DEVELOPMENT TRENDS IN THE WEST END PORTFOLIO - MCCULLOCH

APPL 5310

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Part A

Question 1A: Analysis of development trends

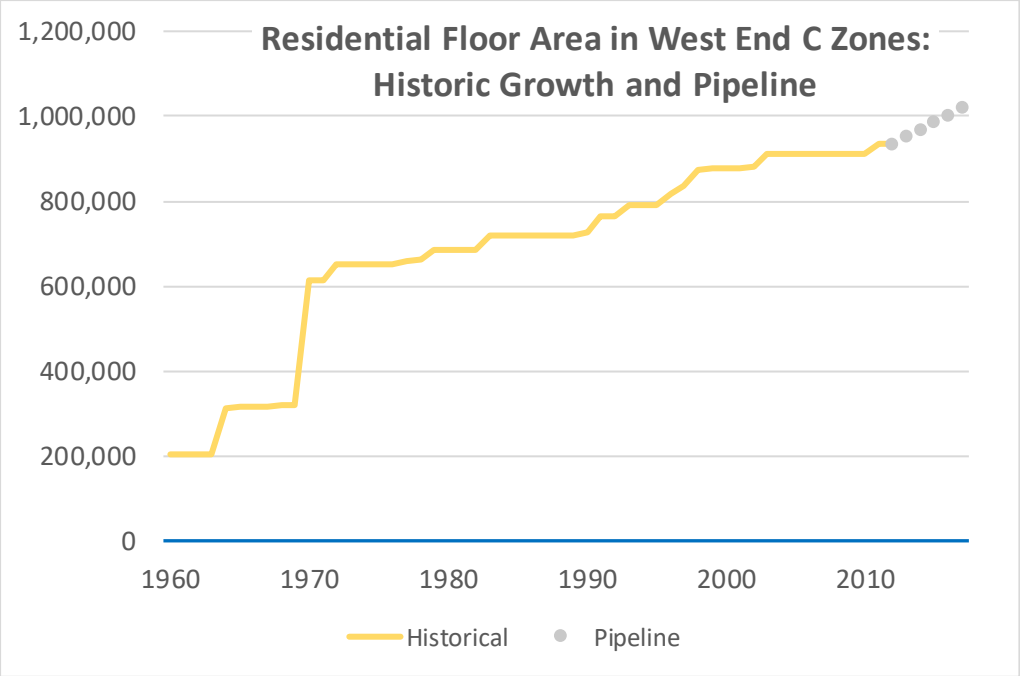
Development Trends: C-Zone

How has the amount of residential floor area in the West End changed over time? How has this varied by zone?

The amount of residential floor area has increased exponentially since 1960 going from 5,532,621 square feet to 21,490,459 across zones. C-Zone has increased from 203,954 to 935,064 (+731,110 or 359% or 4.6 times), DD-Zone increased from 223,147 to 1,200,226 (+977,079 or 438% or 5.4 times), and RM-Zone increased from 5,105,880 to 19,335,169 (+14,229,289 or 279% or 3.8 times).

C-Zone: Completed Residential Floor Area Stock by Year Built		
Period of Construction	Total Residential Floor Area	Average Annual Completed Residential Floor Area (Gross)
Prior to 1961	203,594.00	3,393.23
1961-1980	480,062.00	24,003.10
1981-2000	193,378.00	9,668.90
>2000	58,030.00	4,835.83

C-Zone: Development Pipeline		
State	# of Sites	Residential Floor Area
REVIEW	4.00	42,625.00
U/C	3.00	42,075.00



When was most of the housing stock built?

The most housing stock was built during the 1961 to 1980 period.

How has the pace of development varied over time?

Development has been an upward trend with a large episode of growth in development in roughly 1969 and smaller episodes in 1979, 1983, 1991, 1993, 1995, 2003 and 2011 with period of little to no development in between. The intensity of growth episodes stabilizes over time, especially after 1980.

Is the pace of development accelerating/ slowing?

The pace of development has been generally slowing, since the rapid development in the late 1960s/early 1970s. However, there are small periods of growth between inactivity that push development upwards. The average annual completed residential floor area has decreased since the 1961 to 1980 period from ~24,000 to ~9,700 in 1981 to 2000, and ~4,800 in >2000 period.

What's in the Pipeline?

The pipeline shows a steady increase from 2012 to 2017 with 7 sites in the pipeline adding an additional 84,700 square feet of residential floor area. Relative to the two time periods, it's a noticeable increase over 5 years.

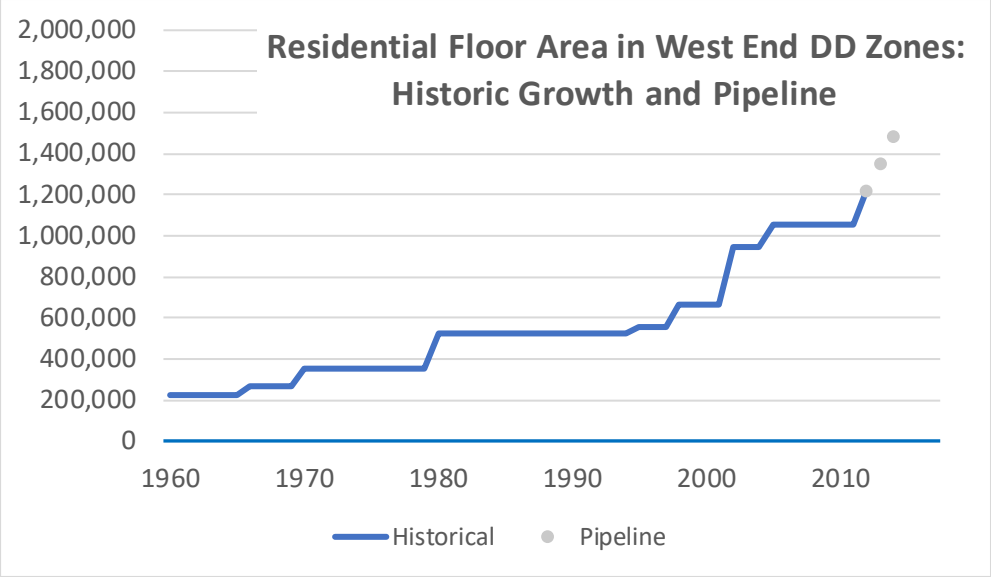
How much housing is being delivered in C zone compared to other parts of the West End?

C-Zone has delivered the least amount of housing since 1960 with an increase of 731,110 square feet of residential floor area. However, it has experienced 4.6 times growth relative to its existing stock in 1960 while DD-Zone experienced 5.4 times and RM-Zone 3.8 times, placing it in the middle for relative growth. The C-Zone pipeline delivers the least amount of residential floor area with ~84,000 square feet of residential floor space.

Development Trends: DD-Zone

DD-Zone: Completed Residential Floor Area Stock by Year Built		
Period of Construction	Total Residential Floor Area	Average Annual Completed Residential Floor Area (Gross)
Prior to 1961	223,147.00	3,658.15
1961-1980	297,922.00	14,896.10
1981-2000	146,508.00	7,325.40
>2000	552,649.00	46,054.08

DD-Zone: Development Pipeline		
State	# of Sites	Residential Floor Area
REVIEW	1.00	210,000.00
U/C	3.00	320,000.00



When was most of the housing stock built?

The most housing stock was built during the >2000 time period (2000-2012).

How has the pace of development varied over time?

The pace of development has been uneven, or sporadic, with long periods of little development with spikes in development in 1979, 1997, 2003, 2006, and 2011. The largest spike in development was in the early 2000s and slowed after.

Is the pace of development accelerating/ slowing?

The pace of development is accelerating with the magnitude of the growth in development larger in the 2000s. The average annual completed residential floor area decreased from 1961 to 1980 was ~14,000 to ~7,300 in 1981 to 2000 and increased to ~46,000 in the >2000 period.

What's in the Pipeline?

The pipeline shows a large episode of development with an additional 520,000 projected square footage across 4 sites, almost as large as the 2000-2012 period.

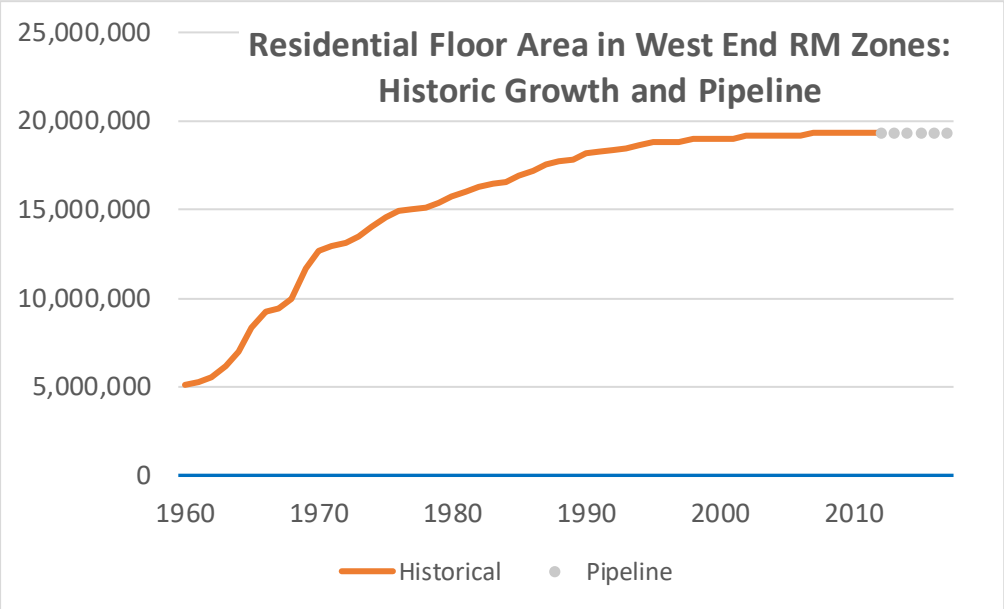
How much housing is being delivered in this zone compared to other parts of the West End?

DD-Zone has delivered the second most amount of housing since 1960 with an increase of 977,079 square feet of residential floor area. However, it has experienced 5.4 times growth relative to its existing stock in 1961 while C-Zone has experienced 4.6 times and RM-Zone 3.8 times, placing it in the top for relative growth. The DD-Zone pipeline is set to deliver almost 5 times the amount of residential floor area versus C-Zone and RM-Zone with an additional 530,000 square feet of residential floor area.

Development Trends: RM-Zone

RM-Zone: Completed Residential Floor Area Stock by Year Built		
Period of Construction	**Total Residential Floor Area**	**Average Annual Completed Residential Floor Area (Gross)**
Prior to 1961	5,105,880.00	83,702.95
1961-1980	10,589,788.00	529,489.40
1981-2000	3,318,852.00	165,942.60
>2000	320,649.00	26,720.75

RM-Zone: Development Pipeline		
State	**# of Sites**	**Residential Floor Area**
REVIEW	5.00	55,387.50
U/C	3.00	32,812.50



When was most of the housing stock built?

The most housing stock was built in the 1961-1980 period.

How has the pace of development varied over time?

The pace of development has been consistently slowing since the strong growth until approximately 1980.

Is the pace of development accelerating/ slowing?

The pace of development is slowing down, especially after 1997 with very little increase in residential floor space. The gross average annual completed residential floor area drops drastically and consistently from ~529,489 in the 1961 to 1980 time period, to ~165,942 in the 1981-2000 time period, and ~26,720 in the >2000 time period.

What's in the Pipeline?

The pipeline shows a continuing slow trend of development with an additional ~88,000 square feet of residential floor space being added across 8 sites, which is only an annual average of 17,600 square feet. This is significantly lower than previous time periods.

How much housing is being delivered in this zone compared to other parts of the West End?

RM-Zone has delivered the most amount of housing since 1961 with an increase of 14,229,289 square feet of residential floor area. However, it has experienced the least amount of relative growth with only 3.8 times growth relative to its existing stock in 1960 while C-Zone has experienced 4.6 times and RM-Zone 5.4 times. The RM-Zone pipeline is delivering the second most amount of residential square floor space of ~88,000, just a few thousand more than the C-Zone.

Question 1B: Development Capacity Analysis

Using the data provided, identify the number of typical development sites in each zoning district grouping and whether there is capacity for recent development trends to be accommodated on those sites.

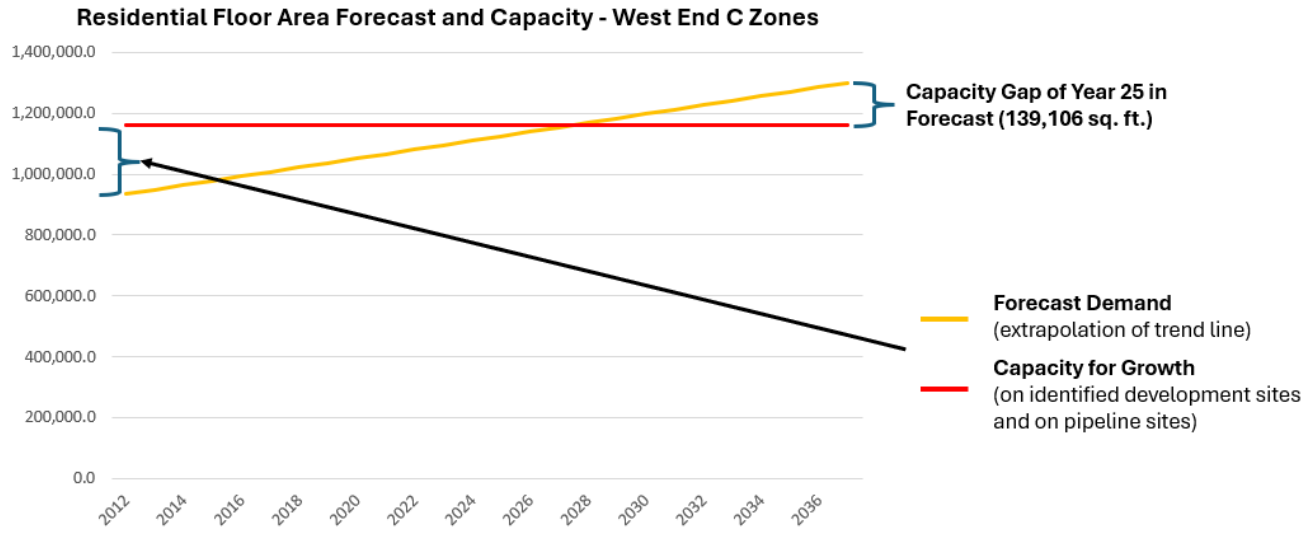
Development Capacity Analysis: All Zones

Zone Type	Max. Existing FSR of Redevelopment Sites
C Zoned Sites	0.5
DD Zoned Sites	1.5
RM Zoned Sites	0.31

Zone Type	Aggregate Site area of Redevelopment Sites	FSR Permitted in Existing Zoning	GROSS Capacity for Growth on Redevelopment Sites	NET Capacity for Growth on Redevelopment Sites
C Zoned Sites	56,056.00	2.75	154,154.00	154,154.00
DD Zoned Sites	295,869.00	5.00	1,479,345.00	1,473,514.00
RM Zoned Sites	128,609.00	1.75	225,065.75	221,386.75

Zone Type	Projected Net Growth 2012-2037	Net Capacity for Growth on Redevelopment Sites	Net Capacity for Growth on Pipeline Sites	Capacity Gap Analysis (surplus or shortfall)
C	366,575.00	154,154.00	73,315.00	-139,106.00
DD	1,917,600.00	1,473,514.00	383,520.00	-60,566.00
RM	369,453.00	221,386.75	73,890.50	-74,175.75

Development Capacity Analysis: C-Zone



Is there enough capacity on identified development sites to accommodate anticipated growth?

No there is not enough capacity. There is a shortfall of approximately -139,106.00 square feet of residential floor space.

If no, approximately when will demand exceed supply in the zoning district?

In approximately 2027 demand will exceed supply in the C-Zone district.

What might be done to increase capacity (if needed)

Relax the setback requirements from building frontage to the street.

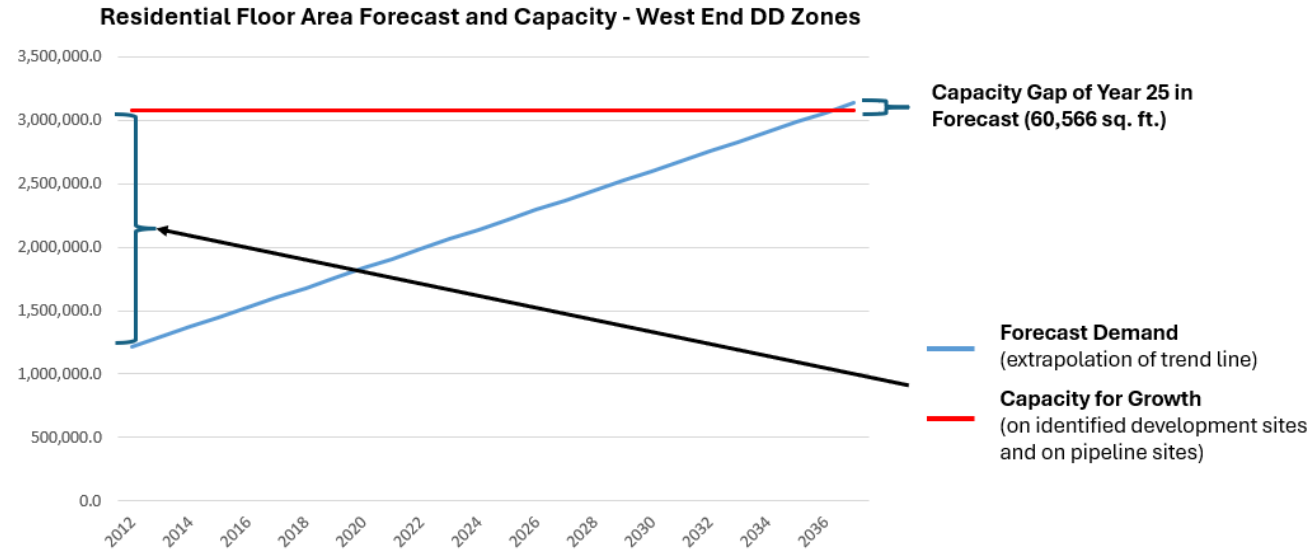
Allow for a wider range of commercial uses to be mixed-use than currently allowed under zoning bylaws.

What are some factors (assumptions) that might impact the forecast amount of capacity or the demand for housing that has been modelled?

That no more development will happen in the timeline which, if it happens, would increase the amount of capacity.

There is likely an assumption in the immigration rates to the Vancouver region within the projected net growth that may differ, reducing or increasing demand for housing.

Development Capacity Analysis: DD-Zone



Is there enough capacity on identified development sites to accommodate anticipated growth?

No there is not enough capacity. There is a shortfall of approximately -60,566.00 square feet of residential space.

If no, approximately when will demand exceed supply in the zoning district?

In approximately 2036 demand will exceed supply in the DD-Zone.

What might be done to increase capacity (if needed)

Relax the view-cone requirements for taller buildings to allow for more ease with structure placement on lots.

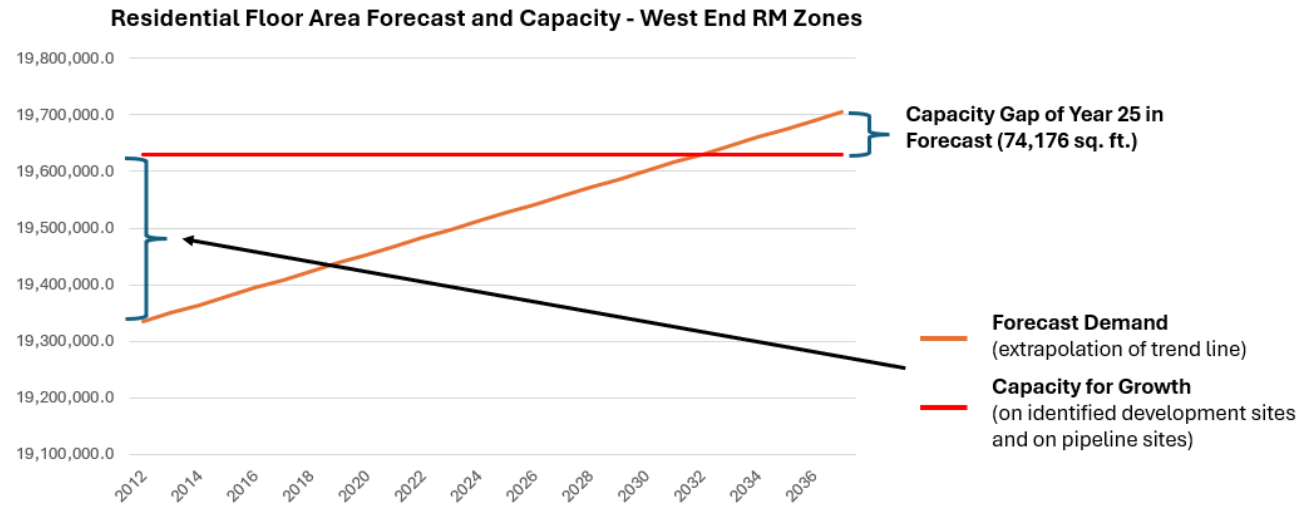
Broaden what is considered 'light industrial' to be up to date with current technological advancements that are compatible with residential use such as would allow for inclusion of residential uses in primarily industrial areas.

What are some factors (assumptions) that might impact the forecast amount of capacity or the demand for housing that has been modelled?

That no more development will happen in the timeline which, if it happens, would increase the amount of capacity.

Assumptions likely include the current definition of industrial uses, and technological advancement in the next 25 years may greatly change our industrial similar to as we have seen in the last 25 years with advancements like Amazon or A.I.

Development Capacity Analysis: RM-Zone



Is there enough capacity on identified development sites to accommodate anticipated growth?

There is not enough capacity to accommodate anticipated growth. There is a shortfall of approximately -74,175.75 square feet of residential floor area.

If no, approximately when will demand exceed supply in the zoning district?

Demand will exceed supply in approximately 2032.

What might be done to increase capacity (if needed)

Reduce the amount of below-market housing necessary to achieve the density bonus for residential buildings.

Pre-zone parcels identified in a suitability analysis with a higher density than currently allowed.

What are some factors (assumptions) that might impact the forecast amount of capacity or the demand for housing that has been modelled?

That no more development will happen in the timeline, which if it happens, would increase the amount of capacity.

Current housing policies won't be updated to reflect the growing demand for housing that would potentially increase allowable density and impact capacity for growth.

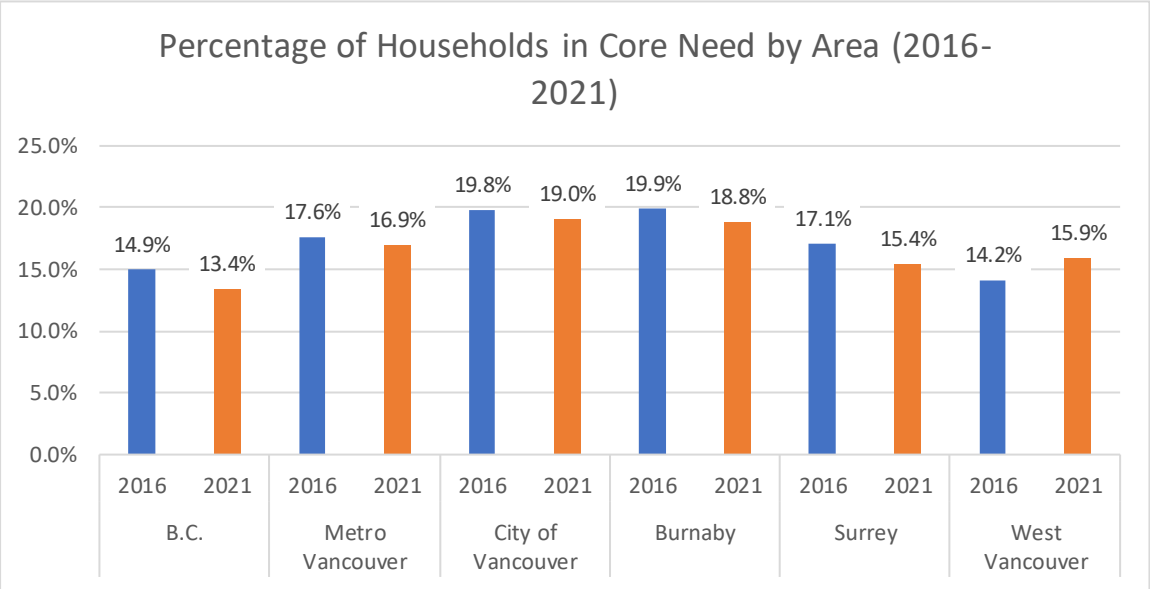
Within the project growth there is likely an assumption about the population growth that will happen over the period which may be different and either increase or decrease demand

Question 2

How does the rate of housing need vary over time, by area, tenure and household type?
Add a brief description of what each chart is telling us about housing needs.

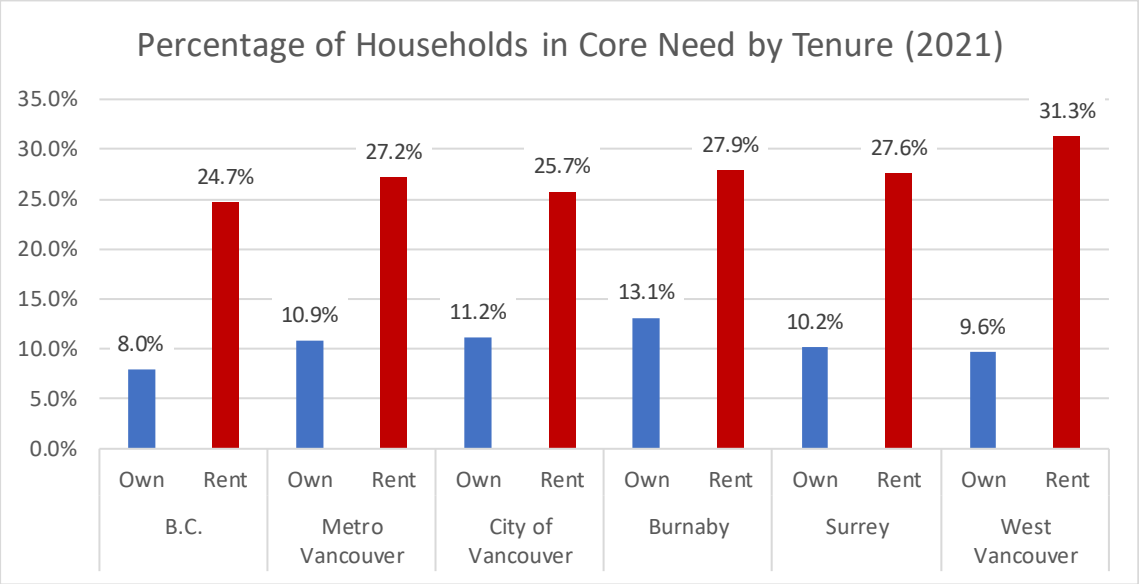
The rate of housing need decreases over time across areas, except for West Vancouver which sees an increase. Housing need is highest in Burnaby across time, area, tenure and household type. All areas included have a higher proportion of households in core housing need across time, tenure, and household type when compared to the Province suggesting that the cost of living is higher in the included areas of study versus the province. The gaps between variables of comparison (tenure, household type) are the biggest in West Vancouver, suggesting that there is potentially a larger wealth gap in that municipality versus other areas of study.

Housing Needs Analysis: Households by Area



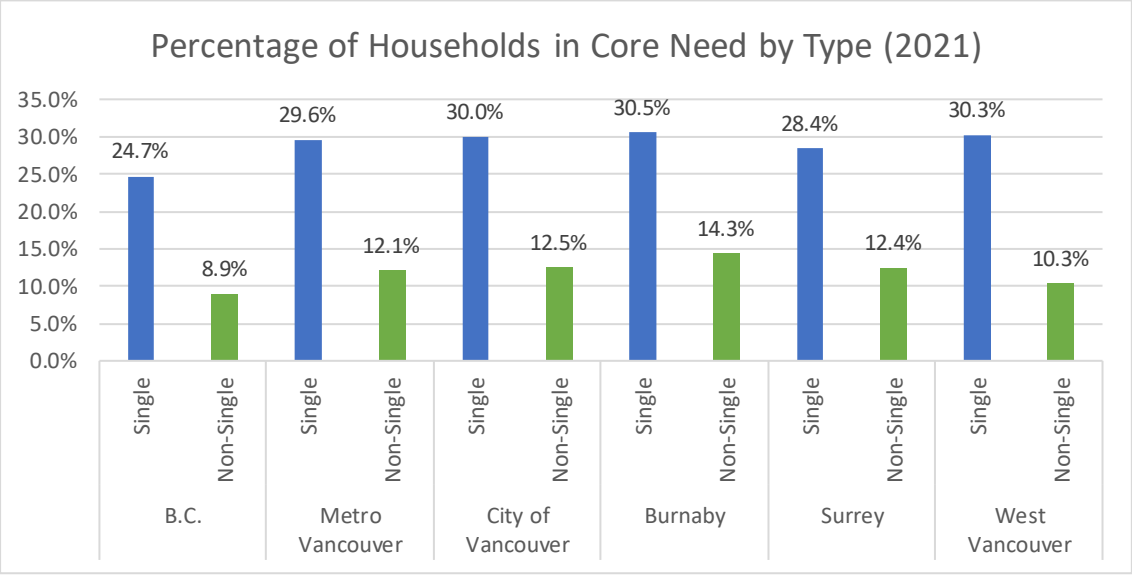
Generally, the proportion of households in core need modestly decreased from 2016 to 2021 in all areas, except for West Vancouver which is the only area that saw an increase of households in core housing need. The City of Vancouver and Burnaby have the highest proportion of households in core need both in 2016 and 2021.

Housing Needs Analysis: Households by Tenure



Across all areas, renters are in considerably higher housing need than residents who own their homes. West Vancouver has the highest disparity with the lowest among of owners in core need and the greatest number of renters in core housing need. Interestingly, B.C. has the lowest households in core housing need for both owners and renters relative to the other regions, suggesting that the other areas included have a higher cost of living that is above the average of the province.

Housing Needs Analysis: Households by Household Type



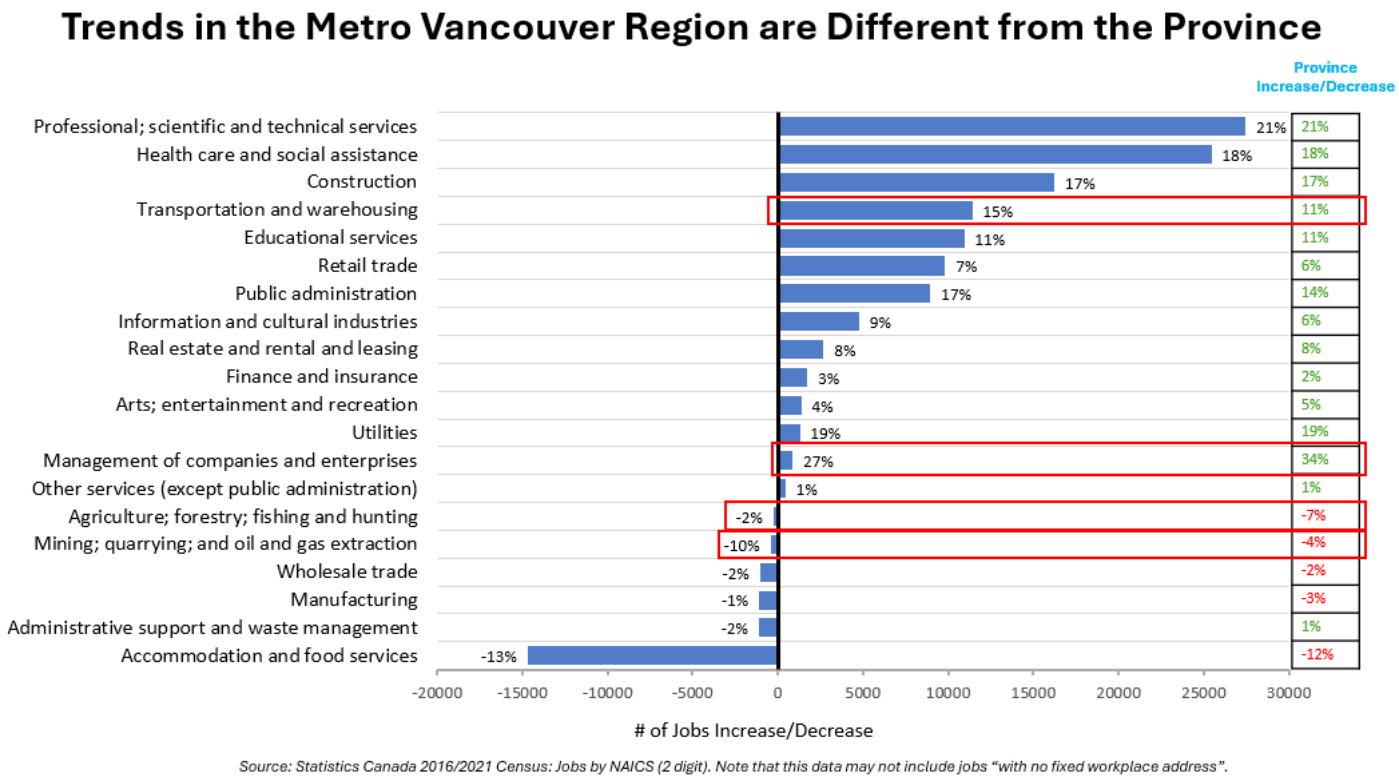
This graph shows that single households across areas are more likely to be in core housing need. The proportion of single households in core housing need is similar across the areas while the non-singles in core housing needs has a greater degree of variability. West Vancouver has widest gap further suggesting affordability issues in the area. Lastly, all of the

sub regions have higher rates of households, single or non-single, in core housing need suggesting that the cost of living is higher, above average than other areas in the province.

Part B: Economic Structure Analysis

Question 1

How did the economic structure of Metro Vancouver change between 2016 and 2021? How does this compare with the Province of BC overall? ***Description of what the bar graph and comparison to BC overall is telling us.***



Source: Statistics Canada 2016/2021 Census: Jobs by NAICS (2 digit). Note that this data may not include jobs "with no fixed workplace address".

While there is a mix of growth, there was a higher concentration in higher-level education industries such as professional services, technology, education and health-related employment. The economic structure shifted toward a service-oriented economy with specialization in high-skilled fields such as 'Professional; scientific and technical services' and away from resource-based manufacturing. It's likely that this influence is related to the COVID-19 pandemic, especially for healthcare related jobs that would have increased demand in these industries. Additionally, the pandemic would have impacts on other sectors as seen in the drop of 'Accommodation and food services' for both Metro Vancouver and the Province.

Generally, the trends for the proportion of job/increases and decreases for Metro Vancouver is similar to that of the province. Metro Vancouver experienced the most relative growth versus the Province in 'Transportation and warehousing', outperforming it by 4%.

The Province had the most relative growth versus Metro Vancouver in ‘Management of companies and enterprises’, outperforming Metro Vancouver by 7%.

While Metro Vancouver did experience a net loss of jobs in ‘Agriculture; forestry, fishing and hunting’, the impact was 5% less than that of the Province, suggesting a stronger resilience of that industry within Metro Vancouver. ‘Mining; quarrying; and oil and gas extraction’ job loss was worse in the Metro Vancouver region by 6% relative to the Province, suggesting a higher sensitivity in the industry to market changes versus the Province.