ECONOMIC
DEVELOPMENT
STRATEGY

THE FLATS

INDUSTRY - SUSTAINABILITY - INNOVATION

VANCOUVER
ECONOMIC COMMISSION

The Flats Economic Development Strategy
Spring 2017

Prepared by
The Vancouver Economic Commission

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To be considered in conjunction with the False Creek Flats Area Profile and Local Area Plan.
Visit www.vancouver.ca/falsecreekflats for more detail.

FOREWORD

The False Creek Flats (the Flats) is a central industrial district in Vancouver that is often mistaken for being under-developed or under-performing. Visually marked by surface parking lots, old warehouses, rails and roads, there is mounting pressure from the development community to introduce residential and office development to the Flats, increasing the density of living and employment spaces close to transit and downtown.

The Flats Economic Development Strategy has been crafted to outline how the Flats can accomodate mixed-use development and higher employment densities while protecting the extremely important light industrial role the Flats currently plays, and must continue to play, in our local economy.

Vancouver's industrial land base has shrunk significantly over the last several decades and is continuing to be eroded by competing uses such as housing and large-format retail space. At the same time, demand for light industrial space is rising, driven by a combination of population growth, continued diversification of Vancouver's economy, a resurgence in small-batch local manufacturing, and new advances in fields such as clean technology, wearables, remanufacturing, virtual reality, biotech and agritech.

Although this strategy has been developed specifically for the Flats, many of the recommendations have relevance throughout Vancouver's central industrial districts. These include recommendations aimed at protecting light industrial activities, enhancing existing and emerging business clusters, intensifying employment potential in concentrated innovation hubs, and capitalizing on the important role these areas can play in becoming the agents of sustainability and economic resilience for Vancouver.

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EXECUTIVE SUMMARY

why this strategy?

The Flats plays an important role in Vancouver's local and regional economy.

The Flats contains more than 600 businesses and more than 8000 employees. 10% of Vancouver's wholesale, manufacturing and waste management jobs are located in the Flats, and 20% of businesses in the area have been operating for more than 40 years. As a 450 acre central industrial area, the Flats has a relatively low employment density, in part due to the large amount of land occupied by rails and roads in the district. This employment density is poised to change drastically over the next 15 years.

Several significant changes are coming to the Flats.

Several major institutions are under development in the area, including a new hospital and healthcare campus, a university campus, and a major district energy utility. In addition, more than 50,000 additional residents are anticipated within a 10-minute walking radius of the Flats in the next 25 years.

Employment in the Flats is expected to triple in the next 15 years, bringing significant economic opportunity to the district.

For instance, new institutional anchors create opportunity for expanding clusters in health and the arts, and increased employment density can sustain the amenities and social spaces needed to develop an innovation district.

Increased employment density also creates some challenges for the Flats, including increased competition for space.

The Flats makes up 15% of Vancouver's industrial land base, and demand for centrally located industrial space in Vancouver is outstripping supply, reducing the vacancy rate for industrial space in Vancouver to 1.2% in recent years. The Flats has become an increasingly attractive area for entrepreneurs and startups, small and mid-size industrial businesses, and the region's booming tech sector. The result is increasing land values and rents in the Flats—a challenge that is only expected to grow in the future as the region's population and job base continue to expand.

Competition for light industrial space is creating an affordability crisis that threatens the prosperity of the region.

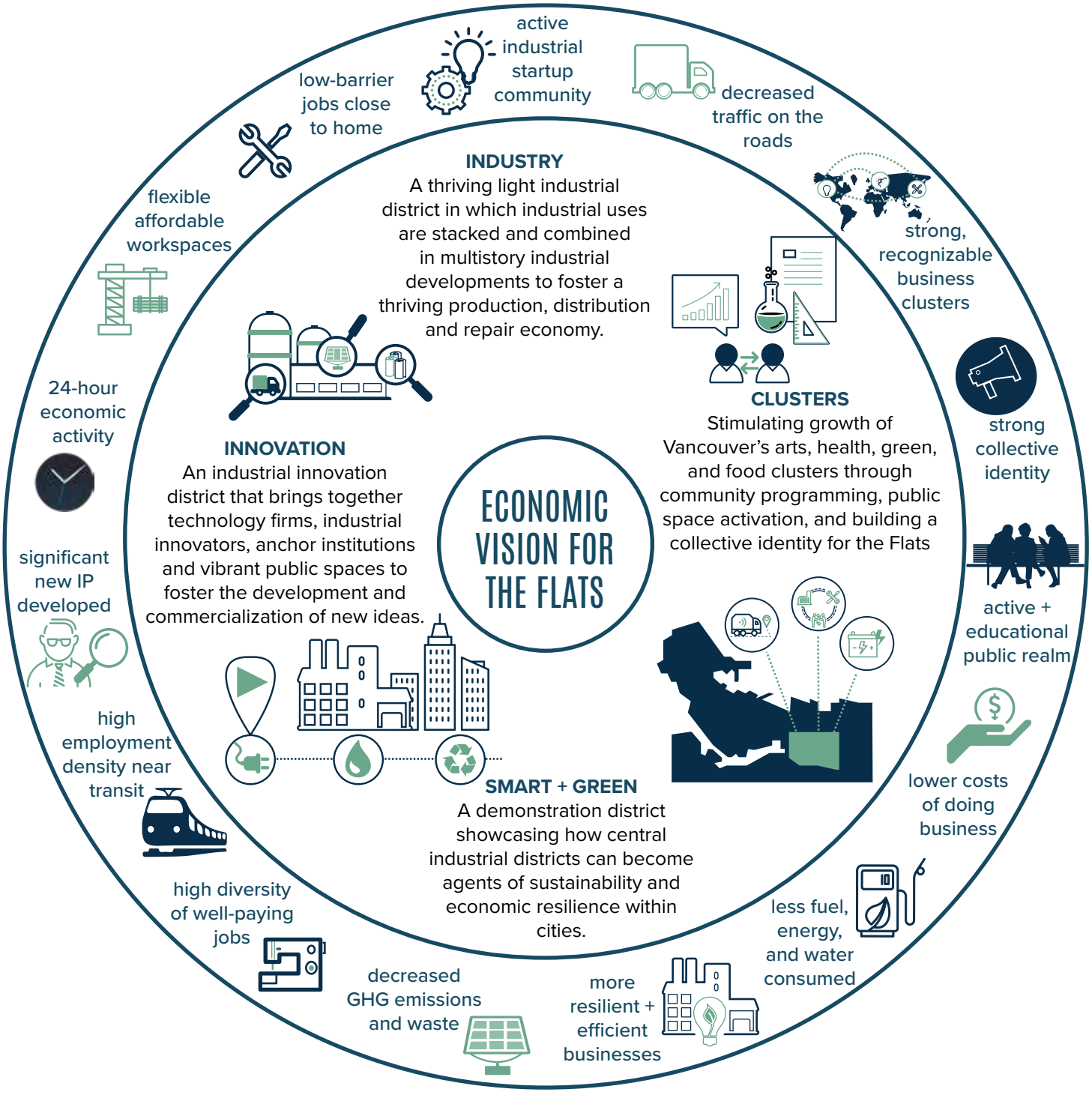
Between the summer of 2015 and the summer of 2016, industrial land values rose by 50% in the Flats. These ongoing leaps in land value are now threatening the viability of industrial uses on industrial land. An exodus of production, repair, and distribution activities from Vancouver's core would be devastating, resulting in a of loss of employment diversity in Vancouver and removal of a high percentage of low-barrier or low-skill jobs from the Vancouver job market. It would also result in an increased cost of doing business throughout Vancouver as supporting goods and services need to travel further to reach their clients. Finally, a lack of low-cost startup space stifles innovation by creating high financial barriers to market entry.

This strategy has been developed to balance the opportunities and risks associated with industrial intensification in the Flats.

Through careful planning and strategic intervention in the market, this strategy outlines how the Flats can serve as both a thriving industrial district and a dense innovation district.

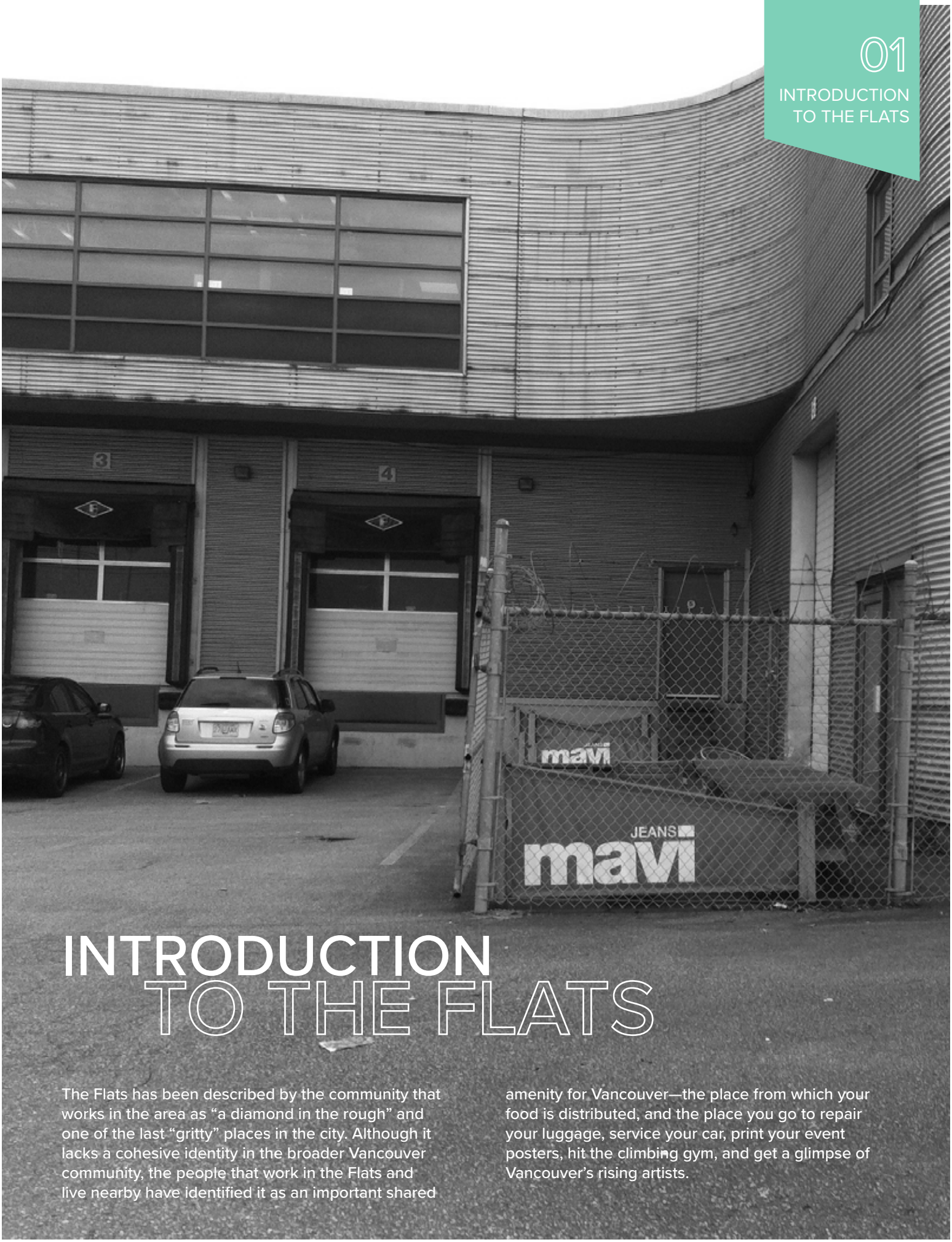
what is the economic vision for the flats?

Extensive consultation with the business community in the Flats, as well as industry leaders and businesses seeking space in the Flats, has led to this four part vision for the economic future of the Flats.



challenges + recommendations

CHALLENGES	UNAFFORDABILITY OF SPACE 1. Demand for industrial space outstripping supply 2. Lease rates rising too high 3. Policy ineffective at suppressing land values	BARRIERS TO INNOVATION 1. GLobal disruptions driving need to innovate 2. Limited capacity for R&D 3. Limited access to R&D resources and institutions	LACK OF CONNECTIVITY + AMENITY 1. Limited access to amenities and social programming 2. Lack of brand / collective identity 3. Dead zones caused by underutilized space	CLIMATE RISK + RESILIENCE 1. Industrial businesses are most impacted by sustainability issues 2. The Flats is a liquefaction zone 3. Many businesses are too small to tackle sustainability challenges on their own
PROGRAMS	1A. Foster colocation and space sharing partnerships among businesses seeking space, and help facilitate the colocation process.	2A. Establish a skills-matching program to match industry challenges with resources from academia, government, and the community.	3A. Create opportunities for businesses and employees in the Flats to connect, share ideas, learn, collaborate, and brand the district.	4A. Host training and education programs to help Flats businesses collectively tackle sustainability and resilience challenges.
GOVERNANCE	1B. Establish a non-profit industrial development corporation to develop, manage, and program affordable industrial spaces.	2B. Establish a multi-stakeholder leadership group to develop and manage the skills-match program and demonstration licenses	3B. Foster the development of an industrial BIA dedicated to representing and advocating for the needs of the Flats business community.	4B. Build project teams made up of subject-matter experts, students, and business conveners to tackle individual issues.
SPACE	1C. Identify a portfolio of sites to develop, retrofit, manage, and maintain as affordable industrial spaces in the Flats, and establish mechanisms to secure these spaces long-term.	2C. Develop and manage a series of public demonstration and education spaces for startups.	3C. Establish and service mobile amenity zones in which service startups can test their business models.	4C. Secure small spaces where businesses can install shared sustainability infrastructure.
POLICY	1D. Develop the regulatory framework needed to secure economic development amenities in the Flats.	2D. Develop demonstration licenses to allow industrial innovators temporary access to publicly held land for testing and showcasing new products and services.	3D. Incent the use of orphan spaces and temporarily underutilized spaces such as parking lots and rooftops for economic and community uses.	4D. Identify policy barriers to implementing sustainability and resilience measures and seek ways to remove red tape.
RESEARCH	1E. Collect and publish annual data on emerging industrial space needs and common challenges facing industrial sectors in the Flats.	2E. Incorporate economic development criteria into City of Vancouver real estate dealings and infrastructure projects.	3E. Research collective community challenges in the Flats and identify and test solutions.	4E. Research collective sustainability challenges in the Flats and develop pilot projects to test various solutions.
FUNDING	1F. Explore developing a Flats Fund (Special Purpose Vehicle) to aggregate and deploy capital from development contributions for economic development amenities in the Flats.	2F. Streamline and simplify the process for small and mid-size businesses to locate, apply for, and obtain skilled individuals to help with R&D initiatives.	3F. Utilize the tax structure of Business Improvement Area associations to fund public realm improvements and community programming.	4F. Assemble funding on a project-by-project basis utilizing a combination of grants, government funding, and corporate sponsorship.



INTRODUCTION TO THE FLATS

The Flats has been described by the community that works in the area as “a diamond in the rough” and one of the last “gritty” places in the city. Although it lacks a cohesive identity in the broader Vancouver community, the people that work in the Flats and live nearby have identified it as an important shared amenity for Vancouver—the place from which your food is distributed, and the place you go to repair your luggage, service your car, print your event posters, hit the climbing gym, and get a glimpse of Vancouver’s rising artists.

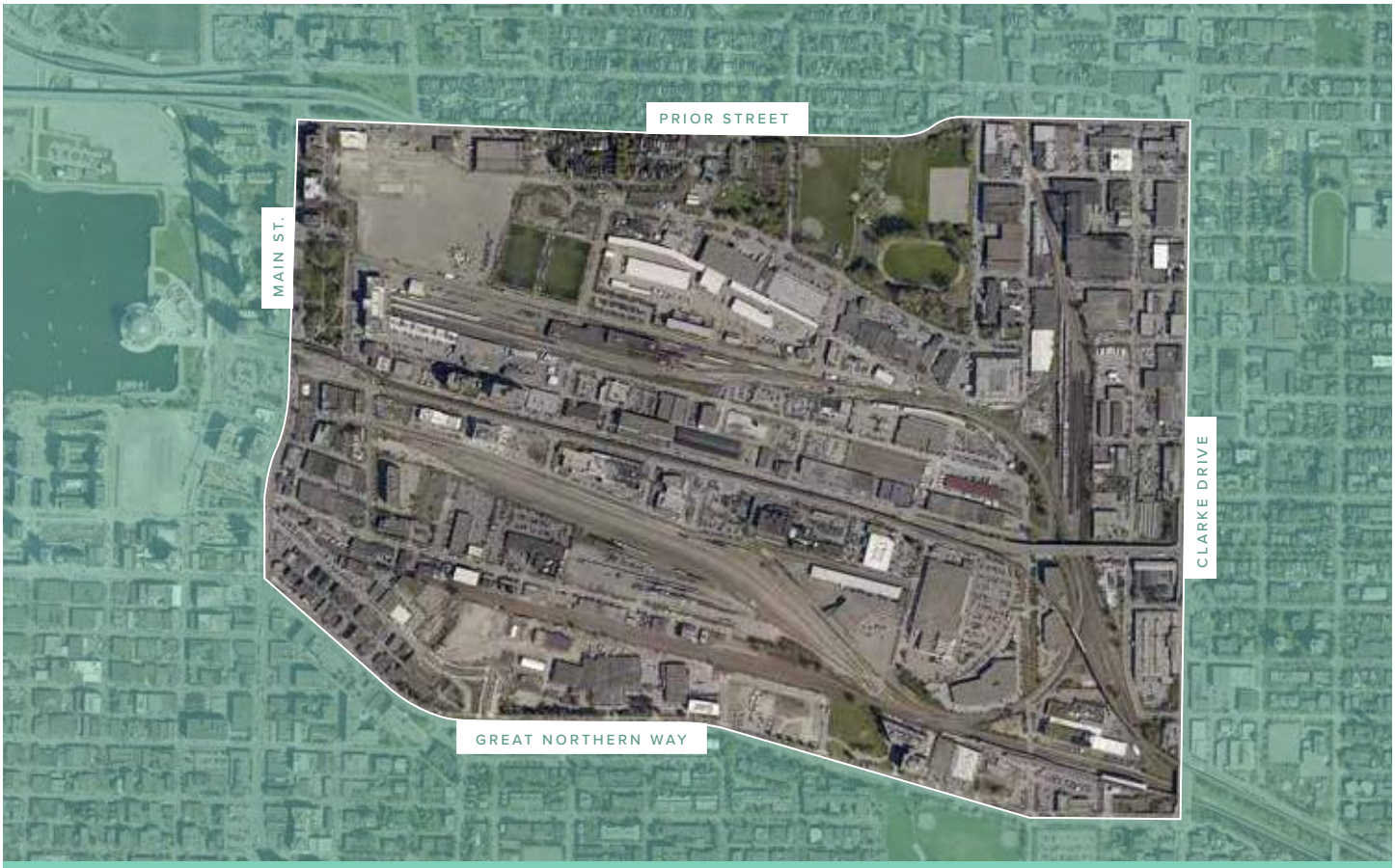


Figure 1 **FALSE CREEK FLATS BOUNDARIES**
The Flats is bounded by Main Street on the west, Prior Street/Venables Street on the north, Clark Drive on the east, and Great Northern Way on the south. The area is about 450 acres including roads, or about 367 acres excluding roads.

THE FALSE CREEK FLATS TODAY

The False Creek Flats ("The Flats") is a large, diverse employment precinct just east of downtown Vancouver. It is occupied by a mix of industrial and commercial uses and is contains more than 8,000 jobs in over 600 businesses, institutions, and non-profits.

While much of the area is occupied by light industrial and transportation-related uses, several factors have drawn an unusual assortment of enterprises, including car dealerships, craft breweries, tech firms, artists, logistics operations, construction companies, and urban agriculture.

Factors contributing to this unique business mix include the presence of older building stock offering lower rents; City lands made available for social / environmental uses; and favourable zoning with comparatively low land values (by Vancouver standards).

Over the past decade, wholesaling and distribution businesses in the Flats have decreased from approximated one-third of businesses in 2005 to only 9% today. At the same time, there have been sizable increases in arts, entertainment and recreation uses in the area, as well as increases in manufacturing uses, retail, and trade agencies.

Not surprisingly, the reduction in wholesalers in the Flats since 2005 has corresponded with a shift away from businesses occupying large spaces. Businesses with footprints of more than 20,000 square feet have decreased from 18% in 2005 to 10% today, while businesses occupying small and mid-sized spaces (2,500 to 10,000 square feet) have increased from 19% to 31% over the same period of time.

20% of businesses in the Flats have been operating for 40+ years.

The Flats is now undergoing significant changes:

- A new hospital, to replace St. Paul's, has been announced for a large site in the northwest corner of the Flats. About 10,000 people are expected to work on this campus at full build-out.
- Several auto dealerships have moved into the area, the largest of which is in a 68,000 sq. ft. facility. As a result, some parts of the Flats have become more service-commercial than industrial.
- The City is planning for a new bioenergy facility on Industrial Avenue to replace the natural gas steam facility in downtown. This facility will occupy 5.2 acres at full build-out, processing 90,000 tons of clean wood waste annually.
- The Great Northern Way campus (owned by UBC, SFU, BCIT, & ECUAD) is developing new educational facilities, student housing, and work spaces including the Centre for Digital Media (CDM) and a new Emily Carr building. The campus is will include 1.3M sq.ft. of institutional, office, retail and student housing space.
- High density office projects have recently located in the Flats, including Stemcell Technologies (a biotech company) and the headquarters for MEC (a major outdoor recreational clothing and gear manufacturer and retailer). These offices bring higher-density employment uses to the Flats.
- The proposed Broadway extension of the rapid transit system includes an additional rapid transit station on the GNW Campus, increasing transit accessibility in the area.
- An east-west arterial road is being created through the Flats, with significant implications for a neighbouring 40-year-old food distribution cluster that is looking to expand alongside this new infrastructure.

These changes bring opportunities and challenges to the Flats. The new institutional anchors, for example, create economic opportunity for expanding clusters in health and the arts. On the other hand, higher value uses such as office, retail, and service-commercial contribute to rising land values, putting pressure on traditional light industrial users and creating entry barriers for new small enterprises.

The Flats is now subject to increasing competition for space among traditional light industrial users (printers, event rentals, automobile repair, food distribution), industrial-scale tech or innovation firms (cleantech, advanced manufacturing), service-commercial uses (large-footprint retail), and office/mixed-development uses (office-based tech, life sciences, digital entertainment, retail, residential).

> Employment in the Flats is expected to triple in the next 15 years, from 8000+ jobs in 2016 to nearly 28,000 jobs in 2030.

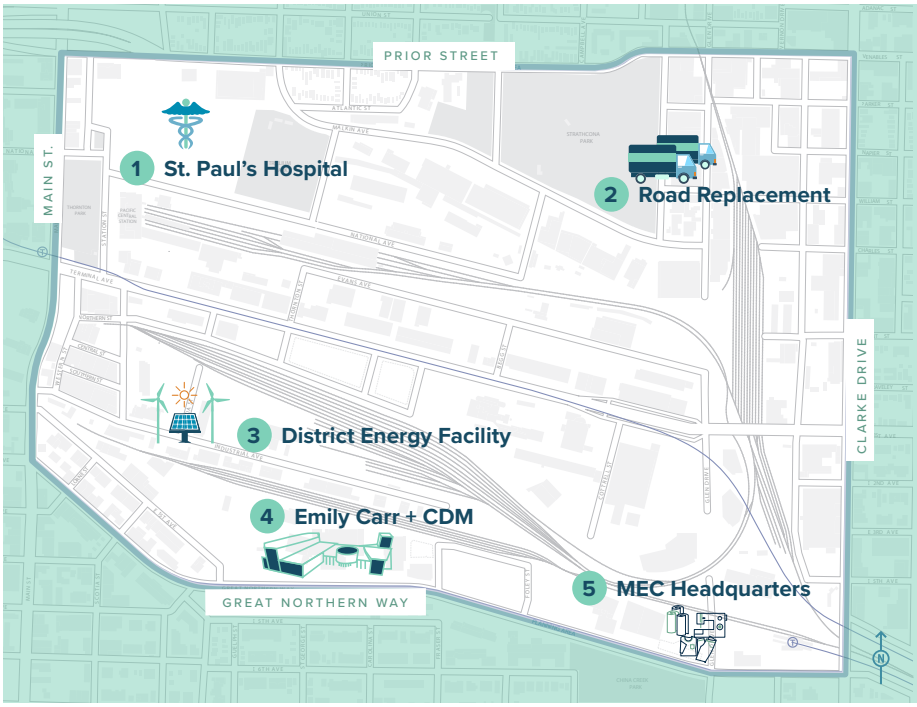


Figure 2
ANCHOR DEVELOPMENTS

1 | St. Paul's Hospital
18.4 Acre Health Campus; Anticipated to house 10,000 jobs

3 | District Energy Facility
5.2 Acre Biofuel Facility; Anticipated to burn 90,000 bone dry tons of clean wood waste annually

4 | Emily Carr + CDM
1.3M sq.ft. of institutional, student housing, office and retail planned

5 | Road Replacement
Arterial road replacement will create opportunities to improve and densify 40 year old food distribution cluster

6 | MEC Headquarters
120,000 sq. ft. custom head office

THE ROLE OF THE FLATS IN THE REGIONAL ECONOMIC CONTEXT

According to the Conference Board of Canada, Vancouver has the fastest growing and most diverse economy in Canada, and it is expected to continue on this trajectory for the next several years. This diverse economic base ensures there will continue to be employment growth in many sectors across Vancouver, reducing the risk of severe economic decline due to the weakening of any one industry.

Employment in the region is forecast to grow from about 1,158,000 jobs in 2006 to about 1,753,000 jobs by 2041, which implies a total growth of about 595,000 jobs over the 35 year forecast period. The Regional Growth Strategy anticipates that the City of Vancouver will capture about 15% of anticipated job growth in the region, which is equivalent to an average annual increase of about 2,500 jobs per year in the city. These numbers are extremely conservative. For example, the Vancouver Economic Commission estimates an additional 47,000 tech jobs will hit BC in the next 5 years, the majority of which will land in Metro Vancouver.

These jobs need land and space, and the Greater Vancouver region has a restricted land base due to constraints of geography and the Agricultural Land Reserve. As a result, land for employment uses is at a premium, and values for all uses, including industrial, are being pushed up due to strong demand.

The Metro Vancouver region also shares important geographic, environmental, infrastructural, and institutional attributes that will continue to draw immigrants, skilled labour, firms with locational flexibility, and investors. These traits include clean air and water; liveable, walkable neighbourhoods; outstanding natural areas; a high degree of access to outdoor recreation; high quality transportation infrastructure; strong public health and education systems; a favourable time zone; strong legal systems; and a diverse, tolerant society.

As Downtown Vancouver continues to attract a large share of regional office, destination retail, cultural facilities, and hotels, demand for service-commercial and light industrial support businesses, such as printing, repair, laundry, couriers, custodial services, construction and renovation will continue to rise.

Vancouver is also anticipated to continue to see rapid population growth and significant increases in housing in the districts flanking the Flats. More than 50,000 additional residents are anticipated within a 10-minute walking radius of the Flats in the next 25 years. This will be the impact of high density residential to the west, mixed-use developments to the north, and increased residential and commercial density to the east and south. This housing increase will continue to drive demand for service-commercial and retail supports (e.g. home improvement, furniture, auto repair, and food retail).

Beyond the increasing need for 'traditional' light industrial and service-commercial space in Vancouver, there is a growing need for startup space and manufacturing facilities for industrial innovators. These include artisanal manufacturers that are doing small-batch production, clean technology startups that need space to prototype, and design and development firms such as those in biosciences, product design, and advanced manufacturing.

Vancouver has been rated as Canada's number one startup ecosystem by Startup Genome in 2016—15th in the world, and while the city has a growing number of technology and innovation centric districts, including Yaletown, Gastown, and Mount Pleasant, these districts primarily support office-based technology and innovation firms. Industrial innovation is also plentiful in the region, but the spaces to support these ventures are diminishing.

Housing challenges and high land values have created pressure for policy makers to convert more employment land to residential use, resulting in the displacement of startups from industrial areas.

> Traditionally, inner city industrial districts have been the places where startups could find cheap space to experiment and develop new products. As demand for employment space grows and the supply of industrial land continues to deplete, these fledgling ventures are some of the most vulnerable to displacement, and yet of huge huge economic importance for the future of the city and the region.

Figure 3 **INNOVATION DISTRICTS ACROSS VANCOUVER'S CORE**
Innovation-driven companies of all shapes and sizes are choosing Vancouver, typically clustering in the horseshoe of employment districts surrounding False Creek. Each district appeals to a unique segment of Vancouver's innovation community. The Flats plays a crucial role as a landing pad for space-intensive, loud, and messy startups.

GLOBAL ECONOMIC CONTEXT

Cities around the globe, including Barcelona, Berlin, London, Montreal, Boston, and Toronto, are working to establish "innovation districts"—dense employment districts that merge the innovation and employment potential of research-oriented anchor institutions, high-growth firms, and tech and creative start-ups. These districts are not built according to cookie cutter formats; rather, they tend to be unique in size and type and grow out of the particular combination of economic strengths found in each location.

According to the Brookings institute, the challenge for each district is to "identify and marshal resources in a deliberate and customized way to capitalize on advantages and realize the promise of productive, inclusive and sustainable growth". Increasingly, success in creating innovation districts relies on creating well-designed, amenity-rich commercial environments. True to Vancouver's experience, building great places is seen as the most effective form of economic development for stimulating and supporting innovation.

The innovation district approach has been gaining popularity for its effectiveness in helping facilitate the creation and commercialization of new ideas in existing business clusters which, in turn, generates new high-paying and high-value jobs. It can also help connect disadvantaged populations to employment in emerging high-growth sectors.

While there is a lot of attention on the innovation economy both globally and locally, attention must also be paid to Vancouver's traditional economic base. While the innovation economy boasts high growth potential, the region still relies heavily on jobs in light manufacturing, transportation, and warehousing/distribution.

This tension between pouring resources into the

innovation economy and working to protect the industrial economic base is not unique to Vancouver. Alongside the global movement to focus on the innovation economy, there is growing concern in many cities about the loss of industrial space and the effect it is having on urban economies. Cities such as London, Brussels, San Francisco, and New York are all looking for ways to better integrate light industrial spaces into their increasingly dense urban fabrics.

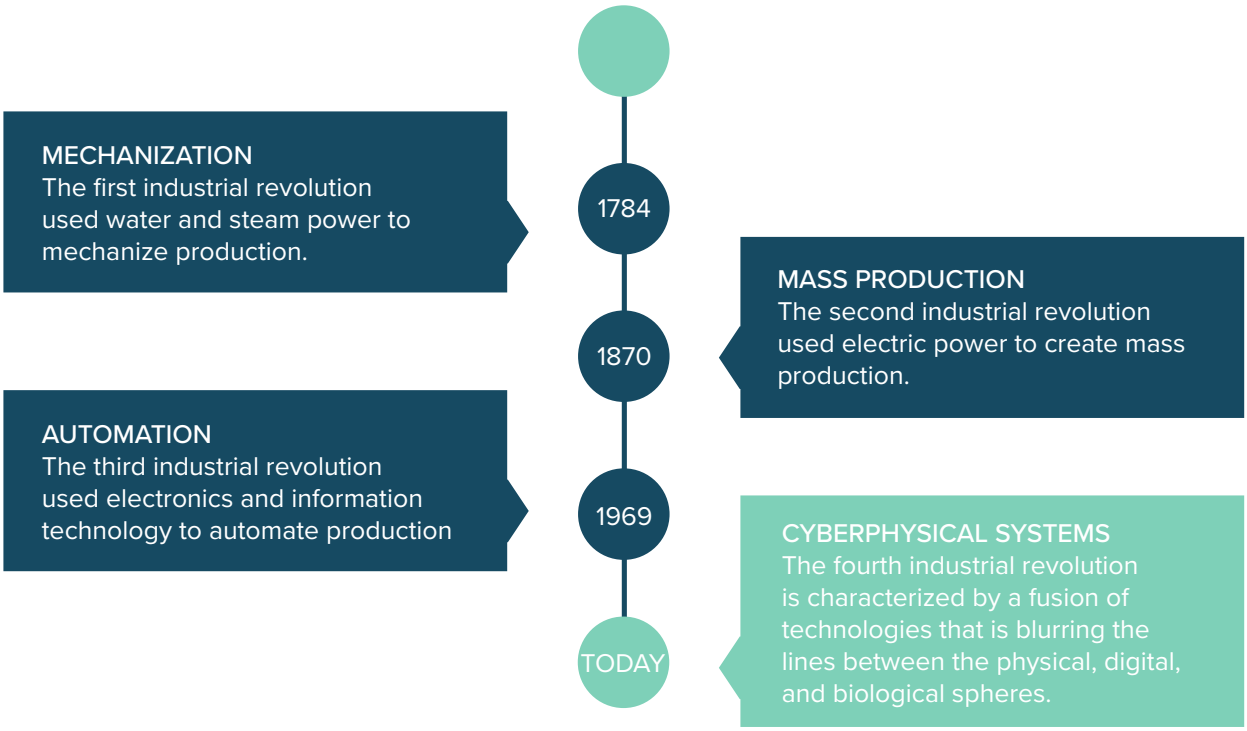
Supporting innovation does not have to come at the expense of the less glamorous but equally economically important sectors. In fact, both the innovation economy and the light industrial base in Vancouver are looking for increasingly similar types of space at affordable rates in order to survive.

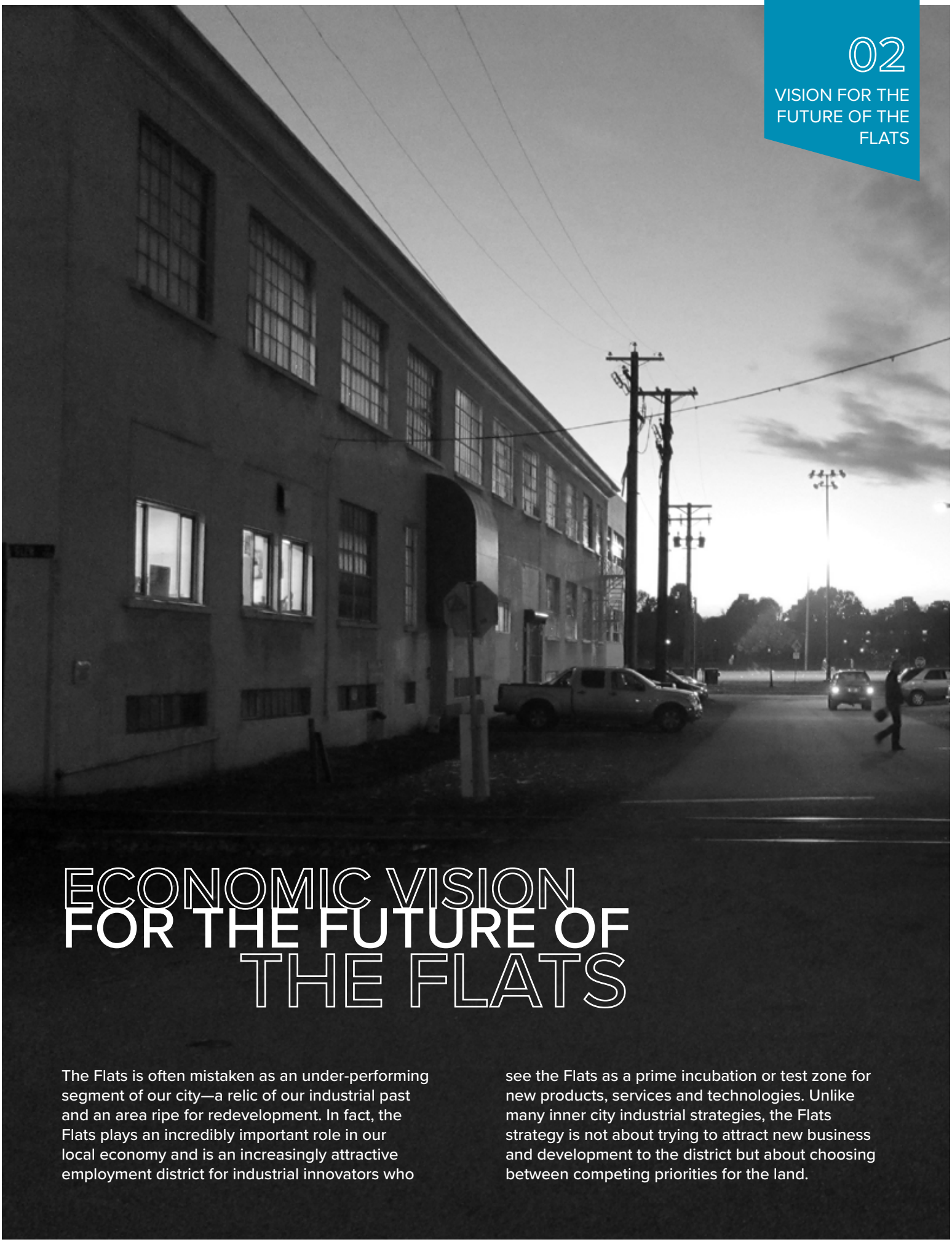
Many of the most exciting advances in the innovation economy are being developed in small to mid-size industrial spaces. These include entrepreneurial ventures that are developing smart city infrastructure and clean technologies, wearable devices to augment healthcare, advanced manufacturing techniques to eliminate waste from production, and agri-tech solutions to deliver healthy low-cost food to urban dwellers.

The World Economic Forum suggests that a 4th industrial revolution is underway, characterized by a fusion of technologies that are blurring the lines between physical, digital, and biological spheres. This type of innovation is physical in nature and thereby often requires industrial space, not only for manufacturing, but also prototyping, testing, and R&D. Because the 4th industrial revolution blends technology, biology, and manufacturing, firms operating in this space require access to a highly educated workforce, and locating in urban areas allows for a diverse pool of employees as well as customers.

The Flats presents a unique opportunity in the global context to demonstrate how an innovation district approach can be applied to an inner city industrial district, marrying tech-forward startups with traditional manufacturing and distribution. One space in which tech and traditional manufacturing are already merging is in the field of 3D printing.

According to Wohlers Associates, worldwide revenues in the 3D printing industry alone is expected to grow from $3.07 billion in 2013 to nearly $13 billion in 2018 and more than $21 billion by 2020.





ECONOMIC VISION FOR THE FUTURE OF THE FLATS

The Flats is often mistaken as an under-performing segment of our city—a relic of our industrial past and an area ripe for redevelopment. In fact, the Flats plays an incredibly important role in our local economy and is an increasingly attractive employment district for industrial innovators who see the Flats as a prime incubation or test zone for new products, services and technologies. Unlike many inner city industrial strategies, the Flats strategy is not about trying to attract new business and development to the district but about choosing between competing priorities for the land.

DEVELOPING AN ECONOMIC DEVELOPMENT VISION FOR THE FUTURE OF THE FLATS

Over the past three years, the Vancouver Economic Commission has been engaging with a wide variety of stakeholders that have an interest in the future of the Flats, including entrepreneurs, business owners, landowners, real estate developers, planners, designers, investors, government representatives, academics, students, non-profits, and sustainable development experts.

This engagement has focused around two primary questions:

- What is the role of the Flats in Vancouver's economy—both today and in the future?
- What does sustainability mean for the Flats, as a central industrial area in a rapidly growing city?

Developing this vision for the future of the Flats included interviews with hundreds of business owners, employees, and subject-matter experts; design investigations and pilot projects with dozens of post-secondary students; topic-specific business workshops on challenges specific to urban industrial areas; and in-depth surveys and research projects on the sustainable economic development potential of the Flats.

This engagement and research process revealed four major roles for the Flats in Vancouver's economic future which are detailed in this section. They include:

1. Becoming an even more active and thriving light industrial district
2. Becoming a research and development hub for Vancouver's arts, food, health and green clusters
3. Becoming an industrial innovation district with a high degree of employment density and amenity
4. Becoming a demonstration district for how central industrial areas can become agents of sustainability and resilience for cities

The Flats is seen as a testing ground for innovative technologies, economic policies, financial tools, industrial development models, and business support programs.

300+

interviews with business owners, entrepreneurs, landowners, and subject-matter experts

120+

participants in topic-specific business workshops

50+

student projects, including research, storytelling, and design projects

150+

responses to Flats business surveys

INDUSTRY
A THRIVING LIGHT INDUSTRIAL DISTRICT

The Flats is home to more than 5000 jobs in the wholesale, manufacturing, construction, and waste management / remediation services which represents about 10% of the jobs in these sectors city-wide. It also contains a large number of warehousing and distribution businesses, accounting for one third of all businesses in the area.

This means that a large portion of the light industrial businesses in the Flats serve a "back-of-house" function for the surrounding densely populated commercial and residential districts—a function of supplying goods and services to the surrounding retail, hospitality, and office districts. Approximately 60% of businesses in the Flats view being close to downtown as important or essential for their business.

There are currently about 1,577 acres of industrial land in the entire City of Vancouver, so the Flats accounts for approximately 15% of the City's industrial land base.

The Flats is also one of the few large employment precincts in Vancouver that still caters to city-serving industrial businesses. Other industrial areas in the city include:

- Large swaths of waterfront industrial land along Burrard inlet and the Fraser river that serve primarily marine-related enterprises
- The areas west of Granville Island and south of Olympic Village which generally contain small lots and include a significant amount of retail, service, and office uses
- The South Vancouver industrial areas between Marine Drive the waterfront which includes a mix of light and heavy industrial uses
- An industrial area north of Hastings Street between Main and Victoria Drive and along Clark Drive from the waterfront to the False Creek Flats which includes an increasing number of design uses and breweries, and
- An area of light industrial and service-commercial land paralleling Grandview Highway, east of Slocan and generally bounded by Broadway on the north and Grandview Highway on the south

The Flats, therefore, not only accounts for a large share of the city's total inventory of industrial land but also a significant share of the city's total employment in city-serving industrial sectors such as transportation, light manufacturing, and local warehousing and distribution—sectors that are crucial to creating low-barrier and low-skill jobs in a city that is, some argue, increasingly at risk of becoming a resort town for the wealthy.

Not only is the industrial function of the Flats crucial to maintaining a diversity of employment opportunities in Vancouver, the "back-of-house" role that the Flats plays is critical to supporting many of our fastest growing business sectors. For instance:

- The film and tv sector is reliant on industrial space for filming and staging, but also heavily relies on industrial suppliers such as caterers, rental companies, prop makers, and contractors.
- Product design and development firms, such as architecture firms, lifesciences companies, agritech businessses, and cleantech companies, are directly reliant on light industrial space for prototyping, testing, manufacturing, and distribution, but they also rely on industrial service-providers for sourcing materials and accessing repair services.
- Local food and beverage companies, such as food trucks, juiceries, breweries, catering services and restaurants, directly require industrial space for processing, distribution and storage facilities,

15%
of industrial land left in Vancouver is in the Flats

10%
of total manufacturing, wholesale, construction, and waste management jobs in Vancouver

21%
of space in the Flats is used for warehousing purposes

25%
of space in the Flats is used for manufacturing or repair

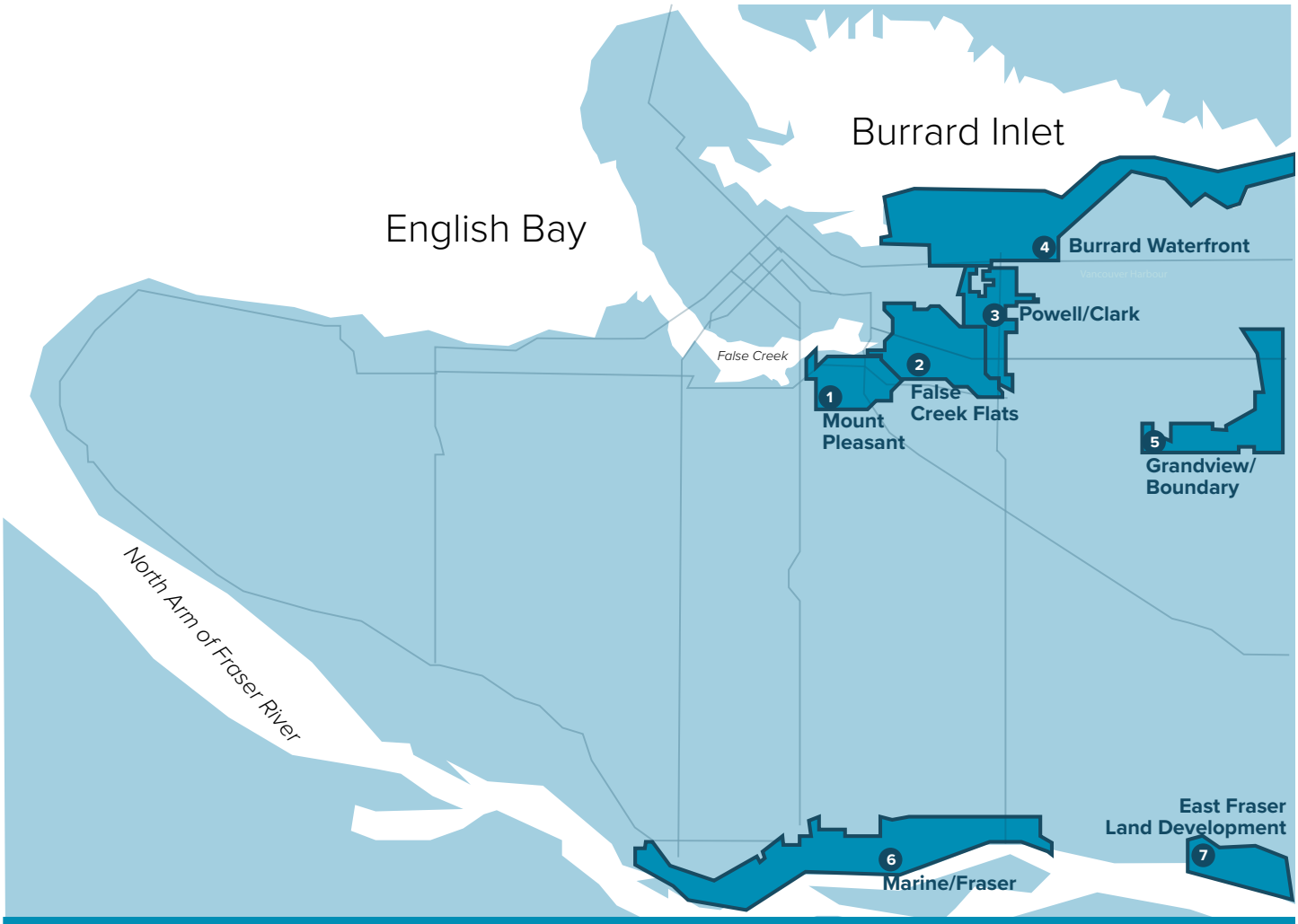


Figure 4 **INDUSTRIAL DISTRICTS IN VANCOUVER**
The Flats is one of the last remaining light industrial districts that houses back-of-house services for Vancouver. Rising rents are putting many of these uses at risk of being displaced to outside the city's limits.

but they also rely heavily on local food importers, equipment wholesalers and repair services, and industrial kitchen facilities.

Most large industrial operations that do not require proximity to the port, downtown, or a highly skilled employment base have already moved from Vancouver's central industrial districts to areas on the outskirts of the region where industrial land is cheaper and in greater supply. Those that remain are primarily small and mid-scale operations that benefit from proximity to competitors, clients and employees in the urban center.

In response to rising rents in the Flats, one local tourism company priced out a move to Richmond or Burnaby where industrial land is in greater supply. They concluded that a move from central Vancouver would result in increased costs of approximately $300,000 per annum in employee time and fuel as their vehicles would be on the road more hours.

The economic vision for a thriving industrial district includes mixed use industrial developments in which light industrial space, heavy industrial space, office and retail are combined and stacked in interesting industrial developments that are great places to work, visit, and learn about industrial processes.

CLUSTERS
STIMULATING THE GROWTH OF VANCOUVER'S ARTS, FOOD, HEALTH, AND GREEN CLUSTERS

Clusters form when complementary businesses locate in close proximity to one another, creating opportunities to share resources, information, and infrastructure, as well as provide a 'one-stop' experience for clients and suppliers.

A number of new and significant economic clusters are already emerging in the Flats. Beyond the traditional concentrations of transportation, warehousing / distribution, and service-commercial uses, business clusters are forming around the arts, culture, and design; food processing and distribution; health and lifesciences; and recycling / materials management.

Supporting further development of specialized business clusters in the Flats can reinforce the existing job base in the area while adding new uses that complement and strengthen the existing businesses. Geographic concentrations of interconnected organizations, businesses, suppliers, and institutions can increase productivity among businesses and improve the ability of smaller businesses to access larger markets.

The owner of one design and production studio in the Flats outlined the benefits of locating in an area in which a design cluster is forming by explaining how his entire supply chain exists within a ten minute walk, including a laser cutting shop, plastics and metal wholesalers, printers, and paper suppliers. This proximity is critical to the shop's productivity as they have many interactions with these suppliers each week.

Enhancing existing and emerging business clusters in the Flats means helping these clusters continue to grow in place and gain notoriety within the district, while simultaneously improving the conditions for complementary businesses to (co)locate in the area.

ARTS, CULTURE + DESIGN CLUSTER

Approximately 19% of businesses in the Flats identify themselves as part of an arts, culture and design cluster. These include businesses in arts production, theatre, dance, opera, set production, festivals, film, design, exhibitions, galleries, and special events, all of which are supported by the service and production spaces in the Flats.

Although arts and culture uses do not occupy a substantial land area in the Flats, the maintenance of the existing arts spaces in the Flats is critical to the regional arts and culture cluster. A single building at 1000 Parker Street, for example, provides rental studio space to more than 100 artists, designers, and makers. This high concentration of artists and designers not only draws attention to the area during big events such as the Eastside Culture Crawl, it also helps draw suppliers to the area, ensuring operational efficiency within the cluster.

The addition of the new Emily Carr facility on Great Northern Way creates the prospect of an even greater concentration of arts and culture businesses and organizations in the Flats. This facility is already attracting galleries and art supply retail to the area.

> The community's vision for the arts, culture and design cluster in the Flats includes an enhanced public presence of the arts, improved access to tools, space, training and other resources, and a critical mass of connected suppliers, makers, designers, artists, and storage spaces.

LOCAL FOOD CLUSTER

There are more than 70 food-related enterprises in the Flats that play a vital role Vancouver's food system. These include more than a dozen longstanding food distribution facilities, a number of small locally-oriented food processing operations, including craft breweries, bakeries, and caterers, and some significant food-related social enterprises, such as the Greater Vancouver Food Bank and Sole Food Street Farms.

The City of Vancouver has committed to landing a centre for food excellence in the Flats which has been envisioned as a single facility that serves food-related non-profits, startups, and the needs of the surrounding residential and working community.

> The community's vision for the food cluster in the Flats includes an expanded produce row, state-of the-art facilities for incubating agritech and food processing startups, a central food hub for food-related non-profits, startups, and services; and shared digital and physical infrastructure for helping Flats businesses access local farmers and share spaces for food growing, sorting, storage, processing, selling, and waste processing.

PRODUCE ROW
VANCOUVER'S LARGEST AND MOST DIVERSE FOOD DISTRIBUTION CLUSTER

The Produce Row food distribution cluster in the Flats warrants special attention. While many of the larger distribution operations that once occupied the Flats have moved to parts of the region that offer lower rents and larger building footprints, the businesses of Produce Row have opted to grow in place, protecting the delicate balance of competition, co-operation, and proximity to clients and to each other that is fundamental to their success.

Produce Row is a 40+ year old industrial business cluster of food distributors, wholesalers and food processors on and around Malkin Avenue. In its current formation, it is comprised of 14 wholesalers, processors, and distributors spanning produce, dry goods, and meats. Businesses in the cluster rely on each other to fill orders and build a critical mass of clients by providing a "one stop shop" experience for the independent grocers, restaurants, and food processors they supply.

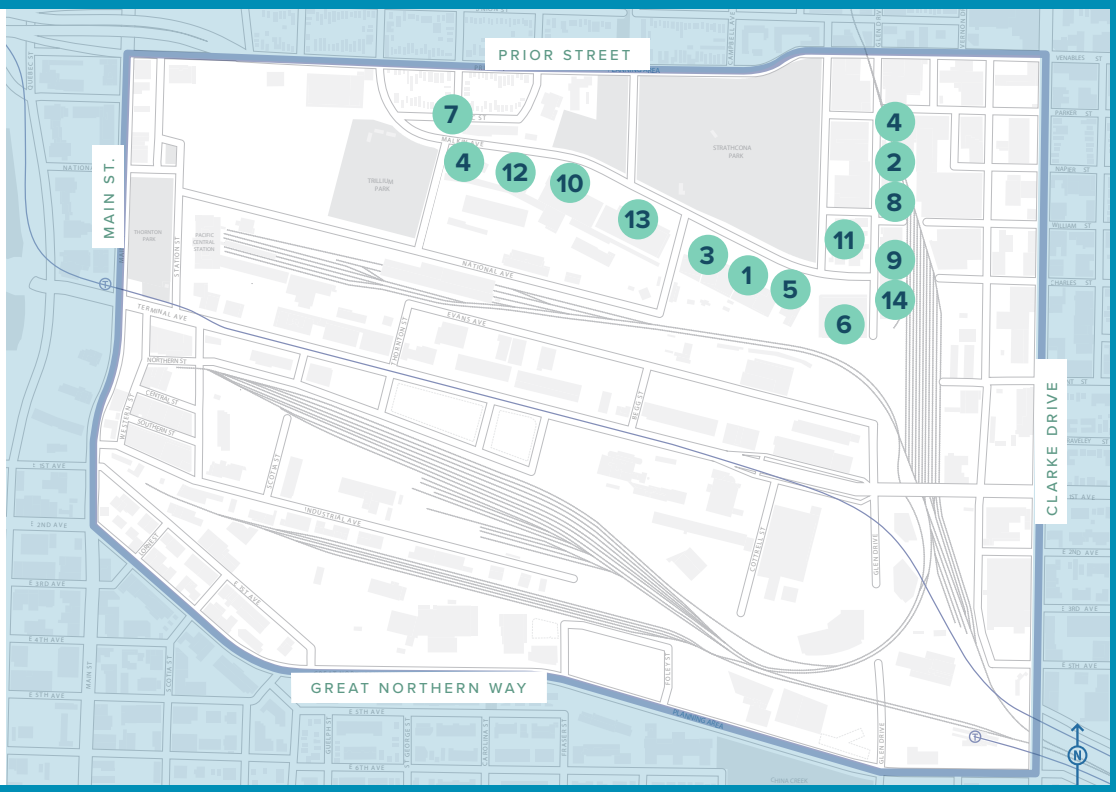
Collectively, Produce Row employs more than 1000 people, many in low-barrier jobs that allow unskilled or non-English speaking citizens to enter the workforce. The cluster moves $700 million worth of goods in and out of Vancouver and Western Canada annually which translates to $1.2 billion in retail sales. Approximately $125 million of the produce supplied to Produce Row is from local farmers. To put this in perspective, the Farmers Markets generated $8.1 million in sales in 2014.

While 38% of goods and services procured by Produce Row businesses are purchased within BC, about 79% of products are sold within BC. Primary customers include local supermarkets such as Kin's Farm Market, T & T Supermarket and the Granville Island Public Market; food distributors such as Emerald Earth Foods which delivers fruit and vegetables to 80 restaurants in the North Shore; and local food processors, including those making juices, sauces, and baked goods, among others.

Changes to the road network connecting Produce Row to the rest of the city have raised concern about the continued viability of Produce Row businesses throughout these shifts. Protecting and enhancing this important food distribution cluster is of utmost importance in the Flats. The economic vision for Produce Row includes expanded food distribution operations in the area, multi-story facilities to accomodate increased demand, and the addition of other types of complementary food businesses to the cluster.

Produce Row
List of Businesses

1. Can Am Produce
2. Chong Loong Produce
3. Discovery Organics
4. Faxio Foods (2 locations)
5. Fresh Direct Produce
6. FreshPoint Produce
7. North American Produce Sales
8. Pacific Fresh Produce
9. Pacin Enterprises
10. Produce Terminal
11. Total Fresh Produce
12. Trimpac Sysco Fine Meats
13. Van Whole Produce
14. W.K. Produce



HEALTH CLUSTER

The development of a major new hospital in the Flats will draw doctors' offices, diagnostic companies, health-oriented retail, and clinics, among other medical and health-related uses to the area. The health campus orientation proposed for the new St. Paul's hospital development, combined with the low-density industrial environment of the Flats, are likely attract a much wider array of complementary health uses, including research institutes, health-related non-profits, biotech firms, medical device manufacturers, and educational facilities.

A number of existing health and lifesciences companies operate in the Flats today, from the well-established Stemcell Technologies to the early-stage startups housed in the BC Tech Innovation Hub on Great Northern way, such as Phemi Systems and Head Check Health. These organizations are well-poised to take advantage of proximity to and relationships with two major health facilities—the Vancouver General Hospital which is set to be connected to Great Northern Way by rapid transit in the future, and the new St. Paul's hospital planned for the northeast corner of the Flats.

The community's economic vision for the health cluster in the Flats includes a district that demonstrates innovation in accessibility and designing healing environments, a place where health startups work directly with health professionals on the new hospital campus to develop and test innovative solutions to tough healthcare challenges, and a health campus that prioritizes local purchasing and hiring, creating employment opportunities for surrounding residents.

GREEN ECONOMY CLUSTER

Vancouver has a well-established "green" brand—a brand that has been valued at over $31 billion dollars as the result of large political and community commitments to environmental sustainability.

The Flats plays a crucial role in Vancouver's green economy. It is home to a number of well-established recycling and materials management businesses that serve the downtown and dense residential districts in Vancouver's core; it is an attractive destination for budding cleantech companies that need cheap industrial space to prototype; and it is home to dozens of business leaders that are taking a stance on environmental issues.

There is also a new district energy facility under consideration for the Flats. This new facility would replace existing central steam heat infrastructure in downtown. The possibility has been raised that this new facility could be the anchor for a cluster of enterprises or researchers in the field of clean, renewable energy.

A focus on renewable energy, green infrastructure, materials innovation, and clean technology can also generate significant cost-saving opportunities for industrial businesses. These include opportunities for sharing excess heat or capturing waste energy, facilitating greywater treatment and re-use, and generating waste-to-resource partnerships. These "industrial symbiosis" approaches can reduce operational costs for all businesses involved while increasing building and business resilience and helping commercialize new clean technologies.

The economic vision for continued growth of the green economy cluster in the Flats includes colocation hubs for various green economy subsectors such as a hydrogen hub or smart logistics demonstration center. It also includes the integration of cutting-edge sustainability approaches into public spaces, infrastructure, and buildings.

INNOVATION
A 24-HOUR INDUSTRIAL INNOVATION DISTRICT

The Flats is a regional employment destination. Municipal policy, along with physical features such as rail yards, have helped secure space in the Flats for industrial employment uses to date. Although the Flats is already a very functional light industrial area, pressure to accomodate more jobs within the same amount of land is mounting in Vancouver.

As a centrally located industrial area, the Flats is especially attractive for job densification. It is already surrounded by relatively dense residential development, and by 2041, it is estimated that there will be 90,000 residents living within a 10 minute walk of the Flats and 500,000 residents within a 10 minute walking and transit radius.

With a total land area of about 450 acres (including roads), the overall average employment density in the Flats is 17.8 jobs per acre—or 21.8 jobs per acre if you look only at the land area contained in lots. This is a relatively low employment density, reflecting the land-extensive nature of many of the uses.

Jobs in the Flats are expected to triple in the next 30 years from under 10,000 in 2017 to more than 30,000 by 2047, bringing employment density up drastically.

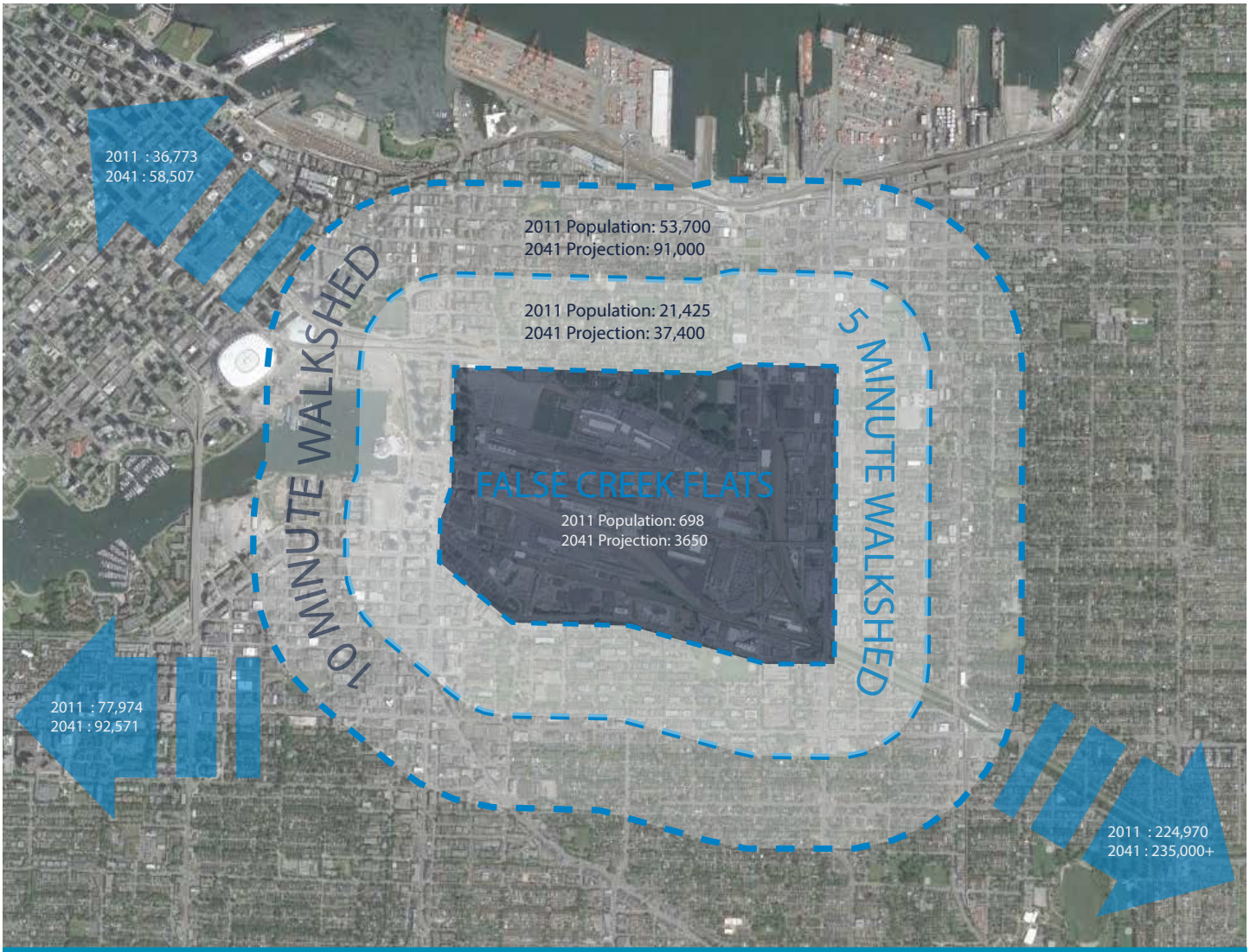


Figure 5 **RESIDENTIAL DENSITY IN THE WALK-SHED OF THE FLATS**
There are already more than 75,000 people living within a 10 minute walk of the Flats. By 2041, approximately 500,000 people will live within 10 minutes walk of the Flats or transit serving the Flats.

This job growth in the Flats will be driven in part by new institutions. For instance, the new St. Paul's development is expected to bring 10,000 new jobs to the Flats.

Employment in urban manufacturing, although niche, is also expected to continue to rise. Between 2010 and 2012, the US added 400,000 new manufacturing jobs, 98% of which were small, boutique urban operations. Similar trends are being seen in Canada and across the globe. Firms that lie at the intersection of technology and manufacturing, are choosing to locate in urban areas where access to a highly educated workforce and a diverse pool of employees and customers is possible.

In order to accomodate this significant increase in jobs, the Flats local area plan seeks to improve linkages to transit and nearby residential districts to support retail, restaurants, and other amenities for the area's workers. This focus on connections will not only ensure people can bike, walk, and transit to work, it will also ensure amenities in the area are supported by dense residential districts which create around-the-clock demand for services.

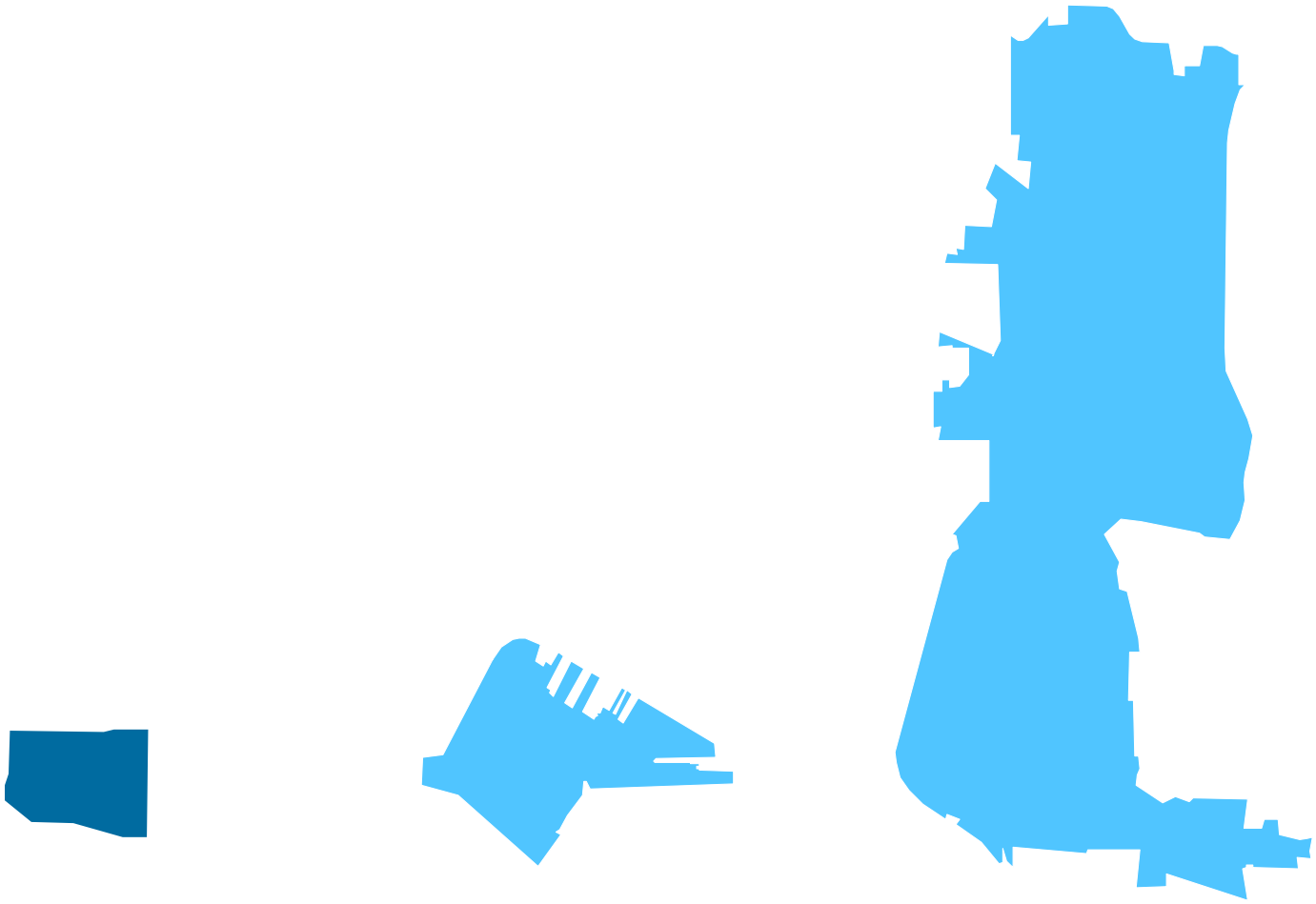
Most large scale urban planning and economic development initiatives have identified the value of mixed-use development, combining employment space, shopping, eating/drinking, and housing, to offer a more vibrant working environment that attracts a diversity of employers. Although this strategy focuses on creating and maintaining employment opportunities in the Flats, small pockets of land in the Flats are also conducive to adding residential to the mix.

The key in the Flats is to find ways to allow in a controlled fashion the entry of residential uses that enhance the potential for lively innovation districts but do not detract from the viability of employment uses. There are a few ways to ensure residential development does not limit the capacity and affordability of the area for employment uses.

For one, residential use cannot be allowed to be the only or primary use on sites as this would price other uses out of the market. Subsequently, market condominium development would also need to be prohibited, as this will generate too much pressure on land values and risk creating a resident population that could be dissatisfied with industrial neighbours.

That said, rental housing could be introduced in the area without having a negative impact on employment capacity if structured along these lines:

- Good locations are identified for small concentrations of retail, service, and amenity uses that will help to create a sense of place and residential is considered in these limited zones only;
- Residential and additional retail space is allowed only as bonus floor space on sites that achieve the maximum FSR in employment use in locations where higher density is suitable;
- Extra density is used to support the provision of economic amenities for the district such as low-cost startup space, training and mentorship programs, or common facilities that could be used by a variety of entrepreneurs or artists; and
- Residential is limited to rental units, with a focus on creating residential units that serve the middle-income employment base of the Flats.



FALSE CREEK FLATS	BOSTON INNOVATION DISTRICT	RESEARCH TRIANGLE PARK, NC
470 acres	1,000 acres	7,000 acres
3,900 residential units (estimated in plan)	12,000 residential units (estimated in plan)	1,400 residential units (called for in plan)
8.3 units per acre	12 units per acre	0.2 units per acre

Figure 6 **RESIDENTIAL DENSITY PROPOSED WITHIN URBAN INNOVATION DISTRICTS**
Even with a focus on employment density in the Flats as opposed to housing, the local area plan for the Flats is proposing significantly more residential density in the district than in similarly employment and innovation serving districts in other cities.

Five types of space are being most sought after in the Flats by the business community with varying degrees of compatibility to residential uses. These are:

1. R&D campuses or head office spaces. Businesses seeking these spaces are looking for large (1 to 4 acre) undeveloped sites that can house build-to-suit facilities for 300+ employees. Typically, these developments resemble office buildings. The Stemcell Technologies R&D headquarters and the MEC head office are good examples of this type of space in the Flats.

2. Small manufacturing, prototyping, and distribution spaces. Businesses seeking these spaces are typically looking to lease light industrial spaces between 2000 and 8000 sq. ft. at affordable rates ($12-$18/sq.ft. gross rent). Examples include cleantech companies looking for protoyping space, artisinal manufacturers, and food processing companies.

3. Mid-scale processing and distribution facilities. Businesses seeking these spaces are typically looking to buy or lease spaces that are between 50,000 and 100,000 sq. ft., where 90% is industrial warehousing space. Long lease terms are preferred as these facilities often require high levels of customization. Examples include coffee roasters, waste processing facilities, and food distributors.

4. Industrial commercialization spaces. Businesses seeking these spaces are typically looking to take out a master lease on a 10,000 - 20,000 sq. ft. of light industrial space that can accomodate a variety of subtenants. They typically need truck access and about 15% office space. Examples include commissary kitchens and maker spaces.

5. Showcasing, demonstration, and amenity spaces. Businesses seeking these spaces are typically looking for 300-500sq. ft. of indoor or outdoor space that is accessible to the public for showcasing a new product, service, or creation. Examples include green building and cleantech companies that need spaces to showcase new products and arts or organizations that need space to interact with the public.

While some of these uses, such as mid-scale processing and distribution facilities, are less compatible with residential or office uses, most of these spatial typologies are fairly compatible with each other as well as with rental residential, office, and retail uses. These compatible uses should be concentrated around transit nodes to maximize employment and amenity close to transit.

The Flats has also been described by community members as a network of orphan spaces, referring to the large quantity of underutilized sites throughout the Flats, such as residual spaces around rail lines, unprogrammed industrial rooftops, and surface parking lots that are used at limited times of day. These present enormous opportunities for accomodating temporary economic activity.

The economic vision for an industrial innovation district in the Flats includes innovative forms of mixed use developments that combine industrial and non-industrial uses, unique parking solutions that require less land and can be utilized around the clock for a diversity of uses, and the activation of underutilized spaces for temporary or seasonal economic activity such as food trucks, events, and arts production.

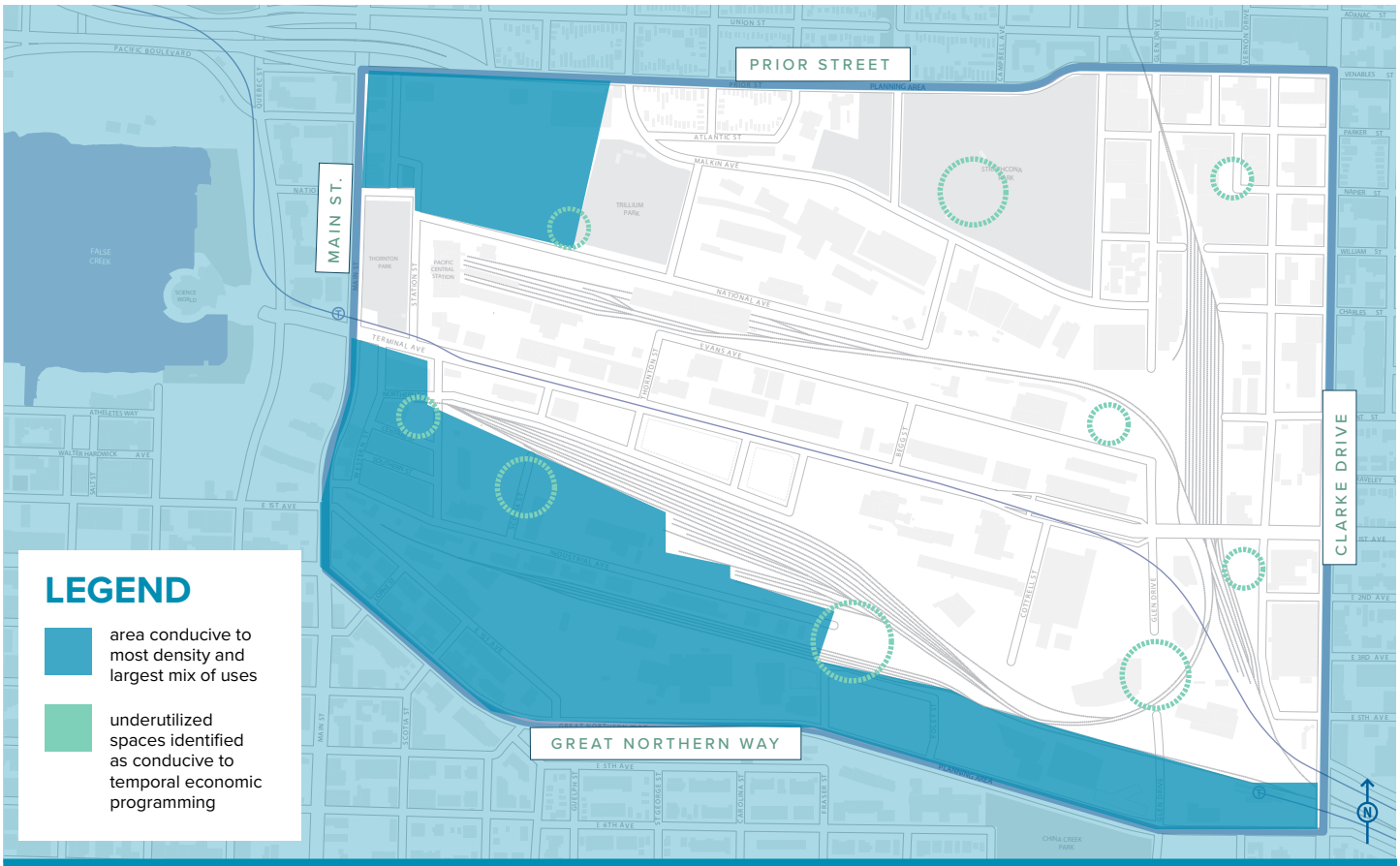


Figure 7 **INDUSTRIAL INTENSIFICATION IN THE FLATS**
The areas outlined above have been identified by the community as focal areas for industrial intensification and the densification of jobs. It should be noted that densification of jobs and capitalizing on underutilized spaces for temporary economic activity is recommended throughout the Flats.

SMART + GREEN
A DEMONSTRATION DISTRICT SHOWCASING INDUSTRIAL SUSTAINABILITY + RESILIENCE

The Flats is rapidly becoming a focal point for demonstrating how central industrial districts can become engines of sustainability and innovation for the cities they serve--districts that showcase and support innovation, feature green buildings and infrastructure, support the shift to a circular economy, and pioneer new models for efficiently moving goods and people throughout the city.

Throughout engagement with the business community, the Flats was envisioned as an important engine for economic sustainability in Vancouver. This included being a focal point for circular economy activity, serving as a demonstration district for smart logistics and smart city solutions, and becoming a testing ground for district-scale approaches to renewable energy and green infrastructure.

FOCAL POINT FOR CIRCULAR ECONOMY ACTIVITY

The Circular Economy refers to an economic model designed to keep materials in circulation and out of the landfill. Unlike the status quo "take-make-waste" model of producing and consuming, it takes after natural ecosystems where energy is renewable, materials are infinitely recovered and reused, and business and consumers work together to maintain and strengthen natural capital.

The shift to a more circular economy is largely driven by increased global demand for goods and services and a finite supply of resources which will lead to scarcity and commodity price increases. Leadership on circular economy initiatives therefore tends to come from designers, manufacturers, wholesalers, and the contractors—sectors where material costs have a huge influence on the bottom line. Industrial businesses in the Flats are no exception.

More and more companies are seeking opportunities to take advantage of the transition to a circular economy, which offers opportunities for innovation and export of new production techniques and business models, while reducing dependency on imports. The economic value to be generated in shifting to a more circular economy is significant. For instance, Amsterdam has estimated that transitioning to a more circular economic model in their construction sector alone will result in upwards of 85M € of value creation and more than 700 new jobs.

The Green Jobs Roadmap produced by the VEC projected that Materials Management and Recycling jobs could grow by as much as 50% between 2013 and 2020. The Flats is already home to more than 25 "re" businesses, including repair shops, resellers, recyclers, and remanufacturers. Establishing more of this infrastructure close to the city's core will be critical for enabling the transition to a more circular economy.

> The economic vision for the circular economy in the Flats includes an upcycling center of warehousing, storage, design and staging spaces for material recovery, deconstruction, remanufacturing, upcycling and resale. It also includes showcasing what can be done with reclaimed materials through public art, infrastructure, and facilities. Finally, the Flats has been envisioned as a district dedicated to low-barrier job development in material recovery, processing, repair, and reuse.

DEMONSTRATION DISTRICT FOR SMART LOGISTICS AND SMART CITY SOLUTIONS

As a primary distribution hub for the city, the Flats has the potential to become a powerful centre for smart logistics, improving the performance of entire industry clusters and acting as a hub for the clean distribution of goods and services.

Smart Logistics is a technology-driven approach to the distribution of goods and services that seeks to provide clean, efficient, and adaptive solutions for efficient distrbution. It promotes connectedness both internally, such as streamlining existing delivery routes, and externally, such as vehicle sharing between businesses.

Approximately 44% of the 30,000+ tonnes of CO2 emissions generated by business operations in the Flats are from transportation. Given the return-to-base nature of most of the fleets in the area, there is a unique opportunity for the adoption of alternative fuels and electric vehicles in a district where infrastructure could be centralized and shared by many companies.

The Flats is home to more than 800 commercial vehicles, including 346 cars and SUVs, 128 large trucks, 102 small trucks, 85 cargo vans, 64 buses, 54 passenger vans and 13 forklifts. This presents ample opportunity for electrification and the adoption of alternative fuels.

Furthermore, the Flats already serves as a launching ground for local tourism companies and a focal area for automotive sales, repair, and maintenance. In the Flats today, there are more than 30 businesses in the

automotive sales and services sectors alone.

Smart city systems typically refer to sensor and response technologies that improve the efficiency of urban life, but there are a number of other innovations contributing to the development of smarter, efficient, and more connected cities. These include social business platforms and digital citizenship tools, as well as physical technologies, goods, or services that outperform the standard.

With millions of dollars of infrastructure planned for the Flats in the coming years, including seismic upgrades to road infrastructure, rail overpasses, bike lanes, and district energy infrastructure, there will be ample opportunity to demonstrate new technologies through public infrastructure.

The economic vision for the Flats as a demonstration district for smart city technologies include widespread adoption of alternative fuels and electric vehicles as well as other technologies for improving the efficiency of logistics operations. It also includes widespread demonstration of smart street and lighting solutions, renewable energy generation and storage, and other clean technologies relevant to industrial districts.

SHOWCASING DISTRICT-SCALE APPROACHES TO RENEWABLE ENERGY + GREEN INFRASTRUCTURE

The Flats houses a significant concentration of aging industrial buildings, surface parking lots, large heating and cooling systems, and large, sunny roofs. This creates ample opportunity for green retrofits, renewable energy projects, and green infrastructure development.

Green retrofits are sustainability-driven building upgrades that improve operational and energy efficiency and create high-performance buildings. Pursuing greater energy efficiency not only reduces the environmental footprint of a building, but can also reduce long-term operational costs for tenants. These retrofits often include the integration of clean technology or renewable energy—power that is generated from naturally replenished resources such as sunlight, wind, or geothermal sources.

According to Light House Sustainable Building Centre, over half of the Flats' 325 buildings are over 50 years old, which means they are due for upgrading old energy, waste, and ventilation systems with newer, more efficient, and more sustainable technologies. Climate Smart estimates businesses in the Flats are also directly responsible for at least 36,000 tonnes of CO_2 emissions annually and indirectly responsible for more than 60,000 tonnes of CO_2 annually.

Beyond individual business opportunities for improved efficiency and cost savings, there is an opportunity for businesses to work together in the Flats to improve the biodiversity, resilience, and health of the district which has been demonstrated to affect the health and productivity of employees.

Initiatives in this realm could be linked to resilience and business continuity training and supported by community foundations and environmental non-profits. For instance, MEC has taken up the challenge of becoming Salmon Safe certified on their site, but the impact of this leadership will be limited if it is not complemented by other biodiversity and green infrastructure initiatives in the area.

The community's economic vision for renewable energy and green retrofits in the Flats includes widespread adoption of renewable energy and building retrofits as a means of reducing operating costs and demonstrating on-site energy capture and storage throughout new and existing developments.

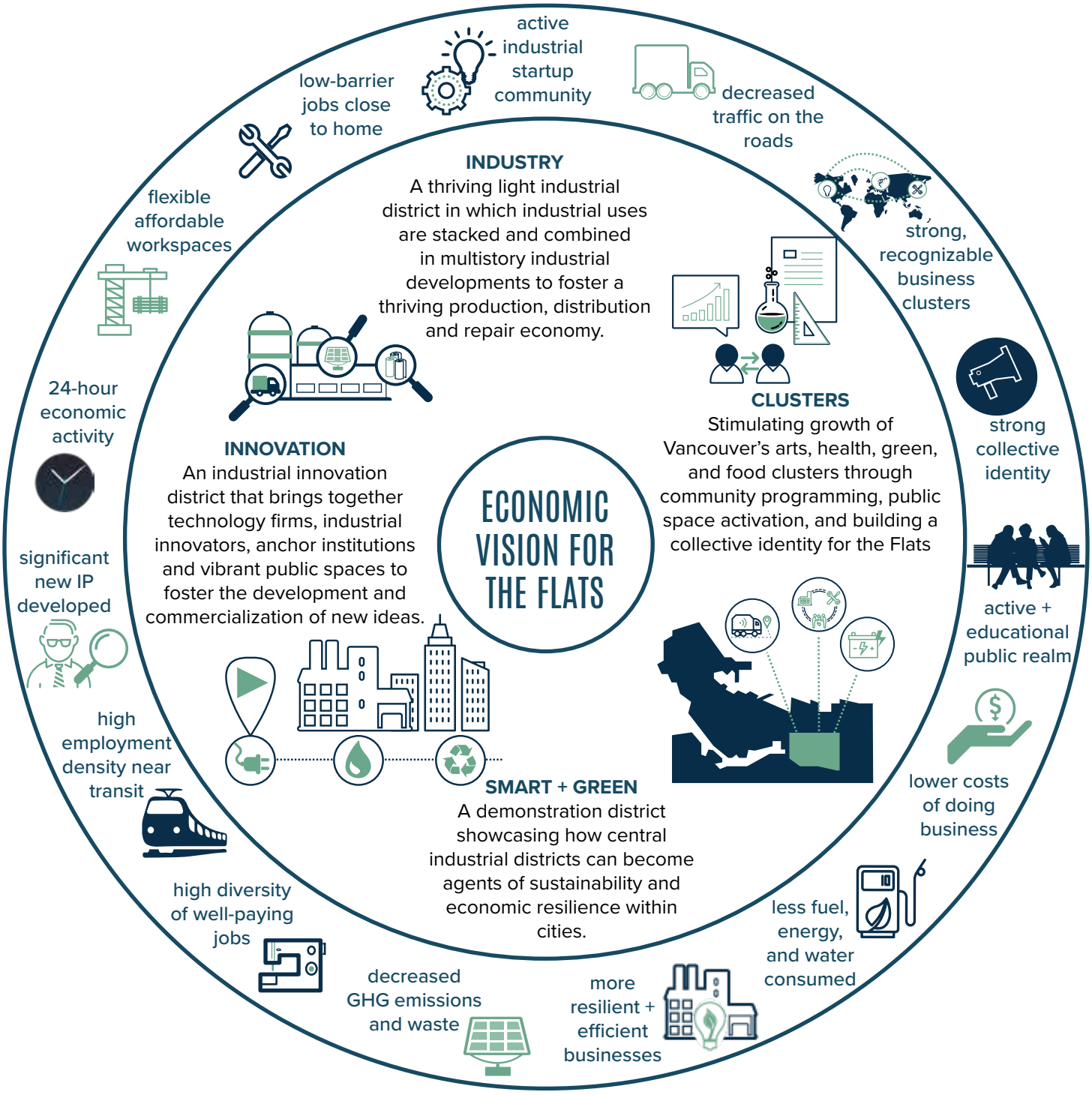


Figure 8 **SUMMARY OF THE ECONOMIC VISION FOR THE FLATS**
Extensive consultation with the business community in the Flats, as well as industry leaders and businesses seeking space in the Flats, has led to this four part vision for the economic future of the Flats.

ACHIEVING THE VISION
HOW SUCCESS WILL BE MEASURED

The industrial revolution brought with it the concept that a steady growth in revenue, output, and jobs was the key to economic prosperity, heightening the importance of the measures of GDP and employment rates. Today, the shift away from a resource economy toward an innovation-driven connection economy makes these measures less relevant. They fail to indicate resilience, impact, and idea flow, all of which are important to understanding local and regional prosperity.

The economy today also demands to be measured on a different scale. Unlike the resource economy, which is measured in terms of global resource allocation, the connection economy functions at a more local scale. It relies on localized infrastructure, access to a diversity of opportunities and ideas, and informal face-to-face interactions with peers.

The metrics presented here reflect the vision for the Flats to become a regenerative employment district for Vancouver—a district that is simultaneously industry and jobs focused, regenerative to their physical, social and economic contexts, and self-sustaining.

As with any system measurement, no one set of metrics can ever fully represent the desired system change this economic development strategy intends to achieve in the Flats. In order to collect, analyze, and understand metrics in a more nimble and efficient way, the Vancouver Economic Commission is working with Urban Logiq on a data analytics pilot project to track progress, gather more granular data on what is happening in the Flats, and better understand economic trends in the area.

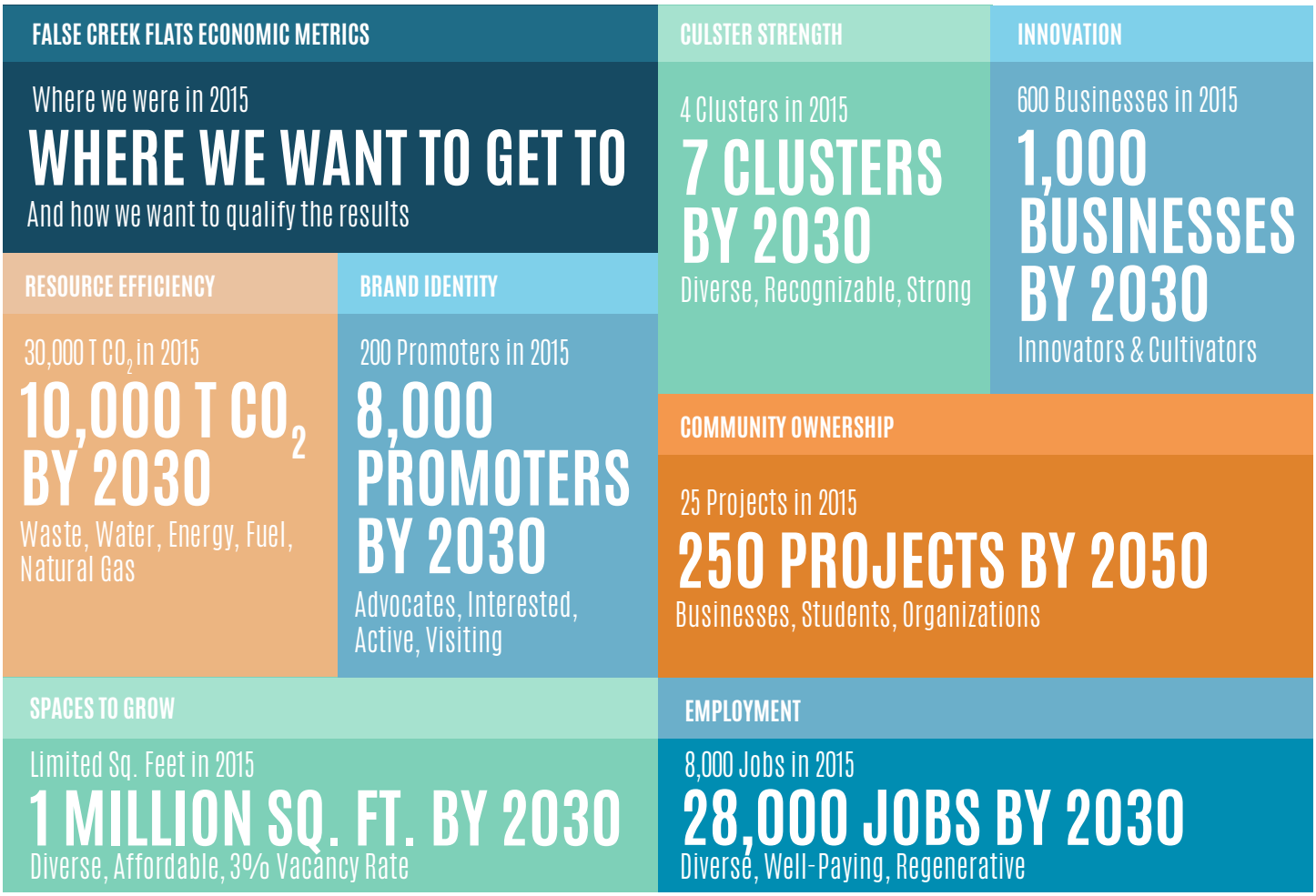
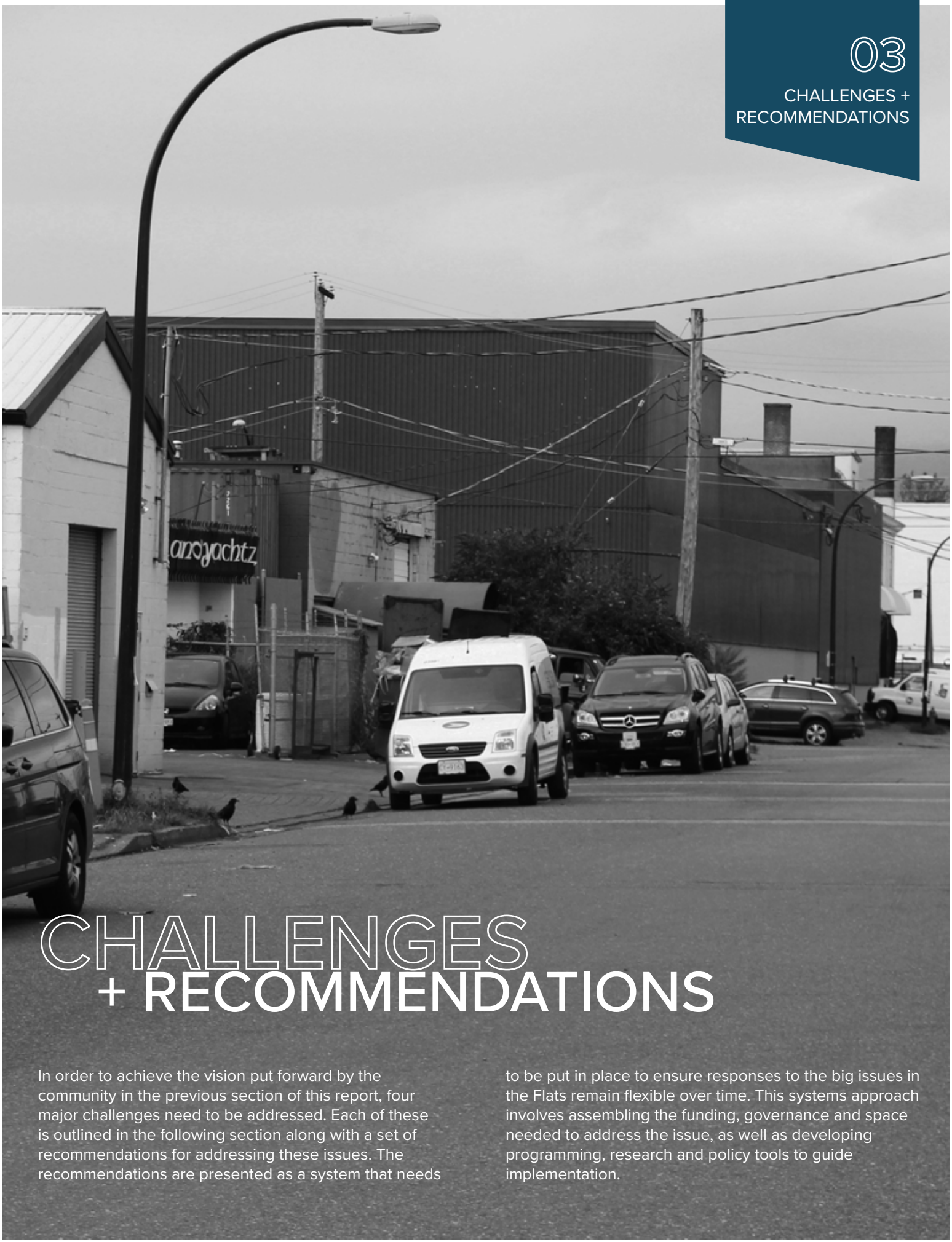


Figure 9 **ECONOMIC METRICS FOR THE FLATS**
The above metrics and targets have been set to track progress on the Flats Economic Development Strategy, with a focus on metrics that contribute to the long-term economic resilience of the Flats.



CHALLENGES + RECOMMENDATIONS

In order to achieve the vision put forward by the community in the previous section of this report, four major challenges need to be addressed. Each of these is outlined in the following section along with a set of recommendations for addressing these issues. The recommendations are presented as a system that needs to be put in place to ensure responses to the big issues in the Flats remain flexible over time. This systems approach involves assembling the funding, governance and space needed to address the issue, as well as developing programming, research and policy tools to guide implementation.

PART 1: ADDRESSING AFFORDABILITY OF INDUSTRIAL SPACE

As land values continue to rise and industrial districts continue to attract an increasing number of employment uses, the City's total capacity to accommodate light industrial and service commercial uses is shrinking. This phenomena is pushing up land values and, by extension, lease rates and property taxes. The Flats is now home to the 2nd most expensive industrial land in the city with many sites selling for $10M - $15M per acre.

Between the summer of 2015 and the summer of 2016, industrial land values in the city rose by 50 percent, a trend that is creating an affordability crisis in Vancouver's central industrial districts. The vacancy rate for industrial land in Vancouver is now hovering around 1.2%—half of what it was just two years ago. An inability to find an affordable light industrial space is forcing emerging industrial enterprises to look outside the city to get started or to forfeit their plans altogether.

Startups, however, are not the only businesses affected. In Vancouver, 70% of businesses lease or rent their operating spaces. This means that as land values climb and competition for industrial space increases, even established industrial businesses in Vancouver's core are at risk of being priced out of the market. Already, businesses holding triple net leases are feeling the crunch of increased property tax, and those with less than 5 years left on their lease are worried about being displaced if their lease rate rises alongside property values.

Lease rates in Vancouver's industrial core are now listed at a base rent of $20 / sq.ft. This means gross costs are as high as $25-$27 / sq. ft. for light industrial space. Just two years ago, base rent was listed at $8 - $10 / sq. ft., keeping gross costs around $12 - $18 / sq. ft., the level at which many light industrial businesses, including startups, are maxed out. For many, moving outside the city is not an option as proximity to their workforce, clients, and competitors is integral to their success.

Displacement of industrial uses from the city will have devastating impacts on Vancouver's economy. Many of our fastest growing sectors not only rely on industrial space to operate, but they also rely heavily on industrial suppliers. The impact of industrial displacement on the rest of Vancouver's economy could therefore raise operating costs for businesses across the city, as well as raise the cost of living for residents, as the result of it being more costly and difficult to access suppliers.

Establishing mechanisms to develop and manage more affordable industrial space is integral to supporting a diversity of employment opportunities in Vancouver. These include low-barrier jobs for populations that are struggling to get a foothold in Vancouver's economy and new jobs generated through entrepreneurship.

More than ever, Vancouver is at risk of becoming resort town. Industrial displacement from the city means a loss of middle-income jobs, including low-barrier jobs for non-English speakers, individuals with mental health issues, and other populations with employment barriers. This will exacerbate issues of economic inequality and increase reliance on social services. Industrial displacement can also result in a reduction in vibrancy, character, and gritty life of the city, including arts and cultural activities.

CHALLENGES

1. Demand for light industrial space in Vancouver is outstripping supply.
2. Land values and lease rates are climbing to levels that are unaffordable for industrial startups as well as established light industrial businesses.
3. Policy has been unsuccessful in keeping land values low through zoning alone.

2nd
most expensive industrial land in Vancouver

$15M
per acre sale prices for light industrial sites in the Flats

1.2%
vacancy rate for light industrial space in Vancouver

$25
per square foot gross rent for light industrial space

RECOMMENDATIONS

PROGRAMMING

INITIATIVE 1A

Connect businesses seeking space with one another for the purpose of fostering colocation projects and space sharing partnerships. Help simplify the process of colocation.

One way businesses are driving down the cost of rent is by sharing space with other complementary organizations. This can take the form of leasing larger older spaces that are easier to find at a lower cost and subdividing them into many smaller sub-tenant spaces, or, in some cases, finding opportunities to share tools and workshop space, working at alternate times of day or on alternate days of the week.

Taking on a master lease for a space that is bigger than needed is particularly attractive for mid-size businesses that anticipate needing more space in a couple years, and taking on a short-term sub-lease is particularly attractive for startups that cannot commit to a 5 year lease term. Connecting businesses that share similar values and are looking for complementary types of space can go a long way to fostering more of these partnerships.

Although a majority of businesses state that they are interested in colocation with others, very few manage to find the right partners without outside help. Help can take the form of throwing space-matching events, introducing businesses that share the same values and timelines for moving, and helping facilitate discussions on how to best navigate the colocation process (eg, developing tenancy contracts, navigating the permitting process, developing and maintaining shared facilities, etc.)

In addition to working with the business community, assistance also needs to be provided to the City's permitting and licensing groups to simplify the process of administering permits and licenses for businesses that are sharing a facility.

GOVERNANCE + STAFFING

INITIATIVE 1B

Establish a non-profit industrial development corporation to develop, retrofit, manage, and maintain affordable industrial space for job creators and community leaders whose space needs are not being met by the market.

In the past, Vancouver has relied on zoning to address the affordability of space in the city—limiting allowable uses on land to keep cost of land low. This approach is no longer sufficient. Land values throughout Vancouver's industrial core have skyrocketed, and, what's more, citizens are demanding active, mixed-use communities where they can, live, work, and socialize in close proximity. Government intervention, therefore, needs to change form to ensure that space needs that are not being met by the for-profit market can be delivered through other means.

Agencies already exist in Vancouver to proactively develop affordable residential and arts space, and Vancouver needs an equivalent organization that can develop affordable job space for segments of the economy that are not being served by for-profit developers—a proactive industrial development corporation that is driven by public interest as opposed to profit.

Similar organizations have been established in other North American cities with equally hot real estate markets, such as New York's Greenpoint Manufacturing and Design and San Francisco's Placemade. Development projects by these organizations are supported by municipal policy and funding aligned with the economic development needs of the city.

QUICKSTART

Complete a detailed vision, mission, business plan, viability analysis & funding/strategic partnership strategy, and action plan for the first four years of operation and present it to Council in fall 2017.

SPACE + FACILITIES

INITIATIVE 1C

Identify a portfolio of sites and buildings to develop, retrofit, manage, and maintain as affordable industrial spaces in the Flats, and establish mechanisms to secure these spaces long-term.

Designing and developing affordable light industrial spaces in Vancouver can significantly increase innovation and entrepreneurship throughout the city, acting as a support system for the development of low-barrier jobs, the green economy, arts and culture, innovation and entrepreneurship. There are a couple examples in the Flats where city intervention or city sites have been used to secure space in support of the arts, low-barrier jobs, and innovation. The Recycling Hub on Industrial Ave supports low-barrier employment and access to informal streams of income; the Arts Factory on Industrial Ave supports low-cost space for professional artists, makers, and designers; and theGenerator Program on Great Northern Way supports early-stage technology startups, many in the healthcare sector.

While these projects are a great start, they are not sufficient to meet the space needs of job creators and community leaders that are not being delivered by the market. Continued build-out of a portfolio of affordable industrial spaces is needed. This can be achieved through purchasing new sites, retrofitting buildings to densify job space on existing city properties, and redeveloping city-owned sites to accomodate a wider variety of employment spaces, including indsutrial commercialization/coworking spaces, startup spaces, and low-barrier job creating spaces.

These sites can also be used to test new forms of industrial development, including multi-story industrial and mixed-use industrial developments where higher-value uses are incorporated to cross-subsidize spaces for users that have a lower ability to pay.

POLICY

INITIATIVE 1D

Develop the regulatory framework needed to secure economic development amenities in the Flats.

The City has relied on Community Amenity Contributions from developers to help ensure that forms of housing that the market is not providing on its own get built. This has also extended to childcare spaces, where market failures have created a crisis of affordability while demand is persistently high, and to heritage buildings which have been rehabilitated through financing paid for through density bonuses.

Density Bonus policies are used to create spaces or cash in lieu for various amenities, including affordable housing, child care, and cultural facilities, among others, but these do not currently include affordable industrial work space amenities. It is suggested the development of new commercial and industrial space could be leveraged to generate dedicated affordable space or cash in lieu to secure affordable space for Economic Development Amenities (EDAs) in employment districts, such as the Flats.

Economic Development Amenities include programmable spaces concerned with building the community's employment capacity, increasing workspace affordability, and creating economic opportunities for non-profits, community co-ops, social enterprises, as well as shared infrastructure needed to support local industries and sectors, such as commissary kitchens, demonstration spaces, arts production spaces, and commercialization spaces.

QUICKSTART

Continue work with CIty Planning, Finance, Community Services, and Legal departments to explore regulatory and/or enabling tools and strategic partnership opportunities for council consideration.

RESEARCH + ADVOCACY

INITIATIVE 1E

Collect and publish annual data on emerging industrial space needs, as well as economic trends and common challenges facing industry in Vancouver.

The Vancouver Economic Commission frequently fields questions about commercial and industrial real estate from organizations that are driving job growth in our local economy. These inquiries, along with proactive engagement with the business community, provide unique insights on the future spatial needs of the Vancouver business community.

Publishing annual reports on the light industrial sectors in Vancouver will contribute to a more comprehesive understanding among policy makers and real estate professionals of the community's needs and challenges. Combined with advocacy efforts, this data can be used to help guide updates to industrial zoning schedules and land use policies. It can also be used to inform industrial developers and landowners on how to best create flexible employment spaces that not only will serve the immediate needs of Vancouver's economy, but also the needs the business community anticipates having in the future.

San Francisco's SFMade has been collecting and publishing these insights for 5 years as a tool for helping guide industrial policy development, real estate projects, and colocation initiatives. As a result, they have been awarded a number of consulting contracts with developers who are interested in ensuring new developments are meeting the current and future needs of the Bay Area business community.

QUICKSTART

Update and publish VEC industrial space needs report outlining the unmet needs of Vancouver's urban industrial operators.

FUNDING + RESOURCING

INITIATIVE 1F

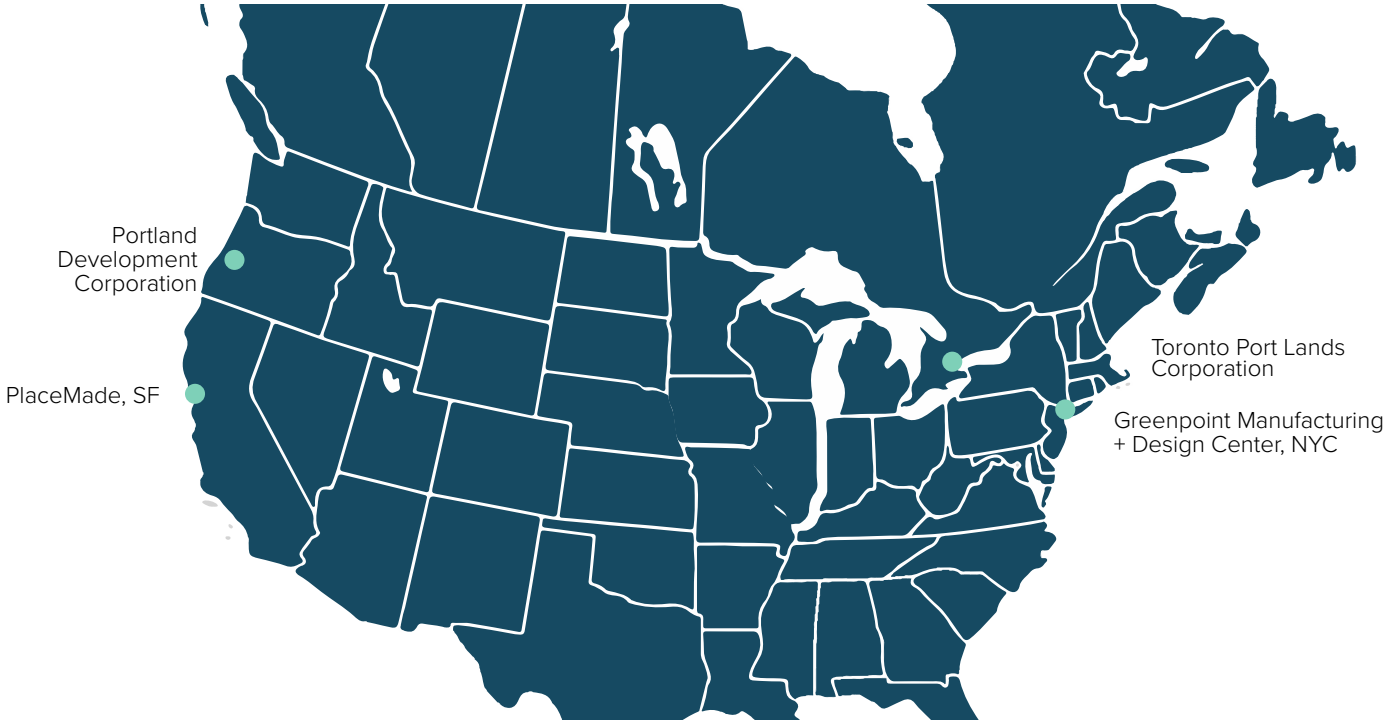
Explore developing a Flats Fund (Special Purpose Vehicle) to aggregate and deploy capital from development contributions and various levels of government for economic development amenities in the Flats.

Sources of funding for developing economic development amenities include developer contributions, government grants, community grants, and financing from various development banks, real estate investors, and impact investors. These sources, however, can take months or, in some cases, years to coordinate. Similarly, projects are not always shovel-ready at the exact time that financing and funding is secured.

In order to ensure that money collected for economic development amenities and affordable industrial spaces in the Flats is dedicated solely to those purposes, a Flats Fund needs to be created to aggregate and disseminate funds.

Creating a special purpose vehicle, such as a Flats Fund has other benefits as well. It creates an easy tool for measuring and tracking public funding that is attributed to economic development amenities in the Flats. It also creates a vehicle for collecting dividends from ongoing economic development amenity projects. For instance, if and when publicly-supported development projects begin making profits, those can be fed back into the Flats Fund for helping fund the next round of initiatives.

Dissemination of funding from this type of Fund will require project prioritization criteria based on the needs identified by the community. Projects that are proposed by non-profit developers, social enterprises, and community co-ops can then be selected for granting based on the community's evolving needs. This criteria would need to be re-evaluated every few years to ensure funding remains responsive to the changing needs of the community.



PLACEMADE, SAN FRANCISCO

Placemade is San Francisco's first and only non-profit affordable industrial real estate developer. Founded in 2013 in partnership with the City of San Francisco, PlaceMade collaborates with the public and private sectors to design, build, renovate, and rent modern, affordable industrial space for manufacturers and other related industrial users in the City.

Placemade's first big development is the Manufacturing Foundry at 150 Hooper. The project is a four-story, multi-tenant building with over 50,000 SF of manufacturing space. It was catalyzed by density bonus policy that mandated the developer to commit space to Placemade. Placemade was responsible for assembling the rest of the project financing.

GMDC, NEW YORK CITY

The Greenpoint Manufacturing and Design Center (GMDC) is the premier nonprofit industrial developer in New York City. Since its inception in 1992, GMDC has rehabilitated seven manufacturing buildings in Brooklyn for occupancy by small manufacturing enterprises, artisans and artists. GMDC currently owns and manages five of these properties.

GMDC has played a vital role in helping meet New York City's need for affordable, flexible production space for small and mid-size manufacturers. Currently, GMDC owns and manages five of these properties, which together represent more than 600,000 square feet of space. These buildings are occupied by more than 100 businesses that employ over 600 people.

Figure 10 **ADDRESSING AFFORDABILITY OF INDUSTRIAL SPACE**

Many global cities are facing similar issues with maintaining space for industrial activity as land values rise and competition for urban space increases. Both New York and San Francisco have established similar non-profit industrial development corporations linked to municipal policy to help address this issue.

PART 2: ADDRESSING BARRIERS TO INNOVATION

According to The Brookfield Institute, approximately 42% of Canadian jobs are at a high risk of being impacted by automation in the next 10-20 years. This can already being seen in Vancouver's industrial business community where companies are testing smart logistics solutions and developing personalized manufacturing processes.

Automation is just one example of the changes businesses must face. As global resources become more scarce and commodity prices climb, businesses must look for more resource-efficient ways to produce and distribute goods and services. As environmental regulations become more stringent, businesses must adapt their facilities, operations, and practices. And as consumers and employees continue to demand more from their brands and employers, businesses must learn to build social responsibility and impact into their operations.

All of these pressures are forcing businesses big and small to innovate, but transforming existing business operations or creating innovative products and services requires significant time and resources put toward research and development. It can also require new skill sets, significant client testing and business model refinement, as well as public education.

That said, many startups and SMEs in Vancouver's business community are struggling with access to the mentors, talent, investment capital, and early adopters they need to survive, thrive, and innovate. Given that 90% of businesses in Vancouver have fewer than 50 employees, this capacity can be very difficult to build in house. In fact, about 65% of businesses in the Flats have fewer than 5 employees, and only 25% have more than 50. This means many they do not have the financial runway needed to invest in significant R&D on their own.

Although substantial federal programs have been developed to help fund and support research and development activities, there are gaps that need to be filled at a local level. In particular, small and mid-size businesses that are looking to transform elements of their operations, as well as startups that fall outside traditional technology fields, are struggling to gain access to outside support, mentorship, or grant funding. This same small business community tends to have fewer connections to large R&D institutions such as hospitals and universities.

Public perception often paints established "mom and pop shops" as traditional or uninnovative, but SMEs in the Flats are taking business model innovation, new technology adoption, and 'greening' their operations extremely seriously. Driven by the need to reduce costs, engage young employees, get ahead of market shifts, reduce environmental impacts and identify new business opportunities, SMEs are actively seeking ways to innovate.

CHALLENGES

1. Global disruptions to "business as usual" are creating a need for businesses to innovate in order to survive.
2. Business transformation requires a significant investment of time, energy, skill and money that is difficult for smaller enterprises to supply in house.
3. Limited access to R&D resources such as specialized tools, equipment, demonstration spaces, and market research expertise for smaller businesses.

26%
of businesses in the Flats have fewer than 50 employees

42%
of Canadian jobs are estimated to be at risk of automation

20%
of businesses in the Flats have been operating for 40+ years

150%
increase in commodity prices from 2002-2010 driving business transformation

RECOMMENDATIONS

PROGRAMMING

INITIATIVE 2A

Establish a skills-matching program to match industry challenges with skilled students, recent graduates, and design and engineering professionals at a low cost to the entrepreneur.

Over the past year, CityStudio and the Vancouver Economic Commission have engaged with educators, instructors and academics who have been struggling to find meaningful and impactful design and engineering projects for their students and recent grads. At the same time, work with industrial businesses has revealed a need for better access to research, design, and prototyping resources. A skills-matching program can strengthen industrial research & development by creating access to researchers, designers, and prototyping resources from academia and the community. This reduces the financial risk that a startup or small business must imbue in order to innovate.

The Flats skills-matching program can build off existing local models for linking researchers with practical industry challenges. These include the CityStudio model that matches undergraduate students with civic issues, the Greenest City Scholar Program that matches graduate students with sustainability challenges, and the MITACS program that matches university researchers with industry challenges. Unlike these programs, however, the Flats program will focus specifically on challenges from small and mid-size businesses that are seeking innovative solutions to business sustainability.

QUICKSTART

Work with a Greenest City Scholar and program partners to detail year one of the program to be launched in September 2017.

GOVERNANCE + STAFFING

INITIATIVE 2B

Establish a leadership team made up of representatives from the Vancouver Economic Commission, CityStudio, UBC, and the Sustainability Group to develop and manage the skills-match program and demonstration licenses.

Demonstration licensing and skills-match initiatives will be greatly strengthened if leadership is distributed across the City's Sustainability Group, the Vancouver Economic Commission, UBC and CityStudio, all of whom have a significant stake in the initiative.

The Vancouver Economic Commission's main interest and experience is in helping established businesses make their operations more sustainable and helping innovative green startups commercialize new solutions. CityStudio is looking for opportunities for CityStudio alumni to continue to get involved in civic and environmental issues and tie together industry and academia through imagination zone initiatives. UBC is aiming to become the most sustainable university campus in the world while creating opportunities for their grads to enter the green economy locally. And the City's Sustainability Group is running complementary programming through the Greenest City Scholars Program which has potential to grow and link together with an industry sustainability skills-match program.

The responsibilities of this leadership group would include:

- proactively soliciting challenges from businesses and individuals seeking experience in the field
- matchmaking and problem-solving to ensure the partnerships are fruitful for all parties
- helping assemble funding, mentorship, educational partners, and other resources to support R&D programming

SPACE + FACILITIES

INITIATIVE 2C

Develop and manage a series of demonstration spaces and complementary educational signage to help innovative green startups gain access to public spaces and demonstrate their solutions to the public, investors, and potential clients.

Having a space to test, prototype and demonstrate products in the public realm can go a long way to helping businesses refine their solutions and find initial clients and investors. That said, industrial startups with limited capital can rarely afford to acquire and administer a publicly accessible demonstration space, let alone proactively program such a space.

Three types of demonstration spaces have been identified as valuable to Vancouver's community of industrial innovators. The first are small wall or floor spaces within indoor public facilities such as building lobbies and cafes for demonstrating individual products such as modular green walls, green building materials, and innovative interior design products. The second are shipping-container size spaces, either covered or outdoor, for demonstrating alternative systems-based solutions such as solar PV systems, modular building systems, and micro-industrial composting systems. And the third type of demonstration spaces needed are integration into full-scale infrastructure projects, such as road construction or street lighting projects, for testing solutions such as solar roads, pervious paving, and smart lighting systems.

While Vancouver's Green and Digital Demonstration Program covers the first and third type of space, the second type requires dedicated public sites—sites that can be complemented by educational programming and signage delivered in partnership with education partners such as Science World, Evergreen, or the Greentech Exchange.

POLICY

INITIATIVE 2D

Develop demonstration licenses to allow industrial innovators temporary access to publicly held land for the purpose of demonstrating their solution, educating the public, testng and refining products, and meeting with potential clients and investors.

Commercializing innovative products and services requires accessing a first big client or investor, proving a concept, and educating the public, all of which can become obstacles for industrial innovators. Having access to a public space to test, prototype and demonstrate creates opportunities for entrepreneurs to showcase solutions to potential investors, educate the public, and test and refine products more quickly. Creating demonstration licenses can help mobilize unused or marginal land for this purpose.

Vancouver launched the Green and Digital Demonstration Program (GDDP) in 2014 to provide demonstration support to entrepreneurs and start-ups in Vancouver's clean technology and digital sectors. Selected participants in the program gain temporary access to City-owned assets (e.g. buildings, streets or vehicles) for technology demonstrations and proof-of-concept trials. Since the launch of the program, there have been 80 program applicants, 12 accepted proposals, and 4 demonstration projects landed.

Many of the additional applicants had excellent proposals but did not fit the parameters of the program because they need public-facing land to demonstrate as opposed to City infrastructure or facilities. Traditionally land has been off limits as it can be seen as a subsidy or grant to the private sector, but selling limited demonstration licenses at a low cost allows the city to grant temporary access to city-owned land for the specialized purpose of demonstration.

QUICKSTART

Work with City permitting, licensing, and engineering departments to develop demonstration licenses for fall 2017.

RESEARCH + ADVOCACY

INITIATIVE 2E

Apply economic development criteria into City real estate development and infrastructure development projects.

Large R&D firms are important anchors for the innovation economy. They produce chains of talent and capital that feed back into the sectors in which they are operating, as well as foster spinoff startups in their sectors. These anchors in industrial technology sectors—such as lifesciences, agritech, or remanufacturing—are having difficulty locating large enough mixed industrial and office sites to land R&D facilities or build-to-suit head offices in Vancouver.

Many of these operations have unique building needs, including labs and custom mechanical systems, limiting their ability to go into existing office spaces. In order to ensure these innovation drivers are able to find a place in Vancouver, the City can prioritize these types of tenants and buyers when choosing occupants for large City-owned sites, in particular along the western and southern edges of the Flats where additional office density is permitted. This can be done through applying desired economic development criteria to these sites.

There is also ample opportunity to weave economic development criteria into requests for proposals for civic infrastructure and facility projects. Vancouver has already developed a net zero firehall by applying stringent sustainability criteria to a public call for proposals. Integrating demonstration opportunities, local procurement, and low-barrier job criteria into City infrastructure and facility developments in the Flats sends an important signal to the community that Vancouver is committed to reaching ambitious economic development targets through municipal intervention in the Flats.

FUNDING + RESOURCING

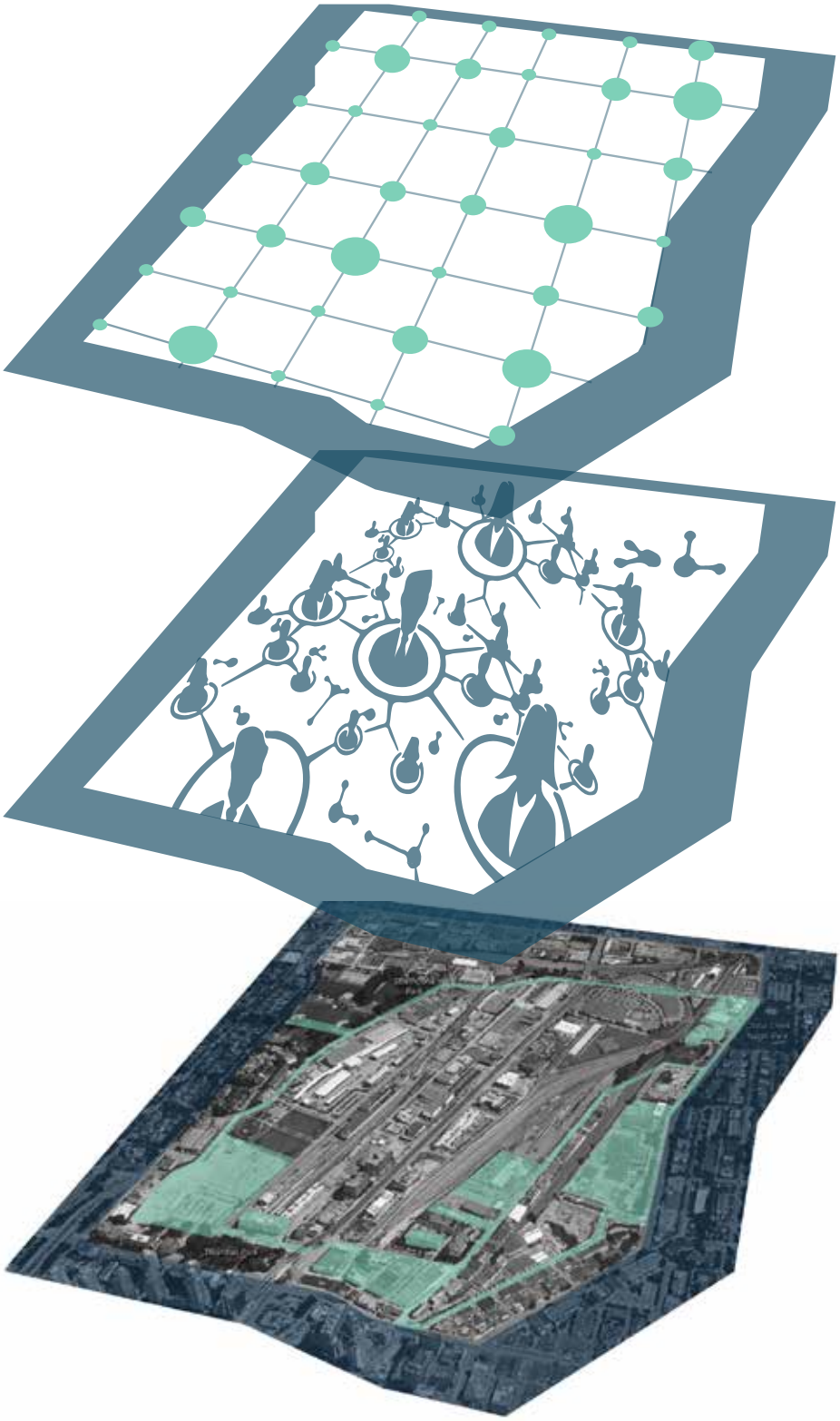
INITIATIVE 2F

Utilize the skills-matching leadership team to streamline and simplify the process for small and mid-size businesses to locate, apply for, and obtain skilled individuals to work on their R&D initiatives.

Although many resources exist for helping businesses take on new challenges, conducting the background research to understand what resources are available and to whom they are most relevant can be a sticking point for small and mid-size businesses. Programs can be difficult to access, and each has different criteria, application needs, and administration processes. Researching and vetting each of these programs can be so cumbersome that it prevents smaller businesses from taking advantage of them.

Some of the initiatives that already exist for supporting industry R&D work, include wage subsidy programs, research grants, and university courses that match micro-consultancies of students with individual industry challenges. Wage subsidy programs most often apply to specific demographics that are eligible to be hired, such as persons with physical disabilities, young people, or aboriginal people. These programs can be widely leveraged to test out potential new hires, get new projects jump-started, or complete shorter term initiatives while paying a fraction of the contractor's salary. Research grants most often apply to specific sectors or types of industry challenges.

Examples of existing programs to partner with include Mitacs, UN Canada Green Corps, UBC's Engineering capstone projects, KPU's product design capstone projects, and RED Academy's partner programs.



DIGITAL CONNECTIVITY

SMART BUILDINGS +
SMART INFRASTRUCTURE

SOCIAL PROGRAMMING

SKILLS-MATCHING + PUBLIC
EDUCATION PROGRAMMING

PHYSICAL INFRASTRUCTURE

INSTITUTIONAL ANCHORS +
PUBLIC DEMONSTRATION SITES

Figure 11 **ADDRESSING BARRIERS TO INNOVATION**

Example challenges put forward for a skills-matching program to date include a market research challenge by a businesses developing new sustainable products, a packaging challenge by a business that is aiming to become zero-waste, and an engineering challenge by a business that is in the midst of developing its own on-site water recycling system.

Examples of industrial innovators that are looking for demonstration opportunities include entrepreneurs developing modular green building materials and off-grid micro-homes, cleantech companies looking to test distributed renewable energy systems, and students and designers looking to test new green infrastructure approaches.

PART 3: ADDRESSING LACK OF AMENITY AND CONNECTIVITY IN THE FLATS

The Flats benefits from close proximity to downtown, signficant access to public transit, and a number of new anchor institutions in art, design, education, lifesciences, apparel, and local food. Even so, the Flats is not a well known district in Vancouver. Employees that work in the district have referred to it as a diamond in the rough, a black hole in people's mental map of the city, or an unknown area of great potential.

As an important employment district, the Flats lacks some key neighbourhood-building amenities that are needed to foster social connectivity and a sense of collective identity. Establishing this collective identity and social connectivity is integral to attracting new investment to the area and enabling innovation and entrepreneurship.

As an active industrial area, the Flats public realm presents unique opportunities for education, experimentation, and demonstration through:

- making industrial operations visible to the public through events, building design, and public realm installations,
- utilizing orphan sites for events, pop-up markets or mobile amenities, and
- testing and refining new technologies, approaches, products, and services in the public realm.

Activating the public realm can go a long way toward strengthening business networks and a sense of collective identity in the Flats, but these activities need to be complemented by online and in-person network development in order to be truly impactful to the community. Frequent social interaction is the spark for creating the synergistic relationships between individuals and organizations, and these interactions need to be fostered through a combination of events and workshops, as well as informal meetings, such as those that occur when there are places to eat, drink, shop, and recreate nearby.

These types of spaces and activities are currently sparse in the Flats where employment density is low and residential uses are almost non-existent. Amenites are likely to develop relatively quickly around the Emily Carr campus once the student population moves in, but other parts of the Flats are unlikely to see a significant change in access to amenities and increase in social activity without some degree of intervention.

In many areas of the city, this intervention is taken on by Business Improvement Associations (BIAs). BIAs are responsible for connecting neighbours, implementing public space improvements, fostering a district identity, and advocating for community safety and security solutions. Businesses in the Flats have been hesitant to cultivate a BIA because of their perceived focus on retail and branding in other districts throughout the city.

The Flats is not only poised for a rapid increase in employment density over the next decade, the residential districts in close proximity are also poised for continued densification, yielding an additional 50,000 new residents within a 10 minute walk of the Flats in the next 30 years. This substantial growth creates substantial opportunity for increased public amenity, connectivity, and social activation of the Flats, but it also needs to be managed to ensure these improvements to public life do not interfere with the important economic role of the district.

CHALLENGES

1. Limited access to amenities and social programming in the Flats creates challenges for employee retention.
2. The identity of the Flats and its business community are not well known to the public.
3. Orphan spaces throughout the Flats create dead zones in the public realm, giving the impression the area is not safe.

<1KM
to the sea wall, Science World, and Mount Pleasant

50,000
additional residences to be developed within a 10 minute walk of the Flats in the next 25 years

3x
as many jobs are anticipated to be accomodated in the Flats in the next 15 years

RECOMMENDATIONS

PROGRAMMING

INITIATIVE 3A

Create opportunities for businesses and employees in the Flats to connect, share ideas, learn, collaborate, and brand the district.

Unlike retail districts, industrial districts do not feature the storefronts and galleries needed to engage passers-by with the activities happening behind closed doors. This means neighbouring business owners are slow to get to know one another and miss out on opportunities to share resources. tackle collective challenges, and learn from one another. These connections are integral to helping business owners understand new trends, identify new markets, and reduce costs.

This type of formal and informal interaction can also help businesses build a sense of community. This type of community building can foster opportunities for cross-promotion among businesses, as well as help businesses self-organize to advocate for neighbourhood infrastructure, safety and security needs.

The Flats is not a well known district in Vancouver. Establishing a collective identity for the Flats is important for attracting new amenity and investment to its public realm. This type of identity-building can also be developed through events, branding, and creating an online presence for the businesses in the Flats.

Although nothing beats face-to-face interation, digital tools can also be used to improve connectivity and engagement among neighbours. These include social platforms, resource-sharing platforms, and information sharing platforms.

GOVERNANCE + STAFFING

INITIATIVE 3B

Help establish a unique industrial BIA dedicated to improving and activating the public realm of the Flats, hosting relevant community programming, and identifying and addressing collective community challenges.

Business Improvement Associations (BIAs) are used across Vancouver to activate various commercial districts and represent the small and mid-size business community. In Vancouver, each BIA has its own niche. For instance, the Hastings Crossing BIA focuses on social issues. One of their flagship events connects for-profit businesses with social enterprises to facilitate understanding and drive social impact in a community where mental health and poverty issues are prevalent. The Mount Pleasant BIA focuses on arts and culture as a means of connecting industrial businesses and retailers and drawing foot traffic to the many consumer-facing businesses in the district.

The Flats business community has been hesitant to cultivate a BIA because many of the business owners in the district perceive BIAs to focus on street beautification and festivals—initiatives that are less relevant to an industrial district. After speaking with numerous business groups in the Flats, however, it is evident that the district could use collective representation and activation.

Because the Flats is made up of a number of unique micro-districts, separated by rail lines and arterial roads, It is integral that a unique industrial BIA would need to be guided by representatives from each of these sub-zones. A board of advisors made up of representatives from Produce Row, the “east of the tracks” businesses, Terminal Ave, Great Northern Way, and Industrial Ave/Main Street could serve this function.

QUICKSTART

Convene community champions and identify leaders for undertaking the BIA engagement and application process.

SPACE + FACILITIES

INITIATIVE 3C

Create mobile amenity zones to serve the needs of employees in the Flats in the interim years while more permanent amenity spaces are being secured.

Although we anticipate that significant increases in places to eat, drink, socialize, and shop will be part of the fabric of the Flats in the coming decades, there is a lot that can be done to help activate the public realm in the short term. One way to bridge the gap is by establishing a network of mobile amenities that can service the Flats, such as food trucks, mobile shops, and service delivery systems.

These amenity zones require minimal infrastructure—in most cases a well graded and drained site with access to electricity and washrooms would suffice. These amenity zones can also be combined with demonstration sites outlined the previous section. Similar to demonstration sites, mobile amenity spaces could be permitted through a license process on designated sites where basic utilities are made available.

Working closely with the arts, design, and maker community, these zones can also be used to test new forms of street vending vehicles such as bicycle coffee carts, renewably powered food trucks, and fold-out instant seating areas.

There are a number of co-benefits of dedicating small areas of the Flats to mobile amenity zones. These areas can serve as test-spaces for startups before investing in a brick and mortar location. They can also double as small green, digital, and social infrastructure spaces—areas that feature innovative approaches to renewable energy and stormwater, free wifi, and experiments in designing better spaces for social interaction, such as those developed by CityStudio's Imagination Zone studio.

POLICY

INITIATIVE 3D

Incent the use of orphan spaces and temporarily underutilized spaces for various economic and community uses.

The Flats is already home to a unique example of utilizing an undeveloped site for a temporary use. The modular housing project at Main and Terminal has been developed as a temporary solution to for housing low income individuals that are facing displacement. Although the housing is not permanent, it fills a housing gap temporarily while utilizing a high-value site for a fixed term while the site is undergoing redvelopment planning.

This project is a great example of utilizing a temporarily vacant or underutilized site to fill a community need. Expanding this program to include other community uses and other types of spaces could be extremely effective for creating more employment, showcasing, and arts space in the Flats.

For instance, entrepreneurs are seeking temporary access to underutilized sites for public art production, clean technology demonstration, agricultural production, and local food or maker markets. Some are seeking spaces they can occupy for a couple years, while others are seeking spaces they can utilize for a couple months.

By expanding the types of spaces and activities that are accomodated as temporary uses, we could see rooftops, showrooms, parking lots, and vacant sites populated with a wide variety of informal or temporary economic activities. For instance, Light House Sustainable Building Centre identified 5 major sites in the Flats that hold potential for rooftop greenhouses.

RESEARCH + ADVOCACY

INITIATIVE 3E

Identify collective community challenges in the Flats and advocate on behalf of the business community for solutions.

A number of concerns have been raised by the business community in the Flats over the past three years, spanning infrastructure challenges to safety and security and street cleanliness. Although these issues are not uniform across the Flats, multiple groups have begun self-organizing to advocate for needs at City Hall.

For instance, the Produce Row businesses conducted their own research on the economic impact of their cluster to advocate for minimal disruption to their operations throughout the development of a new arterial road through the Flats. The businesses on Industrial Ave have started to self-organize to address public safety and theft issues related to the binner community in the area, as well as to seek solutions for digital infrastructure gaps on the street.

These groups have sprung up out of necessity, often long after the issue they are trying to address has escalated. Conducting ongoing outreach, engagement, and research in the Flats could help identify these issues at the outset and find solutions before problems escalate. This first-person research can be complemented by data analytics in the district in which concerning trends such as crime increases or increases in traffic accidents can be proactively identified and addressed.

FUNDING + RESOURCING

INITIATIVE 3F

Utilize the tax structure of Business Improvement Associations to fund public realm improvements and community programming.

Business Improvement Associations (BIAs) are established in Vancouver by canvassing landowners and businesses in a given district to understand their collective needs and what they would be willing to pay to have those needs addressed by a community association. Once consensus is reached, a rate and set of priorities is established and a boundary is drawn around the Business Improvement district.

Land within the district is then taxed at the established rate to help fund the activities of a Business Improvement Association. Often, BIAs will raise additional project-based support from community foundations and other granting bodies.

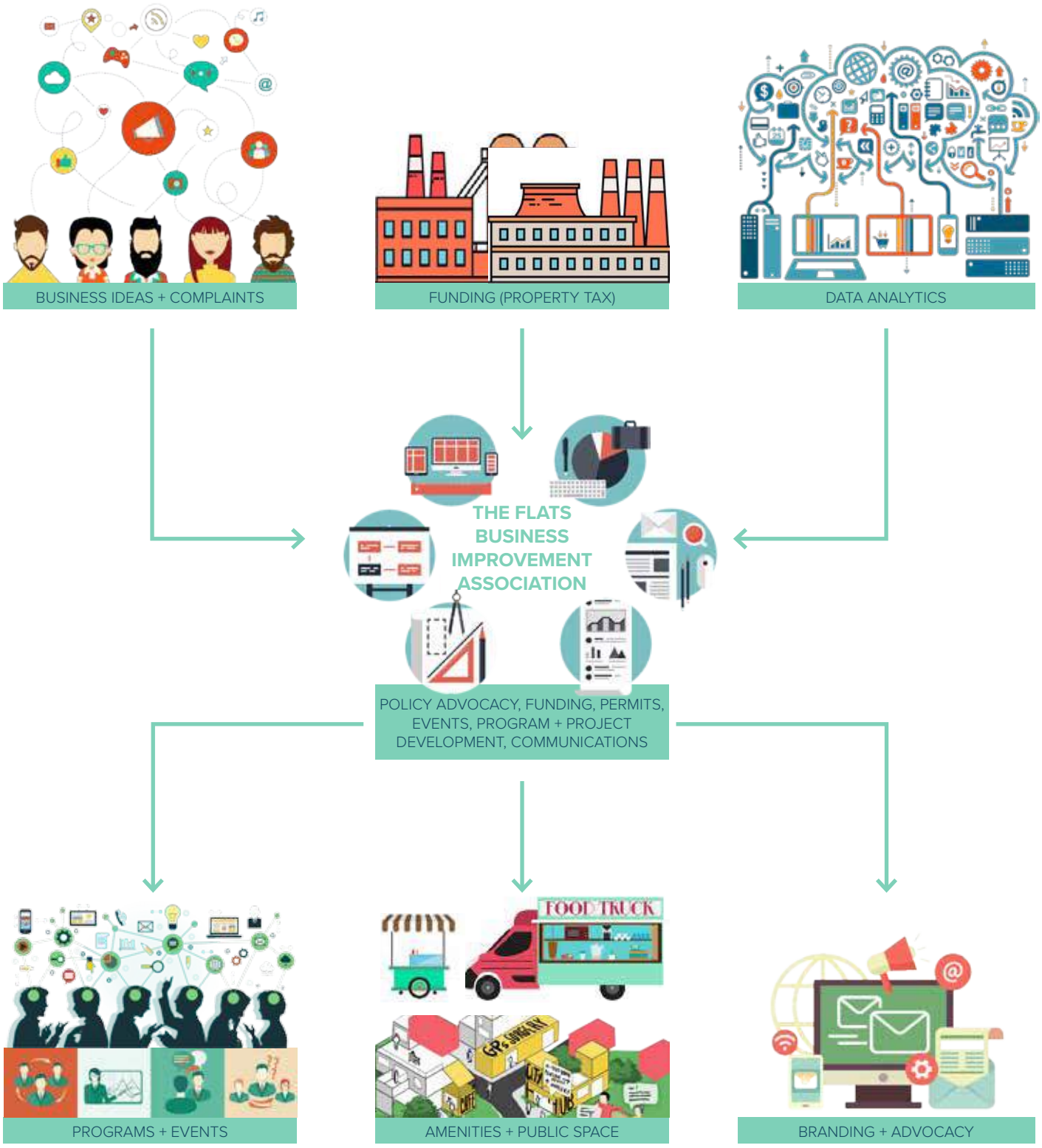


Figure 12 **ADDRESSING LACK OF CONNECTIVITY + AMENITY**

A Business Improvement Association (BIA) could address a number of issues and ideas that have been brought forward by the business community in the Flats, such as solving gaps in digital infrastructure, helping address safety and security issues, and helping plan and advocate for uninterrupted business operations during infrastructure upgrades and replacement. The business community has also raised a number of desires that could be met through BIA programming, including training to increase digital literacy and digital tool use among urban industrial businesses and the development of more public spaces and amenities such as lunch places.

PART 4: ADDRESSING CLIMATE RISK AND RESILIENCE

As part of Vancouver's mission to become the greenest city in the world and eliminate our dependence on fossil fuels, the City has committed to aggressive environmental targets. These include reducing our city-wide greenhouse gas emissions by 80% over 2007 levels by 2050, converting all energy used in the city of Vancouver to 100% renewable sources by 2050, and becoming a zero waste city by 2040.

Industrial businesses will be significant players in achieving these goals as they tend to have energy, fuel and material intensive operations. Sustainability leadership can already be seen across the Flats where businesses are installing high-efficiency equipment, investigating opportunities to improve fleet performance, and developing processes to eliminate waste from their facilities.

This sustainability leadership is driven by a number of motivations that only stand to increase over the coming decade. Young people are increasingly choosing to work for and buy from companies that align with their values. Anticipated policy changes are driving businesses to try to get ahead of new regulations. Increasingly volatile commodity markets are driving businesses to rethink their supply chains. And rising carbon taxes, energy costs, and fuel prices are driving businesses to seek out alternative energy and fuel sources.

The Flats is particularly vulnerable not only to business risks associated with climate change, but also physical risks. Composed of fill soils, the Flats is vulnerable to liquefaction in the event of a large earthquake. As a former tidal flat and low-lying area, it could also be subject to flooding during a rare storm event when combined with sea-level rise. Businesses in the area thus need to plan for business continuity and seismic upgrades.

Despite the many motivators to "go green" and take on resilience planning, many business owners are deterred by the real or perceived costs of implementing new initiatives. For instance, if initial assessments point to more than a two year payback period for sustainability upgrades, many business owners will leave them on the table, even if there is a positive return on investment in the long-run. Financing terms for retrofit projects on a small scale can also be less desirable, and many businesses lease their space, creating split incentives between landowners and tenants for retrofits.

Business size can also be a limitation to taking a leadership role on climate action. More than 90% of businesses in Vancouver have under 50 employees, and more than 60% of businesses in the Flats have fewer than 5 employees. Businesses of this size not only have limited financial flexibility to take on sustainability initiatives, but they are also unlikely to be able to address their toughest challenges on their own. Many small and mid-size businesses in the Flats have expressed an interest in partnering with neighbours to implement sustainability initiatives such as collective purchasing from green suppliers or on-site composting.

CHALLENGES

1. Industrial businesses are most impacted by sustainability issues due to their energy, materials, and fuel intensive operations
2. The Flats is particularly vulnerable to earthquake and flooding.
3. Small and mid-size businesses lack the capacity to take on significant sustainability and resilience initiatives on their own.

36,040
tonnes CO_2 emissions directly produced by businesses in the Flats annually

44%
of business emissions in the Flats are generated by transportation

27%
of business emissions in the Flats come from the manufacturing sector

31%
of business emissions in the Flats come from the wholesale trade sector

RECOMMENDATIONS

PROGRAMMING

INITIATIVE 4A

Host training and education programs to help Flats businesses collectively tackle sustainability and resilience challenges

Over the past three years, the Vancouver Economic Commission has been bringing together businesses in the Flats to tackle sustainability challenges. This approach has been effective not only for identifying collective challenges in the Flats, but also for connecting neighbours who motivate one another to "up their green game". For instance, one local tourism business inspired a neighbouring recycling business to take on an on-site wastewater collection, filtration and reuse project.

In 2015, the Vancouver Economic Commission launched the Flats Climate Action Program in partnership with Climate Smart to train business owners and employees in the Flats in measuring and managing their carbon emissions. This program has been met with enthusiam. To date, 18 businesses have been engaged that are collecively managing 21,759 tonnes of CO_2 emissions.

The Flats Climate Action Program has revealed demand for a number of other sustainability and resilience training programs, including:

- Driver Training programs to teach delivery vehicle drivers how to reduce fuel consumption through changes to driving behaviour;
- Digital skills training for businesses aiming to use online tools to improve efficiency;
- Business continuity or resilience training for understanding the potential impacts of an earthquake in the Flats and how to return to work after a major seismic event.

QUICKSTART

Run a third cohort of businesses through the Flats Climate Action Program by September 2017.

GOVERNANCE + STAFFING

INITIATIVE 4B

Build up project teams to tackle individual sustainability and resilience issues made up of subject-matter experts, solution providers, students and business conveners.

Each sustainability challenge requires a different mix of skills and expertise to solve. Project teams allow for distributed leadership on various issues while creating the flexibility to find the best partners for the task at hand. The Vancouver Economic Commission (VEC), through its Thriving Vancouver Green Business Programs, can lead the development of project teams for taking on sustainability and resilience challenges in the Flats.

Thriving Vancouver is a dedicated community engagement platform for helping grow sustainable business in Vancouver. The Thriving approach holds convening at its core, bringing together networks of relevant businesses and partners to tackle sustainability issues that require collective action. For instance, to tackle textile waste in Vancouver, a group of waste haulers, clothing manufacturers, designers, and policy makers have been working together through the Thriving Vancouver platform to understand the trajectory of textile waste in the region and opportunities for improving the system.

QUICKSTART

Assemble a project team to tackle industrial retrofits in the Flats, including a business engagement partner, a technical partner, and a financing partner.

SPACE + FACILITIES

INITIATIVE 4C

Secure small spaces in parking lots, garages, and streetscapes for landing shared sustainability infrastructure.

As more businesses are attempting to “go green” or become circular businesses, the need for sustainability-related infrastructure is increasing. Small spaces need to be secured as dedicated spaces for sustainability infrastructure. These can simply be designated parking spots in many cases or 320 – 1200 sq. ft. spaces along street rights of way, building edges, or in parking garages. These spaces need to be ground level and easily accessible

Examples of collective sustainability infrastructure include:

- Waste infrastructure such as cardboard compactors, micro-industrial composting services, and covered bins for materials collection, sorting and redistribution
- Electric vehicle and alternative fueling infrastructure, such as electric vehicle fast-charging stations, renewable diesel refueling stations, and hydrogen fuel-cell charging stations
- Water infrastructure such as stormwater swales, rain gardens, cisterns, and greywater recycling systems
- Renewable energy infrastructure such as solar trees in parking areas, renewably powered plug-in stations for events and food carts in public spaces, and heat recovery systems
- Sharing economy infrastructure such as car-share parking spaces, and shared shipping-container spaces for tool libraries, repair cafes, and reuse sheds

POLICY

INITIATIVE 4D

Identify policy barriers to implementing sustainability and resilience measures and seek ways to remove red tape.

The deployment of new green technologies, products, and services can sometimes be hindered by existing policies. For instance, the installation of solar PV systems may be limited by regulations aimed at protecting neighbourhood aesthetics, or waste diversion efforts can be limited by pricing structures and policies associated with material disposal. By concentrating demonstration projects, sustainability pilot projects, and green business programming in the Flats, the area will become the go-to place for flagging regulatory barriers to implementation of new green solutions.

Manufacturers, wholesalers, and industrial innovators are some of the groups that are most impacted by sustainability policies, many of which are aimed at transportation, energy, and materials. As a result, industrial operators tend to pay close attention to regulatory shifts that will impact their operations, such as waste bans and green building bylaws, looking for ways to effectively meet new regulatory requirements while simultaneously reducing costs or building new revenue streams.

Because the Flats has a large concentration of industrial operators, the Flats business community has a high concentration of individuals looking for innovative approaches to material, energy, fuel and water challenges. While upcoming policy can be a major driver of behaviour change among businesses, working with businesses that are attempting to get ahead of those policies can be a very effective way to identify barriers to implementation of new regulation.

RESEARCH + ADVOCACY

INITIATIVE 4F

Identify collective sustainability challenges in the Flats and research potential solutions and partners for testing the approaches identified.

One of the biggest barriers for businesses attempting to reduce their environmental footprint or improve their resilience is finding the right resources. There are so many programs, educational offerings, and approaches, that business owners can become easily overwhelmed. Importantly, not all of these programs are relevant to all businesses, and many of the sustainability solutions presented to businesses are most effective or only pencil out at scale.

The business community in the Flats faces many of the same challenges and curating resources and solutions can be done centrally. There are many benefits of taking this type of research off the shoulders of business owners. More time and resources can be spent on understanding the intricacies of collective challenges if the solutions identified are likely to be broadly applicable. If taken on by a subject matter expert, this research can also integrate new technologies and solutions that are still under development. Finally, solutions can be considered that only pencil out with a critical mass business participation.

For example, in 2014 a number of businesses in the Flats identified fleets as an area of focus—recognizing there are significant opportunities for simultaneous GHG and cost reductions. The Vancouver Economic Commission took on the task of researching fleet options, barriers to implementation and costs of implementing solutions. This research is now contributing to fleet-sharing and driver training pilots in the short term and helping businesses transition to electric vehicles in the long-term.

QUICKSTART

Develop a vehicle-share pilot project to test the appetite for and impact of vehicle-sharing for commercial uses in the Flats

FUNDING + RESOURCING

INITIATIVE 3B

Work with local financial institutions, foundations, universities, private corporations and various levels of government to develop financing and funding mechanisms for sustainability initiatives on a project-by-project basis.

There are a number of financing and funding models that can be applied to community sustainability and resilience projects. Private financing can be used to support building retrofits where the cost savings over time are used to repay investors. Government and community grants can often be utilized for green infrastructure or education/training initiatives. And community bonds can be used to support infrastructure projects.

To date, a number of financial partnerships and funding mechanisms have been identified as worth exploring and testing in the Flats These include:

- Taking a portfolio-based approach to retrofit financing for industrial businesses in which multiple building retrofits are financed and implemented together to facilitate better financing terms, reduce administrative costs, and facilitate group purchasing
- Developing micro-bonds or neighbourhood bonds for community green infrastructure projects such as industrial composting facilities, electric vehicle charging infrastructure, bike lanes, and stormwater infrastructure
- Creating a community grant program whereby businesses, non-profits, and individuals can apply for moderate sums of money to kickstart sustainability initiatives in the district

QUICKSTART

Conduct a feasibility study on portfolio-based retrofit financing to determine whether or not this approach is both feasible and worthwhile.

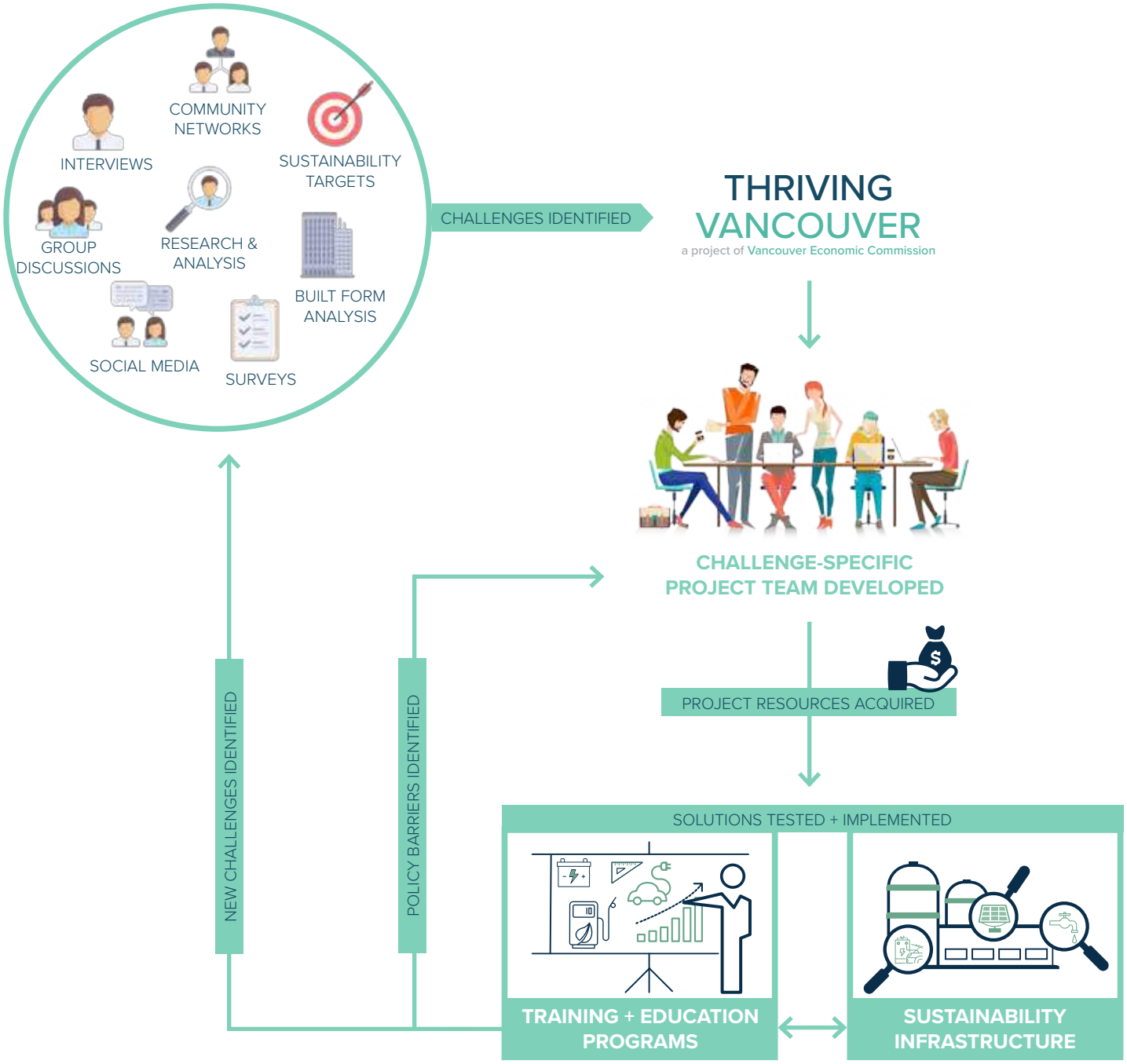


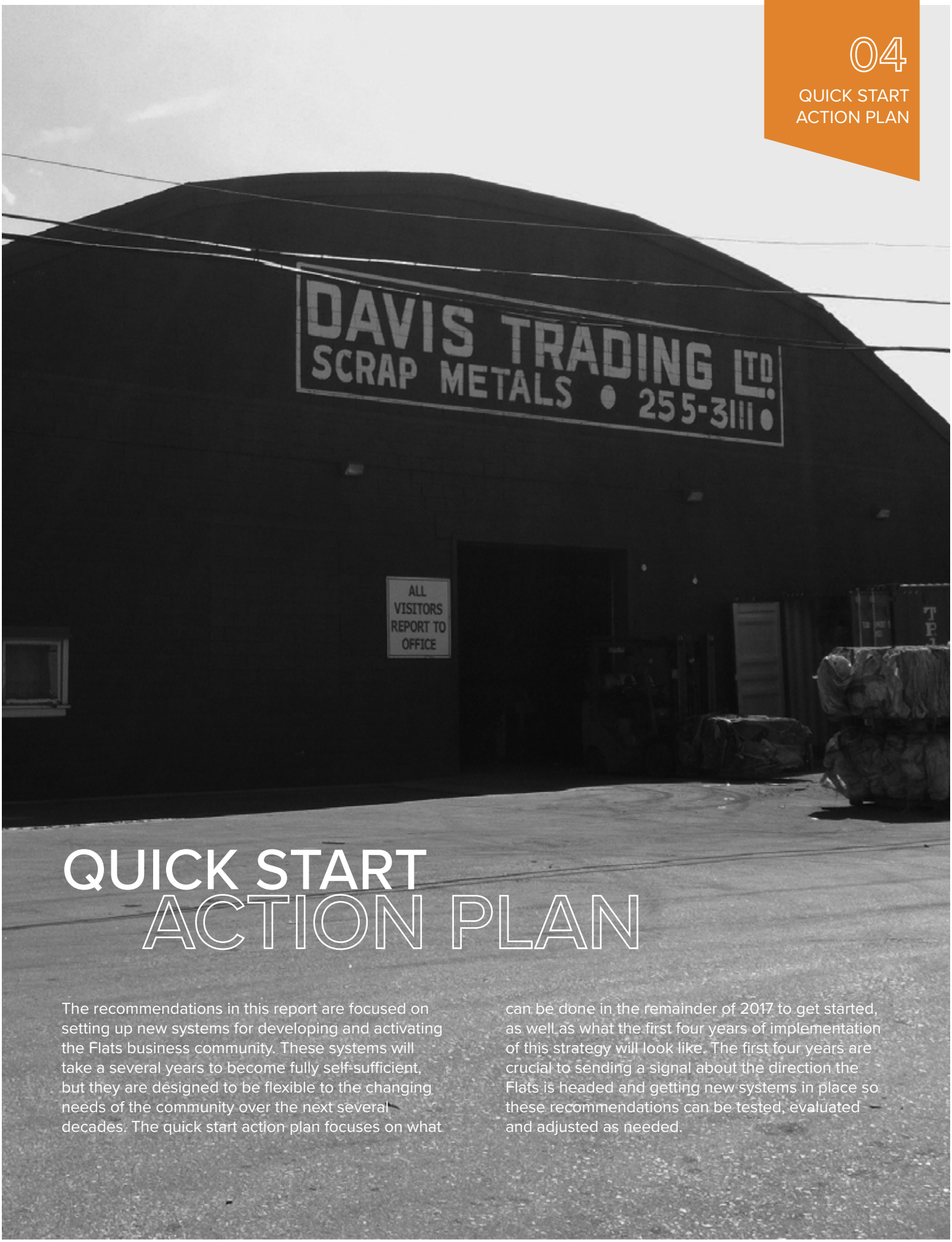
Figure 13 **ADDRESSING CLIMATE RISK AND RESILIENCE**

In Vancouver's 2020 Greenest City Action Plan, one of the priority actions for the green economy is to establish a Green Enterprise Zone—a district that will showcase new clean technologies and innovative business models, feature green buildings and smart infrastructure, support sustainability-related industries, and attract new impact investment. The Flats became the target area to land this initiative, and a number of sustainability and resilience challenges are already being tackled in the Flats using the process above.

Examples include measuring and managing GHG emissions from businesses through the Flats Climate Action Program, testing new approached to financing energy efficiency retrofits for industrial businesses, and demonstrating new fleet technologies.

SUMMARY OF RECOMMENDATIONS

CHALLENGES	UNAFFORDABILITY OF SPACE 1. Demand for industrial space outstripping supply 2. Lease rates rising too high 3. Policy ineffective at suppressing land values	BARRIERS TO INNOVATION 1. GLobal disruptions driving need to innovate 2. Limited capacity to fir R&D 3. Limited access to R&D resources and institutions	LACK OF CONNECTIVITY + AMENITY 1. Limited access to amenities and social programming 2. Lack of brand / collective identity 3. Dead zones caused by underutilized space	CLIMATE RISK + RESILIENCE 1. Industrial businesses are most impacted by sustainability issues 2. The Flats is a liquefaction zone 3. Many businesses are too small to tackle sustainability challenges on their own
PROGRAMS	1A. Foster colocation and space sharing partnerships among businesses seeking space, and help facilitate the colocation process.	2A. Establish a skills-matching program to match industry challenges with resources from academia, government, and the community.	3A. Create opportunities for businesses and employees in the Flats to connect, share ideas, learn, collaborate, and brand the district.	4A. Host training and education programs to help Flats businesses collectively tackle sustainability and resilience challenges.
GOVERNANCE	1B. Establish a non-profit industrial development corporation to develop, manage, and program affordable industrial spaces.	2B. Establish a multi-stakeholder leadership group to develop and manage the skills-match program and demonstration licenses	3B. Foster the development of an industrial BIA dedicated to representing and advocating for the needs of the Flats business community.	4B. Build project teams made up of subject-matter experts, students, and business conveners to tackle individual issues.
SPACE	1C. Identify a portfolio of sites to develop, retrofit, manage, and maintain as affordable industrial spaces in the Flats, and establish mechanisms to secure these spaces long-term.	2C. Develop and manage a series of public demonstration and education spaces for startups.	3C. Establish and service mobile amenity zones in which service startups can test their business models.	4C. Secure small spaces where businesses can install shared sustainability infrastructure.
POLICY	1D. Develop the regulatory framework needed to secure economic development amenities in the Flats.	2D. Develop demonstration licenses to allow industrial innovators temporary access to publicly held land for testing and showcasing new products and services.	3D. Incent the use of orphan spaces and temporarily underutilized spaces such as parking lots and rooftops for economic and community uses.	4D. Identify policy barriers to implementing sustainability and resilience measures and seek ways to remove red tape.
RESEARCH	1E. Collect and publish annual data on emerging industrial space needs and common challenges facing industrial sectors in the Flats.	2E. Incorporate economic development criteria into City of Vancouver real estate dealings and infrastructure projects.	3E. Research collective community challenges in the Flats and identify and test solutions.	4E. Research collective sustainability challenges in the Flats and develop pilot projects to test various solutions.
FUNDING	1F. Explore developing a Flats Fund (Special Purpose Vehicle) to aggregate and deploy capital from development contributions for economic development amenities in the Flats.	2F. Streamline and simplify the process for small and mid-size businesses to locate, apply for, and obtain skilled individuals to help with R&D initiatives.	3F. Utilize the tax structure of Business Improvement Area associations to fund public realm improvements and community programming.	4F. Assemble funding on a project-by-project basis utilizing a combination of grants, government funding, and corporate sponsorship.



QUICK START ACTION PLAN

The recommendations in this report are focused on setting up new systems for developing and activating the Flats business community. These systems will take a several years to become fully self-sufficient, but they are designed to be flexible to the changing needs of the community over the next several decades. The quick start action plan focuses on what can be done in the remainder of 2017 to get started, as well as what the first four years of implementation of this strategy will look like. The first four years are crucial to sending a signal about the direction the Flats is headed and getting new systems in place so these recommendations can be tested, evaluated and adjusted as needed.

QUICK START ACTION PLAN 2017

In order to achieve the vision set forward in this Economic Development Strategy for the Flats, substantial resources will be required and new systems need to be put in place. The task of developing new systems and assembling resources can seem daunting. This section outlines several quick start recommendations to demonstrate what can be accomplished in the remainder of 2017—the initial steps that can be taken to get these new systems and approaches off the ground. It should be noted that several of these actions are already underway.

- Policy and Real Estate Development
- Data, Research, and Communications
- Capacity Building
- Feasibility Studies and Pilot Projects
- Community Convening and Testing

POLICY + PROJECT DEVELOPMENT
Non-Profit Industrial Development and Economic Development Amenities

Complete a detailed action plan, including **vision, mission, business plan, viability analysis & funding/strategic partnership strategy for the first four years of operation** of a non-profit industrial development corporation, and work with the City's planning, finance and community services departments to establish detailed policy and implementation guidelines for Economic Development Amenities.

POLICY DEVELOPMENT
License Development for Demonstration Projects and Mobile Amenities

Engage a working group made up of members of the City's permitting, licensing, sustainability, planning and engineering departments to develop demonstration and mobile amenity licenses for the Flats. Ensure licenses are adopted by Council and relevant implementation partners by end of 2017.

PILOT PROJECT
Data Analytics for the Flats

Engage a third party organization that works with governments and communities on collecting, analyzing, and understanding community data. Focus on the use of predictive analytics to help track affordability, innovation, sustainability, and employment concerns among businesses and employees.

RESEARCH + COMMUNICATIONS
Insights on Vancouver's Industrial Business Community

Update VEC industrial space needs data outlining the unmet space needs of Vancouver's urban industrial operators as well as other insights on the strengths and weaknesses of Vancouver's industrial business community. Publish trends and insights to be shared with relevant stakeholders.

PROJECT DEVELOPMENT
Laying the Groundwork for a Skills-Match Program

Engage a Greenest City Scholar to outline the parameters for the skills-matching program and identify participating businesses and institutions for the pilot year of implementation. Begin developing leadership group and implementation partnerships for pilot year of programming.

FEASIBILITY STUDY
Portfolio Approach to Financing Industrial Retrofit Projects

Engage a Greenest City Scholar to work with a group of businesses in the Flats, along with Kambo Green Solutions, Climate Smart Business, and existing energy efficiency financers, to test the concept of taking a portfolio-based approach to energy retrofit financing in industrial districts.

PILOT PROJECT
Vehicle Sharing for Business

Engage a Greenest City Scholar to work with a collective of businesses in the Flats, as well as Modo Car Co-op, to develop a pilot project for vehicle sharing for commercial uses. Several businesses have identified an interest in vehicle sharing to cut costs and reduce the need to drive to work.

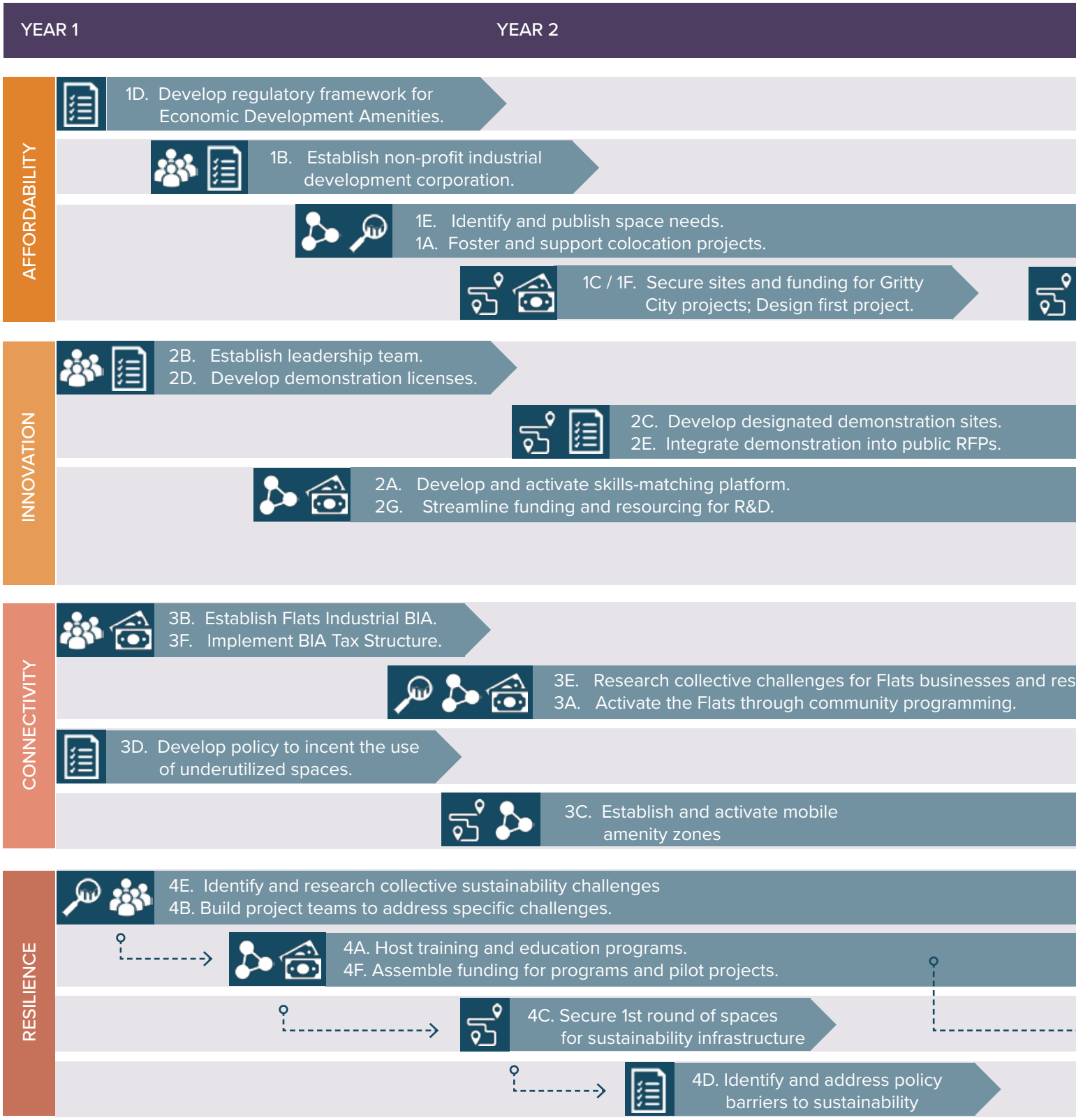
COMMUNITY ENGAGEMENT
Flats Climate Action Program to Cut Costs and Cut Carbon

In partnership with Climate Smart, engage a third cohort of Flats businesses will go through a training and certification process in which they measure their carbon emissions, identify opportunities for reductions, and begin implementing cost and carbon reducing measures.

COMMUNITY CONVENING
Seeding the Development of a Flats BIA

Convene community champions and identify community leaders with an interest in helping develop a Flats BIA. Help guide this group through the engagement and application process required to set up a new BIA within the Flats.

ACTION PLAN FOR 2017 - 2021



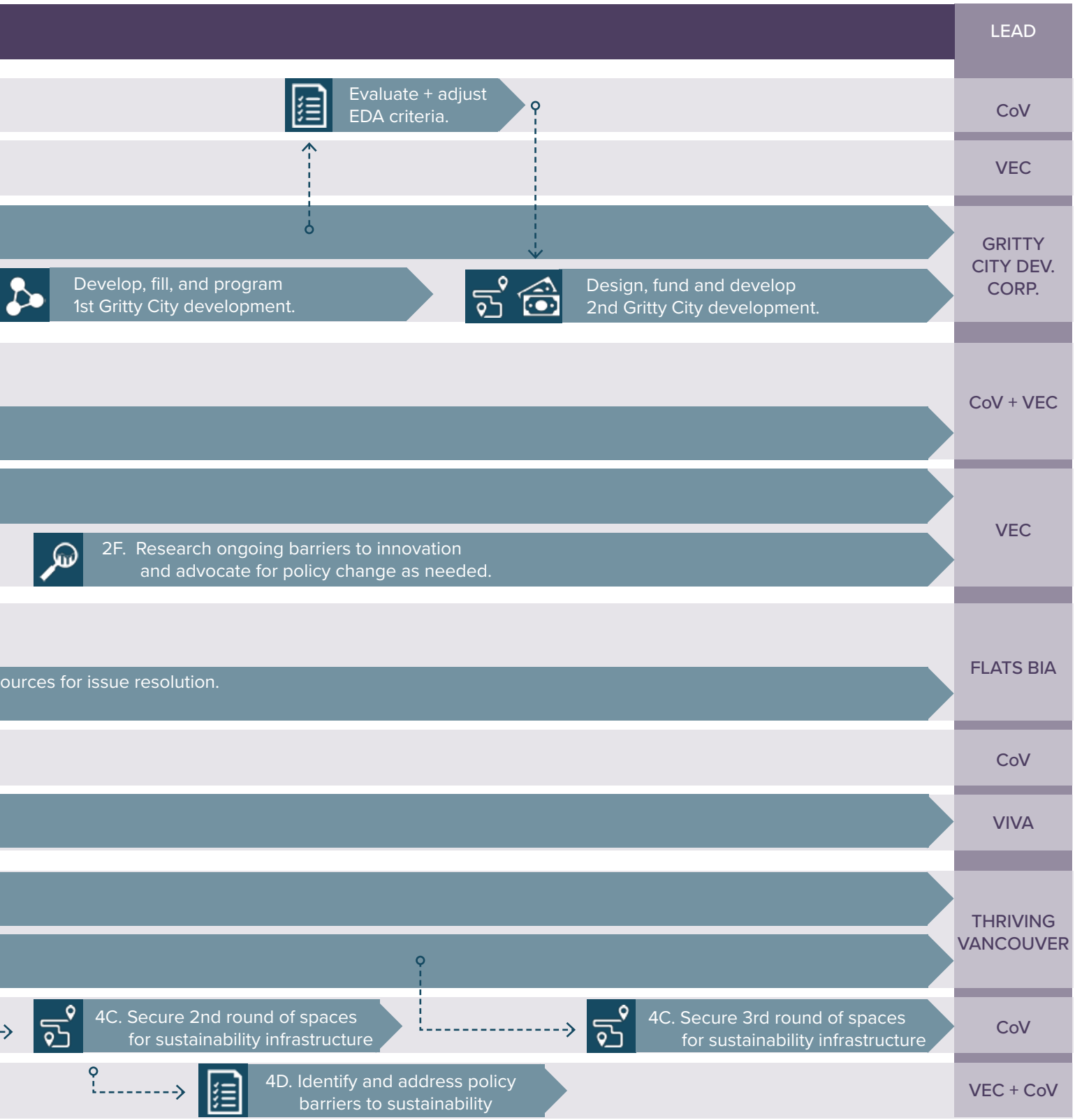


Figure 4 **ACTION PLAN 2017-2021**
This timeline outlines the first four years of implementation for the Flats Economic Development Strategy. Many actions are concentrated in the first 2 years as new governance and funding structures need to be set up.

VANCOUVER
ECONOMIC COMMISSION