M E M O R A N D U M

January 17, 2020

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 an equivalent "translation" of 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 **2,235 removed 308138 remain** By itself this removes 2235 parcels (56119 DUs)	PIPELINE_UNITS is not null
HOA lands **10,157 removed 300216 remain** By itself this removes 8093 parcels (50846 DUs)	NEW_LANDUSECODE = '740' or LANDUSECODE_QC = '740' or LANDUSE_CODE = '740'
Parcels in public ownership **15,906 removed 294467 remain** By itself this removes 6038 parcels (143007 DU)	PublicOwnership IN('WSSC' , 'WMATA' , 'Montgomery County' , 'MNCPPC' , 'MC Board of Education' , 'Maryland State' , 'Federal')
Parcels in Ag_easement. **16,174** removed 294199 remain By itself this removes 279 parcels (2002 DUs)	AG_easementFlag in ('BLT', 'AgEasemnt'
Remove Utilities **16,730 removed 293643 remain** By itself this removes 1087 parcels (11719 DUs)	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') or NEW_LANDUSECODE in ('470', '480')
Environmentally constrained properties **40,084 removed 270289 remain** By itself this removes 28414 parcels (91184DUs)	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 And (SHAPE_Area - Env_Const_Sqft) < (43560/4)
Commercial newer than 50 years (1970) **41,373 removed 269000 remain** By itself this removes 1337 parcels (112312DUs)	LU_CATEGORY IN('Office' , 'Retail') and YEAR_BUILT > 1970

Multifamily without enough additional zoning capacity **42,716 removed 267657 remain** By itself this removes 1358 parcels (20563 DUs)	(NEW_LANDUSECODE in ('113', '117', '119', '118') or LU_CATEGORY = 'Multi-Family') and (DU_Zoned_Potential < (RES_DWELLU*3))
Remove all Residential Condos **43,292 removed 267081 remain** By itself this removes 1019 parcels (16166 DUs)	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 **231,071 removed 79302 remain** By itself this removes 191523 parcels 35322DU	ZONING_SCHEDULE IN ('MC_Regular' , 'MPDUrequired') and LONGZONE IN ('THD' , 'TLD' , 'TMD' , 'RURAL' , 'Rural' , 'RT-8.0' , 'RT-6.0' , 'RT-15.0' , 'RT-12.5' , 'RT-10.0' , 'RNC' , 'RE-2C' , 'RE-2' , 'RE-1' , 'RC' , 'R-90' , 'R-60' , '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 **257,715 removed 52548 remain** By itself this removes 27032 parcels (6186 DUs)	ZONING_SCHEDULE NOT IN('MC_Regular' , 'MPDUrequired') and NEW_LANDUSECODE in ('111', '116', '114')
Burial Sites **257,862 removed 52511 remain** By itself this removes 222 parcels (2759 DUs)	BurialSite = 'Buri*'
Private Institutional **258,087 removed 52286 remain** By itself this removes 800 parcels (19752 DUs)	PUBLICUSE_TYPE IN('ASSISTED LIVING (AMBULATORY)' , 'HOSPITAL' , 'JAIL/CORRECTIONAL FACILITIES' , 'NURSING HOME' , 'SCHOOL') or NEW_LANDUSECODE IN ('672', '674', '675', '681', '682', '731', '711')
Remove Non-Retail where Improvement Assessed value more than twice the land assessed value **261,932 removed 48441 remain** By itself this removes 18131 parcels (88998 DUs)	IMPROV_ASSMT > (LAND_ASSMT*2) and NEW_LANDUSECODE not like '5%'

Remove Employment Zones **263,253 removed 47120 remain** By itself this removes 2680 parcels (0 DUs)	LONGZONE like 'EOF%' or LONGZONE like 'GR%' or LONGZONE like 'NR%' or LONGZONE like 'IM%' or LONGZONE like 'IH%' or LONGZONE like 'IL%' or LONGZONE like 'I-3%' or LONGZONE like 'I-1%' or LONGZONE like 'LSC%'
Remove CR, CRT, CRN parcels that net ten or less units from likelihood of redeveloping. **264,722 removed 45651 remain** By itself this removes 2815 parcels (2985 DUs)	NET_DU_CAPACITY <=10 and LONGZONE like 'CR%'
Remove PD zoned parcels with single family landuse codes **271,621 removed 38752 remain** By itself this removes 8583 parcels (784 DUs)	ZONING_SCHEDULE IN ('MC_Regular' , 'MPDUrequired') and LONGZONE like 'PD%' and (NEW_LANDUSECODE in ('111', '116', '114') or LU_CATEGORY IN ('Cooperative', 'Single Family Attached' , 'Single Family Detached'))
Remove Park Landuse QC **291,860 removed 18513 remain** By itself this removes 44634 parcels (84434 DUs)	LANDUSECODE_QC = '761'
Remove Golf Courses we agreed are sure not to redevelop **291,869 removed 18504 remain** By itself this removes: 31 parcels (5247 DUs)	(Bethesda CC, Burning Tree CC, Chevy Chase CC, Columbia CC, Congressional CC, Kenwood CC, Little Bennett Golf Course, Needwood Golf Course, Northwest Park Golf Course, Sligo Creek Golf Course, TPC At Avenel Golf Course) GOLF_KEEPS = 'NoRedev'
Eliminate developable parcels that have zero net units available. **306,023 removed 4350 remain** By itself this removes: 273207 (0 DUs)	NET_DU_CAPACITY < 1 or NET_DU_CAPACITY is null

Remaining parcels with development or redevelopment potential   4,350
Total additional existing residential capacity   <u>**85,946 Dwelling Units**</u>