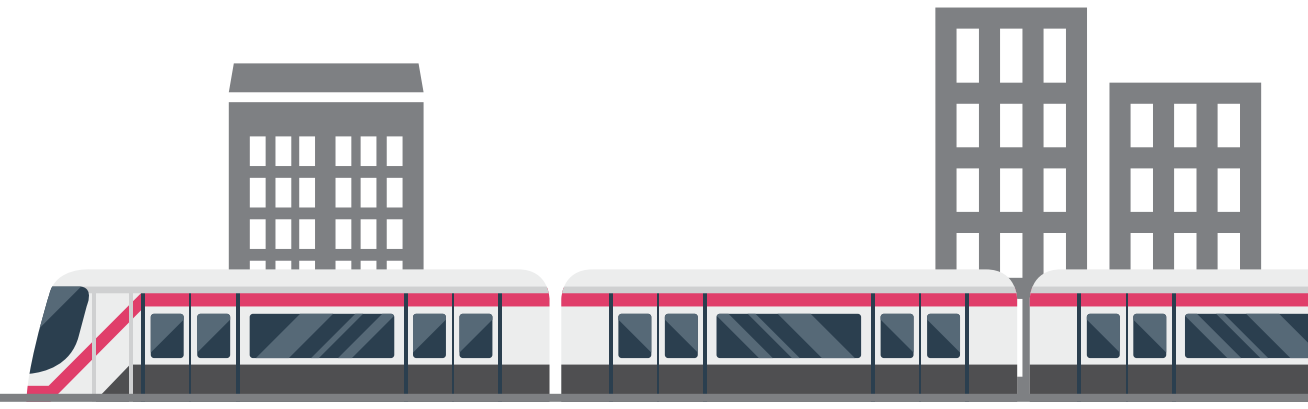


CONDITIONS IN 10 YEARS. CROSSSECTION FROM WEST TO EAST, LOOKING NORTH



CONDITIONS IN 15 YEARS. CROSSSECTION FROM WEST TO EAST, LOOKING NORTH

LANDFILL SETBACKS



IN ALBERTA, THE MUNICIPAL GOVERNMENT ACT (MGA; SECTION 17) OUTLINES SETBACK REQUIREMENTS BETWEEN WASTE DISPOSAL SITES, AND OTHER DEVELOPMENT. THE FOLLOWING RULES CURRENTLY APPLY TO THE ECCO LANDFILL:

There is currently a 300 metre setback from the ECCO subject site in place, although setback variances have been approved on several occasions in the past to allow for development nearby. As part of our application to The City of Calgary, ECCO is working with a professional engineer to explore a permanent setback relaxation.

Upon completion of the landfill reclamation, no setbacks will apply to the site.

A Development Permit for a school, hospital, or residence cannot be issued if the building site is within 450 metres of the working area of an operating landfill or is within 300 metres of the disposal area of an operational or non-operational landfill.

A subdivision application for a school, hospital, or residential use cannot be approved if the lot would result in a property line that is within 450 metres of the working area of an operating landfill or 300 metres of the disposal area of an operating or non-operating landfill.

These setbacks provide a buffer between waste disposal facilities and other development to mitigate nuisances and in some cases, contaminant migration. The setbacks impact the type of development allowed near the ECCO facility.

In some cases, Alberta Environment and Protected Areas and The City of Calgary can collectively approve variances to the setback rules, provided the landowner can demonstrate that all nuisances and/or contamination is either not an issue or can be mitigated effectively.

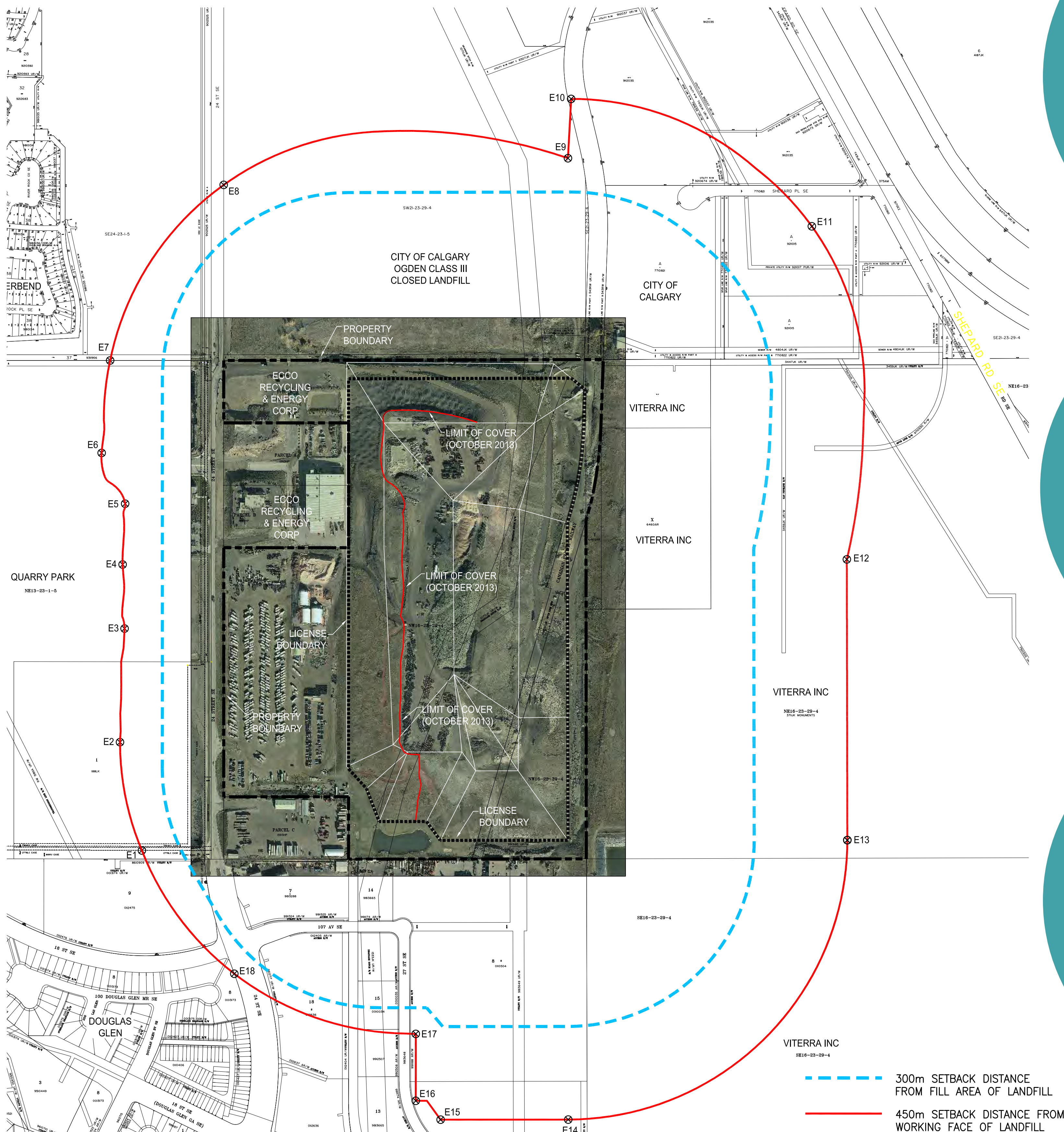


FIGURE BY STANTEC

Client/Project
ECCO RECYCLING & ENERGY CORP
LANDFILL SETBACKS (AENV)

Figure No.

103

Title

PLAN

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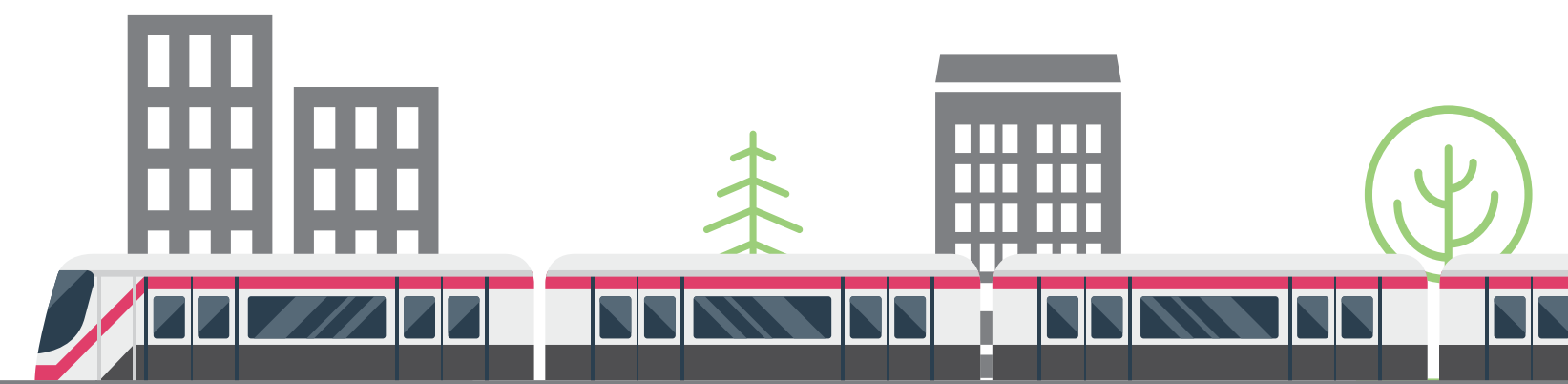
AIR PHOTO DATED OCTOBER 2013 (ORTHOSHOP)



December, 2013
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RISK MITIGATION



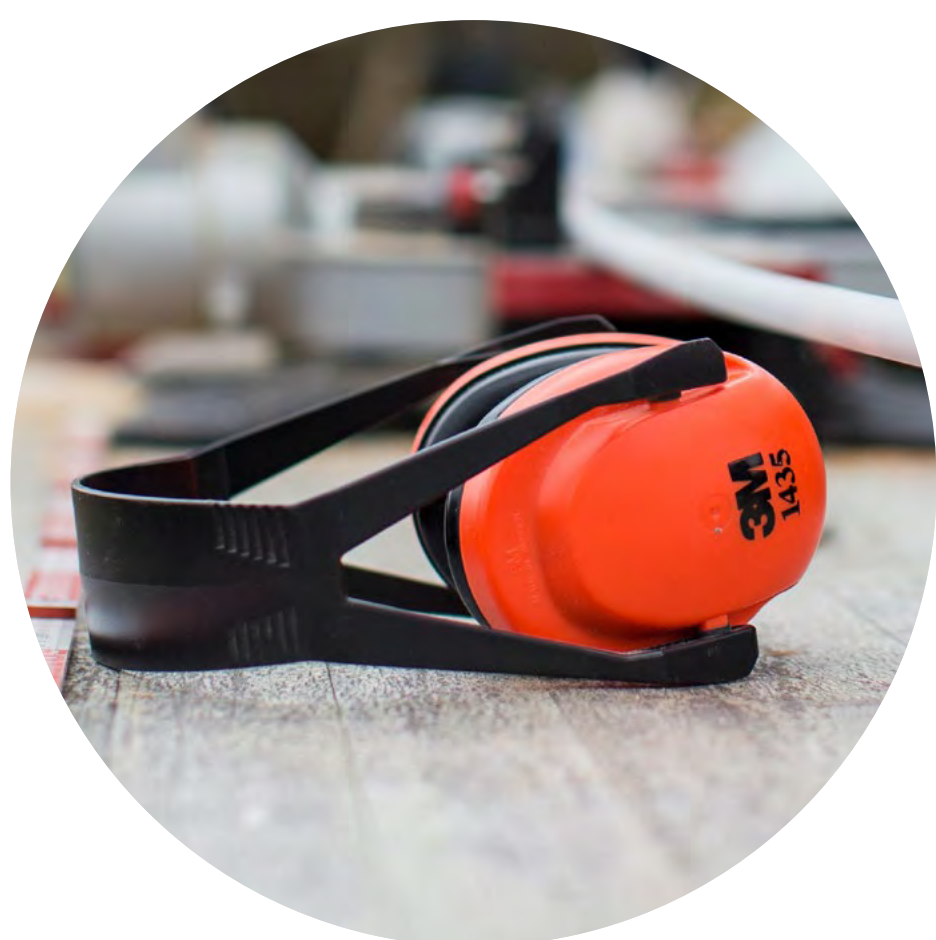
ECCO HAS MANY RISK PREVENTION AND MANAGEMENT STRATEGIES IN PLACE, FOR EXAMPLE...

HI-TECH



The ECCO landfill was built to Alberta Environment and Protected Areas standards with an engineered clay liner designed to prevent infiltration of contaminants into soil or groundwater. The landfill design also includes a comprehensive groundwater and gas monitoring system. This high level of mitigation and risk management for a “dry” landfill was unusual in the 1990s and demonstrates ECCO’s early commitment to improving waste management practices in Alberta.

ODOUR & NOISE



As an Alberta Environment and Protected Areas Approved Waste Management Facility, ECCO’s approval for operation only permits receipt of Construction and Demolition (C&D) waste materials and prohibits other materials, including organics, such as food wastes or soiled diapers. As a result, ECCO does not anticipate any unpleasant odours from the landfill reclamation project, as these types of odours are typically generated from the decomposition of organic materials. ECCO will maintain the existing peripheral screening berm around the top of the landfill on the south and west faces. As the elevation of the landfilled area decreases with the removal of materials, so too will the peripheral berm. The entire process will remain screened from view.

TRAFFIC

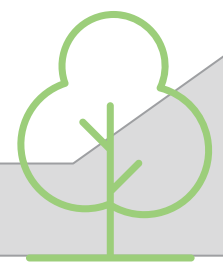


It is anticipated the traffic volume will remain the same or decrease during this process. Every effort to develop and implement efficiencies to reduce trucking volume will be deployed.

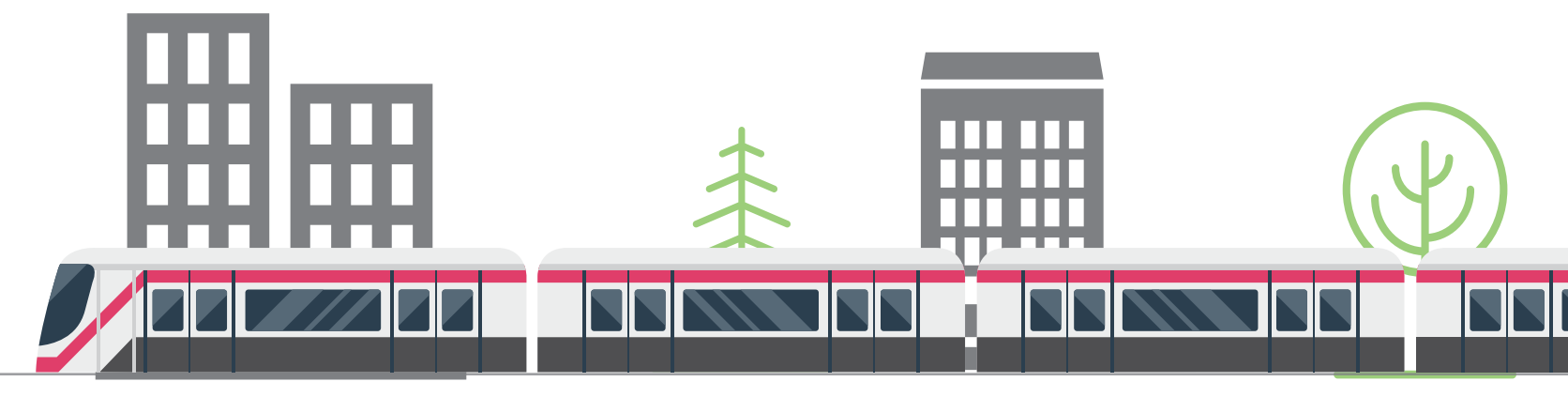
FIRE



ECCO has a fire suppression plan in place including screening incoming loads and removing any potential flammable materials prior to being placed into the landfill, which reduces the probability of flammable materials being unearthed during the reclamation process. ECCO’s fire suppression plan includes constant monitoring and a quick response protocol utilizing heavy machinery to quickly cover any fire with soil, depriving it of oxygen and extinguishing it. Additionally, ECCO’s fire suppression plan includes constant and rapid communication with the Calgary Fire Department and other emergency services.



RISK MITIGATION



DUST



ECCO currently owns and operates a water truck for dust control as required. This practice will continue throughout the reclamation process. To mitigate any windblown materials, ECCO will maintain the peripheral berm and continue the practice of strategically placing windscreens and undertaking periodic collection of windblown wastes on and off the ECCO landfill site (including 24th Street SE) as required.

GROUNDWATER



Groundwater is not anticipated to be impacted by these activities. The existing landfill features an engineered clay liner and leachate collection system (perforated pipes wrapped in a geotextile) just below the liner surface. These systems will remain in place until the material removal is complete. Groundwater monitoring and reporting is a requirement of ECCO's current operations and will continue throughout the reclamation process.

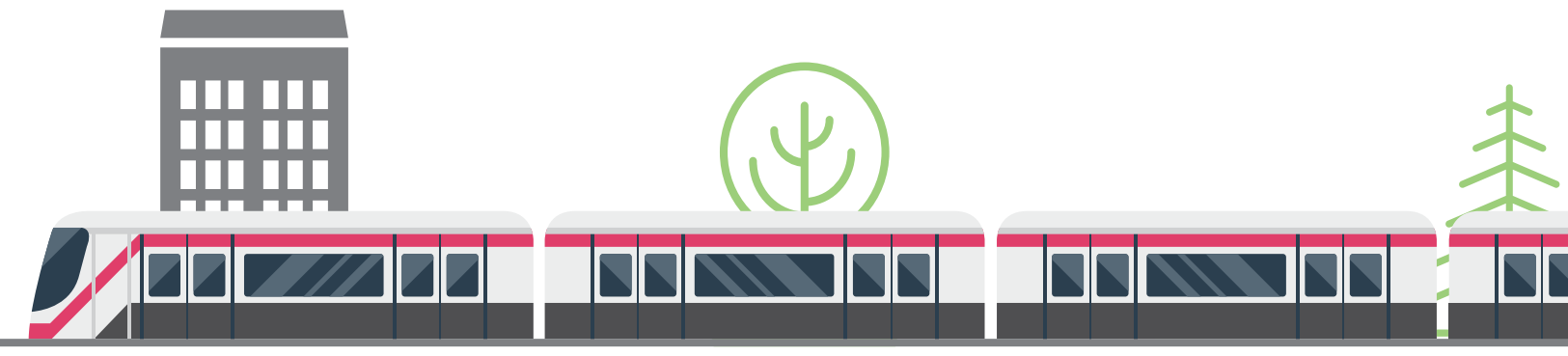
STORMWATER MANAGEMENT



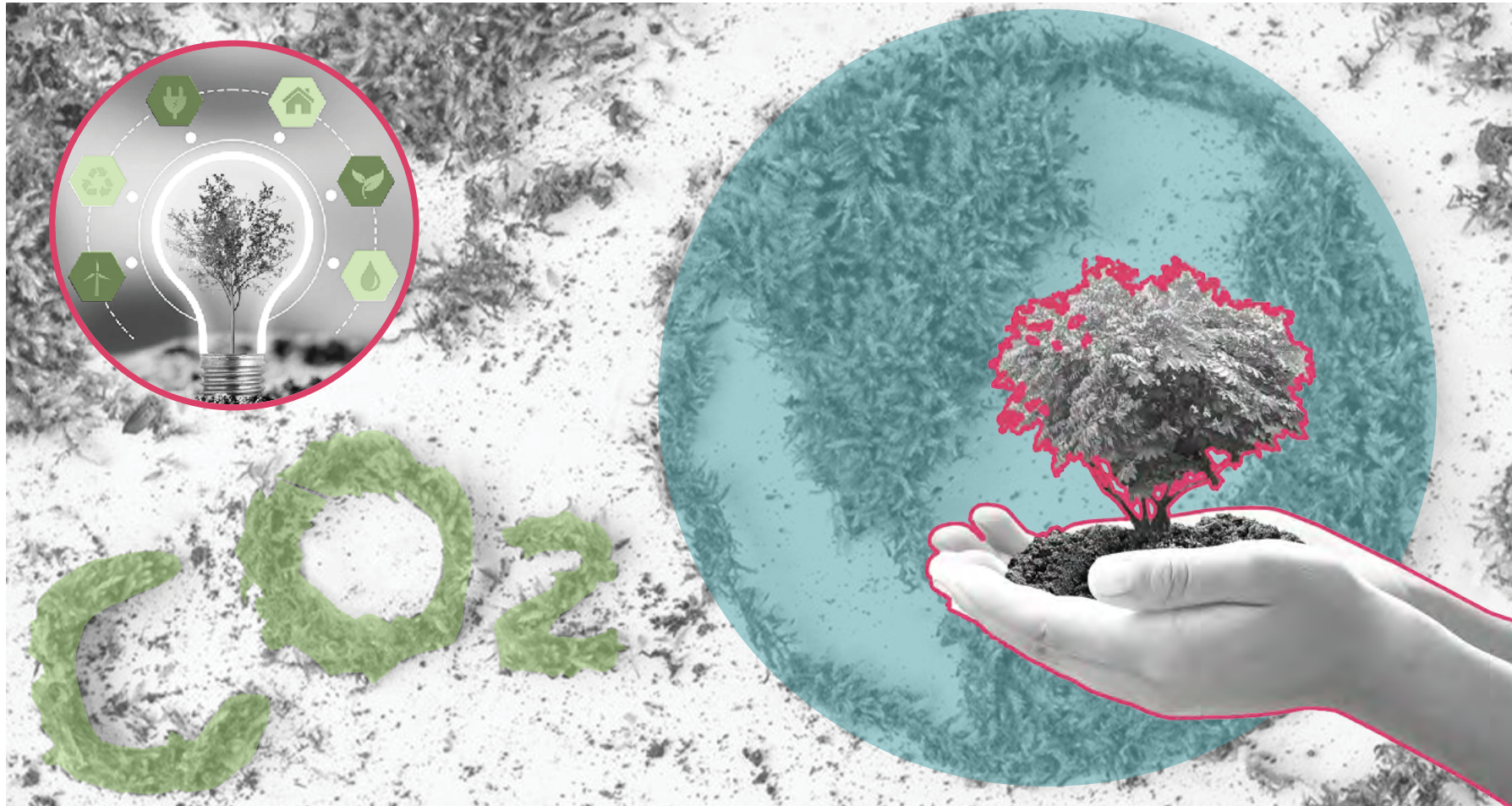
Stormwater on the subject site is currently managed through the following practices:

- On-site grading and drainage ditches to direct surface water runoff from the landfill area to two on-site stormwater management ponds. One on-site stormwater management pond (wet pond) is designed to contain the runoff from the completed and closed landfill site. The retention pond is designed for the 1:100-year storm event.
- Although only necessary during extreme events such as the 2013 flood, controlled discharges from the on-site stormwater management pond to the Douglasdale Sanitary Line can be deployed.
- Improvement of stormwater management pond capacity by sediment control and removal as required.
- Off-site drainage from paved areas of the site is accommodated through a City of Calgary storm sewer.
- Stormwater is anticipated to be managed as it is currently until reclamation is complete. Updated stormwater management plans will be developed in alignment with future redevelopment of the land.

FUTURE FOCUSED

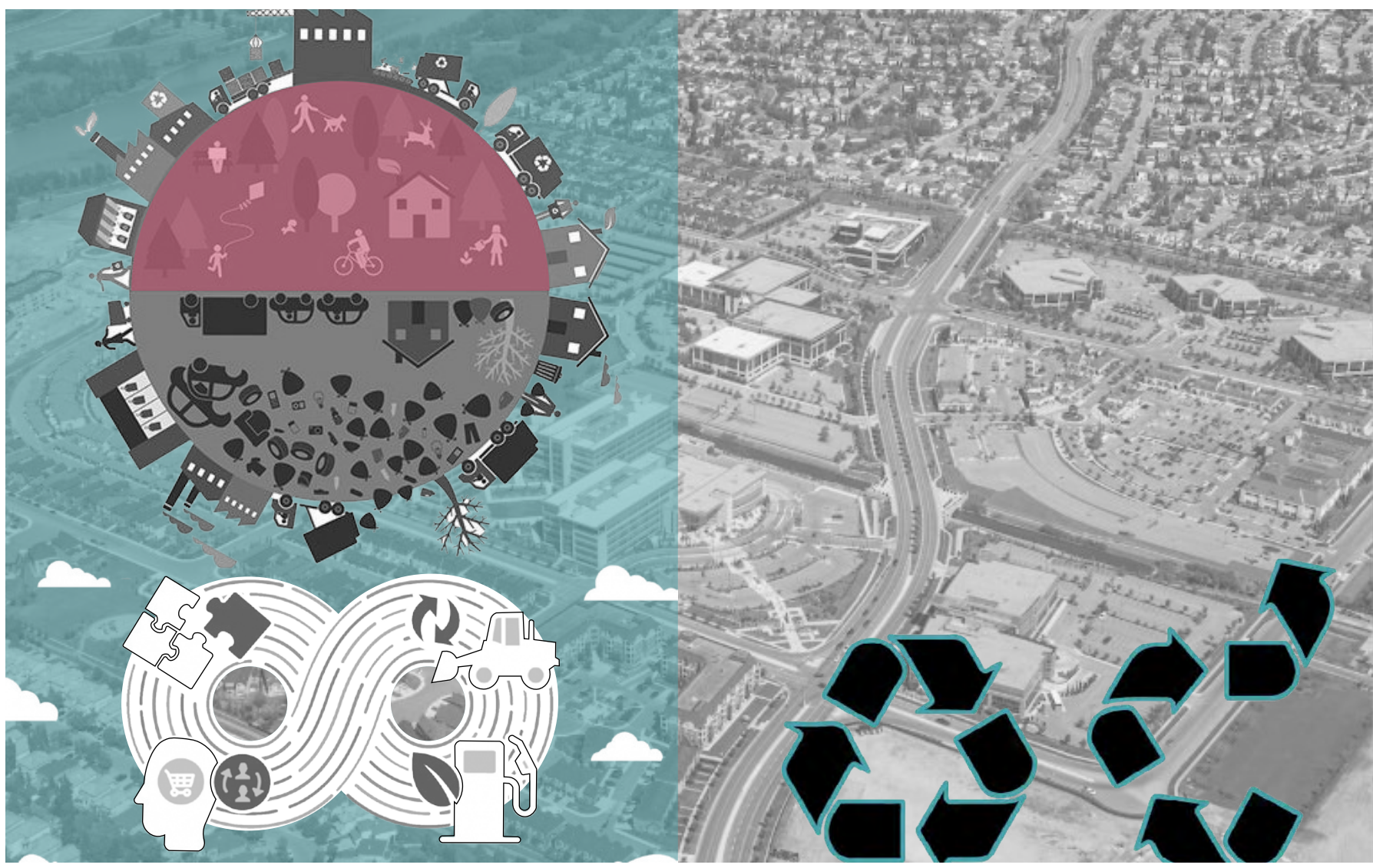


ECCO's overarching goal is to protect the environment through implementation of sound environmental practices, adherence to environmental legislation and reuse and upcycling of materials into commercial and industrial products.



LOW-CARBON FUEL BENEFITS

Low-Carbon Fuel reduces Greenhouse Gas (GHG) emissions. For instance, at the Exshaw Plant, replacing natural gas with the waste upcycled into Low-Carbon Fuel produced at ECCO's facilities will dramatically reduce Lafarge's GHG emissions over the course of the reclamation timeline.



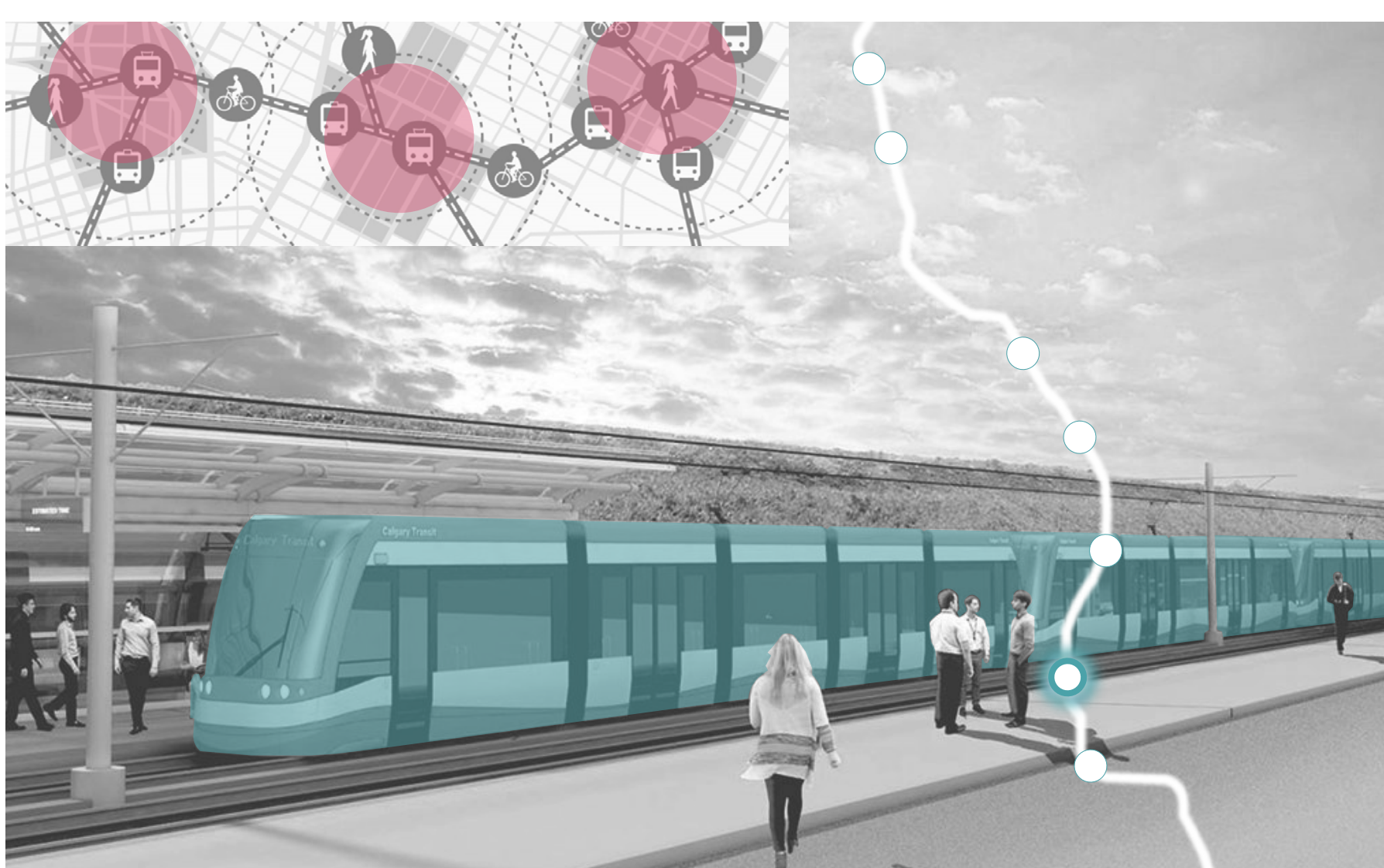
TOWARDS A CIRCULAR ECONOMY

Landfill reclamation and production of Low-Carbon Fuel facilitates a circular economy. A circular economy is a model of production and consumption which seeks to "regenerate" resources by employing practices such as reusing, upcycling, repairing, remanufacturing, and recapturing waste as a resource to create a closed-loop system.



ACTIVATING PUBLIC INVESTMENT

The Green Line Station for Quarry Park will be located on 24th Street SE adjacent to the communities of Quarry Park and Douglas Glen, directly in front of ECCO's site. The proximity and timing of the landfill reclamation initiative and the Green Line LRT make it a prime location for a walkable, high-density, mixed-use, Transit-Oriented Development.



TRANSIT-ORIENTED DEVELOPMENT

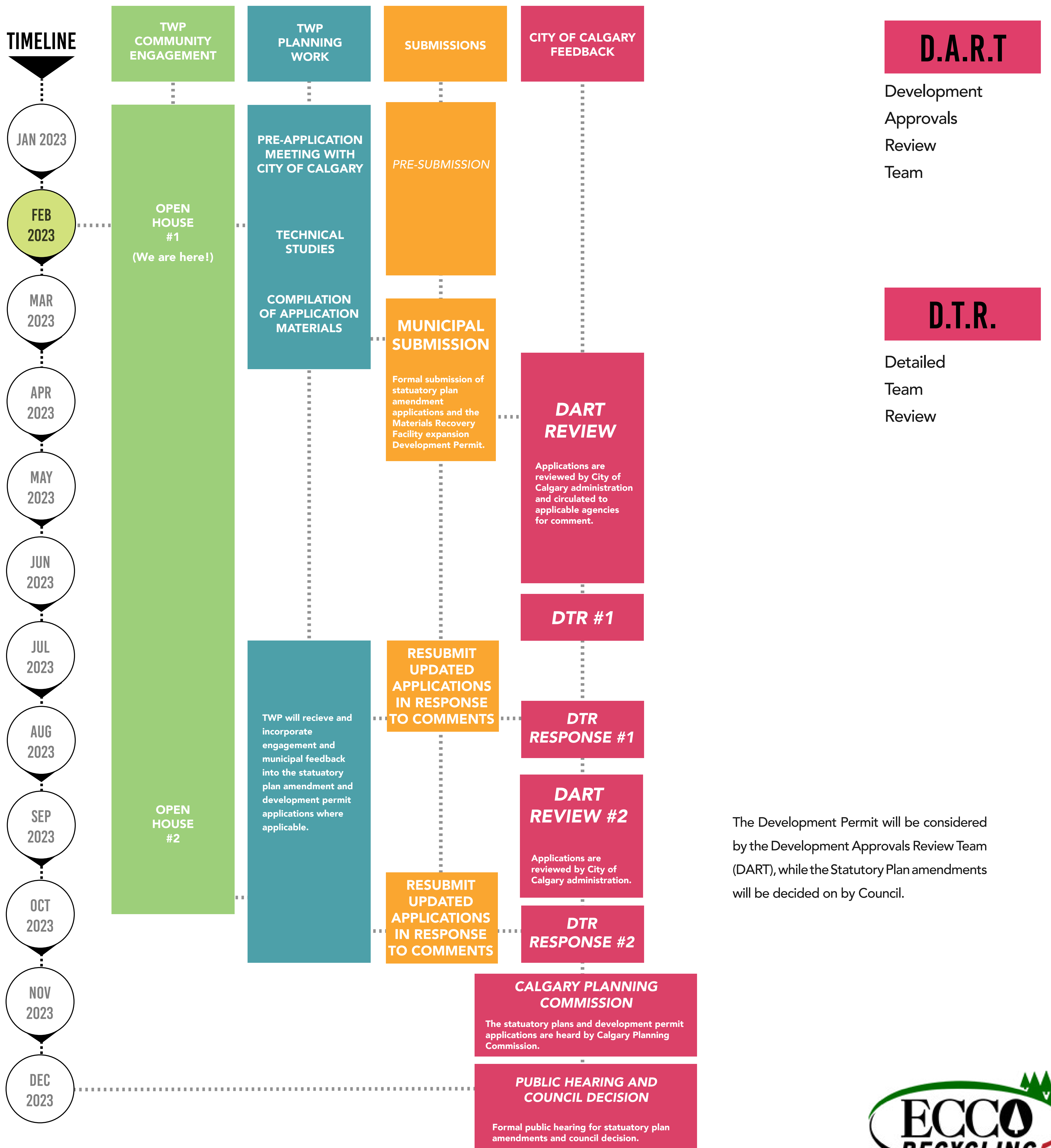
Upon issuance of a Reclamation Certificate, the ECCO site will be ready for development. A Transit-Oriented Development on the former landfill site will complement the existing development in the area and support the Green Line LRT's vision of a population of 1200 people and 2100 riders within an 800 metre radius by 2048.

THE TIMELINE



THE PROPOSED APPLICATION HAS TWO DISTINCT COMPONENTS:

- 1 A "blend and extend" Development Permit to facilitate an expansion of the Materials Recovery Facility (MRF) and to allow reclamation of the existing landfill. To accommodate the reclamation, a new MRF building of approximately 25,000-30,000 square feet will be required.
- 2 Statutory Plan (Municipal Development Plan + Southeast Industrial Area Structure Plan) amendments to accommodate future development on the subject site.



THE TAKEAWAYS



CITY BUILDING, INNOVATION, COMMUNITY WINS

INFRASTRUCTURE INNOVATION

Landfill Reclamation on the site allows ECCO to decommission the waste disposal area and manufacture the materials into Low-Carbon Fuel, paving the way for reclamation of the land.

FUTURE-FOCUSED

This is a positive, beneficial project for everyone. By transforming this site, we are supporting the future of the communities around the site, allowing for the potential of new homes, shops and amenities to develop along with the Green Line LRT.

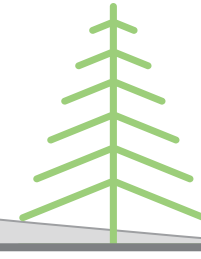
LOCAL CORPORATE RESPONSIBILITY

This is a not-for-profit endeavour undertaken by ECCO. Landfill reclamation and Low-Carbon Fuel production has a high financial cost for ECCO. The opportunity in undertaking this effort is cleaning up the site to Alberta Environment and Protected Areas standards and future redevelopment in alignment with public investment and City policy.

COMMUNITY- CENTRED

ECCO is a Calgary founded, owned, and operated company that has continuously created jobs for Calgarians and supported its neighbouring Community Associations, as well as a wider-scope of charities and social initiatives.

CONTACT



**DO YOU HAVE QUESTIONS OR COMMENTS?
WANT TO LEARN MORE ABOUT THE PROJECT
AND WHAT IT MEANS TO YOU?**



Reach out by email at:

**hello@
twppanning.com**

**Or follow our progress and share
your thoughts at:**

eccoynec.com

