

INNOVATIVE HOUSING ANALYSIS **EXECUTIVE SUMMARY**

Montgomery County, MD

Prepared for:

Montgomery County Planning Department

Prepared by:

Michael Baker International

Date

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1.0 OVERVIEW

Michael Baker prepared the following deliverables as part of the Innovative Housing Analysis project for the Montgomery County Planning Department:

Task 2: Zoning Analysis

- A review of current regulations and processes associated with housing development in the county’s single-family residential zones. The study evaluates development standards such as lot coverage, setbacks and parking etc. in residential zones.
- A summary and analysis of key barriers (beyond building types permitted) in residential zones to building small multi-unit buildings in a cost-effective manner with a menu of potential solutions to address such barriers.

Task 3: Conceptual Design Package: A conceptual design package for hypothetical sites in the county’s residential zones including R-40, R-60, R-90, and R-200 that include prototypical, market responsive duplexes, triplexes, quadplexes, and cottage courts.

Task 4: Innovative Construction Techniques: A summary and discussion of innovative construction techniques and materials and evaluation of building code and permit requirements, as well as criteria for emergency access and the provision of utilities, in the single-family residential zones.

Task 5: Sustainable Site Planning: A summary and discussion of innovative and environmentally sustainable site planning techniques.

2.0 TASK 2: ZONING ANALYSIS

Michael Baker International was tasked with reviewing existing zoning regulations and proposed amendments for their impact on the potential development of duplexes, triplexes, quadplexes, and cottage courts in four residential zoning districts (R-40, -60, -90, and -200), identifying key barriers to building these attainable housing types, and proposing recommendations to address such barriers.

The zoning analysis consisted of two parts:

1. **Existing Landscape Analysis:** Analysis of the overall geographic and regulatory landscape of the focus zoning districts (R-40, -60, -90, and -200), Attainable Housing Study (AHS) zoning amendments, and focus housing types.
2. **Site Analysis:** Parcel analysis of different conceptual designs for the focus housing types to understand how current zoning code and proposed AHS amendments provide context-appropriate regulations or barriers for these housing types.

From the zoning analysis, the following key barriers emerged. Associated recommendations were developed to address the barriers.

Table ES-1 Key Barriers and Recommendations

KEY BARRIERS	RECOMMENDATIONS
Complicated Zoning Ordinance	Simply the Zoning Ordinance.
	Simplify the Approval Paths.
	Introduce Cottage Courts as a Housing Type in the Zoning Ordinance.
Minimum Site Area	Provide minimum lot area per unit relief.

Pattern Book Requirement	Permit duplexes in all focus residential districts by-right.
	Use conformance with the pattern book as a carrot, not a stick.
Maximum Lot Coverage	Increase lot coverage maximums by 5%.
Minimum Side and Rear Setbacks	Decrease minimum setbacks by 5 feet.
Geographic Limitations	Reexamine use of Priority Housing District.
	Re-zone R-200 districts located within the Priority Housing Area to R-90.

This zoning analysis and associated recommendations are meant to be considered in tandem with the analysis of other regulations, such as building code, fire code, tree canopy cover requirements, and stormwater management regulations.

3.0 TASK 3: CONCEPTUAL DESIGN PACKAGE

The Conceptual Design Package includes conceptual designs to introduce attainable housing into the R-40, R-60, R-90, and R-200 zoning districts. This report complements Task 2, Zoning Analysis, to understand what barriers exist to introducing attainable housing that follows these conceptual designs.

4.0 TASK 4: INNOVATIVE CONSTRUCTION TECHNIQUES

This report provides numerous examples of innovative techniques and construction materials and methods relative towards promoting small, multiple dwelling units in current detached single-family settings in Montgomery County. These examples can be beneficial in order to lessen the obstacles towards developing these types of infill dwelling in cost and increase climate responsiveness.

Table ES-2 Summary of Innovative Construction Techniques

Innovative Construction Technique or Material Category	Environmental Performance Strategy	Cost to Implement \$ - Low \$\$ - Medium \$\$\$ - High	Complexity and Scale of Implementation 1. Homeowner 2. Community 3. Developer	Environmental Performance Enhancement 1. Low 2. Medium 3. High
On-Site Energy Generation	Solar PV panels	\$\$\$	1,2,3	3
	Solar Glazing	\$	1,3	3
Building Techniques	Micro Housing Units	\$	3	2
	Mass Timber	\$\$\$	3	3
	Modular Units	\$	1,3	2
	Permit Ready ADU Program	\$\$	1,2,3	1
	Pre-Cast Sectional Foundations	\$	1,3	2
	Wall Panelization – Interior and Exterior	\$	1,3	2
	Trussed Roof Pre-Assembled Sections	\$	1,3	1
Materials	Transparent Wood	\$\$	1,3	3

	Bipolar Ionization	\$\$\$	1,2,3	1
	Structural Insulated Panels	\$\$	1,3	3
	Declare Products	\$	1,2,3	3
	Shipping Containers	\$	3	3

5.0 TASK 5: SUSTAINABLE SITE PLANNING

This report showcases a series of sustainable site planning techniques that can be applied to housing at a variety of scales. The table below summarizes the strategies and their associated costs, complexity, and performance enhancement.

Table ES-3 Summary of Sustainable Site Planning

Environmental Performance Category	Environmental Performance Strategy	Cost to Implement \$ - Low \$\$ - Medium \$\$\$ - High	Complexity and Scale of Implementation 1. Homeowner 2. Community 3. Developer	Environmental Performance Enhancement 1. Low 2. Medium 3. High
Building location and orientation for passive heating/cooling	Architectural Interventions	\$\$(\$)	1,2,3	1
	Planting Strategies	\$	1,2,3	1
On-Site Energy Generation	Solar	\$\$\$	1,2,3	2
	Wind	\$\$\$	1,2,3	2
On-Site Water Recycling and Reuse Techniques	Rain Barrels	\$	1	1
	Rainwater Cisterns	\$\$	2	2
	Underground Storage	\$\$\$	3	2
Strategies for Preservation and Enhancement of Tree Canopy	Shade Tree Planting	\$	1, 2, 3	3
	Species Selection	\$	1, 2, 3	3
	Provide adequate soil volume	\$\$	3	3
	Improve soil texture and organic matter content	\$\$	3	3
	Restore biological function to soils	\$\$	2,3	3