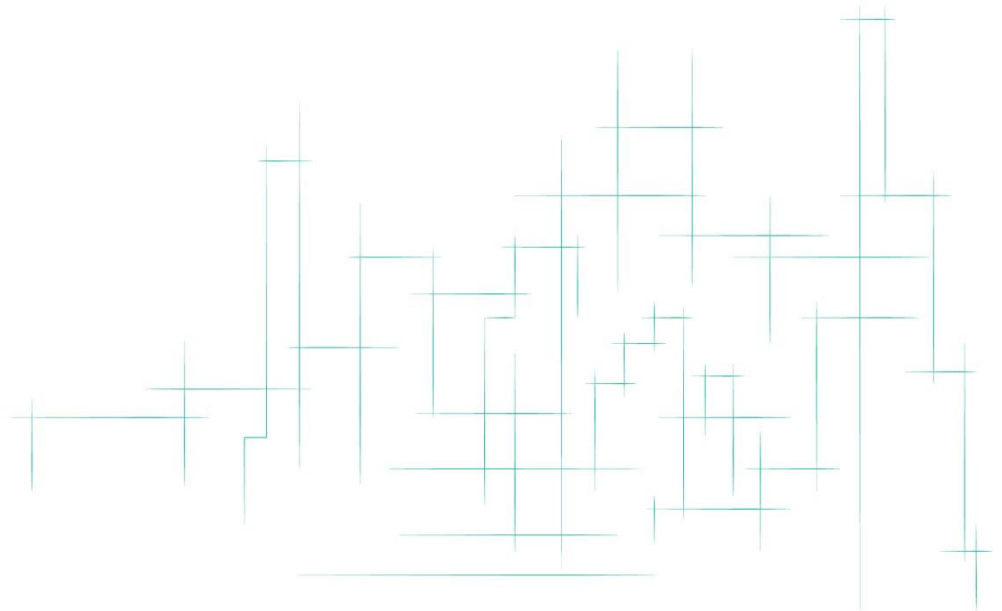




Maplewood Employment Lands Strategy

For: District of North Vancouver

October 2016



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Executive Summary

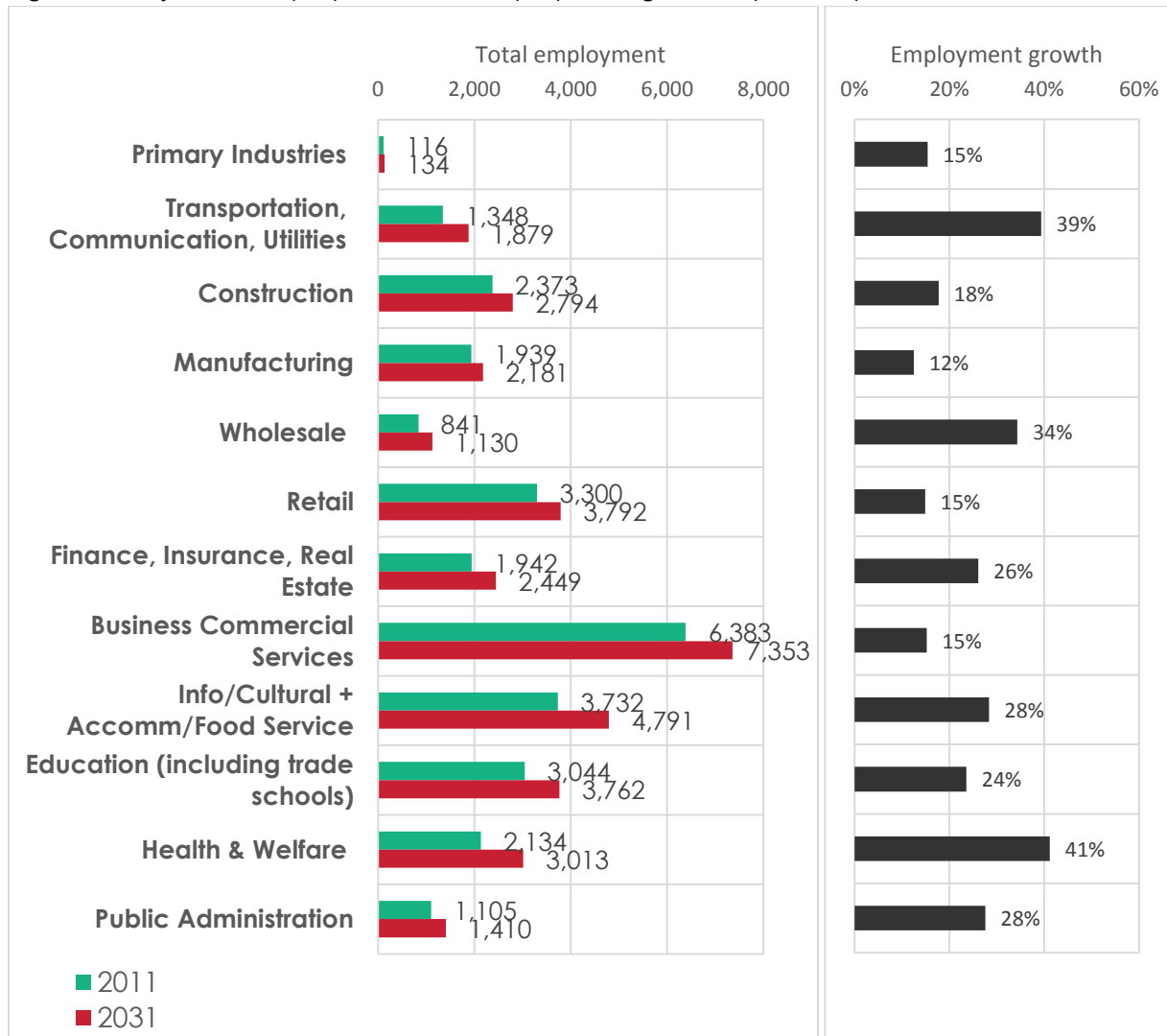
ASSESSMENT OF DEMAND FOR EMPLOYMENT LANDS

A key step in the process of determining appropriate future employment land uses in the Maplewood area is understanding what future demand may exist for such lands. This includes understanding what industries are likely to grow or contract in North Vancouver, what types of land and adjacencies/ proximities different industries seek, how each industry uses lands (i.e. higher or lower densities, parking and outdoor storage requirements etc.), and which industries are more likely to be receptive to change in land use patterns over time.

Our team conducted an employment growth-driven projection of future employment land use needs in the District of North Vancouver. This process included:

- Industry-specific employment forecasts for District of North Vancouver, using industry categories as defined in Metro Vancouver's Regional Growth Strategy (Figure A)

Figure A: Projected employment and employment growth by industry in the District, 2011 - 2031



- Forecast of employment specifically at fixed places of work, not at home, in the District of North Vancouver, by industry
- Allocation of fixed-place employment figures to light industrial/commercial business park, hybrid business park, or other employment lands, excluding lands for commercial or heavy industry
- Conversion of employment forecasts to built space requirements through employment densities (Table A), and conversion of built space requirements to land requirements through application of built densities by industry (Table B).

Table A: Net new built space (sq. ft.) needed in the District, 2016 – 2031

Industry	2016 – 2021	2021 – 2026	2026 – 2031	2016 – 2031
Primary Industries ¹	2,251	1,364	1,647	5,263
Transportation, Communication, Utilities	61,087	53,635	53,383	168,105
Construction	18,013	11,819	13,544	43,375
Manufacturing	13,190	6,893	9,236	29,318
Wholesale	59,398	50,219	50,552	160,169
Retail	8,067	4,788	5,861	18,716
Finance, Insurance, Real Estate	5,876	4,549	4,749	15,174
Business Commercial Services	77,249	46,417	56,351	180,017
Info/Cultural Services + Accommodation & Food Services	31,807	25,347	26,113	83,267
Education (including trade schools)	4,572	3,410	3,627	11,609
Health & Welfare	52,747	46,863	46,509	146,119
Public Administration	21,144	16,690	17,267	55,102
TOTAL	355,400	271,995	288,839	916,235
Average Annual	71,080	54,399	57,768	61,082

Table B: Projected land utilization in the District by sector, in each scenario (floor-space ratio²)

Industry	Scenario 1 - Status quo FSR	Scenario 2 - Higher FSR new construction in select categories	Notes
Primary Industries	0.2	0.2	No change anticipated due to outdoor space requirements
Transportation, Communication, Utilities	0.1	0.2	Slight densification possible
Construction	0.4	0.5	Slight increase
Manufacturing	0.1	0.3	Small-scale manufacturers could operate in multi-level spaces
Wholesale	0.2	0.2	No change anticipated due to loading/parking requirements
Retail	0.4	0.4	No change anticipated due to required parking ratios
Finance, Insurance, Real Estate	0.2	0.7	Significant densification possible through multi-level facilities and reduced parking
Business Commercial Services	0.3	0.4	Slight increase possible through multi-level space
Info/Cultural Services, Accommodation & Food Services	0.3	0.4	Slight increase possible through multi-level space
Education (including trade schools)	0.3	0.6	Multi-level space possibilities
Health & Welfare	0.9	0.9	No change
Public Administration	0.2	0.5	Multi-level space possibilities

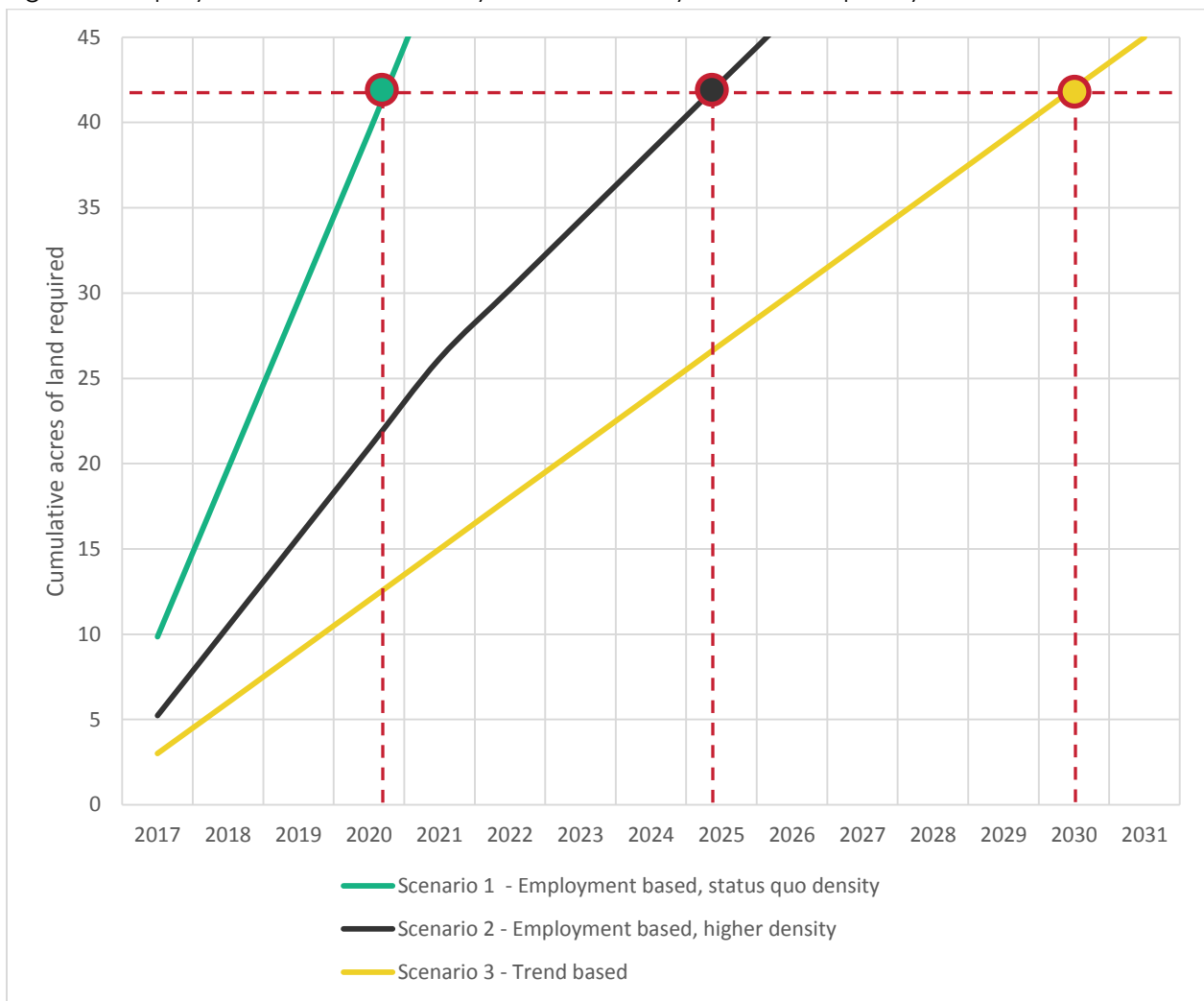
The following are highlights from the analysis:

¹ Includes agriculture and resource extraction.

² FSR is calculated by dividing the gross floor area of a building by the total area of its site. A higher FSR implies a higher land utilization.

- From 2016 to 2031, the employment-based forecasts show a need for approximately 916,000 square feet of floor area in the District of North Vancouver on employment lands³
- Under two employment-driven demand scenarios – one at current density and one at anticipated higher densities – the 42 acres⁴ of vacant land in the DNV would be consumed in the next 4.5 to 9 years (Figure B)
- If we extend recent industrial land absorption trends – as recorded by Colliers International – into the future, 42 acres of vacant land would be consumed in 12 to 13 years (Figure B). This reflects the impact of scarcity; as land runs out, fewer potential occupants can find the ideal location, so rates of sales and development slow down. This may already be occurring.

Figure B: Employment land demand by scenario, with year of full capacity indicated



MAPLEWOOD ECONOMIC OPPORTUNITIES – INTERVIEW PHASE

³ Assuming ratios of those working at home and with no fixed place of work remain constant.

⁴ Metro Vancouver (2015). Industrial Lands Inventory Technical Report

The Consultant Team interviewed 16 industry stakeholders and experts to achieve an understanding of market trends and forces, different land and building preferences by industry, and overall market attitude. The key findings of the interview process were as follows:

- There is more than enough demand to fill all available employment land area
- Business with a mix of retail, warehouse, manufacturing and office on one site, that can make use of flexible space, will continue to be in high demand.
- Maplewood will be attractive to a wide range of business types. Offering flexibility in business type and proximity to key transportation infrastructure will ensure that the area remains in high demand from employers.
- Uses such as a spa could take up as much as 200,000 square feet (~4.5 acres) of land area; sloped land is not problematic, and may be an asset.
- A shortage of affordable housing is one of the barriers to businesses operating in North Vancouver over the long term.
- Some users would prefer to locate in Maplewood but currently cannot. An example is medical offices.
- There will also be continuing demand from trades and contractors, looking for smaller (e.g. 1,500 sf) units, on flat sites, with appropriate street and loading access. Those serve both local area and the heavy industrial hub to the south.
- Fitness and lifestyle-oriented users (for example climbing walls and gyms) are increasing their demand for industrial areas due to space flexibility and rent.
- Demand for peripheral port services is high and increasing.
- There may be demand for additional brewery-related space.
- One key group of business owners likely to remain in Maplewood are those who live on the North Shore.
- Distribution and large warehouse operations are struggling in Maplewood due to high rents and land values. It is increasingly difficult to locate on the North Shore rather than relocating to more affordable space in the Fraser Valley. This may be an opportunity to expand other sectors in their absence.

Some key challenges to businesses in Maplewood were frequently mentioned:

- Continued price escalation of industrial land
- Continue escalation of housing market, making it difficult for employees to live on the North Shore
- Potential worsening of parking and traffic challenges in Maplewood area

The interviewees also suggested some uses that may be appropriate for different locations in Maplewood, as follows:

- Flat vacant lands may be appropriate for a wide variety of potential of potential uses and users, including:
 - Mixed business park, which typically includes office, warehouse, light manufacturing, distribution, warehousing
 - Small manufacturers
 - Film studio and other entertainment/info/cultural industries (North Shore Studio may be looking for 2 – 4 ac)
 - Live/work (appropriate for variety of business types including business commercial services, health/welfare, retail, wholesale and others)
 - Port-related logistics (e.g. storage)
- Sloping vacant lands has limited usability for employment, except in niche categories. Our research has indicated interest from a spa, which could occupy a sloping site up to 200,000 square feet. This could expand if demand warrants in the future.
- Occupied, redevelopable lands, which fall into two broad categories:
 - Much of this land is currently used by niche, small manufacturers and distributors for whom this is the best location. Most of these users could not afford new space if it were available
 - There are instances of lower intensity uses on some sites, which may prove the sites most easily redeveloped. These include the transfer station and a variety of distribution & storage users who may leave the area due to more affordable locations elsewhere. These spaces could then be redeveloped as mixed-employment lands with higher density structures.

RETAIL ANALYSIS

Table C projects the total commercial floor area supportable in Maplewood in 2031 based on assumed population, employment, income, and spending estimates. The supportable floor space is divided for the sake of interest into a residential- and employee-supported share.

Table C: Retail and service commercial space supportable in 2031 in Maplewood (square feet)

Business Type	Resident-supported	Employee-supported	Total
Service commercial	35,324	943	36,266
Convenience goods	29,886	1,551	31,437
Comparison goods	19,908	947	20,855
Food & Beverage	8,421	6,706	15,127
Entertainment & Recreation	658	61	719
Automotive	0	0	0
Total	94,197	10,208	104,405

Table C indicates that more than 104,000 square feet of retail and commercial space will be supportable in Maplewood in 2031. This matches up fairly well to the current OCP projection of approximately 100,000 within Maplewood Village Centre by 2030. The Stong's grocery store and adjacent retail space currently make up over 33,000 square feet.

We project that about 104,000 square feet of commercial space will be supportable in Maplewood by 2031, of which about 10,000 square feet is attributable to employees. Given that approximately 100,000 is already anticipated by the OCP in the Village Centre, the Consulting Team concludes that a small retail node within the Maplewood business park area is likely to be appropriate, in order to serve the in-site working population. This node should probably be limited to 8,000 – 10,000 square feet and would likely consist of four or five food & beverage, convenience, and personal service retailers. A larger, more diverse retail & service node in the Maplewood business park would also be viable, but only at the expense of the currently emerging retail hub.

ZONING & REGULATORY CONSIDERATION

The Consulting Team has analyzed the District's industrial and comprehensive development zoning regulations with the aim of comparing the existing regulations to various industry sector preferences, according to interviewed stakeholders.

Observed discrepancies between stakeholder preferences and zoning restrictions include:

- Some light industrial users may find it difficult to operate in the I3, EZ-LI, CD33, and CD50 zones because these zones restrict "noise, glare, odour and air pollution... detectable from the parcel's property line". In the EZ-LI zone, the District has limited the good neighbour regulations to those sites next to residential uses – this flags the potential conflict for businesses before the conflict develops to the point where other bylaws like the noise bylaw or nuisance bylaw kick in. The motive behind including the good neighbour clause is to forewarn businesses when they are considering moving into a new site and thereby avoid frustrations, expensive renovations, or moves down the line
- The EZ-LI zone has an upper limit on lot size (4,500 m²), which might prevent a film studio or spa from locating there, assuming they were limited to a single lot.
- Landscaping requirements in Maplewood typically mandate a complete screen between buildings and main roads. These could be adjusted to make retail uses more visible to the street, which would improve their viability. Locating buildings next to the sidewalk would also serve to improve visibility. Low visibility of retailers from the street was mentioned as an issue multiple times by existing Maplewood retailers that the Consulting Team interviewed.

The Consultant team anticipates that mixed-use business park will continue to be in high demand. Taking primary and accessory uses into account, the I3, EZ-LI, CD18, CD19, CD33, CD45, and CD50 zones are all more or less appropriate since they allow a mix of light manufacturing, office, and logistical uses.

Additional uses that could be considered in these zones to better match the market would be medical office and live-work space.

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1 Introduction

1.1 Project Understanding

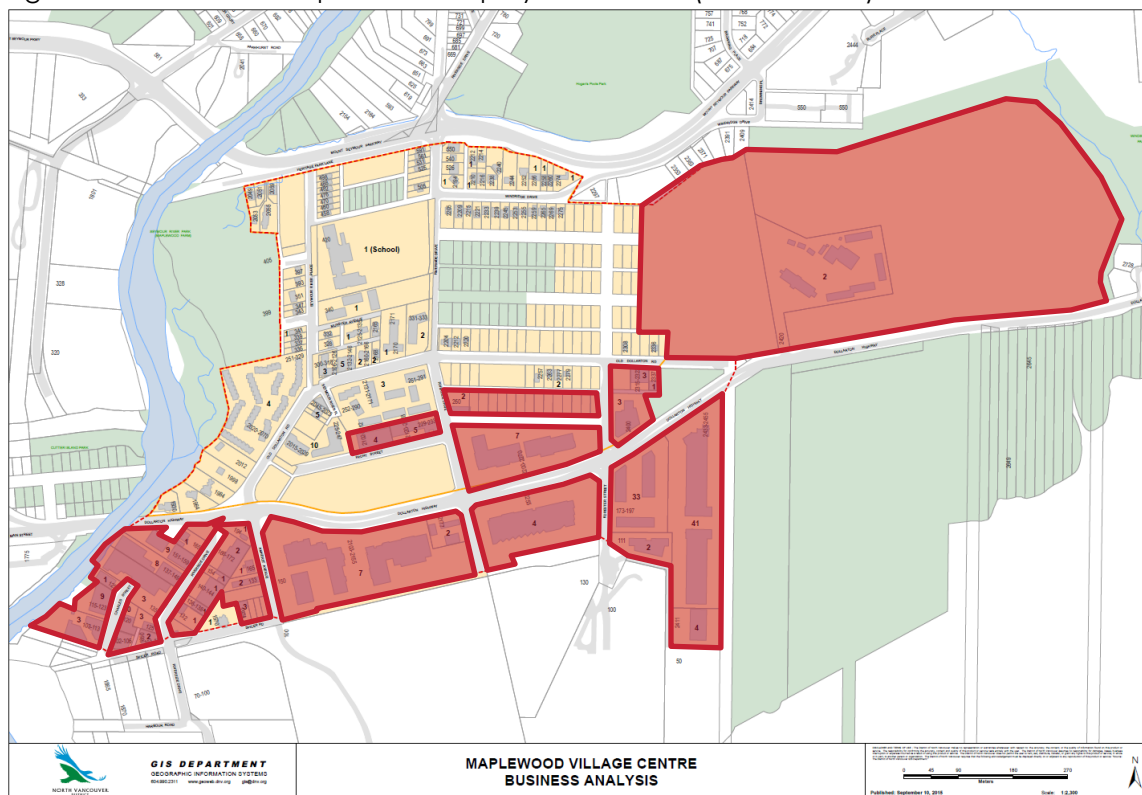
G. P. Rollo & Associates, Land Economists and Urban Systems Ltd. (the Consultant Team) have been retained by the District of North Vancouver (the District) to perform an in-depth analysis of the market for employment lands in the Maplewood Area. The aim of this study is to position Maplewood within the marketplace in order to maximize its potential and bolster the District's economic base by providing high-quality job opportunities for local residents.

The study consists of four phases:

- Phase 1: A quantitative assessment of demand for employment lands in the District generally, and in Maplewood in particular, based on a projection of employment growth by industry and modified in light of interview findings
- Phase 2: A qualitative assessment of Maplewood's employment opportunities, based primarily on a comprehensive stakeholder interview process
- Phase 3: An analysis of the demand for accessory retail space in Maplewood
- Phase 4: A discussion of the design, planning, and regulatory considerations required to best position Maplewood to meet the District's employment objectives.

1.2 Maplewood Employment Lands

Figure 1: Location of Maplewood Employment Lands (shown in red)



The Maplewood Employment Lands that are the object of this study are found within the Maplewood Village Centre, as indicated in Figure 1. The Village Centre surrounds Dollarton Highway and is bounded approximately by the Seymour River to the west, Mount Seymour Parkway to the north, Spicer Road and the nearby rail line to the south, and the Maplewood Conservation Area to the east. It also includes Goldenwood Hall School and the surrounding property, which is the largest undeveloped industrial-zoned parcel on the North Shore. Maplewood Village Centre is one of six Village Centres (along with Lower Capilano-Marine, Edgemont, Queensdale, Parkgate, and Deep Cove) in which the District aims to “build on their own unique characteristics to create distinct urban village environments”⁵ and one of four OCP-designated growth areas (along with Lynn Valley and Lower Lynn Town Centres and Lower Capilano-Marine Village Centre) with which the District aims to create a network of centres to “support effective transit, walking and cycling; and focus growth and renewal”⁶. To that end, the Village Centre is home to a significant amount of recent and proposed residential and commercial development, with approximately 1,500 net new residences planned for construction by 2030 and 33,000 square feet of recently constructed retail space, intended to be approximately 100,000 by 2030.

With the exception of the large and undeveloped zone surrounding Goldenwood Hall School, most of Maplewood’s employment lands were developed many decades ago, and consist of a mix of manufacturing, warehousing, logistics, office, and service uses. The area specializes in locally-owned small and medium-sized businesses as well as marine-, science-, and engineering-related businesses that make use of and support the marine uses immediately to the south, including the Canexus Chemical plant. It contains a mix of industrial zones, lot sizes, and tenures.

Because it is one of the District’s principle industrial hubs, especially when viewed as a continuation of the heavy industrial uses immediately to the south, it is an important policy objective to ensure that the area remains productive and healthy as an employment zone. To this end, this study aims to identify the demand for these employment lands in the next 15 years, as well as the differing needs of the various employment sectors that occupy or may seek to occupy these lands.

⁵ District of North Vancouver (2011). Our Official Community Plan for a Sustainable Future. Pg. 23.

⁶ District of North Vancouver (2011). Our Official Community Plan for a Sustainable Future. Pg. 13.

2 Employment Lands Demand Assessment

An independent employment forecast for the District of North Vancouver, by industry, has been completed by the Rollo/USL team based on data received from both the District and Metro Vancouver, and an independent Metro-wide total employment forecast tied to Provincial GDP. Metro Vancouver provided their estimates and forecasts for employment by industry for the Region and the District of North Vancouver (to 2030). Ratios were calculated from these data sets and applied to the GPRA/Urban Systems forecast of future regional employment to arrive at an employment forecast, by industry, for the District of North Vancouver to 2031.

Projections of future employment by industry in the District have been converted to estimates of built space requirements per annum (i.e. square feet of absorption), and these in turn are converted into land requirements (acres) on the basis of both historic District-specific land utilization data, as well as higher density scenarios.

2.1 Metro Vancouver Employment Estimates & Forecasts

Metro Vancouver had nearly 1.21 million employees in 2011, including those working from home and those with no fixed place of work. Metro Vancouver's internal population and employment forecasting model projects region-wide employment to reach nearly 1,579,000 by 2030.

The Rollo/USL team has elected to conduct an independent forecast of total region-wide employment as the basis for subsequent District of North Vancouver employment estimates. This employment projection is independent of any demographic projection; it is a product of a trend-based extension of the historical relationship between provincial economic activity (as measured by real Gross Domestic Product – GDP) and employment in the Metro Vancouver region. This method benefits from the long, accessible historical database of economic and employment activity, as well as published short-term assessments of near-future economic activity in the province.

The economic history of BC is characterized by significant (but slowing) growth in real GDP: in the 1960's and 1970s, growth averaged 6.5% and 5.7% per annum respectively. In the recessionary 1980s, growth dropped to an average of 1.9% per annum. The pace of growth picked up in the 1990s, averaging 2.8% per annum. From 2001 to 2014, growth averaged 2.6% per annum; this included a drop of -2.4% in the 2008-2009 period.

A recent forecast from Central 1 Credit Union has projected real GDP growth in BC at an average rate of 3.1% per annum through to the end of 2019. We have adopted this short-term forecast in our projections. Extending historic and near-term future real GDP into the future to our forecast horizon of 2031 results in a projection where economic growth would fall from 3.1% per annum in the 2016-2019 period to 1.8% per annum between from 2020-2025, and 1.7% per annum between 2026 and 2031. This would see the BC economy grow by 31% over the 15 years from 2016-2031.

The projection of total employment in Metro Vancouver is developed using the observed historical relationship between total employment and BC's real GDP, and the trend-based projection of real GDP described above. Combining these two elements yields a projection of

Metro Vancouver employment growing from nearly 1.21 million jobs in 2011 to 1.42 million by 2021 and 1.59 million by 2031, or 53% growth over a 30-year period. The 53% growth in region-wide employment compared to a 99% increase in GDP implies future productivity gains. This is shown in Figure 2. Figure 3 breaks the 2011 and 2031 employment totals into industry sectors.

Figure 2: Total employment in Metro Vancouver, 2001 – 2031

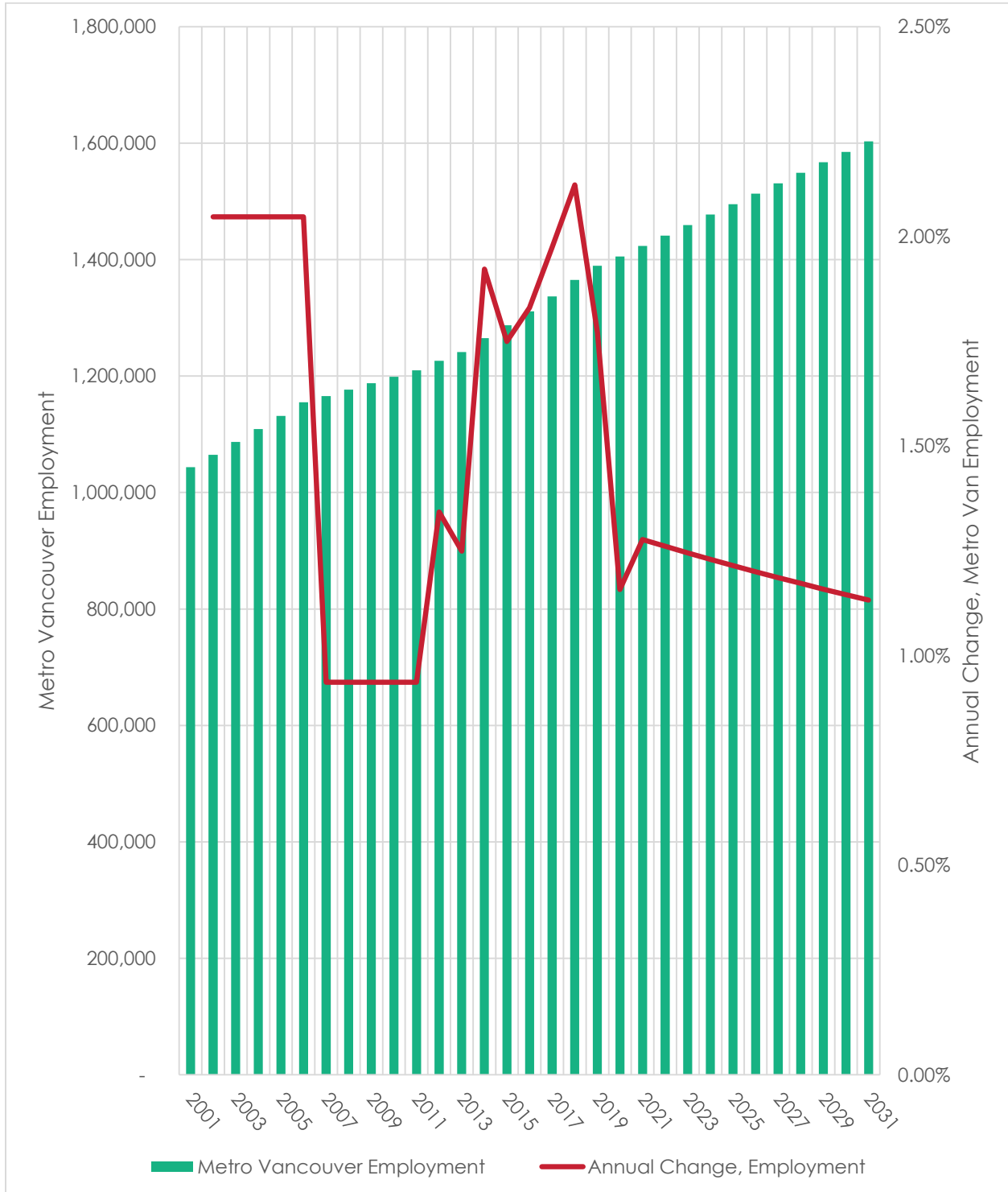
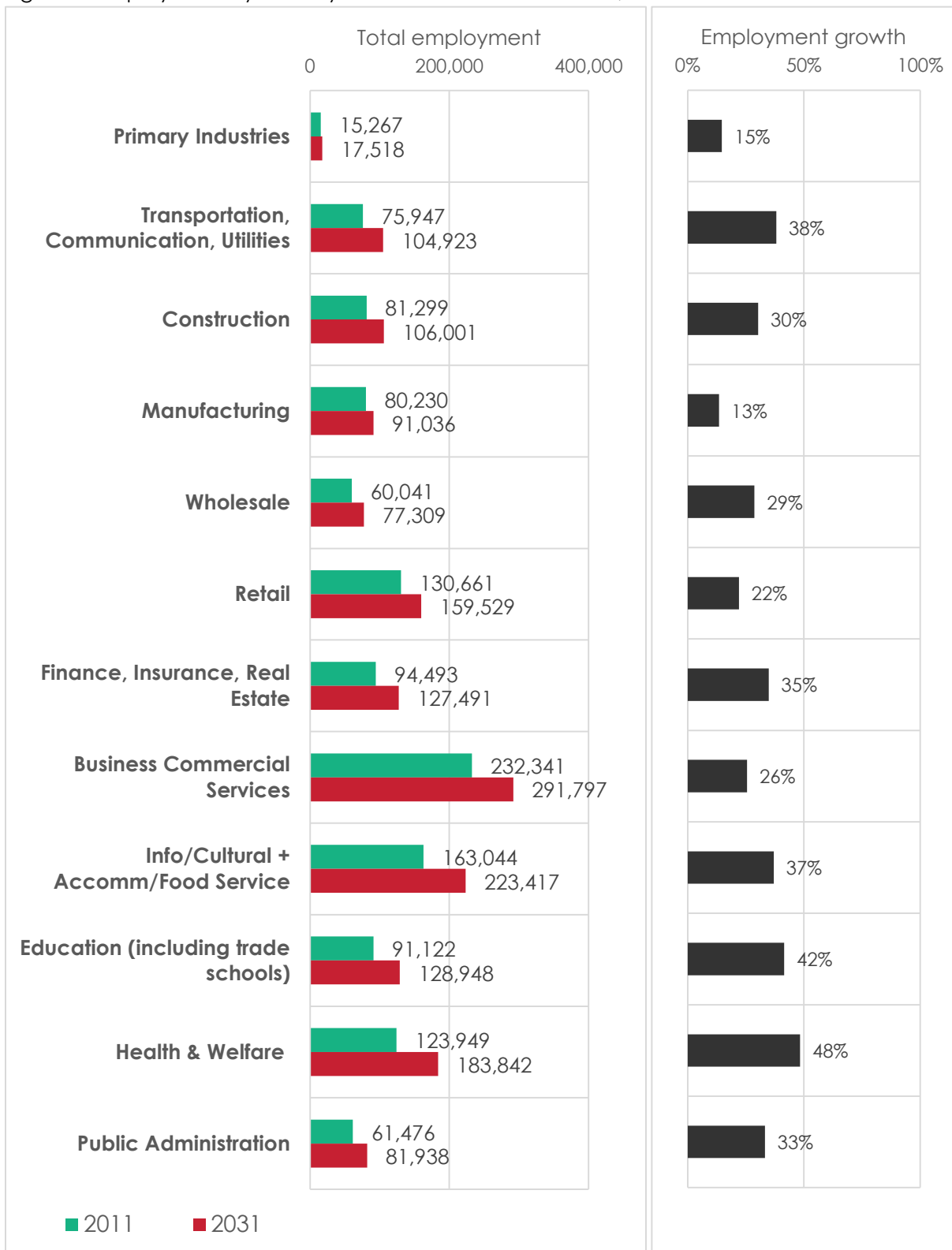


Figure 3: Employment by Industry Sector in Metro Vancouver, 2011 and 2031⁷



⁷ Primary industries include agriculture and resource extraction.

2.2 District of North Vancouver Employment Estimates

2.2.1 Total District Employment Estimates

There were an estimated 28,257 people employed at businesses in the District of North Vancouver in 2011, including those working from home, those with no fixed place of work, and accounting for Census undercount. This compares to 28,940 DNV residents in the labour force, creating a very balanced jobs-to-labour-force ratio of 0.98. This compares to a 0.97 ratio for the Metro Vancouver region overall. By 2016, employment in the District of North Vancouver is estimated to have reached just over 30,000.

Overall, it is projected that there will be nearly 34,700 people employed at businesses, institutions, government agencies, etc. in the District of North Vancouver by 2031.

2.2.2 Employment at Home and With No Fixed Place of Work in District

For the purposes of this analysis, total employment figures by industry must be further analyzed to 'net out' those who work at home and those with no fixed place of work, as neither of these groups will require dedicated employment lands.

Home-Based Employment: In 2011, nearly 19% of those employed at DNV businesses (4,790 jobs) worked in private residences. This compares to approximately 7.5% for the region overall. In the DNV, home-based employment as a proportion of total employment in a given category is most prominent in Finance, Insurance and Real Estate (33.5%), Business Commercial Services (30.7%) and Retail Trade (26.2%), as indicated in Table 1.

Table 1: Home-based employment in the District in 2011

Sector	Sector share of home-based employment	Portion of sector that is home-based
Primary Industries	0.2%	8.6%
Transportation, Communication, Utilities	2.5%	9.7%
Construction	2.0%	4.5%
Manufacturing	5.3%	14.5%
Wholesale	1.1%	7.0%
Retail	16.3%	26.2%
Finance, Insurance, Real Estate	12.3%	33.5%
Business Commercial Services	37.0%	30.7%
Info/Cultural Services, Accommodation & Food Services	9.5%	13.6%
Education (including trade schools)	7.9%	13.8%
Health & Welfare	2.5%	6.2%
Public Administration	3.4%	16.4%
TOTAL	100.0%	18.8%

No Fixed Workplace: employment in the DNV at no fixed places of work accounted for approximately 16% of total jobs in in 2011 (4,400 jobs). This compares to approximately 13% for the region overall. Employment with no fixed place of work, as a proportion of total employment in given category was most prominent in Construction (54%), Primary Industries (33%) and Transportation, Communication and Utilities (32%), as indicated in Table 2.

Table 2: Employment with no fixed place of work in the District in 2011

Industry	Sector share of no-fixed-workplace employment	Portion of sector with no fixed workplace
Primary Industries	0.9%	33.1%
Transportation, Communication, Utilities	9.7%	32.0%
Construction	28.7%	53.6%
Manufacturing	2.6%	6.0%
Wholesale	2.6%	13.7%
Retail	5.2%	7.0%
Finance, Insurance, Real Estate	4.0%	9.2%
Business Commercial Services	18.3%	12.7%
Info/Cultural Services, Accommodation & Food Services	9.8%	11.6%
Education (including trade schools)	5.7%	8.3%
Health & Welfare	6.2%	13.0%
Public Administration	6.3%	25.2%
TOTAL	100.0%	15.7%

2.2.3 Employment at a Fixed Workplace other than Home

On the whole, 66% of those employed at businesses in the District had a 'usual place of work' (fixed but not at home) in 2011. The industries where more than 75% of employees had a usual place of work were Manufacturing, Wholesale, Information/Cultural Services, Accommodation and Food Services, Education, and Health & Welfare. The industries with between 50% and 75% of employees at usual workplaces were Primary, Transportation, Communications and Utilities, Retail, Finance, Insurance and Real Estate, Business Commercial Services, and Public Administration. Only the Construction industry showed less than 50% of employees at a usual workplace (42%). Table 3 compares the industry sectors in this respect.

Table 3: Employment in the District in 2011

Sector	Total FTE ⁸	Excluding 'at home' and 'no fixed place'	Portion with usual place of work
Primary	116	68	58%
Transportation, Communication, Utilities	1,348	786	58%
Construction	2,373	996	42%
Manufacturing	1,939	1,541	79%
Wholesale	841	668	79%
Retail	3,300	2,207	67%
Finance, Insurance, Real Estate	1,942	1,113	57%
Business Commercial Services	6,383	3,610	57%
Info/Cultural Services, Accommodation & Food Services	3,732	2,793	75%
Education (including trade schools)	3,044	2,369	78%
Health & Welfare	2,134	1,724	81%
Public Administration	1,105	645	58%
TOTAL	28,257	18,519	66%

For the projections of future built space and employment land demand, these proportions have been held constant.

⁸ 'FTE' stands for 'full-time equivalents', which reflects total hours according to the number of full-time schedules those hours would fill.

2.3 District of North Vancouver Employment Projections, 2011 – 2031

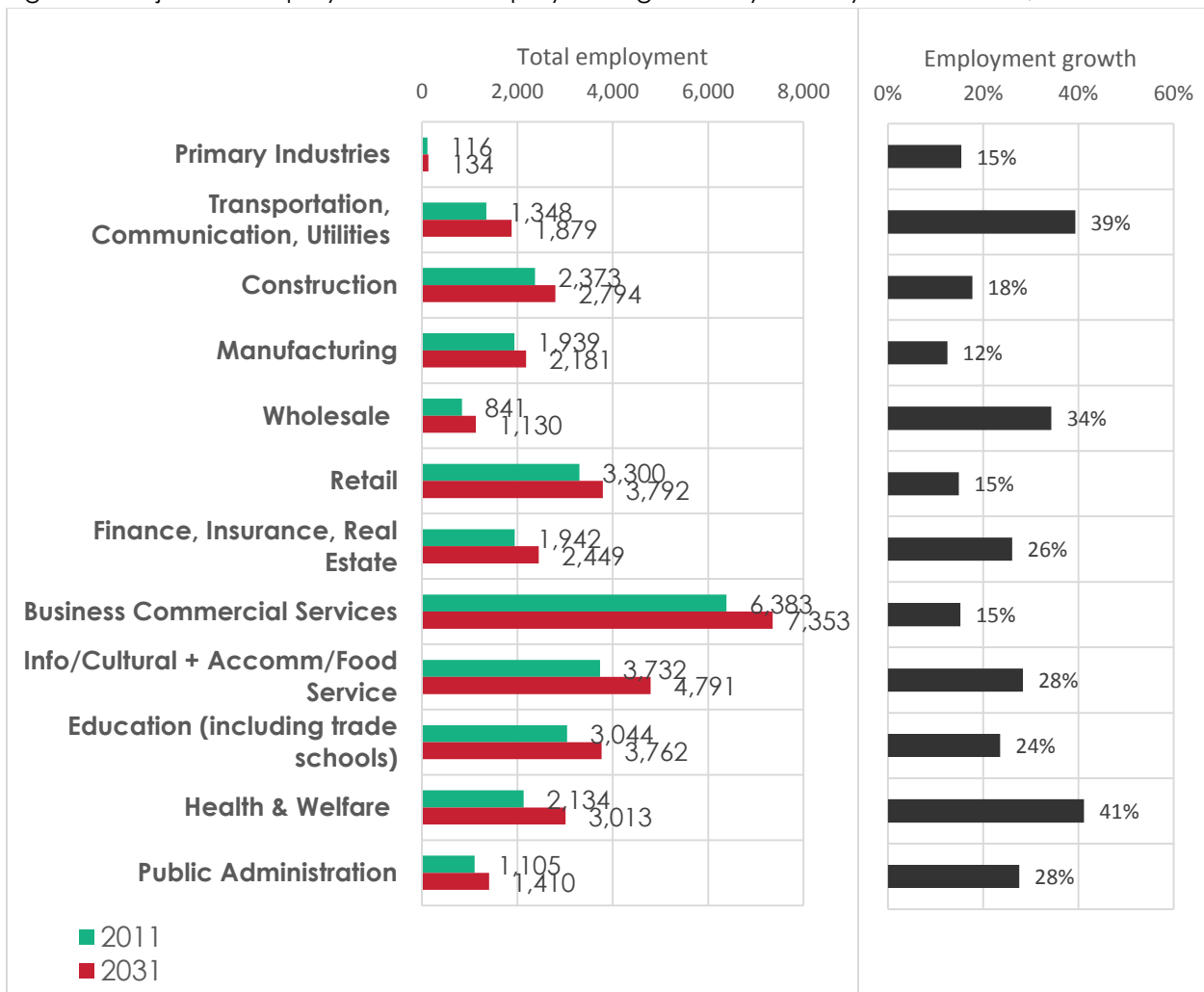
2.3.1 Employment overall and by sector

Projections of future employment in the District have been conducted based on the following key assumptions:

- BC's real GDP will grow from \$229 billion in 2015 to \$319 billion by 2031, and Metro Vancouver's total employment growth will be tied to real Provincial GDP growth
- Allocation of employment by industry for Metro Vancouver overall, and the allocation of industry-specific employment to the District, have both been determined using data received from Metro Vancouver for 2011 and 2030, with interpolation for years between.

On this basis, employment within the District has been projected to grow from 28,257 in 2011 to nearly 34,700 by 2031, an addition of 6,430 employees or 23% growth. Figure 4 below shows projected growth by industry as well as each industry's respective rate of change.

Figure 4: Projected employment and employment growth by industry in the District, 2011 - 2031



2.3.2 Employment at a Fixed Workplace other than Home

Of the projected additional employees in the District of North Vancouver over the next 15 years, over 4,300 or 67% are expected to have a fixed-place of work in the DNV, not at home, as shown in Table 4.

Table 4: Employment in the District at a fixed workplace other than home

Sector	2011	2021	2031	Change, 2011-31	% Change
Primary Industries	68	74	78	10	15%
Transportation, Communication, Utilities	786	948	1,095	309	39%
Construction	996	1,100	1,173	177	18%
Manufacturing	1,541	1,661	1,734	192	12%
Wholesale	668	790	897	229	34%
Retail	2,207	2,405	2,536	329	15%
Finance, Insurance, Real Estate	1,113	1,274	1,403	290	26%
Business Commercial Services	3,610	3,941	4,159	549	15%
Info/Cultural Services, Accommodation & Food Services	2,793	3,227	3,585	792	28%
Education (including trade schools)	2,369	2,683	2,928	559	24%
Health & Welfare	1,724	2,094	2,433	710	41%
Public Administration	645	743	823	178	28%
TOTAL	18,519	20,940	22,843	4,325	23%

2.3.3 Employment Lands in the District

Employment activities occur at a wide range of land types with a variety of OCP designations and land use zones. For the purpose of this analysis our Team is concerned with the proportions of future 'fixed place' employment that may seek land or built space in light industrial/commercial business park, hybrid business park, or other employment lands. This may include some institutional-type users (e.g. daycare, community health centre, labs, offices related to education), but would exclude the majority of heavy manufacturing users save for some office space.

For the following industry categories, it is assumed that at least 85% of the projected fixed-workplace employment may seek locations on employment lands as defined above:

- Primary Industries
- Transportation, Communication, Utilities
- Construction
- Wholesale
- Health & Welfare
- Public Administration.

For the remainder of categories, the following proportions have been allocated to employment lands:

- Manufacturing, @25%: much of the manufacturing-related employment in North Vancouver is likely to be related to port-oriented purposes (e.g. ship building) or other heavy manufacturing related to materials processing, infrastructure and the like. The remainder will be light manufacturing, which is appropriate for the type of employment lands being considered in this study. This would include industries related to electronics, furniture, textiles, plastics, pharmaceuticals, wood, and others located within fully-enclosed buildings.
- Retail @ 20%: this would account for accessory retail uses on employment lands.
- Health & Welfare @ 20%: this category includes a wide range of sub-industries, from offices for doctors, dentists and other health practitioners, to laboratories, ambulatory services, hospitals, nursing facilities and family/community/vocational/child services. Most of those employed within this industry would locate in health, community, and institutional-type buildings on commercial and institutional lands. Some uses may gravitate to office space in a business park environment.
- Finance, Insurance, and Real Estate @ 25%: there is significant alignment here with retail; most businesses in this grouping tend to land in commercial retail centres, comparatively few in stand-alone office buildings or business parks.
- Education @ 10%: this is not a common usage on employment lands. Most would go to dedicated institutional lands, with some ending up in commercial districts (e.g. language schools).
- Business & Commercial Services @ 75%: this category is an amalgamation of four Statistics Canada 2-digit NAICS categories⁹, and most businesses in this sector operate in the 'business to business' space (i.e. business that primarily offer services to other businesses). These types of users operate well in industrial/business park environments, although some businesses will gravitate to commercial zones.
- Information/Cultural Industries @ 50%: while the majority of employees in this category work either at home or at no fixed place, at least half of the remainder of employees and their companies are expected to gravitate toward space on employment lands. This industry sector includes businesses involved in publishing (including software, sound, TV, broadcasting), telecommunication, data processing, internet providers, and other information service industries.

⁹ Comprised of the following categories (with 2 digit NAICS codes): Professional, Scientific and Technical Services (54); Management of Companies & Enterprises (55); Administrative and Support, Waste Management and Remediation Services (56); Other Services excluding public administration (81).

2.4 Employment Space Demand in the District, 2016 – 2031

To forecast the future space and land requirements for industry in the District of North Vancouver, the following approaches have been used:

- 1) Convert employment forecasts “on employment lands” as discussed above into built floor space, and subsequently convert built floor space into land requirements:
 - a. Convert built space to land using existing densities in the District
 - b. Convert built space to land using anticipated future densities (by sector) in the District
- 2) Project future land requirements on the basis of recent historical absorption of industrial floor space in the District.

2.4.1 Employment-driven Built Space Demand

Data sets provided to the Consultant Team by the District provide employment density calculations by business type, measured in square feet of built space per full-time-equivalent (FTE) job. By applying these ratios to projected employment expected to locate at employment lands, we arrive at estimates of future built space requirements by industry (gross floor area), year-over-year, as shown in Table 5:

- From 2016 to 2031, the employment-based forecasts show a need for approximately 915,000 square feet of floor area in the District of North Vancouver on employment lands.
- Demand is projected to be highest in the next 5 years, averaging over 71,000 square feet per year from 2016 – 2021. Between 2021 and 2026 average annual demand is expected to taper to around 54,000 square feet, before increasing to just under 58,000 square feet in the 2026 – 31 period. Variability is a function of projected employment growth in the region overall, which is tied to anticipated pace of Provincial GDP growth.

Table 5: Projected net new built employment space needed (sq. ft.) in District, 2016 – 2031

Industry	2016 – 2021	2021 – 2026	2026 – 2031	2016 – 2031
Primary Industries	2,251	1,364	1,647	5,263
Transportation, Communication, Utilities	61,087	53,635	53,383	168,105
Construction	18,013	11,819	13,544	43,375
Manufacturing	13,190	6,893	9,236	29,318
Wholesale	59,398	50,219	50,552	160,169
Retail	8,067	4,788	5,861	18,716
Finance, Insurance, Real Estate	5,876	4,549	4,749	15,174
Business Commercial Services	77,249	46,417	56,351	180,017
Info/Cultural Services, Accommodation & Food Services	31,807	25,347	26,113	83,267
Education	4,572	3,410	3,627	11,609
Health & Welfare	52,747	46,863	46,509	146,119
Public Administration	21,144	16,690	17,267	55,102
TOTAL	355,400	271,995	288,839	916,235
Avg. Annual	71,080	54,399	57,768	61,082

2.4.2 Employment-driven Land Demand Forecasts (Scenarios 1 & 2)

Each industry utilizes industrial and mixed-employment lands in a different way. Some industries are more building-intensive, including logistics, warehousing, manufacturing, production, distribution and industrial-related accessory uses such as on-site retail and office. Other are more land-intensive, requiring significant outdoor space for storage, loading and parking. Some industries are more readily adaptable to denser, multi-level industrial building forms than others, provided that these typologies still allow all core needs to be met, including cost of construction and parking.

As the industrial land market in the Metro Vancouver region becomes increasingly constrained, the pace at which certain industries are adapting or looking for ways to adapt is accelerating. For this analysis, consideration has been given to two future land utilization scenarios in conjunction with the DNV-level forecast of employment, which are then compared to land availability in the District. The scenarios are as follows:

Scenario 1 – Using Employment Forecasts and Status Quo Development Densities: The densities of buildings in each sector in the District, and thus their utilization of land, will not change in the District over the next 15 years.

Scenario 2 – Using Employment Forecasts and Select Increases in Development Densities: Land utilization (i.e. built space density) will increase in certain categories, reducing the amount of land required.

Densities for each of the above scenarios are shown in Table 6 below.

Table 6: Projected land utilization in the District by sector, in each scenario (floor-space ratio¹⁰)

Industry	Scenario 1 - Status quo FSR	Scenario 2 - Higher FSR new construction in select categories	Notes
Primary Industries	0.2	0.2	No change anticipated due to outdoor space requirements
Transportation, Communication, Utilities	0.1	0.2	Slight densification possible
Construction	0.4	0.5	Slight increase
Manufacturing	0.1	0.3	Small-scale manufacturers could operate in multi-level spaces
Wholesale	0.2	0.2	No change anticipated due to loading/parking requirements
Retail	0.4	0.4	No change anticipated due to required parking ratios
Finance, Insurance, Real Estate	0.2	0.7	Significant densification possible through multi-level facilities and reduced parking
Business Commercial Services	0.3	0.4	Slight increase possible through multi-level space
Info/Cultural Services, Accommodation & Food Services	0.3	0.4	Slight increase possible through multi-level space
Education (including trade schools)	0.3	0.6	Multi-level space possibilities
Health & Welfare	0.9	0.9	No change
Public Administration	0.2	0.5	Multi-level space possibilities

¹⁰ FSR is calculated by dividing the gross floor area of a building by the total area of its site. A higher FSR implies a higher land utilization.

Under Scenario 1, the District would see demand for approximately 10 acres of land per year over the next 5 years, and an average of 8.5 acres per year over a 15-year period. Assuming that none of this land demand is fulfilled through adaptive re-use and redevelopment, the inventory of vacant land in the District (~42 acres¹¹) would be consumed within 5 years.

Under Scenario 2 the District would see demand for approximately 5 acres of land per year over the next 5 years, and an average of 4.5 acres per year over a 15-year period. Again assuming that none of this land demand is fulfilled through adaptive re-use and redevelopment, the inventory of vacant land would be consumed within 9 years. These outcomes are shown in Table 7.

Table 7: Land demand, 2017 – 2025, based on employment & density forecasts (ac)

Year	Scenario 1 – Employment-based, status quo density			Scenario 2 – Employment-based, higher density		
	Land required	Cumulative land required	Vacant land remaining	Land required	Cumulative land required	Vacant land remaining
2017	9.9	9.9	32.1	5.23	5.23	36.8
2018	9.9	19.7	22.3	5.23	10.46	31.5
2019	9.9	29.6	12.4	5.23	15.69	26.3
2020	9.9	39.4	2.6	5.23	20.92	21.1
2021	9.9	49.3	0	5.23	26.15	15.8
2022	7.7	57.0	0	4.06	30.22	11.8
2023	7.7	64.7	0	4.06	34.28	7.7
2024	7.7	72.5	0	4.06	38.34	3.7
2025	7.7	80.2	0	4.06	42.40	0

2.4.3 Trend-based Land Demand Forecast (Scenario 3)

Over the last 5 years up to the end of Q4 2015, net absorption of industrial land in North Vancouver has averaged approximately 60,000 square feet per year. In the first quarter of 2016, net absorption already reached 60,000 square feet, and is likely to exceed 80,000 square feet by year-end. Assuming that the net absorption of space at year-end 2016 is 80,000 square feet, a trend-based forecast would see average annual demand of 50,000 built square feet. Using an average density of 0.39 FSR, this translates to annual requirements of approximately 3 acres of land. This pace of growth would consume all available lands within 14 years, as indicated in Table 8.

¹¹ Metro Vancouver (2015). Industrial Lands Inventory Technical Report

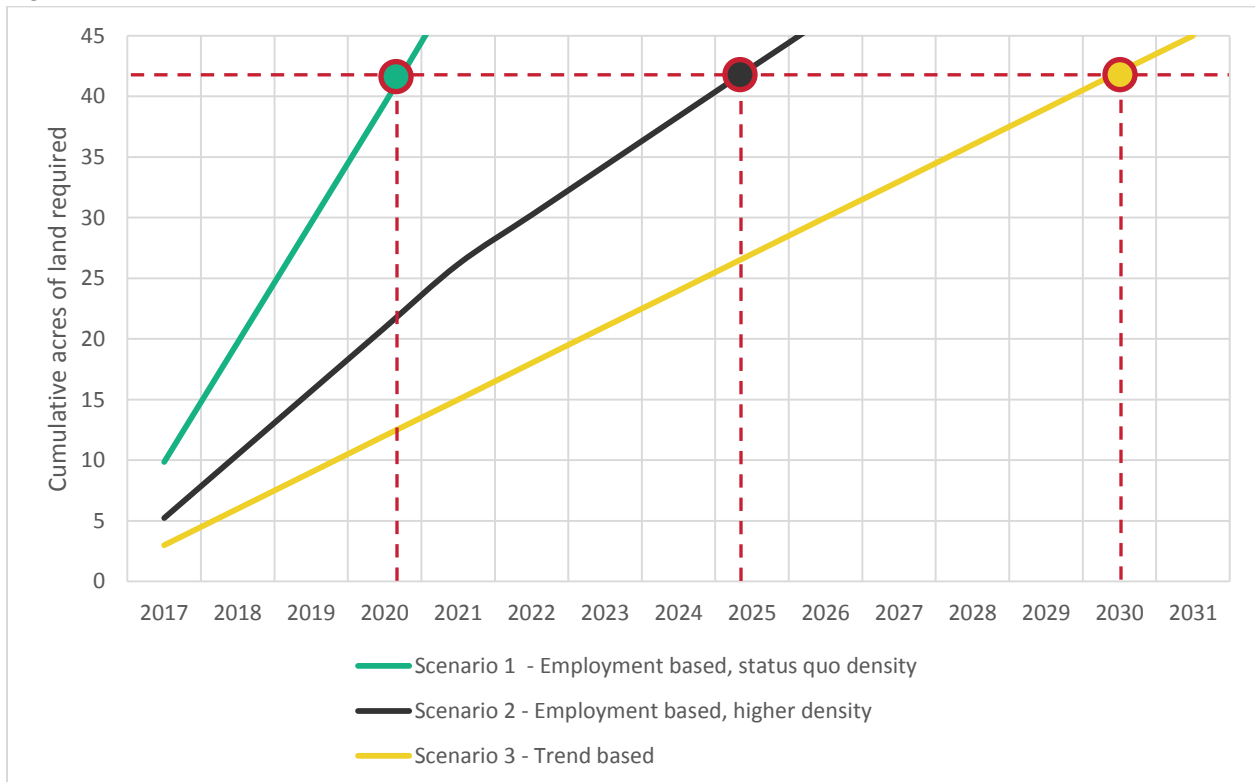
Table 8: Land demand, 2017 – 2030, based on absorption trends (ac)

Year	Scenario 3 – Trend-based		
	Land required	Cumulative land required	Vacant land remaining
2017	3.0	3.0	39.0
2018	3.0	6.0	36.0
2019	3.0	9.0	33.0
2020	3.0	12.0	30.0
2021	3.0	15.0	27.0
2022	3.0	18.0	24.0
2023	3.0	21.0	21.0
2024	3.0	24.0	18.0
2025	3.0	27.0	15.0
2026	3.0	30.0	12.0
2027	3.0	33.0	9.0
2028	3.0	36.0	6.0
2029	3.0	39.0	3.0
2030	3.0	42.0	0

2.4.4 Synopsis of Land Demand Forecast Scenarios

Under the employment-driven demand scenarios (Scenarios 1 and 2) – one at current density and one at anticipated higher densities – the 42 acres of vacant land in the DNV would be consumed in between 4.5 and 9 years. If we extend recent absorption trends into the future (Scenario 3), the 42 acres of vacant land would be consumed in about 14 years. All three scenarios are shown in Figure 5.

Figure 5: Employment land demand by scenario, with year of full capacity indicated



Even under a situation of significant densification in industries where it is most feasible, all available land may be consumed within 9 years (Scenario 2). This assumes that employment growth as forecast based on Metro Vancouver's proportionate allocations is realistic and that the constrained land situation does not itself cause an early tapering of DNV's employment allocations (reflected in Scenario 3); as land runs out, fewer potential occupants can find the ideal location, so rates of sales and development slow down. This may already be occurring.

There may be opportunities for redevelopment of employment lands (in Maplewood and elsewhere) that would be considered 'underutilized' based on the current ratios of improvement-to-land values. It is important to keep in mind however that older, depreciated building stock provides opportunities for certain businesses and business categories to operate, opportunities that may not exist in newer space due to the rents and sale prices that would be required to make redevelopment viable. This is not to say that redevelopment should not occur, but rather to highlight one of the inevitable trade-offs that redevelopment will require.

Through the interview process (discussed at greater length in Section 3) we have ascertained some key opportunities for particularly challenging portions of the vacant lands in Maplewood, notably the areas with significant slopes at the northern ends of the Port lands. There may be some industry categories that are well suited to these lands, in which case it would be wise to retain these lands for future employment uses. If it is determined that there is limited usability of these lands for industry, or that the industries best suited to these lands are unlikely to be major growth sectors in the District over the next 10 – 15 years, then consideration could be given to re-designation for residential, mixed-use, live-work or other uses.

With regard to allowing additional vacant lands in Maplewood to be converted to industrial and/or mixed-employment uses, this policy is not recommended by the Consultant Team because a shortage of affordable housing is one of the barriers to businesses operating in North Vancouver over the long term, and such an approach may do more harm to the District's businesses than good.

3 Maplewood Economic Opportunity Assessment

The Employment Lands Demand Assessment presented in Section 2 produced an understanding of how employment is likely to grow in the District as a whole, how that employment is likely to utilize built space and land, and how that compares to what is currently and potentially available. To gain a sense of demand for employment lands in the Maplewood Area in particular, a more qualitative approach is required, since demand for land in Maplewood depends more on sector-specific locational preferences and less on regional-scale trends.

This section reports the results of a detailed interview process in which the Consulting Team contacted and spoke with 16 stakeholders and experts, each with unique perspectives on the Maplewood Area. Interviewees included:

- Three realtors
- A developer
- Two manufacturers of boats, boat parts, and nautical technology
- A manufacturer of industrial parts
- A manufacturer of chemicals
- A wholesale & distribution company
- A stevedoring service
- Two research and technical service companies
- A business services company
- A film studio
- A spa
- The Port of Vancouver.

This section discusses some high-level findings of the interview process, and then presents several pages of tables that summarize the interview findings on a sector-by-sector basis.

3.1 General Stakeholder Comments

According to the Consultant Team's realtor contacts (and corroborated by many other stakeholders), the 2016 market for industrial and office space on the North Shore is very hot; there have been many sales and leases in the area in recent years, including industrial, retail, and office space. Local commercial realtors have never seen this level of scarcity. There is effectively zero current supply of North Shore industrial space, and products are spending as little as one day on the market. Office has relatively more vacancy, but this still amounts to very little. Developer/realtor Great West Life is fully built-out and looking for more land.

Currently the most popular products include buildings that mix office and light industrial uses, and small-bay office strata that can be combined. Big warehouses are not in demand as much as smaller spaces for specialty businesses.

In Maplewood, a developer has sold one standalone office building, two standard industrial buildings, and one hybrid office & industrial building. All of it sold quickly, although the hybrid space is particularly popular and highlights the benefit of flexible use regulations. Their four

buildings on Forester Street now contain a huge variety of occupants, indicating Maplewood's appeal to a broad range of businesses:

- Engineering firm
- Mechanical contractor
- Garage
- Small manufacturing
- Athletic uses
- Cafes
- Bike manufacturing
- Luxury car service
- Civil contractor
- Language school
- Property management firm
- Design and marketing companies.

New industrial space in Maplewood is selling for \$285 - \$300 per square foot, and leasing for \$15 - \$18 per square foot per year. New office space in Maplewood is selling for \$410 - \$450 per square foot, and leasing for \$25 per square foot per year.

Parking is the big constraint on density in this area. Businesses need a certain amount of parking and unground parking is prohibitively expensive, so ground parking is unavoidable.

3.2 Industry Sectors with Growing Demand

According to several stakeholders, the following sectors exhibit growing demand for land in Maplewood:

- Mixed-use developments
- Live-work space (which has the benefit of requiring less parking)
- Retail
- Light industrial
- Trades and contractors
- Locally-owned businesses
- Service commercial
- Office
- Brewery
- Fitness & lifestyle (including gym and spa uses)
- Peripheral port services

3.3 Employee Attraction & Retention

Maplewood is generally considered a good place to operate a business or to work. Its attractiveness is increasing as residential development brings more amenities to the area such as restaurants, retailers, and services. However, there are a number of issues that stakeholders identified that may be improved to better attract and retain employees:

- The difficulty of travelling to Maplewood from some parts of the region is frequently mentioned as a barrier to employment in the area. Transit service to Maplewood has been improved in recent years, but further improvements would have a positive impact.
- A second frequently mentioned barrier to employment in Maplewood is the high cost of North Shore living in general, and of housing costs in particular. Ensuring that affordable housing exists in the District may allow workers to live closer to Maplewood.
- The development of Northwoods Village has introduced new retail, restaurant, and service amenities that are appreciated by those businesses currently operating in Maplewood. Further increasing the area's offering of amenities would continue to increase its attractiveness to employees.
- Further to that point, a pedestrian crossing connecting Northwood Village to the south side of Dollarton Highway would make the existing and proposed amenities in the Village easier for Maplewood's workers to access.

3.4 Maplewood Industry Sector Analysis

This section presents an analysis of Maplewood's strengths, weaknesses, opportunities, and constraints (SWOC) from the perspective of a number of industry sector stakeholders, primarily including businesses currently operating in the area, but also prospective Maplewood occupants such as the film and spa sectors.

Table 9 is a matrix showing each sector's perspective on Maplewood's SWOC. Table 10 compares the locational requirements and preferences of each sector.

Table 9: Interview results showing Maplewood's strength's weaknesses, opportunities, and constraints according to various industry sectors

Sector	Strengths	Weaknesses	Opportunities	Constraints
Maplewood in general (industry non-specific) ¹²	<ul style="list-style-type: none"> • Good regional accessibility due to Highway 1. It creates a worker catchment that includes the North Shore, Burnaby, and East Vancouver. • Beautiful green space attracts workers and customers. • Maplewood is very attractive to business owners who live in North Vancouver. • Adjacent amenities (food, stores, etc.) are a boon to businesses. • Good bike infrastructure. • Maplewood has a tight-knit community of businesses, providing a customer base for business service operations. 	<ul style="list-style-type: none"> • The heavy industrial properties to the south present adjacency issues for some tenants, including smell and traffic. • Safety is a concern for business owners next to heavy chemical operations. • The North Shore is too expensive for most employees to live locally. • Parking is a constant issue in most industrial sectors. • Traffic congestion is a nuisance, and may impede emergency vehicles. • Bus service is present but poor. • In general Maplewood doesn't have the customer pull of Lonsdale, for example. 	<ul style="list-style-type: none"> • The growth in nearby retail creates a general amenity attractive businesses and employees. • The Port lands represent a vast development opportunity (employment or otherwise) • Neighbourhood walkability has improved and may improve further. • Some of the area's older homes may be replaced by employment uses. • Space for medical and counselling offices; and automotive and heavy equipment shops are in demand but are not permitted. 	<ul style="list-style-type: none"> • Land is in short supply in Maplewood, the District, and the Region generally. The North Shore is particularly impacted in all sectors. • The housing shortage threatens all businesses, as residential and accompanying retail uses "crowd out" the market for land. • Already long-term tenants are leaving due to affordability issues. • Switching to a toll bridge system may make the area less affordable for commuters. • On the other hand, traffic jams appear to be worsening. • Restrictions on permitted uses (for example medical offices and live-work spaces) may limit flexibility.

¹² This row of the SWOT analysis reflects overall strengths, weaknesses, opportunities, and constraints in Maplewood that apply to all industry sectors. The items shown below refer only to industry-specific SWOT characteristics.

Sector	Strengths	Weaknesses	Opportunities	Constraints
Retail	<ul style="list-style-type: none"> The introduction of newer retail is a positive development for many sectors as it creates a better workplace environment. 	<ul style="list-style-type: none"> It is tougher for retailers to locate in Maplewood than in other parts of the North Shore because it is a relatively low-income area without a large residential catchment. 	<ul style="list-style-type: none"> The newer commercial tenant mix, especially office workers, tend to be more affluent and may support local retail. Retail potential is set to grow with the development of the area's residential market. 	
Light industrial	<ul style="list-style-type: none"> Very appropriate existing space. Good proximity to bridge and railroad. Good proximity to waterfront, as many light industrial operations are marine-related. Appropriate rents (for now). 	<ul style="list-style-type: none"> Parking is insufficient. Traffic is an issue (from the transfer station especially) 	<ul style="list-style-type: none"> The presence of nearby heavy industrial uses makes Maplewood less appropriate for many other uses such as residential, but ideal for light industrial operations. Expansion of the shipping industry and related marine uses would facilitate the growth of this sector in Maplewood. The District could more efficiently manage traffic, for example with a one-way loop of some kind. 	<ul style="list-style-type: none"> Demand for residential could crowd out this sector. Higher-yield employment types could crowd out this sector. There is no other location on the North Shore where these operations could go. Already businesses are moving to the Fraser Valley.
Heavy industrial	<ul style="list-style-type: none"> The area south of Maplewood is ideal for its current heavy industrial use because of logistical and transportation convenience. The supply chain is largely in one place. There are several businesses in the Maplewood area that provide technical and support services to the large operations across the railway. 	<ul style="list-style-type: none"> The chemical plant poses a safety concern for surrounding uses. 	<ul style="list-style-type: none"> The introduction of newer retail is a positive development for this industry as it creates a better workplace environment, by providing amenity to employees. 	<ul style="list-style-type: none"> Transportation to this sector's large, static locations is a growing issue that impedes employee retention.

Sector	Strengths	Weaknesses	Opportunities	Constraints
Wholesale & Distribution		<ul style="list-style-type: none"> High lease rates and land prices make distribution increasingly unviable. Particularly when compared to warehousing districts in the Fraser Valley (such as Burn Road), operating this kind of business on the North Shore is not very attractive. 	<ul style="list-style-type: none"> There is a potential opportunity for other industries to expand if this sector relocates. 	<ul style="list-style-type: none"> Potential crowding out by residential and retail uses is a real threat.
Office employment	<ul style="list-style-type: none"> Having a mix of nearby employment types is beneficial for this sector, as is nearby residential. 	<ul style="list-style-type: none"> Office employment tends to require more parking (although it requires less open space overall). 	<ul style="list-style-type: none"> Maplewood's walkability has improved recently, and would benefit from further improvement. 	<ul style="list-style-type: none"> Congestion is an issue in the area, and nearby residential development is perceived to exacerbate this.
Film	Not an existing use in Maplewood.		<ul style="list-style-type: none"> North Shore Studio is looking for a new location, and the Port Lands are one of the largest pieces of undeveloped industrial-designated land in the District. 	<ul style="list-style-type: none"> This industry requires a quiet location, which may be an issue in Maplewood.
Spa	Not an existing use in Maplewood.		<ul style="list-style-type: none"> Strom Spa is looking for a location in North Vancouver. North Vancouver in general and Maplewood in particular provide exceptional proximity to nature, which this industry prizes. Maplewood is already an emerging fitness and wellness hub (Arc'teryx, climbing gym, etc.) Proximity to Deep Cove is positive. A spa can be almost invisible from the outside, which makes it a perfect transitional use for Maplewood North. Rugged terrain and slopes are no barrier to this use. 	<ul style="list-style-type: none"> Rail noise and highway noise may be an issue for this sector.

Table 10: Sector locational requirements & preferences

	Light industrial	Distribution	Shipping	Office ¹³	Film ¹⁴	Spa
Site	<ul style="list-style-type: none"> Flat Decent egress 				<ul style="list-style-type: none"> Manageable turning radius Flat is preferred Quiet 	<ul style="list-style-type: none"> Quiet Slope preferred Transit-accessible
Neighbours	<ul style="list-style-type: none"> Residential discouraged Heavy industrial clients preferred 			Residential and retail preferred		Ideally none
Preferred built size ¹⁵	1,500	< 10,000 ft ²		1,500 – 2,500 ft ²	15,000 – 20,000 ft ² , plus attached office, warehouse, and mill shop.	20,000 – 25,000 ft ²
Lot size			Greater than 50 ac		2 – 4 ac	100,000 – 200,000 ft ²
Height				9 – 10 ft. ceiling		Single storey
Clearance	20 – 22 ft.		16 ft. clearance for trucks			
Setback	Could be zero setback from property line.					
Preferred parking ¹⁶	1 stall per 1,000 ft ²			1 stall per 500 ft ²	Potentially underground	
Storage	Outdoor preferred or necessary, depending on business		More than 200 ft ²		Outdoor, but flexible	No outdoor storage required
Infrastructure	<ul style="list-style-type: none"> Freeway access Proximity to water 		<ul style="list-style-type: none"> Freeway access Rail access Proximity to water 			

¹³ Mandate elevators for disabled workers.

¹⁴ Film industry tax credits are sometimes used to entice this industry.

¹⁵ Units smaller than 1,500 square feet only attract storage, which is low yield and low employment. The ideal product (according to realtors and developers) is a 2,500 square foot unit with office in the front and warehouse in the back.

¹⁶ Less parking than this amount is difficult to sell. Parking requirements assume street parking in addition to stated amount.

Table 10 presents the stated locational preferences of a number of Maplewood's employment sectors. Some observable conclusions include:

- The sectors that primarily occupy Maplewood at present – light industrial, distribution, and office – have no strict requirements vis a vis lot size, although preferences may exist, as mentioned in Section 3.1
- Shipping, film, and spa uses require large sites, which may explain why these sectors have less presence in Maplewood at present
- Most sectors require flat sites and vehicle access, although the spa sector is able to operate on a sloping site, and may even prefer it
- Interviewees report that building setbacks are purely aesthetic, and do not impact their operations.
- Requirements with respect to transportation infrastructure, clearance, building heights, lot sizes, and parking minimums vary by sector, but are typically well met by Maplewood and by the District's zoning bylaw (further discussed in Section 5).

3.5 Maplewood Economic Opportunity Assessment Summary

There is more than enough demand to fill all available employment land area in Maplewood:

- Employment land with a mix of retail, warehouse, manufacturing and office on one site, that can make use of flexible space, will continue to be in high demand.
- Maplewood will be attractive to a wide range of business types. Offering flexibility in business type and proximity to key transportation infrastructure will ensure that the area remains in high demand from employers.
- Uses such as a spa could take up as much as 200,000 square feet (~4.5 acres) of land area; sloped land is not problematic, and may be an asset.
- A shortage of affordable housing is one of the barriers to businesses operating in North Vancouver over the long term.
- There will also be continuing demand from trades and contractors, looking for smaller (e.g. 1,500 sf) units, on flat sites, with appropriate street and loading access. Those serve both local area and the heavy industrial hub to the south.
- Fitness and lifestyle-oriented users (for example climbing walls and gyms) are increasing their demand for industrial areas due to space flexibility and rent.
- Demand for peripheral port services is high and increasing.
- Distribution and large warehouse operations are struggling in Maplewood due to high rents and land values. It is increasingly difficult to locate on the North Shore rather than relocating to more affordable space in the Fraser Valley. This may be an opportunity to expand other sectors in their absence.
- Requirements with respect to transportation infrastructure, clearance, building heights, lot sizes, and parking minimums vary by sector, but are typically well met by Maplewood and by the District's zoning bylaw (further discussed in Section 5).

4 Accessory Retail Analysis

The long-term potential for existing and new retail uses in Maplewood will be driven by both residential population and daytime employment population in the area. Having completed District-wide employment forecasts and a Maplewood-specific assessment of demand potential, the Consulting Team now has a sense of the total employment in the Maplewood Area in 2031, which we have used to create a projection of retail demand in Maplewood in that year. This section describes and explains this projection, including a discussion of the type, amount, and market position for future accessory retail uses in the area.

4.1 Employment Assumptions

Applying our District-wide employment projection to the question of retail demand at Maplewood is significantly simplified by the fact that of the District's 42 acres of under-utilized industrial land¹⁷, nearly all is either within the Maplewood Area, or immediately to the south of it in the adjacent waterfront employment zone, and therefore still within a reasonable commercial catchment.

Based on the allocation of employment described in Section 2.3.3, the Consulting team estimates that the equivalent of 9,051 full-time employees (FTE) work on employment lands in the District in 2016. Of these, about 760 work in the Maplewood area¹⁸. The consulting team projects that from 2016 to 2031, District-wide employment on employment lands will rise from 9,051 to 10,475, or an increase of 1,424. Because nearly all of the District's vacant industrial land is within walking distance of Maplewood, the Consulting team projects that 75% of this growth will occur in this area (with the remainder going to other intensifying parts of the District). This results in a total employee retail catchment of 1,828 FTE IN 2031.

ICSC Research indicates that on average, each downtown office employee spends almost \$6,600 (2015 dollars) per year on a variety of goods and services that are likely to be available in Maplewood, including those who spend nothing¹⁹. The Consulting Team assumes that since this is not a downtown location, employee spending will be somewhat lower, at just over \$5,900 per year. We also assume that this spending pattern will not change in real terms²⁰.

¹⁷ Metro Vancouver (2015). Industrial Lands Inventory Technical Report

¹⁸ This figure is extrapolated from a 2011 District estimate of employment in Maplewood.

¹⁹ ICSC (2011). Office worker spending, urban downtown, including those who spend nothing.

²⁰ I.e. before inflation.

4.2 Residential assumptions

To estimate the retail space that can be supported by a local population, it is important to estimate both the size and affluence of the population.

District staff report that Maplewood's residential capacity is approximately 1,500 net new units by 2030, in addition to 315 existing units. This results in a 2031 residential total of approximately 1,815. Assuming an average household size of 2.5 individuals, this indicates a total Maplewood population of over 4,500.

Compared to the total population of the neighbourhood, the affluence of the neighbourhood can only be projected in the most approximate terms. For the sake of simplicity, the Consulting Team assumes that Maplewood's average household income in 2031 will be equal to the District's average household income in the same year. Extrapolating from an Environics Analytics projection going as far as 2023²¹, we project that the average household income in 2031 will be more than \$176,000 in 2015 dollars, or almost \$71,000 per capita.

4.3 Gross Retail Expenditure Potential

Gross retail expenditure potential is the amount of retail spending (by category) that a given population is statistically likely to do. It is a measure of an area's ability to support retail and service commercial establishments *overall* and, as such, is the next step after income forecasting to determining the total potential commercial demand for an area. Expenditure potential is a function of an area's population, income, and overall expenditure patterns.

Real employee spending and residential income projections (as presented in Sections 4.1.1 & 4.1.2, respectively) are converted to real expenditure projections by category using provincial-level retail trade data from Statistics Canada; calculations are performed to determine both how spending by category is likely to change in real terms over time, and how differentials in incomes between the provincial average and the trade areas translate into differences in spending profiles on an individual basis. The gross annual retail expenditure in 2031 from Maplewood's residential population is projected at \$93 million, and the gross annual retail expenditure from Maplewood's employee population is projected at \$11 million.

²¹ This is a linear projection of the following estimations and projections from Environics Analytics, expressed as "(year, average household income in 2005 dollars)": (2008, \$109,198), (2013, \$114,770), (2016, \$123,994), (2018, \$128,436), (2023, \$140,067).

4.4 Net Retail Expenditure & Warranted Commercial Floor Area Potential

The next step in determining the amount of warranted service and retail commercial space in Maplewood is to determine how much retail spending in any given retail category may be attracted to Maplewood instead of other destinations, and how that spending converts to square feet supportable. The amount of spending that may reasonably be attracted to Maplewood was determined based on a number of factors including:

- Existing competition in the marketplace
- Site-specific conditions including traffic and parking considerations, existing and intended adjacent land uses, and the relative age and attractiveness of Maplewood's buildings.

Ultimately the question of 'dollar capture' is one of appropriate tenant mix and market positioning. Based on the above factors, in conjunction with our market expertise, it was determined that Maplewood should be positioned as a local-serving commercial hub specializing in convenience shopping (for example grocery stores), food and beverage establishments, and services such as banks.

With this market positioning in mind, capture rates were applied to gross retail expenditures by category, and the resulting 'net' retail expenditures deemed feasible for local capture were converted to warranted retail floor area by applying sales-per-square foot requirements.

Table 11 projects the total commercial floor area supportable in Maplewood in 2031 based on the assumed capture rates and retail performance, divided for the sake of interest into a residential- and employee-supported share.

Table 11: Retail and service commercial space supportable in 2031 in Maplewood (square feet)

Business Type	Resident-supported	Employee-supported	Total
Service commercial	35,324	943	36,266
Convenience goods	29,886	1,551	31,437
Comparison goods	19,908	947	20,855
Food & Beverage	8,421	6,706	15,127
Entertainment & Recreation	658	61	719
Automotive	0	0	0
Total	94,197	10,208	104,405

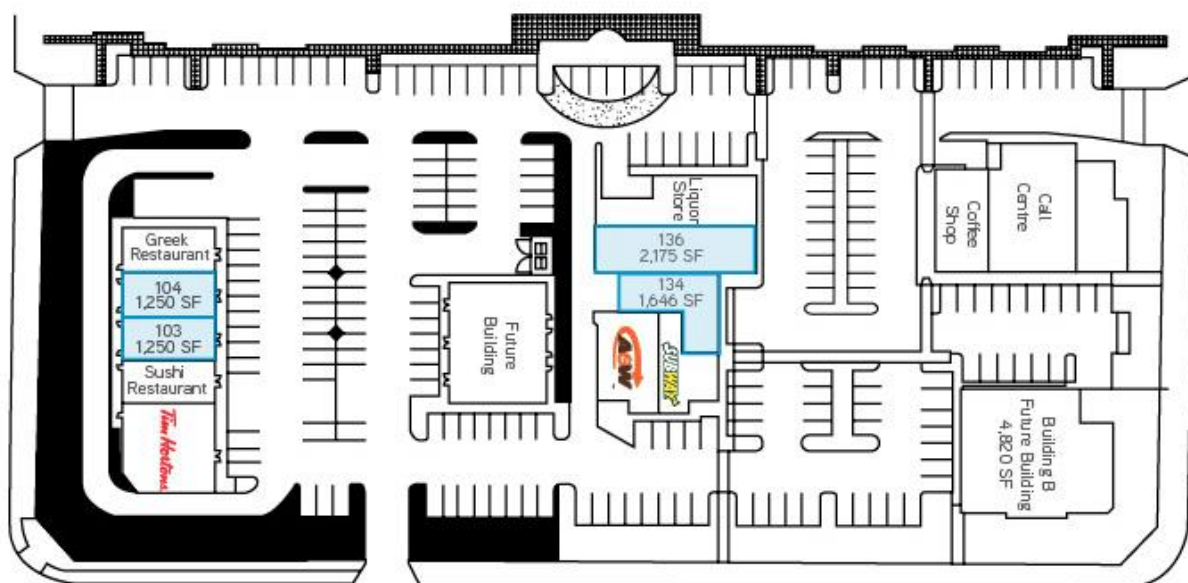
Table 11 indicates that more than 104,000 square feet of retail and commercial space will be supportable in Maplewood in 2031. This matches up fairly well to the current OCP projection of approximately 100,000 within Maplewood Village Centre by 2030. The Stong's grocery store and adjacent accessory retail space currently make up over 33,000 square feet.

4.5 Accessory Retail Recommendations

We project that about 104,000 square feet of commercial space will be supportable in Maplewood by 2031, of which about 10,000 square feet is attributable to employees. Given that the OCP calls for the majority of supportable space to be directed to the Village Centre, building upon the emerging Stong's-anchored retail node and other existing smaller-scale retail and service operators in the vicinity, the Consulting team believes that a small-scale accessory retail node within the Maplewood business park area is most appropriate. This node would serve primarily the on-site working population, and would be limited to 8,000 to 10,000 square feet. Its ideal tenant mix would consist of four or five food & beverage, convenience, and personal service retailers. A larger, more diverse retail & service node in the Maplewood business park may also be viable, but only at the expense of the currently emerging retail hub as designated in the OCP.

An example of built form and usage mix that may be appropriate for an accessory commercial hub in Maplewood is the Campbell Station commercial area, which offers high-quality, professionally managed retail and office space, and serves the Campbell Heights Business Park. It includes eight 1,250 – 1,650 square foot units suitable for restaurants and retailers, as well as a liquor store, a standalone furniture store, and some adjacent office space. This concept, which is shown in Figure 6, is somewhat larger scale than what we recommend for Maplewood, but can be scaled down as appropriate.

Figure 6: Campbell Station Commercial Area, image courtesy of Colliers International



5 Planning & Regulatory Considerations

The Consulting Team has analyzed the District's industrial and comprehensive development zoning regulations with the aim of comparing the existing regulations to various industry sector preferences, according to interviewed stakeholders. The Appendix summarizes the requirements of the District's seven industrial zones as well as the five comprehensive development zones that currently allow industrial uses in the Maplewood Area. In total, the Appendix summarizes:

- Waterfront Industrial Zone (I1)
- General Industrial Zone (I2)
- Light Industrial Zone (I3)
- Interim Industrial Zone (I4)
- Storage Industrial Zone (I5)
- Employment Zone – Industrial (EZ-I)
- Employment Zone – Light Industrial (EZ-LI)
- Comprehensive Development Zones 18, 19, 33, 45, & 50 (CD18, CD19, CD33, CD45, & CD50, respectively).

Comparing the location requirements mentioned by business owners and developers with the industrial and comprehensive development zones described in the zoning bylaw reveals certain elements that might merit further investigation and revision.

Observed discrepancies between stakeholder preferences and zoning restrictions include:

- Some light industrial users may find it difficult to operate in the I3, EZ-LI, CD33, and CD50 zones because these zones restrict “noise, glare, odour and air pollution... detectable from the parcel's property line”. In the EZ-LI zone, the District has limited the good neighbour regulations to those sites next to residential uses – this flags the potential conflict for businesses before the conflict develops to the point where other bylaws like the noise bylaw or nuisance bylaw kick in. The motive behind including the good neighbour clause is to forewarn businesses when they are considering moving into a new site and thereby avoid frustrations, expensive renovations, or moves down the line
- The EZ-LI zone has an upper limit on lot size (4,500 m²), which might prevent a film studio or spa from locating there, assuming they were limited to a single lot.
- Landscaping requirements in Maplewood typically mandate a complete screen between buildings and main roads. These could be adjusted to make retail uses more visible to the street, which would improve their viability. Locating buildings next to the sidewalk would also serve to improve visibility. Low visibility of retailers from the street was mentioned as an issue multiple times by existing Maplewood retailers that the Consulting Team interviewed.

The Consultant team anticipates that mixed-use business park will continue to be in high demand. Taking primary and accessory uses into account, the I3, EZ-LI, CD18, CD19, CD33, CD45, and CD50 zones are all more or less appropriate since they allow a mix of light manufacturing, office, and logistical uses.

Additional uses that could be considered in these zones to better match the market would be medical office and live-work space.

6 Conclusion

The Maplewood Employment Lands are a thriving and successful business hub, with a balanced mix of businesses types that are well-suited to the location both locally and regionally. The businesses in Maplewood make use of the nearby transportation infrastructure, the nearby marine access, and do business with one another and with the heavy industrial users immediately to the south, such as the Canexus chemical plant. Few changes to the District's zoning bylaw are called for, as it seems to match the needs of existing and potential businesses fairly well.

Realtors and developers are selling available industrial properties at unprecedented speed for unprecedented prices. In other words, there has never been more of an industrial land shortage in the Metro Vancouver Region, and this is especially true on the North Shore. High demand is expected to continue, with many industrial operators and other businesses fleeing to more affordable locations such as the Fraser Valley. Although Maplewood and its immediate environs contain almost all of the District's vacant industrial land²², the Consulting Team estimates that only 4.5 – 14 years of supply remains, depending on the demand scenario.

Barriers to businesses locating in Maplewood include a general shortage of affordable housing in the District, as well as regional-scale transportation challenges and rising land prices. Businesses requiring large building footprints, such as warehousing, are particularly pressed by the land shortage, and have tended to leave the North Shore.

Based on interviews with stakeholders, the Consulting Team projects that businesses with a mix of retail, warehouse, manufacturing, and office on one site, that can make use of flexible space, will continue to be in high demand. Maplewood will be attractive to a wide range of business types in the next several decades. Offering flexibility in business type and proximity to key transportation infrastructure will ensure that the area remains in high demand from employers. Uses such as a spa could take up as much as 200,000 square feet (~4.5 acres) of land area, and have less of an issue with sloped terrain than other employment uses. A small-scale accessory commercial hub may also be appropriate as part of the Maplewood Employment Lands, but should not exceed 10,000 square feet.

To further the District's objective of ensuring that the Maplewood Employment Lands remain as successful and productive as possible, one logical next step is to research best practices and locally-specific options for high-yield business attraction.

²² Metro Vancouver (2015). Industrial Lands Inventory Technical Report

Appendix – Summary of Selected Land Use Zones

Zone	Uses	Height	FSR	Lot dimensions	Coverage	Storage	Parking ²³
Waterfront Industrial Zone (I1)	<ul style="list-style-type: none"> Port-oriented uses except for manufacturing of hazardous substances Accessory offices, display, sales, and reception areas 	≤ 60 ft.			<ul style="list-style-type: none"> Buildings & structures: ≤ 60% of site 		1 per 1,150 m ² GFA of storage space for goods exclusively handled by machinery
General Industrial Zone (I2)	<ul style="list-style-type: none"> Numerous²⁴, except for manufacturing of hazardous substances Accessory retail, offices, caretaker, display, sales, and reception areas. No more than 15% of GFA of a tenancy or building 	≤ 40 ft.			<ul style="list-style-type: none"> Buildings & structures: ≤ 60% of site Buildings, structures, parking, loading, aisles, driveways, and storage: ≤ 95% of site 		In cases of unidentified built space: a minimum of one stall per 40 m ² of GLA to a maximum of 15% of GLA of building plus one stall per 100 m ² of other GLA

²³ All Industrial Zones have the following parking requirements: 1 stall per 100 m² of warehouse, 115 m² of industrial and interior storage, 575 m² of outdoor display space, 535 m² of mini warehousing, or 45 m² of other uses (all areas refer to GFA). Further requirements are in addition to these.

²⁴ Includes animal shelter, auction room, automotive body shop, automotive repair shop, construction services, contractor services, custom manufacturing, delivery services, equipment rental establishments, gun shop, heavy manufacturing, hobby beer & wine-making, light manufacturing, mini-warehousing, parking lot, pet care, research & development, trade school, specialized light industrial and technological establishments; transportation; veterinarian, warehousing, wholesaling, and works yard.

Zone	Uses	Height	FSR	Lot dimensions	Coverage	Storage	Parking
Light Industrial Zone (I3)	<ul style="list-style-type: none"> Clean, safe, and buffering uses including office²⁵ all in an enclosed building Accessory admin office, caretaker unit, display, sales, reception, outdoor customer service, and storage. No more than 25% of GFA of a tenancy or building 	≤ 40 ft.	≤ 1.2		<ul style="list-style-type: none"> Buildings & structures: ≤ 60% of site Buildings, structures, parking, loading, aisles, driveways, and storage: ≤ 90% of site 	Exterior storage is limited to: <ul style="list-style-type: none"> Vehicles at automotive body and repair shops Building supply establishments Equipment rental establishments Fleet vehicles at contractor or delivery services Recreation vehicle establishments 	In cases of unidentified built space: a minimum of one stall per 40 m ² of GLA to a maximum of 25% of GLA of building plus one stall per 100 m ² of other GLA
Interim Industrial Zone (I4)	<ul style="list-style-type: none"> Interim uses including mining, garbage disposal, and soil screening Accessory admin office 	≤ 40 ft.			<ul style="list-style-type: none"> Buildings & structures: ≤ 60% of site 		
Storage Industrial Zone (I5)	<ul style="list-style-type: none"> Outdoor storage, excluding hazardous materials Accessory admin office 	≤ 20 ft.			<ul style="list-style-type: none"> Buildings & structures: ≤ 10% of site Buildings, structures, parking, loading, aisles, driveways, and storage: ≤ 95% of site 		

²⁵ Includes animal shelter, artists' studio, auction room, automotive body shop, automotive repair shop, billiard hall, building supply establishment (of no more than 40,000 sq. ft.), business/office support services, clubs, contractor services, custom manufacturing, delivery services, equipment rental, fitness centre, gun shop, hobby beer and wine-making, industrial product sales, light manufacturing, media-related establishments, mini-warehousing, parking structure, pet care, recreation vehicle sales/rental/leasing, research and development, retail food services, trade school, specialized light industrial and technological establishments, veterinarian, warehousing, wholesaling, and works yard.

Zone	Uses	Height	FSR	Lot dimensions	Coverage	Storage	Parking
Employment Zone – Industrial (EZ-I)	<ul style="list-style-type: none"> • Employment land adjacent to the Port and rail corridor, including manufacturing, port-oriented use, service, transportation, waste and recycling, wholesale, and equipment sales and rental • Office use on upper floors, taking up no more space than above uses, and not exceeding 2,500 m² • Up to three dwellings in separate buildings, depending on size of lot • Accessory uses of up to 25% of floor space 	≤ 82 ft.		<ul style="list-style-type: none"> • Lot size: ≥ 1,100 m² • Lot width: ≥ 79 ft. • Lot depth: ≥ 112 ft. or 79 ft. on corner lots 			In cases of unidentified built space: a minimum of one stall per 100 m ² of GFA
Employment Zone – Light Industrial (EZ-LI)	<ul style="list-style-type: none"> • Numerous²⁶ low-impact manufacturing and service businesses in enclosed buildings • Accessory uses of no more than 25% of GFA of a tenancy or building 	<ul style="list-style-type: none"> • ≤ 4 storeys or 50 ft. • ≤ 30 ft. if within 15 m of an RS or C9 zone 		<ul style="list-style-type: none"> • Lot size: 1,100 m² – 4,500 m² • Lot width: ≥ 79 ft. • Lot depth: ≥ 112 ft. or 79 ft. on corner lots 	<ul style="list-style-type: none"> • ≥ 50% of site must be covered by single building facing the street • ≤ 90% of site covered • Building width: ≤ 150 ft. 		In cases of unidentified built space: a minimum of one stall per 45 m ² of GFA
Comprehensive Development Zone 18 (CD18)	<ul style="list-style-type: none"> • High-quality light manufacturing and industrial augmented with a range of other uses²⁷, all in an enclosed building • Various accessory uses²⁸. No more than 25% of GFA of a tenancy or building 	≤ 40 ft.	1.0	<ul style="list-style-type: none"> • Lot size: ≥ 12,000 f² 	<ul style="list-style-type: none"> • Buildings & structures: ≤ 50% of site 		In cases of unidentified built space: a minimum of one stall per 40 m ² of GLA to a maximum of 25% of GLA of building plus one stall per 100 m ² of other GLA

²⁶ Includes manufacturing, office on upper floors, recreation or community centre, one residential unit per parcel to a maximum of 500 m², restaurant, personal service, service, social gathering on upper floors to a maximum of 500 m², warehouse, and retail to a maximum of 2,500 m² including appliances and furniture, auctioneer, building supplies, equipment sales and rental, garden supplies, sports equipment, and vehicle sales.

²⁷ Includes: Business & office support services, car wash, courier and messenger services, custom manufacturing, fitness centre, gas bar, industrial product sales, light manufacturing, media-related establishments, mini-warehousing, office equipment rental, office, research & development, retail food, trade school of up to 7,200 ft², service station, specialized light industrial and technology, warehousing, and wholesaling

²⁸ Includes: administrative office; conference, display, sales, and reception areas; interior storage; outdoor customer service areas; retail sales; servicing, repair, or testing of goods associates with principal use, and fleet storage for courier and messenger services. Office and media-related establishments shall not exceed 50% of GFA.

Zone	Uses	Height	FSR	Lot dimensions	Coverage	Storage	Parking
Comprehensive Development Zone 19 (CD19)	<ul style="list-style-type: none"> Business park uses²⁹ all in an enclosed building Various accessory uses³⁰. No more than 40% of GFA of a tenancy or building 	≤ 60 ft.	1.0		<ul style="list-style-type: none"> Buildings & structures: ≤ 50% of site 		In cases of unidentified built space: a minimum of one stall per 40 m ² of GFA
Comprehensive Development Zone 33 (CD33)	<ul style="list-style-type: none"> Clean, safe, and buffering business park uses³¹ all in an enclosed building Various accessory uses³². No more than 40% of GFA of a tenancy or building, except in case of research & development or specialized light industrial and technology 	≤ 60 ft.	≤ 1.0		<ul style="list-style-type: none"> Buildings: ≤ 50% of site 		In cases of unidentified built space: a minimum of one stall per 40 m ² of GFA

²⁹ Includes: business & office support services, courier & messenger services, fitness centre, industrial product sales, media-related establishment, office, research & development, restaurant, retail food services, specialized light industrial and technology, warehousing, and wholesaling

³⁰ Includes: administrative office; conference, display, sales, and reception areas; interior storage; outdoor customer service areas; retail sales; servicing, repair, or testing of goods associates with principal use, and fleet storage for courier and messenger services. Office and media-related establishments shall not exceed 50% of GFA.

³¹ Includes: business & office support services, custom manufacturing, fitness centre, industrial product sales, office, research & development, retail food services, specialized light industrial and technology, and wholesaling

³² Includes: administrative office; conference, display, sales, and reception areas; interior storage; outdoor customer service areas; retail sales; servicing, repair, or testing of goods associates with principal use

Zone	Uses	Height	FSR	Lot dimensions	Coverage	Storage	Parking
Comprehensive Development Zone 45 (CD45)	<ul style="list-style-type: none"> Clean and safe industrial and servicing uses³³ as well as limited commercial all in an enclosed building except for customer service, storage, and animals Accessory admin office, caretaker unit, display, sales, reception, outdoor customer service, and storage. No more than 25% of GFA of a tenancy or building 	≤ 40 ft.	1.2		<ul style="list-style-type: none"> Buildings & structures: ≤ 60% of site 	Exterior storage is limited to: <ul style="list-style-type: none"> Vehicles at automotive body and repair shops Building supply establishments Equipment rental establishments Fleet vehicles at contractor or delivery services Recreation vehicle establishments 	In cases of unidentified built space: a minimum of one stall per 40 m ² of GLA to a maximum of 25% of GLA of building plus one stall per 100 m ² of other GLA
Comprehensive Development Zone 50 (CD50)	<ul style="list-style-type: none"> Clean, safe, and buffering light industrial park uses³⁴ all in an enclosed building except for fleet storage, contractor services, film set construction, industrial product sales, and light manufacturing and specialized technology establishments Various accessory uses³⁵. No more than 25% of GFA of a tenancy or building, except in case of media-related establishments, research & development, or specialized light industrial and technology 	≤ 40 ft.	≤ 1.0		<ul style="list-style-type: none"> Buildings: ≤ 50% of site 		<ul style="list-style-type: none"> In cases of unidentified built space: a minimum of one stall per 40 m² of GLA to a maximum of 25% of GLA of building plus one stall per 100 m² of other GLA In the case of film sound stages, 1 space for each 51 m² of GFA.

³³ Includes: artist's studio, auction room, automotive body shop, automotive repair shop, billiard hall, business & office support services, clubs, contractor services, custom manufacturing, delivery services, equipment rental, entertainment & recreation, fitness centre, hobby beer and wine-making, household repair, industrial product sales, light manufacturing, liquor store, mini-warehousing, office, parking structure, pet care, recreation vehicle sales/rental/leasing, research & development, retail food, trade school, specialized light industrial and technological establishments, veterinary, warehousing, wholesaling, and building supplies or retail of no more than 40,000 f²

³⁴ Includes: business & office support services, call centre, contractor services, courier and messenger services, custom manufacturing, fitness centre, household repair, industrial product sales, light manufacturing, media-related establishments, mini-warehousing, office, research & development, specialized light industrial and technology, warehousing, and wholesaling

³⁵ Includes: administrative office; conference, display, sales, and reception area; exterior storage; film set construction; interior storage; retail related to principal use; servicing, repair, and testing of goods associated with principal use; instruction associated with custom manufacturing