Attachment C- Cost Analysis MPDUs for Public Benefit Points

MPDU Cost Analysis

Intro

MPDUs are one of most important public benefits from a policy priority perspective and one of the most common public benefits included for points in optional method projects. Whether in the incentive zones or not, MPDUs can receive outsized attention within development review, both in negotiations and as a matter of policy. Stakeholders in the development community and public agencies supporting this study have also indicated that MPDUs are perceived to be one of, if not the most, expensive public benefits in the menu. Given their significance and some complexities in isolating their cost impact, this analysis utilizes a comprehensive approach to understand the full scope of cost, and revenue, implications of including MPDUs in optional method projects for points.

MPDUs require a specialized approach for estimating their costs and feasibility impacts because pro formas do not typically distinguish between market rate units and MPDUs when evaluating construction costs and revenues. One of the reasons to use a specialized approach is MPDUs generate revenue through rent. Typically, MPDU rents in new construction range are affordable to households earning between 60 and 70 percent of the Area Median Income (AMI). Therefore, this analysis identifies the feasibility impacts of MPDUs as opposed to the cost alone, because the true 'cost' must account for revenues as well.

Another reason MPDUs require a specialized approach is to account for the range of feasibility impacts across building types. High-rise concrete buildings have different costs than mid-rise apartment buildings constructed primarily with wood, and both have different costs compared to townhomes and single-family detached units, which are generally larger than apartments.

Finally, there are incentives outside of the point system and the incentive zones for developers to provide additional MPDUs above the minimum required 12.5 percent of total dwelling units. These incentives include height and density bonuses, an impact fee waiver, a Payment In Lieu of Taxes (PILOT) policy for development on WMATA-owned property. For projects within the incentive zones, providing 20% MPDUs or more eliminates the requirement to provide any other public benefits. These incentives all affect the underlying economics of a project, and therefore change the feasibility impacts of MPDUs. This study navigates these nuances with a rigorous and comprehensive approach to pro forma modeling comparing costs and revenue of projects with different levels of MPDUs across building types.

This analysis is part of the incentive zoning update and specifically, the public benefit cost exercise as part of evaluating the feasibility impacts of providing public benefits. This analysis focuses on the incremental cost of providing MPDUs for points in the incentive zones. For example, if the minimum required number of MPDUs is 20 and the project provides 25 MPDUs, only five of the 25 MPDUs would be worth points, and the cumulative feasibility impacts of those five units would be the cost of the public benefit. Furthermore, this analysis does not test the feasibility of providing single-family detached MPDUs as this is not a form of development that occurs in the incentive zones.

This analysis does not estimate the effects of the minimum MPDU requirement on housing production in the County. Nonetheless, it is important to note that this analysis does not question the merits of the MPDU program. Montgomery County has one of the oldest and most significant inclusionary zoning policies in the country. Minimum MPDU requirements and incentives for additional MPDUs exist not only to generate a supply of affordable housing but also to create mixed-income communities.

Methodology

This analysis utilizes static pro forma models to answer the question: "how do additional MPDUs and applicable incentives change the feasibility of the same project with the minimum required MPDUs and no incentives?". The models test three unique building prototypes with 12.5 percent MPDUs, 15 percent MPDUs, and 25 percent MPDUs[1]. The analysis isolates the total development costs and market value for the MPDUs. The difference in costs and revenues for the MPDUs, which leads to either a feasibility surplus or gap, is the feasibility impact per MPDU. In each model with MPDUs worth points, this impact per unit is multiplied by the number of MPDUs worth points to obtain a cumulative impact of the public benefit.

There are models for three prototypical developments:

- Concrete high-rise on an urban 0.75-acre site
- Five-story wood building over a concrete podium ("Five-Over-One") on a suburban three-acre site
- Townhomes on a suburban 25-acre site

The dimensions of each prototype are based on real example of optional method projects in Montgomery County. The variation in building types also reflects variations in market conditions and land values, so assumptions regarding rents, sale prices, and site acquisition costs differ in each prototype. Each prototype is modified to account for density or height bonuses, as applicable, for including more MPDUs. This means the prototypes with 15 and 25 percent MPDUs are generally either larger or taller than the prototypes with 12.5 MPDUs.

This analysis utilizes static pro forma models, where feasibility is calculated by subtracting total development costs form the market value of the project. In rental products, the market value (or capitalized market value) of the project is determined by dividing the net operating income by a conservative cap rate of five percent. In the for-sale products, the market value is the cumulative sales revenue of the project minus marketing costs.

This analysis uses static pro forma models in place of traditional cash flow models. To be conservative, for each prototype, the model with 12.5 percent MPDUs is designed to be *marginally feasible*, meaning the development costs are outweighed by the project's value, but the gap between the two slightly below what developers and lenders are generally comfortable with. Cash flow models require more detailed project assumptions, but since the analysis assumes marginal feasibility, the additional assumptions and variables in cash flow models that do not exist in simple static pro formas would have

[1] Models do not test MPDU thresholds higher than 25 percent because there are no additional incentives for providing more than 25 percent MPDUs. However, providing more than 25 percent MPDU may make a project eligible for outside funding. This is not tested.

to be tweaked to ensure marginal feasibility. Static pro formas also allow for a direct comparison of a project's value to the cost of providing MPDUs in cumulative, overall terms.

A project would be feasible if the yield-on-cost (YOC) is 1.2 percentage points above the cap rate. With a cap rate of five percent, a feasible project would generate a YOC of 6.2 percent. A Marginally feasible project would have a YOC between 5.75 percent and 6 percent. These yields that developers and lender may consider enough to proceed with a project, but the project would be risky. A YOC above 6.2 percent would move forward.

The glossary of terms and assumptions below clarify details on the methodology and establish the variables utilized in this analysis.

Glossary of Terms and Assumptions

Total Development Costs

Total development costs represent 'all-in' costs to build a project, including predevelopment, construction, and financing costs. Assumptions regarding components of the all-in costs were confirmed by Hayat Brown, the consultant for this study. Pro formas are designed to isolate total development costs for market rate portion of the project and the MPDUs.

Costs per Door

Costs per door is total development costs divided by the total number of units. While assumptions regarding cost components were utilized in this analysis, the accuracy of the pro forma results were confirmed through the costs per door. Hayat Brown provided the research the confirm the cost per door estimates. Stakeholders from the development community the Technical Working Group for this study also verified the estimates.

Net Operating Income (NOI)

Net Operating Income is the total annual revenue a project will generate based on assumptions of rent minus operating expenses and rent lost through vacant units.

Capitalization Rate (Cap Rate)

A cap rate is the ratio of NOI to a project's sale price (i.e., NOI divided by the sale price of a building). When a rental development project is sold, the buyer is purchasing a revenue-generating asset and the sale price is effectively the value of the NOI. NOI varies from project to project, so real estate professional track cap rates as away to compare projects to each other. The cap rate also helps estimate the market value of a rental development project and its NOI before it is sold. Rearranging the formula, pro formas in this analysis estimate the prototype's market value by dividing the NOI by a cap rate. The lower the cap rate, the more valuable a project. This analysis assumes a five percent cap rate, which is a relatively conservative assumption in the Montgomery County for new developments.

Yield-On-Cost (YOC)

Yield-on-cost is a financial feasibility metric measuring the ratio of NOI to total development costs (i.e., NOI divided by total development costs). Developers and lenders typically desire a YOC to exceed the assumed cap rate by 1.0 to 1.2 percentage points (or 100 to 120 basis points). Therefore, if a pro forma assumes a five percent cap rate, the required YOC for the project to be considered feasible would be between 6.0 and 6.2 percent. Therefore, for a project to be feasible, not only must the market value of the project exceed the total development costs, but it must exceed it with a buffer to account for risk.

Return-On-Investment (ROI)
Return-on-investment is a financial feasibility metric comparing sales revenue to total development costs. ROI is utilized for measuring the feasibility of for sale products. This analysis assumes a conservative ROI of 20 percent.

Marginal Feasibility
To be conservative, this analysis designs pro formas where total development costs and revenues lead to marginally feasible project, meaning a developer could make the project pencil with the minimum required MPDUs, but it would be risky to do so. As this analysis assumes a five percent cap rate, the required YOC for a feasible project is 6.2 percent. A marginally feasible project would have a YOC ranging from 5.5 percent to 6.2 percent, and this analysis designs pro formas with the minimum required MPDUs to achieve a YOC in this range. If a project is infeasible with the minimum required MPDUs where the MPDUs are not worth points, a project will not seek to add more MPDUs for points.

Static Pro Forma
A static pro forma is a high-level pro forma that does not include a cash flow analysis and is not typically utilized by developers for real-world projects. Real projects will generate annual revenue and annual costs and real projects typically need to generate more revenues annually than the debt service payments on the loans to construct the project. In fact, most pro formas do not estimate the overall, cumulative market value of a project because they are primarily concerned with the project generating a positive cash flow.

A static pro forma does not account for annual cash flows and instead compares cumulative market value, determined by dividing the NOI by the cap rate, to the total development cost. A static pro forma is appropriate in this exercise because the cumulative values are necessary to compare to the cumulative costs of public benefits to assess the balance between incentive density and the point system. Furthermore, as this analysis assumes marginal feasibility, a cash flow analysis would also be designed to be marginally feasible. That is, this project does not analyze projects that could generate a negative cash flow, because such projects would not add more MPDUs for points.

Feasibility Impact
Since MPDUs generate development costs and rental revenue, the overall effect on a developer pro forma is the feasibility impact, or the difference between development costs and revenues for the affordable units. Feasibility impacts are calculated on a 'per door' (i.e., per unit) basis MPDUs, while the cumulative feasibility impact is that per door value multiplied by the number of MPDUs worth public benefit points. Feasibility impacts are described as either a feasibility surplus or feasibility gap. A feasibility surplus implies market value exceeds development costs, where a feasibility gap implies costs exceed market value.

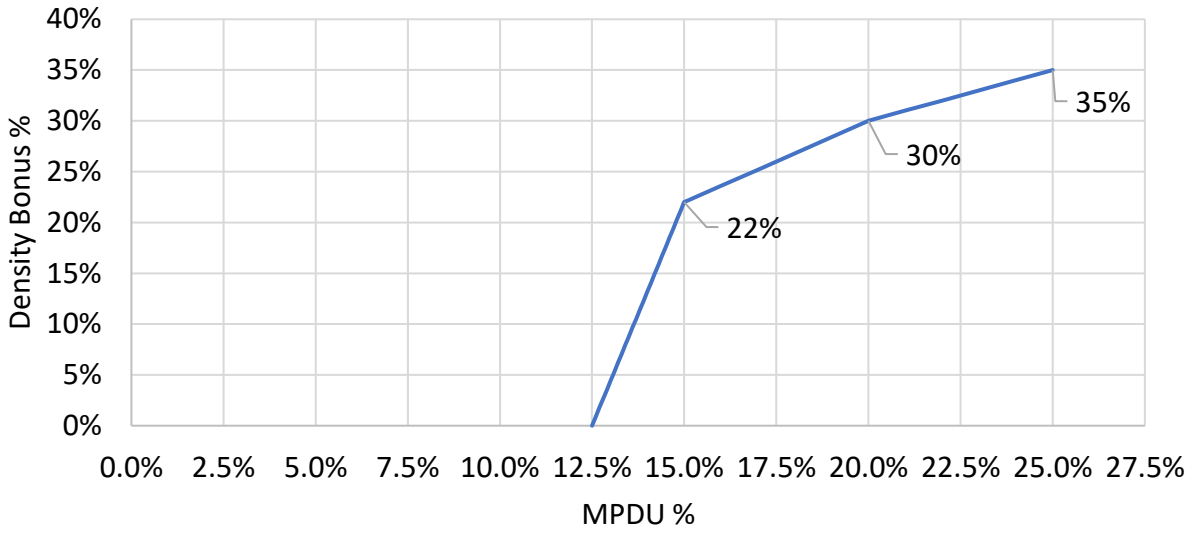
Affordable Housing Incentives
Independent of the points system, there are development incentives for providing additional MPDUs that affect the underlying economics of a project, and therefore change the feasibility impacts of MPDUs. This analysis tests the impacts of three incentive policies: the density bonus, the height bonus, and the impact fee reduction/waiver.

Density Bonus
Projects may receive incremental density bonuses up to 35 percent, for including up to 25 percent

MPDUs. For providing 15 percent MPDUs, a project can receive a 22 percent density bonus, meaning 2.5 percent additional MPDUs leads to a 22 percent density bonus. Providing 20 percent MPDUs leads to a 30 percent density bonus, and providing 25 percent MPDUs leads to a 35 percent density bonus. The density bonus intends to provide enough additional density to not only accommodate additional MPDUs but also increase the number of market rate units, making the larger project more valuable than the smaller project with fewer MPDUs and no density bonus.

As Figure 1 demonstrates, the density bonus diminishes, meaning there is less density bonus the more MPDUs a project provides. This has implications on the feasibility impact findings that are discussed in the analysis below.

Figure 1: Density Bonus for Providing MPDUs Above the Minimum Required 12.5%



Source: Montgomery Planning, 2023.

Height Bonus

Projects exceeding 12.5 percent MPDUs may increase their height by up to two stories, based on the need to accommodate MPDUs. The additional height is calculated as the floor aera provided for MPDUs above 12.5 percent divided by the average residential floor plate area, where each whole number and each remaining fraction allows and increase of 12 feet.

Impact Fee Reduction/Waiver

For projects providing 25 percent MPDUs or more, impact fees are reduced or waived completely. Most development applications must pay school and transportation impact taxes, which are based on location. There are two tiers of school impact taxes, and three tiers of transportation impact taxes. For projects located where the bottom tier of impact taxes applies, impact taxes are waived. For the other tiers, impact taxes are lowered to the tier below. Impact taxes are only assessed on market rate units; there are no impact taxes associated with MPDUs. Table 1 summarizes the FY24 schedule of impact taxes.

Table 1: FY 2024 Impact Tax Schedule

	Policy Area					
	School		Transportation			
Res. (per DU)	Infill	Turnover	Red	Orange	Yellow	Green
Single Family Detached	$25,004	$26,084	$9,663	$24,151	$30,190	$30,190
Single Family Attached	$21,664	$29,456	$7,905	$19,761	$24,702	$24,702
Farm	$25,004	$26,084	$0	$0	$0	$0
Multifamily Low Rise	$6,584	$13,625	$6,146	$15,366	$19,208	$19,208
Multifamily High Rise	$3,739	$6,073	$4,390	$10,976	$13,720	$13,720
Senior	$0	$0	$1,755	$4,391	$5,488	$5,488
Student	$0	$0	$0	$0	$0	$0
NonRes. (per sf)						
Office	n.a.	n.a.	$8.80	$22.10	$27.60	$27.60
Industrial	n.a.	n.a.	$4.45	$10.95	$13.85	$13.85
Bioscience	n.a.	n.a.	$0.00	$0.00	$0.00	$0.00
Retail	n.a.	n.a.	$7.85	$19.70	$24.60	$24.60

Source: Montgomery County Department of Permitting Services, 2023; Montgomery Planning, 2023.

Summary of Findings

MPDUs generate a feasibility gap ranging from $10,000 to $151,000, depending on the building type and material.

In each of the three prototypes, MPDUs generate a feasibility gap on a per door basis. This means for each MPDU, the market value they generate based on their income-restricted rents or sale prices is less than the cost to construct the units. Since each MPDU generates a feasibility gap, the cumulative effect of MPDUs worth points also generates a feasibility gap, implying MPDUs reduce project feasibility. As shown in **Error! Reference source not found.**, the feasibility gap per MPDU ranges from $10,000 in the w ood-built mid-rise model, to $151,000 in the townhomes model. In total, the feasibility gap ranges from $220,000 to $10.6 million. Importantly, the townhome prototype generates the largest feasibility gap for two reasons: the units are larger than the multifamily prototypes, and the pricing structure for for-sale MPDUs generates less market value than rental MPDUs. This is discussed further below.

Table 2: Summary of MPDU Feasibility Impacts

	MPDU Impact on Feasiblity Surplus/(Gap)			
Building	**15% MPDUs**		**25% MPDUs**	
Prototype	per MPDU	Total	per MPDU	Total
High Rise	n.a.	n.a.	($90,000)	($3,968,000)
Mid Rise	($11,000)	($220,000)	($10,000)	($690,000)
Townhomes	($150,000)	($1,950,000)	($151,000)	($10,570,000)

Source: Montgomery Planning, 2023.

Zoning and Site Size Affect the Feasibility of Providing Additional MPDUs for Points.
While building material is the most significant factor affecting the MPDU feasibility impacts, zoning, site size, and the tenure of the MPDU (rental or owner unit) can all change the feasibility impact within a building type. Zoning and site size drastically affect the applicability of height and density bonuses for providing additional MPDUs. When projects cannot take advantage of these bonuses, the additional MPDUs are not offset by an increase in market-rate units, meaning each additional MPDU will worsen the financial feasibility of the overall project. In these instances, a project is unlikely to provide more MPDUs just for points, as other public benefits may be able to generate a similar number of points with a smaller cost or feasibility impact. For example, a single mid-rise building is unlikely to exceed 400 units. If the underlying zoning (i.e., maximum FAR and height) on the site allows for a 400-unit mid-rise building, the density bonus is nullified. By comparison, if the zoning is lowered and allows for a building that is big enough for 350-units, the building could provide more MPDUs and obtain bonus density such that the building could accommodate 400 units.

By testing a range of construction types on a range of sites, we found three general scenarios explain the relationship between MPDUs and the height and density bonuses:

1. A project receives a height bonus to accommodate the additional MPDUs only.
2. A project receives a density bonus that allows it to build both more MPDUs and Market Rate units.
3. A project cannot increase its building program through a height or density because it is limited by material type or site size, meaning each additional MPDU comes at the expense of a market rate unit.

In general, the height and density bonuses do not significantly improve feasibility but do offset negative feasibility impacts where they can be applied. Improving feasibility with additional MPDUs would require a project taking advantage of the density bonus associated with each additional MPDU and receiving an impact fee reduction/waiver.

Inconsistent pricing standards for for-sale and rental MPDUs undermine feasibility of larger, for-sale MPDUs.
The tenure of MPDUs also significantly changes the feasibility of MPDUs within a building type because pricing standards are different for for-sale and rental units. Whereas rental units must charge a rent that is effectively equal to 25 percent of gross monthly income for households earning 60 or 70 percent of Area Median Income (AMI), ownership MPDUs are based on the cost to construct the unit. This policy

makes rental units significantly more valuable as the rent is not tied to size of the underlying unit. All one-bedroom units, for example, must charge a rent affordable to households earning 60 or 70 percent of AMI whether the unit is 700 square feet or 950 square feet. This means that in certain projects, the rent per square foot for MPDUs can exceed the market-rate rents per square foot, although market-rate units are generally larger than MPDUs.

While MPDU rents are based on the ability to pay, MPDU sale prices are not. Chapter 25A stipulates lump-sum values associates with different unit types (single family detached, duplex, etc.) that the developer must charge. For example, a developers can sell a four-plex townhome MPDU for up to $140,000. Developers can charge more if the units include an additional bathroom above the minimum required for MPDUS, but those additional costs are also stipulated in Chapter 25A as lump-sum values based on the additions.

The Department of Housing and Community Affairs (DHCA) publishes MPDU sale prices. The average sale price for MPDU townhomes was approximately $250,000. Using standard homeownership cost assumptions and the current Montgomery County property tax rate, for sale MPDUS would be affordable to households earning between 50 and 60 percent of AMI. This is lower than the AMI requirement for rentals. Townhomes in this analysis generate a feasibility gap of $149,000 per door using these pricing standards. Applying a sale price affordable to 60 to 70 percent of AMI would reduce the feasibility gap to $42,000, which is smaller than the feasibility gap generated by MPDUs in an urban high rise.

Financial Feasibility Analysis

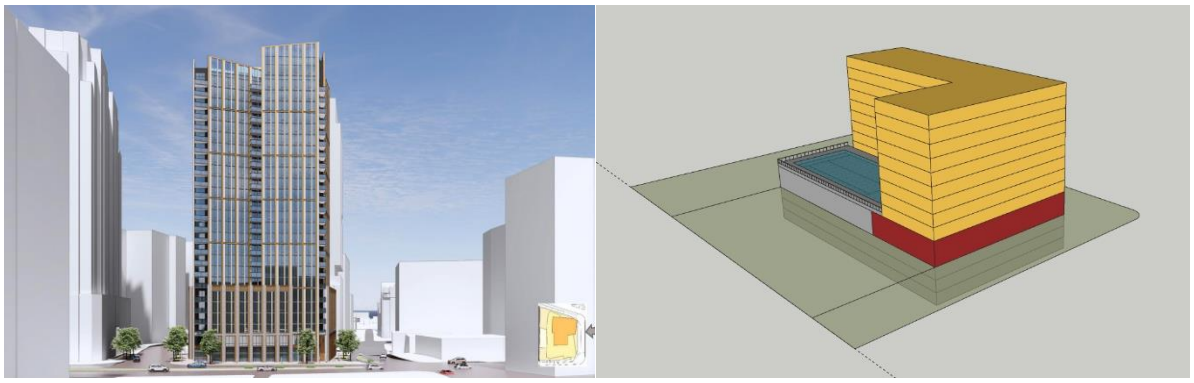
This subsection will summarize building details and pro forma analysis for each prototype. For each prototype, there is a baseline model with the minimum required MPDUs and up to two additional models with 15 percent and 25 percent MPDUs. The models with additional MPDUs are modified from the baseline model to account for any the density or height bonuses, whichever apply. Every prototype has a model with 25 percent MPDUs, as there are no additional incentives for more MPDUs. Every model with 25 percent MPDUs assumes wither a waiver or reduction in impact fees.

Concrete High-Rise

The concrete high-rise prototype is based on development in urban centers. Most concrete high-rise development has occurred in Downtown Bethesda, which along with Downtown Silver Spring, have the most sites with maximum densities and heights to accommodate, dense, small-lot urban development. Dure largely to different market conditions, buildings in Downtown Bethesda tend to be taller and larger than in Siler Spring. This prototype assumes the project is in Downtown Bethesda with its overlay zone[2] and rents that can support concrete high-rise development. Figure 2 shows examples of this prototype.

[2] In the Downtown Bethesda Overlay Zone (BOZ), applicants can purchase density to exceed maximum allowable FAR on the site up to the maximum height. On most sites, heights exceed what is possible with the maximum mapped FAR, meaning applicants must purchase density to maximize their building size.

Figure 2: Urban High-Rise Examples



Source: Montgomery Planning, 2023.

The site is assumed to be a 0.75-acre lot in Downtown Bethesda a maximum FAR of 8.0 and a maximum height of 220 feet. The maximum allowable development on the site 261,360 square feet without purchasing additional density. The baseline building without MPDUs worth points has a floorplate of 15,000 square feet, a first-floor height of 20 feet, and a ten feet height for all other floors. This building reaches the maximum allowable height of 220 feet with 21 stories and a total size of 315,000 square feet, or an FAR or 9.64. The additional density above the mapped 8.0 FAR, 53,640 square feet, comes from the overlay zone, purchased at a rate of $12.49 per square foot.

In Downtown Bethesda, the minimum MPDU requirement is 15 percent, not 12.5 percent. Therefore, the baseline building has 15 percent MPDUs, none of which earn the project points. The baseline building has a total of 330 units, including 280 market rate units and 50 MPDUs. The market rate units have an average gross size of 950 square feet, while the MPDUs have an average gross size of 675 square feet. Based on minimum parking requirements, the prototype assumes 248 parking spaces in a structured garage.

The concrete high-rise prototype with MPDUs worth points assumes 25 percent MPDUs. Since the project is in Bethesda and it can purchase density, the density bonus is moot other than lowering the amount of BOZ density the project must purchase to meet its maximum height. Most projects in Bethesda already exceed mapped FAR. In places without overlay zone density to purchase, a density bonus can lead to a larger building with more units. Effectively, in Bethesda, the density bonus is a cost savings, whereas in places without an overlay zone, the density bonus is a revenue-generating opportunity.

The prototype with 25 percent MPDUs is identical to the baseline prototype but taller by two stories, or 20 feet, because of the height bonus. Of the 374 units, 280 are market rate, while 94 are MPDUs. A comparison of the two prototypes is shown in Table 3.

Table 3: Urban Concrete High Rise Prototypes

Pro Forma Summary	
Building Material	Type I-A
Site Size (acres)	0.75

Concrete High Rise	**Type I Hi-Rise - 15% MPDUs**	**Type I Hi-Rise - 25% MPDUs**
Building Details		
Total Dwelling Units	330	374
du per acre	440	499
Total Built Area (sf)	315,000	345,000
Proposed FAR	9.6	10.6
Stories	21	23
Height (feet)	220	240
Floorplate (sf)	15,000	15,000
Residential Development		
Market Rate Units		
Number of Units	280	280
Gross Unit Size (sf)	950	950
MPDUs		
Number of Units	50	94
Gross Unit Size (sf)	675	675

Source: Montgomery Planning, 2023.

The height bonus does not technically allow for additional market rate units. The additional height is available to accommodate additional MPDUs and using any leftover height for more market rate units would require additional MPDUs to maintain at least a 25 percent share of total units. However, the height bonus also ensures that the additional MPDUs do not come at the expense of market rate units. Therefore, the urban high-rise prototypes demonstrate the feasibility impacts of additional MPDUs with no offsetting market rate units, but also no reduction in market rate units to accommodate the additional MPDUs. The 25 percent MPDU prototype also does not incur any impact fees as the urban location would place it in the lowest tiers of school and transportation impacts taxes.

Feasibility Analysis

Table 4 provides a summary of the financial feasibility analysis, followed by a detail description of the findings.

Table 4: Urban Concrete High-Rise Financial Feasibility Summary

Pro Forma Summary	
Building Material	Type I-A
Site Size (acres)	0.75
Cap Rate	5.00%
Target YOC	6.20%
Site Acquisition Costs	$10,617,750
Est. Land Value psf	$325

	15% MPDUs			25% MPDUs		
Type I-A: 8.0 FAR on 0.75-acre Site	Market Rate	MPDU	Total	Market Rate	MPDU	Total
Total Dwelling Units	**280**	**50**	**330**	**280**	**94**	**374**
Total Built Area	266,000	33,750	299,750	266,000	63,450	329,450
Net Increase over 15%				0	44	
Total Development Costs	**($141,097,499)**	**($17,619,559)**	**($158,717,058)**	**($136,693,321)**	**($32,605,982)**	**($169,299,303)**
per unit	($503,920)	($352,391)	($480,961)	($488,190)	($346,872)	($452,672)
per sf	($530)	($522)	($529)	($514)	($514)	($514)
Net Operating Income (NOI)	**$8,932,280**	**$641,725**	**$9,574,005**	**$8,932,280**	**$1,206,443**	**$10,138,723**
Market Value	**$178,645,600**	**$12,834,500**	**$191,480,100**	**$178,645,600**	**$24,128,860**	**$202,774,460**
per unit	$638,020	$256,690	$580,243	$638,020	$256,690	$542,178
per sf	$672	$380	$639	$672	$380	$615
Feasibility Surplus/(Gap)	**$37,548,101**	**($4,785,059)**	**$32,763,042**	**$41,952,279**	**($8,477,122)**	**$33,475,157**
per unit	$134,100	($95,701)	$99,282	$149,830	($90,182)	$89,506
per sf	$141	($142)	$109	$158	($134)	$102
Yield-On-Cost (YOC)	**6.3%**	**3.6%**	**6.0%**	**6.5%**	**3.7%**	**6.0%**
Cap Rate-YOC Spread	133	(136)	103	153	(130)	99

Source: Montgomery Planning, 2023.

In the baseline model with 15 percent MPDUs, the total development costs across all units are $158.7 million, or $481,000 per door. The market rate units cost $504,000 per door, while the smaller MPDUs $352,000 per door. The MPDUs in total cost $17.6 million. Based on a total annual NOI of $9.6 million and dividing by the cap rate of five percent, the market value of the overall project is $191.5 million, or $580,000 per door. The MPDUs generate a market value of $12.8 million, or $257,000 per door. Comparing the costs and market value per door reveal that MPDUs each generate a feasibility gap or $96,000, whereas the market rate units generate a feasibility surplus of $134,000 each. However, as the baseline model does not have any MPDUs worth public benefit points, there are no public benefit costs in the baseline prototype model.

In the model with 25 percent MPDUs, the total development costs increase to $169.3 million, or $453,000 per door. This is driven by the addition of 44 MPDUs, which have a slightly lower cost per door by $5,000 because some of the fixed costs that do not scale with the project, such as sitework, is split across more units. Given its urban context, the prototype is in the lowest impact tax tiers, meaning market rate units in the 25 percent model do not pay any impact taxes. This significantly reduces the cost per door of the market rate units to $488,000, lowering the total development costs of the market rate units to $136.7 million.

There are no changes to the market value of the market rate units or MPDUs per door, although the total market value of the MPDUs increases to $24.1 million given the 44 additional units. As a result of the slight reduction in MPDU costs per door due to fixed costs spread out among more units, the feasibility gap per MPDU improves from $96,000 to $90,000. However, because there are more MPDUs and each add a gap, the total feasibility gap for MPDUs increases to $8.5 million. The feasibility surplus of the market rate units improves from $134,000 to $150,000 per door primarily due to the impact fee waiver, raising the overall surplus by $4.4 million. The overall feasibility surplus increases from $32.8 million to $33.5 million.

The additional MPDUs increase the NOI of the project, but also increase the total development costs. However, compared to the baseline model, the total development costs are lower on a per door basis because of savings to the market rate units. The savings in impact fees offsets the negative impact of adding MPDUs whose NOI, and by extension, market value, is not enough to support their development costs. Thus, the YOC in the baseline model and the 25 percent model is the effectively unchanged. The increased MPDU s are offset by savings to the market rate unit, but they do not add additional value to the project in terms of YOC, although there is marginal increase in the total feasibility surplus, which may motivate developers to pursue larger projects with 25 percent MPDUs in an urban high-rise context.

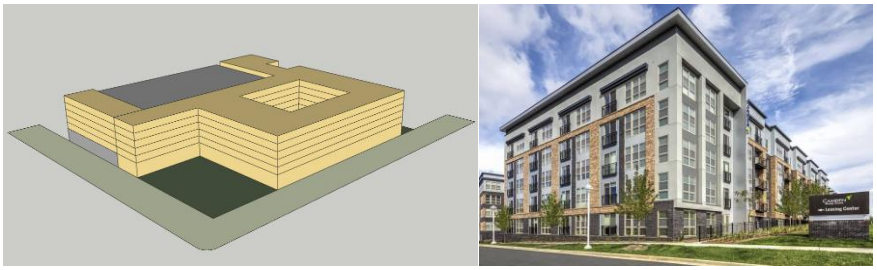
The urban concrete high rise models demonstrate the effect on feasibility of allowing a project to add MPDUs without reducing the market-rate program, but not allowing for additional market rate units. The MPDUs in the baseline model each reduce the prototype's overall feasibility by $95,000, so the additional MPDUs above the minimum requirement also worsen the project's feasibility. However, the impact tax waiver does offset the additional feasibility gap for providing more MPDUs, although it does not add value to the project. Critically, if not for the waiver, project feasibility would worsen, meaning applicants are incentivized to either provide the minimum required MPDUs, or 25 percent MPDUs. Without any other offset or incentive, applicants are unlikely to provide MPDUs for points in high rises

at rates significantly higher than the minimum required 15 percent, unless they choose to provide 25 percent MPDUs.

Suburban Mid-Rise (5-over-1)

The suburban mid-rise prototypes reflect five stories of wood over a concrete podium wrapped around an above-grade structured garage, otherwise known as a '5-over-1'. These building types are common throughout the county. The first floor is made of concrete and is typically taller than the floors above it to account for first-floor retail, lobbies with higher ceilings, or to accommodate a mezzanine. As implied in their name, these prototypes typically have similar heights and generally include between 200 and 400 units. These buildings typically cannot support additional stories due to their wood construction, meaning they respond to density by adjusting floorplates as opposed to height. Each mid-rise model is 75 feet tall. Figure 3 shows examples of suburban mid-rise buildings.

Figure 3: Suburban Mid-Rise Examples



Source: Montgomery Planning, 2023.

The baseline scenario assumes a prototype with a 54,000 square foot floorplate, totaling 324,000 square feet. The six-story building has a 20-foot-tall concrete podium, while the residential wood-built floors above it are ten feet tall. The models assume a site size of three acres and a maximum FAR of 2.5, which is a maximum allowable density of 326,700 square feet without a density bonus. The baseline model has 325 units, including 12.5 percent MPDUs (41), in line with the minimum requirement in most parts of the county. The model also assumes 439 parking spaces in an above-grade structured garage.

The 15 and 25 percent models take advantage of the density bonus, but because height is limited due to the wood material, they do not take advantage of the height bonus. Providing 15 percent MPDUs allows for a 22 percent density bonus, increasing the maximum allowable FAR to 3.05, or 398,574 square feet. The 15 percent model takes advantage of the density bonus, increasing the floorplate to 66,000 square feet. The 15 percent model totals 396,000 square feet, including 401 units and 533 parking spaces. The number of market rate units increases to 340 from 284, while the MPDUs increase to 61 from 41. Therefore, the larger building includes 56 additional market rate units for providing 20 more MPDUs.

As described above in Figure 1, the density bonus tapers off. Providing 15 percent MPDUs, or just 2.5 percentage points more than the minimum requirement, generates a 22 percent density bonus. However, increasing MPDUs from 15 percent to 25 percent, a ten-percentage point increase, leads to just a 13 percent density bonus, for a total of a 35 percent density bonus above the mapped 2.5 FAR on the site.

By providing 25 percent MPDUs, the project obtains a 35 percent density bonus. This is a maximum allowable density of 441,045 square feet. However, developers do not typically build 5-over-1 buildings

with more than 400 units due to a variety of factors, including challenges in property management and designing a building that responds to the fire code. Therefore, while the building could be larger, it is unlikely a developer would maximize the allowable density with a 35 percent density bonus. This model assumes the 25 percent models has a 70,000 square foot floorplate for a total of $420,000 square feet, leaving 21,045 square feet of density on the table. The model has 440 total units, which is very large, including 330 market rate units, 110 MPDUs, and 555 parking spaces.

The suburban mid-rise prototypes are summarized in Table 5.

Table 5: Suburban Mid-Rise Prototypes

Prototype Summary	
Building Material	Type III-B Wood
Total Height	75
Site Size (acres)	3
Max. FAR	2.5

5-Over-1	**5-Over-1 12.5% MPDUs**	**5-Over-1 15% MPDUs**	**5-Over-1 25% MPDUs**
Building Details			
Total Dwelling Units	325	401	440
du per acre	108	134	147
Stories	6	6	6
Height (feet)	75	75	75
Floorplate (sf)	54,000	66,000	70,000
Total Built Area (sf)	324,000	396,000	420,000
Proposed FAR	2.48	3.03	3.21
Max. Allowable Development (sf)	326,700	398,574	441,045
Leftover Density (sf)	2,700	2,574	21,045
Residential Development			
Market Rate Units			
Number of Units	284	340	330
Gross Unit Size (sf)	950	950	950
MPDUs			
Number of Units	41	61	110
Gross Unit Size (sf)	650	650	650
Parking			
Type	Structured	Structured	Structured
Spaces	439	533	555

Source: Montgomery Planning, 2023.

Feasibility Analysis

Table 6 provides a summary of the financial feasibility analysis, followed by a detail description of the findings.

Table 6: Wood-built Suburban Mid-Rise Financial Feasibility Summary

Pro Forma Summary	
Building Material	Type III-B Wood
Cap Rate	5%
Target YOC	6.2%
Site Acquisition Costs	$9,147,600
Est. Land Value psf	$70

Type III-B:	**12.5% MPDUs**			**15% MPDUs**			**25% MPDUs**		
2.5 FAR on 3-acre Site	Market Rate	MPDU	Total	Market Rate	MPDU	Total	Market Rate	MPDU	Total
Total Dwelling Units	**284**	**41**	**325**	**340**	**61**	**401**	**330**	**110**	**440**
Total Built Area	269,800	26,650	296,450	323,000	39,650	362,650	313,500	71,500	385,000
Net Increase over 12.5%				56	20		46	69	
Total Development Costs	**($122,025,000)**	**($10,731,000)**	**($132,756,000)**	**($143,924,000)**	**($15,661,000)**	**($159,585,000)**	**($137,147,000)**	**($28,150,000)**	**($165,297,000)**
per unit	($430,000)	($262,000)	($408,000)	($423,000)	($257,000)	($398,000)	($416,000)	($256,000)	($376,000)
per sf	($452)	($403)	($448)	($446)	($395)	($440)	($437)	($394)	($429)
Net Operating Income	**$6,907,000**	**$505,000**	**$7,412,000**	**$8,269,000**	**$751,000**	**$9,020,000**	**$8,026,000**	**$1,354,000**	**$9,380,000**
Market Value	**$138,138,000**	**$10,093,000**	**$148,231,000**	**$165,376,000**	**$15,017,000**	**$180,393,000**	**$160,512,000**	**$27,079,000**	**$187,591,000**
per unit	$486,000	$246,000	$456,000	$486,000	$246,000	$450,000	$486,000	$246,000	$426,000
per sf	$512	$379	$500	$512	$379	$497	$512	$379	$487
Feasibility Surplus/(Gap)	**$16,113,000**	**($638,000)**	**$15,475,000**	**$21,452,000**	**($644,000)**	**$20,808,000**	**$23,365,000**	**($1,071,000)**	**$22,294,000**
per unit	$56,000	($16,000)	$48,000	$63,000	($11,000)	$52,000	$70,000	($10,000)	$50,000
per sf	$60	($24)	$52	$66	($16)	$57	$75	($15)	$58
Yield on Cost (YOC)	**5.7%**	**4.7%**	**5.6%**	**5.7%**	**4.8%**	**5.7%**	**5.9%**	**4.8%**	**5.7%**
YOC-Cap Rate Spread	66	(29)	58	75	(20)	65	85	(19)	67

Source: Montgomery Planning, 2023.

The baseline prototype with 12.5 MPDUs and 325 total units has a total development cost of $132.8 million, or $408,000 per door. The market rate units have a total development cost of $122.0 million and costs per door of $430,000, while the MPDUs have a total development cost of $10.7 million and costs per door of $262,000.

In the 15 percent model, due to fixed costs (e.g., site work) spread out across more units, the costs per door for the market rate units fall slightly to $423,000, while the costs per door for the MPDUs fall by $5,000 to $257,000. The total development costs nonetheless rise to $159.6 million as the 15 percent model adds 56 market rate units, and 20 MPDUs.

In the 25 percent model, the costs per door for market rate units declines to $416,000 because of the impact fee reduction. Notably, given its suburban location, the impact fees are lowered, but not waived when the prototype includes 25 percent MPDUs. Despite the lower cost per door, the 25 percent model has 46 more market rate units and 69 more MPDUs than the baseline model and as such, has the highest total development costs with $165.3 million.

The market value per door in each model is the same, as each model assumes the same rent per unit for both market rate units and MPDUs. The market rate units generate a market value of $486,000 per door, while the MPDUs generate a market value of $246,000 per door. In the baseline model, the market rate units generate a surplus of $56,000 per door, while the MPDUs generate gap of $16,000 per door. As the market value is the same in all models and the cost per door decline, the feasibility surplus improves to $63,000 and $70,000 in the 15 percent and 25 percent models, respectively. Similarly, the feasibility gap for the MPDUs improves to $11,000 to $10,000, respectively.

Unlike the urban high-rise prototype, the density bonus enables the suburban mid-rise models to take advantage of the density bonus, adding both more market rate units and MPDUs. In the 15 percent model, not only does the project generate a larger feasibility surplus because it is a bigger project, but the net increase in market rate units also exceeds the increase in MPDUs, thereby improving the YOC, albeit slightly. The 5.6 percent YOC in the baseline model improves to 5.7 percent. This suggests that the additional market rate units support and offset the inclusion of the additional MPDUs, although the additional market rate units are not necessarily generating significantly more value to the project.

The increase in YOC from the baseline model to the 15 percent model would imply a similar change when increasing the MPDUs to 25 percent. However, the 25 percent model provides no net increase compared to the 15 percent model for two reasons. First, the density bonus from 15 percent MPDUs to 25 percent MPDUs is just 13 percent, compared to 22 percent when going from 12.5 percent MPDUs to 15 percent MPDUs. Therefore, each additional MPDU after the 15 percent MPDU threshold is associated with fewer market rate units. Indeed, compared to the baseline model, the 25 percent model adds 69 MPDUs but just 46 market rate units. If in the 15 percent model there is a larger gain in market rate units than MPDUs, offsetting the feasibility gap generated by the MPDUs, then including more MPDUs than market rate units should worsen the YOC. Second, not only is the density bonus diminished for going from 15 to 25 percent MPDUs, the 25 percent model leaves density leftover because the building is physically constrained from becoming larger.

However, the YOC for the 25 percent model is the same as it is in the 15 percent model because of the impact tax reduction for the market rate units. So, while the feasibility would worsen in the 25 percent model compared to the 15 percent model because there is less of a density bonus converted into

market value, this lower density bonus is offset by the impact tax cost savings not present in the 15 percent model.

This is an important finding: the increased feasibility gap of providing additional MPDUs can be offset by either allowing for more market rate units or by waiving impact taxes on market rate units. Allowing for both a density bonus and waiving impact taxes could potentially improve feasibility significantly, not just offset the MPDU feasibility gap, thereby further incentivizing larger share of MPDUs within a project.

Nonetheless, this suburban mid-rise prototype does demonstrate that where a density bonus can be applied, there is an incentive add more MPDUs. Critically, if the mapped density on the site was 3.5 FAR as opposed 2.5 FAR, the density bonus would not apply because the prototype with just 12.5 percent MPDUs would be able to maximize the building size. That is, even though there is bonus density a developer could seek, they would be limited in their ability to utilize it without using a more expensive material.

Townhomes

The Townhomes prototype tests a for-sale product in contrast to the urban high rise and the suburban mid-rise prototypes. The prototype assumes as 25-acre site with a maximum FAR of 1.5 for a maximum allowable density of 1.6 million square feet. Given the large site size and the nature of townhome developments, the prototypes assume 40 percent of the lot will have open space, stormwater management, streets, alleys, and sidewalks. Therefore, the building footprint cannot exceed 60 percent of the lot coverage (653,400 square feet). As a result, the baseline prototype with 12.5 percent MPDUs can maximize the lot with less than the maximum FAR. An example of a townhome project is shown in Figure 4.

Figure 4: Townhome Development Examples

Source: Montgomery Planning, 2023.

In each model, the market rate units have a building footprint (lot coverage) of 1,300 square feet and are 3.5 stories tall for a total size of 2,800 square feet. The MPDUs have a building footprint of 900 square feet and are three stories tall for a total size of 1,470 square feet. In the baseline model with 12.5 percent MPDUs, there are 522 units, including 456 market rate units and 66 MPDUs. As shown in Table 7, these units maximize the available lot coverage but generate a total density of 1.3 FAR, which is lower than mapped 1.5 FAR on the site. Therefore, to provide additional MPDUs, a developer must reduce the market rate program. In the 15 and 25 percent models, there are fewer market rate units than in the baseline model. The overall unit count does increase, but this due to the smaller size of MPDUs. The overall built area and lot coverage in each model is the same.

Table 7: Townhome Prototypes

Prototype Summary	
Site Size (acres)	25
Site Size (sf)	1,089,000
Max. FAR	1.5
Max. Allowable Density (sf)	1,633,500
Non-Building Lot Coverage (sf)	
Open Space/Stormwater (20%)	217,800
Streets/Alleys/Sidewalks (20%)	217,800

Townhomes	**12.5% MPDUs**	**15% MPDUs**	**25% MPDUs**
Building Details			
Total Dwelling Units	522	524	544
du per acre	20.9	21.0	21.8
Total Built Area (sf)	1,373,820	1,362,130	1,342,320
Proposed FAR	1.3	1.3	1.2
Leftover Density	(259,680)	(630,740)	(862,905)
Lot Coverage (sf)	1,087,800	1,085,200	1,088,400
Building (sf)	652,200	649,600	652,800
Non-Building (sf)	435,600	435,600	435,600
Lot Coverage %	99.9%	99.7%	99.9%
Residential Development			
Market Rate Units			
Number of Units	456	445	408
Gross Unit Size (sf) (20'x40')	2,800	2,800	2,800
Lot Size (20' x 65')	1,300	1,300	1,300
MPDUs			
Number of Units	66	79	136
Gross Unit Size (sf) (14'x35')	1,470	1,470	1,470
Lot Size (18' x 50')	900	900	900

Source: Montgomery Planning, 2023.

Feasibility Analysis

Table 8 provides a summary of the financial feasibility analysis, followed by a detail description of the findings.

Table 8: Townhomes Financial Feasibility Summary

Pro Forma Summary	
Building Material	Townhomes
Site Size (acres)	25
Target ROI	20%
Site Acquisition Costs	$54,450,000
Estimated Land Cost psf	$50

Townhomes:	**12.5% MPDUs**			**15% MPDUs**			**25% MPDUs**		
1.5 FAR on 25-acre Site	Market Rate	MPDU	Total	Market Rate	MPDU	Total	Market Rate	MPDU	Total
Total Dwelling Units	**456**	**66**	**522**	**445**	**79**	**524**	**408**	**136**	**544**
Total Built Area	1,276,800	97,020	1,373,820	1,246,000	116,130	1,362,130	1,142,400	199,920	1,342,320
Net Change over 12.5%				**(11)**	**13**		**(48)**	**70**	
Total Development Costs	**($359,871,657)**	**($25,929,712)**	**($385,801,369)**	**($351,835,935)**	**($31,097,232)**	**($382,933,166)**	**($314,847,299)**	**($53,714,074)**	**($368,561,373)**
per unit	($789,192)	($392,874)	($739,083)	($790,643)	($393,636)	($730,788)	($771,685)	($394,956)	($677,503)
per sf	($282)	($267)	($281)	($282)	($268)	($281)	($276)	($269)	($275)
Sales Revenue	**$448,156,800**	**$16,087,500**	**$464,244,300**	**$437,346,000**	**$19,256,250**	**$456,602,250**	**$400,982,400**	**$33,150,000**	**$434,132,400**
per unit	$982,800	$243,750	$889,357	$982,800	$243,750	$871,378	$982,800	$243,750	$798,038
per sf	$351	$166	$338	$351	$166	$335	$351	$166	$323
Feasibility Surplus/(Gap)	**$88,285,143**	**($9,842,212)**	**$78,442,931**	**$85,510,065**	**($11,840,982)**	**$73,669,084**	**$86,135,101**	**($20,564,074)**	**$65,571,027**
per unit	$193,608	($149,124)	$150,274	$192,157	($149,886)	$140,590	$211,115	($151,206)	$120,535
per sf	$69	($101)	$57	$69	($102)	$54	$75	($103)	$49
Return on Investment (ROI)	**24.5%**	**-38.0%**	**20.3%**	**24.3%**	**-38.1%**	**19.2%**	**27.4%**	**-38.3%**	**17.8%**

Source: Montgomery Planning, 2023.

In the baseline model with 522 units, the total development costs equal $385.8 million, or $739,000 per door. The market rate units cost $789,000 per door and $359.8 million in total developments. By comparison, the MPDUs cost $393,000 per door and $25.9 million in total. The sales revenue for the market rate units and MPDUs reflect the sale price minus 2.5 percent marketing costs. Importantly, townhomes have the lowest development costs per square foot ($275 to $281) than the mid-rise ($429 to $448) and urban high-rise prototypes ($514 to $529) but because they are significantly larger, generate higher costs per door.

The market rate units generate sales revenue of $982,800 per door, for a feasibility surplus of $193,608 per door. The MPDUs generate a sales revenue of just $243,750, leading to a feasibility gap of $149,000. Under the MPDU policy, for-sale MPDUs are priced based on construction costs prescribed in the zoning ordinance, whereas MPDU rents are based on income. This means that as incomes rise, MPDU sale prices do not change, while MPDU rents increase proportionally with income.

The average sale price of MPDU townhomes between September 2022 and July 2023 was $250,777, which would be affordable to a four-person household earning between 40 and 50 percent of AMI. If MPDUs were priced based on what is affordable to a four-person household earning between 60 and 70 percent of AMI, which is the AMI range for MPDU rental pricing, the MPDU townhomes would sell for approximately $350,000. This would still generate a feasibility gap of approximately $42,000 per door, although this is a significantly smaller gap than $149,000.

With the MPDUs each generating a gap of $149,000, and because each additional MPDU must come at the expense market rate units, the 15 and 25 percent prototypes have smaller overall feasibility surpluses, and the ROI declines. In the 15 and 25 percent models, the total costs per door fall to $731,000 and $677,000, respectively, because there is a greater share of MDPUs, which are smaller and cheaper to build. However, the overall market value per door also declines for the same reason; MPDUs have a lower market value per door, and there are more MPDUs in the 15 and 25 percent models compared to the baseline model. Despite the impact tax reduction in the market rate units in the 25 percent model, it has 48 fewer market rate units and 70 more MPDUs than the baseline model, and generates the smallest feasibility surplus and ROI, as shown in Table 8 above.

This prototype demonstrates the feasibility impacts of increasing the number of MPDUs at the expense of market rate units. The feasibility worsens because the MPDUs generate a feasibility gap. This effect is exaggerated in the townhomes model for two reasons: the large size of townhomes compared to multifamily units, and the pricing structure for for-sale MPDUs.

Discussion of Findings

MPDUs generate a feasibility gap ranging from $10,000 to $151,000, depending on the building type and material.

In each of the three prototypes, MPDUs generate a feasibility gap on a per door basis. This means for each MPDU, the market value they generate based on their income-restricted rents or sale prices is less than the cost to construct the units. Since each MPDU generates a feasibility gap, the cumulative effect of MPDUs worth points also generates a feasibility gap, implying MPDUs reduce project feasibility. As shown in **Error! Reference source not found.**, the feasibility gap per MPDU ranges from $10,000 in the w ood-built mid-rise model, to $151,000 in the townhomes model. In total, the feasibility gap ranges from $220,000 to $10.6 million. Importantly, the townhome prototype generates the largest feasibility gap

for two reasons: the units are larger than the multifamily prototypes, and the pricing structure for for-sale MPDUs generates less market value than rental MPDUs. This is discussed further below.

Table 9: Summary of MPDU Feasibility Impacts

	MPDU Impact on Feasiblity Surplus/(Gap)			
Building	**15% MPDUs**		**25% MPDUs**	
Prototype	per MPDU	Total	per MPDU	Total
High Rise	n.a.	n.a.	($90,000)	($3,968,000)
Mid Rise	($11,000)	($220,000)	($10,000)	($690,000)
Townhomes	($150,000)	($1,950,000)	($151,000)	($10,570,000)

Source: Montgomery Planning, 2023.

Zoning and Site Size Affect the Feasibility of Providing Additional MPDUs for Points.
While building material is the most significant factor affecting the MPDU feasibility impacts, zoning, site size, and the tenure of the MPDU (rental or owner unit) can all change the feasibility impact within a building type. Zoning and site size drastically affect the applicability of height and density bonuses for providing additional MPDUs. When projects cannot take advantage of these bonuses, the additional MPDUs are not offset by an increase in market-rate units, meaning each additional MPDU will worsen the financial feasibility of the overall project. In these instances, a project is unlikely to provide more MPDUs just for points, as other public benefits may be able to generate a similar number of points with a smaller cost or feasibility impact. For example, a single mid-rise building is unlikely to exceed 400 units. If the underlying zoning (i.e., maximum FAR and height) on the site allows for a 400-unit mid-rise building, the density bonus is nullified. By comparison, if the zoning is lowered and allows for a building that is big enough for 350-units, the building could provide more MPDUs and obtain bonus density such that the building could accommodate 400 units.

By testing a range of construction types on a range of sites, we found three general scenarios explain the relationship between MPDUs and the height and density bonuses:

4. A project receives a height bonus to accommodate the additional MPDUs only.
5. A project receives a density bonus that allows it to build both more MPDUs and Market Rate units.
6. A project cannot increase its building program through a height or density because it is limited by material type or site size, meaning each additional MPDU comes at the expense of a market rate unit.

In general, the height and density bonuses do not significantly improve feasibility but do offset negative feasibility impacts where they can be applied. Improving feasibility with additional MPDUs would require a project taking advantage of the density bonus associated with each additional MPDU and receiving an impact fee reduction/waiver.

Inconsistent pricing standards for for-sale and rental MPDUs undermine feasibility of larger, for-sale MPDUs.
The tenure of MPDUs also significantly changes the feasibility of MPDUs within a building type because

pricing standards are different for for-sale and rental units. Whereas rental units must charge a rent that is effectively equal to 25 percent of gross monthly income for households earning 60 or 70 percent of Area Median Income (AMI), ownership MPDUs are based on the cost to construct the unit. This policy makes rental units significantly more valuable as the rent is not tied to size of the underlying unit. All one-bedroom units, for example, must charge a rent affordable to households earning 60 or 70 percent of AMI whether the unit is 700 square feet or 950 square feet. This means that in certain projects, the rent per square foot for MPDUs can exceed the market-rate rents per square foot, although market-rate units are generally larger than MPDUs.

While MPDU rents are based on the ability to pay, MPDU sale prices are not. Chapter 25A stipulates lump-sum values associates with different unit types (single family detached, duplex, etc.) that the developer must charge. For example, a developers can sell a four-plex townhome MPDU for up to $140,000. Developers can charge more if the units include an additional bathroom above the minimum required for MPDUS, but those additional costs are also stipulated in Chapter 25A as lump-sum values based on the additions.

The Department of Housing and Community Affairs (DHCA) publishes MPDU sale prices. The average sale price for MPDU townhomes was approximately $250,000. Using standard homeownership cost assumptions and the current Montgomery County property tax rate, for sale MPDUS would be affordable to households earning between 50 and 60 percent of AMI. This is lower than the AMI requirement for rentals. Townhomes in this analysis generate a feasibility gap of $149,000 per door using these pricing standards. Applying a sale price affordable to 60 to 70 percent of AMI would reduce the feasibility gap to $42,000, which is smaller than the feasibility gap generated by MPDUs in an urban high rise.