

Financial Analysis for Missing Middle Housing Initiative, Victoria BC

28 April 2022

Prepared for:
City of Victoria

By:
coriolis 
CONSULTING CORP.

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1.0 Introduction

1.1 Background

Missing middle housing includes ground-oriented forms of housing such as duplexes, triplexes, houseplexes, townhouses and other forms of attached housing. These infill housing forms can often be introduced into existing single family neighbourhoods without impacts on neighbourhood character and can provide a variety of significant benefits, including housing options that are more affordable than new single detached houses, options for existing neighbourhood residents to downsize (freeing up existing housing stock), more efficient use of land and infrastructure, reduction in energy use, improved public realm, and more walkable urban areas.

The City of Victoria land use policies and bylaws already allow some forms of missing middle housing in some locations in the City. However, the pace of missing middle housing development has been slow in Victoria in comparison to other forms of housing, such as single detached homes and apartment units.

Therefore, the City of Victoria has undertaken a city-wide planning process to:

- Identify suitable locations for missing middle forms of housing.
- Engage with the community to help shape the framework.
- Evaluate opportunities to secure public benefits, rental housing and/or below market housing from new missing middle projects, or certain types of missing middle projects.
- Consider policy and/or bylaw changes that would allow these forms of housing to proceed without Council approval for each project.

As input to the process, the City of Victoria retained Coriolis Consulting Corp. to:

1. Analyze the financial viability of redevelopment of existing single family lots into different types of missing middle housing to help identify the circumstances in which redevelopment is likely financially viable, taking into account different factors such as typology, density, location, and existing use on a property.
2. Evaluate the financial ability of missing middle housing to provide amenity contributions.
3. Evaluate the financial ability of new projects to incorporate below market housing units.
4. Evaluate the financial performance of retaining, renovating and converting existing heritage homes into multi-unit dwellings (heritage conversion).
5. Evaluate the proposed missing middle forms and related policies in terms of financial viability, potential land value impacts, opportunities for amenity contributions and/or below market housing, and other desired outcomes.

Our work was being completed in two main phases to match the City's overall planning process:

1. We completed an initial evaluation of the preliminary missing middle typologies that the City was considering in early 2021. This also included an evaluation of retaining and renovating heritage homes. This provided input to the City's public engagement process and helped identify some of the key factors

to consider to help make missing middle housing financially viable. A memo summarizing this initial preliminary analysis was submitted to the City in May 2021¹ and is contained in the attachments.

2. Following the public engagement process, the City refined the missing middle typologies being considered. In early 2022, we then completed a more detailed analysis of the refined typologies and related proposed policies. This report summarizes the approach, key assumptions and findings of our financial analysis for these proposed typologies.

1.2 Professional Disclaimer

This document may contain estimates and forecasts of future growth and urban development prospects, estimates of the financial performance of possible future urban development projects, opinions regarding the likelihood of approval of development projects, and recommendations regarding development strategy or municipal policy. All such estimates, forecasts, opinions, and recommendations are based in part on forecasts and assumptions regarding population change, economic growth, policy, market conditions, development costs and other variables. The assumptions, estimates, forecasts, opinions, and recommendations are based on interpreting past trends, gauging current conditions, and making judgments about the future. As with all judgments concerning future trends and events, however, there is uncertainty and risk that conditions change or unanticipated circumstances occur such that actual events turn out differently than as anticipated in this document, which is intended to be used as a reasonable indicator of potential outcomes rather than as a precise prediction of future events.

Nothing contained in this report, express or implied, shall confer rights or remedies upon, or create any contractual relationship with, or cause of action in favor of, any third party relying upon this document.

In no event shall Coriolis Consulting Corp. be liable to the City of Victoria or any third party for any indirect, incidental, special, or consequential damages whatsoever, including lost revenues or profits.

¹“Summary of Preliminary Financial Analysis for: Missing Middle Housing Typologies and Heritage Conversions”, Coriolis Consulting Corp., 14 May 2021.

2.0 Key Findings of Initial Preliminary Analysis

We completed an initial preliminary evaluation of a variety of missing middle redevelopment scenarios in early 2021. This was used as one input to the City's public engagement process and helped identify some of the key factors that will help make missing middle housing financially viable. The main findings of the initial 2021 analysis can be summarized as follows.

1. The financial viability of missing middle housing development is likely marginal in most locations in the City, so if permitted, the pace of missing middle development will likely be modest for the foreseeable future.
2. To help make missing middle development financially attractive to builders and developers, the City should consider the following:
 - Maximize the achievable density for missing middle housing forms (while still achieving the City's urban design objectives). Our analysis indicates that heights of 3 storeys and gross floorspace to lot area ratios of about 1.0 are likely required to make missing middle redevelopment financially viable.
 - Allow a significant number of units per lot (say four to five units per lot) to help keep the average unit sizes modest. Smaller unit sizes will keep the total unit price more affordable than larger units allowing the new units to appeal to a broader range of buyers.
 - Allow flexibility for the amount of off-street parking². Projects that are close to existing commercial services and amenities may not need to provide as much parking as projects that are removed from commercial services and amenities.
 - In locations where the City wants to encourage missing middle housing, rezone properties in advance so that builders do not need to go through the cost and uncertainty associated with rezoning.
3. Because the financial viability of missing middle housing is marginal, there is little room for missing middle projects to provide amenity contributions or below market housing.
4. The cost of retaining, renovating and converting an existing heritage home into multiple units will vary from property to property. However, unless costs are low, heritage conversion is unlikely to be financially viable in the absence of additional infill units on the lot. Even with strata infill housing, the financial viability of heritage retention and conversion is likely to be marginal. Therefore, the City should examine opportunities to allow a significant amount of strata infill housing on a lot as part of a heritage conversion.

One of the key findings of our initial analysis is that the financial performance of missing middle housing is strongest in the neighbourhoods with higher residential values, such as James Bay, Fairfield, Gonzales and other nearby areas. If there is potential for missing middle housing to provide amenity contributions and/or below market housing, it is highest in these higher value neighborhoods.

Therefore, Phase 2 of our financial analysis focused on the likely performance of missing middle typologies in these higher value locations.

² We tested the financial viability of missing middle housing with underground parking. However, due to the additional cost associated with underground parking, these forms of missing middle housing are unlikely to be financially viable.

3.0 Missing Middle Housing Typologies Analyzed

The Phase 2 analysis focused on three different types of missing middle housing:

- Houseplex on a smaller single family lot (4,924 square foot lot).
- Houseplex on a larger single family lot (5,909 square foot lot) under different assumed heights.
- Townhouse on an assembly of two single family lots under different assumed heights and unit sizes.

Concepts for each of the different options were developed by City staff and the City's design consultant. We were provided with estimates of the gross floorspace that is likely achievable for each typology as well as assumed unit counts, unit sizes and parking. For each concept, we were instructed to assume there would be one lock off unit (secondary suite) in a project.

For the Phase 2 analysis, we analyzed eight different scenarios, which vary based on typology (houseplex or townhouse), lot size and building height. The scenarios can be summarized as follows:

1. Smaller 2 1/2 level houseplex on a smaller single family lot. This scenario includes three levels, with the first level submerged half a floor below grade. This typology is assumed to achieve a gross floorspace to lot area ratio of about 0.95. A total of four units are assumed to be included in the houseplex plus a lock-off unit. One surface parking stall is available for the units with a second available for a car share vehicle.
2. Smaller 3 level houseplex at grade on a smaller single family lot. This scenario includes three levels. This typology is assumed to achieve a gross floorspace to lot area ratio of about 0.95. A total of four units are assumed to be included in the houseplex plus a lock-off unit. One surface parking stall is available for the units with a second available for a car share vehicle.
3. Larger 2 1/2 level houseplex on a larger single family lot. This scenario includes three levels, with the first level submerged half a floor below grade. This typology is assumed to achieve a gross floorspace to lot area ratio of about 1.03. A total of five units are assumed to be included in the houseplex plus a lock-off unit. One surface parking stall is available for the units with a second available for a car share vehicle.
4. Larger 3 level houseplex at grade on a larger single family lot. This scenario includes three levels. This typology is assumed to achieve a gross floorspace to lot area ratio of about 1.03. A total of five units are assumed to be included in the houseplex plus a lock-off unit. One surface parking stall is available for the units with a second available for a car share vehicle.
5. Larger 3 1/2 level houseplex on a larger single family lot. This scenario includes four levels, with the first level submerged half a floor below grade. This typology is assumed to achieve a gross floorspace to lot area ratio of about 1.27. A total of five units are assumed to be included in the houseplex plus a lock-off unit. One surface parking stall is available for the units with a second available for a car share vehicle.
6. 3 level townhouse at grade on an assembly of two single family lots, with 24 foot wide units (large units). This typology is assumed to achieve a gross floorspace to lot area ratio of 1.07. A total of 9 units are assumed to be included in the project plus a lock-off unit. Three surface parking stalls are available for the units and a fourth is available for a car share vehicle. Because of the width of the townhouse units, some units are very large.
7. 3 level townhouse at grade on an assembly of two single family lots, with 19 foot wide units (mid sized units). This typology is assumed to achieve a gross floorspace to lot area ratio of 1.07. A total of 11 units are assumed to be included in the project plus a lock-off unit. Three surface parking stalls are available for the units and a fourth is available for a car share vehicle. This scenario has smaller units sizes than Scenario 6.

8. 3 1/2 level townhouse on an assembly of two single family lots, with 19 foot wide units. This typology has four levels with the first level submerged half a floor below grade. The assumed gross floorspace to lot area ratio is 1.27. A total of 11 units are assumed to be included in the project plus a lock-off unit. Three surface parking stalls are available for the units and a fourth is available for a car share vehicle. This scenario has relatively large units.

Exhibit 1 summarizes the assumed development statistics that we used in our financial analysis for each houseplex typology (Scenario 1 to 5).

Exhibit 1 - Summary of Development Statistics for Houseplex Typologies

Scenario	1	2	3	4	5
Concept	2.5 Level Submerged Houseplex on Smaller Lot	3 Level Houseplex at Grade on Smaller Lot	2.5 Level Submerged Houseplex on Larger Lot	3 Level Houseplex at Grade on Larger Lot	3.5 Level Submerged Houseplex on Larger Lot
Site Size (sf)	4,924	4,924	5,909	5,909	5,909
Gross Residential Floorspace (sf)	4,682	4,682	6,087	6,087	7,507
Floorspace Excluded From FSR (sf)	1,561	0	2,029	0	2,029
Net Saleable Floorspace (sf)	4,214	4,214	5,478	5,478	6,381
Assumed Efficiency	90%	90%	90%	90%	85%
Gross Floorspace Divided by Site Size	0.95	0.95	1.03	1.03	1.27
Assumed FSR ³	0.63	0.95	0.69	1.03	0.93
Number of Units	4	4	5	5	5
Average Unit Size (sf)	1,054	1,054	1,096	1,096	1,276

Exhibit 2 summarizes the assumed development statistics that we used in our financial analysis for each townhouse typology (Scenario 6 to 8).

Exhibit 2 – Summary of Development Statistics for Townhouse Typologies

Scenario	6	7	8
Concept	3 Level Townhouse at Grade (24ft Unit Widths)	3 Level Townhouse at Grade (19ft Unit Widths)	3.5 Level Submerged Stacked Townhouse (19ft Unit Widths)
Site Size (sf)	12,917	12,917	12,917
Gross Residential Floorspace (sf)	13,819	13,819	16,441
Floorspace Excluded From FSR (sf)	0	0	3,656
Net Saleable Floorspace (sf)	13,128	13,128	15,619
Assumed Efficiency	95%	95%	95%
Gross Floorspace Divided by Site Size	1.07	1.07	1.27
Assumed FSR ³	1.07	1.07	0.99
Number of Units	9	11	11
Average Unit Size (sf)	1,459	1,193	1,420

³ Assumes that below grade floorspace is excluded from FSR.

4.0 Approach to Financial Analysis and Key Assumptions

4.1 Approach

Our analysis is intended to test the financial viability of the missing middle scenarios from the perspective of a for-profit builder or developer. A non-profit developer or existing home owner could view the economics of redevelopment differently.

We created proformas to test the likely financial performance of each of the different missing middle typologies. Each proforma, compares the estimated overall value of the completed project with the estimated costs to create the new housing units⁴. We used the models to:

- Estimate the potential profit that could be generated by each typology assuming the builder/developer acquired the lot at its current market value as an older single family home.
- Determine whether a typology will likely be financially viable.
- Estimate the impact on the financial performance and viability of assumed amenity contributions and below market housing.
- Evaluate whether a typology is likely to create increased lot value (beyond the existing single family value).

The lot acquisition cost, development costs, achievable sales prices are based on market conditions in the higher value residential locations in the City that could be candidates for missing middle housing, such as Fairfield, Gonzales, James Bay and other nearby neighbourhoods. Based on our initial 2021 analysis, the profitability would likely be lower in other parts of the City as the market value of the new missing middle units would be lower.

4.2 Key Assumptions

Attachment 7.1 summarizes the financial assumptions used in our analysis (revenues, costs). Other key assumptions for the analysis are as follows:

- The analysis assumes that the City changes the zoning of properties in advance (prezone) so that builders and developers are not required to rezone.
- The financial analysis assumes that the builder (or developer) acquires the existing single family lots at the market value supported by the existing single family use and zoning. The townhouse scenarios include two lots. Typically, a developer will need to pay a premium over market value to existing homeowners to create a financial incentive to sell both adjacent lots simultaneously for redevelopment. However, our analysis does not build in any assembly costs allowance because we assume that builders

⁴ Our analysis focused on testing the viability of strata residential development for each typology. As part of our 2021 analysis, we also tested some market rental scenarios, but our analysis indicated that rental housing development is not financially viable at the missing middle densities.

could still proceed with one of other houseplex typologies on a single lot if the adjacent lot is not available for sale at market value.

- Each houseplex building is required to have at least one unit that includes a lock off unit (secondary suite).
- The maximum number of units per houseplex building is six (including lock off units).
- Houseplex projects are assumed to include one parking stall for sale with the new units and townhouse projects are assumed to include three parking stalls for sale with the new units. All projects also include one additional car share parking stall.
- Projects are assumed to provide common bike storage in the project that is separate from each individual housing unit.
- No transportation demand management (TDM) costs are included in the analysis. If builders and developers are required to incur costs for the reduced parking requirements, then it would negatively affect the results of our analysis.
- Some scenarios assume that a bonus density contribution is required. The bonus density contribution rate that is tested is equal to \$10 per square foot of increased permitted density beyond 0.5 FSR (the assumed existing density permitted).
- Some scenarios test the impact of including one below market home ownership (BMHO) unit priced at a 10% discount to an equivalent market unit. Our analysis assumes that the smallest unit in the concept is the below market home ownership unit (these units range from about 726 to 920 square feet in the analysis). By applying the discount to the smallest units in the project, it minimizes the financial impact of the below market home ownership unit on the financial performance of the scenario.

4.3 Impact of Amenity Contributions or Below Market Units on Lot Values

If a new development project is required to provide an amenity contribution or include below market housing within the project, it reduces the potential profit from the project (through increased costs and/or reduced project value). Therefore, if these requirements are known in advance, a builder or developer will try to pass the financial impact of these requirements back to the existing development property owner by offering a lower price for the property when acquiring a property.

So policies that identify the expected amenity or below market housing contribution are a useful tool that can be used by local governments to limit any upward pressure on land values that can arise due to an increase in permitted density.

However, a developer cannot always pass these costs back to the existing property owner if there is an alternate use for the property that also creates value. In Victoria, missing middle housing will be built on sites that will also be zoned for single family housing, so the minimum price that a missing middle builder or developer can bid for a lot (and be the successful purchaser) is the market value supported by the existing single family use and zoning. If the builder or developer bids less, then a purchaser who is interested in retaining the existing house or building a new single family house will outbid them.

The existing single family market value will not be affected by any amenity contribution or below market housing requirement that applies to the missing middle option. Because of this, our analysis assumes that the minimum acquisition cost to a missing middle builder is the market value that is supported by the existing single family zoning.

5.0 Summary of Findings

We divided the results of our financial analysis into two parts:

- Houseplex scenarios.
- Townhouse scenarios.

The exhibits in the following sections summarize the findings of our analysis. For each scenario, the exhibits show:

- The assumed lot size.
- The assumed total project size (gross floorspace and units).
- The assumed lot acquisition cost. This is the value of older single family homes in the neighbourhood that are likely redevelopment candidates.
- The estimated lot value supported by the redevelopment typology assuming an industry standard minimum profit target is required by the builder or developer.
- The calculated increase in property value (if any) due to the missing middle typology.
- The estimated profit margin for the scenario as a percentage of total project costs, assuming the lot is acquired at current single family market value with no density bonus contribution and no below market housing.
- Whether or not the scenario is likely financially viable for builders and developers.
- The impact on the estimated profit of a density bonus contribution equal to \$10 per square foot of increased permitted FSR.
- The estimated impact on the profit of including one below market home ownership unit.

5.1 Houseplex Analysis

Exhibit 3 summarizes the findings of our financial analysis for the houseplex typologies.

Exhibit 3 – Summary of Financial Analysis for Houseplex Scenarios

Scenario	1	2	3	4	5
Concept	2.5 Level Submerged Houseplex on a Smaller Lot	3 Level Houseplex at Grade on a Smaller Lot	2.5 Level Submerged Houseplex on a Larger Lot	3 Level Houseplex at Grade on a Larger Lot	3.5 Level Submerged Houseplex on a Larger Lot
Site Size (sf)	4,924	4,924	5,909	5,909	5,909
Gross Residential Floorspace (sf)	4,682	4,682	6,087	6,087	7,507
Floorspace Assumed to be Excluded From FSR (sf)	1,561	0	2,029	0	2,029
Net Saleable Floorspace (sf)	4,214	4,214	5,478	5,478	6,381
Efficiency	90%	90%	90%	90%	85%
Gross Residential Floorspace Divided by Site Size	0.95	0.95	1.03	1.03	1.27
Assumed FSR (Excludes Basement)	0.63	0.95	0.69	1.03	0.93
Number of Units (excluding lock-off unit)	4	4	5	5	5
Average Unit Size (sf)	1,054	1,054	1,096	1,096	1,276
Land Value Estimates					
Estimated Existing Value of Property	\$1,050,000	\$1,050,000	\$1,150,000	\$1,150,000	\$1,150,000
Estimated Land Value Supported by Redevelopment	\$816,000	\$816,000	\$1,106,000	\$1,106,000	\$961,000
Calculated Increase in Land Value	\$0	\$0	\$0	\$0	\$0
Profitability Analysis - Base Case					
Estimated Profit if Site Acquired at the Existing Value	1.4%	1.4%	8.7%	8.7%	5.1%
Viability	Unlikely	Unlikely	Likely	Likely	Possibly
Profitability Analysis - Impact of CAC or BMHO Unit					
Calculated CAC at \$10 PSF on Bonus FSR	\$6,588	\$22,198	\$11,033	\$31,323	\$25,233
Estimated Profit with \$10 PSF CAC on Bonus FSR	1.1%	0.5%	8.3%	7.6%	4.4%
Estimated Profit with One Below Market Ownership unit	-0.4%	-0.4%	6.9%	6.9%	3.7%

Multifamily residential developers in Victoria typically require a minimum profit margin of about 15% on total project costs in order to obtain construction financing and proceed with a new project.

Houseplex development likely requires a lower profit margin as there are fewer units to sell (less marketing risk), development can occur on a single lot (so no assembly is required) and the construction period is shorter.

We would expect builders and developers to target a minimum profit margin on houseplex development of about 10%, assuming lots are rezoned in advance by the City to allow houseplex development.

As shown in Exhibit 3:

1. The estimated profit margin for each houseplex typology that we analyzed is in the range of about 1% to 9%. Houseplex development is profitable, but it does not meet the profit margin that would likely be required by many builders and developers to proceed. This suggests that the financial viability of houseplex is marginal under current market conditions.
2. The houseplex typologies are unlikely to create any significant upward pressure on existing single property values.
3. The typologies that achieve the highest profit margins are located on the larger single family lots. This is due to two key factors:

- A slightly higher density (in terms of gross floorspace to lot size) can be achieved on the larger lots.
 - The larger lots have a slightly lower existing market value (as single family properties) per square foot of lot area than the smaller lots.
4. Because the profit margins are very low, houseplex projects have little (or no) financial room to make amenity contributions or incorporate below market housing units. We tested the impact of a modest density bonus contribution or below market housing requirement on the estimated profit margins:
- If houseplex projects are required to make a density bonus contribution of \$10 per square foot of bonus density, the profit margin declines by between 0.3 and 0.9 percentage points depending on the scenario.
 - If houseplex projects are required to include one below market home ownership unit (with no density bonus contribution), the estimated profit margin declines by between 1.4 and 1.8 percentage points depending on the scenario.

5.2 Townhouse Analysis

Exhibit 4 summarizes the findings of our financial analysis for the townhouse typologies.

Exhibit 4 – Summary of Financial Analysis for Townhouse Scenarios

Scenario	6	7	8
Concept	3 Level Townhouse at Grade (24ft Unit Widths)	3 Level Townhouse at Grade (19ft Unit Widths)	3.5 Level Submerged Stacked Townhouse (19ft Unit Widths)
Site Size (sf)	12,917	12,917	12,917
Gross Residential Floorspace (sf)	13,819	13,819	16,441
Floorspace Assumed to be Excluded From FSR (sf)	0	0	3,656
Net Saleable Floorspace (sf)	13,128	13,128	15,619
Efficiency	95%	95%	95%
Gross Floorspace Divided by Site Size	1.07	1.07	1.27
Assumed FSR (Excludes Basement)	1.07	1.07	0.99
Number of Units (excluding lock off unit)	9	11	11
Average Unit Size (sf)	1,459	1,193	1,420
Land Value Estimates			
Estimated Existing Value of Property	\$2,450,000	\$2,450,000	\$2,450,000
Estimated Land Value Supported by Redevelopment	\$1,963,000	\$2,332,000	\$2,448,000
Calculated Increase in Land Value	\$0	\$0	\$0
Profitability Analysis - Base Case			
Estimated Profit if Site Acquired at the Existing Value	8.1%	13.3%	14.9%
Viability	Possibly	Likely	Likely
Profitability Analysis - Impact of CAC or BMHO Unit			
Calculated CAC at \$10 PSF on Bonus FSR	\$73,609	\$73,609	\$62,371
Estimated Profit with \$10 PSF CAC on Bonus FSR	7.0%	12.2%	14.0%
Estimated Profit with One Below Market Ownership unit	7.3%	12.7%	14.3%

We would expect townhouse developers to target a minimum profit margin of about 15%, assuming lots are rezoned in advance by the City to allow townhouse development.

As shown in Exhibit 4:

1. The estimated profit margin for each townhouse typology that we analyzed is in the range of about 8% to 15%. The lower end of this range is for a scenario that includes large townhouse units. If unit sizes are smaller, the profitability increases to the 13% to 15% range. This suggests that townhouse development is viable under current market conditions if properties can be acquired and assembled by developers at current market value under single family zoning.
2. The townhouse typologies are unlikely to create any significant upward pressure on existing single property values.
3. Because the profit margins do not exceed the typical minimum profit margin required to obtain financing and proceed with a townhouse project, there is little financial room for townhouse builders to make amenity contributions or incorporate below market housing units. We tested the impact of a modest density bonus contribution or below market housing requirement on the estimated profit margins:
 - If townhouse projects are required to make a density bonus contribution of \$10 per square foot of bonus density, the profit margin declines by between 0.9 and 1.1 percentage points depending on the scenario.

- If townhouse projects are required to include one below market home ownership unit (with no density bonus contribution), the estimated profit margin declines by between 0.6 and 0.8 percentage points depending on the scenario.

6.0 Conclusions

1. The City has numerous locations zoned for apartment development and a wide range of locations zoned for single family housing. However, there are few locations zoned for attached forms of housing. Missing middle housing would create opportunities for new types of housing that are generally not available in existing single family neighbourhoods in the City. This could:
 - Increase the housing choice for residents.
 - Create opportunities for younger families to purchase a ground-oriented home in the City at a lower cost than a single family home.
 - Create opportunities for existing single family owners to downsize within their own neighbourhood.
 - Creates flexibility for homeowners to accommodate family members through redevelopment.
2. The financial viability of the missing middle typologies we tested is marginal. If permitted:
 - We would expect the pace of missing middle development to be modest for the foreseeable future and likely focused in the higher value residential neighbourhoods of the City.
 - We would not expect missing middle housing to create significant upward pressure on the market value of existing single family properties. If developers pay more than the current market value of a lot, it will negatively affect project viability.
3. The financial performance of the missing middle housing typologies could improve over time if the achievable unit sales prices increase over time, without corresponding increases in project costs and single family lot values.
4. To help make missing middle development attractive to builders and developers, the City should consider the following:
 - Rezone properties in advance so that builders do not need to go through the cost and uncertainty associated with rezoning.
 - Allow flexibility about the amount of off-street parking. To be marketable, projects that are close to existing commercial services and amenities may not need to provide as much parking as projects that are removed from commercial services and amenities.
5. Because the financial viability of missing middle housing is currently marginal, there is little (or no room) for missing middle projects to provide amenity contributions or below market housing under current market conditions. Therefore, if the City requires a density bonus contributions or below market housing as part of approval, the requirements will need to be modest.

Our analysis tested the impact of a requirement for a bonus density contribution equal to \$10 per square foot of increased permitted density or one below market home ownership unit. These requirements would have a modest impact on the financial performance of the missing middle scenarios that we tested. However, given that the viability of missing middle projects is marginal, these are likely the maximum density bonus or below market housing requirements the City should consider at this time.

6. Projects that involve heritage retention and designation and projects that are 100% market rental should be exempt from any density bonus or below market home ownership requirements.
7. The City should monitor the pace of missing middle development and housing market conditions each year and consider adjustments to any density bonus or below market housing requirements. If the pace

of development is slow, it may be an indication that the density bonus or below market housing requirements are too high. If the pace of development is high, it could be an indication that there is room to increase any requirements.

7.0 Attachments

7.1 Assumptions for Financial Analysis

The key financial assumptions used in our proforma analysis are based on detailed market research that we completed during late 2021 and early 2022. The assumptions are summarized below.

7.1.1 Revenue Assumptions for Financial Analysis

To determine the likely sales prices that are achievable for the missing middle housing scenarios that we tested, we researched and analyzed sales prices for new(er) duplex, townhouse and other attached forms of housing in Victoria. Unit sales prices varied based on a number of key characteristics:

- The location of the unit and quality of the project.
- The size of the unit. Larger units sell at a higher total price point, but sales prices per square foot decline as units increase in size. Therefore, large units achieve comparatively low sales prices per square foot.
- Parking. Units that do not include parking tend to sell at a discount to similar units that include parking. However, this can vary depending on the location and type of the unit. For example, the price of units that are located close to commercial services, amenities and employment areas may be less influenced by parking. Also, the sales price of larger 2 and 3 bedroom units (as are common in the scenarios we tested) would likely be impacted more than smaller units.

The units in the scenarios that we tested range from about 725 square feet to over 2,800 square feet. Based on our market research, we would expect units in this size range to sell between about \$650,000 and \$1,750,000, or between about \$625 and \$900 per square foot. The average unit prices vary by scenario depending on the mix of unit sizes.

Exhibit 5 summarizes the revenue assumptions for each scenario tested before accounting for any impact of the reduced parking in each scenario.

Exhibit 5 – Sales Prices by Scenario (before adjustment for reduced parking)

Scenario	1	2	3	4	5	6	7	8
Concept	2.5 Level Submerged Houseplex on a Smaller Lot	3 Level Houseplex at Grade on a Smaller Lot	2.5 Level Submerged Houseplex on a Larger Lot	3 Level Houseplex at Grade on a Larger Lot	3.5 Level Submerged Houseplex on a Larger Lot	3 Level Townhouse at Grade (24ft Unit Widths)	3 Level Townhouse at Grade (19ft Unit Widths)	3.5 Level Submerged Stacked Townhouse (19ft Unit Widths)
Unit Sizes Range (sf)	726-1,451	726-1,451	960-1,729	960-1,729	905-1,810	936-2,809	749-2,248	749-2,772
Unit Sales Price Range	\$653,000-\$1,088,000	\$653,000-\$1,088,000	\$816,000-\$1,297,000	\$816,000-\$1,297,000	\$769,000-\$1,312,000	\$796,000-\$1,756,000	\$674,000-\$1,630,000	\$674,000-\$1,733,000
Average Sales Price psf	\$817	\$817	\$819	\$819	\$789	\$750	\$795	\$757

Duplex and townhouse units in Victoria are typically sold with at least one parking stall per unit. The scenarios that we tested have a limited number of parking stalls available to the unit purchasers, so we assume that there will be an impact on the achievable prices for units that do not include a parking stall.

To estimate the potential impact on the overall average sales price of selling multiple units in a small project without a parking space, we compared sales data of units with and without parking stalls at multifamily

projects in Victoria. The sales data suggests a potential \$50,000 discount for units that do not include a parking stall. The actual discount will likely vary depending on the specific location of any project and the unit types included in a project (i.e. 1 bedroom versus 3 bedroom).

Our analysis assumes that units that are sold without a parking stall, sell at a \$50,000 discount (on average) in comparison to units that include parking.

7.1.2 Cost Assumptions for Financial Analysis

1. As part of the initial Phase 1 testing in early 2021, Advicas Group (Quantity Surveyors) prepared a rough order of magnitude hard construction cost estimate for various missing middle typologies being tested. We then inflated the initial construction cost estimates for 12 month of construction inflation (to early 2022), based on advice from Advicas Group. The total overall hard costs assumed in our analysis range from \$335 to \$345 per square foot of gross floorspace depending on the scenario. These hard costs include the construction of the building, surface parking stalls, site servicing, landscaping, and contingency. The costs would be higher if the scenarios included garage parking and/or increased parking.
2. Sales commissions are assumed to be 3% of sales revenue.
3. Marketing costs are assumed to total 2% of sales revenue.
4. Development management professional fees and other soft costs (permits, engineering, design, legal, survey, appraisal, accounting, new home warranties, insurance, deficiencies, and other professional fees), contingency and development management total about 16% of hard costs.
5. Development cost charges and property taxes are based on existing bylaws and schedules.
6. Construction financing is charged on 75% of construction costs at 5% per year. In addition, a financing fee equivalent to 1% of financed construction costs is included.
7. Land financing is charged at 5% per year on 75% of the estimated land value. In addition, a financing fee equivalent to 1% of financed land costs is included.
8. Property transfer tax on site acquisition is calculated using the existing property transfer tax rates.

In total, the all-in construction costs, sales commissions, property transfer tax and land financing range between about \$455 and \$465 per square foot depending on the scenario.

7.2 Summary Proformas for Missing Middle Scenarios

Exhibits 6 and 7 provide summaries of the detailed proformas for each of the scenarios that we analyzed. Each summary proforma shows:

- Details about the assumed concept (gross floorspace units, saleable floorspace).
- Estimated revenues from the completed project after allowing for the impact of reduced parking and sales commissions.
- All-in construction costs for the project, including all demolition, servicing, landscaping, hard construction costs, permits, soft costs, DCCs, financing, and property taxes.

- The assumed land acquisition costs and other land related costs (closing costs, transfer taxes, financing). This is based on the current market value of single family building lots.
- The calculated profit before any density bonus contributions or below market housing.
- The revised profit estimate with the assumed density bonus contribution.
- The revised profit estimate with one below market home ownership unit (but not density bonus contribution).

Figures in the summary proformas are rounded so they profit calculations may differ slightly from the figures in the detailed calculations.

Exhibit 6 provides the summary proformas for the houseplex scenarios.

Exhibit 6 – Summary Proformas for Houseplex Scenarios.

Scenario	1	2	3	4	5
Concept	2.5 Level Submerged Houseplex on a Smaller Lot	3 Level Houseplex at Grade on a Smaller Lot	2.5 Level Submerged Houseplex on a Larger Lot	3 Level Houseplex at Grade on a Larger Lot	3.5 Level Submerged Houseplex on a Larger Lot
Site Size (sf)	4,924	4,924	5,909	5,909	5,909
Gross Residential Floorspace (sf)	4,682	4,682	6,087	6,087	7,507
Floorspace Excluded From FSR (sf)	1,561	0	2,029	0	2,029
Net Saleable Floorspace (sf)	4,214	4,214	5,478	5,478	6,381
Assumed Efficiency	90%	90%	90%	90%	85%
Gross Residential Floorspace Divided by Site Size	0.95	0.95	1.03	1.03	1.27
Assumed FSR (Excludes Floorspace Below Grade)	0.63	0.95	0.69	1.03	0.93
Number of Units	4	4	5	5	5
Average Unit Size (sf)	1,054	1,054	1,096	1,096	1,276
Revenues					
Gross Sales Revenue	\$3,443,000	\$3,443,000	\$4,490,000	\$4,490,000	\$5,040,000
Less Parking Discount	\$150,000	\$150,000	\$200,000	\$200,000	\$200,000
Less Sales Commissions	\$99,000	\$99,000	\$129,000	\$129,000	\$145,000
Net Sales Revenue	\$3,194,000	\$3,194,000	\$4,161,000	\$4,161,000	\$4,695,000
Costs					
All In Construction Costs	\$2,012,000	\$2,012,000	\$2,574,000	\$2,574,000	\$3,215,000
Land Acquisition Cost	\$1,050,000	\$1,050,000	\$1,150,000	\$1,150,000	\$1,150,000
Land Closing and Holding Costs	\$86,000	\$86,000	\$95,000	\$95,000	\$95,000
Profit Analysis - Base Case					
Estimated Profit	\$46,000	\$46,000	\$342,000	\$342,000	\$235,000
Estimated Profit on Costs	1.4%	1.4%	8.7%	8.7%	5.1%
Profit Analysis - Impact of CAC					
Calculated CAC at \$10 PSF on Bonus FSR	\$6,588	\$22,198	\$11,033	\$31,323	\$25,233
Revised Estimated Profit	\$39,412	\$23,802	\$330,967	\$310,677	\$209,767
Revised Estimated Profit on Costs	1.2%	0.7%	8.4%	7.8%	4.5%
Profit Analysis - Impact of BMHO Unit					
10% Sales Discount on Smallest Unit	\$60,000	\$60,000	\$77,000	\$77,000	\$72,000
Revised Estimated Profit	-\$14,000	-\$14,000	\$265,000	\$265,000	\$163,000
Revised Estimated Profit on Costs	-0.4%	-0.4%	6.7%	6.7%	3.5%

Exhibit 7 provides the summary proformas for the townhouse scenarios.

Exhibit 7 – Summary Proformas for Townhouse Scenarios.

Scenario	6	7	8
Concept	3 Level Townhouse at Grade (24ft Unit Widths)	3 Level Townhouse at Grade (19ft Unit Widths)	3.5 Level Submerged Stacked Townhouse (19ft Unit Widths)
Site Size (sf)	12,917	12,917	12,917
Gross Residential Floorspace (sf)	13,819	13,819	16,441
Floorspace Excluded From FSR (sf)	0	0	3,656
Net Saleable Floorspace (sf)	13,128	13,128	15,619
Assumed Efficiency	95%	95%	95%
Gross Residential Floorspace Divided by Site Size	1.07	1.07	1.27
Assumed FSR (Excludes Floorspace Below Grade)	1.07	1.07	0.99
Number of Units	9	11	11
Average Unit Size (sf)	1,459	1,193	1,420
Revenues			
Gross Sales Revenue	\$9,854,000	\$10,448,000	\$11,800,000
Less Parking Discount	\$300,000	\$400,000	\$400,000
Less Sales Commissions	\$287,000	\$301,000	\$342,000
Net Sales Revenue	\$9,267,000	\$9,747,000	\$11,058,000
Costs			
All In Construction Costs	\$5,876,000	\$5,887,000	\$6,913,000
Land Acquisition Cost	\$2,450,000	\$2,450,000	\$2,450,000
Land Closing and Holding Costs	\$227,000	\$227,000	\$227,000
Profit Analysis - Base Case			
Estimated Profit	\$714,000	\$1,183,000	\$1,468,000
Estimated Profit on Costs	8.1%	13.3%	14.8%
Profit Analysis - Impact of CAC			
Calculated CAC at \$10 PSF on Bonus FSR	\$73,607	\$73,607	\$63,268
Revised Estimated Profit	\$640,393	\$1,109,393	\$1,404,732
Revised Estimated Profit on Costs	7.2%	12.4%	14.1%
Profit Analysis - Impact of BMHO Unit			
10% Sales Discount on Smallest Unit	\$75,000	\$62,000	\$62,000
Revised Estimated Profit	\$639,000	\$1,121,000	\$1,406,000
Revised Estimated Profit on Costs	7.2%	12.6%	14.2%

7.3 Summary Memo from Phase 1 Analysis

The May 2021 draft memo summarizing our initial Phase 1 analysis is attached.

MEMORANDUM

DATE: 14 May 2021

TO: Malcolm MacLean, City of Victoria

FROM: Blair Erb, Coriolis Consulting Corp.

RE: Summary of Preliminary Financial Analysis for: Missing Middle Housing Typologies and Heritage Conversions

1.0 Introduction

Missing middle housing includes ground-oriented forms of housing such as duplexes, triplexes, houseplexes, townhouses and other forms of attached housing. These infill housing forms can often be introduced into existing single family neighbourhoods without impacts on neighbourhood character and can provide a variety of significant benefits, including housing options that are more affordable than single detached houses, options for existing neighbourhood residents to downsize (freeing up existing housing stock), more efficient use of land and infrastructure, reduction in energy use, improved public realm, and more walkable urban areas.

The City of Victoria land use policies and bylaws already allow some of these forms of housing in some locations in the City⁵. However, the pace of missing middle housing development has been slow in Victoria in comparison to other forms of housing.

Therefore, the City of Victoria has undertaken a city-wide planning process to:

- Identify suitable locations for missing middle forms of housing.
- Engage with the community to help shape the framework.
- Evaluate opportunities to secure public benefits, rental housing and/or affordable housing from new missing middle projects, or certain types of missing middle projects.
- Consider policy and/or bylaw changes that would allow these forms of housing to proceed without Council approval for each project.

As input to the process, the City retained Coriolis Consulting Corp. to:

1. Analyze the financial viability of different types of missing middle housing in different parts of the City to identify the circumstances in which missing middle housing is viable, taking into account different factors such as typology, density, location, existing use and existing zoning.
2. Identify the type of missing middle projects that have the financial ability to provide public benefits.
3. Evaluate the financial performance of retaining, renovating and converting existing heritage homes into multi-unit dwellings (heritage conversion).
4. Determine the financial ability of new projects to include rental or affordable housing units and, if rental and/or affordable units are viable, help determine the level of affordability that can be achieved.
5. Work with staff to test the ideas and strategies that emerge from the engagement process.

⁵ The Traditional Residential OCP designation allows attached forms of housing up to 1.0 FSR (in 2 storeys).

6. Evaluate the draft recommendations and policies in terms of financial viability, potential land value impacts, opportunities for public benefits and/or affordable housing, and other desired outcomes.

Our work is being completed in steps to match the City's overall planning process. We have completed preliminary financial analysis for items 1 to 4 above. This document provides a brief summary of the key findings for these tasks.

Following the planned engagement process, we will refine our financial analysis, complete tasks 5 and 6, and document our findings in a full report.

2.0 Typologies Evaluated

The City identified six different types of missing middle housing options to evaluate as part of our financial analysis:

1. Smaller 2 1/2 storey houseplex on a smaller single family lot. This typology is assumed to achieve a gross floorspace to lot area ratio of 0.8. Parking would be provided in a single car enclosed garage. Any additional parking would be provided at surface.
2. Larger 3 storey houseplex on a smaller single family lot. This typology is assumed to achieve a gross floorspace to lot area ratio of 0.88. Parking would be provided in a single car enclosed garage. Any additional parking would be provided at surface.
3. Smaller 2 1/2 storey houseplex on a larger single family lot. This typology is assumed to achieve a gross floorspace to lot area ratio of 0.87. Parking would be provided in a single car enclosed garage. Any additional parking would be provided at surface.
4. Larger 3 storey houseplex on a larger single family lot. This typology is assumed to achieve a gross floorspace to lot area ratio of 0.97. Parking would be provided in a single car enclosed garage. Any additional parking would be provided at surface.
5. Townhouse on an assembly of two single family lots. This typology is assumed to achieve a gross floorspace to lot area ratio of 1.07. Parking would be provided at surface.
6. 3 storey transitional apartment on an assembly of two single family lots. This typology is assumed to achieve a gross floorspace to lot area ratio of 1.15. Parking would be provided for about half of the units under the building in a tuck under parking area. Any additional parking would be provided at surface.

In addition, the City identified scenarios to test for potential conversion of heritage houses into multiple dwellings. We analyzed the financial performance of renovating and converting a hypothetical existing heritage house into multiple strata units (heritage conversion) and allowing new infill units on the lot in addition the existing renovated heritage house.

3.0 Approach to Financial Analysis

We created proformas to test the likely financial performance of each of the typologies identified by the City. Each proforma, compares the estimated overall value of the completed project with the estimated costs to create the new housing units⁶. We used the models to:

⁶ Our analysis focused on testing the viability of strata residential development for each typology. We also tested some rental scenarios, but our analysis indicated that rental housing development is not financially viable at the densities that we were asked to assume. Our analysis also assumes that sites are rezoned in advance by the City to allow the various typologies.

- Estimate the land value supported by the typology and compared this with the existing value of the property as an older single family home.
- Estimate the potential profit that could be generated by each typology assuming the builder/developer acquired the lot at its current market value as an older single family home⁷.
- Determine whether a typology will likely be financially viable.
- Evaluate whether a typology creates increased lot value (beyond existing single family value) and is therefore able to provide amenity contributions and/or affordable housing.

We completed the financial analysis for each of the missing middle typologies in three different locations that span the range of market conditions and property values in the City, including:

- A higher value market area. This includes neighbourhoods such as Fairfield, Gonzales, and James Bay.
- A middle value market area. This includes neighbourhoods, such as Fernwood, Vic West, and Jubilee.
- A lower value market area. This includes neighbourhoods such as Hillside-Quadra and Burnside.

This allowed us to determine whether the financial viability of each typology would likely vary across different parts of the City due to differences in existing property values and due to differences in the likely market value of new missing middle units in different locations.

4.0 Summary of Results for Missing Middle Typologies

Attachments 1 to 6 summarize the results of our preliminary financial analysis for the six missing middle typologies. There are two attachments for each of the three different market areas (six in total):

- The first attachment for each market area assumes that each of the new missing middle units are provided with one parking stall (either at grade, in a garage, or in a tuck under parking area). This may not be physically achievable, so it could be optimistic.
- The second attachment for each market area assumes that parking is only provided for a limited number of units (the assumed amount of parking varies depending on the typology and the architectural concepts provided to us by the City for the analysis).

For each typology, the attachments show:

- The assumed lot size.
- The assumed total project size (floorspace and units).
- The estimated lot value in dollars per square foot of lot area supported by the typology.
- The assumed lot acquisition cost in dollars per square foot of lot area (this is the value of older single family homes in the neighbourhood that are likely redevelopment candidates).
- Whether or not the typology is likely financially viable for builders and developers.
- The potential increase in lot value per new unit⁸.
- The estimated profit margin as a percentage of total project costs.

The key findings of the preliminary analysis for the six missing middle typologies are as follows:

⁷ For typologies that require assembly, we assume that the builder needs to pay a 20% premium to existing homeowners to create a financial incentive to sell both adjacent lots simultaneously for redevelopment.

⁸ This is an indicator of the ability of a typology to provide amenity contributions and/or affordable housing.

1. The financial performance of each typology varies depending on the market area/locations. The missing middle typologies perform better (from a financial perspective) in the higher value market areas than in the middle and lower value market areas. Therefore, in the short term, we would expect interest in the missing middle housing forms to be focused in higher value single family neighbourhoods such as Fairfield, James Bay, and Gonzales. Over time, as market conditions change, we would expect interest in missing middle typologies to increase throughout the City.
2. The amount of parking that can be provided on site will likely affect the financial viability of the missing middle typologies. We would expect the marketability of units to be negatively affected if units do not come with a parking stall. However, this is likely location dependent. For example, a project that is close to existing commercial services and amenities may not need to provide as much parking as a project that is removed from commercial services and amenities.
3. With exception of the townhouse typology in the higher value market area, the typologies we tested do not generate any estimated increase in lot value beyond current single family property value. Therefore, the typologies tested create little or no financial room for amenity contributions and/or affordable housing.
4. The estimated achievable profit for most of the typologies is very low (typically less than 10%) so the financial viability of most typologies is likely marginal. There are two exceptions which can achieve higher profit margins:
 - The large houseplex typology in the middle and higher value locations, assuming sufficient parking can be provided.
 - The townhouse typology in the middle and higher value locations, assuming sufficient parking can be provided.
5. Overall, a gross floorspace to lot area ratio of about 1.0 is likely required to make the missing middle typologies typologies financially attractive at the single family lot sizes that we tested⁹. Even at this density, the financial viability of each typology will likely depend on the amount of parking that can be provided and the location of the project.

5.0 Summary of Results for Heritage Conversion

Attachment 7 summarizes the results of our preliminary financial analysis for the heritage renovation and conversion scenarios that we analyzed. We analyzed three density scenarios:

- A scenario that assumes the existing heritage home is converted into small strata units.
- A scenario that assumes the existing heritage home is converted into multiple units plus an additional 0.2 x the lot area of new infill housing is constructed on the lot (the small infill scenario).
- A scenario that assumes the existing heritage home is converted into multiple units plus an additional 0.35 x the lot area of new infill housing is constructed on the lot (the large infill scenario).

Based on interviews with builders in Victoria who are actively involved in heritage projects, the cost associated with a heritage conversion can vary significantly from project to project. Therefore, for each of the three

⁹ We tested the missing middle typologies on lots in the range of about 4,900 square feet to 6,000 square feet. Lower densities would likely be financially attractive at single family lots that are larger than the lot sizes that we tested because the market value of a single family lot (per square foot of lot area) typically declines as the lot size increases.

density scenarios, we analyze a lower and a higher renovation cost scenario for the heritage conversion. So, Attachment 7 includes a total of six different scenarios (three density scenarios with two cost assumptions for each).

For each scenario, Attachment 7 shows:

- The assumed lot size.
- The assumed total project size (floorspace, units, infill space).
- The estimated lot value in dollars per square foot of lot area supported by the typology.
- The assumed lot acquisition cost in dollars per square foot of lot area (this is the existing value of the older heritage house).
- Whether or not the typology is likely financially viable for builders and developers.
- The estimated profit margin as a percentage of total project costs.

The key findings of the heritage analysis are as follows:

1. Renovation and conversion of most existing heritage homes is unlikely to be financially viable in the absence of additional infill housing on the lot. The exception would be existing heritage homes that involve relatively low costs to renovate and convert.
2. Permitting infill housing on-site can significantly improve the viability of heritage retention. However, even with infill housing, the viability of heritage retention will likely be marginal. In addition, the financial viability will vary from property to property depending on the cost to renovate and convert the existing home to multiple units.
3. The greater the infill density permitted on the lot, the higher the likelihood that heritage conversion will be financially attractive.

6.0 Key Planning Implications

The key implications of our preliminary analysis are as follows:

1. The City is has numerous locations zoned for apartment development and a wide range of locations zoned for single family housing. However, there are few locations zoned for attached forms of housing. Missing middle housing would create opportunities for new types of housing that are generally not available in existing single family neighbourhoods in the City. This could:
 - Increase the housing choice for residents.
 - Create opportunities for younger families to purchase a ground-oriented home in the City at a lower cost than a single family home.
 - Create opportunities for existing single family owners to downsize within their own neighbourhood.
 - Creates flexibility for homeowners to accommodate family members through redevelopment.
2. The financial viability of missing middle housing development is marginal in most locations in the City, so if permitted, we would expect the pace of missing middle development to be modest for the foreseeable future.
3. To help make missing middle development financially attractive to builders and developers, the City should consider the following:

- Maximize the achievable density for missing middle housing forms (while still achieving the City's urban design objectives). Our analysis indicates that heights of 3 storeys and gross floorspace to lot area ratios of about 1.0 are likely required to make the typologies we tested financially viable.
 - Allow a significant number of units per lot (say four to five units per lot) to help keep the average unit sizes modest. Smaller unit sizes will keep the total unit price more affordable than larger units allowing the new units to appeal to a broader range of buyers.
 - Allow flexibility about the amount of off-street parking¹⁰. Projects that are close to existing commercial services and amenities may not need to provide as much parking as projects that are removed from commercial services and amenities.
 - In locations where the City wants to encourage missing middle housing, rezone properties in advance so that builders do not need to go through the cost and uncertainty associated with rezoning.
4. Because the financial viability of missing middle housing is marginal, there is little or no room for missing middle project to provide amenity contributions, rental housing, or affordable housing.
 5. The cost of retaining, renovating and converting an existing heritage home into multiple units will vary from property to property. However, unless costs are low, heritage conversion is unlikely to be financially viable in the absence of additional infill units on the lot. Even with infill housing, the financial viability of heritage retention and conversion is likely to be marginal. Therefore, the City should examine opportunities to allow a significant amount of infill housing on a lot as part of a heritage conversion.

¹⁰ We tested the financial viability of missing middle housing with underground parking. However, due to the additional cost associated with underground parking, these forms of missing middle housing are unlikely to be financially viable.

7.0 Attachments

Exhibit 1							
Missing Middle Financial Analysis - Higher Value Areas with One Parking Stall per Unit							
Strata/Ownership Scenarios							
Typology ¹	1	2	3	4	5	6	
	Smaller Lot Houseplex 2.5 Storeys	Smaller Lot Houseplex 3 Storeys	Larger Lot Houseplex 2.5 Storeys	Larger Lot Houseplex 3 Storeys	Townhouse	Transitional Apartment	
Site Size (sf)	4,924	4,924	5,909	5,909	12,917	12,917	
Residential Floorspace Divided by Site Size	0.80	0.88	0.87	0.97	1.07	1.15	
Number of Units	3	4	4	5	10	13	
Average Unit Size (sf)	1,227	1,018	1,211	1,079	1,382	931	
Assembly Required	No	No	No	No	Yes	Yes	
Estimated Supportable Land Value (\$ PSF of Site Area)	\$113	\$127	\$129	\$146	\$204	\$134	
Assumed Land Acquisition	Higher Cost	\$165	\$165	\$165	\$165	\$198	\$198
Cost (\$ PSF of Site Area) ²	Lower Cost	\$150	\$150	\$150	\$150	\$180	\$180
Viable?	No	Possibly	Possibly	Possibly	Yes	No	
Calculated Increase in Land Value per Unit ³	n/a	n/a	n/a	n/a	\$7,750	n/a	
Estimated Profit ^{4,5}	2% to 5%	6% to 10%	7% to 10%	11% to 14%	15% to 20%	3% to 6%	
¹ All scenarios are assumed to include at least one parking stall per unit.							
² Assembling 2 lots is assumed to result in a 20% assembly premium, increasing the cost of acquiring land.							
³ Increase in land value is calculated on the higher end of the assumed land acquisition cost.							
⁴ Assumes no CAC/bonus density contribution.							
⁵ Assumes sites acquired based on current value.							

Exhibit 2							
Missing Middle Financial Analysis - Higher Value Areas With Parking as Indicated in Architectural Testing							
Strata/Ownership Scenarios							
Typology ¹	1	2	3	4	5	6	
	Smaller Lot Houseplex 2.5 Storeys	Smaller Lot Houseplex 3 Storeys	Larger Lot Houseplex 2.5 Storeys	Larger Lot Houseplex 3 Storeys	Townhouse	Transitional Apartment	
Site Size (sf)	4,924	4,924	5,909	5,909	12,917	12,917	
Residential Floorspace Divided by Site Size	0.80	0.88	0.87	0.97	1.07	1.15	
Number of Units	3	4	4	5	10	13	
Average Unit Size (sf)	1,227	1,018	1,211	1,079	1,382	931	
Assembly Required	No	No	No	No	Yes	Yes	
Estimated Supportable Land Value (\$ PSF of Site Area)	\$91	\$94	\$102	\$110	\$171	\$107	
Assumed Land Acquisition Cost (\$ PSF of Site Area) ²	Higher Cost	\$165	\$165	\$165	\$165	\$198	\$198
	Lower Cost	\$150	\$150	\$150	\$150	\$180	\$180
Viable?	No	No	No	Possibly	Possibly	No	
Calculated Increase in Land Value per Unit ³	n/a	n/a	n/a	n/a	n/a	n/a	
Estimated Profit ^{4,5,6}	Negative to 0%	0% to 2%	1% to 3%	3% to 6%	9% to 13%	Negative to 1%	

¹Houseplex Sites have 1 off street parking stall, townhouse has 2 off street parking stalls and the transitional apartment has 6 off street parking stalls.
²Assembling 2 lots is assumed to result in a 20% assembly premium, increasing the cost of acquiring land.
³Increase in land value is calculated on the higher end of the assumed land acquisition cost.
⁴Assumes no CAC/bonus density contribution.
⁵Assumes sites acquired based on current value.
⁶Assumes units without parking sell at a \$75,000 discount (this is a rough allowance based on limited existing market evidence).

Exhibit 3							
Missing Middle Financial Analysis - Medium Value Areas with One Parking Stall per Unit							
Strata/Ownership Scenarios							
Typology ¹	1	2	3	4	5	6	
	Smaller Lot Houseplex 2.5 Storeys	Smaller Lot Houseplex 3 Storeys	Larger Lot Houseplex 2.5 Storeys	Larger Lot Houseplex 3 Storeys	Townhouse	Transitional Apartment	
Site Size (sf)	4,924	4,924	5,909	5,909	12,917	12,917	
Residential Floorspace Divided by Site Size	0.80	0.88	0.87	0.97	1.07	1.15	
Number of Units	3	4	4	5	10	13	
Average Unit Size (sf)	1,227	1,018	1,211	1,079	1,382	931	
Assembly Required	No	No	No	No	Yes	Yes	
Estimated Supportable Land Value (\$ PSF of Site Area)	\$84	\$96	\$98	\$112	\$163	\$99	
Assumed Land Acquisition Cost (\$ PSF of Site Area) ²	Higher Cost	\$145	\$145	\$145	\$145	\$174	\$174
	Lower Cost	\$130	\$130	\$130	\$130	\$156	\$156
Viable?	No	Possibly	Possibly	Possibly	Yes	No	
Calculated Increase in Land Value per Unit ³	n/a	n/a	n/a	n/a	n/a	n/a	
Estimated Profit ^{4,5}	0% to 3%	3% to 6%	4% to 7%	8% to 11%	13% to 15%	1% to 4%	

¹All scenarios are assumed to include at least one parking stall per unit.
²Assembling 2 lots is assumed to result in a 20% assembly premium, increasing the cost of acquiring land.
³Increase in land value is calculated on the higher end of the assumed land acquisition cost.
⁴Assumes no CAC/bonus density contribution.
⁵Assumes sites acquired based on current value.

Exhibit 4							
Missing Middle Financial Analysis - Medium Value Areas With Parking as Indicated in Architectural Testing							
Strata/Ownership Scenarios							
Typology ¹	1	2	3	4	5	6	
	Smaller Lot Houseplex 2.5 Storeys	Smaller Lot Houseplex 3 Storeys	Larger Lot Houseplex 2.5 Storeys	Larger Lot Houseplex 3 Storeys	Townhouse	Transitional Apartment	
Site Size (sf)	4,924	4,924	5,909	5,909	12,917	12,917	
Residential Floorspace Divided by Site Size	0.80	0.88	0.87	0.97	1.07	1.15	
Number of Units	3	4	4	5	10	13	
Average Unit Size (sf)	1,227	1,018	1,211	1,079	1,382	931	
Assembly Required	No	No	No	No	Yes	Yes	
Estimated Supportable Land Value (\$ PSF of Site Area)	\$63	\$63	\$71	\$75	\$131	\$72	
Assumed Land Acquisition Cost (\$ PSF of Site Area) ²	Higher Cost	\$145	\$145	\$145	\$145	\$174	\$174
	Lower Cost	\$130	\$130	\$130	\$130	\$156	\$156
Viable?	No	No	No	No	Possibly	No	
Calculated Increase in Land Value per Unit ³	n/a	n/a	n/a	n/a	n/a	n/a	
Estimated Profit ^{4,5,6}	Negative	Negative	Negative to 0%	Negative to 2%	6% to 10%	Negative	
¹ Houseplex Sites have 1 off street parking stall. townhouse has 2 off street parking stalls and the transitional apartment has 6 off street parking stalls.							
² Assembling 2 lots is assumed to result in a 20% assembly premium, increasing the cost of acquiring land.							
³ Increase in land value is calculated on the higher end of the assumed land acquisition cost.							
⁴ Assumes no CAC/bonus density contribution.							
⁵ Assumes sites acquired based on current value.							
⁶ Assumes units without parking sell at a \$75,000 discount (this is a rough allowance based on limited existing market evidence).							

Exhibit 5							
Missing Middle Financial Analysis - Lower Value Areas with One Parking Stall per Unit							
Strata/Ownership Scenarios							
Typology ¹	1	2	3	4	5	6	
	Smaller Lot Houseplex 2.5 Storeys	Smaller Lot Houseplex 3 Storeys	Larger Lot Houseplex 2.5 Storeys	Larger Lot Houseplex 3 Storeys	Townhouse	Transitional Apartment	
Site Size (sf)	4,924	4,924	5,909	5,909	12,917	12,917	
Residential Floorspace Divided by Site Size	0.80	0.88	0.87	0.97	1.07	1.15	
Number of Units	3	4	4	5	10	13	
Average Unit Size (sf)	1,227	1,018	1,211	1,079	1,382	931	
Assembly Required	No	No	No	No	Yes	Yes	
Estimated Supportable Land Value (\$ PSF of Site Area)	\$28	\$33	\$36	\$42	\$83	\$29	
Assumed Land Acquisition Cost (\$ PSF of Site Area) ²	Higher Cost	\$140	\$140	\$140	\$140	\$168	\$168
	Lower Cost	\$125	\$125	\$125	\$125	\$150	\$150
Viable?	No	No	No	No	No	No	
Calculated Increase in Land Value per Unit ³	n/a	n/a	n/a	n/a	n/a	n/a	
Estimated Profit ^{4,5}	Negative	Negative	Negative	Negative	Negative to 1%	Negative	
¹ All scenarios are assumed to include at least one parking stall per unit.							
² Assembling 2 lots is assumed to result in a 20% assembly premium, increasing the cost of acquiring land.							
³ Increase in land value is calculated on the higher end of the assumed land acquisition cost.							
⁴ Assumes no CAC/bonus density contribution.							
⁵ Assumes sites acquired based on current value.							

Exhibit 6							
Missing Middle Financial Analysis - Lower Value Areas With Parking as Indicated in Architectural Testing							
Strata/Ownership Scenarios							
Typology ¹	1	2	3	4	5	6	
	Smaller Lot Houseplex 2.5 Storeys	Smaller Lot Houseplex 3 Storeys	Larger Lot Houseplex 2.5 Storeys	Larger Lot Houseplex 3 Storeys	Townhouse	Transitional Apartment	
Site Size (sf)	4,924	4,924	5,909	5,909	12,917	12,917	
Residential Floorspace Divided by Site Size	0.80	0.88	0.87	0.97	1.07	1.15	
Number of Units	3	4	4	5	10	13	
Average Unit Size (sf)	1,227	1,018	1,211	1,079	1,382	931	
Assembly Required	No	No	No	No	Yes	Yes	
Estimated Supportable Land Value (\$ PSF of Site Area)	\$6	\$0	\$9	\$6	\$50	\$1	
Assumed Land Acquisition Cost (\$ PSF of Site Area) ²	Higher Cost	\$145	\$145	\$145	\$145	\$174	\$174
	Lower Cost	\$130	\$130	\$130	\$130	\$156	\$156
Viability?	No	No	No	No	No	No	
Calculated Increase in Land Value per Unit ³	n/a	n/a	n/a	n/a	n/a	n/a	
Estimated Profit ^{4,5,6}	Negative	Negative	Negative	Negative	Negative	Negative	

¹Houseplex Sites have 1 off street parking stall, townhouse has 2 off street parking stalls and the transitional apartment has 6 off street parking stalls.

²Assembling 2 lots is assumed to result in a 20% assembly premium, increasing the cost of acquiring land.

³Increase in land value is calculated on the higher end of the assumed land acquisition cost.

⁴Assumes no CAC/bonus density contribution.

⁵Assumes sites acquired based on current value.

⁶Assumes units without parking sell at a \$75,000 discount (this is a rough allowance based on limited existing market evidence).

Exhibit 7						
Heritage Restoration Scenarios with One Parking Stall per Unit						
Strata/Ownership Scenarios						
Scenario ¹	1a	1b	2a	2b	3a	3b
Cost Scenario	Lower	Higher	Lower	Higher	Lower	Higher
	Heritage Conversion	Heritage Conversion	Heritage Conversion with Smaller Infill	Heritage Conversion with Smaller Infill	Heritage Conversion with Larger Infill	Heritage Conversion with Larger Infill
Site Size (sf)	5,974	5,974	5,974	5,974	5,974	5,974
Residential Floorspace Divided by Site Size	0.71	0.71	0.91	0.91	1.06	1.06
Number of Heritage Conversion Units	6	6	6	6	6	6
Number of Infill Units	None	None	2	2	3	3
Average Heritage Conversion Unit Size (sf)	633	633	633	633	633	633
Average Infill Unit Size (sf)	n/a	n/a	568	568	662	662
Assumed Land Acquisition Cost (\$ PSF of Site Area) ²	Higher Cost	\$165	\$165	\$165	\$165	\$165
	Lower Cost	\$150	\$150	\$150	\$150	\$150
Viability?	No	No	Possibly	No	Possibly	Possibly
Estimated Profit ^{2,3}	Negative	Negative	4% to 8%	Negative	11% to 14%	1% to 4%

¹All scenarios are assumed to include at least one parking stall per unit.

²Assumes no CAC/bonus density contribution.

³Assumes sites acquired based on current value.