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MEMORANDUM

To: Susanne Ruhle, Planning, Urban Design & Sustainability, City of Vancouver

From: Russell Mathew, Hemson Consulting
Adam Mattinson, Hemson Consulting

Date: May 3, 2022

Re: City of Vancouver 2051 Employment Forecast Update

Following from previous work on the Employment Lands and Economy Review (ELER), the City of Vancouver requested Hemson Consulting to prepare an update to the forecast of jobs and associated demand for employment space to reflect three new growth scenarios that the City is considering as part of its analysis for the proposed City of Vancouver Plan.

These new employment scenarios assess the implications for employment of three new population and housing projections prepared by Andrew Ramlow of rennie. The population projections are based on the impacts of three future housing scenarios for the 2020 to 2050 period, provided to rennie by the City.

This memorandum summarizes the assumptions incorporated in the employment forecast update, and compare the results to relevant scenarios from the original ELER published in February 2020, along with the September 2020 update published in the response to the COVID-19 pandemic.

A. FORECAST METHOD AND APPROACH

The ELER employment forecasts published in 2020 are partly outlooks for regional economic and employment activity. More so, these forecast scenarios are varying outlooks for the concentration of regional economic and employment activity within the City of Vancouver in its economic function as the central city of a broader economic region. To this end, the original ELER employment forecasts were prepared based on draft projections of regional population and employment prepared by Metro Vancouver, as part of Metro 2050, the update to the Regional Growth Strategy. The regional population outlook is closely tied to the economic outlook.

Regional population growth, which is mainly the result of in-migration, only occurs if there are sufficient long-term employment opportunities for those participating in the labour force. The relationship is not one way, population growth itself creates employment opportunities in the economic region and the city, both in the provision of services to the growing population and in new arrivals offering skillsets otherwise in short supply in the labour force, including entrepreneurship. The economic opportunities in the region and City are spread across a range of jobs in different sectors, employment types, education and skills, compensation, and location.

i. Land-Use Based Employment Categorizations Used for the Forecast

The employment forecast scenarios consider various factors based on historical and emerging trends to project the number of regional jobs split amongst four land-use based categories:

- **Major Office:** employment uses occurring in free-standing office buildings of 20,000 square feet or greater or the office component of mixed-use developments. Firms and organizations in this category typically seek good transportation and transit access as well as other amenities in order to maximize their ability to draw from the regional labour force. As a result, the vast majority of major office employment is distributed amongst a few major concentrations in the region; the largest of which by far is Vancouver's Central Business District. Office jobs under a hybrid model which include both working from home and reporting to a regular office for one or more days per week are also included in this category.
- **Population Related – Commercial:** This category includes employment activities that primarily serve the local resident population, along with some regional population serving uses (like major malls) and tourism-related uses. Uses include retail, services, restaurants, small offices and hotels. Businesses in this category can be accommodated in a range of built forms, including standalone shops, malls, and mixed-use buildings, often as the main floor of commercial and residential buildings.
- **Population Related – Institutional:** Like other population-related uses, activities in this group typically serve the local and regional population. They are distinct in their land needs in that they tend to require larger sites, buildings or campuses, and often planned for separately from other population-serving uses. Most institutional employment is contained in schools, post-secondary education, hospitals, government buildings, police, fire and ambulance stations and places of worship. Other more specialized uses such as the Canadian Armed Forces facilities, correctional centres and museums may be major employers in some communities.

- **Industrial Areas:** Employment in uses accommodated in industrial-type buildings, nearly all of which, in an urban environment, are in employment areas. These often involve activities related to Production, Distribution and Repair, which are often not compatible adjacent to or mixed with sensitive uses, such as residential. The economic role of these businesses includes those that support other businesses within the city and broader region as well as those more trade-enabling in nature. Examples of employment uses include factories, logistics, storage and distribution, wholesaling, vehicle and equipment repair facilities, film and media production, and a range light industrial business park uses.

A fifth **Footloose/Work at Home** category is also considered, representing employment activity that is either based at home, or does not typically report to a specific place of work¹, such as many construction workers or taxi and truck drivers. Employment in these categories does not directly create demand for additional floor space in any of the other four categories, but does tend to induce some demand. This induced demand is captured within the floor space per worker trends of each of the other employment land use categories. For example, taxi and ride-share drivers creating demand for auto-repair services, or construction workers creating demand for construction equipment retailers.

The jobs in each of these land categories are comprised of shares from different employment sectors, as classified by the North American Industry Classification System (NAICS). The share of total forecast regional employment in each of these categories is then allocated down to Vancouver, informed by historic sectoral trends and forecast scenario assumptions. Once the local employment level for each land use-based category is established, assumptions for employment space needs (expressed as Floor Space per Worker, or FSW) are used to estimate the total floor space demand by category, based on a review of sectoral occupancy trends.

ii. ELER 2020 Forecasts and rennie's Current Population Forecast Scenarios Are Informed by Metro Vancouver's Regional Population Forecasts

Hemson's 2020 ELER forecasts and the population scenarios recently prepared by rennie are both informed by regional population projections prepared by Metro Vancouver. However, these two sets of City of Vancouver forecasts rely on different versions of the Metro Vancouver outlook. In 2020, Hemson had linked its forecasts to Metro's 2019 draft growth forecast scenarios to 2050.

¹ Office workers that are working 'hybrid' in-office and work from home schedules are not considered to be part of this category, as these jobs are still considered tied to a regular place of work for at least some part of the week.

Metro Vancouver subsequently released an updated forecast in April of 2021. The population scenarios prepared for the City of Vancouver by rennie also consider the updates 2021 Metro Vancouver projections as a key input to their long-term growth outlook. The updated Metro forecasts also involve an updated regional employment forecast, with a somewhat higher regional employment result. The differences between the regional forecast population figures are detailed in Table 1.

Table 1: Different Between Regional Population Projections for Forecast Base

YEAR	2016	2021	2031	2041	2051
Metro Draft Projection, 2019 (used as a base for 2020 ELER City Forecasts)	2,571,200	2,755,600	3,120,500	3,417,900	3,676,400
Metro Revised Projection, 2021 (used as an input for the 2022 City population projections)	2,593,200	2,807,500	3,244,200	3,595,600	3,836,800

Source: Metro Vancouver

To account for this change, and to explore projected job space under the City’s new 2050 population scenarios, the ELER work has been revised upwards to match the updated regional population projections. In adapting the regional employment estimates to match the population change, we have assumed the shares of regional employment by economic sector remain the same as the 2019 draft forecasts as there was no clear reason to suggest a different outlook for these broad sectors.

B. HEMSON EMPLOYMENT FORECAST SCENARIOS ARE ASSOCIATED WITH THE POPULATION FROM THE CITY’S THREE HOUSING PROJECTION SCENARIOS

Hemson’s assignment related to this memorandum is to update the employment forecasts to adjust for the local population projected in each of the three housing scenarios prepared by rennie for the City of Vancouver. The details and resulting population for 2050 in each scenario are as follows:

Scenario 1: 863,300 Residents by 2050

- This scenario assumes completion of the City’s 2020 to 2031 development forecast of 50,750 net new homes by 2031 (4,600 annual housing units added).

- After 2031, growth continues in line with Metro Vancouver’s 2050 high housing allocations for the City (+15% version, 43,800 net additional homes, averaging 2,300 net annual housing unit additions).
- This scenario results in the City adding 173,000 residents between 2020 and 2050, growing to 863,300 residents by 2050 (22% of regional total population).

Scenario 2: 917,200 Residents by 2050

- In addition to the development forecast of 50,750 net additional homes over the coming decade, after 2031 this scenario assumes average net new housing unit completions moderate to levels experienced over the 2010s. Over the 2031 to 2050 period there would be a net housing unit growth of 81,400 units, averaging 4,280 net new units annually.
- This scenario results in the City adding 227,100 residents between 2020 and 2050, growing to 917,200 residents by 2050 (24% of regional total population).

Scenario 3: 976,400 Residents by 2050

- Where the first two scenarios relied on the City development forecast of 50,750 net new units to 2031, this scenario increases net new housing delivery to 109,900 units to 2031. This equates to the housing need identified in the City’s draft Provincially-mandated Housing Needs Assessment.
- After 2031, growth continues at the rate of Metro Vancouver’s 2050 high housing allocations for the City (+15% version, 43,800 net new units, averaging 2,300 net housing additions per year).
- This scenario results in the City adding 286,400 residents between 2020 and 2050, growing to 976,400 residents by 2050 (25% of regional total population).

For more details on the City’s 2050 population projections, please refer to the Vancouver Plan 2050 Population Projections Technical Background memorandum prepared for the City by rennie.

As noted by rennie, the completion of the units indicated in Scenario 3 may be less likely to be achieved by the 2031 horizon due to developer sector capacity, City approval processes, and limited senior government funding. If some of these units are shifted into the 2031 to 2050 period, the total households and population at 2050 will not be affected.

C. KEY ASSUMPTIONS FOR THE EMPLOYMENT FORECAST SCENARIOS

In adapting the ELER forecasts to reflect the local population projected in each of the three scenarios prepared by Rennie, Hemson conducted an assessment of assumptions used in the three employment scenarios considered as part of the September 2020 update to the ELER:

Medium Impact / Medium Growth (MI/MG) (Reference) Scenario:

- Building on the same principles of the original pre-pandemic reference forecast, this scenario was developed around the trends understood to be most likely given the data and trajectory of change at the time of publication.
- The scenario assumed the economy would gradually return to something close to business as usual, while requiring some increased restrictions that would slow the rate of recovery in the near term. A slightly depressed long-term employment outlook and some sectoral shifts were assumed as a result, specifically a slower recovery for commercial and tourism-related jobs compared to other sectors.

Low Impact / High Growth (LI/HG) Scenario:

- This scenario assumed reduced near-term impact from the pandemic with a more optimistic set of assumptions regarding employment growth and concentration within the City.
- This was most notably assumed to be tied to continued strength in the tech sector, with a more optimistic outlook for the recovery of the commercial and tourism-related sectors between now and 2026 – though it would still take some time for these sectors to see growth rates return to the pre-pandemic norms.
- Footloose and work from home was also assumed to grow as a result of COVID, though at a reduced rate when compared to the other post-pandemic scenarios.

High Impact / Low Growth (HI/LG) Scenario:

- This scenario took a more conservative outlook to both the time it would take for local economic activity to recover through and following the pandemic, while considering factors that could limit the demand for employment space in the post-pandemic period.
- A less optimistic outlook for commercial, tourism and office jobs and space reflects a more gradual recovery and increased headwinds to both job growth and space demand needs.

In the time since the September 2020 forecasts were published, elements of each scenario have come to pass in terms of trends in the wake of subsequent waves of the virus.

- Despite subsequent waves of the virus, high-level employment data from the Statistics Canada Labour Force Survey, suggest overall job numbers have recovered in line with the more optimistic scenarios, with British Columbia being the first province in Canada to reach pre-pandemic levels of employment by August of 2021.
- Different employment sectors have recovered at varying rates, with accommodation and food services still lagging, while other office-based employment has shown significant growth – a fact that can partially be attributed to the relative ease at which these jobs were able to transition to work-from-home.
- That said, work-from-home and the push for increased hybrid working arrangements in many office-based places of work has slowed the return to the office, and may continue to effect the demand for future office space over the near and longer-term.

Based on the relatively robust employment recovery demonstrated in BC in the time since the preparation of the September 2020 forecast updates, Vancouver would appear to be on pace with the Low Impact / High Growth scenario. However, a number of lingering pandemic-related issues that have hindered recovery in certain sectors and slowed the return to in-person office activity, along with the concerns of forthcoming economic headwinds due to rising inflation and interest rates, suggest that the growth outlook for both jobs and space may be somewhat less optimistic. As such, the Medium Impact / Medium Growth scenario was chosen as the most reasonable baseline for updating the employment forecasts against the City's updated growth scenarios, after updating the 2021 starting point to reflect the recent rate of recovery.

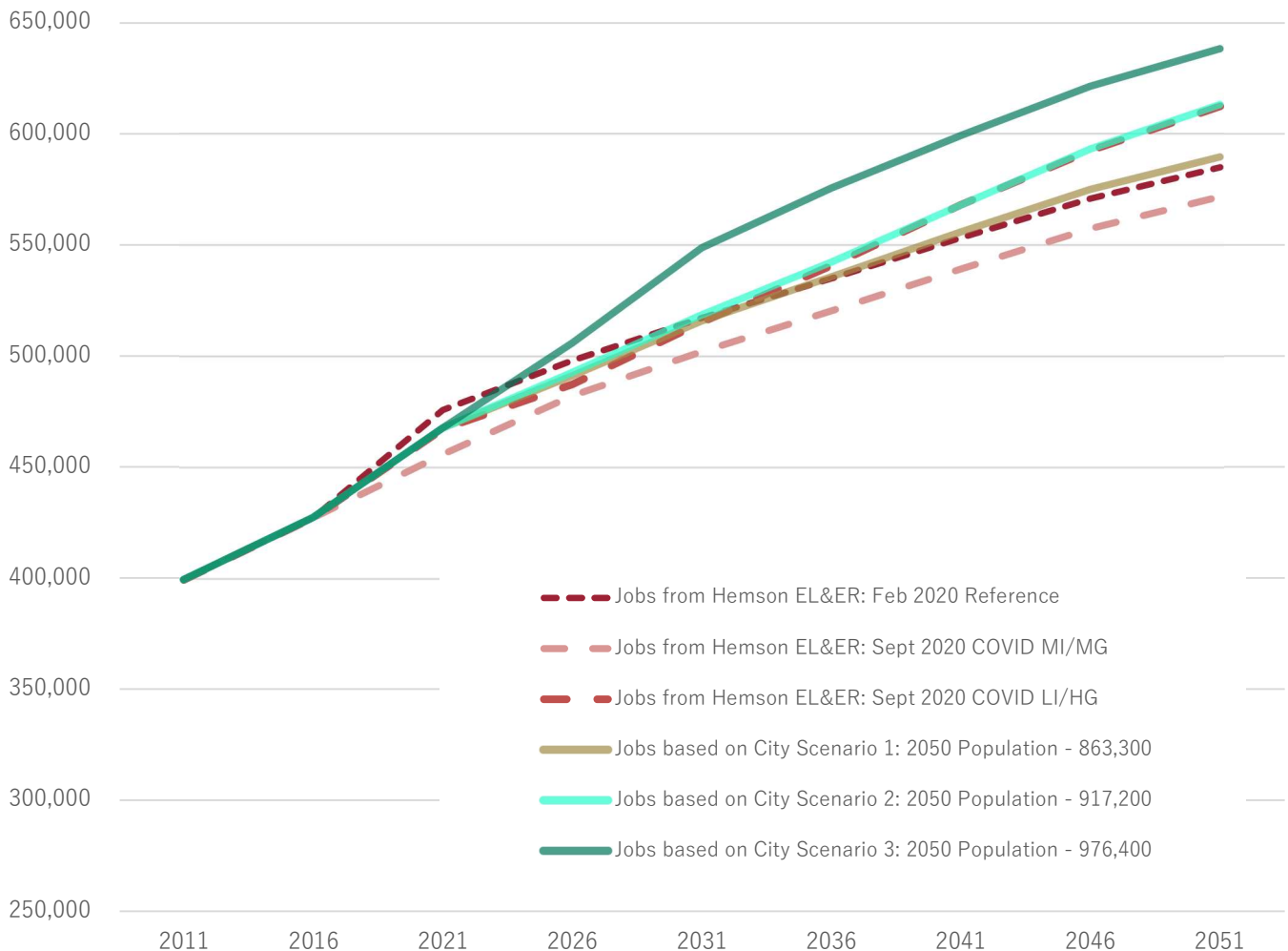
In Hemson's updated employment forecasts, allocations from the regional level down to the City of Vancouver level were adjusted for the land-use-based employment categories, with Population-Related employment being the most significantly influenced by the change in local population. Jobs in these categories include retail and a range of commercial services as well as institutional uses that are, as the category name suggests, closely linked to the number of local residents. Major Office jobs also follow the labour force, which is reflected in the increased share of regional population being concentrated within Vancouver. Jobs in the Footloose / Work from Home category also scale with local population. Only Industrial Area employment, whose growth is primarily influenced by the availability of land, is not expected to vary significantly with changes to local population.

On the employment space demand side of the forecast, floor space per worker (FSW) assumptions used in the ELER 2020 MI/MG scenarios continued to be a sound basis for non-residential space forecasts.

D. FORECAST SCENARIO RESULTS AND COMPARISONS

The resulting forecast outputs in terms of total employment are shown in Figure 1 and Table 2. All scenarios start at a baseline of 427,500 jobs in 2016, based on employment data from the 2016 Census.

Figure 1: Employment Scenario Comparisons - Total Employment



Source: Hemson Consulting Ltd., rennie

Table 2: Employment Scenario Comparisons - Total Employment

SCENARIO	2016	2021	2031	2041	2051
Hemson EL&ER: Feb 2020 Reference	427,500	475,900	517,200	553,300	584,900
Hemson EL&ER: Sept 2020 COVID MI/MG	427,500	456,000	502,100	539,300	571,700
Hemson EL&ER: Sept 2020 COVID LI/HG	427,500	467,600	515,300	568,100	612,300
Based on City of Vancouver Scenario 1: 2050 Population - 863,300	427,500	467,600	515,700	555,800	589,400
Based on City of Vancouver Scenario 2: 2050 Population - 917,200	427,500	467,600	518,500	567,900	612,900
Based on City of Vancouver Scenario 3: 2050 Population - 976,400	427,500	467,600	548,600	599,000	638,000

Source: Hemson Consulting Ltd., rennie

The three new employment forecast scenarios are compared against three forecast scenarios from the ELER in 2020, for context, specifically:

February 2020 ELER Reference Forecast

- This scenario represented what was considered to be the most likely scenario based on prevailing trends at the time, assuming they had generally persisted. This scenario had employment in Vancouver growing from 475,900 jobs in 2021 to 584,900 jobs in 2051 (a growth of 109,000).
- This scenario would require 36.4 million square feet of net additional employment floor space across all land use categories over that time.
- Due to this forecast not anticipating the onset of the COVID-19 pandemic, the starting point in 2021 is higher than other scenarios. However, the overall growth rate in following years is more muted in the absence of the period rapid growth associated with the recovery from the pandemic.
- Footloose and Work at Home employment growth was expected to remain in line with historic rates, growing with local population by 11,800 jobs between 2021 and 2051, to a total of 71,400 (12% of all jobs).

September 2020 ELER Update - Medium Impact / Medium Growth Scenario (MI/MG)

- This scenario assumed a middle ground of pandemic-related effects that would linger through the recovery period and beyond. It assumed a lower starting point in 2021, because the recovery from the pandemic recession was still underway.
- Employment in this scenario was forecast to grow from 456,000 jobs in 2021 to 571,700 jobs in 2051 (growth of 115,700), with more overall growth than the pre-pandemic forecast.
- Due to the effects of the pandemic and changing floor space needs, this scenario resulted in a forecast demand for 27.5 million square feet of net additional space.
- Footloose and Work at Home employment growth was expected to increase and stabilize over time, growing by 20,400 jobs between 2021 and 2051, to a total of 85,000 (15% of all jobs).

September 2020 ELER Update - Low Impact / High Growth Scenario (LI/HG)

- This scenario took a more bullish stance on the prospects for employment through and following the pandemic, particularly within Major Office and Population-Related Employment.
- Employment in this scenario assumed a marginally higher starting point in 2021 resulting from a more rapid rebound from the pandemic, starting at 467,600 jobs and growing to 612,300 jobs in 2051 (growth of 144,900).
- This scenario would require 40.5 million square feet of net additional space, largely on account of increased demand for office and tourism-related commercial activity.
- Footloose and Work at Home employment was expected to increase similar to the MI/MG scenario, but would be slightly outpaced by strong growth in other sectors, growing by 22,000 jobs between 2021 and 2051, to 86,400 total (14% of all jobs).

Due to the relatively strong economic recovery demonstrated by BC since 2020, each of the updates to reflect the rennie population projections assume Vancouver will be starting out with a total job count of 467,600 (in line with the Low Impact, High Growth scenario). However, subsequent employment growth for 2021 to 2051 is calibrated against the Medium Impact / Medium Growth scenario, chosen on account of the lingering effects of the pandemic, along with economic headwinds in the face of rising inflation. This baseline regional growth scenario was then adjusted to reflect the population change identified in each of the City's housing scenarios, as prepared by rennie:

Scenario 1: 863,300 Residents by 2050

- Results in a forecast of 589,400 jobs by 2051 (growth of 121,800 from 2021).
- This equates to demand for 33.4 million square feet of net additional employment space between 2021 and 2051.

Scenario 2: 917,200 Residents by 2050

- Results in a forecast of 612,900 jobs by 2051 (growth of 145,300 from 2021).
- This equates to demand for 39.8 million square feet of net additional employment space between 2021 and 2051.

Scenario 3: 976,400 Residents by 2050

- Results in a forecast of 638,000 jobs by 2051 (growth of 170,400 from 2021).
- This equates to demand for 46.7 million square feet of net additional employment space between 2021 and 2051.

In all scenarios, Footloose and Work from Home employment as a share of total employment was expected to grow with population at a rate similar to the MI/MG scenario, representing nearly 15% of total jobs by 2051 (up from 12% of total jobs in 2016).

Additional details on employment and floor space demand by sub-category are appended to this memorandum.

E. CONCLUSIONS

The population growth in the first two scenarios prepared for the City is forecast to result in overall employment and employment space demand somewhere in line with the pre-pandemic ELER reference forecast and the more optimistic Low Impact / High Growth pandemic update scenario. The bulk of this employment growth would be driven in both Commercial and Office related employment, but also in Institutional, and Footloose and Work from Home (which would not create direct demand for additional floor space).

Scenario 3, which models achieving the objectives set out in the City's housing needs assessment, would result in a much higher equivalent job and floor space demand outlook. The overall job growth anticipated would result a total employment even greater than the most optimistic pre-COVID scenario prepared as part of the ELER work (Alternative Scenario B – 636,200 jobs by 2051). However, due to the lingering impacts of the pandemic on office occupancy patterns and FSW trends, the forecast demand for overall employment

space would be somewhat less at only 46.7 million square feet of net additional space needed between 2021 and 2051.

Overall, this scenario projects that total employment in Vancouver will increase by 210,500 jobs between 2016 and 2051 (427,500 to 638,000). This equates to demand for an additional 54.5 million square feet of employment space over that time (144.9 million square feet to 199.4 million square feet).

The amount of growth contemplated between 2021 and 2031 in this scenario is significant, and may be difficult to achieve given the challenges and limitations facing the delivery of both housing and employment space in the near term. However, if the growth were spread out over the longer forecast period post-2031, it is still possible the City could realize the total employment growth by the 2051 forecast horizon – assuming it were likewise successful in delivering the necessary housing stock to support such growth.

DETAILED FORECAST –

Employment and Floor Space Need based on City of Vancouver Scenario 1: 2050 Population of 863,300 Residents

Employment Category	2011	2016	2021	2026	2031	2036	2041	2046	2051
Major Office	117,700	124,500	138,200	145,200	152,300	159,000	165,900	172,500	177,600
Population-Related	182,900	202,700	213,300	225,500	238,000	246,900	255,700	263,800	269,800
Institutional	59,400	60,200	65,200	68,700	72,300	75,200	78,400	81,400	83,500
Commercial	123,500	142,500	148,100	156,800	165,700	171,700	177,300	182,400	186,300
Hotels	8,200	8,900	8,500	8,900	9,400	9,900	10,400	10,900	11,300
Other Tourism	18,000	24,900	23,700	24,700	26,200	27,500	28,800	30,100	31,100
All Other Commercial	97,300	108,700	115,900	123,200	130,100	134,300	138,100	141,400	143,900
Industrial Areas	51,700	48,000	51,300	52,200	53,000	53,900	54,700	55,600	56,400
Footloose / Work at Home	47,300	52,300	64,800	68,300	72,400	75,800	79,500	82,900	85,600
Total Employment	399,600	427,500	467,600	491,200	515,700	535,600	555,800	574,800	589,400

Employment Category	11-16	16-21	21-26	26-31	31-36	36-41	41-46	46-51	16-51
Major Office	6,800	13,700	7,000	7,100	6,700	6,900	6,600	5,100	53,100
Population-Related	19,800	10,600	12,200	12,500	8,900	8,800	8,100	6,000	67,100
Institutional	800	5,000	3,500	3,600	2,900	3,200	3,000	2,100	23,300
Commercial	19,000	5,600	8,700	8,900	6,000	5,600	5,100	3,900	43,800
Hotels	700	(400)	400	500	500	500	500	400	2,400
Other Tourism	6,900	(1,200)	1,000	1,500	1,300	1,300	1,300	1,000	6,200
All Other Commercial	11,400	7,200	7,300	6,900	4,200	3,800	3,300	2,500	35,200
Industrial Areas	(3,700)	3,300	900	800	900	800	900	800	8,400
Footloose / Work at Home	5,000	12,500	3,500	4,100	3,400	3,700	3,400	2,700	33,300
Total Employment Growth	27,900	40,100	23,600	24,500	19,900	20,200	19,000	14,600	161,900

Employment Category	2016	2021	2026	2031	2036	2041	2046	2051
Major Office	32,940	34,400	37,750	39,290	40,700	42,140	43,470	44,400
Population-Related	83,100	88,690	93,420	97,430	100,490	103,450	106,060	107,810
Institutional	22,130	24,730	25,800	26,880	28,110	29,470	30,760	31,730
Commercial	60,970	63,960	67,620	70,550	72,380	73,980	75,300	76,080
Hotels	9,440	9,940	9,970	10,110	10,460	10,790	11,100	11,300
Other Tourism	8,380	8,880	9,070	9,430	9,690	9,930	10,160	10,260
All Other Commercial	43,150	45,140	48,580	51,010	52,230	53,260	54,040	54,520
Industrial Areas	28,870	29,590	30,300	30,990	31,710	32,410	33,150	33,860
Footloose / Work at Home	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Non-Residential Space (000s sq.ft.)	144,910	152,680	161,470	167,710	172,900	178,000	182,680	186,070

Employment Category	16-21	21-26	26-31	31-36	36-41	41-46	46-51	16-51
Major Office	1,470	3,350	1,540	1,410	1,440	1,330	930	11,460
Population-Related	5,590	4,730	4,010	3,060	2,960	2,610	1,750	24,710
Institutional	2,600	1,070	1,080	1,230	1,360	1,290	970	9,600
Commercial	2,990	3,660	2,930	1,830	1,600	1,320	780	15,110
Hotels	500	30	140	350	330	310	200	1,860
Other Tourism	500	190	360	260	240	230	100	1,880
All Other Commercial	1,990	3,440	2,430	1,220	1,030	780	480	11,370
Industrial Areas	720	710	690	720	700	740	710	4,990
Footloose / Work at Home	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Non-Res. Space Growth (000s sq.ft.)	7,770	8,790	6,240	5,190	5,100	4,680	3,390	41,160

Source: Hemson Consulting Ltd., based on population projections provided by rennie

DETAILED FORECAST –

Employment and Floor Space Need based on City of Vancouver Scenario 2:

2050 Population of 917,200 Residents

Employment Category	2011	2016	2021	2026	2031	2036	2041	2046	2051
Major Office	117,700	124,500	138,200	146,600	154,900	162,700	170,900	178,700	184,700
Population-Related	182,900	202,700	213,300	225,500	238,000	248,800	260,700	272,300	281,500
Institutional	59,400	60,200	65,200	68,700	72,300	75,600	79,500	83,300	86,200
Commercial	123,500	142,500	148,100	156,800	165,700	173,200	181,200	189,000	195,300
Hotels	8,200	8,900	8,500	8,900	9,400	9,900	10,400	10,900	11,300
Other Tourism	18,000	24,900	23,700	24,700	26,200	27,500	28,800	30,100	31,100
All Other Commercial	97,300	108,700	115,900	123,200	130,100	135,800	142,000	148,000	152,900
Industrial Areas	51,700	48,000	51,300	52,200	53,000	53,900	54,700	55,600	56,400
Footloose / Work at Home	47,300	52,300	64,800	68,400	72,600	76,800	81,600	86,400	90,300
Total Employment	399,600	427,500	467,600	492,700	518,500	542,200	567,900	593,000	612,900

Employment Category	11-16	16-21	21-26	26-31	31-36	36-41	41-46	46-51	16-51
Major Office	6,800	13,700	8,400	8,300	7,800	8,200	7,800	6,000	60,200
Population-Related	19,800	10,600	12,200	12,500	10,800	11,900	11,600	9,200	78,800
Institutional	800	5,000	3,500	3,600	3,300	3,900	3,800	2,900	26,000
Commercial	19,000	5,600	8,700	8,900	7,500	8,000	7,800	6,300	52,800
Hotels	700	(400)	400	500	500	500	500	400	2,400
Other Tourism	6,900	(1,200)	1,000	1,500	1,300	1,300	1,300	1,000	6,200
All Other Commercial	11,400	7,200	7,300	6,900	5,700	6,200	6,000	4,900	44,200
Industrial Areas	(3,700)	3,300	900	800	900	800	900	800	8,400
Footloose / Work at Home	5,000	12,500	3,600	4,200	4,200	4,800	4,800	3,900	38,000
Total Employment Growth	27,900	40,100	25,100	25,800	23,700	25,700	25,100	19,900	185,400

Employment Category	2016	2021	2026	2031	2036	2041	2046	2051
Major Office	32,940	34,400	37,750	39,650	41,410	43,240	44,940	46,180
Population-Related	83,100	88,690	93,370	97,320	101,150	105,360	109,400	112,460
Institutional	22,130	24,730	25,800	26,880	28,260	29,880	31,480	32,760
Commercial	60,970	63,960	67,570	70,440	72,890	75,480	77,920	79,700
Hotels	9,440	9,940	9,970	10,110	10,460	10,790	11,100	11,300
Other Tourism	8,380	8,880	9,070	9,430	9,690	9,930	10,160	10,260
All Other Commercial	43,150	45,140	48,530	50,900	52,740	54,760	56,660	58,140
Industrial Areas	28,870	29,590	30,300	30,990	31,710	32,410	33,150	33,860
Footloose / Work at Home	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Non-Residential Space (000s sq.ft.)	144,910	152,680	161,420	167,960	174,270	181,010	187,490	192,500

Employment Category	16-21	21-26	26-31	31-36	36-41	41-46	46-51	16-51
Major Office	1,470	3,350	1,900	1,760	1,830	1,700	1,240	13,240
Population-Related	5,590	4,680	3,950	3,830	4,210	4,040	3,060	29,360
Institutional	2,600	1,070	1,080	1,380	1,620	1,600	1,280	10,630
Commercial	2,990	3,610	2,870	2,450	2,590	2,440	1,780	18,730
Hotels	500	30	140	350	330	310	200	1,860
Other Tourism	500	190	360	260	240	230	100	1,880
All Other Commercial	1,990	3,390	2,370	1,840	2,020	1,900	1,480	14,990
Industrial Areas	720	710	690	720	700	740	710	4,990
Footloose / Work at Home	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Non-Res. Space Growth (000s sq.ft.)	7,770	8,740	6,540	6,310	6,740	6,480	5,010	47,590

Source: Hemson Consulting Ltd., based on population projections provided by rennie

DETAILED FORECAST –

Employment and Floor Space Need based on City of Vancouver Scenario 3:

2050 Population of 976,400 Residents

Employment Category	2011	2016	2021	2026	2031	2036	2041	2046	2051
Major Office	117,700	124,500	138,200	148,100	157,600	166,500	176,000	185,100	192,100
Population-Related	182,900	202,700	213,300	234,200	258,300	270,600	279,800	288,200	294,300
Institutional	59,400	60,200	65,200	70,600	76,700	80,500	83,800	87,000	89,200
Commercial	123,500	142,500	148,100	163,600	181,600	190,100	196,000	201,200	205,100
Hotels	8,200	8,900	8,500	8,900	9,400	9,900	10,400	10,900	11,300
Other Tourism	18,000	24,900	23,700	24,700	26,200	27,500	28,800	30,100	31,100
All Other Commercial	97,300	108,700	115,900	130,000	146,000	152,700	156,800	160,200	162,700
Industrial Areas	51,700	48,000	51,300	52,200	53,000	53,900	54,700	55,600	56,400
Footloose / Work at Home	47,300	52,300	64,800	71,400	79,700	84,400	88,500	92,300	95,200
Total Employment	399,600	427,500	467,600	505,900	548,600	575,400	599,000	621,200	638,000

Employment Category	11-16	16-21	21-26	26-31	31-36	36-41	41-46	46-51	16-51
Major Office	6,800	13,700	9,900	9,500	8,900	9,500	9,100	7,000	67,600
Population-Related	19,800	10,600	20,900	24,100	12,300	9,200	8,400	6,100	91,600
Institutional	800	5,000	5,400	6,100	3,800	3,300	3,200	2,200	29,000
Commercial	19,000	5,600	15,500	18,000	8,500	5,900	5,200	3,900	62,600
Hotels	700	(400)	400	500	500	500	500	400	2,400
Other Tourism	6,900	(1,200)	1,000	1,500	1,300	1,300	1,300	1,000	6,200
All Other Commercial	11,400	7,200	14,100	16,000	6,700	4,100	3,400	2,500	54,000
Industrial Areas	(3,700)	3,300	900	800	900	800	900	800	8,400
Footloose / Work at Home	5,000	12,500	6,600	8,300	4,700	4,100	3,800	2,900	42,900
Total Employment Growth	27,900	40,100	38,300	42,700	26,800	23,600	22,200	16,800	210,500

Employment Category	2016	2021	2026	2031	2036	2041	2046	2051
Major Office	32,940	34,400	37,750	40,020	42,110	44,340	46,460	48,030
Population-Related	83,100	88,690	97,050	105,870	110,240	113,220	115,830	117,520
Institutional	22,130	24,730	26,520	28,520	30,090	31,500	32,880	33,900
Commercial	60,970	63,960	70,530	77,350	80,150	81,720	82,950	83,620
Hotels	9,440	9,940	9,970	10,110	10,460	10,790	11,100	11,300
Other Tourism	8,380	8,880	9,070	9,430	9,690	9,930	10,160	10,260
All Other Commercial	43,150	45,140	51,490	57,810	60,000	61,000	61,690	62,060
Industrial Areas	28,870	29,590	30,300	30,990	31,710	32,410	33,150	33,860
Footloose / Work at Home	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Non-Residential Space (000s sq.ft.)	144,910	152,680	165,100	176,880	184,060	189,970	195,440	199,410

Employment Category	16-21	21-26	26-31	31-36	36-41	41-46	46-51	16-51
Major Office	1,470	3,350	2,270	2,090	2,230	2,120	1,570	15,090
Population-Related	5,590	8,360	8,820	4,370	2,980	2,610	1,690	34,420
Institutional	2,600	1,790	2,000	1,570	1,410	1,380	1,020	11,770
Commercial	2,990	6,570	6,820	2,800	1,570	1,230	670	22,650
Hotels	500	30	140	350	330	310	200	1,860
Other Tourism	500	190	360	260	240	230	100	1,880
All Other Commercial	1,990	6,350	6,320	2,190	1,000	690	370	18,910
Industrial Areas	720	710	690	720	700	740	710	4,990
Footloose / Work at Home	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Non-Res. Space Growth (000s sq.ft.)	7,770	12,420	11,780	7,180	5,910	5,470	3,970	54,500

Source: Hemson Consulting Ltd., based on population projections provided by rennie