

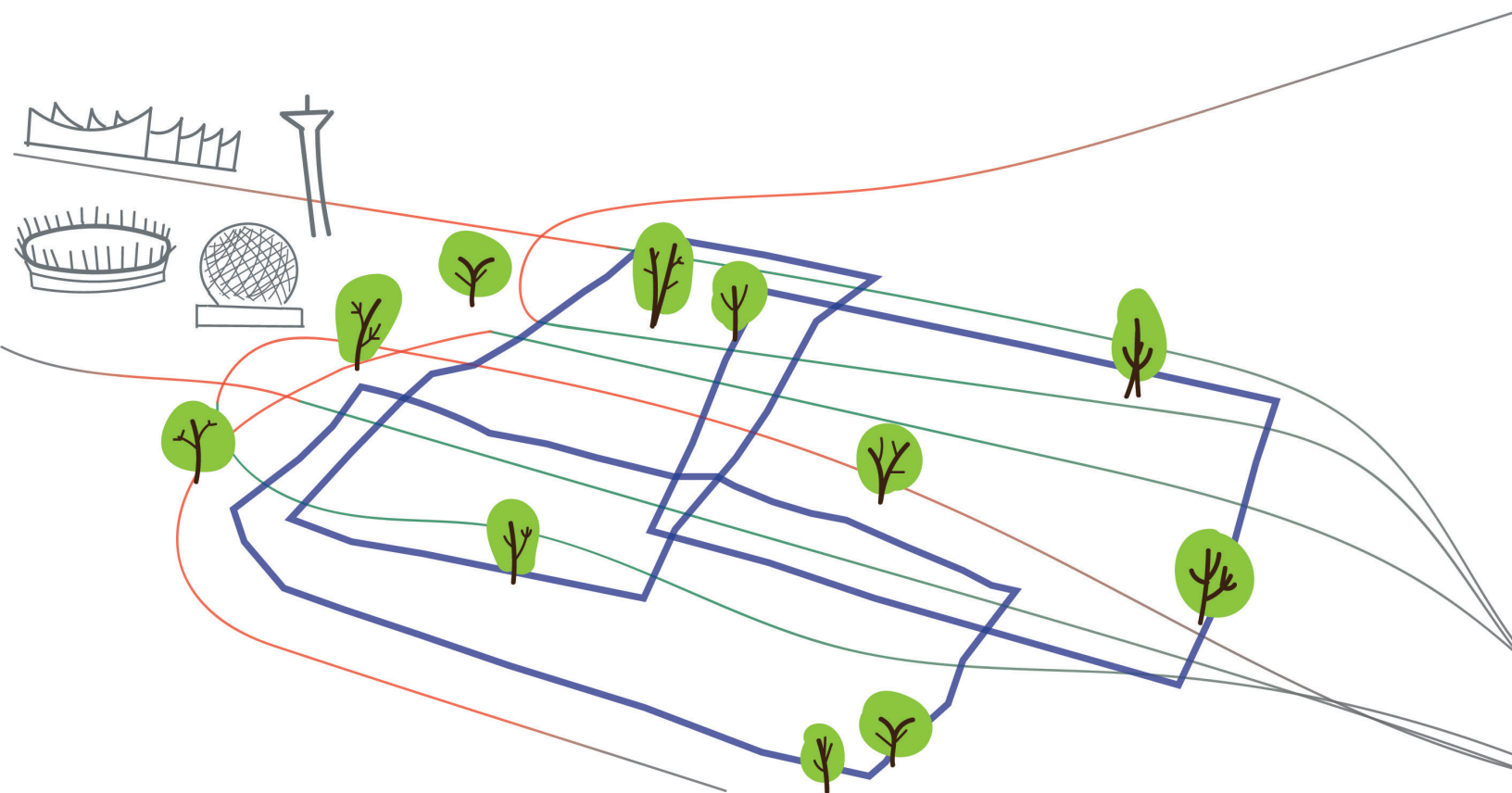
# Mapping the GrIID™

Making Way for Vancouver's First  
**Green Industrial Innovation District (GrIID™)**

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This project was conducted under the mentorship of Recycling Alternative staff. The opinions and recommendations in this report and any errors are those of the author and do not necessarily reflect the views of the University of British Columbia.

As author of this project, I want to respectfully acknowledge my position as a white settler completing this work on the unceded, stolen lands of the x<sup>m</sup>məθk<sup>w</sup>əyəm (Musqueam), Skwxwú7mesh (Squamish), and sə́lílwətaʔ (Tsleil-Waututh) Nations. I am grateful to these lands and their caretakers for feeding me throughout this project, and for providing a nurturing space for reflection, exercise and rest.

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# 01. Project Overview

## 1.1 CONTEXT

For the past 30 years, Recycling Alternative (RA) has been innovating the social enterprise paradigm. As a community impact business, working closely with members of the local community to collaborate on important challenges, RA has always been pushing boundaries to do what needs to be done to support those who need it. In the years following the development of the current partnership between United We Can and Recycling Alternative to create the “**greenHUB**”, it became clear how well the co-location model worked, and how there were many similar iteration opportunities across the district.

Recycling Alternative, along with many other organizations in the False Creek Flats (the Flats), have been sharing resources as a vital part of their current operations for decades. Not only has this exchange occurred within the business community in the Flats, but many of these businesses are key actors in supporting circular initiatives across the Lower Mainland and beyond. The geographic centrality of the Flats within the City of Vancouver positions this industrial area within the Goldilocks zone of accessibility, making it a vital hub for waste collection, re-purposing and redistribution. It became clear to many already engaged in circular and industrial symbiosis modeling that there is a world of untapped potential for this district.

While years of reports and policy continue to mention an area for green innovation and

economic development opportunities, there has yet to be real action from the City of Vancouver to secure land and enact policy to directly support these types of innovative industrial ecosystem zones. As industrial land across the City of Vancouver continues to shrink, the need to retain these vital industrial areas is paramount to the daily infrastructure and operations of the City. This project arose out of the strong desire among the already active local business community to finally see some action around a district that, not only supports climate action, economic resilience, pandemic recovery and inclusive jobs, but could model Vancouver as a national leader in sustainable and circular paradigms.



# What is the GrIID™?

Green Industrial Innovation District

## VISION:

To foster eco-industrial districts within our urban communities that support the global shift to a circular economy built on the following values:

- Green
- Innovative
- Equitable
- Inclusive

## PURPOSE:

To create Canada's first Green Industrial Innovation District (GrIID™) as an urban-industrial strategy for other municipalities and regions to replicate, using the GrIID™ model in the Flats.

## GUIDING PRINCIPALS:

- Environmental sustainability
- Innovation and creation of new models/paradigms
- Local Economic Development and Growth
- Diverse, Equitable and Inclusive Employment
- Local Resilience in our:
  - o Infrastructure
  - o Supply Chain & Production
  - o Jobs and Economy
- City Serving and Citizen Demand Infrastructure
- Collaborative/symbiotic models

The GrIID™ is a thriving economic and employment district that activates industrial land through the establishment of circular economic models of waste regeneration. Bringing together green innovation businesses and employers (Appendix A), the GrIID™ fosters and delivers services, products and resource recovery operations that support local, circular and green production and distribution models.

Materials recovery and re-purposing, deconstruction and production, food production and distribution, share and repair services, energy generation, industrial symbiosis opportunities and skills training are all part of the GrIID™ ecosystem.



## GLOBAL CONTEXT:

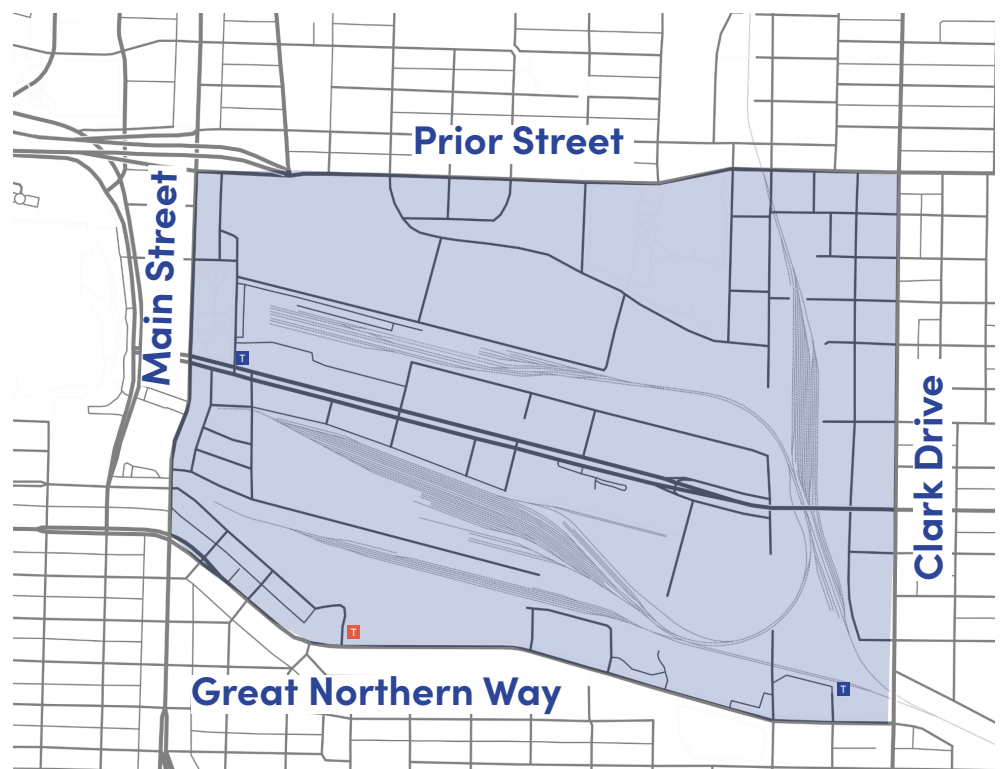
Highly popularized by the Ellen MacArthur Foundation (EMF), the circular economy is an industrial economy that is regenerative by design through a closed loop material flow across an entire economic system<sup>1</sup>. It has been more clearly defined to include numerous other contributions as; “a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, re-manufacturing refurbishing, and recycling”<sup>2</sup>. In a time of environmental, economic and overall global uncertainty, the circular economic model is one that can be confidently sustained.

Evidence of the success of such circular models can be visible across many European countries such as The Netherlands, Denmark, France and Belgium. For many cities, circularity has been a key aspect of climate adaptation and resiliency planning.

These models are based on the increased understanding that urban infrastructure for production and manufacturing, and not least operational urban supporting functions (i.e., food production and distribution, waste management and materials recovery, production) should be strategically positioned close to the demand areas. Locating goods, services and infrastructure close to the urban core drives local economic development and jobs, supply chain resilience, creating sustainable, equitable models within green cities.

## LOCAL CONTEXT:

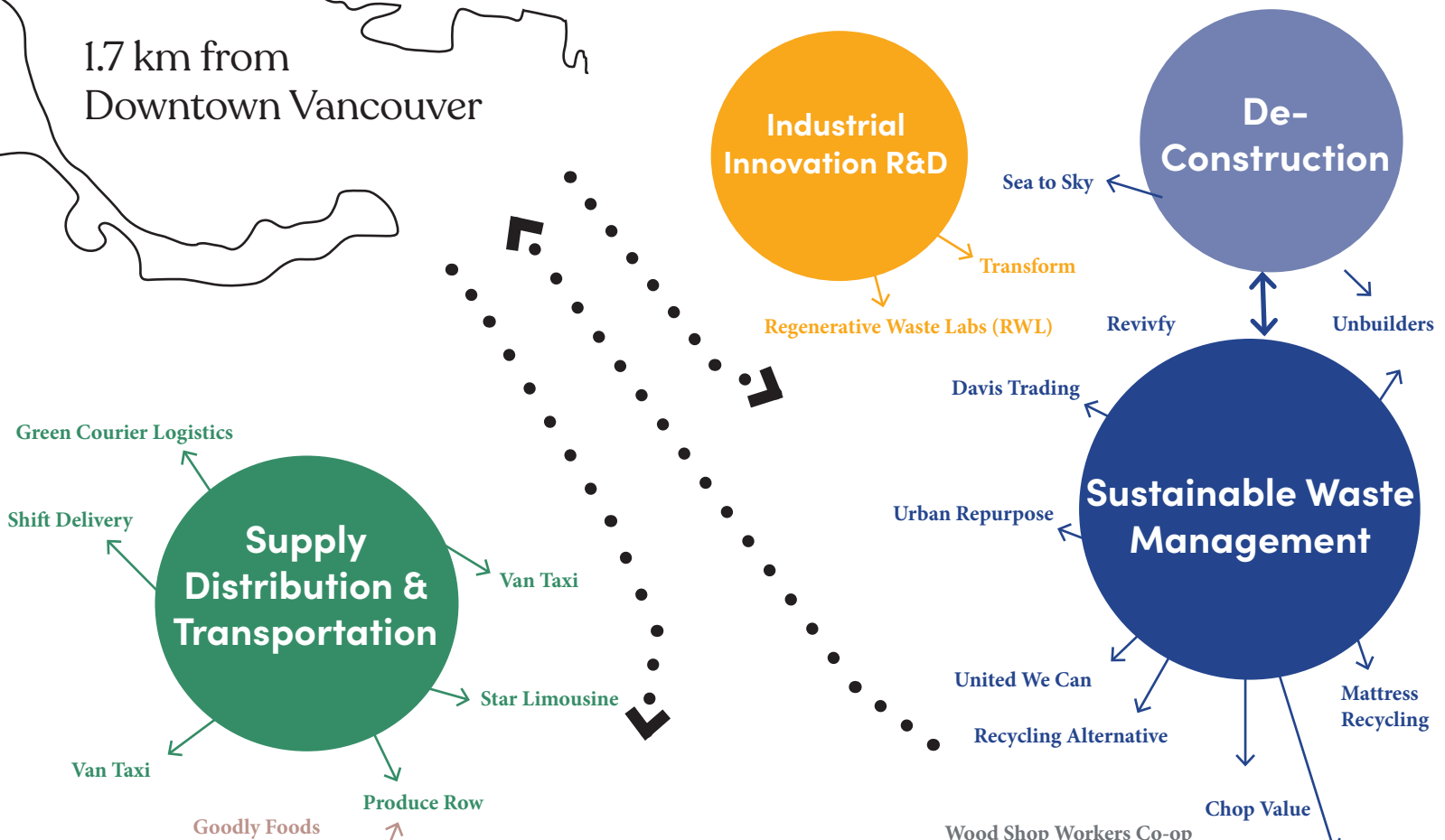
The False Creek Flats is 450 acres of industrial employment lands situated beside some of Vancouver’s fastest growing neighbourhoods. Despite the 44 km of rail line in the Flats, the area is home to over 600 diverse businesses, which support over 8,000 jobs<sup>3</sup>. Given the existing industrial infrastructure, large number of business already embedding circularity into their models, and proximity to downtown, the Flats is a prime location to create such a model in North America.



# GrIID™ Clusters in the Flats

Mapping the GrIID | A. Burse (2021)

1.7 km from Downtown Vancouver



**Industrial Innovation R&D**

**De-Construction**

**Supply Distribution & Transportation**

**Sustainable Waste Management**

**Food**

**Urban Agriculture**

**Arts and Culture**

**Share Repair Reuse**

**Manufacturing & Production**

## GrIID™ Principles

- Green, Industrial, Innovation
- City serving infrastructure
- Local, sustainable, circular
- Inclusive, equitable jobs

Sea to Sky

Transform

Regenerative Waste Labs (RWL)

Revivfy

Unbuilders

Davis Trading

Urban Repurpose

United We Can

Recycling Alternative

Wood Shop Workers Co-op

Chop Value

Mattress Recycling

Our Social Fabric

Solshare

Terraforma

False Creek Fabrication

MODO

ShareWares

Repair Cafe

Share Repair Reuse Initiative

Tradle

EV Repair and Charging

Thingery

Bike Share

Tool Library

## 1.2 OBJECTIVES

Reports that describe the vision for the Flats at the municipal level are certainly plentiful, however there remains a gap between these strategic documents and concrete policy that provides a road map for GrIID™ implementation. Given this extensive existing library of literature, this project aims to identify and map the next steps for the implementation of a circular district. This project goal is supported by a number of objectives to:

1. Understand the **BIG PICTURE** by succinctly summarizing municipal reports and studies which describe industrial land in the Flats. Key themes will be identified as they relate to, and support the development of the GrIID™.
2. Gain community perspective to understand long term **GOALS** to expand primary operations, drive economic development, close waste loops and their existing main **BARRIERS**, under current policy.
3. Through uncovering barriers to implementation, an **ACTION PLAN** will be developed where key community actors for each action will be identified and accompanied by an estimated timeline describing the work needed to overcome the hurdle.

## 1.3 APPROACH

A combination of policy review, semi-structured key informant interviews, and roundtable sessions helped to inform the final recommendations of this report. To understand the landscape of existing policy and planning concerning the False Creek Flats, an analysis of both academic and grey literature was completed. A case study analysis accompanies this resource scan to contextualize the implementation process in examples with similar challenges or conditions as the Flats.





## 02. Gathering Insight

### 2.1 Policy Review

The City of Vancouver and the Vancouver Economic Commission have created numerous policy and planning documents that describe the future for the Flats as a area for green industrial innovation. The False Creek Flats planning process, which began in 2014, created buzz and excitement around the future of this district. Since the completion of the local area plan and economic development strategy, the City of Vancouver has set forth a number of key priority areas for policy which either allude to, or directly reference the importance of industrial space. Throughout these documents, three thematic qualities emerge and offer insight into the direction in which the City sees this space operating. Each visionary quality is discussed in relation to the proposed GrIID™ model in further detail below.

#### 1. Clustering and Co-Location

Promoting the co-location of businesses to support cluster development is a key vision for the Flats economic development plan. Through years of engagement and analysis, “becoming a research and development (R&D) hub for Vancouver’s arts, food, health and green clusters” (p. 14) is highlighted as a central role of the Flats<sup>4</sup>. These clusters are recognized and embedded in the False Creek Flats Area Plan which help to guide the delineation of four character sub-areas<sup>3</sup>. Programming within these character sub-areas that focuses on clustering and resource sharing partnerships is highlighted as a key action of the Area Plan<sup>3</sup>, leveraging economic innovation



within the industrial space and creating extensive employment opportunities<sup>3</sup>. Supporting cluster emergence through co-location demonstration spaces, social innovation labs, increased density becomes the pillar for many policies which drive the creation of an innovation landscape<sup>3</sup>.

The importance of industrial land affordability in supporting cluster development is not forgotten. Retaining and expanding affordable industrial spaces for clusters is described as a key objective in the Flats<sup>5</sup> by protecting the existing space from net loss, utilizing land use mechanisms to secure affordable space, tenant prioritization, retrofitting

existing facilities, and exploring synergies between clustered businesses<sup>3</sup>.

## 2. Green Economy

Given Vancouver's history with the Greenest City Action Plan, principles of sustainability have been embedded in most developments and plans, with the Flats being no exception as "the greenest place to work in the world". This green brand has amounted to a \$31 Billion dollar value<sup>6</sup>. Leveraging these operating clusters of green economic activity in the Flats, with a focus on renewable energy, green infrastructure and clean technology<sup>4</sup>, among others, while also increasing the number of low barrier green employment<sup>3</sup> positions the district as a leader in industrial innovation and sustainability.

Protecting food related businesses such as urban farming and processing<sup>3</sup>, ensuring the green technologies and green design are embedded into both the built form and regenerated natural environment<sup>3</sup> are all described as central pieces of the Flats. The central geographic location of the Flats, both as a regional industrial hub adjacent to the downtown core, and through clustering of businesses internally to support industrial symbiosis<sup>4</sup> gives the Flats a green economic advantage with decreased GHG emissions and waste<sup>4</sup>.

Shared demonstration sites within the Flats to prototype green innovation, both by design and economic innovation allows for businesses to showcase their products to potential investors and talent<sup>7</sup>. Creating such spaces within the Flats has been highlighted as a quick start action to guide this green innovation<sup>4</sup>

## 3. Alignment with City of Vancouver Goals

Not only does the circular GrIID™ model help to leverage existing visioning within the Flats as described above, but it also supports many existing city-wide policies. In Canada, the circular

economy presents an opportunity to address high energy and resource demands<sup>8</sup>. The October 2020 Council motion to support local circular economic policies in Vancouver<sup>9</sup> and subsequent staff direction for circular hubs in the False Creek Flats, along with Metro Vancouver's Industrial Land Strategy, demonstrates strong support at the municipal and regional levels for GrIID™-like models.

The exchange of heat and resources through industrial symbiosis within clusters would help to significantly lower greenhouse gas emissions needed to achieve Big Move 3 in Vancouver's Climate Emergency Action Plan<sup>10</sup> and cut emissions in half by 2030.

Supporting efforts to establish a GrIID™ and activate industrial lands to enable supply chain resilience is an action under the Employment Lands and Economy Review<sup>11</sup>. By laying the framework for this type of district, the development of new, low barrier, green employment, along with clustering allows for the sharing of resources and space co-locations within the Flats to make the area affordable by design, supporting the motion on Industrial Affordability<sup>12</sup>. Given the economic stimulus needed for a post-COVID economic recovery, the GrIID™'s ability to provide low barrier equitable employment makes it an attractive opportunity given the necessary goals of the City of Vancouver's "Moving Vancouver Forward: Economic and Community Recovery"<sup>13</sup> program.

## 2.2 Case Studies

### A) CIRCULAR PROCUREMENT: CITY OF TORONTO

#### OVERVIEW

Supporting the direction in the 2016 long term waste management strategy, Toronto's Circular Economic Procurement Implementation Plan and Framework helps to target municipal level investment in suppliers with roots in the circular economy<sup>14</sup>. The initial framework targets businesses in the food, waste management, information and technology, textiles, and construction sectors.

Alongside traditional cost saving metrics, the city is also tracking the environmental impacts (waste diversion, CO2 savings, recycled content, raw materials avoided), and social implications (jobs created, City staff with circular economy training, asset sharing activities) of this new procurement framework.

#### PARTNERS & GOVERNANCE

City of Toronto's: Solid Waste Management Services



Unit for Research, Innovation and a Circular Economy

Cross departmental approach with senior staff members in planning, economic development, environment and energy, parks, transportation, water, and public health

Toronto's Government Management Committee

#### LESSONS FOR THE GRIID™

New metrics for principles for land procurement will be necessary if a circular model is to be adopted. In an era of deepening societal inequities and climate crisis it's clear that cost should no longer be the single factor in assessing value of a project, business or site. Upon reflection, the City of Toronto highlighted the importance of piloting and testing. Given direction in a number of VEC reports, the Flats is well positioned to be the testing ground for these types of initiatives, opening up new opportunities for businesses. However, for the City of Toronto, the evolution for procurement was not possible without the motivation from businesses to innovate and support city wide goals of economic growth, something that businesses in the Flats are eagerly committed to.



Image Source: Unsplash, Photo by Mwangi Gatheca

## B) BURNSIDE ECO-INDUSTRIAL PARK, NOVA SCOTIA

### OVERVIEW

Established in 1967, Burnside Industrial Park underwent an industrial ecosystem project in 1992, the first investigation into industrial parks as ecosystems in the world<sup>15</sup>. This research was structured to understand the design and feasibility of an industrial ecosystem model which provides a reduction in financial, ecological and health costs, and material and energy waste, increases environmental awareness, and finds new ways for products and business to utilize waste materials. A survey was completed with 278 businesses in the region. From this survey, a number of strategies, guidelines and principles for adopting an industrial ecology approach in business parks.

### PARTNERS & GOVERNANCE

#### Greater Burnside Business Association

#### Non-Profit Community

- Electronic Products Recycling Program
- Clean Nova Scotia
- Offshore Energy Research Association of Nova Scotia

#### Dalhousie University

- Eco-efficiency Centre

#### Nova Scotia Power: Wind Energy

### LESSONS FOR THE GRIID™

While there are many recommendations that arose from the project, the following are the most notably aligned with and support the GrIID™ model.

- *Co-locating of Businesses.* As much as is possible, companies should be co-located so as to maximize use of waste heat and waste water. Some businesses release waste heat into the atmosphere, and waste water into sewers, which could be harnessed for other operations across the district
- *Encouraging Scavengers and Decomposers.* An ecosystem includes scavengers and decomposers. Companies which buy, sell or trade second-hand goods are scavengers. Maintenance and repair businesses also fit into this category.
- *Feedback and Communications.* As in the case of natural ecosystems, there is a need for feedback mechanisms and channels to regulate the flow of materials and the growth of populations and communities. In industrial parks, this feedback must occur within companies, between companies, between companies and park management, and between park management and regulatory agencies.



Photo by Greater Burnside Business Association

## C) PARTNERS IN PROJECT GREEN, TORONTO PEARSON

### OVERVIEW

Partners in Project Green (PPG) is an eco-business zone around Toronto Pearson which first began to ensure watershed protection and aquatic ecosystem health within a heavily industrial space. Since its adoption in 2008, the delivery model aims to support economic prosperity in the region through waste management, water stewardship, community engagement, and energy performance and low carbon transportation. PPG aid their hundreds of members in improving their economic and environmental performance, attract and retain green investment, and to foster innovation within the zone. To ensure its place as a leader of sustainability, PPG members were directed to track key sustainability metrics (environmental, economic and social). Through their involvement in 2,500 projects since 2013, PPG has helped divert 20,000 tonnes of waste, conserved 1.8 billion liters of water and prevented the creation of 121 tonnes of carbon<sup>17</sup>.



Photo by Toronto Pearson International Airport

### LESSONS FOR THE GRIID™

Given the heavy involvement with a large business community, the governance model of PPG may be useful for the Flats. As the GrIID™ emerges as a district operating independently, the governance structure of PPG along with many other examples from circular districts and business associations could be considered to determine the level of the City's involvement.

### PARTNERS & GOVERNANCE

Launched by Greater Toronto Airport Authority (GTAA) strategic planning process and Toronto and Region Conservation Authority (TRCA) to support goals and strategies.

#### TRCA Board of Directors



#### PPG Executive Management Committee

##### Voting Members:

- Senior level representatives from GTAA, TRCA, and municipal partners from the cities of Peel, York, Durham, and City of Toronto

##### Advisory Members

#### Communications and Engagement Performance Committee

#### PPG Secretariat

- Working groups
- Consortium: Forum for members to share knowledge on similar sustainability goals and learn from experts.

## 2.3 Interviews



From a community level, it had appeared the momentum to develop a green innovation space had stalled at the City. Given this, key informant interviews were completed to help understand **three key questions:**

- What role does their organization see the GrIID™ playing in the Flats and how can we help them achieve this goal? What collaborations are needed?
- What major hurdles do they see us needing to overcome?
- What are we missing? Are there opportunities or challenges we have not thought about yet?

### WHO WE INTERVIEWED:

Five semi structured interviews were completed with City Staff across various departments, Local organizations and NGO's heavily involved in the circular economy and the development of a circular innovation model in the Flats.

From these interviews, **two key points** emerged to help guide future work.

1. *Creating an organized community base and governance model.* Given that the City cannot support a for-profit business it is important to have members of the business community come together and form a group, such as a not for profit or Business Improvement Association that would be able to work directly with the City to channel funding.
2. *Developing a clear and concise vision.* Something like an “elevator pitch”, this vision should quantify the outcomes of the GrIID™ (i.e., job creation, GHG emission targets, waste diversion), provide some case study examples and specifically explain what the GrIID™ needs from the City. Many interviewees suggested this eventually should be brought to council with the hopes of steering city departments in the same direction.

To address the first key point, it was decided that it was important to begin to convene some central players in the GrIID™'s development, much like a steering committee or working group, with the hopes of coming to a formal community organization. A roundtable started to be organized and will be described in further detail in the following section. To address the second key point around a vision development, a two page high level overview of the GrIID™ was created (Appendix B) and distributed to a number of City Councilors to gain their feedback. While this is currently ongoing, any feedback that is received helps us to understand what various parties on Council would like to see to support a motion which will be developed based on the findings of this report.

## 2.4 Roundtable

Based on the emerging points from the interviews, the need to develop a community hub or working group became solidified. The use of a roundtable forum for these types of early community building engagements was attractive given the limits on in-person meetings. Members of key cluster-specific organizations in the Flats, along with several City staff across departments, members of the real estate and economic development communities were contacted to participate, with 7 participants at our first session. Additional meetings and discussions were also scheduled outside of this engagement with various employment agencies, focusing on inclusive training and job opportunities.

The 1.5 hour engagement was structured first with introductions, followed by a brief overview of the GrIID™, its vision, objectives, and the aligned City policy documents. During the overview, participants were asked to record any first thoughts that came to mind, positive or negative. A word cloud was generated (Fig 2.1) to capture initial reactions from participants.

The remainder of the engagement consisted of a brainstorming session to understand the wide range of hurdles to implementation, and discuss how this group could mobilize to address them. Given the small size of the group, each participant was asked to share; i) Two hurdles that they are concerned with personally or with their business/organization, and ii) Two hurdles that they see impacted the larger GrIID™ model within the Flats. For each hurdle, an action to overcome, with the jurisdiction where it resides was assigned a particular member of the group. A “short term” or “long term” timeline was also discussed and assigned. 17 hurdles were identified during this process and have been sub-categorized based on 5 overarching action themes.

### HURDLE THEMES:

#### 1. Land Use Pressures

Balancing the urgent need for emergency shelters & temporary housing, affordable residential property development and transit-oriented development with the need to protect remaining industrial land.

#### 2. Industrial Affordability

Internal pressure on City departments related to procurement and leasing to maximize lease rate profits in isolation of other potential social, environmental and economic benefits.

#### 3. Institutional Systems Change

City departments continue to operate in silos, resulting in a lack of cross departmental collaboration and coordinated action.

#### 4. Local Economic Development and Governance

Among the small and medium enterprises in the GrIID™, a governance model must be established to help guide branding and develop the market for the GrIID™.

#### 5. Mobilization, Government and GrIID™ Model Support

Gain and leverage municipal, regional, provincial and federal awareness and support for the GrIID™.



Fig 2.1 Roundtable Wordcloud

## 03. Considerations

Given the dynamic environmental, economic and social conditions existing within the Flats and the City of Vancouver, there are many external forces which must be considered when building the GrIID™. Factors such as Natural Hazards, Reconciliation and Land Affordability are paramount not only for undertaking development in the Flats, but for any work across the region. The short length of this project does not allow the appropriate time to fully investigate these challenges in depth, however this section aims to briefly summarize the necessary key points of significance.

The False Creek Flats gets its name from the historic creek which once emptied into the inlet over 100 years ago. In 1917, this creek, now the Flats, was filled in using waste materials from the surrounding industrial area to create the Canadian National Rail Terminal (Fig 3.1). During a major earthquake this saturated heterogeneous mixture of unconsolidated gravel, sand, and anthropogenic materials loses strength due to repeated stress and acts like a liquid<sup>19</sup>. This process known as liquefaction causes significant infrastructure damage, both below and above ground. Given the high probability for a Cascadia

mega thrust earthquake sometime in the next century, mitigating this impending catastrophic event through emergency planning and asset management strategies should be considered by the GrIID™'s developing team and its partner businesses.

Due to the nature of the underlying sediments in the Flats, the areas elevation and projected flood levels under 1 meter sea level rise due to climate change, risk of inundation increases with time. The City of Vancouver's Coastal Flood Risk Assessment outlines a number of circumstances and possibilities for the Flats until 2100. While flooding in the area won't be a common occurrence during the next century, it will be possible, leading to the recommendation that the City avoid placing critical infrastructure in the floodplain<sup>20</sup>.

In 2014, the City of Vancouver was designated as a City of Reconciliation. From this designation, a framework towards Reconciliation was developed involving three central components, Cultural Competency, Strengthened Relationships and Effective Decision-making, all of which are crucial to forming "a sustained relationship of mutual respect and

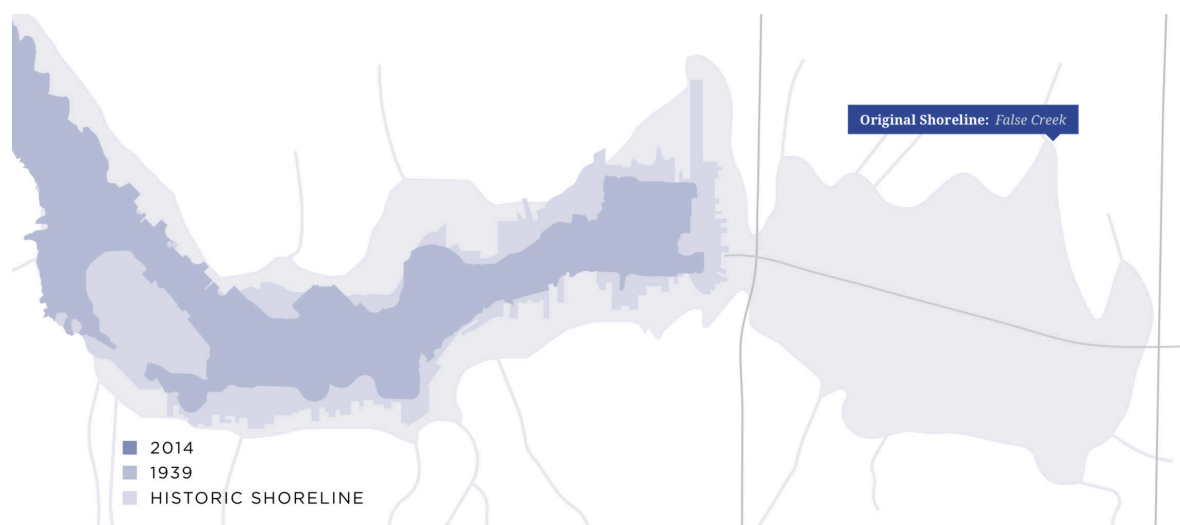


Fig 3.1 - False Creek Flats Shortline Overtime<sup>18</sup>



understanding with local First Nations and the Urban Indigenous community”<sup>21</sup>. For the GrIID™ in the Flats, it’s important for the settler community not to forget they are organizing and developing on land which belongs to the MST Nations. Partnering with members of these Nations to co-create green industrial space that is culturally appropriate (i.e., Indigenous Art and Culture, Natural Environment) is an important step in the process of City-wide decolonization efforts and should be top of mind. Additionally, being as the City recently adopted the motion to implement the UN Declaration on the Rights of Indigenous Peoples in the City of Vancouver (UNDRIP), it will be necessary to embed Nation to Nation relationship throughout the GrIID™’s development.

The final consideration is the landscape of affordability embedded across the City of Vancouver. Consistently ranked in the top 5 least affordable cities in the world<sup>22</sup>, behind Mount Pleasant, the False Creek Flats have the second highest land sale prices in Metro Vancouver and the Fraser Valley at near 130\$ per square foot<sup>18</sup>. Not only does this unaffordability create challenges for businesses to operate within in the City, but it also creates large inequities for housing access which become further exacerbated by the rise in mental health and addictions challenges gripping not only Vancouver, but many North American cities.



# 04. Recommendations + Conclusion



Despite the initiative and commitment from the local business community, there remain significant hurdles at the City level to implement the GrIID™ model. Industrial affordability and existing land use pressures remain the top concern for many small and medium enterprises currently operating in the Flats. Given this, the following recommendations have been developed to shift the dial to address and overcome these longstanding hurdles.

## 1. LAND USE PRESSURES

While there remains extensive land use pressures on the Flats given its close proximity to the downtown core, it is recommended that new industrial land-use specific policies be examined to understand how they may be used to further protect industrial land and freeze non-industrial encroachment. While the importance of residential development should not be overlooked, given the stock of single family homes in the city and the rate at which these types of homes continue to be built, it is strongly recommended that densification occur in existing residentially-zoned lands.

**How to Achieve:** City Policy and direction (i.e., City Council)

**Timeline:** Continuous, Long-term

## 2. SOCIAL BENEFITS LENS

To address the hurdles around industrial affordability and status quo systems of procurement at the municipal level, it is recommended that a more comprehensive community benefits lens for municipal decision making be applied to both City procurement policies and lease rates. Current Community Benefit Agreements should be revised to accurately reflect and quantify the positive social, environmental and economic benefits delivered to the community by models such as the GrIID™ and local small and medium enterprises. Currently the City of Vancouver Real Estate and Facilities Management (REFM) department is restricted by their performance criteria to secure maximum lease rates for City owned properties. Using a more holistic community benefits lens for lease rate justification and tenancies that equally acknowledges and prioritizes the social, environmental, and economic benefits delivered by local businesses and organizations providing multiple community benefits (local green economy, low barrier employment, zero waste, net-zero) should be factored into the City's procurement and leasing selection criteria.

**How to Achieve:** Further research into case studies (i.e, Toronto in Section 2.2) and collaborations with COV Procurement and REFM to understand how a more equitable Community Benefits Agreement

model could be introduced in Vancouver. Discuss with Councillors and City staff for feedback.

**Timeline:** Immediate

### 3. COMMUNITY DECISION-MAKING HUB

The lack of a formal community group or governance structure in the Flats limits those committed to advocating for advancing a shared interest the GrIID™. During the roundtables, many of the challenges articulated by participants focused on the need for a collective communication and branding strategy for the GrIID™. Additionally, should there be funding available to research innovation and demonstration sites, a formalized collective group in the Flats would need to be created to champion and be eligible for such funding opportunities. It is recommended that an all parties approach, which includes representation from the GrIID™ businesses, non-profit stakeholders and policymakers for governance to be mapped and adopted. Similar to the case study example in 2.2 at Pearson, decisions about the GrIID™ would be made by a committee with members of the local business community, senior level municipal staff and perhaps regional level representation.

**How to Achieve:** Connect with broader business community in the Flats to understand participation interest. Work with City staff to identify relevant departmental members to guide this committee's direction, mandate, and structure to utilize this area to develop community-wide communications and branding for the GrIID™.

**Timeline:** Short-term initiation, ongoing input and guidance.

## CONCLUSION

The development of a Green Industrial Innovation District is an exciting endeavor that addresses some of Vancouver's most deeply rooted challenges. Given the considerable research by VEC and subsequent City of Vancouver policies, there is an extensive catalogue of action items and directors already iterated for the Flats. Taking into account the considerations and pressures which concern the GrIID's™ development will be necessary to mitigate possible future hurdles.

As a circular, cluster-based district for green innovation and inclusive employment minutes from the downtown core, the GrIID™ is the necessary next step to create a meaningful model for urban climate action, local commercial activity and resilience, and equitable economic recovery in a traditionally resource intensive space. This project is an exciting moment in the circular economic discourse in Canada, showcasing the power of community organizing initiatives in the development of this emergent, green economy.



# 05. References and Appendix

<sup>1</sup>Ellen MacArthur Foundation (EMF), 2013. Towards the Circular Economy vol.1. Isle of Wight.

<sup>2</sup>Geissdoerfer, M. and Savaget, P. and Bocken, N.M.P. and Hultink, E.J. (2017) 'The circular economy, a new sustainability paradigm?', *Journal of cleaner production.*, 143 . pp. 757-768

<sup>3</sup>City of Vancouver (2017). False Creek Flats Area Plan. Retrieved from: <https://vancouver.ca/files/cov/false-creek-flats-plan-2017-05-17.pdf>

<sup>4</sup>Vancouver Economic Commission. (2017). The Flats Economic Development Strategy. Retrieved from: <https://council.vancouver.ca/20170517/documents/cfsc1-AppendixB-FalseCreekFlatsPlan.pdf>

<sup>5</sup>Vancouver Economic Commission. (2019). Vancouver Industrial Policy.

<sup>6</sup>Velkamp, J. (2018). State of Vancouver Green Economy. Retrieved from: <https://www.vancouvereconomic.com/research/state-of-vancouvers-green-economy-2018/>

<sup>7</sup>Benson, G. (2016). Shared Demonstration Sites: Mobilizing under-utilized land for demonstrating innovative and Impactful Products and Services. Retrieved from: <https://www.sustain.ubc.ca/about/resources/shared-demonstration-sites-mobilizing-under-utilized-land-demonstrating-innovative>

<sup>8</sup>National Zero Waste Council. (2019). Circular Cities Report. Retrieved from: <http://www.nzwc.ca/Documents/CircularCitiesScanSummaryReport.pdf>

<sup>9</sup>Weibe, M. (2020). Improving the Circularity of Vancouver's Economy. Notice of Council Members' Motion. Retrieved from: <https://council.vancouver.ca/20201006/documents/b8.pdf>

<sup>10</sup>City of Vancouver (2020). Climate Emergency Action Plan Summary. Retrieved from: <https://vancouver.ca/files/cov/climate-emergency-action-plan-summary-2020-2025.pdf>

<sup>11</sup>City of Vancouver. (2020). Employment Land and Economy Review: Emerging Policy Directions, Ideas and Potential Actions for Vancouver Plan Process. Retrieved from: <https://vancouver.ca/files/cov/eler-employment-lands-and-economy-review-emerging-directions-report.pdf>

<sup>12</sup>Kirby-Young, S. (2019). Accelerating Action of Industrial Affordability. Notice of Council Members' Motion. Retrieved from: <https://council.vancouver.ca/20190625/documents/b12.pdf>

<sup>13</sup>City of Vancouver. (2020). Covid-19 Economic and Community Recovery Program Progress Update. Retrieved from: <https://council.vancouver.ca/20201103/documents/p2presentation.pdf>

<sup>14</sup>Ellen MacArthur Foundation. (2019). Toronto Circular Economy Procurement Implementation Plan and Framework. Retrieved from: [https://www.ellenmacarthurfoundation.org/assets/downloads/Toronto\\_-Case-Study\\_Mar19.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/Toronto_-Case-Study_Mar19.pdf)

<sup>15</sup>LeBlanc, R., Tranchant, C., Gagnon, Y., & Côté, R. (2016). Potential for Eco-Industrial Park Development in Moncton, New Brunswick (Canada): A Comparative Analysis. *Sustainability*, 8(5), 472. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/su8050472>

<sup>16</sup>Côté, R., & Hall, J. (1995). Industrial parks as ecosystems. *Journal of Cleaner production*, 3(1-2), 41-46.

<sup>17</sup>Toronto and Region Conservation Authority. (2019). Partners in Project Green: Strategic Refresh 2019-2023. Retrieved from: <https://partnersinprojectgreen.com/about-us/our-organization/#2019-strategy-refresh>

<sup>18</sup>City of Vancouver. (2016). The Flats Area Profile: An Overview of Your False Creek Flats. Retrieved from: <https://vancouver.ca/files/cov/false-creek-flats-area-profile.pdf>

<sup>19</sup>Turner, Robert., Clague, J., (1998). GeoMap Vancouver: Geological Map of the Vancouver Metropolitan Area. Geological Survey of Canada Open File 3511. Retrieved from: [https://www.cgenarchive.org/uploads/2/5/2/6/25269392/geomap-of\\_3511\\_e2.pdf](https://www.cgenarchive.org/uploads/2/5/2/6/25269392/geomap-of_3511_e2.pdf)

<sup>20</sup>Lyle, T., Long, G., Beaudrie, C. (2015). City of Vancouver Coastal Flood Risk Assessment Phase II. Retrieved from <https://vancouver.ca/files/cov/CFRA-phase-2-final-report-oct-2016-revision.pdf>

<sup>21</sup>City of Vancouver. (2014). City of Reconciliation Staff Report. Retrieved from: <https://council.vancouver.ca/20160119/documents/rr1b.pdf>

<sup>22</sup>Urban Reform Institute and the Frontier Centre for Public Policy. (2021) Demographia International Housing Affordability. Retrieved from: <http://www.demographia.com/dhi.pdf>

# Appendix A:

## GrIID™ Sector Clusters

### SUSTAINABLE WASTE MANAGEMENT

#### Core Activities:

Pioneering and supporting local, regenerative recovery models (i.e. closed loop, circular, biofuel)

#### Leveraging Policy:

- Climate Emergency Action Plan/CEAP
- Zero Waste 2040
- Employment Lands & Economy Review

#### Activator Organizations:

1. Recycling Alternative: Multiple streams recovery
2. Davis Trading: Metals recovery
3. United We Can: Return-It Depot
4. Regenerative Waste Labs: Bioplastics development
5. Chop Value: Chop stick re-use
6. Mattress Recycling
7. Urban Re-purpose
8. Transcontinental: Textile and rags recovery
9. Our Social Fabric: Textile recovery

### ARTS & CULTURE

#### Core Activities:

Fostering local, vibrant communities through delivery of arts and culture. Businesses in this cluster depend on materials from others.

#### Leveraging Policy:

- Climate Emergency Action Plan/CEAP
- Zero Waste 2040
- Employment Lands & Economy Review

#### Activator Organizations:

- Arts Factory
- Great Northern Way Scene Shop
- East Van Culture Crawl

### DE-CONSTRUCTION

#### Core Activities:

Providing services and facilities for sustainable de-construction of buildings with the recovery of materials for re-use or re-building.

#### Leveraging Policy:

- Climate Emergency Action Plan/CEAP
- Zero Waste 2040
- Employment Lands & Economy Review
- Deconstruction Bylaw

#### Activator Organizations:

1. Unbuilders
2. Urban Re-Purpose
3. Sea to Sky

### FOOD

#### Core Activities:

Fostering local food security, supply and access through local and sustainable food growing, processing, buying, distributing and recovering

#### Leveraging Policy:

- Climate Emergency Action Plan/CEAP
- Zero Waste 2040
- Employment Lands & Economy Review
- Healthy Cities
- Local Food Security

#### Activator Organizations:

##### Growing:

- SoleFood
- Fresh Roots – School Yard Farms
- Victory Gardens
- Hives for Humanity
- DTES Neighbourhood House

##### Production:

- Commissary Connect
- Beta5
- Earnest Ice Cream
- Goodly Foods

##### Distribution:

- Produce Row
- Farmers Markets
- Meals Programs:
- Potluck Café
- Union Gospel Mission

##### Food Rescue:

- FoodMesh
- Goodly Foods

##### Food Waste Recovery

- On-site composting

## SHARE REPAIR REUSE

### Core Activities:

Developing and delivering share, repairing and reuse models through services, workshops, networks, industrial symbiosis opportunities. Organizations extending the life of materials and products with minimal re-processing.

### Leveraging Policy:

- CoV and Metro Repair Café's
- Vancity Lighter Living
- Employment Lands & Economy Review

### Activator Organizations:

- | Share   | Reuse   |
|---|---|
| <ul style="list-style-type: none"> <li>• Share Repair Reuse Initiative</li> <li>• MODO</li> <li>• Bike Share</li> </ul>   | <ul style="list-style-type: none"> <li>• ShareWares</li> <li>• MugShare</li> <li>• FrogBox</li> </ul> |
| <h4>Repair</h4> <ul style="list-style-type: none"> <li>• Repair Café's (Metro and CoV at community centres)</li> <li>• MIDAS</li> <li>• Bike Repair Services (Our Community Bikes)</li> </ul> |   |

## SUPPLY AND DISTRIBUTION

### Core Activities:

Providing city serving services and products, close to the City center.

### Leveraging Policy:

- Climate Emergency Action Plan/CEAP
- Local Supply Chain Resilience
- Employment Lands & Economy Review

### Activator Organizations:

- Soap Dispensary
- JARR
- NADA Grocery
- East Van Printers
- Anizco

## MANUFACTURING & PRODUCTION

### Core Activities:

Sourcing materials locally for their manufacturing and produce goods for the local market

### Leveraging Policy:

- Post COVID Supply Chain resilience
- Employment Lands & Economy Review

### Activator Organizations:

- Woodshop Workers Co-op: Reclaimed wood
- SOL-SHARE: Solar panels
- Chop Value
- False Creek Fabrication: Rreclaimed metal
- Terraforma: Composter production
- Fontile: Built environment
- MAVI Jeans
- Maker Labs
- Lunapads
- Lululemon
- MEC

## TRANSPORTATION

### Core Activities:

Providing transportation & distribution services focused on GHG reductions and local distribution hubs and networks.

### Leveraging Policy:

- Climate Action Plan (see Bold Moves)
- Government of BC Electrification Incentives
- Metro Distribution MicroHubs
- Fraser Basin Clean Fleets

### Activator Organizations:

- MODO Car Share
- SHIFT Delivery (e'trikes)
- Green Courier Delivery (Novex, LAC)
- Star Limousine

# GrIID™ Stakeholders

## NON-PROFITS

### Core Activities:

Advocate to foster local, circular, and equitable economic development.

### Leveraging Policy:

- Equitable, Resilient Economic Recovery
- Employment Lands & Economy Review
- Industrial Affordability

### Activator Organizations:

Circular Innovation:

- Share Repair Reuse Initiative
- NISP (National Industrial Symbiosis)
- One Earth
- WALAS
- Textiles Leverage Lab
- CLIMATE SMART – emissions tracking and reporting
- RCBC
- ENCORP
- Product Care

Local Econ Advocacy:

- Vancouver Economic Commission
- LOCO
- CIRES (Community Impact Real Estate)
- Urban Core

Training and Education:

- WORK BC
- EMBERS
- Binners Project
- UBC Learning Exchange

## ACADEMIC & EMPLOYMENT SUPPORT

### Core Activities:

Providing support for R & D in emerging green industrial innovation technology or support training and skills development for inclusive and equitable employment placement.

### Leveraging Policy:

- Various government incentives for skills training (i.e. Employment Skills Training BC)

### Activator Organizations:

Universities & Colleges:

- UBC Sustainability Scholars
- BCIT – Capstones
- Emily Carr
- SFU – Urban Studies / City Program
- City Studio

Employment Support:

- WORK BC
- Embers
- Native Education College

Incubators:

- Spring

## GOVERNMENT

### Alignment with Government Policy and Strategy

#### Federal

- Climate Action
- Equitable Economic Recovery
- Green Jobs

#### Province

- Clean BC
- Covid-19 Economic Recovery
- Green Jobs

#### Metro Vancouver Regional District

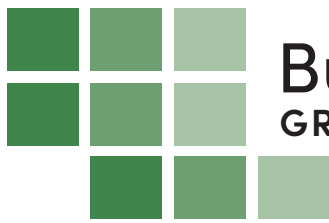
- Regional Economic Prosperity
- Industrial Land Strategy

#### City of Vancouver

- Climate Emergency Action Plan (CEAP)
- Moving Vancouver Forward: Economic and Community Recovery



# Appendix B: GrIID™ Overview

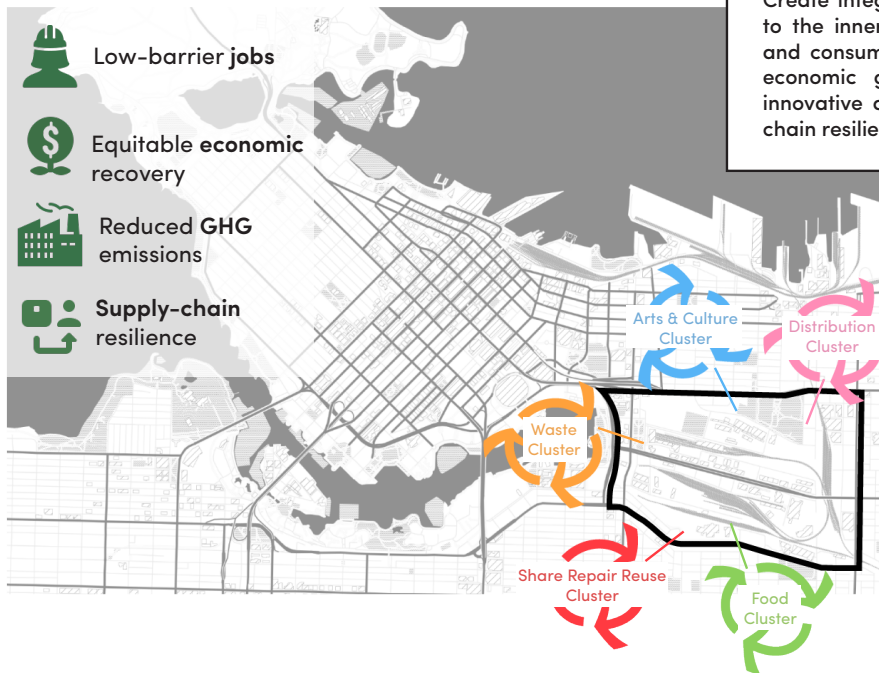


## Building Vancouver's first GrIID GREEN INDUSTRIAL INNOVATION DISTRICT

The GrIID is Metro's first **CIRCULAR** district, bringing together **GREEN INNOVATION** businesses and employers, developing and delivering services, products and resource recovery operations that support **local, circular and green** production and distribution models such as:

- materials recovery
- local production
- industrial symbiosis opportunities
- de-construction
- food production and distribution
- energy generation
- materials re-purposing
- share, repair & reuse services
- skills training & employment

### MAPPING THE GRIID



### VISION

Create integrated, inclusive and diverse employment close to the inner city, through responsible, circular production and consumption models, driving Vancouver's local, green economic growth, equity and social inclusion through innovative and sustainable materials recovery and supply chain resilience.

### Alignment with COV Goals, Policies and Strategies

- Climate Emergency Action Plan (2020)
- Employment Lands/Economy Review (2020)
- Industrial Affordability (July 2019 – Clr Kirby-Yung)
- Circular Motion (Oct 2020 – Clr Wiebe)
- False Creek Flats Local Area Plan
- False Creek Flats Economic Development Strategy
- Shared Demonstration Sites
- C40 Cities
- Complete Communities
- Healthy City Strategies
- Food Security
- Zero Waste
- Metro Industrial Lands Strategy
- COVID Just and Equitable Recovery

### OUR ASK:

Given the strong alignment between existing City priorities and goals that the GrIID will achieve in Vancouver and the region, we are asking for Council's support to leverage opportunities to engage and collaborate with GrIID businesses. This will further amplify the extensive work and direction City Staff and VEC have articulated for the FLATS as a local, green, employment district, by building upon and engaging with the existing innovator businesses, already collaborating to create circular models in the FLATS.

# Sample Clusters

## WASTE CLUSTER

- Recycling Alternative
- Wood Shop Workers Co-op unbuiders
- Chop Value
- Urban Repurpose
- Davis Trading
- Our Social Fabric
- United We Can
- Regenerative Waste Labs



Wood Shop Workers Co-op makes reclaimed wood furniture from wood waste and pallets collected by Recycling Alternative

## FOOD CLUSTER

- Commissary Connect
- FoodMesh
- Goodly Foods
- Beta5
- Solefood
- Fresh Roots
- Victory Gardens
- Hives for Humanity



Goodly Foods makes delicious wholesome food using surplus produce from food rescue organizations such as FoodMesh

## ARTS & CULTURE CLUSTER

- Arts Factory
- Great Northern Way Scene Shop
- East Van Culture Crawl



Arts Factory & GNW Scene Shop collaborate to create theatre scenery and fabrication using recycled/repurposed materials

## SHARE REPAIR REUSE CLUSTER

## DISTRIBUTION CLUSTER