May 8, 2008

## MEMORANDUM

TO:	Montgomery County Planning Board
FROM:	Roselle George, Research Manager Jacob Sesker, Planner Coordinator (Research) Megan Taylor (Research)
SUBJECT:	Housing Policy Element of the General Plan: Preliminary Pro Forma Analysis of MPDU Bonus Density

## STAFF RECOMMENDATION

Staff recommends the following: (1) additional research and analysis into the effect of the Workforce Housing requirement on both the feasibility of MPDU bonus density, and on the overall number of inclusionary zoning units that will be developed in Montgomery County; (2) continued development and refinement of in-house pro forma models to support evaluation of individual development projects and to support the analysis and evaluation of policy alternatives.

## INTRODUCTION

In February, the Planning Board approved an approach for the *Housing Policy Element of the General Plan* whereby the Board engages in regular discussions of housing policy issues throughout the spring. These discussions occur as either public work sessions where the conversation is sparked by a staff memorandum or as discussions that begin with presentations by invited speakers. Through these discussions, staff will identify housing policy issues that could be addressed through changes to the *Housing Policy Element of the General Plan*, through changes to other housing-related policies and legislation, or through changes to planning processes.

First, this memorandum begins with a background summary of the relevant portions of two recent analyses of the MPDU program: the County Council's report entitled *Strengthening the Moderately Priced Dwelling Unit Program: A 30-Year Review*, and the follow-up report by the Office of Legislative Oversight entitled *A Study of Moderately Priced Dwelling Unit Program Implementation*. Second, this memorandum includes a brief discussion of the

differences between public and private sector perspectives of bonus density. Third, this memorandum includes preliminary observations and findings with respect to the economics of bonus density under various distinct scenarios.

The intent of this memorandum is to provide the Board with an analysis of the economic value to developers of building bonus density units. This analysis will further the discussion of the efforts to achieve higher yields of affordable units in individual projects.

## BACKGROUND

Montgomery County's MPDU program has produced more than 12,000 moderatelypriced dwelling units since 1974. It has been far and away the most successful inclusionary zoning program in the nation. However, dwindling supply of green fields for development and the rising costs of construction materials and energy may result in a slower pace of MPDU development in the future. To some degree that slower pace will be offset by the increased control periods applied to MPDU (both for-sale and for-rent MPDU). However, increased yield of affordable units could serve as an untapped resource capable of adding a small number of additional MPDUs.

The MPDU program has been the subject of in-depth study during the past several years, including the County Council's 2004 report *Strengthening the Moderately Priced Dwelling Unit Program: A 30-Year Review* and the Office of Legislative Oversight's 2007 report *A Study of Moderately Priced Dwelling Unit Program Implementation*. In addition, the Planning Department continues—as a part of the Housing Policy Element of the General Plan—to study the MPDU program and present analysis to the Planning Board on topics including the existing supply of MPDU, MPDU location and design issues, relationship between MPDU and TDR density, as well as this study of the economics of bonus density under the MPDU program.

This pro forma analysis of bonus density under the MPDU program is motivated by a desire to identify new sources for MPDUs (in this case, previously unrealized potential yield) and to create an environment in which the private sector can meet a portion of the County's affordable housing needs with minimal economic hardship. However, unlike the MPDU requirements, utilization of MPDU bonus density is optional for developers; to the extent that that option represents a potential source of additional units, Staff believes that a more thorough understanding of the economics of bonus density may, over time, yield some additional affordable units at the margin.

<b>Bonus Density</b>	0%	3%	7%	11%	15%	19%	22%	
% of Project MPDU	12.5%	12.8%	13.2%	13.6%	14.0%	14.4%	15.0%	

Figure 1: Bonus Density Sliding Scale

While improved understanding of the economics of bonus density may result in tweaks to policies or practices that could marginally increase the yield of affordable units, any substantial increase in the supply of affordable housing must be met through increased public investment in the development of new affordable units, preservation of existing affordable units, and removal of other barriers to development of additional affordable units (e.g. height limits in master plans).

## Strengthening the Moderately Priced Dwelling Unit Program: A 30-Year Review

Council Staff adopted certain assumptions in *Strengthening the Moderately Priced Dwelling Unit Program: A 30-Year Review.* Those assumptions are outlined below:

1. The success of the MPDU program depends on creating an environment where the private sector can integrate affordable housing into market rate development without economic hardship. The program must continue to achieve a balance among the number of MPDUs required, density bonuses, flexible development standards, and sales and rental pricing.

2. Achieving geographic dispersion of affordable housing must remain an overriding objective of the program. To this end, the County should promote production of MPDUs in areas where land use or economic constraints may make implementation more difficult.

3. As the County approaches build-out, the stock of MPDUs could diminish significantly. Action must be taken to identify new sources for MPDUs and to retain the supply of MPDUs for longer periods.

According to the report: "Independent observers of the County's program and developers have concluded that the success of the MPDU program is largely a result of the balance achieved between the number of MPDUs required and the opportunity for developers to realize a reasonable profit. The continued success of the County MPDU program rests to a great extent on maintaining this balance."<sup>1</sup>

The County Council Staff concluded that over half of the site plans for developments with MPDUs between 1989 and 2004 included no or minimal bonus density units, whereas nearly one quarter of the developments achieved the full 22% density bonus.<sup>2</sup> That report cites physical characteristics of the site, zoning requirements, and height limits imposed in master and sector plans as factors that influence the utilization of the MPDU bonus density.

<sup>&</sup>lt;sup>1</sup> See Strengthening the Moderately Priced Dwelling Unit Program: A 30-Year Review, page 10-1.

<sup>&</sup>lt;sup>2</sup> Ibid, page 10-2.

County Council Staff recommended retaining both the 12.5% minimum requirement and the existing bonus density schedule, but conceded that slight adjustments to the percentages would be possible without disrupting the balance of the MPDU legislation.

## A Study of Moderately Priced Dwelling Unit Program Implementation

Following up on the Council Staff's *30-Year Review*, the Office of Legislative Oversight (OLO) was asked to examine the practices and procedures of Montgomery County Government and Maryland-National Capital Park and Planning Commission (M-NCPPC). OLO examined six elements of the implementation of the MPDU program:

- Number of MPDUs in a subdivision
- Location of MPDUs in a subdivision
- Staging of MPDU construction
- Design and size of MPDUs
- Pricing of MPDUs
- Alternative Review Committee

Of those six elements of program implementation, most relevant to this pro forma analysis is the first one (number of MPDUs in a subdivision). Sub-topics addressed in that portion of the report included density bonus and the number of MPDUs in a subdivision.

According to the report, the Planning Board approved site plans for 16 projects that included MPDUs between April 2005 and April 2007. MPDUs comprised 13.4% of the combined total units in those 16 project site plans. Half of the 16 site plans had no or minimal bonus density units, whereas the other half was at or near the top of the bonus density scale.<sup>3</sup>

## PUBLIC AND PRIVATE SECTOR PERSPECTIVES

Underlying any analysis of the economics of MPDU bonus density are the following facts: first, it is often not possible to achieve bonus density; second, bonus density, even when possible, is optional and as such must make economic sense to developers.

Both the Council's 30-Year Review and the OLO's report showed that about half of all projects that include MPDUs build to high levels of bonus density. However, developers who spoke with Staff in connection with this report had no experience building to bonus density. Those developers cite legal constraints, such as height restrictions in master plans, as reasons why they are unable to build to the envelope. Other economic realities and physical characteristics of the site undoubtedly also play a role in keeping overall residential densities

<sup>&</sup>lt;sup>3</sup> See A Study of Moderately Priced Dwelling Unit Program Implementation, page 19.

below the zoning envelope, and prevent developers from building inclusionary units beyond the minimum number required by law.

Developer decisions to build MPDU in excess of the minimum requirements are based on the project-specific economic situation (site characteristics, cost of money, risk, etc.). In part that decision is also based on how an individual developer weighs an opportunity to maximize profit versus maintaining a specific rate of return. Because the ratio of market units to MPDU decreases with bonus density, the rate of return on costs also decreases. When money is cheap or project risk is low, and where legal or physical characteristics of the site allow for additional density, some developers may decide to build to bonus density in order to achieve greater overall profits. However, other developers may not be able to afford the cost of making that extra buck, i.e. the diminished rate of return on the overall project may move the project from "go" to "nogo."

Policy debates about inclusionary zoning typically include discussion of both profit and rate of return. Planners often cite opportunity for increased profit through bonus density as the carrot for developer participation, whereas developers often cite decreased rates of return as the barrier to feasibility of building additional affordable units. Both profit and rate of return will be addressed throughout this pro forma analysis<sup>4</sup>.

#### MPDU BONUS DENSITY: PRELIMINARY OBSERVATIONS AND FINDINGS

Staff's observations and findings herein generally relate to changes in overall project profitability (net difference between value and cost) and overall rate of return (net difference divided by costs) moving up the density ladder from base density (12.5% MPDU and 0% bonus density) to the 22% bonus density available to developers who provide 15% MPDU.

As a disclaimer, Staff pro forma analysis is a work-in-progress. Our model generates real numbers (dollars, percentages, et cetera). The accuracy of those numbers will improve with time. The relationships, rather than the numbers themselves, are the most important aspect of this analysis.

#### High-Rise, No Workforce Housing, Standard Parking ("Base Case")

In the "base case" scenario, high-rise construction costs and values were used, and parking was assumed to be 1.2 spaces per market rate unit and 0.6 spaces per MPDU. While this scenario is more likely to occur in close proximity to transit, Staff did not assume that the Workforce Housing requirement applied.

<sup>&</sup>lt;sup>4</sup> Profit and rate of return are abstract and complex concepts. Both were simplified for purposes of this analysis. "Profit," as used herein, indicates total value less total cost; "rate of return" is profit divided by total cost.

The pro forma analysis showed that the per-unit loss on each additional MPDU more than offsets the gain from bonus market rate units. The result is profits that decline from base density through the bonus density scale. Rates of return decline much more steeply than profits.

Figure 2: Percent Change in Profits and Rate of Return, "Base Case", 100% For-Sale

	0%	3.00%	7.00%	11.00%	15.00%	19.00%	22.00%
Change in Overall Profit	0.00%	0.21%	2.01%	3.81%	5.61%	7.41%	7.62%
Overall Rate of Return	12.9%	12.6%	12.3%	12.1%	11.9%	11.7%	11.4%

As Figure 2 illustrates, increases in density may result in a slight increase in overall profits as development moves up the density scale (where "profits" are value less cost). Figure 2 also shows a steady rate of decline in the overall rate of return. In essence, each dollar of new profit costs more.

Even if underlying assumptions regarding the inputs to the model are changed, these relationships between profit and rate of return will likely remain constant. This is because the ratio of market rate units to affordable units declines as a development moves up the bonus density scale.

Figure 3: Ratio of Market Rate Units to MPDUs

Bonus Density	0%	3%	7%	11%	15%	19%	22%
# Market Rate Units/MPDU	6.69	6.36	6.13	5.94	5.76	5.61	5.42

In addition, the base case scenario demonstrates the marked decrease in economic performance from 19% bonus density to 22% bonus density. This is a result in the change in ratio between additional MPDU and market rate units at this level. Using the low end of the scale as an example, a developer going from 12.5% MPDU to 12.8% MPDU gets a 3% density bonus (3% increase in overall density for an increase of 0.3% MPDU), whereas a developer going from 14.4% MPDU to 15% MPDU also gets an additional 3% density bonus (increase of 3% new bonus density for a 0.6% increase in MPDU).

## High-Rise, No Workforce Housing, Reduced MPDU Parking

In this scenario the variable was parking spaces per MPDU. In the base case scenario (above), the parking ratio was 0.6 spaces per unit (as compared to the market rate ratio of 1.2 spaces per unit). Assuming that the market will continue to demand 1.2 spaces per unit, the only opportunity to reduce parking would be to reduce the number of spaces per MPDU (from 0.6 per unit to 0.3). This would result in a marginal decrease in parking for the project overall<sup>5</sup>.

*Figure 4: Comparison of Rate of Return in "Base Case" and Reduced Parking Scenario, 100% For-Sale* 

	0%	3.00%	7.00%	11.00%	15.00%	19.00%	22.00%
Base Case Overall Rate of Return	12.9%	12.6%	12.3%	12.1%	11.9%	11.7%	11.4%
Reduced Parking, Overall Rate of Return	13.2%	12.9%	12.7%	12.5%	12.3%	12.1%	11.8%

Figure 4 indicates that reducing the parking requirements for the MPDU does result in a rate of return that is slightly higher than in the standard parking "base case" scenario. However, the small reduction in parking costs is not sufficient to offset any significant portion of the losses associated with MPDU development, and as such would not likely result in additional bonus density MPDU at the margins.

*Figure 5: Relative Change in Profit/Rate of Return, Reduced Parking, High-Rise, 100% For-Sale* 

	0%	3.00%	7.00%	11.00%	15.00%	19.00%	22.00%
Relative Percentage		0.40					
Change, Overall Profits	0.0%	0.4%	2.3%	4.2%	6.2%	8.1%	8.5%
Relative Percentage Change, Overall Rate of							
Return	0.0%	-2.4%	-4.1%	-5.8%	-7.3%	-8.7%	-10.5%

As illustrated in Figure 5, the scenario with reduced parking for the MPDU results in modest increases in overall profitability at most levels of bonus density, though it would still result in a decline in the rate of return. For example, if a project at base density cost \$50 million

<sup>&</sup>lt;sup>5</sup> There are two problems with reducing parking on the MPDU only: first, there is the equal treatment issue, i.e. why should affordable units have so much less parking than market rate; second, such a minor small reduction in parking may not have any impact on development costs because other factors make it impossible to change the footprint of the building.

to build and could be sold for \$55 million that would be a profit of \$5 million and a 10% rate of return. Based on the relationships illustrated above that project at 22% bonus density would generate an overall profit of \$5,425,000 (8.5% higher than at base density), whereas the overall rate of return would have decreased from 10% to 8.95% (10.5% less than the rate of return at base density).

#### High-Rise, With Workforce Housing, Standard Parking

This scenario is distinguishable from the base case by the fact that it also includes Workforce Housing. The Workforce Housing requirement applies in Metro Station Policy Areas, where much of the development is likely to be high-rise.

*Figure 6: Comparison of Rate of Return in "Base Case" (MPDU Only) and Scenario with MPDU and Workforce Housing* 

	0%	3.00%	7.00%	11.00%	15.00%	19.00%	22.00%
Base Case Overall Rate							
of Return	12.9%	12.6%	12.3%	12.1%	11.9%	11.7%	11.4%
Workforce Housing Scenario, Overall Rate							
of Return	9.5%	9.3%	8.8%	8.7%	8.6%	8.2%	8.1%

Again, though the rates of return may change the relationship between the rates of return in different scenarios will likely change little. Figure 6 (above) illustrates that adding the Workforce Housing requirement on top of the MPDU requirement results in a significant decline in the overall rate of return. On the basis of these assumptions, if 10% is the feasibility threshold for a project, the added burden of Workforce Housing would be pushing this project farther into the range of infeasibility as density increases. The implication of the preliminary results in Figure 6 is that Montgomery County may actually see fewer bonus density units constructed in the future, given the extent to which growth is targeted for Metro Station Policy Areas.

In addition, developers opine that there may be no way for them to increase the total number of units in a development in order to accommodate the Workforce Housing requirement. As such, it may be that the total number of units will remain constant, with the Workforce Housing effecting a proportional reduction in market rate units and MPDU.

TOTAL UNITS	100	103	107	111	115	119	122
Base Case	1		I				
# MPDUs	13	14	15	16	17	18	19
# Market Rate Units	87	89	92	95	98	101	103
Workforce Housing So	enario				·	·	
# MPDUs	12	12	13	14	14	14	15
# Workforce Units	8	8	8	8	9	9	9
# Market Rate Units	80	83	86	89	92	96	98

*Figure 7: Unit Mix Breakdown for Base Case and Workforce Housing, Holding Number of Units Constant* 

As Figure 7 (above) illustrates, if developers are unable to build additional units, the workforce units will replace market rate units and MPDU both.

The development community continues to voice its concerns that it is not financially feasible to develop residential where both the MPDU and Workforce Housing requirements apply. While the recent downturn in the real estate market has made this assertion difficult to evaluate, this critical issue deserves additional attention in the near future.

#### CONCLUSION

Preliminary analysis indicates that there is little economic benefit to developers in building to bonus density under the MPDU program. Sufficient economic incentive would need to be in place in order for developers to choose to build additional, bonus density MPDU. If the bonus density incentive is to be a resource for additional MPDU at the margins, that incentive structure requires an overhaul.

The additional burden of the Workforce Housing requirement, where it applies, makes it even less likely that developers will build to bonus density in areas close to transit. This is a significant preliminary finding given that much of Montgomery County's future residential capacity is in areas affected by the Workforce Housing requirement. As an example, OLO's *A Study of Moderately Priced Dwelling Unit Program Implementation* indicated that between April 2005 and April 2007 13.4% of dwelling units constructed in developments to which the MPDU

requirement applies were MPDU. It is possible that the addition of the Workforce Housing requirement would reduce that yield to the 12.5% minimum of the MPDU program.

Increasing the yield of affordable units under our current inclusionary zoning laws will probably require creative solutions. More detailed analysis will be necessary in order to develop creative solutions to improve the yield of affordable units under an inclusionary zoning regime that includes both MPDU and Workforce Housing.

#### Appendix 1: Scenarios, Assumptions & Methodology

The analysis was performed by building a pro forma model of the base case scenario, and then by running the same set of assumptions for a number of other scenarios. This enabled Staff to examine not only the economic feasibility of bonus density within each scenario, but also to compare the performance of different scenarios to one another.

#### Scenarios

All scenarios were run off of the "base case" with only one variable changed in each sensitivity analysis. The variables include number of parking spaces, workforce housing, and the distribution of affordable units within the bonus density program. In each case it was assumed that the project included 100 total units at base density. The following scenarios were run to determine what can provide developers with the largest incentive to build the full amount of bonus MPDUs.

- *Base Case Scenario:* This scenario reflects the current formula for the MPDU program. Workforce units were excluded. This scenario shows the net profits and rates of returns that developers could expect to receive from the existing MPDU program at different levels of bonus density.
- *Workforce Housing Analysis:* This analysis added in workforce housing that is required for development in Metro Station Policy Areas. The analysis was conducted to illustrate the impact of the workforce housing requirement above and beyond the MPDU requirement on a developer's bottom line.
- *Parking Sensitivity Analysis:* The intent of this scenario was to demonstrate the impact of reduced parking for MPDU on both profit and rate of return. The parking ratio (1.2 spaces per market rate unit) is held constant for market rate units, whereas the MPDU parking ratio is reduced from 0.6 to 0.3 spaces per unit. This analysis demonstrates the sensitivity of profit and rate of return to reductions in parking.

## Assumptions

The following assumptions were kept constant in each of the scenarios, unless otherwise specified.

## Parking

• High-Rise Parking Space Cost (Underground): \$35,000

High-Rise Development Costs

	Average Development Cost/SF	Average Gross SF/Unit	# Parking Spaces/Unit
Market Rate For-Sale	\$380	1,155	1.2
MPDU For-Sale	\$342	1,040	0.6
Workforce For-Sale	\$342	1,155	0.6

Development costs include hard costs and soft costs, but do not include land or parking.

## High-Rise Values (Per Unit)

- Market Rate For-Sale Values: Market Rate for-sale units were valued at \$578,000, which is \$500/SF. \$500/SF is in line with values for new high-rise for-sale construction in the County.
- MPDU For-Sale Values: For-sale MPDUs were valued at \$187,000<sup>6</sup>. A \$10,000 average upgrade per unit was assumed for MPDUs in addition to the base price of \$187,000.<sup>7</sup>
- Workforce Housing For-Sale Units: The value of workforce for-sale units (\$249,500) were determined using the calculation on the DCHA website, which is based on incomes at 80% of AMI.<sup>8</sup> Workforce units were also assumed to get the average \$10,000 upgrade.

<sup>&</sup>lt;sup>6</sup> For Sale MPDU values were based off current units up for resale of similar construction types on the DHCA website. These values were confirmed through conversations with DHCA, reflecting the most current pricing of new for-sale high-rise MPDUs.

<sup>&</sup>lt;sup>7</sup> The \$10,000 average upgrade for an MPDU was provided through developer conversations and based on their experience with the program.

<sup>&</sup>lt;sup>8</sup> It was assumed that 28% of income is spent on housing and monthly housing expenses. The adjusted housing cost was translated into the sales value by calculating the annual housing allowance (HH income was multiplied by the percentage of income spent on housing) 28%, which is in line with the percentage cited on the DHCA website for 'affordable' units. Then the annual housing expenses (defined as condo fees, hazard insurance, primary mortgage

#### Methodology

The pro-forma analysis plotted out the bonus density levels allowed under the program, starting with 0% (base density) and increasing to a maximum bonus density of 22%. For each of these densities, the number of MPDUs and market rate units were calculated<sup>9</sup> with the percentage of MPDUs in the project rising from 12.5% to 15%. In addition, a tenure split was calculated, which then translated into the number of market rate for-sale, market rate for-rent, MPDU for-sale, and MPDU for-rent units in a given scenario. While all levels of bonus density were analyzed, throughout this report reference is made only to bonus density levels of 0%, 3%, 7%, 15%, 19%, and 22%. This is because at these levels one additional MPDU was required for an increase in market rate units—at the intervening levels of density there would be no increase in affordable units, with the increase only impacting market rate units (assuming base density of 100 units).

In each scenario the total net profit/loss was calculated for the projects—based upon the cost assumptions and value assumptions outlined above. Finally, both the rate of return and change in overall profits were calculated at each level of density.

insurance, and real estate taxes) were netted out to find the maximum allowable yearly mortgage payment. A 5% down payment was assumed, which is the minimum required under the program. The annual housing expenses were estimated using available secondary market information. Then the mortgage was calculated using an 8.3% 30-year fixed mortgage rate.

<sup>&</sup>lt;sup>9</sup> It was assumed that no new market rate units would be approved without an additional MPDU.

# Appendix 2: Results of Pro Forma Analysis

## **Base Case Scenario**

Base Unit Count	Base MPDU	Base Market Rate	Parking Spaces/Unit
100	13	87	1.2/Market
			0.6/MPDU

## Summary of Preliminary Model Results

Base Density	0%	3%	7%	11%	15%	19%	22%	
100% For Sale								
Profit (Millions)	\$6.16	\$6.19	\$6.31	\$6.43	\$6.54	\$6.67	\$6.69	
Overall Rate of Return	12.9%	12.6%	12.3%	12.1%	11.9%	11.7%	11.4%	
Change in Rate of Return from Base	0.0%	-2.6%	-4.4%	-6.2%	-7.8%	-9.3%	-11.3%	
Density								

## Workforce Housing Scenario

Base Unit Count	Base MPDU	Base Market Rate	Base Workforce Units	Parking Spaces/Unit
100	13	87	8	1.2 – Market
				0.6 – Affordable

## Summary of Preliminary Model Results

Base Density	0%	3%	7%	11%	15%	19%	22%	
100% For Sale								
Profit (Millions)	\$4.77	\$4.78	\$4.74	\$4.85	\$4.95	\$4.91	\$4.92	
Overall Rate of Return	9.5%	9.3%	8.8%	8.7%	8.6%	8.2%	8.1%	
Change in Rate of Return from Base	0.0%	-2.3%	-7.4%	-8.3%	-9.3%	-13.5%	-15.2%	
Density								

# **Parking Scenario**

Base Unit Count	Base MPDU	Base Market Rate	Parking Spaces/Unit		
100	13	87	1.2 – Market		
			0.3 - MPDU		

Summary of Preliminary Model Results

Base Density	0%	3%	7%	11%	15%	19%	22%
100% For Sale							
Profit (Millions)	\$6.16	\$6.19	\$6.31	\$6.43	\$6.54	\$6.66	\$6.69
Overall Rate of Return	13.2%	12.9%	12.7%	12.5%	12.3%	12.1%	11.8%
Change in Rate of Return from Base	0.0%	-2.4%	-4.1%	-5.8%	-7.3%	-8.7%	-10.5%
Density							