M E M O R A N D U M

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Residential Development Capacity Analysis Methodology and Assumptions

The Residential Development Capacity Analysis is an estimate of the total amount of residential development that may be built in Montgomery County under a certain set of assumptions (see attached methodology). These assumptions include applicable market trends, zoning rules and existing land use policies. The Residential Development Capacity will serve as a baseline measure that aims to estimate current residential capacity in Montgomery County, MD in dwelling units.

The Residential Development Capacity Analysis will use a detailed parcel-level approach, where each parcel's development capacity will be measured against a set of constraints and assumptions. While the capacity analysis will create a baseline residential capacity number, its detailed approach will allow for a more granular look at residential capacity in smaller areas of Montgomery County. This will also allow us to model future scenarios and understand the implications of zoning changes in segmented areas of the County. By looking at both county-wide and at smaller areas, we can also apply a historical lens to find areas of the county that may have excess capacity and aim to understand why.

The Residential Development Capacity Analysis' methodology is detailed below. The methodology details the set of constraints and assumptions each parcel is measured against.

Residential Development Capacity methodology:

1) Determine the residential zoning potential of all parcels in the county.
2) Apply attributes to all parcels that will allow us to determine if a parcel is constrained by environmental or man-made factors.
3) Apply the current development pipeline to the County parcels
4) Establish the existing dwelling unit count
5) Establish the existing plus pipeline unit count
6) Filter all parcels not already involved in the pipeline for those environmental or manmade constraints to determine the remaining additional residential development capacity

Determine the residential zoning potential of all parcels in the county.

Zoning code was attributed to each parcel in the County. This includes the zoning code from Rockville, Gaithersburg, Poolesville, Laytonsville, Barnesville, Washington Grove along with the rest of the County.

- Assumes Standard Method of Development (12.5% MPDUs)
- Unless:
    - Within Planning Areas with a legal requirement to provide 15% MPDUs (Optional Method +22% bonus density)
    - Within Bethesda Downtown Plan Area (Optional Method + no bonus density)
- **C/R Family of Zones (FAR-based zones):**
    - Assumes Maximum Residential
    - The formula for CR Zone: (Shape_Area * R (Residential) value) / 1250 sq. ft. = Potential_Units
- For **Employment Zones** (GR, NR, LSC EOF) assumes office (no residential)
- **Residential (Units-Per-Acre Zones):**
- The formula for Residential Zones was:
    - Total Acreage = Shape_Area/43,560 (1 acre = 43,560 sf)
    - Total Acreage * Allowable units-per-acre for Standard Method/MPDU optional method of development = Potential_Units
- Residential capacity will be calculated using unit size factors for FAR based zones:

Unit Size Assumptions	
Multi-family	**1,250 SF**
Townhouse/Single-family Attached	**2,400 SF**
Single-Family Detached	**3,200 SF**

a.

Zone	**Standard Method Unit Type Assumption**	**Standard Method Density (Units-Per-Acre)**	**Optional Method Unit Type Assumption**	**Optional Method Density (Units-Per-Acre)**
Rural Residential Zones				
AR	SFD	1 unit per 25 acres	SFD	
R	SFD	1 unit per 5 acres	SFD	
RC	SFD	1 unit per 5 acres	SFD	1 unit per 5 acres
RNC	SFD	1 unit per 5 acres	SFD	1.22
Residential Detached Zones				
RE-2	SFD	½ unit per acre	SFD	
RE-2C	SFD	½ unit per acre	SFD	0.48
RE-1	SFD	1.09	SFD	1.22
R-200	SFD	2.18	SFA	2.66
R-90	SFD	4.84	SFA	5.90
R-60	SFD	7.26	SFA	8.86
R-40	SFD	7.26	SFA	8.86
Townhouse Low Density Zones				
TLD	SFA	9.07	SFA	11.07

TMD	SFA	12.10	SFA	14.76
THD	SFA	15.02	SFA	18.32
Residential Multi-Unit Zones				
R-30	MF	14.50	MF	17.69
R-20	MF	21.70	MF	26.47
R-10	MF	43.50	MF	53.07
Commercial/Residential Zones				
CR	MF	FAR	MF	FAR + 22% Bonus
CRT	MF	FAR	MF	FAR + 22% Bonus
CRN	MF	FAR	MF	FAR + 22% Bonus
Employment Zones				
GR	MF (30%)	FAR	MF (30%)	FAR + 22% Bonus
NR	MF (30%)	FAR	MF (30%)	FAR + 22% Bonus
LSC	MF (30%)	FAR	MF (30%)	FAR + 22% Bonus
EOF	MF (30%)	FAR	MF (30%)	FAR + 22% Bonus
Zones Retained				
RT-6.0	SFA	6.0	SFA	7.32
RT-8.0	SFA	8.0	SFA	9.76
RT-10.0	SFA	10.0	SFA	12.20
RT-12.5	SFA	12.5	SFA	15.25
RT-15.0	SFA	15.0	SFA	18.30
PD	Case-By-Case Basis	Case-By-Case Basis	Case-By-Case Basis	Case-By-Case Basis

Municipal zoning density schedule: INSERT

2: Apply attributes to all parcels that will allow us to determine if a parcel is constrained by environmental or man-made factors.

Attributes added to all parcels:

Square Feet of surface parking	GIS surface parking lot layer, apportioned to each parcel
Government ownership	Schools, County, MNCPPC, WSSC, MC-HOC, Maryland State, Federal
Square Feet of environmental constraint	floodplains, wetlands, stream valley buffers
Agricultural Easements	State Ag Easements, TDRs, and BLTs
Water and Sewer Categories	From MC DEP
Multifamily building YEARBUILT	MD DHCA licensed rental database has accurate year built for our MF buildings
Pipeline of development	Number of residential approved units apportioned to each parcel

3. Apply Residential Pipeline to Parcel base

Development approvals from MNCPPC as well as those from sub-jurisdictions within the County (Gaithersburg, Rockville, etc.) and maintained in a GIS pipeline layer by Montgomery Planning. These projects are residential, commercial, or mixed.
Constituent parcels to a development plan get these values. Parcels not affiliated with a pipeline approval contain NULL in this field. Some parcels are coded with a zero in this field, this means that the parcel is part of a project. HOA open space, or stormwater management lots are used to derive density for a project, and when they are approved, they can no long be used to derive additional density. This is why many parcels associated with a project can have a zero, so they are correctly removed from calculation of additional zoning potential.

4. Establish the Existing Dwelling Unit Count

The SDAT dwelling unit counts are taken for the whole county. The analysis uses a parcel snapshot from December 2019.
Existing Dwelling units: **382,027**

5. Establish Additional dwelling units in the December 2019 Pipeline

There are **42,520** dwelling units in the pipeline of approved residential projects
Existing units plus these approved units results in **424,547** total existing and approved dwelling units.

6. Filter all parcels not already involved in the pipeline for those environmental or manmade constraints to determine the remaining additional residential development capacity

Each parcel has its existing, potential, and net additional units already calculated from previous steps. However, many of these parcels cannot or likely will not be able to redevelop for various reasons. We have established a series of compounding queries to isolate the parcels whose capacity will not be counted. A parcel can be flagged by one or many of these queries.

After this process we total the net capacity of those parcels that did not get filtered. These parcels and their magnitudes are what we see on our development capacity map.

Parcels already in Pipeline **2,230 removed**	PIPELINE_UNITS is not null
HOA lands **10,152 removed**	NEW_LANDUSECODE = '740' or LANDUSECODE_QC = '740' or LANDUSE_CODE = '740'
Parcels in public ownership **15,901 removed**	PublicOwnership IN('WSSC' , 'WMATA' , 'Montgomery County' , 'MNCPPC' , 'MC Board of Education' , 'Maryland State' , 'Federal')
Parcels in Ag_easement. **16,169** total removed	AG_easementFlag in ('BLT', 'AgEasemnt')
Remove Utilities **16,725 total removed**	PUBLICUSE_TYPE IN ('POTOMAC ELECTRIC - Operating Property' , 'ASHINGTON GAS LIGHT - Operating Property' , 'CSX TRANSPORTATION - Operating Property' , 'TRANSCO GAS PIPE - Operating Property', 'BELL ATLANTIC - MARYLAND - Operating Property') NEW_LANDUSECODE in ('470', '480')
Environmentally constrained properties **20,908 total removed**	Properties who are no more than 33% covered by environmentally regulated areas AND where that un-regulated area totals at least a quarter acre. (SHAPE_Area - Env_Const_Sqft) / SHAPE_Area < .33
Commercial newer than 50 years (1970) **22,193 total removed**	LU_CATEGORY IN('Office' , 'Retail') and YEAR_BUILT > 1970
Multifamily without enough additional zoning capacity **23,534 total removed**	(NEW_LANDUSECODE in ('113', '117', '119', '118') or LU_CATEGORY = 'Multi-Family') and (DU_Zoned_Potential < (RES_DWELLU*3))
Remove all Residential Condos **24,109 total removed**	ACCT like 'C%' and LU_CATEGORY not in ('Institutional/Community Facility', 'Office', 'Research and Development', 'Retail')
Single Family Dwellings on small lot zones – not munis **188, 499 total removed**	ZONING_SCHEDULE IN ('MC_Regular', 'MPDUrequired') and LONGZONE IN ('TMD' , 'TLD' , 'THD', 'R-90' , 'R-60', 'RT-10.0', 'RT-12.5', 'RT-15.0', 'RT-6.0', 'RT-8.0', 'R-200') and (NEW_LANDUSECODE in ('111', '116', '114')or

	LU_CATEGORY IN ('Cooperative' , 'Single Family Attached' , 'Single Family Detached'))
Single Family small lots in Municipalities **215,938 total removed**	ZONING_SCHEDULE NOT IN('MC_Regular' , 'MPDUrequired') and NEW_LANDUSECODE in ('111', '116', '114')
Burial Sites **215,295 total removed**	BurialSite = 'Buri*'
Private Institutional **215,520 total removed**	PUBLICUSE_TYPE IN('ASSISTED LIVING (AMBULATORY)' , 'HOSPITAL' , 'JAIL/CORRECTIONAL FACILITIES' , 'NURSING HOME' , 'SCHOOL') NEW_LANDUSECODE IN ('672', '674', '675', '681', '682', '731', '711')

Total additional Capacity 114,697