Goods Production & Distribution District

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TORONTO REGION BOARD OF TRADE | economic blueprint institute

FROM CRISIS TO OPPORTUNITY:

Challenges Today and Futureproofing for Tomorrow in the **Goods Production & Distribution District** of Canada's Innovation Corridor

June 2021

Ready for Reopening and Recovery

To develop a path forward for our economy and the businesses that power it, the Toronto Region Board of Trade (TRBOT) launched its Reimagining Recovery Framework in May 2020. The Framework outlined six specialized recovery work tracks, informed in consultation with 25 stakeholder tables comprised of more than 350 individuals, 300 businesses and all three levels of government, as well as 29 recovery events with over 7,100 virtual attendees. Two of these work tracks addressed the pandemic's impact on our physical workplaces. Two others focused on the pandemic's impact to sectors and our economic zone, the Innovation Corridor.[1]

Building on the work and success of this Framework, TRBOT, with support from the Government of Canada through the Federal Economic Development Agency for Southern Ontario, embarked on a journey to solve for the safe reopening, continued operation, and recovery of business districts.

The outputs include five business district reports which examine similarities and differences in mitigation needs and how best to support their recovery. The districts chosen mirror the types of business districts in other parts of Ontario and Canada. These are:

- **Metropolitan Centre**: The dominant urban centre of a region, defined by its density and variety of services – such as finance and professional services, tourism, and retail.
- **Goods, Production and Distribution:** Areas defined by the production and movement of goods — such as manufacturing, warehousing, and logistics.
- **Services and Mixed Use:** Less-dense areas with a mix of activities including professional services, light industrial, and retail.
- **Regional Centres:** Hubs that are home to civic and government institutions, as well as professional and retail services that attract local workers and nearby residents.
- **Knowledge Creation:** Engines of the innovation ecosystem, including post-secondary schools and teaching hospitals.

Additionally, pilot zones were selected in three districts across the Toronto Region. Key organizations were engaged to explore their needs and concerns around continuing to operate safely through the COVID-19 pandemic. For each zone, actionable guides have been created to enable the right conditions to support workplaces in minimizing COVID-19 transmission risk and ensure consistent, clear communications between employers and their workers.

- **Financial District Pilot Zone:** Located in the Metropolitan Centre, the FDPZ is the heart of downtown Toronto. Dominated by financial and business services, this zone employed approximately 118,000 people, 21% of the Metropolitan Centre's 550,000 pre-pandemic workers.
- **Pearson Employment Area Pilot Zone:** In a Goods Production and Distribution District, this zone includes many businesses that have remained open with mitigations in place. Prior to the pandemic, the Pearson Employment Pilot Zone employed more than 200,000 people, 63% of the more than 300,000 workers in and around the Toronto Pearson Airport Employment Zone.
- **Scarborough Centre Pilot Zone:** A Regional Centre, this zone includes many types of workplaces and public-facing spaces—including a mall, a civic centre, library, small businesses, big box stores, and office towers—and employed more than 17,500 workers pre-pandemic.

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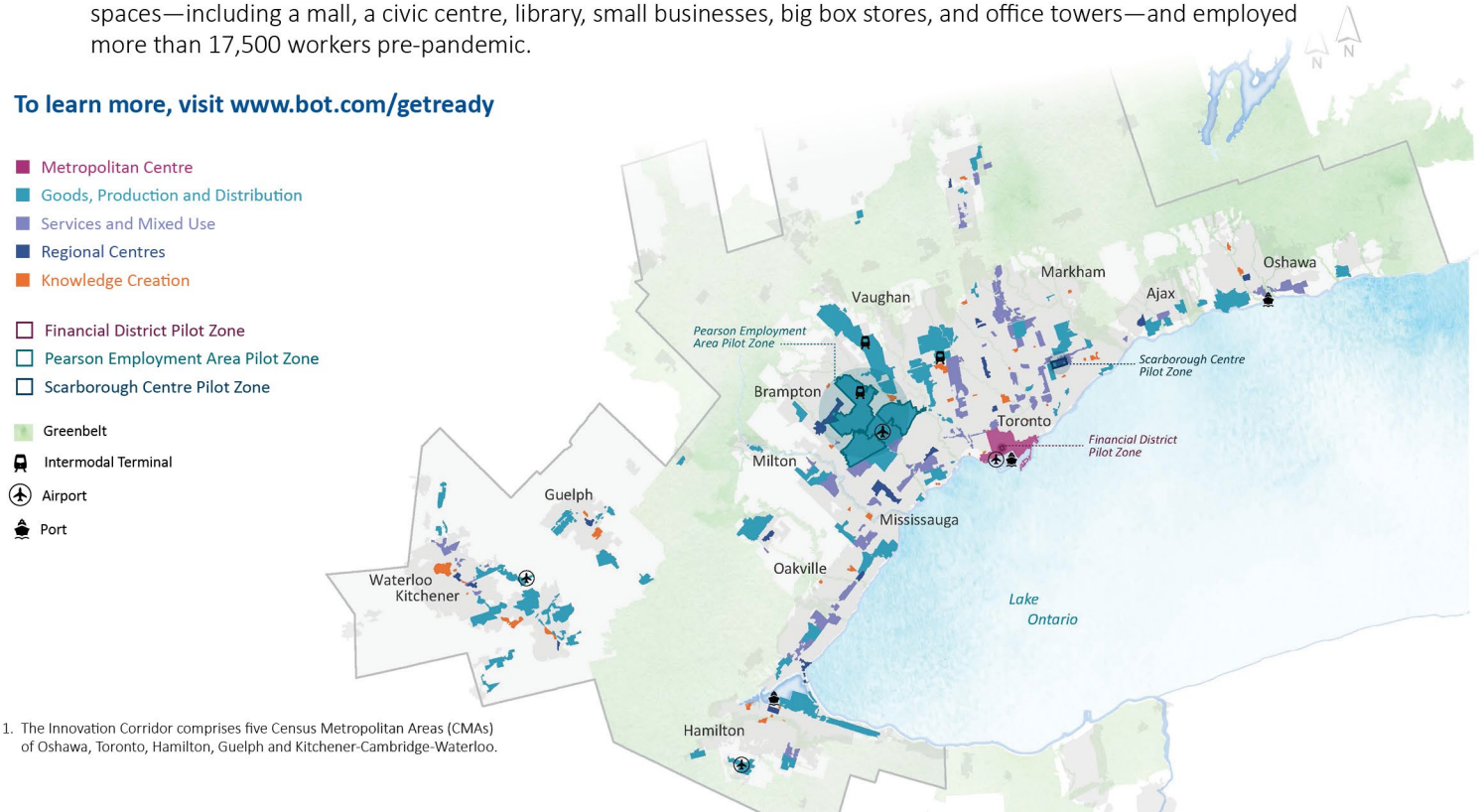


1. The Innovation Corridor comprises five Census Metropolitan Areas (CMAs) of Oshawa, Toronto, Hamilton, Guelph and Kitchener-Cambridge-Waterloo.

Foreword

When the COVID-19 pandemic began in March 2020, all our lives changed. Not just in the practical sense of new routines, new ways of getting around or sharing spaces, but also in the collective way we talked about this historic moment. Terms like "PPE," "flattening the curve" and "herd immunity" are now used and understood widely. This was because the problem – in this case, a highly contagious virus – threatened each and every one of us, so we needed a shared lexicon to overcome it collectively. In other words, a new language for new times. In this report, one in a series on each of the five types of Business Districts, we deep dive into the conditions unique to the Goods Production and Distribution District (GPDD) that will determine a safe continuation of economic activities and future-proofing for short- and long-term recovery of the District. The report complements TRBOT's mitigation playbook for the Pearson Employment Area Pilot Zone, which identifies actions that address actual and perceived health and safety concerns to reduce the risk of virus transmission as the vaccine rollout takes place.

In this series of reports that spotlights business districts across Canada's Innovation Corridor, the Toronto Region Board of Trade introduces a framework for characterizing, understanding and analyzing the region's economic makeup and assessing the impact of the pandemic. Again, a new language for new times. Because the truth is that the pandemic was not the first existential threat to the Toronto region's prosperity, nor will it be the last.

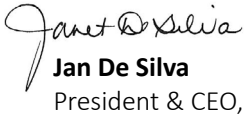
Historic population growth, driven by strong immigration and job creation, left our region as one of the world's most expensive places to buy a home with some of most congested roads, highways and subways. Our fastest growing sectors – like construction, AI, cleantech – are facing a shortage of skilled workers. Businesses that start in the region aren't able to scale here, or they find themselves unable to access new consumer markets.

The ways we've historically tackled such issues are also coming up short. Piecemeal, project-by-project investments by federal and provincial governments can't keep up with the region's expanding list of needs. A legacy funding model fiscally straps municipalities, of which there are 34 across the Corridor, within their own city limits. Yet drivers of our economy – the smooth flow of people and goods, a highly-skilled workforce, a competitive and trading market – transcend municipal boundaries. Now, more than ever, we require more data nuanced ways to understand, plan for and address barriers to growth in our regional economy.

The Business District Report Series, which this report belongs to, are that guide. The reports use research and insights from our data-driven Economic Blueprint Institute to deep dive into five types of business districts first debuted in the Board's 2020 regional recovery playbook, Shaping Our Future. Five ways to view, understand and analyze parts of the Innovation Corridor defined not just by where but by what.

By mapping and profiling these districts we better understand how they've been impacted by the pandemic and what each requires to recover. For instance, financial services offices in downtown Toronto have different needs than warehouses and e-commerce fulfillment centres around Pearson Airport. Because recovery is a global endeavour, this Business District Report Series also provides a methodology for others to apply to their own regions.

After all, when it comes to managing COVID-19 and planning for recovery there is no one-size-fits-all solution. Studying the unique, place-based structure of our economy can give us the map to navigating out of this pandemic-fuelled recession – and seizing on the region's still untapped potential.

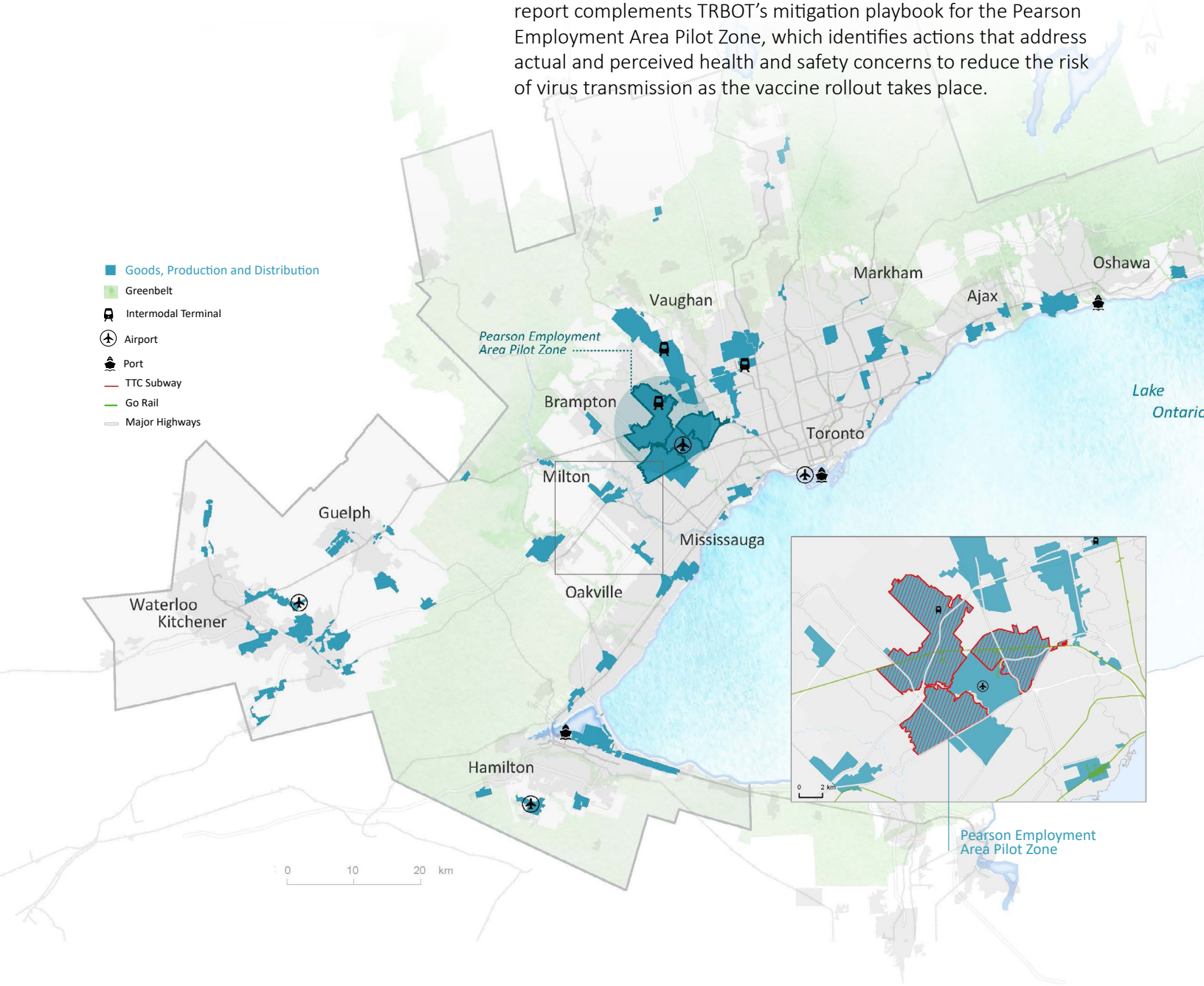


Jan De Silva
President & CEO,
Toronto Region Board of Trade

Executive Summary

In Shaping Our Future, the Toronto Region Board of Trade (TRBOT), through its Economic Blueprint Institute (EBI) introduced a Business Districts framework to measure and track regional economic recovery. These Districts transcend the boundaries of the 34 municipalities that make up the Innovation Corridor (the "Corridor") because this economic zone functions regionally.

In this report, one in a series on each of the five types of Business Districts, we deep dive into the conditions unique to the Goods Production and Distribution District (GPDD) that will determine a safe continuation of economic activities and future-proofing for short- and long-term recovery of the District. The report complements TRBOT's mitigation playbook for the Pearson Employment Area Pilot Zone, which identifies actions that address actual and perceived health and safety concerns to reduce the risk of virus transmission as the vaccine rollout takes place.



Economic Health in the Corridor

More than a year after the pandemic, the negative impacts to the economy persist. As of March 2021, employment in the Corridor has fallen by 243,000, or 5% since the start of the pandemic.[1] There are also notably fewer operational businesses across the Corridor – the number of active businesses declined by 5% between February and December of 2020.[2]

However, the pandemic-induced economic crisis has not prompted widespread bankruptcies. In fact, according to The Office of the Superintendent of Bankruptcy, consumer and business insolvencies dropped 30 and 24 per cent in 2020, respectively, relative to 2019 levels.[3] A similar story is conveyed in Dun & Bradstreet's data on financial stress scores, which have not changed significantly for businesses across the Corridor.

Fiscal support from governments and a formidable pivot in business practices have gone a long way in enabling businesses to stay afloat. Curb side pick-up was quickly established as a norm, and programs such as Digital Main Street and TRBOT's Recovery Activation Program (RAP) have helped businesses go digital and build resilient business processes. Still, to weather the storm businesses have racked up substantial debt. Small businesses in Ontario have taken on an additional $66.7 billion in debt due to the pandemic – an average of nearly $208,000 per business.[4] As government supports wind down, it will be crucial for policy makers to continuously assess the fiscal health of businesses and respond accordingly.

Economic Health in the Goods Production & Distribution District

Unlike the Metropolitan Centre (MC), which emptied out of office and service workers, the GPDD, the heart of Canada's transitioning manufacturing sector, kept production going and goods moving across the Corridor. The essential nature of major manufacturing and distribution operations means that it has seen the least amount of economic disruption across the five Business Districts. Workers continued to commute to their workplace in the District, mostly by car due to its low density, urban form, and lack of transit accessibility to the GPDD.

The continued flow of workers and presence of larger retail stores meant that the District was less impacted by the drop of in-person visits to stores. In fact, many retail and wholesale businesses with operations in the District have thrived during the pandemic because of the shift to online purchases. The web of transportation and logistics operations supporting e-commerce have also benefited from the growth in e-commerce transactions.

The dramatic fall in air travel has forced Pearson International Airport to transition rapidly into an international goods movement hub alongside John C. Munro International Airport in Hamilton.

The flipside to the economic resilience of the District has been the health risks posed to workers. Of the close to 1 million workers who work in the GPDD[5], many are essential and front-facing and therefore have taken on a disproportionate share of the risk of COVID-19 exposure. As new waves of the pandemic progress, the public debate about the need for prioritizing vaccination for essential workers, many of whom had to continue to travel to the District to work, has grown.[6]

The District has also faced a set of unique economic and infrastructure challenges. The dramatic fall in air travel has forced Pearson International Airport to transition rapidly into an international goods movement hub alongside John C. Munro International Airport in Hamilton. The aviation sector will face significant delays in the demand for air travel, having cascading effects on the sizable and diverse workforce employed in the sector.

Pre-pandemic, congestion on regional roads, highways, and rail corridors in one of the fastest growing urban regions in North America was already a critical pain point, leading to conflicts between goods and passenger movement. Preliminary modelling from the Ontario Ministry of Transportation shows that the congestion challenge is going to get significantly worse by 2041 and highlights the need for planning to protect critical road and rail corridors.[7]

Rapid growth also meant growing pressure on employment lands to be converted for residential purposes even when industrial properties to support growth in e-commerce has been in high demand. With this rise of e-commerce, the need for a multi-modal goods movement strategy that combines road, rail, marine, and air transportation based on data-driven supply chain visibility will be critical for optimizing existing infrastructure and enhancing the Corridor's economic competitiveness.

As the economy of the Innovation Corridor begins to re-open and recover, key factors affecting the continued economic health of the GPDD include:

Reducing Risk of Transmission

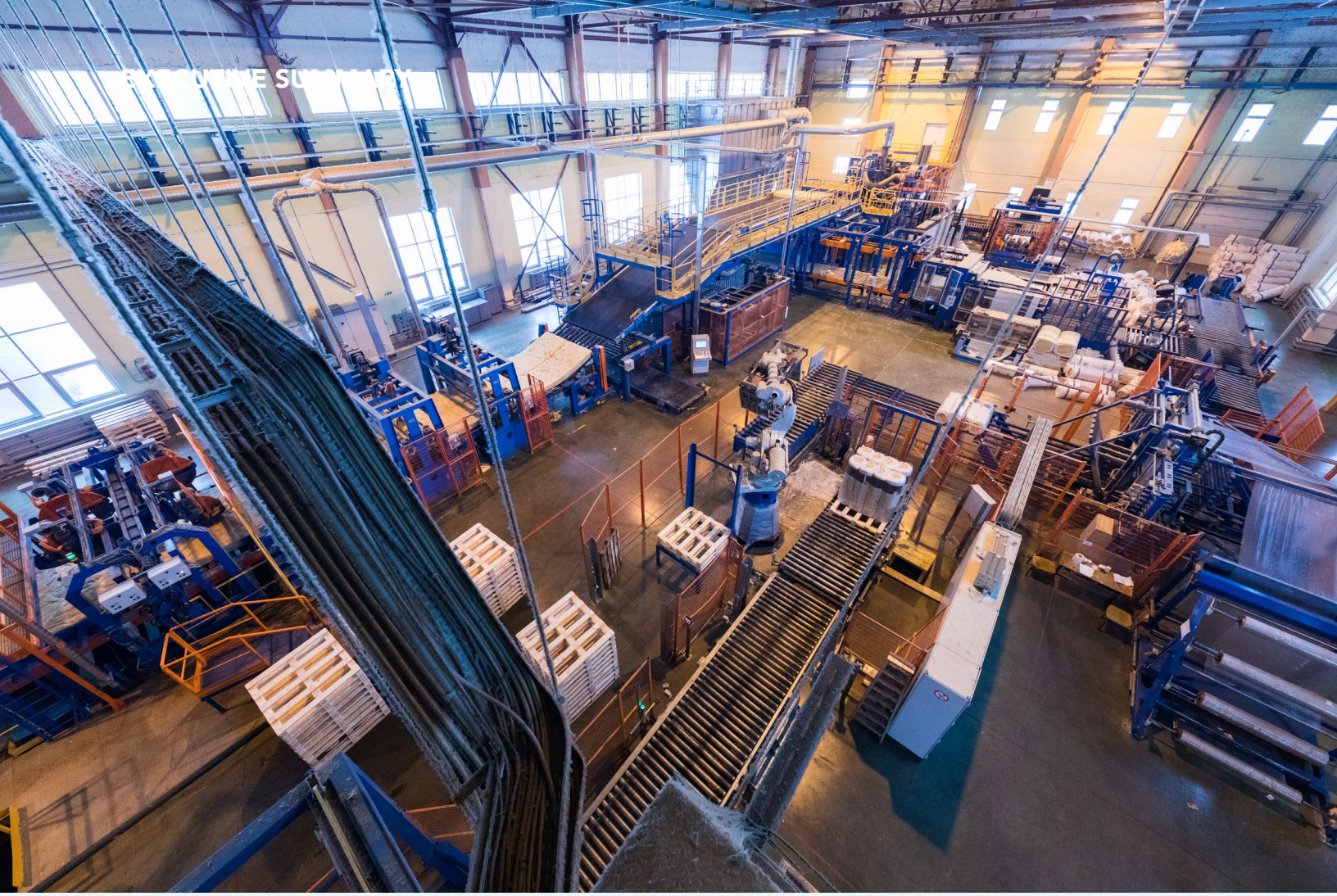
Risk reduction in factories, warehouses, and other workplace settings in the District is key to suppressing the spread of the virus and enabling the continuity of economic activities. Businesses in this District are critical to a functioning economy and require workers to continue traveling. Despite having lower density, workplaces such as manufacturing, warehousing, and logistics facilities in the District have been a significant source of outbreaks. The continued movement of workers in and out of the District, including truck drivers, means that they must be considered as part of early vaccination deployment planning, starting with the Toronto Pearson Employment Area Pilot Zone, which has one of the largest concentration of workers from some of the hardest hit communities.*

Drivers of Recovery

Key drivers that will impact the trajectory of recovery for the District include: (i) supporting the growth of e-commerce; and (ii) reviving highly impacted industries, including air transportation. Because of the large concentration of employment and importance of the GPDD to the regional economy, it is critical that the right infrastructure investments and goods-movement planning be undertaken to support the continued and expected growth in e-commerce. This means ensuring that there is an adequate supply of industrial lands in the right places to accommodate warehouses and distribution centres. Bold measures must also be taken to support hard hit industries in the District, such as the air transportation industry, that have suffered greatly throughout the pandemic.

Support must also be provided to vulnerable workers in the District, including low-wage and non-remote workers facing challenging economic and health conditions. Workers in industrial sectors also face higher than average risks for automation-related job transformations. This does not, however, mean that automation should be discouraged. On the contrary, enabling greater technological adoption will help companies in the District compete in the global marketplace, especially when supported by a workforce that is trained to operate in the workplace of the future.

Early findings:
*On April 7, 2021, the Board released early findings suggesting that workplace vaccination could play an integral part in curbing the rise of COVID-19 cases in Peel region. As of May 2021, the government of Ontario had included such action as part of its vaccine roll out strategy.



Building a Strategy for Recovery

Pre-Pandemic Pain Points and Opportunities:

Increased Congestion and its impact on the Movement of Goods
Goods production and the efficient movement and distribution of goods are critical to the regional economy. Congestion on regional roads, highways, and rail corridors along with conflicts between goods movement and passenger movement was a critical pain point prior to the pandemic. Congestion is estimated to cost the Toronto Region $6 billion annually in productivity, rising to $15 billion by 2031.[8]

Growth of Automation and Advanced Manufacturing
The use and application of the latest era of advanced manufacturing technologies is expected to become a prerequisite for firms to compete in the global marketplace. These advancements in the manufacturing sector include the adoption of digital capabilities, additive manufacturing, automation technologies, and the application of the internet-of-things, among other innovations.

Conversion Pressures on Employment Lands
A fast-growing urban region has created substantial pressure to convert lands set aside for employment for residential uses, especially along transit corridors. Residential encroachment has also led to conflict with existing businesses, forcing some to pick up and move elsewhere.

The Rise of E-commerce and the Growing Demand for Industrial Space
Industrial real estate had been booming even prior to 2020, supported by the growing presence of Amazon and other e-commerce players. Leading up to the pandemic, the Corridor experienced rising demand for warehouses, distribution centres, and other properties for logistical uses.

Pandemic impacts and recovery strategy continued on next page.

Pandemic Impacts:

Significant Health Risks Posed to Essential workers
While the rest of the workforce quickly pivoted to working from their homes, essential workers continued to travel to work to keep critical components of the economy running and were left exposed to significant health risks. The occurrence of COVID-19 outbreaks in industrial workplaces in the District highlights the elevated risks posed to essential workers.

Steep Decline in Passenger Air Travel
The collapse of passenger air travel during the pandemic meant layoffs for many workers at airports within the District. The airline industry is expected to experience a significant lag in its recovery due to lingering health anxieties, inconsistencies in global vaccination timelines, and long-term changes in business travel demand.

Acceleration of E-commerce
Business closures and restrictions induced by the spread of COVID-19 have resulted in a surge in e-commerce activity, further intensifying the demand for industrial real estate. Businesses in the GPDD are key beneficiaries of this trend, many of which operate their head office locations in the District.

Expedited Shift Towards Automation
Increased efforts towards automation will be felt most acutely by workers that were already at high risk of automation-related job transformations. These include workers in the manufacturing sector, where a large share of workers have been subject to a high-risk of automation-induced job transformation even prior to the pandemic.

Post-Pandemic Recovery Strategy:

Developing a Multi-Modal Goods Movement Strategy
A multi-modal, data driven approach that combines road, rail, marine, and air transportation and increases supply chain visibility will be critical for optimizing existing infrastructure and enhancing the Corridor's economic competitiveness.

Supporting E-commerce and Protecting Employment Lands
To support the growth of e-commerce, and industrial activity more broadly across the Corridor, steps must be taken to strengthen employment land protections and adopt a regional approach to take inventory of industrial employment lands.

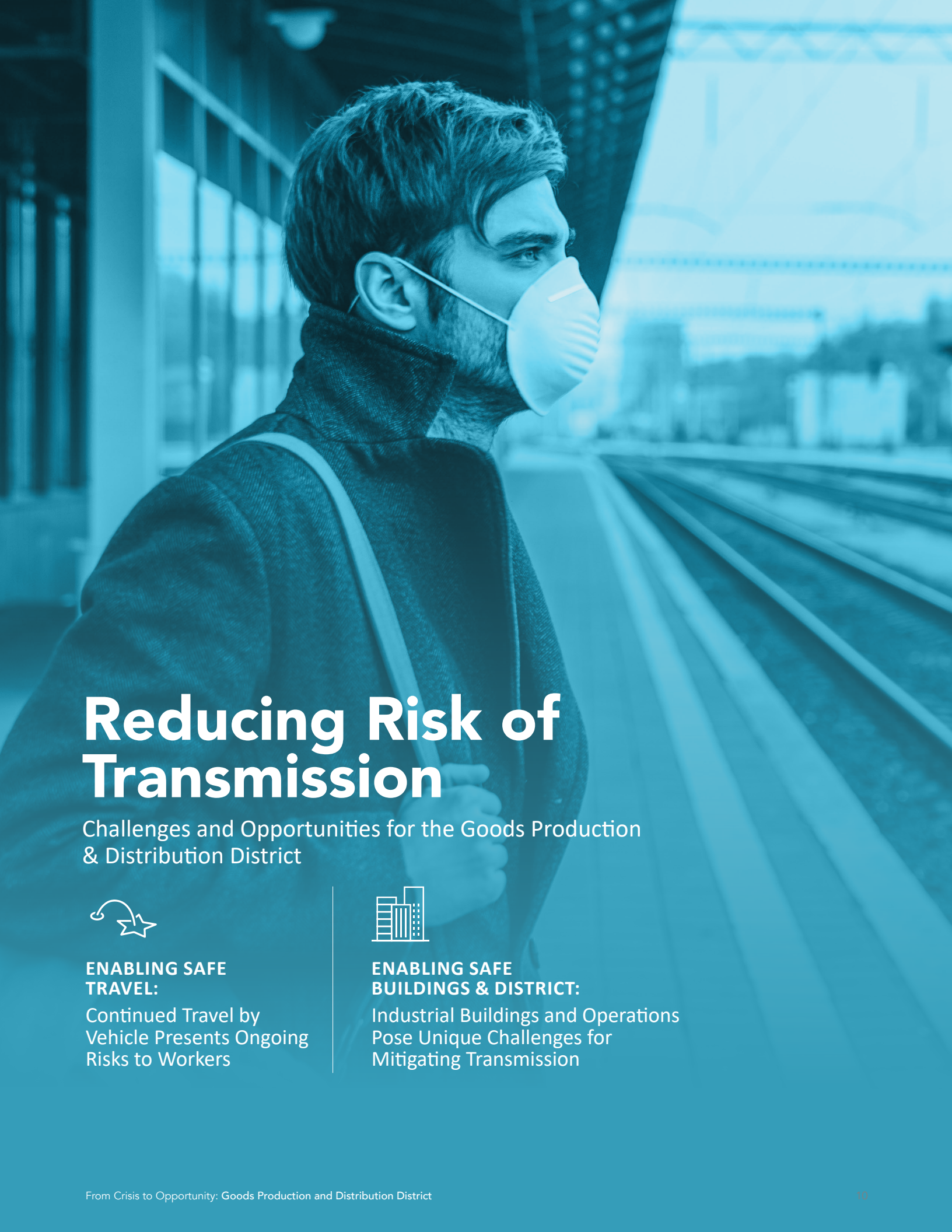
Advancing First and Last Mile Mobility Solutions
Almost all work-related travel to the District is through private automotive mode of transportation. This is mainly due to the District's low density, urban form, and a lack of transit accessibility. Smart mobility solutions and on-demand micro transit present promising opportunities to address first/last mile challenges.

Enabling Industry 4.0 Transformation and Futureproofing our Workforce
To keep pace with an increasingly competitive global economy, governments must support the development and adoption of automation and industry 4.0 technologies, including through the availability of 5G connectivity. Preparing our workforce for tomorrow's jobs will require more businesses to take on a leading role in investing in training and learning. A successful strategy must also build upon existing government policies and initiatives to upskill and reskill workers, and support lifelong learning.

Developing a Business District Framework for Canadian Cities:

The Business District framework developed for the Innovation Corridor is based on two primary data sources: 1) employment area designations captured in municipal official plans and the provincially significant employment zones as referenced in Ontario's growth plan for the Greater Golden Horseshoe; and 2) estimated number and type of jobs based on 4-digit Industry (NAICs) Codes and Place of Work Status for the Employed Labour Force 15 years and older from the 2016 Canadian Census.

To determine a Business District type, we overlaid census tracts with employment areas and where boundaries did not match, we allocated jobs based on percentage of overlapped area. It is not a perfect science. However, the established Business District framework provides a working model for better understanding economic activity in the Corridor that can be refined with the next census, and as more granular economic and jobs data are brought to the project.



Reducing Risk of Transmission

Challenges and Opportunities for the Goods Production & Distribution District

ENABLING SAFE TRAVEL:

Continued Travel by Vehicle Presents Ongoing Risks to Workers

ENABLING SAFE BUILDINGS & DISTRICT:

Industrial Buildings and Operations Pose Unique Challenges for Mitigating Transmission

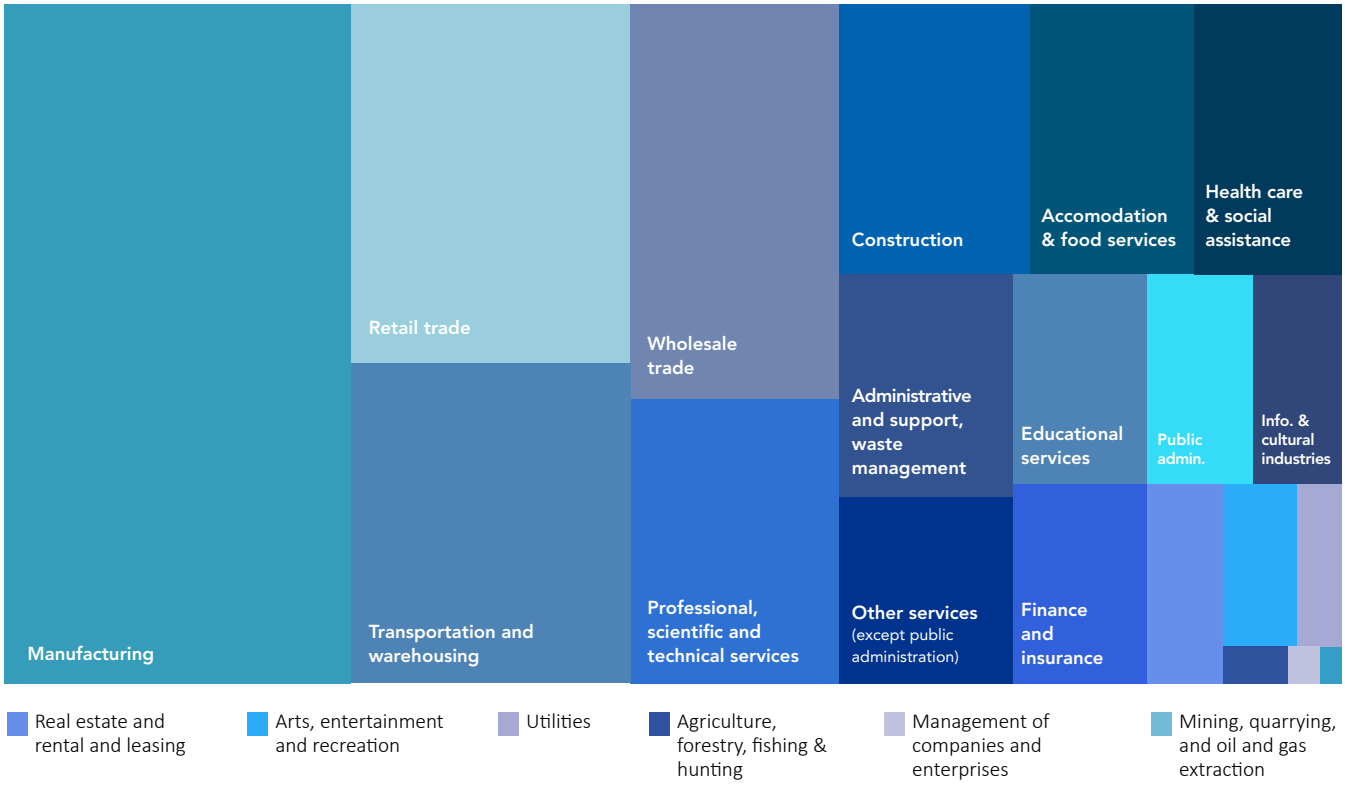
The Goods Production and Distribution District (GPDD), unlike other Business Districts across the Corridor, saw the least amount of economic disruption due to the continued movement of people and goods.

Powered by the growth of e-commerce and the presence of essential factories, warehouses, and distribution centres which remained open throughout the pandemic, the Goods Production and Distribution District (GPDD), unlike other Business Districts across the Corridor, saw the least amount of economic disruption due to the continued movement of people and goods.

Workers in manufacturing, transportation and warehousing, wholesale trade, and construction – who were deemed essential in the pandemic – make up close to 50% of employment in the GPDD (Figure 1).[9] At the same time, however, maintaining the flow of goods has meant that workers in this District face significant personal risks to their health, requiring employers in the District to put protocols in place early in the pandemic to make their workplaces safe and reduce virus transmission and outbreaks.

To consider the issue of vulnerable workers in the District, we examined the area surrounding Toronto Pearson International Airport to provide a profile of workers that can inform the vaccine deployment strategies for the Innovation Corridor.

FIGURE 1: **Employment Breakdown by Sector, Goods Production and Distribution District, 2016**



Source: "Place of Work," Statistics Canada, Census (2016).

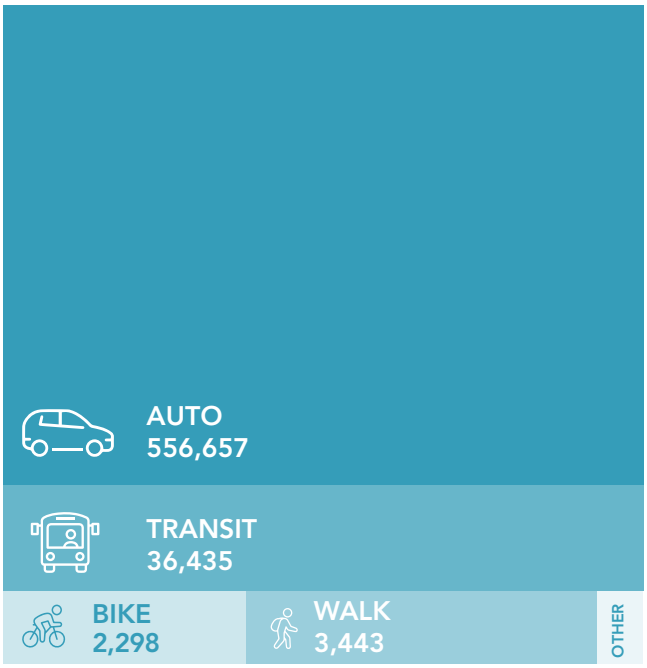
Enabling Safe Travel: Continued Travel by Vehicle Presents Ongoing Risks to Workers

Approximately 600,000 daily work trips were made to the GPDD prior to the pandemic, accounting for 34% of total work trips across the five Business Districts.[10] The combined factors of low-density employment, limited transit options, operations outside the 9-5 work day, and the widespread origin of its workforce make workers in the GPDD more reliant on driving than other Districts. Close to 93% of daily work trips were made by automotive vehicles (Figure 2).

The continuing operations of essential businesses in the GPDD has meant that commuter travel to the District remains largely unchanged. Exemptions to manufacturing, warehousing, logistics, and other essential industries were necessary to maintain essential supply chains, production, and goods flowing across the region. Unlike other Business Districts across the Corridor, which saw significant declines in commuter travel, work trips by vehicle to the GPDD declined by only 6% between the fourth quarters of 2019 and 2020 (Figure 3).[11] Still, the pandemic has caused persistent disruptions to business activities in the District – truck trips to the GPDD remained 15% below 2019 levels in the fourth quarter of 2020.[12] Even while truck trips fell slightly, the average length of trips are estimated to be more than 22% longer over the same period, signaling potential structural changes to the flow of goods across the Corridor.[13]

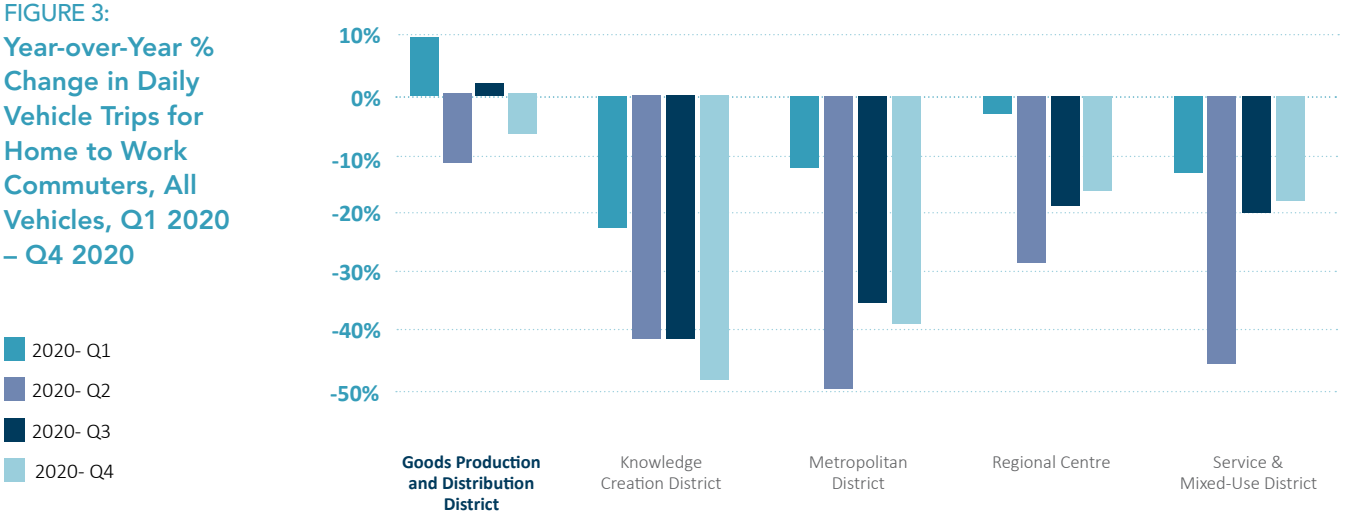
With thousands of truck drivers entering the District each day, there is a greater risk for virus transmission, particularly across long distances. A total of 22,530 transport truck drivers are employed in the GPDD alone, not to mention drivers from other regions that continue to travel in and out of the District.[14] Contact tracing for businesses in the District is required not only to monitor their own employees, but also to track external drivers picking-up or delivering products at their location.

FIGURE 2: **Commuter Trips by Transportation Mode, Goods Production & Distribution District, 2016**



Note: "Auto" modes of transport include travel by personal vehicle, taxi, ride hailing service, or a motorcycle. "Transit" transportation includes trips in which the primary mode of travel is some form of transit, which includes both local transit and GO Transit trips. "Work trips" are defined as trips made by workers from their residential zone to their place of employment. Any trips involving intermediate stops between a place of residence and work are ignored in this analysis. Home to work trips captured in this analysis are more representative of commuting pattens. Intermediate trips likely account for a small share of commuting trips and do not have a significant impact on the overall findings of our analysis. Trip counts represent estimates for trips made during a typical 24 hour weekday in 2016.
Source: Data Management Group at the University of Toronto Transportation Research Institute, Transportation Tomorrow Survey (2016).

FIGURE 3: **Year-over-Year % Change in Daily Vehicle Trips for Home to Work Commuters, All Vehicles, Q1 2020 – Q4 2020**



Note: Data represents changes in the average daily vehicle trips for workers that commute from home to work in the Business District by car, truck, or bus.
Source: StreetLight (2020).

Enabling Safe Buildings: Industrial Buildings and Operations Pose Unique Challenges for Mitigating Transmission

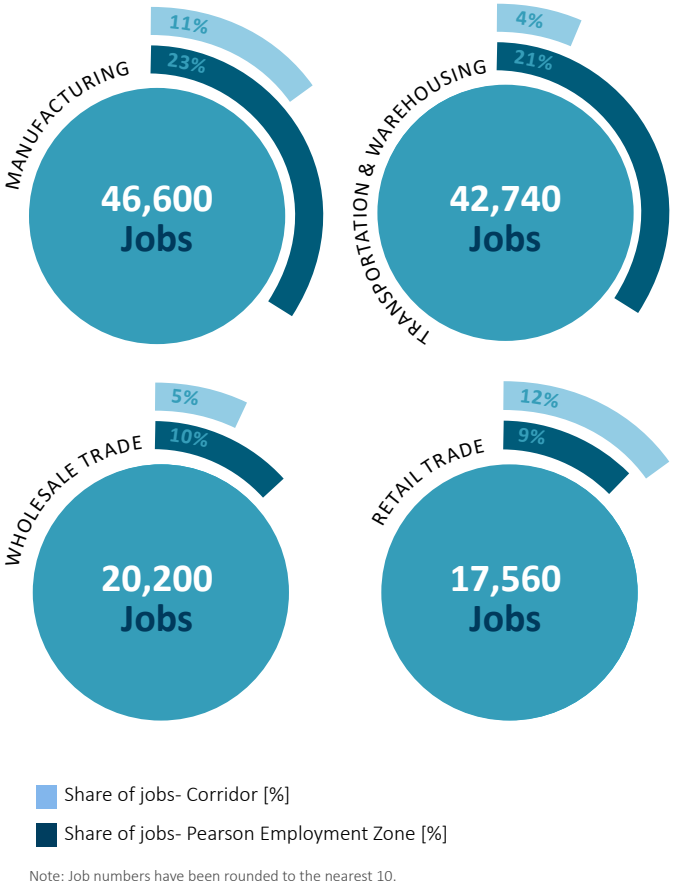
Goods warehousing, manufacturing, and other industrial activities require a large amount of space to accommodate operations. Because of the ubiquity of these operations in the District, the GPDD is the least dense of the five Business Districts. The District hosts an estimated 2,230 jobs per square kilometre of space, by far the lowest among the five Business Districts and just over a tenth of the density in the Metropolitan Centre (MC).[15] The large floor plans and relative lack of elevators makes congestion management of the workforce much easier than in other Business Districts.

Despite these advantages, the nature of the work in the GPDD makes reduction of virus transmission a notable challenge. Production facilities operate at a rapid pace and can involve some degree of physical contact. Additionally, certain facilities are often designed to be strictly climate controlled, with little to no outside ventilation or exposure. Food processing plants, for example, must maintain cold temperatures to prevent food spoilage, and must be completely sealed to prevent cross-contamination. This creates a conducive environment for the virus to linger and spread.[16] Over the course of the pandemic, workplaces such as manufacturing, warehousing, and logistics facilities across the Corridor have been a common source of transmission for the virus.[17]

While the District has experienced outbreaks, employers in the GPDD have also been on the forefront of testing and tracing and working with public health authorities to reduce outbreaks. Other Business Districts can learn from their frontline experience.

Over the course of the pandemic, workplaces such as manufacturing, warehousing, and logistics facilities across the Corridor have been a common source of transmission for the virus.

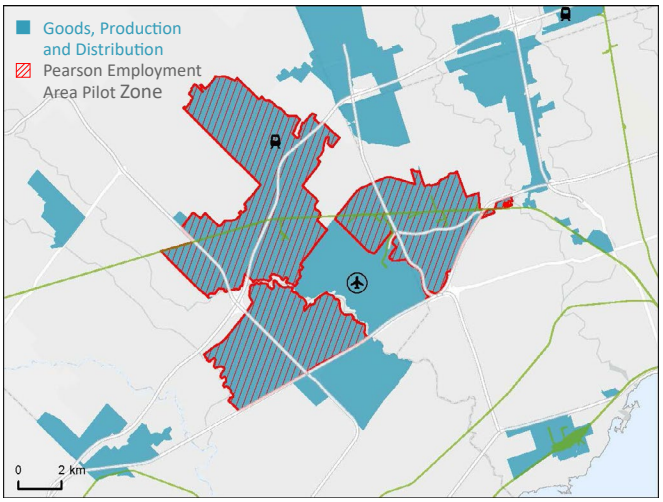
Top Four Sectors in the Pearson Employment Zone by Employment



Note: Job numbers have been rounded to the nearest 10.
Source: "Place of Work," Statistics Canada, Census (2016).

Pearson Employment Area Pilot Zone: A Profile of Workers at Risk

The Toronto Region Board of Trade (TRBOT) worked with colleagues at the Mississauga and Brampton Boards of Trade, along with the City of Mississauga and several large employers in the area surrounding Pearson Airport to learn and share best practices in mitigating the risk of virus transmission. While these practices are captured in the Pearson Employment Zone Playbook, the GPDD report focuses on understanding the profile of workers in the Pearson Employment Area Pilot Zone (Pilot Zone) to highlight the vulnerable workers at risk who have kept the economy going while performing essential work.



REDUCING RISK OF TRANSMISSION

Pre-pandemic, workers commuting to the Zone accounted for roughly 158,000 total daily work trips, the vast majority of which (92%) were by auto vehicles.[18] Despite a sharp decline in Q2 of 2020, when home-to-work trips by vehicle fell by 23%, commuting activity to the Pilot Zone rebounded sharply in the second half of the year (Figure 4).[19] Although trip volumes remain below pre-pandemic levels, this demonstrates the essential and non-remote nature of the jobs performed by workers in the Zone. Bus trips into the Pilot Zone declined sharply in the aftermath of the pandemic, dropping 66% across September and October of 2020 relative to levels in 2019. This drop likely underscores the perceived risks associated with the use of transit and has been seen across the Corridor with declining ridership.

Our analysis also determined the origin of workers continuing to work in the Pilot Zone. In the fourth quarter of 2020, of those still commuting to work in the Pilot Zone, 41% were from Brampton, 17% from the City of Toronto, and 16% from Mississauga, together accounting for more than 70% of total commuter trips. Our analysis suggests that 51% of these workers are employed in low-wage jobs, earning less than $40,000 in after-tax annual income and nearly 47% do not have educational attainment beyond a high school diploma. Moreover, more than 50% of commuters are from racialized communities, further underscoring the vulnerability of this community of workers.[20]

As a vital employment zone in our region with a large concentration of vulnerable workers, the Pilot Zone provides an important opportunity for government and employers to work together to reduce the risk of virus transmission while keeping workers safe. Early research suggests that vaccinating essential workers, such as those in the Pilot Zone, in large metropolitan areas can reduce the risk of virus transmission, long-term impacts of COVID-19 on health, and the number of deaths.[21]

As part of vaccine roll out, the vulnerability of workers employed in the Pilot Zone and other areas within the GPDD with a large concentration of workers should be considered as part of vaccination deployment planning.*

MITIGATION TOOLKIT

For a full list of mitigations that can be used to help improve safety in the GPDD, click here to access the Mitigation Toolkit.

Early findings:
*On April 7, 2021, the Board released early findings suggesting that workplace vaccination could play an integral part in curbing the rise of COVID-19 cases in Peel region. As of May 2021, the government of Ontario had included such action as part of its vaccine roll out strategy.

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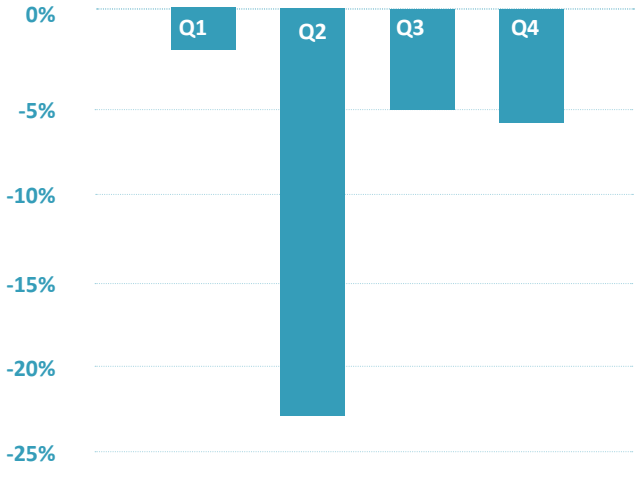
FIGURE 4:
Year-over-Year % Change in Daily Vehicle Trips for Home to Work Commuters, All Vehicles, Pearson Employment Area Pilot Zone, Q1 2020 – Q4 2020



Note: Data represents changes in the average daily vehicle trips for workers that commute from home to work in the Pearson Employment Area Pilot Zone by car, truck, or bus.
Source: StreetLight (2020).

Recovery Drivers:

Challenges and Opportunities for the Goods Production & Distribution District

- Acceleration of E-commerce
- Rebound of Highly Impacted Industries and the Visitor Economy
- Challenges Facing Vulnerable and At-risk Workers
- Acceleration and Adoption of Industry 4.0 Technologies
- Fiscal Health of Cities

While the GPDD largely escaped disruption during the pandemic and ensuing lockdowns due to the presence of essential industries and on-site operations, some key trends that have been accelerated by the pandemic will impact longer-term recovery in the District.

The rapid growth of e-commerce will drive the need for warehouse and distribution space in the Corridor, making it even more crucial to ensure a supply of industrial employment lands and policies that prevent the conversion of these lands to other uses. A regional approach to planning for this supply will be essential.

Toronto Pearson and John C. Munro-Hamilton International Airports have played an important role in the growth of e-commerce even with reduced passenger travel. Support for the aviation industry will be required as the rebound for travel, both leisure and business, will take time. However, their central role in the Corridor's supply chain management and consumer spending activities must also be taken into account as part of recovery planning.

Other challenges such as automation-induced job transformations as firms continue to adopt technology to increase their global competitiveness will also impact long-term recovery of the District. Government and businesses must work together to proactively address reskilling and upskilling of workers so that everyone can benefit from the path to recovery.

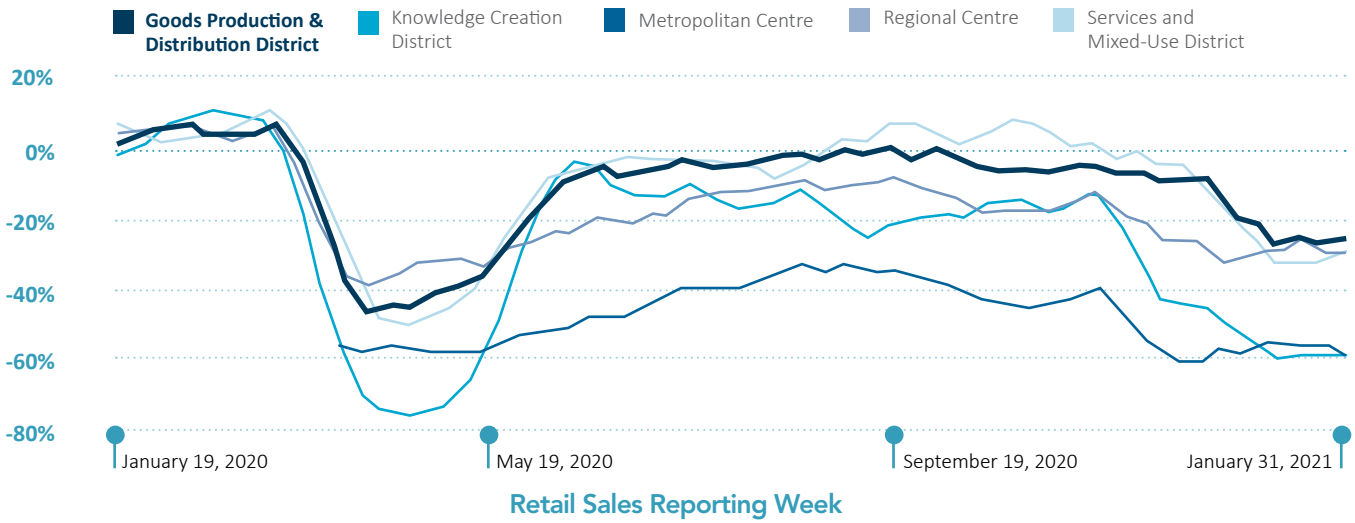
The GPDD has demonstrated notable resiliency in consumer spending activity at physical business locations in the face of widespread restrictions and reduced movement of people during the pandemic.

Acceleration of E-commerce

Together with the Services and Mixed Used District (SMUD), the GPDD has demonstrated notable resiliency in consumer spending activity at physical business locations in the face of widespread restrictions and reduced movement of people during the pandemic (Figure 5). While in-person spending dropped as much as 51% in April during the first lockdown, spending in the District recovered sharply within three months of the initial province-wide shutdown. The buoyancy seen in consumer spending is largely attributed to the growth in retail expenditure relative to 2019. Conversely, depressed levels of service-related expenditures, particularly on travel and entertainment, continue to act as a drag on overall economic activity in the District.

Rising in-person retail spending likely stems from two factors: a) continued commuter travel of essential workers into the District, and b) the presence of larger retail stores. Big box shopping centres, free standing large retail stores, and neighbourhood shopping centres make up more than half of total retail floor area in the District, making stores in the GPDD more likely to be open and more attractive places for patrons.[22]

FIGURE 5: **Year-over-Year % Change in Consumer Spending Levels (3-Week Moving Average), In-Store Transactions, January 2020 – January 2021**



Note: Dates for consumer spending data are reported based on the start of the retail sales reporting week, which starts on Sunday. Consumer spending data corresponds to year-over-year changes in weekly transactional dollar volume. In-store transactions are represented by 'card present transactions' recorded by Moneris. In-store transactions that are recorded as 'card not present transactions' are not included. Only Moneris-acquired credit and debit transaction data are included.
Source: Moneris (2021).

Total retail activity in the District has been further boosted by the acceleration of e-commerce. Quantified through 'card not present' transactions processed by Moneris, retail e-commerce activity has boomed in the District since the start of the pandemic.[23] Between April and December 2020, weekly e-commerce retail spending attributed to companies located in the District was on average more than 30% higher than levels seen in 2019.[24]

Between April and December 2020, weekly e-commerce retail spending attributed to companies located in the District was on average more than 30% higher than levels seen in 2019.

The shift away from bricks-and-mortar retail towards a preference for online purchases is expected to have a lasting impact on the District, where retail businesses have been notable beneficiaries of the nation-wide shift towards online shopping. As of December 2020, e-commerce accounts for more than 8% of total retail sales in Canada – in December of 2019 it accounted for 5% of total sales.[25]

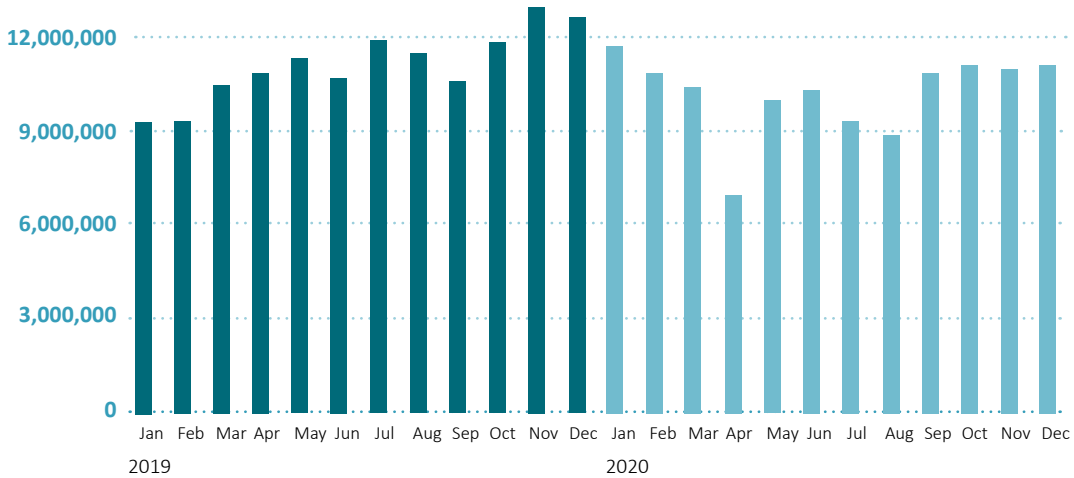
While e-commerce penetration in Canada significantly lags other countries – for example, in China e-commerce accounts for 25% of total retail activity – analysts predict rapid growth over the next several years.[26] This presents significant opportunities for retail companies and supporting operations including logistics, warehousing, and transportation – activities which are highly concentrated in the GPDD.

As the population growth in the Corridor continues, governments will need to develop a more robust strategy to protect employment lands and ensure the right infrastructure is in place to support the growth of e-commerce. Brokerage firm CBRE has estimated that Canada will need an additional 40 million square feet of warehouse space to meet estimated demand.[27]

As industrial space continues to be highly sought after across the region, the importance of protecting employment lands and more detailed policies to protect and manage Provincially Significant Employment Zones (PSEZs), many of which are in the GPDD, take on an added urgency.

The resilience of the GPDD during the pandemic is also evident through an examination of the change in the volume of air cargo. Prior to the pandemic, a substantial amount of air cargo travelled through the belly of passenger planes. While there was an immediate drop in April 2020 in the volume of goods shipped through Toronto Pearson and John C. Munro airports when air travel plummeted, volumes began trending towards gradual recovery (Figure 6). The volume of goods destined to Pearson and Munro dropped by 11% in Q4 of 2020 and 8% in 2020 overall, relative to levels in 2019. Juxtaposed against the 74% decline in passenger traffic at Pearson Airport[28] and 66% decline at the Hamilton Airport[29], this highlights the importance of air cargo as a driver for economic activity in these airports and for the District more generally. The acceleration of e-commerce is expected to further shape the future of air cargo transport as it is estimated to account for 80% of cross border business to consumer e-commerce shipments.[30] As the industry continues to combat the challenges of the COVID-19 pandemic, e-commerce represents a key area of growth.

FIGURE 6:
Volume of Air Cargo Destined to Pearson and Munro Airports (Kg), Jan 2019 – Dec 2020



Source: Transport Canada (2021).

Rebound of Highly Impacted Industries and the Visitor Economy

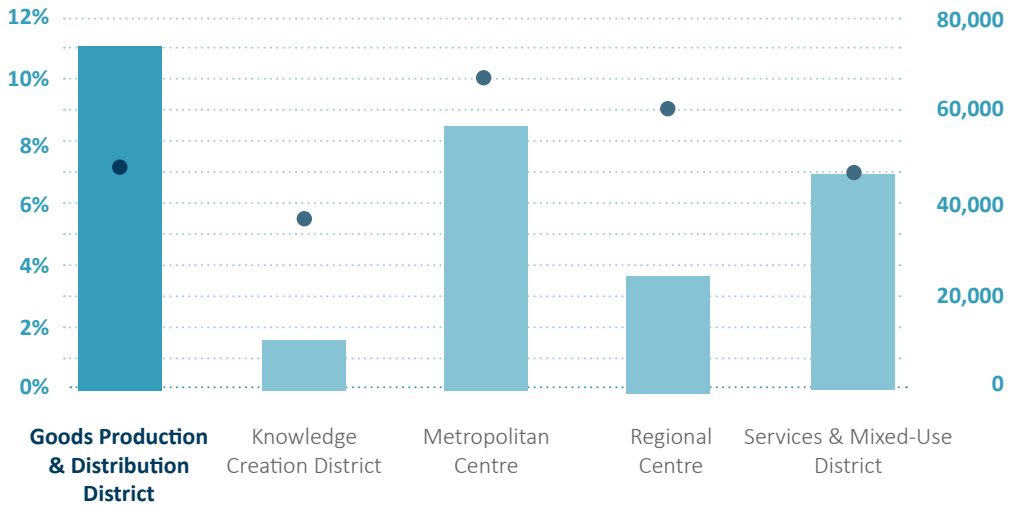
According to our analysis of total employment losses in the Corridor[31] and total decline in economic activity across Canada[32], the three industries most impacted by the pandemic were identified as: Air Transportation; Arts, Recreation and Entertainment; and Accommodation and Food Services (collectively referred to as 'highly impacted industries' throughout this report). The GPDD, because of its large geographic coverage, holds the largest total number of workers in these industries- 70,710 workers, accounting for approximately 7% of its total workforce (Figure 7).[33] The tourism or visitor economy more broadly accounts for 82,160 jobs within the GPDD, consisting of not only the leisure and hospitality industries most impacted by the pandemic, but also other transportation and travel-arrangement related industries that are directly or indirectly impacted by visitor traffic.[34]

The pandemic-related drop in travel outside of personal vehicle use has impacted the significant concentration of transportation-related businesses and workers in the GPDD. Home to the Corridor's international airports, employment in air transportation is significant – employing more than 85% of the industry's workers in the region. The 11,380 workers and businesses that employ them are arguably among the most vulnerable groups in the Corridor.

Home to the Corridor's international airports, employment in air transportation is significant, employing more than 85% of the industry's workers in the region.

Nationally, air transportation remains one of the hardest hit industries in Canada – its GDP in December 2020 remains less than 85% of pre-pandemic levels of economic output.[35] The result has been substantial layoffs across the industry, including the Greater Toronto Airport Authority's announced reduction of more than a quarter of its workforce, over 500 screening officers employed by the private sector at Pearson, and Air Canada's temporary layoffs of 1,500 unionized employees.[36] The industry is expected to experience a significant lag in its recovery, due to reduced flight capacity, lingering health anxieties, inconsistencies in global vaccination timelines, and long-term changes in business travel demand.[37] Enabling a quicker, stronger recovery requires a bold sector strategy that includes support for the industry and a coordinated effort between government and businesses to reduce air-travel risk, boost traveler confidence, and anticipating structural changes to the aviation sector.

FIGURE 7:
Share and Number of Workers in 'Highly Impacted Industries', 2016



Note: Highly Impacted Industries includes Air Transportation; Arts, Recreation and Entertainment; and Accommodation and Food Services.
Source: "Place of Work," Statistics Canada, Census (2016).

Challenges Facing Vulnerable and At-Risk Workers

Low-wage workers have also been disproportionately impacted by COVID-19, including sales and service occupations whose average incomes are well below the average after-tax income in the Corridor.[38] Sales and service workers constitute 82% of jobs in the accommodations and food services and 32% of jobs in the arts, recreation and entertainment sectors in Ontario. These low wage occupations make up 20% (or 192,360) of total employment in the GPDD, on par with the MC (19%) but lower than is the case with the Regional Centres (RC) (27%) and the SMUD (23%). Additionally, marginalized communities in the labour force such as racialized populations, immigrants, women, and young people, are disproportionately employed in these low-wage occupations.[39] This raises concerns about the compounding effects of the pandemic for many workers in the District.

Jobs in the GPDD also have the lowest capacity for remote work capacity across all five Business Districts (Figure 8). Among the nearly 600,000 workers (61% of total) that are unable to work from home, over 31,000 are retail salespersons, who are considered essential and front-facing workers. Other occupations with a significant presence in the District and without the ability to work from home fall within manufacturing industries, namely material handlers (31,890) and motor vehicle assemblers, inspectors, and testers (24,470).

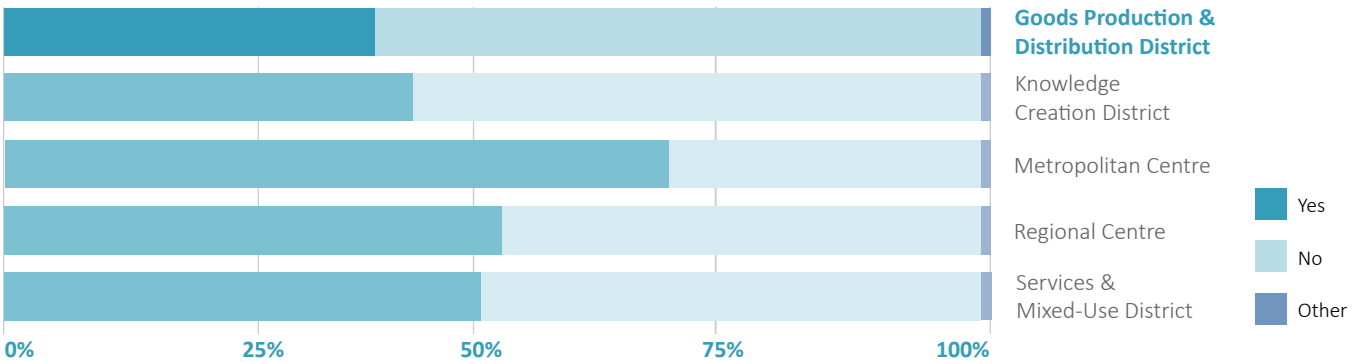
From the lens of longer-term recovery planning, workers in the GPDD are at higher risk of job loss due to the potential for automation-related job transformation.[40] This is mainly attributed to the high concentration of workers in manufacturing, as well as transportation and warehousing. An estimated two-thirds of workers in the District are employed in industries at high risk of transformation, defined as having at least 10% of the workforce with a 70% chance or higher risk of automation-related job transformation. These two industries alone account for over 35% of employment in the District.

Looking at the workforce by occupation, the risk profile is lower with 29% of workers in occupational groups where at least 10% of workers are at high risk of transformation, only slightly higher than the Corridor-wide average. Still, the lowest risk occupations, mainly in professions related to education and business services, are less prominent in the GPDD, with only 15% of workers falling in this category versus 23% across the Corridor. Motor vehicle assemblers, inspectors and testers — occupations with a significant presence in the District— are identified as occupations particularly vulnerable to disruption given the high proportion of their tasks that can be replaced by automation. These workers also have minimal opportunities to transition to jobs with similar skill requirements, lower risk of automation, and similar or higher pay.[41]

Automation in the manufacturing and distribution sectors may accelerate as fears around virus transmission in workplaces continue post-COVID.[42] Failing to address the acceleration of these trends could leave companies at risk of getting "squeezed out" by other firms who have used the pandemic as an opportunity to advance long-term productive capacities.[43] While jobs with a high risk of automation need not necessarily equate to job losses, mitigating this risk job by preparing workers in the GPDD for jobs of the future will require policy that targets vulnerable workers.[44]

Jobs in the GPDD also have the lowest capacity for remote work capacity across all five Business Districts.

FIGURE 8: **Proportion of Workers with a Capacity for Remote Work, 2016**



Note: The 'Other' category includes workers in occupations where the capacity for remote work could not be determined.
Source: "Place of Work," Statistics Canada, Census (2016); EBI classification of occupations with capacity for remote work.

The GPDD is particularly vulnerable to the external shocks and disruptions to the [manufacturing] sector that have been accelerated by the pandemic, including supply chain disruptions and workforce shortages.

Acceleration and Adoption of Industry 4.0 Technologies

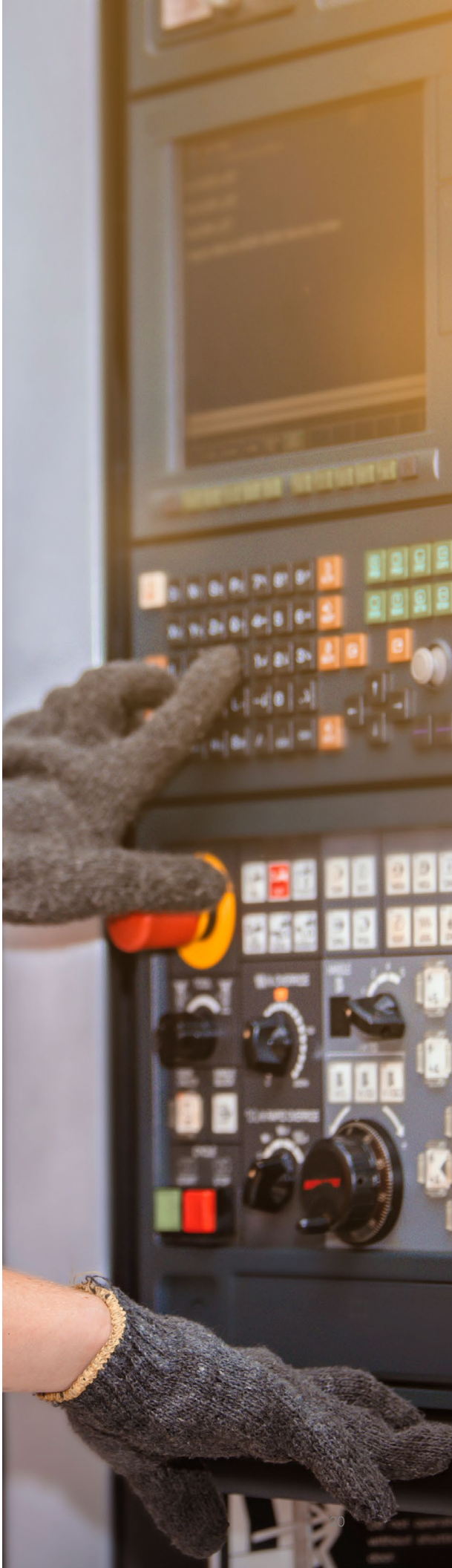
Manufacturing operations are a defining strength of the GPDD, representing over a quarter of jobs in the District. However, this means that the GPDD is particularly vulnerable to the external shocks and disruptions to the sector that have been accelerated by the pandemic, including supply chain disruptions and workforce shortages. To address these challenges, companies will need to adopt Industry 4.0 technologies such as automation, digital capabilities, supply chain visibility solutions, and artificial intelligence.

The future of manufacturing increasingly relies on the need to transform and adapt by integrating the digital with the physical.[45] The loss of manufacturing jobs in many advanced industrial economies over the last 20 years[46] has been accompanied by the push to adopt advanced manufacturing processes and capabilities to revitalize traditional industrial bases.

Southern Ontario is well positioned to take advantage of the ongoing evolution in manufacturing with its diverse and concentrated manufacturing base, leading technology companies, and world-class research and educational facilities. Still, there are concerns in Canada about the uneven adoption of technology, a digital and technical skills gap, and lagging productivity.[47] The resulting divide between Canada's performance relative to its peer jurisdictions is clear – since 2002, Canada has among the lowest levels of manufacturing productivity growth in the G-7.[48]

While many companies in the Innovation Corridor were quick to adapt early in the pandemic, retooling and reshaping their processes to support the production of PPE and other critical supplies,[49] longer term recovery of the sector and its continued vitality rests on a deeper, more sustained shift in practices and technological adoption. Programs such as the Canadian Manufacturers & Exporter's productivity and technology assessments, funded through FedDev Ontario[50], must be built upon to enhance the competitive position of firms in the GPDD, and Ontario more broadly. Technology adoption must also be accompanied by policy solutions and investments that empower workers to evolve alongside a changing workplace and minimize potential skills gaps.

Aligning the strengths of manufacturing and the innovation ecosystem in the Corridor with policy goals, for example attracting talent and meeting climate targets, requires government and industry partnerships designed to achieve mission-driven objectives.



Fiscal Health of Cities

While cities are the drivers of the 21st Century economy, one of the biggest challenges facing cities is that in the Canadian federal system they hold the least power and fiscal capacity even while they are increasingly asked to deliver more and more services. In the Corridor, property taxes account for close to 36% of total municipal revenues, so the impact of the pandemic on property values must be monitored closely while more effective and sustainable funding models are explored.[51]

Overall, the GPDD is responsible for 32%, or $1.728 billion, of commercial and industrial tax revenue collected by municipalities across the Corridor with industrial properties contributing the majority (83%) (Figure 9).[52] This includes education taxes collected for the province by municipalities. The City of Mississauga accounts for the largest share of commercial and industrial property tax revenue collected across the District, at 23%, with the City of Toronto (16%) and Brampton (15%) making up the second- and third-largest shares, respectively.

With the acceleration of e-commerce and as the demand for industrial space grows, municipalities which have large amounts of industrial land to accommodate manufacturing, warehousing, and storage activities will benefit. According to CBRE data, vacancy rates for industrial space across the Toronto, Waterloo, and Wellington markets was only 2.0% at year-end 2020. In the Toronto region, it was 1.0%.[53]

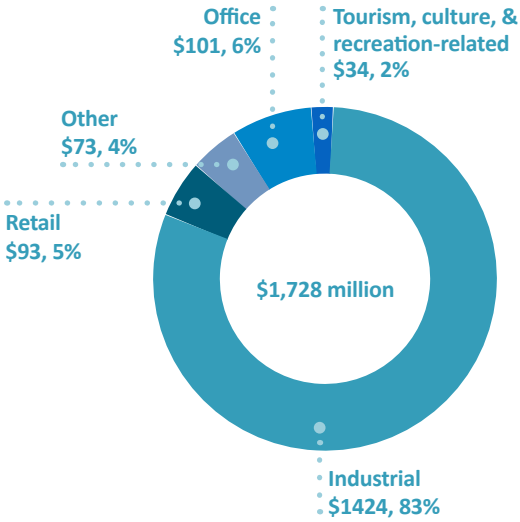
However, the danger of an over-reliance on property taxes can create competition between municipalities to the disbenefit of the region.

The outlook for office space in the District,[54] which accounts for 6% (or $104 million) of total tax revenues collected from the GPDD, is more worrisome. While office and combined office/retail take up less than 4% of total floor area in the District, there are several pockets of office buildings across the District. As of 2020, the Pearson Employment Zone, although largely industrial, has over 120 office buildings with a vacancy rate of 23.5%- a rise from 14.7% since the end 2019.

The Markham North and Richmond Hill market has a vacancy rate of 9.5% among its 90-plus office buildings.[55] The demand for office space in the District, including demand for satellite offices in a post-pandemic world, will determine to a large extent the future of these buildings across the Corridor.

Retail poses an even larger potential threat with the rise of e-commerce, as it accounts for close to 10% of all businesses in the District. Most of these (83%) are small businesses with 1 to 19 employees.[56] The GPDD also has the second-highest number of hotel properties out of the five Business Districts studied, with over 90 hotel properties accounting for $25 million in property tax revenue. As e-commerce reduces the need for many of these stores and services, and the visitor economy continues to see reduced demand, the risk to municipal finances could be substantial.

FIGURE 9: **Commercial and Industrial Property Tax Revenue (millions) by Property Type, Goods Production & Distribution, 2019**



The GPDD is responsible for 32%, or $1.728 billion, of commercial and industrial tax revenue collected by municipalities across the Corridor with industrial properties contributing the majority (83%).

Note: "Other" includes a wide variety of property types, including institutional buildings and commercial condominiums. Property tax revenue amounts based on 2019 Phase-In Current Value Assessments.
Source: MPAC data, based on active properties as of December 2020.

Building a Strategy for Recovery

Futureproofing our Workforce

First and Last Mile Mobility Solutions

Supporting E-commerce and Protecting Employment Lands

Multi-Modal Goods Movement Strategy

Preliminary modelling from the Ministry of Transportation showed that the congestion challenge is going to get significantly worse by 2041 and highlights the need for planning to protect critical road and rail corridors.

A successful post-COVID recovery will require careful and effective management of key drivers and trends that pre-dated the COVID-19 virus as well as impacts that were either brought about or accelerated by the pandemic.

The GPDD has been as much about the movement of goods as it has the movement of people. However, the growth of both transportation needs has placed an excessive burden on existing infrastructure, generating considerable congestion. Preliminary modelling from the Ministry of Transportation showed that the congestion challenge is going to get significantly worse by 2041 and highlights the need for planning to protect critical road and rail corridors.[57] A similar battle for land and space has increased pressure to convert employment lands for residential uses. The continued rise of automation and e-commerce has also had an influence on the GPDD, impacting how businesses make, store, and move goods.

The pandemic brought about a new host of pressures while intensifying existing pain points. Key components of the economy were left exposed to the impacts of the pandemic, including essential workers that are critical to the functioning of the GPDD and the air transportation industry that forms the backbone of the Pearson Employment Zone. The spread of the virus has led to the acceleration of automation efforts and e-commerce, increasing the risk of job displacement, and fueling demand for an already hot industrial market. However, greater automation and e-commerce penetration also present opportunities to increase the prospects for growth in the District.

A long-term strategy for recovery for the District must deploy policies that address these challenges head on through place-making, infrastructure, and workforce initiatives:

The spread of the virus has led to the acceleration of automation efforts and e-commerce, increasing the risk of job displacement, and fueling demand for an already hot industrial market.

Developing a Multi-Modal Goods Movement Strategy

Congestion on roads and highways across the Corridor, including around Toronto Pearson International Airport, will only increase with the growth in e-commerce and continue to raise conflicts between passenger and goods movement, costing the regional economy billions of dollars. Currently under development, Ontario's Greater Golden Horseshoe Transportation Plan – which is developing a proposed strategic and smart freight goods movement network to resolve conflicts between passenger and freight movement – needs to be accelerated. A multi-modal approach that combines road, rail, marine, and air transportation and increases supply chain visibility will be critical for optimizing existing infrastructure and enhancing the Corridor's economic competitiveness.

Supporting E-commerce and Protecting Employment Lands

With e-commerce penetration expected to rise, enabling the online presence of firms and addressing the logistical needs of e-commerce businesses will be vital to the growth of the economy. E-commerce businesses are already facing key barriers limiting their ability to enter the market or grow, including the lack of suitable industrial land. To make matters worse, as one of the fastest growing urban regions in North America, the Corridor faces pressures to convert lands set aside for employment for the construction of houses and apartments. There have been growing land use conflicts due to residential encroachment on lands set aside for goods production and distribution as was the case with CN's proposed Milton intermodal hub. The provincial government and their municipal counterparts must work together to better protect employment lands through land-use planning and undertake a regional inventory of industrial employment lands. Sufficient buffers must be maintained between GPDD lands and residential encroachment to ensure businesses aren't forced to pick up and move elsewhere. Economic development entities must simultaneously continue to support digital enablement initiatives such as Digital Main Street and TRBOT's RAP program to position businesses in the Corridor for success.

Advancing First and Last Mile Mobility Solutions

The overwhelming majority of commuters in the District use personal vehicles to get to their workplace. Due to low density, urban form, and a lack of transit accessibility, workers in the GPDD find it difficult to travel without a personal vehicle, and employers in turn have struggled to meet their workforce needs. Smart mobility solutions and on-demand micro transit, which can accommodate the 24-hour work-day in the District, are particularly well-suited to low density employment areas and present promising opportunities to address the first/last mile challenge evident across the GPDD.

Enabling Industry 4.0 Transformation and Futureproofing our Workforce

In an increasingly competitive global economy, companies must create or adopt breakthrough technologies to thrive in the marketplace. With the acceleration of the deployment of automation and industry 4.0 technologies, it is more important than ever to support the development and adoption of cutting-edge technologies. Government and businesses must collaborate to ensure enabling infrastructure such as 5G is available across the Corridor to stimulate industry 4.0 adoption. Increased automation and technological adoption also create a greater need for a deliberate workforce strategy to help upskill and reskill workers. More businesses need to take on a leading role in investing in workforce learning and training. A successful strategy must build upon existing government policies and workforce initiatives to help bolster vulnerable workers, develop in-demand skills, and invest in lifelong learning infrastructure.[58]

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ENDNOTES

23 Note: "Card not present" transactions usually indicate e-commerce transactions, but in some cases may represent an in-store purchase. E-commerce transactions are attached to the location where the e-commerce merchant is set up for business. This would typically be the merchant's head office, but could also be another designated physical location.

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54 Including office and combined office/retail properties.

55 CBRE, *Toronto Historical Office Data* (2020 Q4).

56 Statistics Canada, *Business Register* (December 2018). Number of businesses includes all business locations with employees, as defined by Statistics Canada.

57 Informed by pre-pandemic modelling by the Ontario Ministry of Transportation.

58 Marcela Escobari, Ian Seyal, and Michael Meaney, *Realism About Reskilling: Upgrading the career prospects of America's low-wage workers,* Brookings Institute (December 2019).

The **Toronto Region Board of Trade** is one of the largest and most influential chambers of commerce in North America and is a catalyst for the region's economic growth agenda. Backed by more than 13,500 members, we pursue policy change to drive the growth and competitiveness of the Toronto region, and facilitate market opportunities with programs, partnerships and connections to help our members succeed – domestically and internationally. To learn about the Board's economic recovery efforts and response to COVID-19, visit **supportbusiness.bot.com**. For more on making Toronto one of the most competitive and sought-after business regions in the world, visit **bot.com** and follow us at **@TorontoRBOT.**

The **Economic Blueprint Institute** (EBI) is a strategic initiative of the Toronto Region Board of Trade with the goal of developing an economic blueprint for the Innovation Corridor. To expedite the region's economic recovery, EBI is taking a research and data-driven approach to understanding COVID-19 recession impacts and developing a regional strategy that identifies economically enabling priorities.

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