Destination Vancouver

Economic Analysis of Hotel Supply and Projected Demand in Metro Vancouver, 2023 to 2050

Praxity MEMBER GLOBAL ALLIANCE OF INDEPENDENT FIRMS

MNP LLP

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

Before the COVID-19 pandemic, the Metro Vancouver region welcomed over 11 million overnight visitors annually from around the world travelling for leisure and business purposes. The spending by these visitors is an important source of economic impacts across a range of industries, creating economic output, GDP, employment, and government tax revenues in the region. As well, many visitors combine their trip to Vancouver with travel in other parts of the province, thereby generating economic impacts throughout B.C.

While the years 2020 and 2021 saw significant declines in tourism around the world, there are signs in 2022 that the sector is on its way to recovery, and by 2025 visitation to Metro Vancouver is expected to have returned to the same levels seen pre-pandemic. Forecasts from a variety of agencies expect tourism activity to continue to grow in the years beyond.

At the same time, however, the number of hotel rooms, particularly in the City of Vancouver[1], is expected to grow slowly. As a result, concerns have been raised over the likelihood that an increasing number of potential visitors may not be able to find hotel accommodation in the City of Vancouver, thereby resulting in foregone visits with an accompanying loss of visitor spending and associated economic impacts.

1.2 PROJECT PURPOSE AND STUDY SCOPE

Destination Vancouver engaged MNP LLP ("MNP") to study the potential economic implications of foregone hotel room demand between 2023 and 2050. This study is an update to a similar analysis conducted by MNP for Destination Vancouver in 2019.

The study included a review of projected demand and supply of hotel rooms in both the City of Vancouver and other parts of Metro Vancouver ("Rest of Metro Vancouver"), an examination of the economic impacts created and foregone in both the City of Vancouver and the Rest of Metro Vancouver and a high level review of the environmental and social impacts associated with hotel usage.

[1] For the purpose of this report, "City of Vancouver" or "Vancouver" are used interchangeably, and refer to the accommodation properties within the City of Vancouver. "Rest of Metro Vancouver" are those in the other municipalities of the Metro Vancouver Regional District. There are occasions when the data does not support disaggregation and the reporting is for all of Metro Vancouver, or the data are published for other regional geographies such as the Vancouver, Coast & Mountains Tourism Region. These have been indicated in the report.

The scope of the study consisted of:

- Gathering relevant data from public sources and Destination Vancouver.
- Development of the models used for the analysis.
- Estimation of the foregone economic impacts under different projections of hotel supply and room night demand.
- Presentations to Destination Vancouver staff.
- Preparation of a summary report which describes the main components of the study and presents the study results.

1.3 REPORT RESTRICTIONS

This report has been prepared for Destination Vancouver and is intended for information purposes and general guidance only. Any use that a third party makes of this report or reliance thereon, or any decision made based on it, is the responsibility of such third party. MNP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken, based on this report.

MNP has relied upon the completeness, accuracy and fair presentation of all information and data obtained from Destination Vancouver and public sources, believed to be reliable. The accuracy and reliability of the findings and opinions expressed in the report is conditional upon the completeness, accuracy and fair presentation of the information underlying them. As a result, we caution readers not to rely upon any findings or opinions expressed for business investment purposes and disclaim any liability to any party who relies upon them as such.

The financial and economic analysis contained in the report is based on projections containing numerous assumptions regarding future events. Accordingly, actual results may vary from the information presented and such variations may be material. Accordingly, MNP expresses no assurance as to whether the projections underlying the economic and financial analysis will be achieved.

2 METHODOLOGY

The key steps carried out during the study consisted of:

- Collection of data on historical hotel room demand and supply, future hotel construction, visitor characteristics, and spending profiles.
- Projection of room night demand and supply.
- Projection of foregone visitor spending.
- Projection of foregone economic impacts.
- Estimation and projection of environmental impacts.
- Estimation of the size and socio-economic characteristics of the accommodation industry labour force.

In the following sections we provide a summary of each of these key steps.

2.1 COLLECTION OF DATA

Data for the study were collected from Destination Vancouver, Destination BC, and public sources as outlined below:

- Destination Vancouver provided visitor numbers including projections from the Visitor Volume Model, and information on hotel construction and development applications across Metro Vancouver as of August 2022.
- Information on average daily room rates was gathered from Destination Vancouver.
- Data from public sources included information on visitor spending from Statistics Canada's National Travel survey; hotel room demand and supply reported in CBRE's Trends in the Hotel Industry publication; long-term forecast trends from the Commercial Market Outlook published by Boeing; and the Cornell Hotel Sustainability Benchmarking index provided information about the environmental impact of hotels.
- Information about the accommodation industry labour force was drawn from reports prepared by go2HR (using data from Statistics Canada), as well as supplementary information from Statistics Canada's Survey of Employment, Payroll & Hours (SEPH) and Labour Force Survey (LFS), along with the 2016 Census of Population.

2.2 REVIEW OF PROJECTIONS OF ROOM NIGHT DEMAND AND SUPPLY

The projections of room night demand and supply were developed by MNP and reviewed and adjusted as agreed with Destination Vancouver. In brief, the following steps were involved with the development of room night demand and supply projections:

- **Hotel Room Night Demand.** Hotel room night demand was projected using historical room night demand together with projections of future visitor numbers from the Visitor Volume Model and travel growth rates forecast by the Conference Board of Canada and Boeing's "Commercial Market Outlook". Hotel room night projections were made for both the City of Vancouver and other communities in the Rest of Metro Vancouver.
- **Hotel Room Supply.** Hotel room supply was projected using data provided by Destination Vancouver on planned and announced changes in hotel capacity. Hotel room supply projections were also made for both the City of Vancouver and the Rest of Metro Vancouver.

2.3 PROJECTION OF FOREGONE VISITOR SPENDING

Foregone visitor spending refers to the amount of visitor spending that is projected to be lost because potential visitors are not able to find hotel accommodation. Projections of foregone visitor spending were developed using a combination of spending profile information and assumptions regarding the subsequent course of action for potential visitors unable to obtain hotel accommodation:

- **Spending Profile Information**. Spending profiles were developed for visitors staying in hotels in the City of Vancouver, visitors staying in hotels in the Rest of Metro Vancouver as well as for visitors staying in short-term rental.[2] The details of these profiles can be found in Appendix 6.3.1.
- **Courses of Action for Potential Visitors Unable to Obtain Hotel Accommodation**. Visitors that are unable to obtain hotel accommodation were assumed to follow one of three courses of action:
    - relocating into short-term rental (for example, an Airbnb location);
    - seeking a hotel room outside of the City of Vancouver but within the Rest of Metro Vancouver (this is applicable to the City of Vancouver demand only and is contingent upon hotel rooms being available in the Rest of Metro Vancouver); and
    - foregoing the visit to Metro Vancouver.

[2] Based on Statistics Canada's National Travel Survey - Spending profile of overnight visitors to Vancouver CMA staying in Hotels; CBRE - Average Daily Rate (ADR) in Downtown Vancouver and Rest of Metro Vancouver; AirDNA - Hotel Comparable ADR for Short-term rentals such as Airbnb and HomeAway.

2.4 ESTIMATION OF FOREGONE ECONOMIC IMPACTS

In general, economic impacts are viewed as being restricted to quantitative, well-established measures of economic activity. The most commonly used of these measures are output, GDP, government tax revenue, and employment:

- **Output** is the total gross value of goods and services produced by a given company or industry measured by the price paid to the producer. This is the broadest measure of economic activity.
- **Gross Domestic Product ("GDP")**, or value added, refers to the additional value of a good or service over the cost of inputs used to produce it from the previous stage of production. Thus, GDP is equal to the unduplicated value of goods and services produced.
- **Government Tax Revenues** are the total amount of tax revenues generated for different levels of government. Tax revenues arise from personal income taxes, corporate income taxes, taxes on products, and taxes on production. Please note that because tax revenues can frequently change due to modifications in tax policy, the tax revenue impacts in this report are estimates only and subject to change. They should be viewed as approximate in nature.
- **Employment** is the number of additional jobs created. Employment is measured in terms of full-time equivalents ("FTEs"). One FTE may be considered one person-year of employment. That is, one FTE is the equivalent of one person working full-time for a period of one year.

Economic impacts may be estimated at the direct, indirect and induced levels:

- **Direct impacts** are due to changes that occur in "front-end" businesses that would initially receive expenditures and operating revenue as a direct consequence of the operations and activities of an industry, organization or project.
- **Indirect impacts** arise from changes in activity for suppliers of the "front-end" businesses.
- **Induced impacts** arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses.

To estimate the economic impacts, the model follows an input-output methodology using economic multipliers published by Statistics Canada.[3] Input-output modeling is a widely-used and widely-accepted economic impact approach, making it recognizable by many different stakeholders and audiences. The structure of the approach also facilitates easy comparisons between reported results for different industries and organizations. All dollar values in the report and model are presented in 2022 dollars.

[3] Estimates contained in this report are based on Statistics Canada's Provincial Input-Output Multipliers, 2018.

2.5 ESTIMATION OF ENVIRONMENTAL IMPACTS

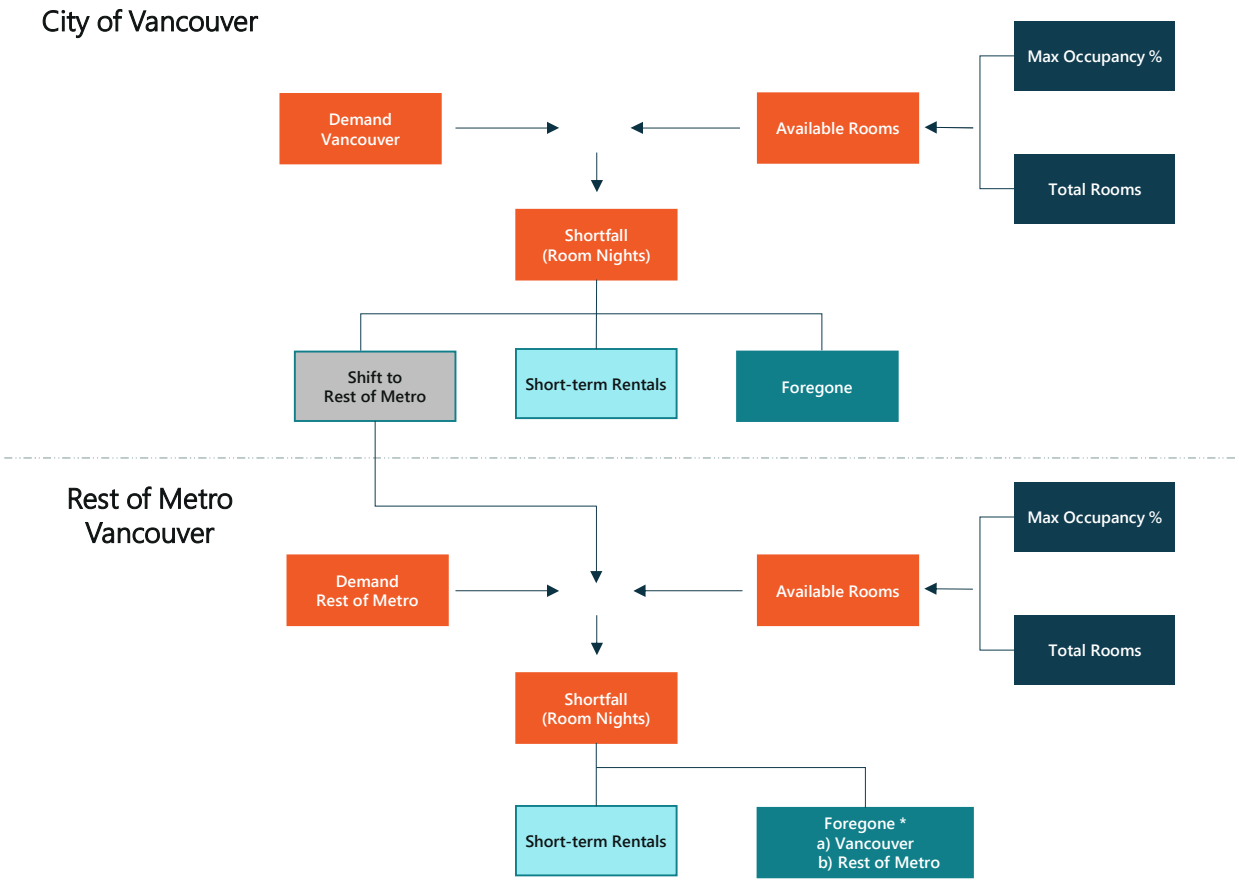
In order to estimate the environmental impacts associated with hotels, this report relies on the Cornell Hotel Sustainability Benchmarking (CHSB)[4]. The 2021 CHSB report provides a 2019 baseline for the carbon, energy, and water use for hotels. Included in the CHSB index are data for hotels in the Vancouver Census Metropolitan Area (CMA), which is approximately the same geographic area as Metro Vancouver.

Information about solid waste associated with hotels is derived from information published by Metro Vancouver in the report 2014 ICI Waste Characterization Program. Since that time, Metro Vancouver has pursued waste reduction strategies, and it is unknown the extent to which those have impacted the accommodation industry's waste. A more recent report published by Metro Vancouver on waste characterization used data collected in 2020 and does not include a separate accommodation industry category. Furthermore the report makes note of the fact that the 2020 results are unique due to the impact of the COVID-19 pandemic and "are shown in comparison to previous years in order to illustrate the differences rather than the trends".[5]

[4] Eric Ricaurte and Rehmaashini Jagarajan (2021), *Hotel Sustainability Benchmarking Index 2021: Carbon, Energy, and Water*, Cornell Center for Hospitality Research https://ecommons.cornell.edu/handle/1813/109990
[5] Metro Vancouver, *2020 Waste Composition Study*.

2.6 DIAGRAM OF THE ANALYSIS MODEL STRUCTURE

The following diagram illustrates how the key steps described in sections 2.1 to 2.4 were incorporated into the structure of the model. Based on the numbers of foregone nights, foregone spending and economic impacts were estimated for both the City of Vancouver and the Rest of Metro Vancouver.



3 RESULTS

3.1 ASSUMPTIONS

This analysis is based on a number of assumptions about visitor volume changes, visitor spending, and hotel construction and occupancy. Changes in any of these conditions will result in different outcomes. For example, if visitor volumes grow more rapidly than the rate assumed in this analysis, a larger number of hotel rooms will be required to avoid foregone spending, and vice versa.

3.1.1 Visitation

It is assumed that the City of Vancouver will see a return to 2019 visitation levels by 2025.

Beyond 2025, the forecast growth will be at rates slower than growth in visitor volume to Metro Vancouver in the decade prior to the COVID-19 pandemic.

3.1.2 Visitor Spending

It is assumed that the seasonal and regional spending patterns of visitors observed in 2019[6] is unchanged over the forecast period.

Foregone spending is calculated using 2022 dollars (the year for which the most recent data were available).

3.1.3 Maximum Hotel Occupancy Rate

For the purpose of this analysis, it was assumed that hotels can operate at up to 100% monthly occupancy. This assumption implies that every available hotel room is occupied every night of the month; implicit in this is that visitors are willing to shift the timing of their visit. That is to say, the monthly occupancy level at which foregone room nights begin is 100%. Historically, monthly occupancy rates in Metro Vancouver have not exceeded 92%. Realistically, anything above 95% for an entire month is extremely unusual.

[6] The 2019 National Traveller Survey, Statistics Canada.

3.1.4 Courses of Action for Potential Visitors Unable to Obtain Hotel Accommodation

Visitors that are unable to obtain hotel accommodation (that is, when monthly occupancy rates exceed 100%) are assumed to follow one of three courses of action:

- Seeking a hotel room outside of the City of Vancouver but within the Rest of Metro Vancouver (this is applicable to the City of Vancouver demand only and is contingent upon hotel rooms being available in Metro Vancouver) = 50% of those unable to obtain accommodation;
- Relocating into short-term rental (for example, an Airbnb location) = 10% of those unable to obtain accommodation; and
- Foregoing the visit to the City of Vancouver = 40% of those unable to obtain accommodation.

3.2 SCENARIOS

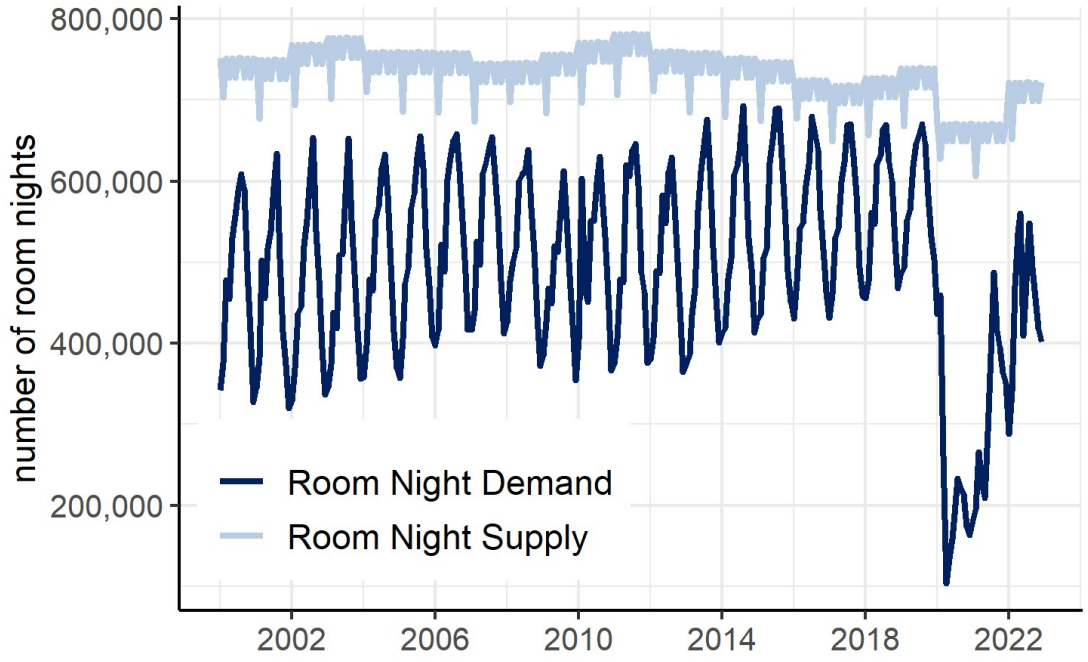
This analysis is based on three scenarios for hotel construction and an increase in room numbers:

1. **No growth**: The number of hotel rooms will show no net increase from the 2022 baseline. (In this chapter.)
2. **Slow growth**: The number of hotel rooms will increase at a rate equal to 2022-2030 construction but with no further loss of existing rooms. (In Chapter 4, “New Hotel Construction”)
3. **No foregone room nights**: The number of hotel rooms in Metro Vancouver will increase at a pace necessary to ensure that there are no foregone room nights. To achieve this, the number of rooms available in the peak month of August will accommodate all of the visitors (a 100% occupancy rate). In this scenario, the supply will meet the demand, and there will be no foregone visitor spending. (In Chapter 4, “New Hotel Construction”)

3.3 HOTEL SUPPLY AND DEMAND

Figure 1 shows the monthly hotel room night supply and room night demand in Metro Vancouver from 2000 to 2022.

Figure 1: Monthly Hotel Room Night Supply and Demand in Metro Vancouver from 2000 to 2022

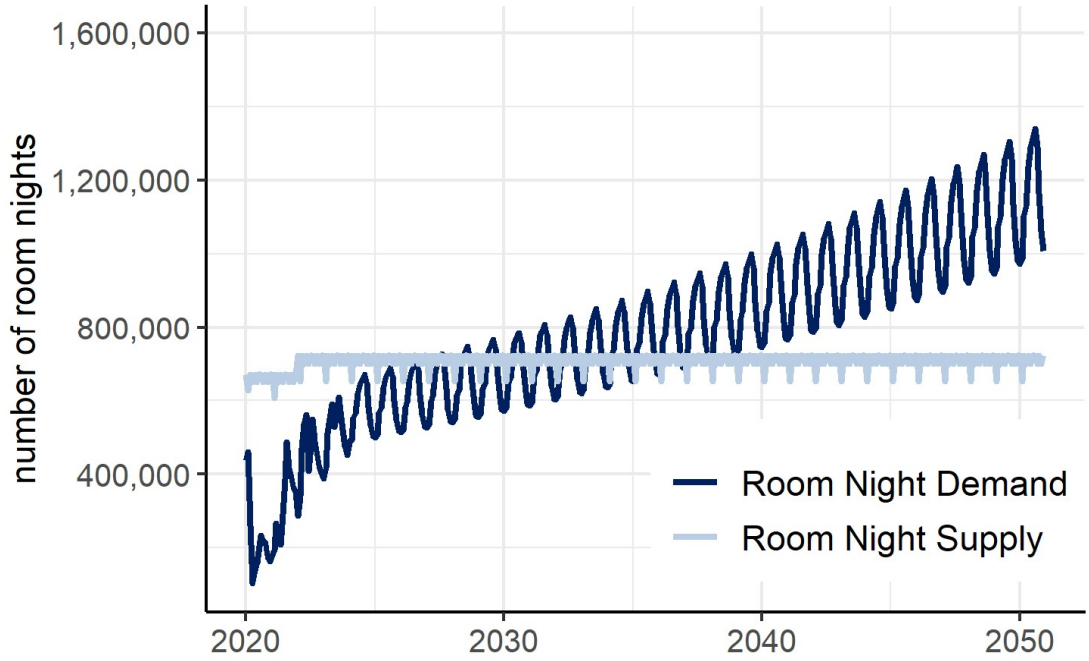


During the two years prior to the COVID-19 pandemic, annual hotel occupancy in Metro Vancouver reached 80%. During the 12 months of 2019, hotels in the region made available 23,449 rooms; across the year, this translated into 8.7 million available room nights. Just under 7 million room nights were used, for an overall annual occupancy rate of 80%.

There is a strong summer season in the tourism sector in the City of Vancouver, and prior to 2020 monthly occupancy rates exceeded 90%. As can be seen in Figure 1, during the summer season, the demand for hotel rooms was much higher than in other seasons. This trend is applicable for all years, except 2020, when the market was disrupted by the COVID-19 pandemic outbreak.

Estimating forward to 2050, the annual hotel room night demand in Metro Vancouver is projected to return to pre-pandemic levels by 2025, and then increase from 6.9 million room nights to nearly 8.2 million room nights by 2030, an average growth rate of 2.7% per year. As shown in Figure 2 below, continued growth means that the demand for hotel room nights will reach 10.7 million in 2040 and 13.9 million by 2050.

Figure 2: Monthly Hotel Room Night Supply and Demand in Metro Vancouver from 2020 to 2050



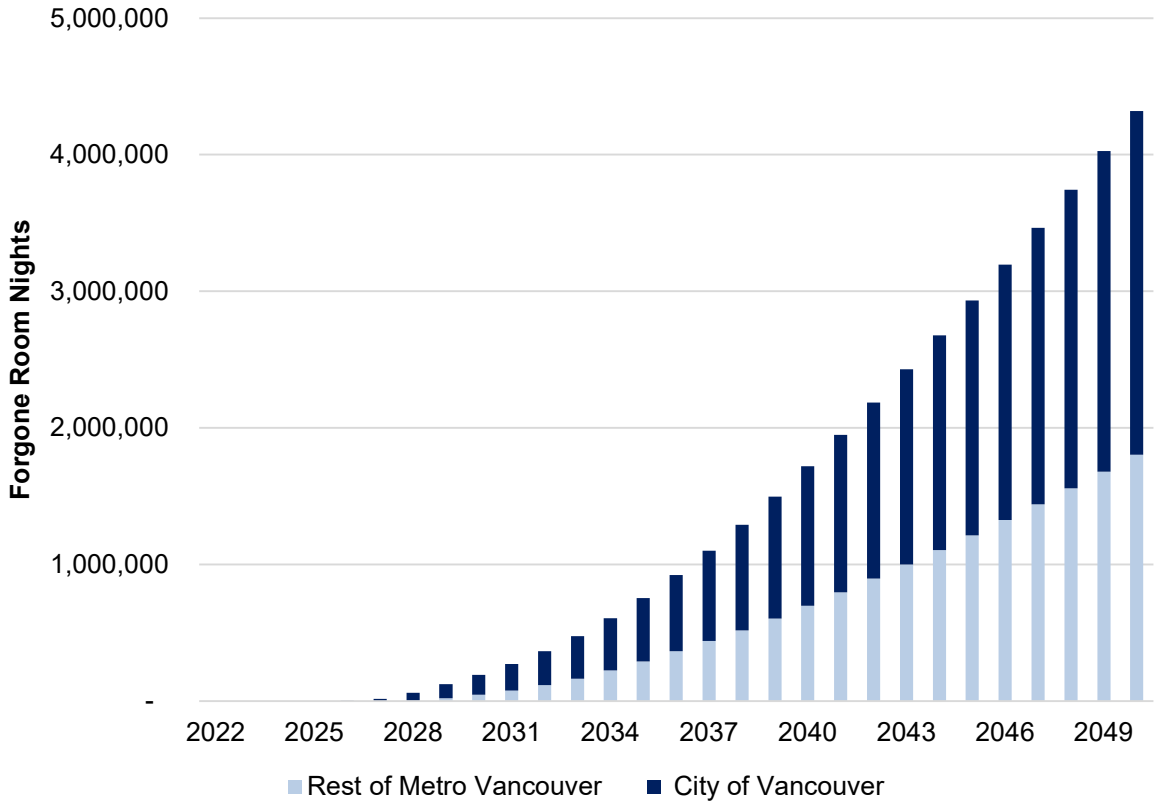
If the number of available rooms in Metro Vancouver remains unchanged over this period, it will mean an increasing number of visitors will be unable to find hotel accommodation, especially in the summer months when demand is highest. In the summer months, demand is forecast to exceed supply in Metro Vancouver by 2028, and by 2040 demand is projected to exceed the current supply for every month of the year. Although some excess demand may shift to short-term rental, most of it is likely to be foregone.

Figure 3 shows the projected lost annual room nights in Metro Vancouver from 2022 to 2050.

This chart shows only those room nights lost as people choose not to visit Metro Vancouver; it does not include visitors who visit Metro Vancouver but change from their preferred accommodation, whether that is from hotel to short-term rental, or from the City of Vancouver to elsewhere in Metro Vancouver.

There are two categories in the chart. The "City of Vancouver" category are visitors who initially wanted to stay in the City of Vancouver, but were unable to find accommodation in either the City of Vancouver or the Rest of Metro Vancouver. This recognizes that some potential visitors would be willing to switch their accommodation to elsewhere in Metro Vancouver, but would be unable to find accommodation there. The "Rest of Metro Vancouver" category wanted to stay elsewhere in the Metro Vancouver region, but were unable to find accommodation and were also foregone.

Figure 3: Projected Foregone Room Nights in Metro Vancouver from 2022 to 2050

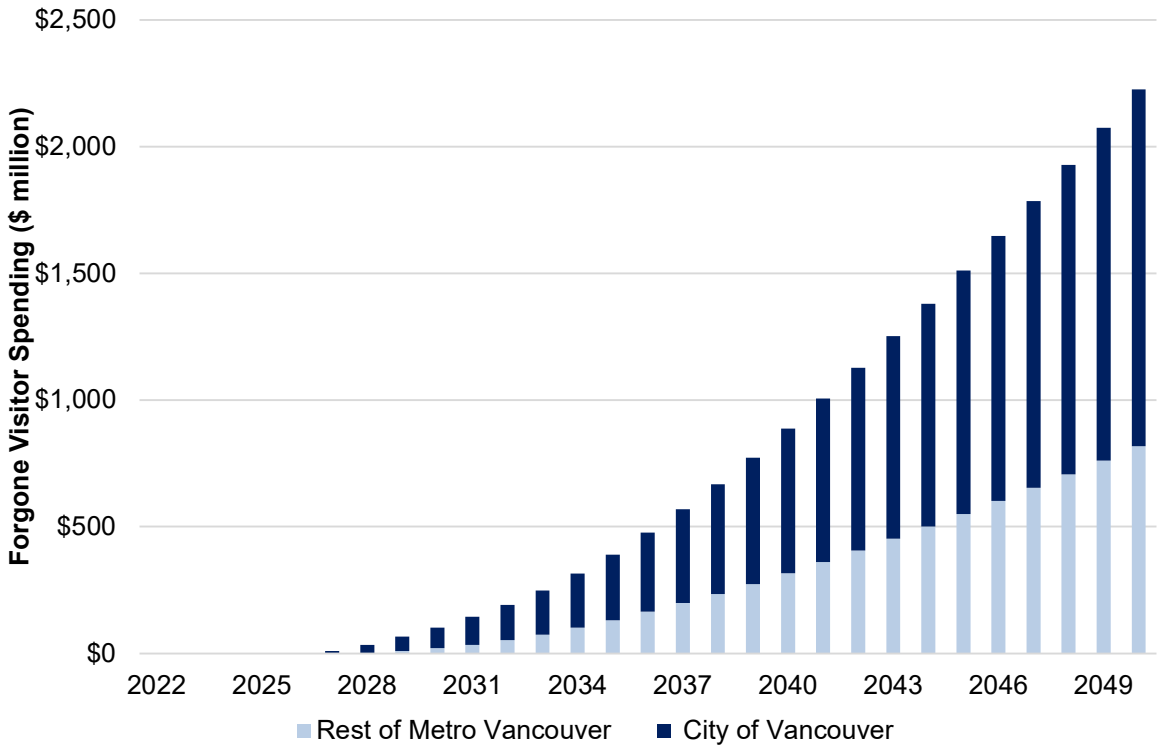


As travel recovers from the shock of the pandemic, the demand for hotel rooms is forecast to return to prepandemic levels by 2025. Based on this forecast, starting in 2026, demand for hotel rooms in the City of Vancouver would start to exceed the supply, and by 2030 the demand for hotel rooms across Metro Vancouver will outpace supply. From 2026 forward the number of foregone room nights will grow. It was projected that by 2050, there will be approximately a total of 4.3 million lost room nights in Metro Vancouver.

3.4 FOREGONE VISITOR SPENDING

Foregone visitor room nights are projected to lead to foregone visitor spending. Figure 4 shows the projected foregone visitor spending from 2022 to 2050 in Metro Vancouver.

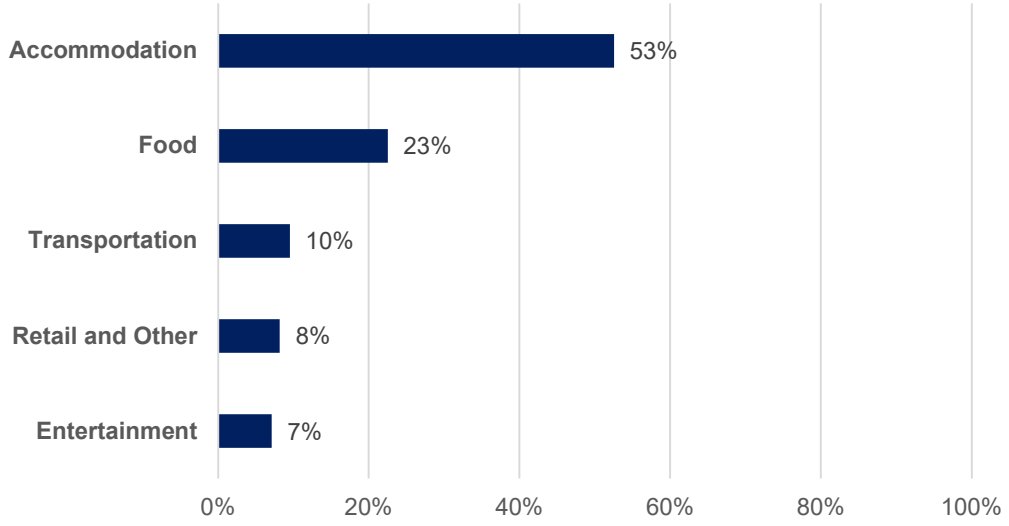
Figure 4: Projected Foregone Visitor Spending in Metro Vancouver from 2022 to 2050



By 2050, the foregone visitor spending was projected to increase to $2.2 billion in Metro Vancouver. Of this $1.4 billion is attributable to people who were planning to stay in the City of Vancouver, and $0.8 billion is attributable to people who were planning to stay in the Rest of Metro Vancouver. Between 2022 and 2050, the cumulative foregone visitor spending is projected to be approximately $20.8 billion in Metro Vancouver. Please note that the estimates of forgone spending take into account the spending lost due to people chosing not to visit Metro Vancouver, as well as the reduced spending associated with visitors relocating into short-term rental or seeking a hotel room outside of the City of Vancouver but within the Rest of Metro Vancouver.

Foregone visitor spending can be broken down into its main categories: accommodation; food; retail and other; transportation; and entertainment. Figure 5 shows the breakdown by category of the projected cumulative foregone visitor spending in Metro Vancouver from 2022 to 2050.

Figure 5: Breakdown of Projected Cumulative Foregone Visitor Spending in Metro Vancouver from 2022 to 2050



Approximately half (53 percent) of the projected foregone visitor spending is expected to be on accommodation. Approximately one quarter (23 percent) of the projected foregone expenditure is expected to be on food. Transportation is expected to account for nine percent, while retail and entertainment expenditures are expected to account for eight percent and seven percent, respectively.

3.5 FOREGONE ECONOMIC IMPACTS

Foregone visitor spending results in foregone economic impacts. These are summarized below.

In 2050, the total foregone direct, indirect, and induced economic impacts from foregone visitor spending are projected to increase to approximately:

- $3.3 billion in output: $2.1 billion from people planning to stay in the City of Vancouver and $1.2 billion from people planning to stay in Metro Vancouver
- $1.8 billion in GDP: $1.1 billion from people planning to stay in the City of Vancouver and $0.7 billion from people planning to stay in Rest of Metro Vancouver
- 18,000 FTEs of employment[7]: 11,200 FTEs from people planning to stay in the City of Vancouver and 6,800 FTEs from people planning to stay in Rest of Metro Vancouver
- $0.8 billion in tax revenue for all three levels of government: $0.5 billion from people planning to stay in the City of Vancouver and $0.3 billion from people planning to stay in Rest of Metro Vancouver

Measuring Cumulative Employment

One FTE is equal to one person working full-time hours for one year. In a single year, FTEs are roughly equal to the number of jobs that would result if all jobs were full-time. Cumulative FTEs over multiple years counts each FTE in each year in the period. Consequently, the number of cumulative FTEs will exceed the number of jobs, and should not be interpreted as measuring the number of jobs affected.

Table 1 summarizes the projected foregone cumulative economic impacts from foregone visitor spending in Metro Vancouver and the rest of BC. Between 2022 and 2050, the cumulative foregone economic impacts in BC from foregone visitor spending are projected to be approximately:

- $30.6 billion in foregone output.
- $16.6 billion in foregone GDP.
- 168,590 FTEs of foregone employment.
- $7.5 billion in foregone tax revenue for all three levels of government.

Table 1: Cumulative Foregone Economic Impacts from Foregone Visitor Spending in Metro Vancouver from 2022 to 2050

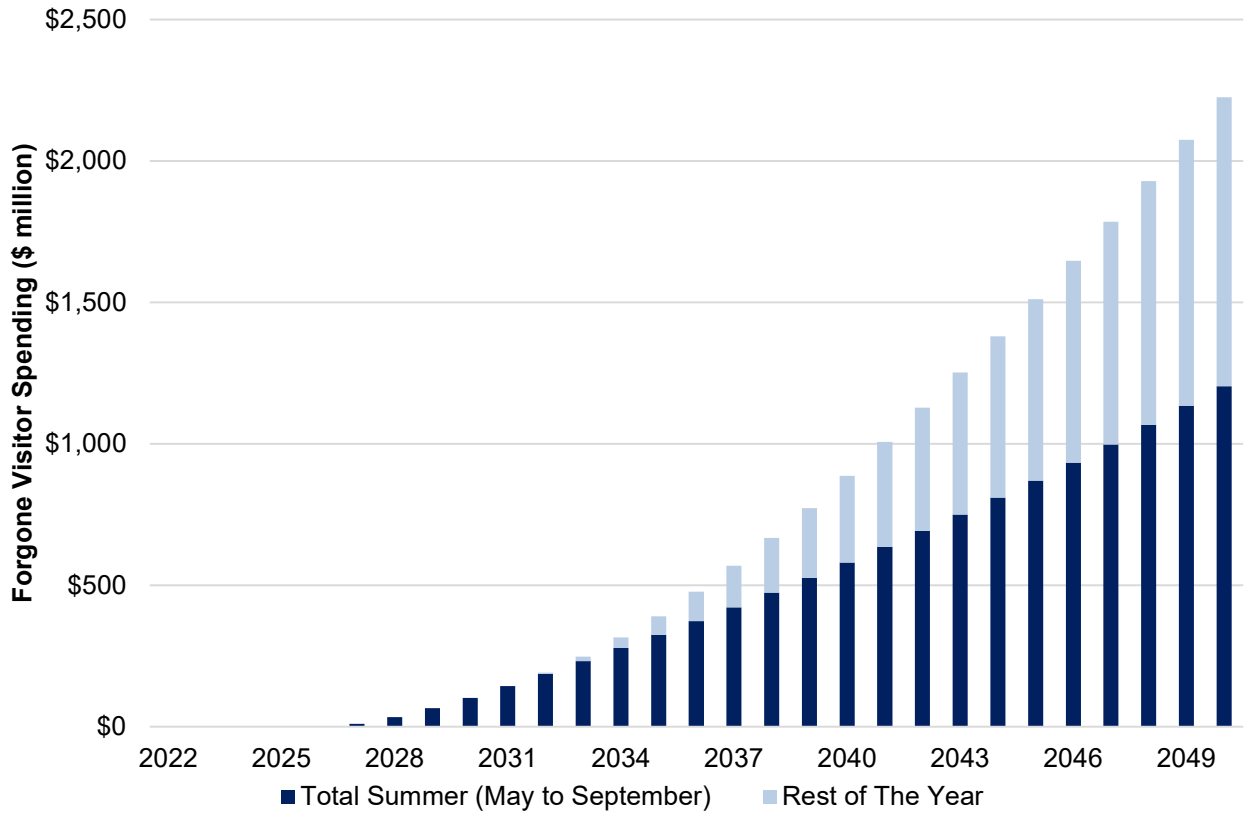
	Foregone Output (million)	Foregone GDP (million)	Foregone Employment (FTEs)	Foregone Total Tax Revenue[8] (million)
Total Cumulative Foregone Impacts	**$30,601**	**$16,610**	**168,570**	**$7,500**

[7] One full-time equivalent (FTE) is equivalent to one person-year of employment.
[8] Includes Federal, Provincial, and Municipal Government tax revenue.

3.6 SEASONAL IMPACTS OF FOREGONE ECONOMIC IMPACTS

More than half of the foregone spending occurs during the five summer months of May to September. However as demand continues to increase, spending forgone during rest of the year is also projected to increase. Between 2025 and 2030, spending forgone during summer months is expected to account for all the forgone spending. This is expected to decease to approximately 54 percent by 2050.

Figure 6: Foregone Visitor Spending in Metro Vancouver During Summer Months Compared to Rest of the Year from 2022 to 2050



4 NEW HOTEL CONSTRUCTION

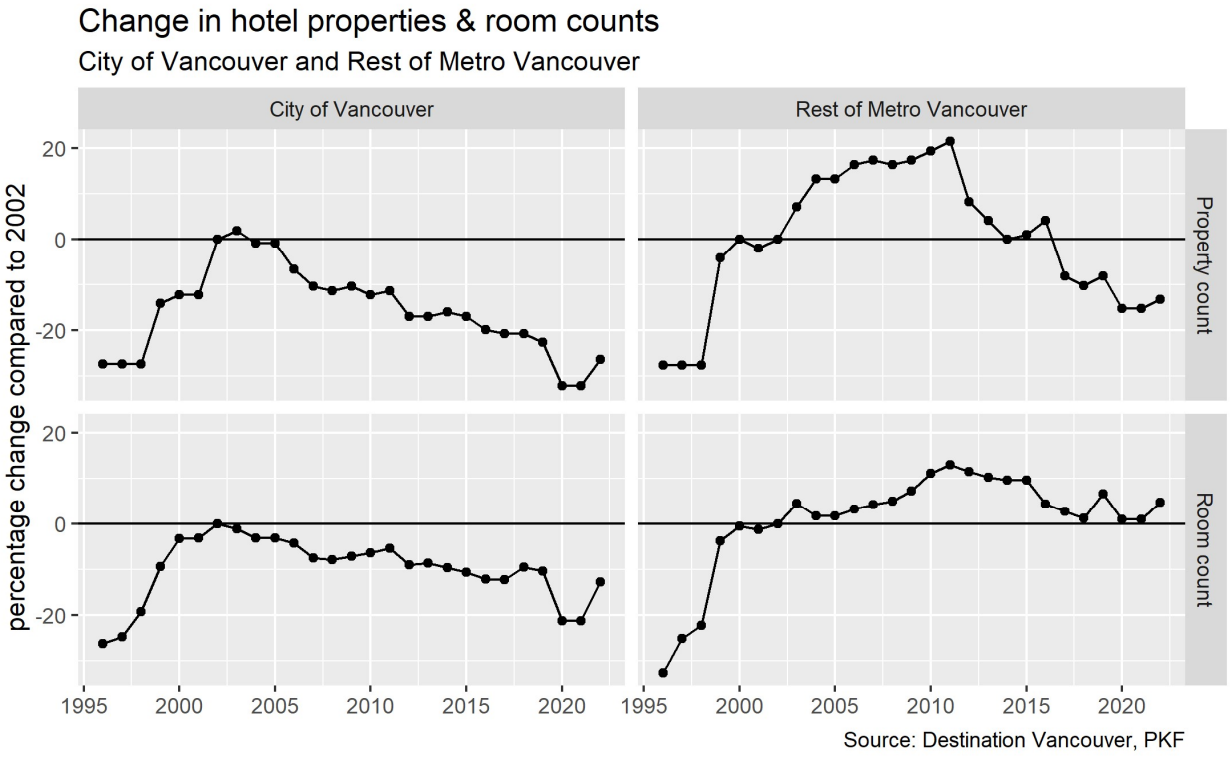
4.1 HISTORIC TRENDS IN HOTEL ROOMS

The number of hotel rooms in Metro Vancouver, including the the City of Vancouver, has shown little change since 2002. This has been the consequence of a variety of factors; these have been identified as hotel closures and conversions to residential uses (including social housing), the real estate, construction, and operating costs of new hotel developments, as well as the constraints imposed by land use zoning.[9]

As shown in Figure 7 below, the number of hotel rooms in the City of Vancouver has dropped by 12.8% from the maximum in 2002, when there were 15,242 rooms. The number of hotel properties in the City peaked one year later at 108, but with slightly fewer rooms (15,076). As of 2022 there are 13,290 rooms and 78 properties.

In the Rest of Metro Vancouver, the peak in hotel rooms was in 2011, when there were 14,424 rooms across 94 properties. As of 2022 there are 10,002 rooms and 85 properties.

Figure 7: Percentage change in hotel property and room counts, 1996 to 2022 (index 0 = 2002)



[9] See for example Sarah Kirby-Yung, "Vancouver's severe hotel room shortage looms over tourism recovery", 2021-11-23, at dailyhive.com https://dailyhive.com/vancouver/vancouver-hotel-shortage-tourism-recovery. An earlier article at the same site can be found at https://dailyhive.com/vancouver/interim-hotel-rooms-development-policy-vancouver-shortage

Currently, 90% of the hotel rooms in the City of Vancouver are in the downtown area, with 10% in other parts of the City of Vancouver. The decline in hotel rooms has disproportionately impacted the other parts of the City of Vancouver; downtown lost 10% of its rooms in the period from 2002 to 2022, while other parts of the City of Vancouver lost 28%.

4.1.1 Near-term Hotel Development

Based on development applications and building permits, it is possible to gain insights into additional hotel capacity that is planned to be added between 2022 and 2028. The table below shows new hotel developments that are under construction, or have had building permits or development applications submitted, for the City of Vancouver and the Rest of Metro Vancouver, through 2028 and projections of additional hotel rooms for 2029 and 2030. This forecast suggests that in total, by 2030 an additional 3,452 rooms will be added across Metro Vancouver.

Table 2: New Hotel Construction, the City of Vancouver & Rest of Metro Vancouver, 2022-2030

	City of Vancouver			Rest of Metro Vancouver	
	Downtown Vancouver	Other Vancouver	Total rooms	Additional rooms	Total rooms
2022			13,290		10,002
2023		270	13,560	124	10,126
2024	300		13,860	806	10,932
2025		585	14,445	207	11,139
2026			14,445	0	11,139
2027			14,445	200	11,339
2028	180		14,625	0	11,339
2029*	95	95	14,815	200	11,539
2030*	95	95	15,005	200	11,739
TOTAL	**670**	**1,045**		**1,737**	

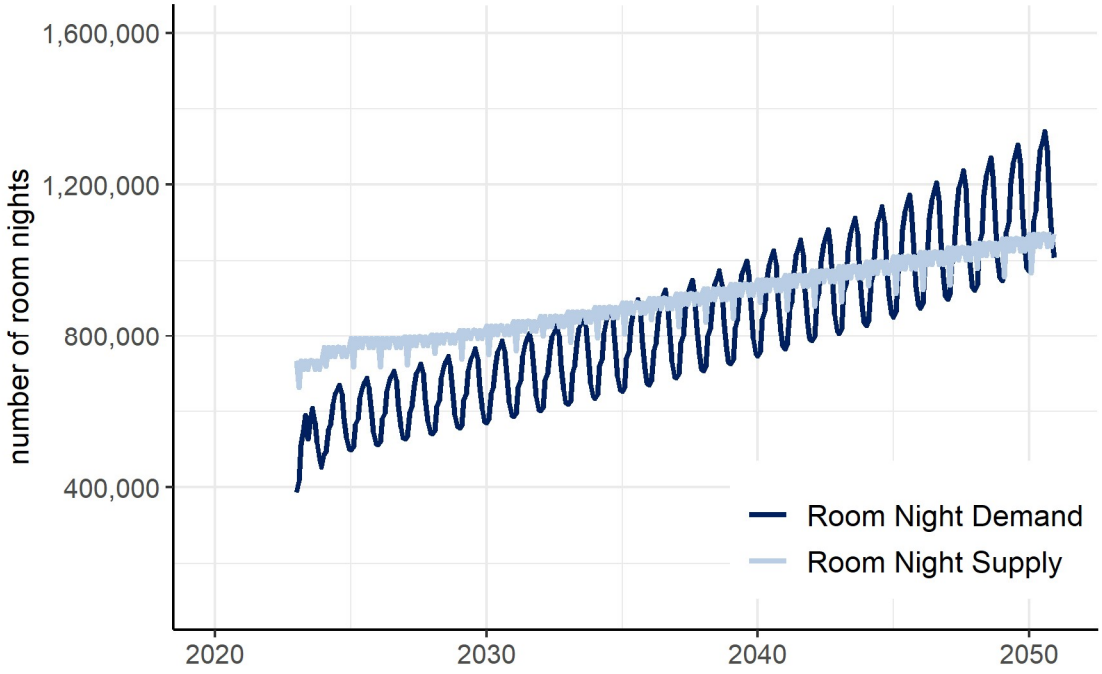
** Information about hotels under construction or development is available to 2028. "Additional rooms" and "Total rooms" for 2029 and 2030 are projections based on growth from 2022 through 2028.*

It was assumed, for the purpose of this analysis, that the City of Vancouver will add 190 hotel rooms per year from 2029 through 2050. Half of these net new hotel rooms will be in the downtown area and half in other parts of the City of Vancouver. Similarly, it was assumed the Rest of Metro Vancouver will add 200 net new rooms per year. While these growth rates are higher than what was observed between 2002 and 2022, they are in keeping with the near-term growth that will come from construction that is underway, along with development and building permits that have been submitted.

4.2 IMPACT ON FOREGONE ROOM NIGHTS

The addition of new hotel rooms, as shown in Section 4.1, would increase the available hotel room supply. This additional capacity would then lower the number of foregone room nights, foregone visitor spending, and associated foregone economic impacts. Figure 8 below shows the increase in room nights that would come with additional hotel rooms, compared to the forecast demand

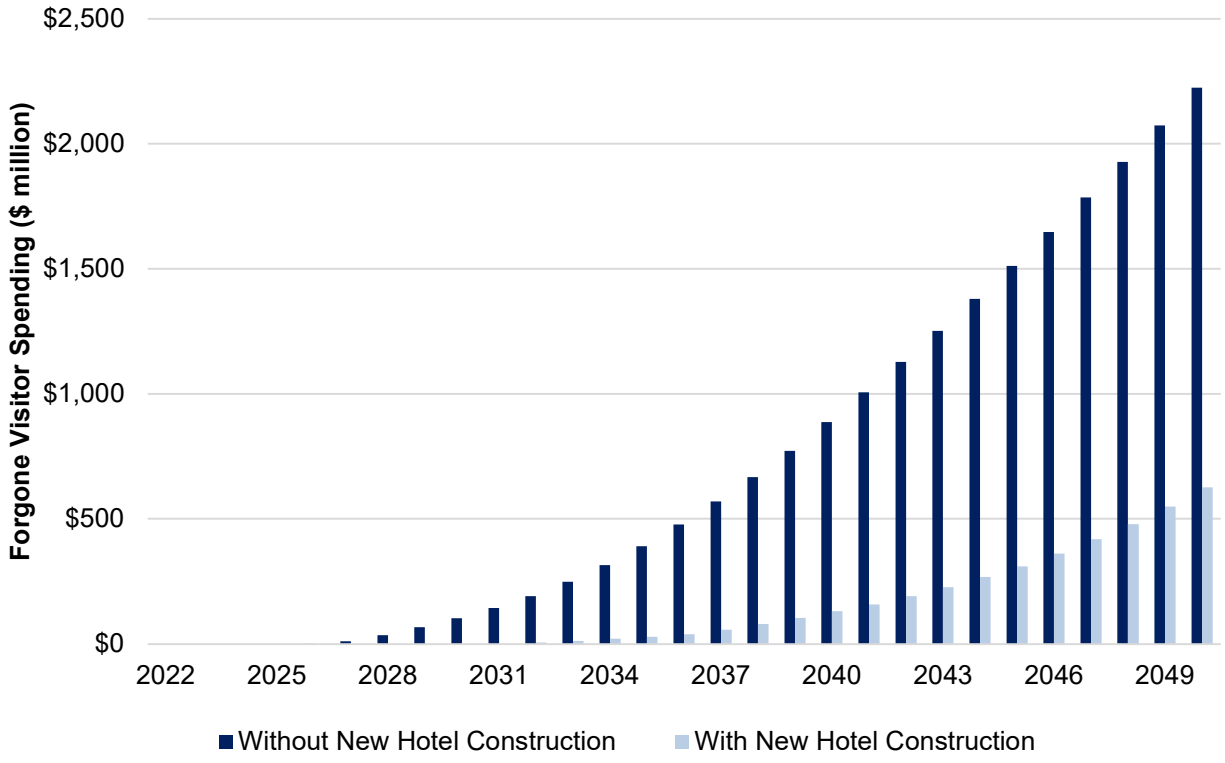
Figure 8: Monthly Hotel Room Night Supply and Demand in Metro Vancouver from 2020 to 2050, Scenario 2



4.3 IMPACT ON VISITOR SPENDING & ECONOMIC IMPACTS

A reduction in foregone room nights would lead to a decrease in foregone visitor spending and associated foregone economic impacts. Figure 9 compares the projected foregone visitor spending without new hotel construction with the projected forgone spending with new hotel construction. As a result of new hotel construction, the cumulative forgone spending in Metro Vancouver from 2022 to 2050 is projected to decrease from $20.8 billion to $4.1 billion.

Figure 9: Forgone Spending in Metro Vancouver without New Hotel Construction and with New Hotel Construction from 2022 to 2050[10]



[10] Projections are presented in 2022 dollars.

As shown in Table 3, the addition of new hotel rooms in Metro Vancouver is projected to reduce the cumulative foregone visitor spending from 2022 to 2050 by approximately $16.7 billion. This is equivalent to approximately 80 percent of spending forgone without any new hotel construction. The new hotel construction translates into an increase in direct, indirect, and induced economic impacts as follows:

- $24.7 billion in total output.
- $13.4 billion in total GDP.
- 135,980 FTEs or person years of total employment.
- $6.1 billion in total tax revenue for all three levels of government.

Table 3: Cumulative Foregone Economic Impacts from Foregone Visitor Spending in Metro Vancouver from 2022 to 2050 without New Hotel Construction and with New Hotel Construction. [11]

	Foregone Expenditure (million)	Foregone Output (million)	Foregone GDP (million)	Foregone Employment (FTEs) [12]	Foregone Total Tax Revenue[13] (million)
Without New Hotel Construction	$20,807	$30,601	$16,610	168,570	$7,500
With New Hotel Construction	$4,060	$5,944	$3,245	32,590	$1,384
Reduction in Foregone Spending as a Result of New Hotel Construction and Associated Economic Impacts	**$16,747**	**$24,657**	**$13,365**	**135,980**	**$6,116**

[11] Projections are presented in 2022 dollars.
[12] Please note that one full-time equivalent (FTE) is equivalent to one person-year of employment. Consequently, one person working full-time for 30 years would be counted as 30 FTEs.
[13] Includes Federal, Provincial, and Municipal Government tax revenue.

4.4 SENSITIVITY ANALYSIS

Figure 11 10 shows the projected cumulative foregone room nights from 2022 to 2050 in Metro Vancouver for the addition of different numbers of hotel rooms in 2026. With no new hotel rooms added, the cumulative number of foregone room nights from 2022 to 2050 in Metro Vancouver is projected to be approximately 40 million room nights. For every 200 hotel rooms added in 2026, the projected cumulative foregone rooms would decrease by approximately 4 percent.

Figure 10: Projected Cumulative Forgone Room Nights from 2022 to 2050 in Metro Vancouver for Different Numbers of Hotel Rooms Added in 2026

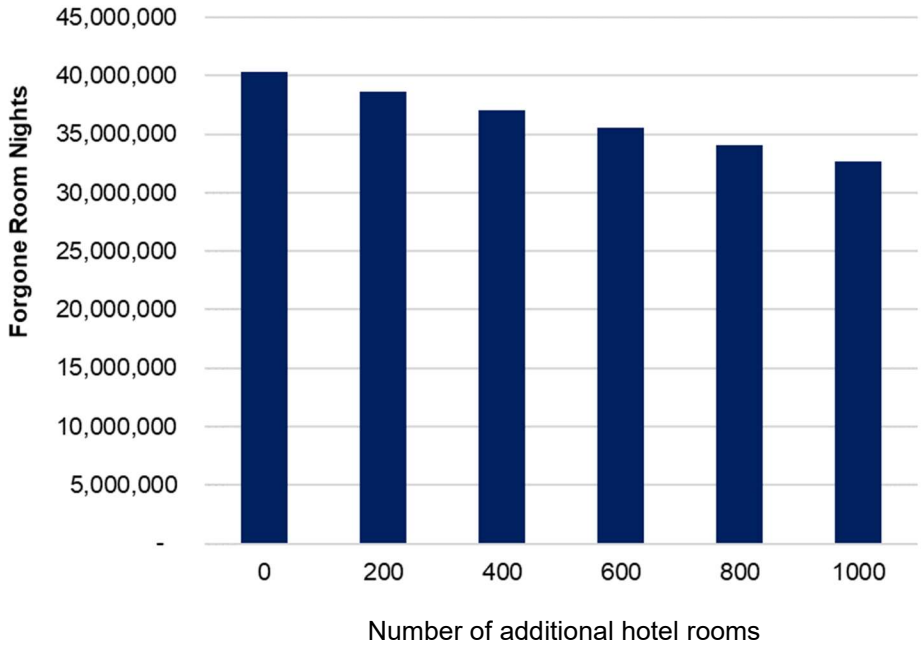


Table 4 shows the projected cumulative foregone visitor spending and projected cumulative foregone economic impacts from foregone visitor spending in Metro Vancouver from 2022 to 2050 for the addition of different numbers of hotel rooms added in 2026.

Table 4: Cumulative Foregone Economic impacts from Foregone Visitor Spending in Metro Vancouver from 2022 to 2050 for Different Numbers of Hotel Rooms Added in 2026.

Rooms Added in 2026	Foregone Expenditure (million)	Foregone Output (million)	Foregone GDP (million)	Foregone Employment (FTEs) [14]	Foregone Total Tax Revenue[15] (million)
0	$20,807	$30,601	$16,610	168,570	$7,500
200	$19,928	$29,311	$15,909	161,469	$7,196
400	$19,107	$28,103	$15,254	154,822	$6,901
600	$18,327	$26,956	$14,631	148,509	$6,621
800	$17,582	$25,861	$14,036	142,476	$6,353
1,000	$16,866	$24,807	$13,465	136,674	$6,095

The addition of 1,000 hotel rooms in Downtown Vancouver in 2026 is projected to reduce the cumulative foregone visitor spending by $3.9 billion. The associated foregone economic impacts are projected to be:

- $5.8 billion in output.
- $3.1 billion in GDP.
- 32,000 FTEs of employment.
- $1.4 billion in tax revenue for all three levels of government.

[14] Please note that one full-time equivalent (FTE) is equivalent to one person-year of employment. Consequently, one person working full-time for 30 years would be counted as 30 FTEs.
[15] Includes Federal, Provincial, and Municipal Government tax revenue.

4.5 NO FOREGONE ROOM NIGHTS

In this scenario, the supply will meet the demand, and there will be no foregone visitor spending. To achieve this, it is assumed that 100% occupancy across Metro Vancouver is achieved during August, the busiest month of the year. The results of this Scenario are shown in Table 5.

It is important to note that this scenario depends on two assumptions:

- There is no consumer preference between different parts of Metro Vancouver. That is to say, visitors who might have preferred to stay in the City of Vancouver will chose to stay in other parts of Metro Vancouver rather than not visit the region at all.
- The hotels will operate at 100% capacity during August, which is above the level generally considered to be "functionally at capacity" (92% occupancy).

Table 5: Number of hotel rooms required to avoid foregone spending

	City of Vancouver			Rest of Metro Vancouver	
	Additional rooms		Total rooms	Additional rooms	Total rooms
	Downtown Vancouver	Other Vancouver			
2022			13,290		10,002
2025	195	195	13,680	390	10,392
2030	793	793	15,265	1,585	11,977
2035	905	905	17,075	1,810	13,787
2040	1,035	1,035	19,140	2,065	15,852
2045	1,180	1,180	21,500	2,360	18,212
2050	1,350	1,350	24,195	2,695	20,907
TOTAL NEW ROOMS	**5,458**	**5,458**		**10,905**	

* It is assumed that additional hotel rooms are added equally between the City of Vancouver and the Rest of Metro Vancouver, and that within City of Vancouver they are equally divided between Downtown and Other Vancouver.

5 ENVIRONMENTAL AND WORKFORCE ASSESSMENT

5.1 ESTIMATES OF ENVIRONMENTAL IMPACTS

This section contains estimates of the environmental impacts of Metro Vancouver's hotel rooms, using per occupied hotel room benchmarks. In addition to a 2019 baseline, projections for 2030 and 2050, relying on the new hotel construction estimates in Section 4, are included.

5.1.1 CHSB index values

The Cornell Hotel Sustainability Benchmarking (CHSB)[16] provides a 2019 baseline for the carbon, energy, and water use for hotels. Included in the index are data for hotels in the Vancouver Census Metropolitan Area (CMA), which is approximately the same geographic area as Metro Vancouver.

For the purpose of this analysis, the measures per occupied room per calendar year were chosen. Measures per square meter and benchmarks with other geographic regions are included in the Appendix.

Table 6 below shows the average (mean) values reported in the CHSB for hotel rooms in the Vancouver CMA. These figures are then used to estimate the total emissions and resource usage for hotels in the Metro Vancouver for 2019 which are reported in Table 7.

Table 6: Carbon, Energy, and Water Use, Vancouver CMA hotels, per occupied room, 2019

Measure	Unit	Mean (average)
Hotel carbon footprint per occupied room (#3)	Kilogram of carbon dioxide equivalent (kgCO2e)	8.2
Hotel energy usage per occupied room (#5)	Kilowatt hours (kWh)	73.5
Hotel water usage per occupied room (#8)	Litres (L)	575.1

[16] Eric Ricaurte and Rehmaashini Jagarajan (2021), *Hotel Sustainability Benchmarking Index 2021: Carbon, Energy, and Water*, Cornell Center for Hospitality Research https://ecommons.cornell.edu/handle/1813/109990

Table 7: Carbon, Energy, and Water Use, Total Vancouver CMA hotels, 2019

Measure	City of Vancouver		Metro Vancouver	
	Room Nights	Total Use*	Room nights	Total Use*
Hotel carbon footprint per occupied room (#3)	3,689,258	30,251,917 kgCO2e	6,953,888	57,021,882 kgCO2e
Hotel energy usage per occupied room (#5)	3,689,258	271,160,477 kWh	6,953,888	511,110,768 kWh
Hotel water usage per occupied room (#8)	3,689,258	2,121,692,389 L	6,953,888	3,999,180,991 L

** Estimates are based on averages reported in Table 6.*

Analysis of hotel construction trends in Metro Vancouver provides an estimate of 2.0% annual replacement of existing room stock. That is, in any given year, 2% of the rooms in the region are permanently closed, and replaced by a new facility. (This is separate from net new construction that adds capacity to the stock of hotel rooms in the region.)

Given that all new hotel construction in the City of Vancouver will have net zero carbon emissions by 2030, these new facilities will not add to the region's emissions. Some of this new construction will add to the stock of rooms, and it is assumed that 2% will replace existing hotel facilities.

As shown in Table 8 carbon emissions (kgCO2e) in 2030 from hotel use will be 34.79 million kg in City of Vancouver and 65.57 million kg in all of Metro Vancouver. As the existing hotel room stock is replaced emissions will fall and by 2050 carbon emissions will be 20.74 million kg in The City of Vancouver and 40.43 million kg in all of Metro Vancouver in 2050. It is important to note that the estimates presented here assume no retrofits to existing hotel room stock that improve efficiencies. Such retrofits could result in additional emission reductions.

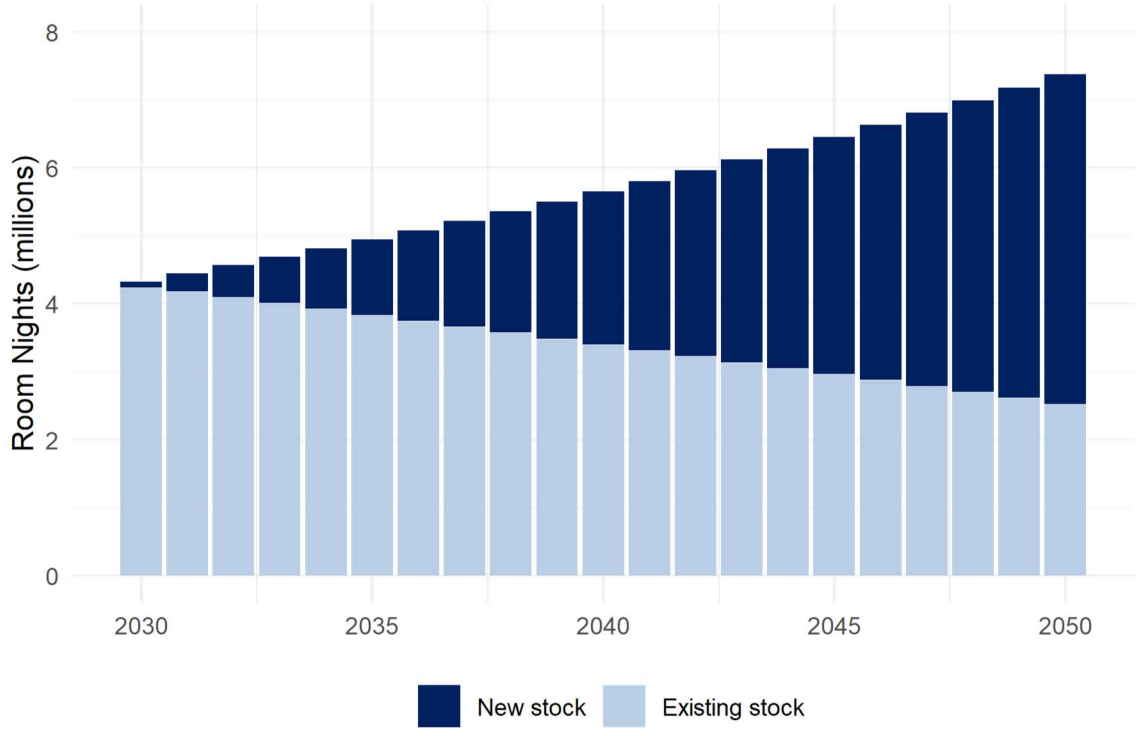
Table 8: Carbon Emissions, Existing Vancouver CMA hotels[1], 2030 & 2050

	City of Vancouver		Metro Vancouver	
Year	Room nights accommodated by 2022 hotel stock	Total Use*	Room nights accommodated by 2022 hotel stock	Total Use*
2030	4,328,742	34,785,772 kgCO2e	7,996,067	65,567,750 kgCO2e
2050	2,529,180	20,739,275 kgCO2e	4,930,916	40,433,514 kgCO2e

[1] Assumes no improvement in environmental impact (average units per occupied room) until 2030.

** Estimates are based on average of 8.2 kgCO2e per occupied room.*

Figure 11: Projected Room Nights, City of Vancouver, 2030–2050, by Age of Hotel Stock



Efficiencies for water use and energy use were assumed to be unchanged between 2030 and 2050. Consequently, water and energy use would increase by up to 19 percent by 2030 and approximately double from 2019 levels by 2050. Improvements in efficiencies could result in reductions in usage.

5.1.2 Solid Waste

The following table uses per visitor and per room estimates from data collected by Metro Vancouver in 2014/15, with extrapolations of total waste based on 2019 room nights. It must be recognized that Metro Vancouver and the region's hotels have engaged in significant waste reduction initiatives since 2014/15, and the volumes estimated here may be substantially overstated.

Table 9: Waste Categorization for Accommodation, Vancouver CMA Hotels, with estimates for 2019*

Category	Percentage of waste stream, by weight	Kg per visitor	Kg per room	Total waste (tonnes)
Paper	25.1	0.1004	0.066933	465.4
Plastics	13.8	0.0552	0.0368	255.9
Compostable Organics	45.2	0.1808	0.120533	838.17
Non-Compostable Organics	0.5	0.002	0.001333	9.27
Metals	2.6	0.0104	0.006933	48.21
Glass	6.6	0.0264	0.0176	122.38
Building Material	1.1	0.0044	0.002933	20.39
Electronic Waste	0.6	0.0024	0.0016	11.12
Household Hazardous	1.8	0.0072	0.0048	33.37
Household Hygiene	2.2	0.0088	0.005867	40.79
Bulky Objects	0	0	0	0
Fines	0.4	0.0016	0.001067	7.41

** 2019 estimate does not take into account any reductions that have been achieved due to strategies that may have been implemented since the source data were collected in 2014/15*

5.2 WORKFORCE ASSESSMENT

The following profile of the accommodation industry is drawn from the go2HR report "Workforce Profile Accommodation" (2022)[17], unless otherwise specified.

The accommodation industry in B.C. employed just under 30,000 people during 2021, of whom just over half (nearly 17,000 people) were in the Lower Mainland tourism region. The accommodation sector is disproportionately made up of women; in 2021, women were 58% of the workforce.

Approximately 26 percent of the workforce was estimated to be between 25 to 34 years of age, 20 percent is between 35 and 44 years old and approximately 23 percent are between 55 and 64 years old,

Table 10: Accommodation Sector Workforce Age Groups, Lower Mainland.

Age Group	Percentage Distribution
15 to 24 years	7%
25 to 34 years	26%
35 to 44 years	20%
45 to 54 years	18%
55 to 64 years	23%
65 years or above	6%

[17] Go2HR, "The Tourism & Hospitality Workforce Profile of the Accommodation Sector", 2022-01-31. Most of the data cited in the report is drawn from Statistics Canada's Labour Force Survey. Direct link to PDF report: https://www.go2hr.ca/wp-content/uploads/2022/04/FINAL-WORKFORCE-PROFILE-ACCOMODATION.pdf

5.2.1 Occupations

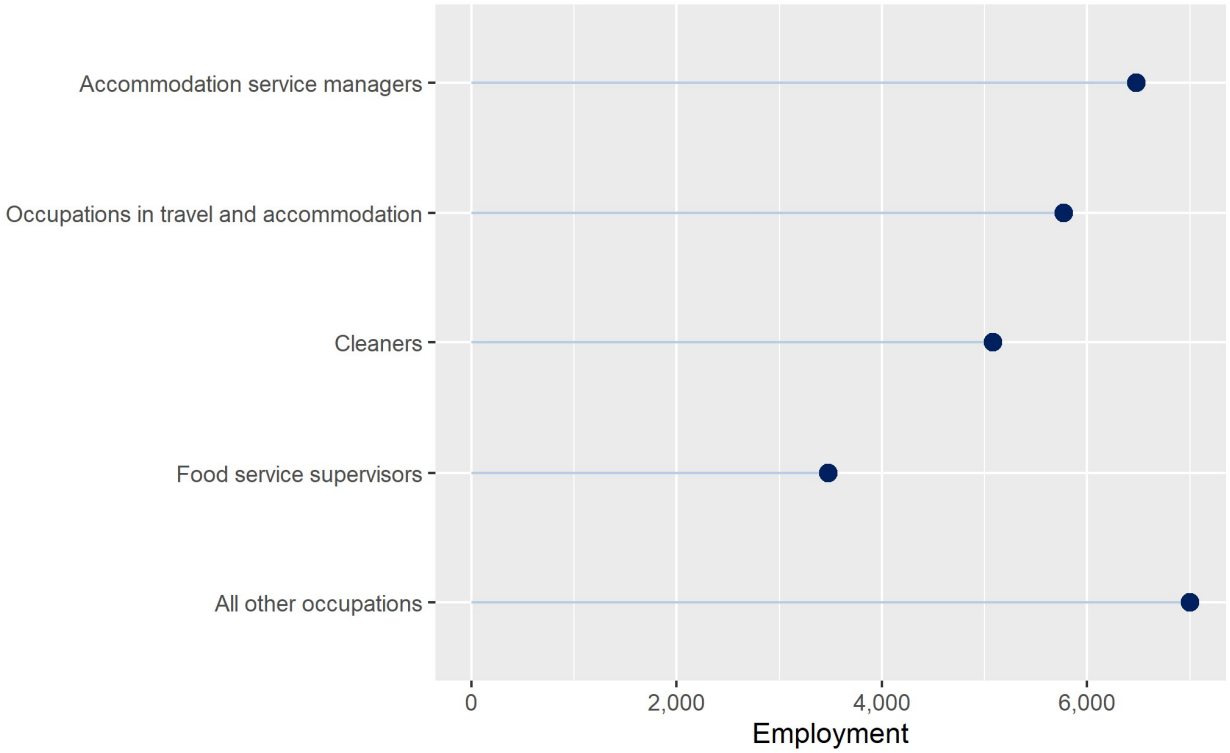
Occupations in the accommodation industry are dominated by four cateogries, which together accounted for three-quarters (74.9%) of all the people working in the industry during 2021.

Accommodation service managers (NOC 063)

- Occupations in travel & accommodation (NOC 652)
- Cleaners (NOC 673)
- Food service supervisors (NOC 631)

The majority of occupations in the accommodation sector are semi-skilled or unskilled positions. Skilled occupations include Accomodation and Service Managers (23% of the workforce); Food Service Supervisors (12.5% of the workforce); Chefs and cooks (5.5% of the workforce); Human Resources (4.6% of the workforce) and Maintenance (2.1% of the workforce). It is worth noting that the 2021 proportions may have been distorted by the impact of the the COVID-19 pandemic and may over-estimate the proportion of higher skill positions. In 2020, the number of workers paid by the hour fell by 37%, while the number who were salaried fell by 18%. Accommodation service managers and other skilled positions are likely in the “salaried” group.

Figure 12: Employment by occupation, accommodation industry in B.C., 2021



Source: go2HR, Labour Force Survey (Statistics Canada)

Compensation [18]

One-quarter (25%) of people who worked in the accommodation and food services industries[19] in Vancouver Census Metropolitan Area (CMA) during 2015 were in low-income status, based on the Market Basket Measure (MBM)[20]. The household threshold for Vancouver CMA in 2015 for a family of four persons was $39,951.[21]

This compares to 17% of the population in the region, and 15% for BC as a whole.

5.2.2 Representation of equity-seeking groups

Table 11 summarizes the representation of equity-seeking groups in the accommodation industry in the Lower Mainland.

5.2.2.1 Indigenous identity

The proportion of workers in the accommodation industry in the Lower Mainland who indicated they have indigenous identity was 3%. This was two percentage points lower than the provincial rate.[22]

5.2.2.2 Visible minority and immigration status

Over half (54%) of the accommodation industry workers in the Lower Mainland tourism region are of visible minority status. A similar proportion are immigrants to Canada, and another 5% are non-permanent residents.

5.2.2.3 Language

Just under half (46%) of workers in the industry in the Lower Mainland indicated that their mother tongue (the language they first learned) is English. The largest proportion of the remainder have a non-official language as their mother tongue (49% of the total).

[18] Data from Statistics Canada's Census 2016 Census PUMF. The income reference year for the 2016 Census is the calendar year 2015.
[19] In order to protect the confidentiality of Census respondents, the data is released at the NAICS two-digit industry "72 Accommodation & food services"
[20] Statistics Canada, Market Basket Measure, Dictionary, Census of Population, 2016 https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop165-eng.cfm
[21] Statistics Canada, Market Basket Measure (MBM) thresholds for economic families and persons not in economic families, 2015 https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/tab/t4_5-eng.cfm .
[22] Go2HR, "The Tourism & Hospitality Workforce Profile of the Accommodation Sector", 2022-01-31. Data from Statistics Canada's Census of Population, 2016.

Table 11: Ethnicity, Immigration, and Mother Tongue in the Accommodation Sector Workforce. 2016

Selected Characteristics	Lower Mainland	
	Total Count	Percentage Distribution
Labour Force	**17,025**	**100%**
Indigenous Status		
Indigenous	440	3%
Non-Indigenous	16,585	97%
Visible Minority Status		
Visible Minority	9,195	54%
Not a Visible Minority	7,830	46%
Immigration Status		
Non-immigrant	7,090	42%
Immigrant	9,100	54%
Non-permanent residents	835	5%
Mother Tongue		
English	7,750	46%
French	240	1%
Non-official language	8,370	49%
Other	665	4%

6 APPENDIX

6.1 SENSITIVITY ANALYSIS

The table below summarizes the economic impacts associated with each 200 hotel rooms in Metro Vancouver (at the current proportion of rooms in Vancouver and the Rest of Metro Vancouver), at 100% occupancy.

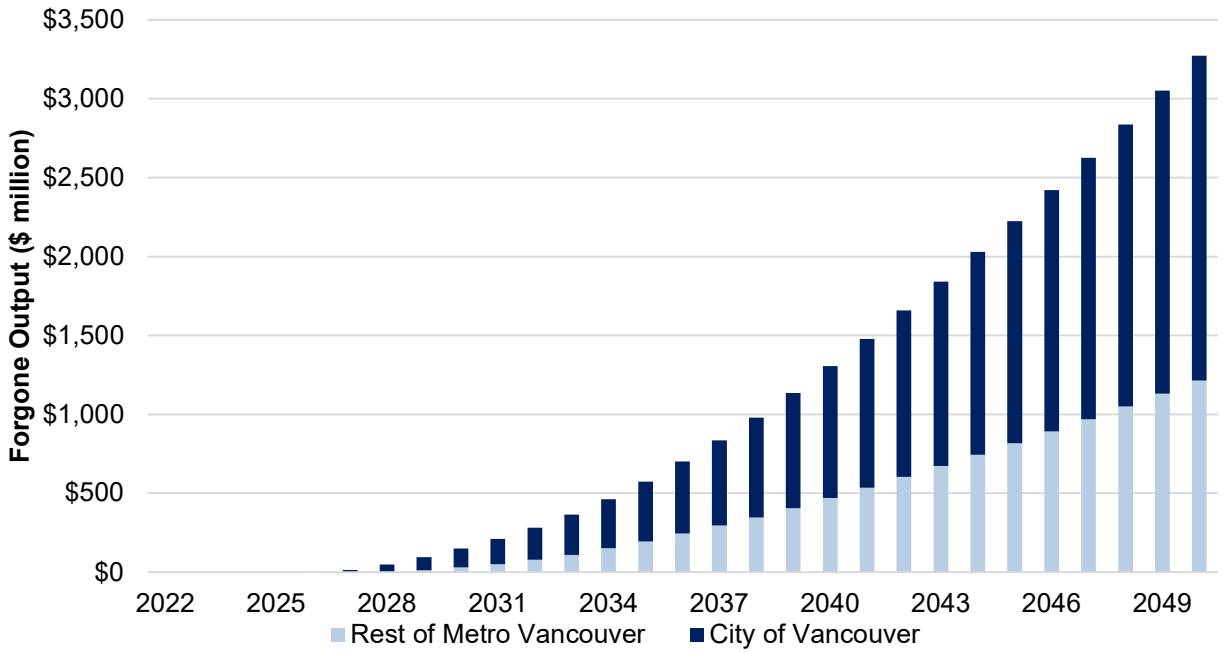
Measure	Annual Impact (per 200 rooms)
Visitor spending	$38 million
Output	$55.8 million
GDP	$30.3 million
Taxes	$13.6 million
Employment (FTEs)	310

6.2 CHARTS

6.2.1 Foregone Economic Impacts

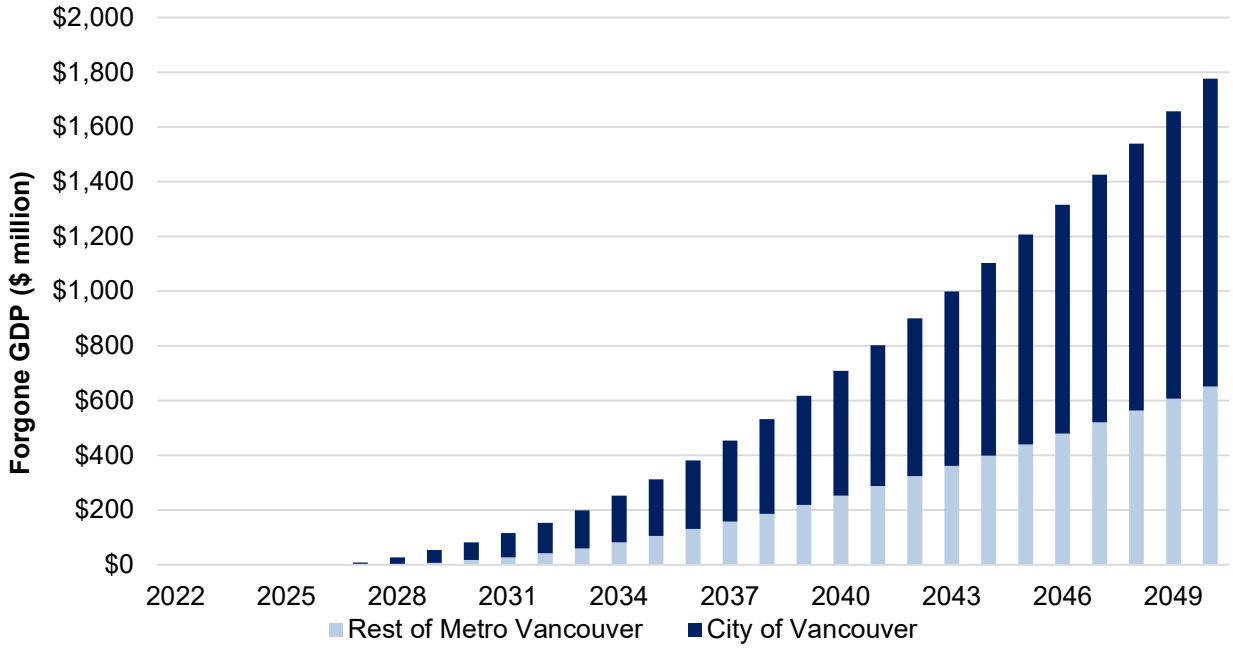
The figures below summarize the projected foregone economic impacts from foregone visitor spending in Metro Vancouver from 2022 to 2050.

Figure 13: Foregone Output from Foregone Visitor Spending in Metro Vancouver from 2022 to 2050[23]



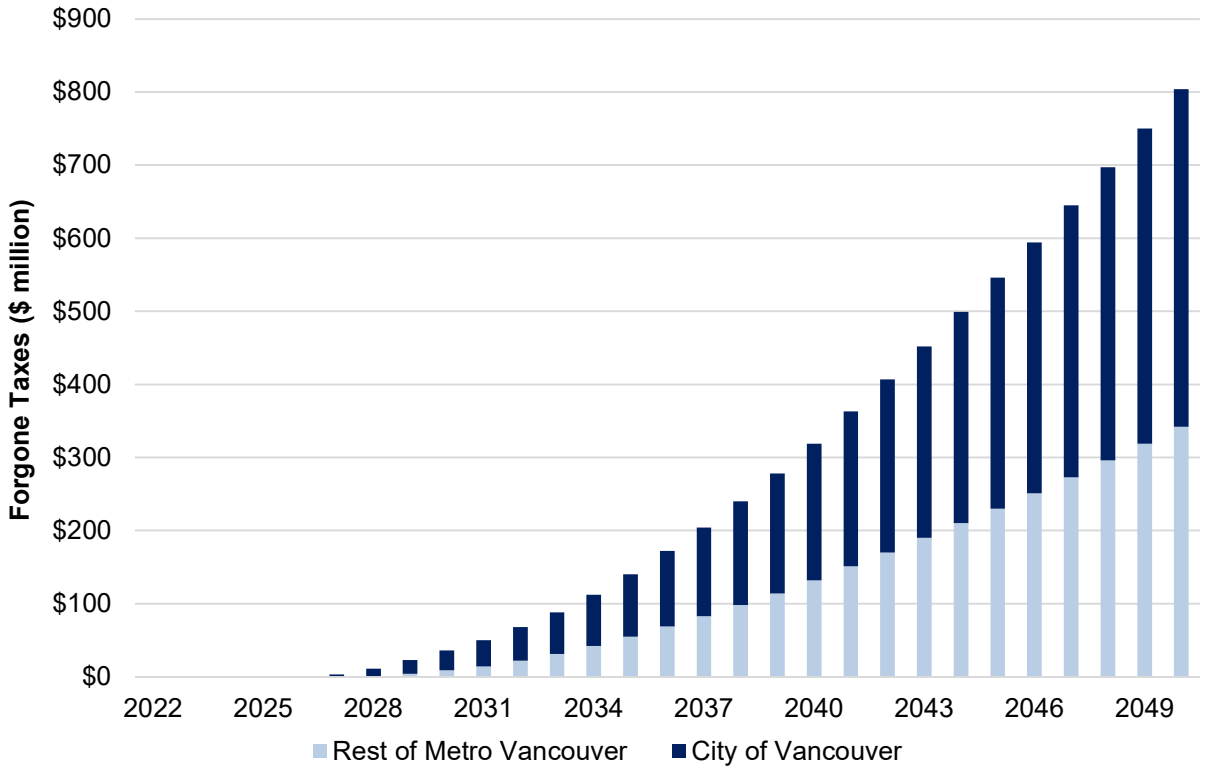
[23] Projections are presented in 2022 dollars.

Figure 14: Foregone GDP from Foregone Visitor Spending in Metro Vancouver from 2022 to 2050[24]



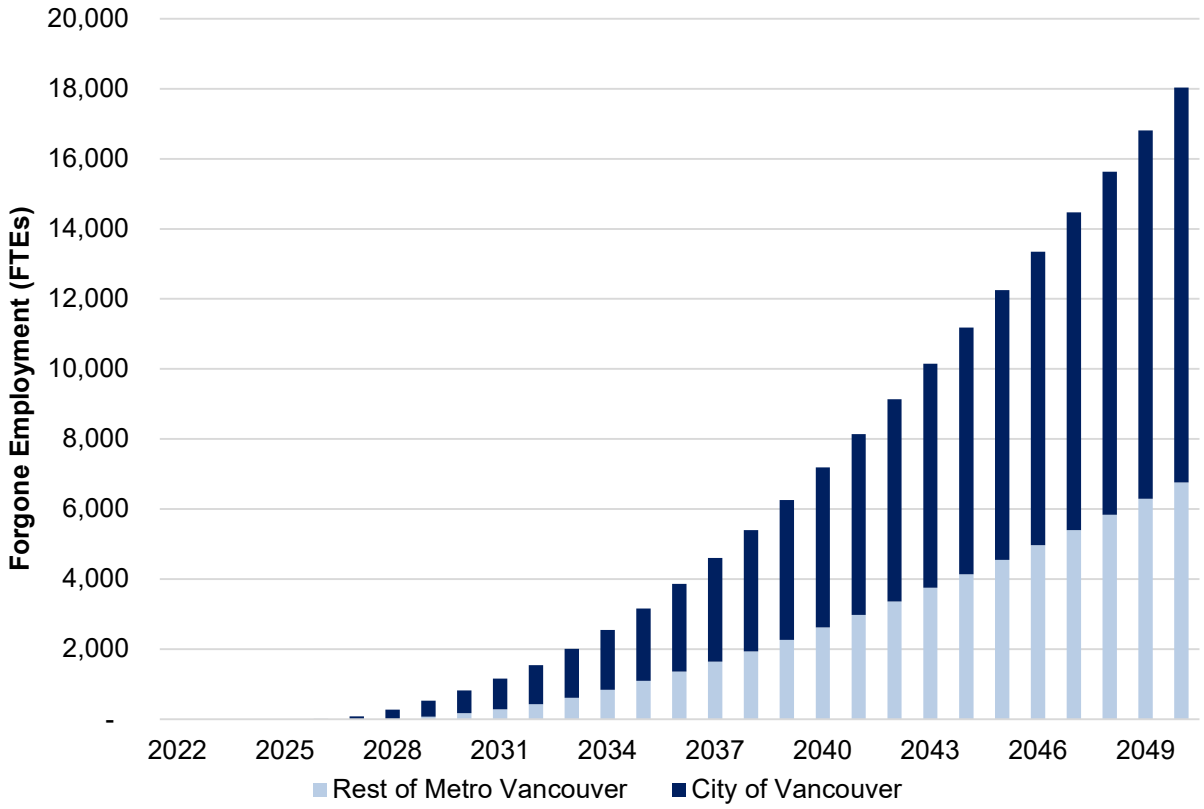
[24] Projections are presented in 2022 dollars.

Figure 15: Foregone Taxes from Foregone Visitor Spending in Metro Vancouver from 2022 to 2050[25]



[25] Projections are presented in 2022 dollars.

Figure 16: Foregone Employment from Foregone Visitor Spending in Metro Vancouver from 2022 to 2050[26,27]



[26] Projections are presented in 2022 dollars.
[27] One full-time equivalent (FTE) is equivalent to one person-year of employment. Consequently, one person working full-time for 30 years would be counted as 30 FTEs

6.3 DATA TABLES

6.3.1 Visitor Spending

The estimates of visitor spending were developed using Statistics Canada's 2019 National Travel Survey (NTS) Public Use Microdata Files. MNP accessed spending information for overnight visitors to Vancouver CMA region staying in hotels and estimated spending per person per night by expenditure category (Table 12). Please note that the NTS reports on data for domestic visitors only. Since data on international visitors staying in hotels was not available, it was assumed that international visitors staying in hotels would spend in the same way as domestic visitors.

Table 12: Spending Per Person Per Night - Statistics Canada's 2019 National Travel Survey

Average Spending Per Person Per Night (2019)	Spending	Share
Accommodation	$171	51%
Food and Beverage	$76	23%
Transportation	$39	11%
Retail	$28	8%
Recreation	$24	7%
Total	$338	100%

Spending per person per night in 2022 dollars was estimated using Statistics Canada's Consumer Price index. Spending per room night was then estimated using average party size of 1.4 persons per room. The average number of people per room was estimated based on information on party size from the NTS data as well as comparison of average spending on accomdation per person with Average Daily Hotel rate in Metro Vancouver.

Table 13 shows the estimated spending per room night by region and accommodation type in 2022 dollars. Spending by region and accomodation type was estimated based on data on Average Room Rates provided by Destination Vancouver and AirDNA data on hotel comparable average daily rates.

Table 13: Estimated Spending Per Room Night by Region and Accommodation Type, 2022

Average Spending Per Person Per Night	Hotel - Vancouver	Hotel – Rest of Metro Vancouver	Short-Term Rentals – Metro Vancouver
Accommodation	$286	$202	$173
Food and Beverage	$116	$116	$116
Transportation	$49	$49	$49
Retail	$42	$42	$42
Recreation	$37	$37	$37
Total	$530	$446	$417

6.3.2 CHSB index values

The Cornell Hotel Sustainability Benchmarking (CHSB)[28] provides a 2019 baseline for the carbon, energy, and water use for hotels. Included in the index are data for hotels in the Vancouver Census Metropolitan Area (CMA), which is approximately the same geographic area as Metro Vancouver.

For the purpose of this analysis, the measures per occupied room per calendar year were chosen.

Table 14 below shows the average (mean) values:

Table 14: Carbon, Energy, and Water Use, Vancouver CMA hotels, per occupied room, 2019

Measure →	**Hotel carbon footprint**		**Hotel energy usage**		**Hotel water usage**	
	per occupied room (#3)	per sq meter (#4)	per occupied room (#5)	per square meter (#6)	per occupied room (#8)	per square meter (#9)
Unit → Region ↓	Kilogram of carbon dioxide equivalent (kgCO2e)		Kilowatt hours (kWh)		Litres (L)	
Vancouver	8.2	37.0	73.5	330.6	575.1	2,802.3
Rest of B.C.	7.5	33.0	74.4	326.9	518.8	2,458.7
Canada	17.1	65.3	91.2	363.9	520.4	2,153.3
Calgary	41.6	152.4	107.9	398.2	501.8	1,912.0
Seattle	12.9	57.5	51.4	233.4	405.9	1,856.1

[28] Eric Ricaurte and Rehmaashini Jagarajan (2021), *Hotel Sustainability Benchmarking Index 2021: Carbon, Energy, and Water*, Cornell Center for Hospitality Research https://ecommons.cornell.edu/handle/1813/109990

6.3.3 Occupations in the Accommodation Industry

Table 15: Occupations in the Accommodation industry, British Columbia, 2021

NOC	Occupation Title	Certification/Training Requirement	Employment**	Percentage of Accommodation Industry
63	Accommodation service managers	A university degree or college diploma in hotel management or other related discipline or equivalent job experience	6,479	23.3
652	Occupations in travel and accommodation	Related post-secondary diploma, On the job training	5,771	20.8
673	Cleaners	On the job training	5,083	18.3
631	Food service supervisors	Post-secondary training in restaurant management or food service admin, or; Equivalent job experience	3,479	12.5
632	Chefs and cooks	Cookâ€™s apprenticeship program and training; Chefâ€™s Red Seal Certification	1,542	5.5
112	Human resources professionals	Related post-secondary degree or diploma	1,271	4.6
671	Food counter attendants	On the job training	1,125	4.0
651	Occupations in food and beverage service	On the job training; Responsible beverage service certification	1,125	4.0
525	Athletes, coaches, referees and related occupations	Extensive sport related training; Coaching and refereeing certificates	750	2.7
641	Sales and account representatives - wholesale trade (non-technical)	Related post-secondary degree or diploma; Experience in sales or related occupation	604	2.2
213	Civil, mechanical, electrical and chemical engineers	A bachelor's degree or above in mechanical engineering or in a related engineering discipline	583	2.1
642	Retail salespersons	On the job training	-*	
654	Security guards and related security service occupations	Related post-secondary degree or diploma usually required; On the job training and job specific certifications; Firearms license and training for security guards who carrying a firearm	-*	
143	Financial, insurance and related administrative support workers	Completion of related post-secondary degree or diploma and required industry certifications may be required; Relevant work experience such as using a payroll systems or software may be required	-*	
621	Retail sales supervisors	Previous retail sales experience as a retail salesperson or salesclerk, cashier, telemarketer, door-to-door salesperson or rental agent may be required	-*	
653	Tourism and amusement services occupations	Related post-secondary degree or diploma may be required	-*	

Notes:
* Employment count is suppressed due to high probability of large sampling error
** Annual average

Source: go2HR, Labour Force Survey (Statistics Canada)

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