

# Carroll County 'Holding Capacity Methodology'

## *Buildable Land Inventory Method*

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)





# Process for Calculating Potential Buildable Land Inventory (BLI) Estimates

- Carroll County performs **Residential** and **Commercial BLI (*Buildable Land Inventory*)** estimates based on **Zoning** and **Designated Land Use** in separate GIS layers and tables. The calculations are currently done separately as each town has unique zoning and land use designations and associated codes.
  - The BLI based on **Zoning** is calculated separately for each of the eight municipalities within their corporate limits and is also calculated for the “Unincorporated County” regions. \*The ‘Residential BLI’ provides 3 levels of estimates: **High, Medium, Low**.
  - The BLI estimates based on **Designated Land Use/Future Land Use** are calculated separately within each of the Designated/Municipal Growth Areas, and also, for the County regions outside of the growth areas. \*The ‘Residential BLI’ provides 3 levels of estimates: **High, Medium, Low**.

# Preliminary Step: Identify Data Layers used for calculating Residential BLI (*housing units*) and Commercial BLI (*acres*):

## ➤ Absolute Constraint Layers

- Absolute constraint layers usually encompass the entire parcel but may just include a portion of the parcel when the constraint is an existing environmental easement or as buffers of existing wellheads, **communication** towers, etc. Absolute constraints (entire parcels or portions of parcels) are removed from BLI consideration prior to calculating the **Low**, **Medium** and **High** estimates.

## ➤ Partial Constraint Layers

- Partial Constraints (potential environmental constraints) generally only impact a portion of a given parcel and the impacted portions are removed from the parcels before calculating the **Low** estimates.

- **Other Data Layers Used in the BLI Process:** *Parcel layer, County Zoning, Municipal Zoning, Designated Land Use (Future Land Use), Address Points, etc.* \*This includes zoning and designated land use layers for each of the 8 municipalities.

# Potential Residential Development (BLI): (Zoning Method)

Potential Residential Lot Yields (*housing units*)



# General Process for Calculating Residential BLI or Potential Lot Estimates



**Step 1:** Update and assemble all needed data layers into a file.



**Step 2:** Remove Absolute Constraints from the Parcel layer.



**Step 3:** Union the Parcel Data layer with the County Zoning layers (including municipal zoning).



**Step 4:** Select all parcels that are zoned agriculture, residential, and conservation.




**Step 5:** Select all commercial zoned parcels that allow residential development.



**Step 6:** Set up the parcel attribute table to include BLI specific fields including fields for 'high', 'medium' and 'low' BLI or lot yield estimates.




**Steps 7 to 10:** Populate/Calculate the new fields in the attribute table for the new layer.



## Step 1: Update and Assemble Data Layers used for calculating Residential BLI:


- **A.** Review data layers and update as needed.
- **B.** Assemble and Merge all the *Absolute Constraints layers* into a single feature class. In this feature class create a field named 'Type' and populate with Ag Easement, County owned, Quarry owned, etc.
- **C.** Assemble and Merge all the *Partial Constraints* layers into a single feature class. In this feature class create a field named 'Type' and populate.
- **D.** Assemble other layers needed for the analysis: *Zoning* (for County & 8 Municipalities), *Address Points*, *Parcels (property data)*, etc.
- **E.** Create a new feature class '**Residential BLI**' from the *Parcel* layer polygons and include select fields extracted from the parcel data need for the analysis. Then copy all data layers into a geodatabase including the absolute constraints, partial constraints and other data layers identified in the preliminary step.



## List of Absolute Constraint Layers: (\*Entire Parcel removed)

- County Owned Lands
- State & municipal owned
- Agricultural Land Preservation Easements
- Agricultural Remaining Portions without further subdivision rights (subset of Ag Remaining Portions)
- Road & Railroad Right-of-ways (subset of Parcel layer)
- HOA & Open Space
- Quarry-owned parcels
- Other non-buildable parcels
- Public Use

*\*The Absolute Constraints (listed above) are considered not subdividable/buildable in the BLI model*



## Other Absolute Constraints: (\*Generally, a portion of the parcel removed from the BLI)

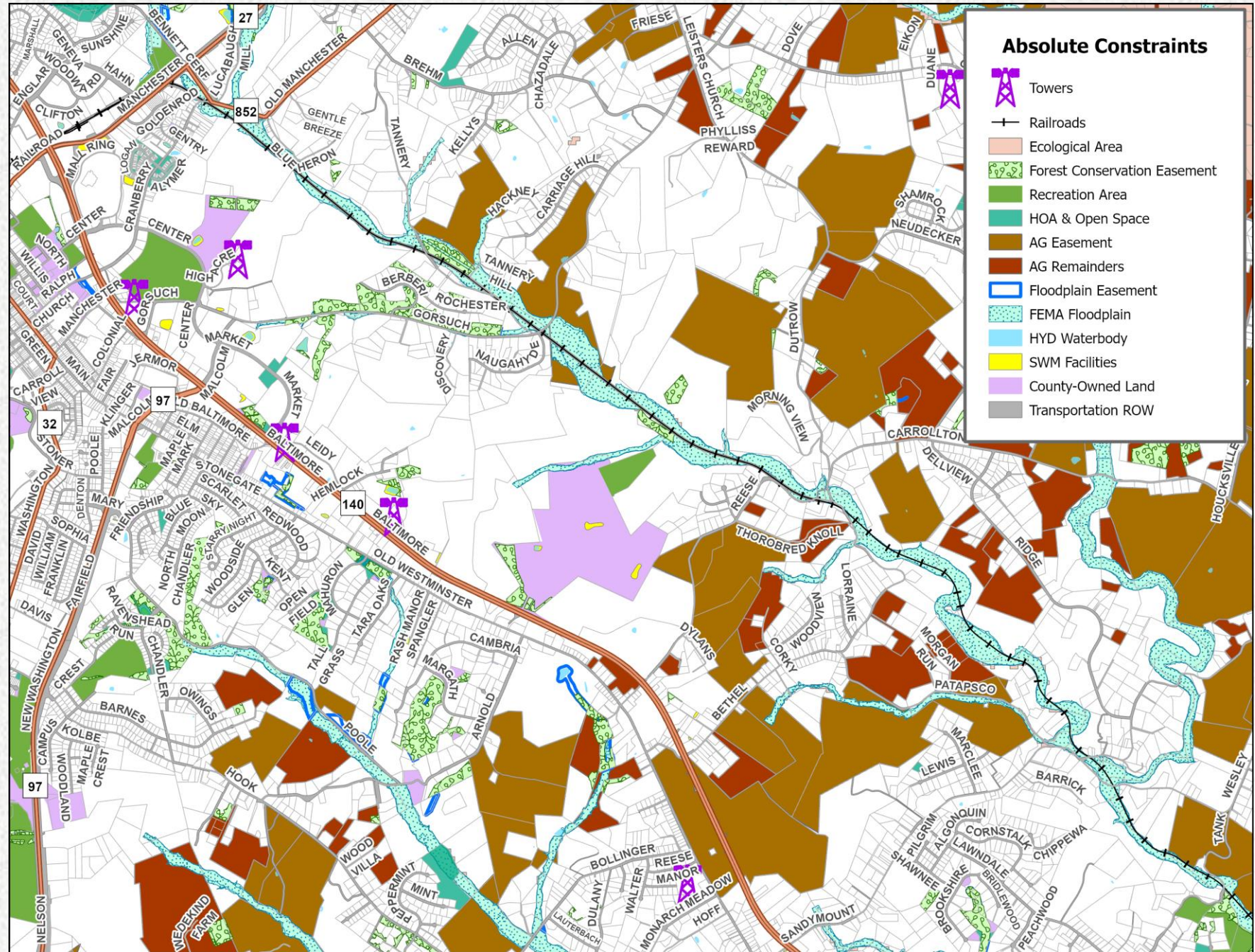
### ➤ Existing Environmental Easements & Well/Tower buffers


- FEMA 100-year Floodplain
- Floodplain Easements
- Forest Conservation Easements
- Water Resource Protection Easements
- Wellhead Buffers-existing municipal production wells
- Communication Towers Buffer



# Absolute Constraints (Residential)

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)



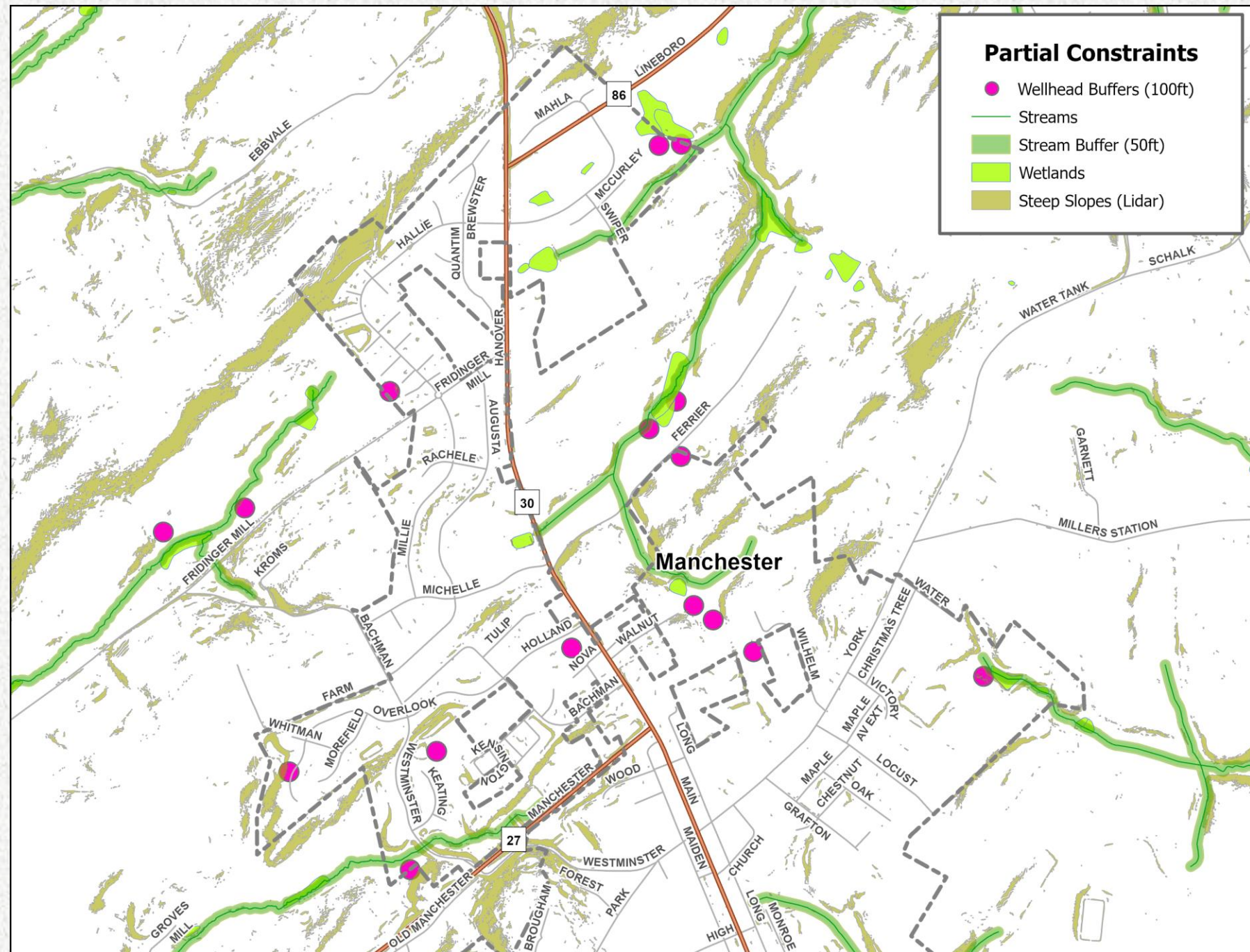


## Partial Constraint Layers: (\*Generally only impact a portion of a given parcel and are removed from the parcels before calculating the 'low estimates')

- Stream buffers- run buffer from streams layer
- Steep Slopes LIDAR
- Wetlands
- Wellhead Buffers-potential municipal production well locations

# Partial Constraints (Residential)

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)



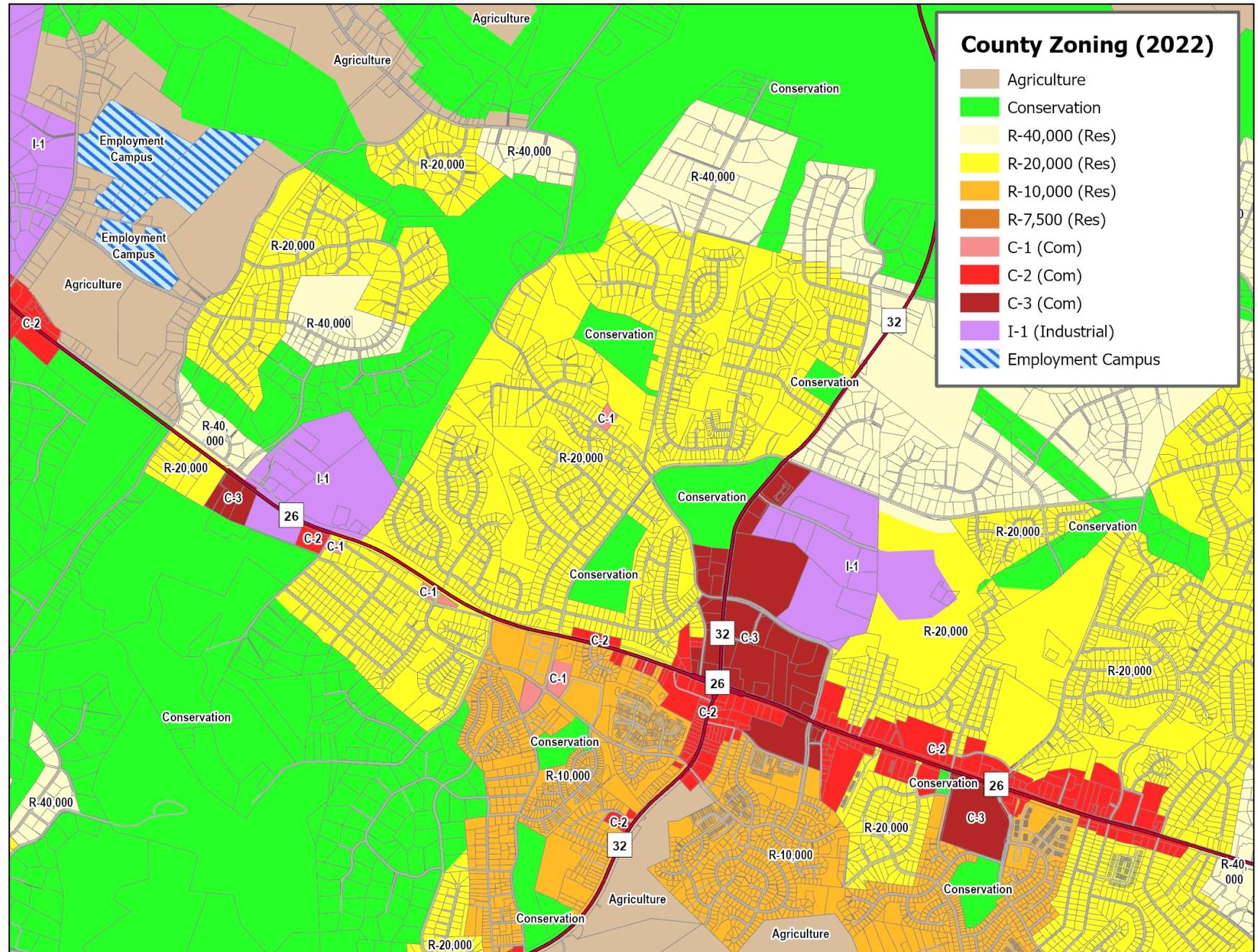



## Other Data Layers Used in the Residential BLI Process:

- Parcel Layer (Property Data)
- Residential Address Points
- County Zoning
- County Future Land Use
- Municipal Zoning for each of the 8 municipalities-
- Municipal Future/Designated Land Use for each of the 8 municipalities (only used for BLI based on Designated Land Use)
- Mineral Resource Overlay-Viable Recovery Area (used Transfer Development Rights)

# Sample: County Zoning with parcel layer (Eldersburg Area)

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)



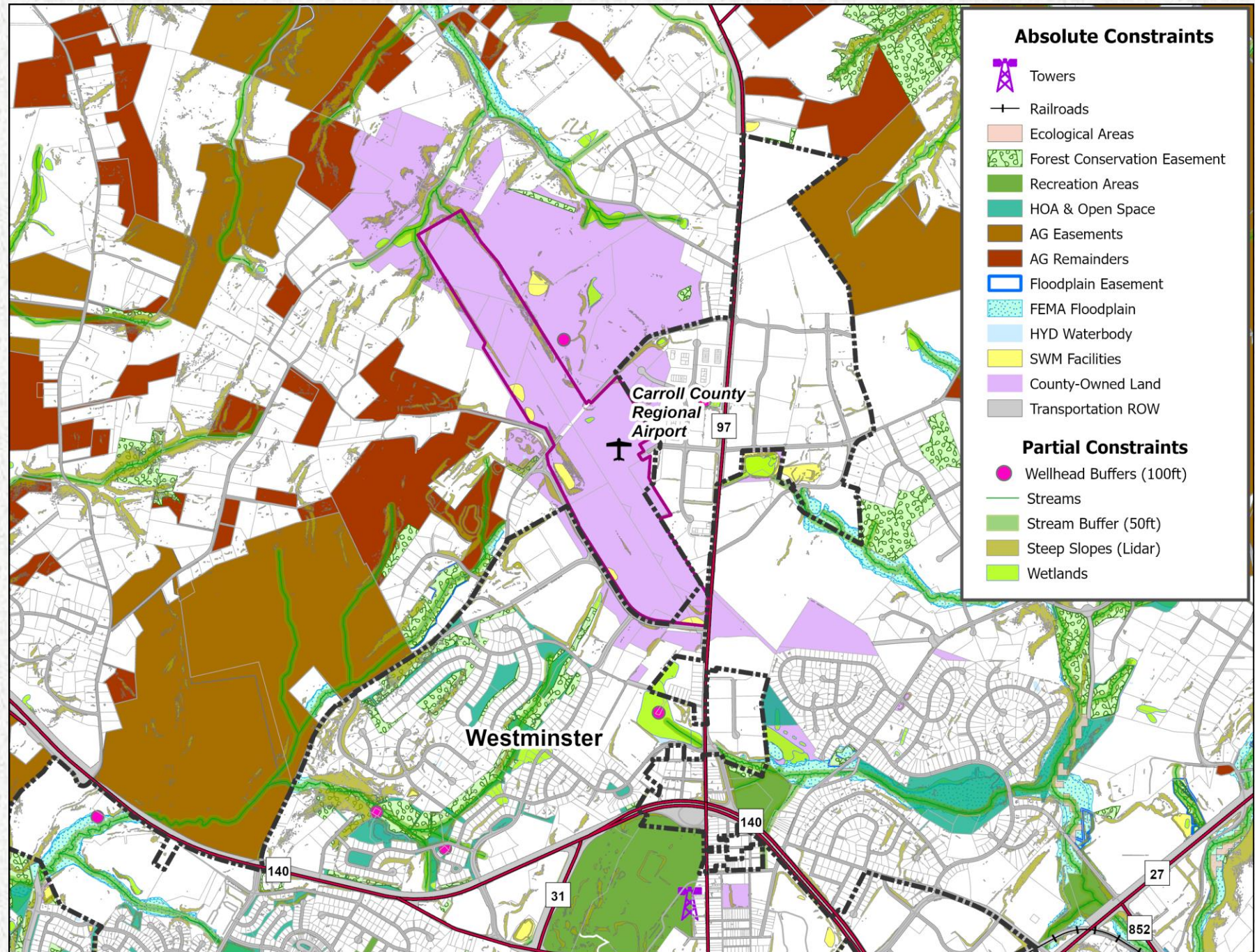


## Step 2: Remove/Erase Absolute Constraints from the BLI Parcel layer:

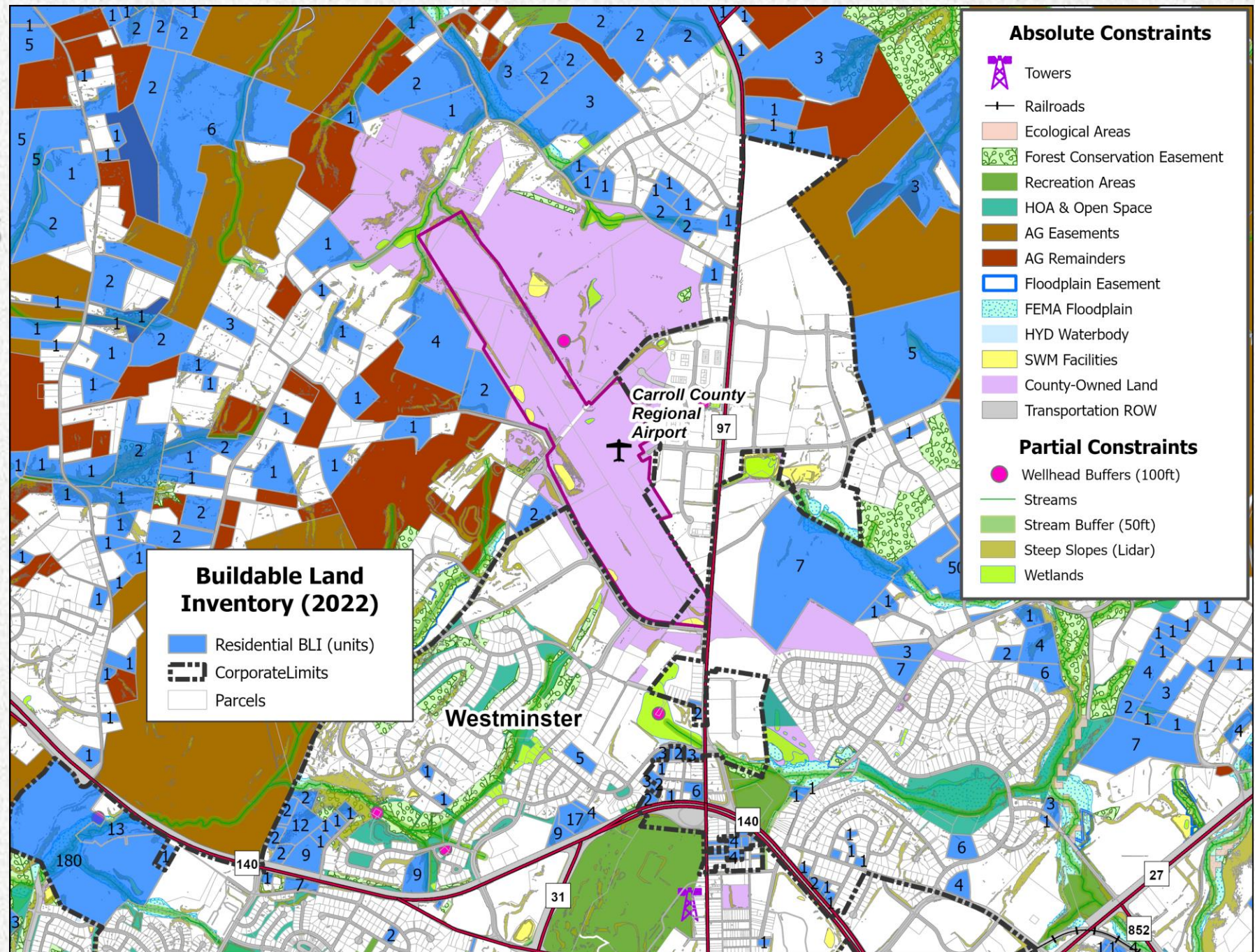
- **A.** Transportation ROW's can be deleted directly from the parcel layer by using the select by attribute tool where the *FCODE* field equals 2 (Street) or 4 (Railroad).
- **B.** Remove *Absolute Constraints* that encompass entire parcels . This includes all absolute constraints listed (i.e., ag easements, forest conservation easements, etc.) except for the existing environmental easements and wellhead/tower buffers.
- **C.** Remove the impacting portions of environmental easements and wellhead/tower buffers by using the erase tool as these rarely encompass an entire parcel.

# Constraints (near Carroll Co. Airport)

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)



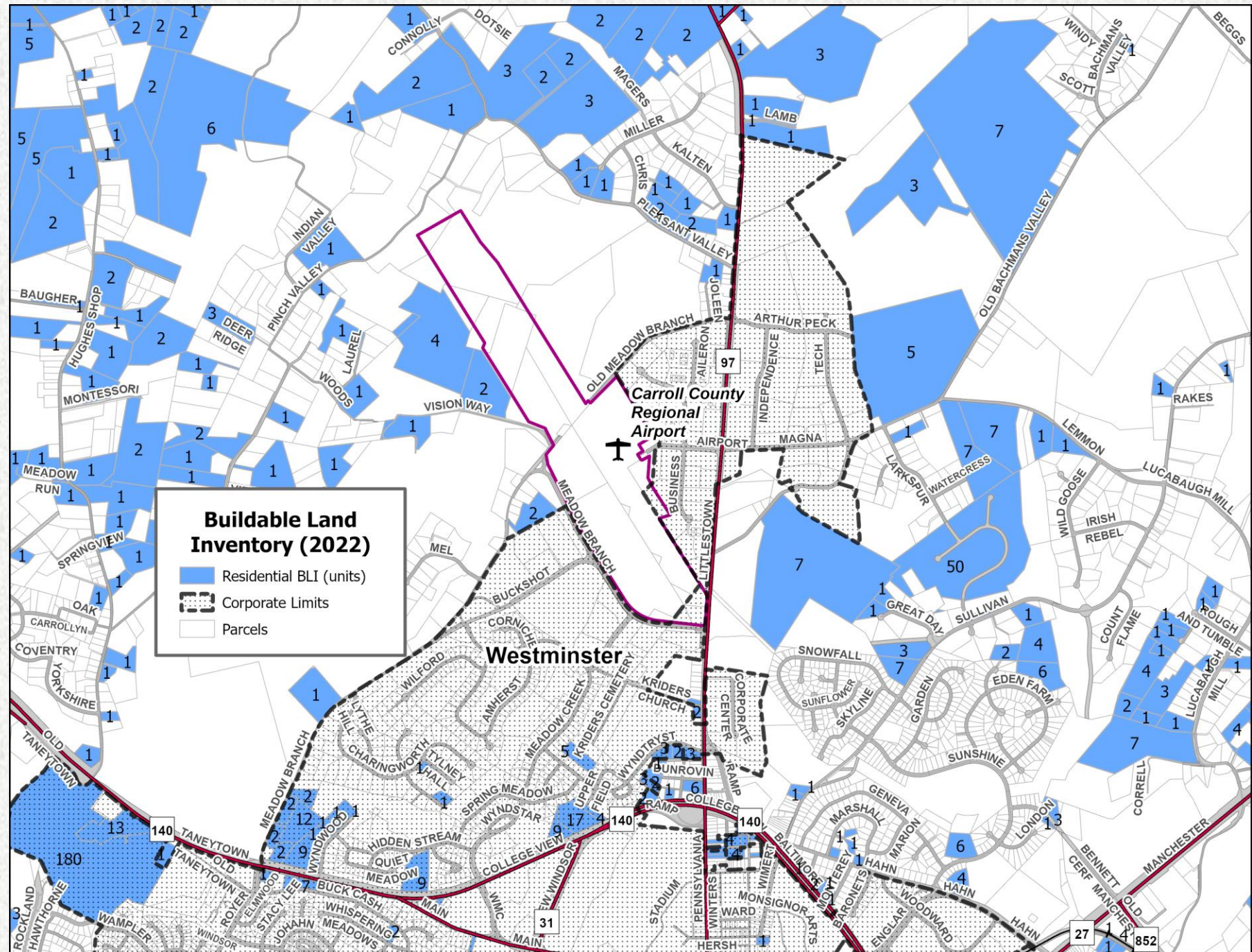
# BLI vs Constraints (near Carroll Co. Airport)



Prepared by the Carroll County  
Departments of Planning and  
Land Resource Management  
2023 (kc)



# Residential & BLI (near Carroll Co Airport)




Prepared by the Carroll County  
Departments of Planning and  
Land Resource Management  
2023 (kc)

## Step 3: Union the Parcel Data layer with the County Zoning layers (including municipal zoning).

- This will assign a zoning district to each parcel. If a given parcel is split by multiple zoning districts or a ROW (right-of-way), this process will create separate parcels based on the split(s). Clean up data as needed.

Jurisdiction	Parcel	Zoning
County	P.94	Conservation
Taneytown	P.935	R-10,000 Dis...
County	P.935	C-2
Taneytown	P.933	R-10,000 Dis...
County	P.933	Conservation
Taneytown	P.932	R-7,500 Distr...
County	P.932	Conservation
County	P.932	Agriculture
Taneytown	P.931	R-7,500 Distr...
County	P.931	R-40,000
County	P.93	Agriculture



## Step 4: Identify and keep in the working layer, all parcels whose zoning allows Residential Development

- **Delete** from the working layer, all parcels having an *industrial* zoning designation as these do not allow for residential development. Also delete any parcels with “null” zoning.
- **Keep** all parcels whose zoning allows for residential development in the working layer: *R-7,500, R-10,000, R-20,000, R-40,000, Heritage, Conservation, C-1, C-2, C-3, and Employment Campus*. These parcels are used to calculate the “Residential BLI” (Buildable Land Inventory) estimates for the County.

## Step 5: Set up the *BLI* fields in the parcel-based working layer attribute table to include these specific fields:

### *Attribute Table*

	Field Name	Type	Description
A	<i>New_Acres</i>	double	Acreage of parcel
B	<i>New_Area</i>	double	square footage of parcel
C	<i>Jurisdiction</i>	Text (30)	Populate with County or Town Name
D	<i>Multiplier</i>	double	Multiplier used for specific zoning district
E	<i>Min_Lot</i>	short integer	Minimum lot size in zoning district
F	<i>Mult_Area</i>	double	square footage after multiplier
G	<i>Improved</i>	short integer	Parcel Improved=1 and unimproved=0
H	<i>Double_Lot</i>	double	preliminary lot calculations
I	<i>LowEst_Area</i>	double	Square footage after removing partial constraints
J	<i>Mult_Area_L</i>	double	square footage after multiplier
K	<i>Int_Lots_H</i>	short integer	High Estimate Potential Lots expressed as an integer
L	<i>Int_Lots_M</i>	short integer	Medium Estimate Potential Lots expressed as an integer
M	<i>Int_Lots_L</i>	short integer	Low Estimate Potential Lots expressed as an integer

- \* Some fields are working (calculation) fields that are deleted from the final *BLI* database layer.
- \* Instructions for the Attribute Table are outlined in **Step 6** (next several slides).

## Step 6: Populate the new fields in the Attribute Table

- A. *New\_Acres field:*** Use the *Geometry Tool* to calculate the area of all parcels in 'Acres'.
- B. *New\_Area field:*** Use the *Geometry Tool* to calculate the area of all polygons in 'Square feet'.
- C. *Jurisdiction:*** Populate with *County* or *Town* Name (as per zoning district)
- D. *Multiplier field:*** Use \*table below to assign the corresponding 'Multiplier' values to each parcel by Zoning District. (\*Note: The multiplier is used for the 'medium' & 'low' estimates)
- E. *Minimum Lot field:*** Use \*table below and assign the corresponding *Minimum Lot Size* value to each polygon by *Zoning District* field.

Zoning District	Multiplier	Minimum Lot Size (sq. ft.)
Agriculture	1	n/a
Conservation	0.95	130,680
R-40,000	0.925	40,000
R-20,000	0.9	20,000
R-10,000	0.875	10,000
R-7,500	0.85	7,500
<i>Heritage</i>	0.9	20,000

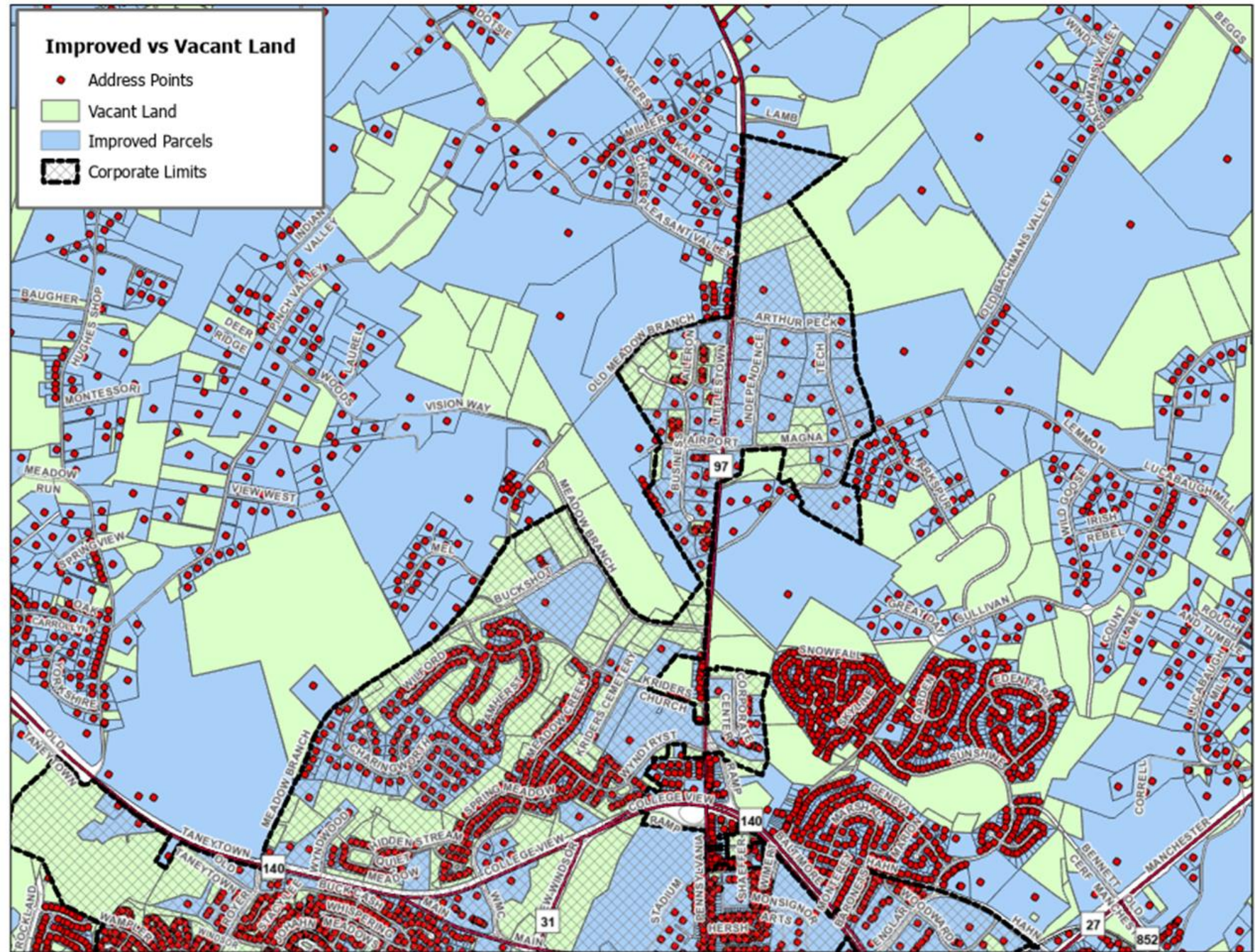
## Step 6: (continued)

### ► Populate/Calculate the new fields in the “Attribute Table” (continued)

- F. *Mult\_Area field:*** Use the field calculator with the expression “*Mult\_Area = New Area \* Multiplier*” to calculate the new *square footage* figure that will be used for calculating both the ‘**Medium**’ and ‘**Low**’ estimates based on the *Zoning* and *Minimum Lot Yields* noted in table on the prior slide.
- G. *Improved field:*** Select features from the *Parcel* layer (target layer) that intersect with the *Address Points* (source layer). These are the *Improved* Parcels. Improved parcels equal **1** and vacant parcels equal **0**. Enter the corresponding values into the *Improved* field. Any “1” values or improved lots noted in the *Improved* field will be subtracted from the final estimates for potential new lots for the ‘**High**’, ‘**Medium**’ and ‘**Low**’ estimates.

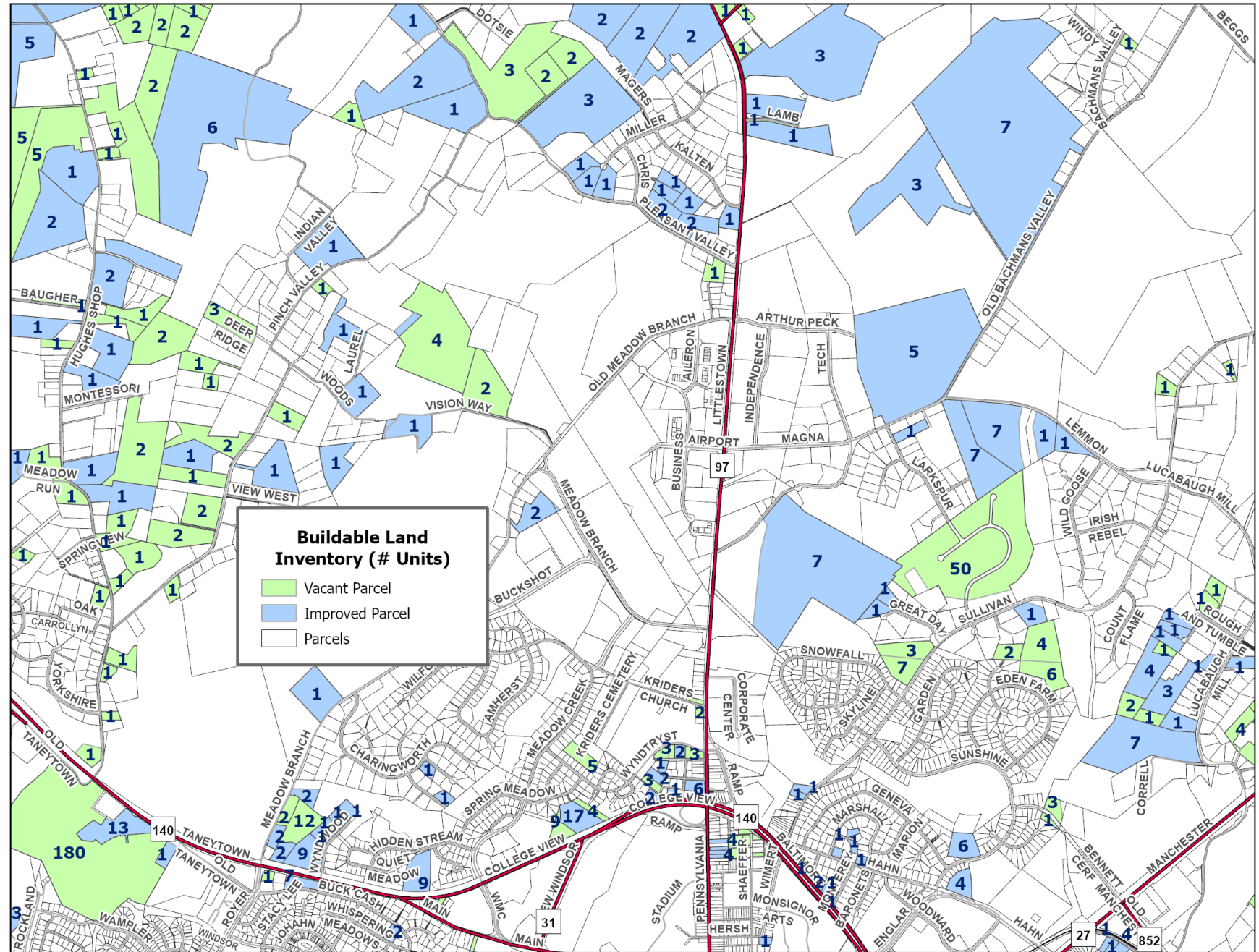
# Using Address Pts. to identify Vacant vs Improved Parcels

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)




# Residential BLI Improved vs Vacant (Potential Lots)

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)








## Step 6: Populate/Calculate the new fields in the Attribute table (continued)

- H. *Double\_Lot field:*** Multiple calculations will occur in this “working” field for the calculations performed in fields noted in next slide “K.” through “M.” After processing, this field will be deleted from the final database.
- I. *LowEst\_Area:*** This working field is used to recalculate the square footages of the parcels after the *partial constraints* are erased from impacted portions of parcels for the ‘Low’ estimates. After processing, this field will be deleted from the final database.
- J. *Multi\_Area:*** This field is used to recalculate the square footages used for the minimum lot yields after the *multiplier* is applied for the ‘Medium’ and ‘Low’ estimates.



## Step 6: Populate/Calculate the new fields in the Attribute table (continued)

- K. *Int\_Lot\_H Field*:** The **'High'** estimate is a straight density calculation after Absolute Constraints are removed and any *Improved* values subtracted. This is the high-end estimate of potential lots expressed as an integer.
- L. *Int\_Lot\_M field*:** This the **'Medium'** estimate that uses the multiplier to reduce the density after a recalculation of the square footages based on the *Multipliers*, the subtraction of *Improved* values and after the removal of *Absolute Constraints*. This is the medium-range expressed as an integer.
- M. *Int\_Lots\_L field*:** This is the **'Low'** estimate that is derived from a recalculation of the square footages based on after both *Absolute* and *Partial* constraints are removed or erased, and *Multipliers* applied. *Improved* values are also subtracted from the final result. This is the low-end estimate expressed as an integer.

## Step 7: Calculate 'Int\_Lots\_H' (High Estimates), 'Int\_Lots\_M' (Medium Estimates), and 'Int\_Lots\_L' (Low Estimates) for parcels zoned Agriculture

1. Use a definition query with the expression *Zoning*="Agriculture" and *Jurisdiction*="County"
2. Use the **\*tables shown on the following slide** to assign potential new lots to the *Int\_Lots\_H* field for each **AG** parcel based on the acreage: where *New\_Acres* >.75 and *New\_Acres* <6 then *Int\_Lots\_H* =1; where *New\_Acres* >6 and *New\_Acres* <15 then *Int\_Lots\_H* =2 ; and, so on, as shown in the tables.
3. Adjustment for '**Improved Lots**': Once the *Int\_Lot\_H* field is calculated based on acreage as shown in the table for all **AG** Zoned parcels (**\*see next slide**), use the field calculator to calculate *Int\_Lots\_H* minus *Improved*. So, if the parcel is already improved, *Int\_Lots\_H* would lose 1 potential lot.
4. Because the 'yield' for **AG Zoned** parcels **is the same for high, medium and low estimates**, use the field calculator with the expression "*Int\_Lots\_M* = *Int\_Lots\_H*" and then "*Int\_Lots\_L* = *Int\_Lots\_H*" to calculate *Int\_Lots\_M* and *Int\_Lots\_L* for all AG Zoned parcels.

(\*Agricultural potential lot estimates are based the gross acreage of the parcel)

# Residential Yield (Allowed Units) for AG Zoned Parcels

Ag Parcel Size (Acres)	New Lots
.75- 6 acres	1
6-15	2
15-30	3
30-45	4
45-60	5
60-75	6

Ag Parcel Size (Acres)	New Lots
75-90	7
90-105	8
105-120	9
120-135	10
135-150	11
150-165	12

Ag Parcel Size (Acres)	New Lots
165-180	13
180-195	14
195-210	15
210-225	16
225-240...	17

## Step 8: Calculate the 'High' Estimates for parcels zoned *R-7500, R-10,000, R-20,000, R-40,000, and Conservation,*

- ▶ Use a definition query to isolate each zoning district separately ( i.e., Zoning=R40,000) and then calculate the estimates for each zoning district.
- ▶ The '**High Estimates**' are calculated based on the *minimum lot sizes* for each parcel based on sewer service and zoning category. (\*See tables – next slides)
- ▶ For "Improved" parcels subtract 1 from the result.
- ▶ Then round down the high estimates to an integer value.
- ▶ Select the high estimate parcels that are greater than 1. These are the BLI 'High Estimate' values that are stored in the *IntLots\_H* field in the database layer.

*\*As of 2021, the BLI takes into consideration current state policies regarding sewer service thus reducing the lot yield estimates to not exceed 7 Units when outside of planned Sewer Service Areas: Existing, Priority and Future service areas. (See table – next slide)*

# Residential Yield (Allowed Units) by Lot Size and Zoning

Residential Yields					
Zoning	Yield w/Sewer	Yield wo/Sewer	High	Medium	Low
Agriculture	N/A	1 unit/ 20ac	Yield with 1 unit/15ac, 7 max	Yield with 1 unit/15ac, 7 max	Yield with 1 unit/15ac, 7 max
Conservation	N/A	1 unit/ 3ac	Yield with 1 unit/3ac, 7 max	Yield with 1 unit/3ac, 7 max	Yield with 1 unit/3ac, 7 max
R-7,500**	5.8 units/ac	7 units per subdivision	5.8 units/ac	5.8 units/ac	5.8 units/ac
R-10,000**	4 units/ac	7 units per subdivision	4 units/ac	4 units/ac	4 units/ac
R-20,000**	2 units/ac	7 units per subdivision	2 units/ac	2 units/ac	2 units/ac
R-40,000**	1 unit/ac	7 units per subdivision	1 unit/ac	1 unit/ac	1 unit/ac
C-1*	14 unit/ac	7 units per subdivision	14 unit/ac	6 unit/ac	3.5 unit/ac
C-2*	14 unit/ac	7 units per subdivision	14 unit/ac	6 unit/ac	3.5 unit/ac
C-3* (sites over 20 acres on water and sewer)	14 unit/ac	7 units per subdivision	14 unit/ac	6 unit/ac	3.5 unit/ac (up 20% of the gross acreage)
EC	14 unit/ac	7 units per subdivision	14 unit/ac (up to 15% of gross acreage)	6 unit/ac (up to 15% of gross acreage)	3.5 unit/ac (up to 15% of gross acreage)

\* Whatever the site capacity is after environmental features and site plan reductions have been taken into consideration.

\*\* 1 unit per 2 acres up to 7 units total if not on water and sewer for Residential Districts.

# Residential Yield (Allowed Units) by Lot Size if outside of Sewer Service Area for Improved and Vacant

Parcel/Lot Size (acres)	Yield (Units) Adjustment Outside Planned SSA*	
	If Improved	If Vacant
.75- 2	0	1
2-4	1	2
4-6	2	3
6-8	3	4
8-10	4	5
10-12	5	6
12-14	6	7
14-16	7	7
16-18	7	7
18-20	7	7
20-22	7	7
22-24	7	7

\* Planned SSA includes the Existing, Priority & Future service area.

\* Parcels less than .75 acres in size that are outside the planned SSA are considered unbuildable

## Step 9: Calculate 'Medium' Estimates for parcels zoned *R-7500, R-10,000, R-20,000, R-40,000* and *Conservation*.

- Use a definition query to isolate each zoning district separately ( i.e., Zoning=R40,000) and then calculate the estimates for each zoning district.
- The 'Medium Estimates' are calculated based on the *minimum lot sizes* for each parcel based on sewer service and zoning category following same process used for the high estimates.  
(\*See tables – previous slides)
- The 'Medium Estimates' are also reduced by using *multipliers* based on zoning categories.  
(\*See table – next slide)
- For *Improved* parcels subtract 1 from the result.
- Then round down the medium estimates to an integer value.
- Select the medium estimate parcels that are greater than 1. These are the BLI 'Medium Estimate' values that are stored in the *IntLots\_M* field in the database layer.

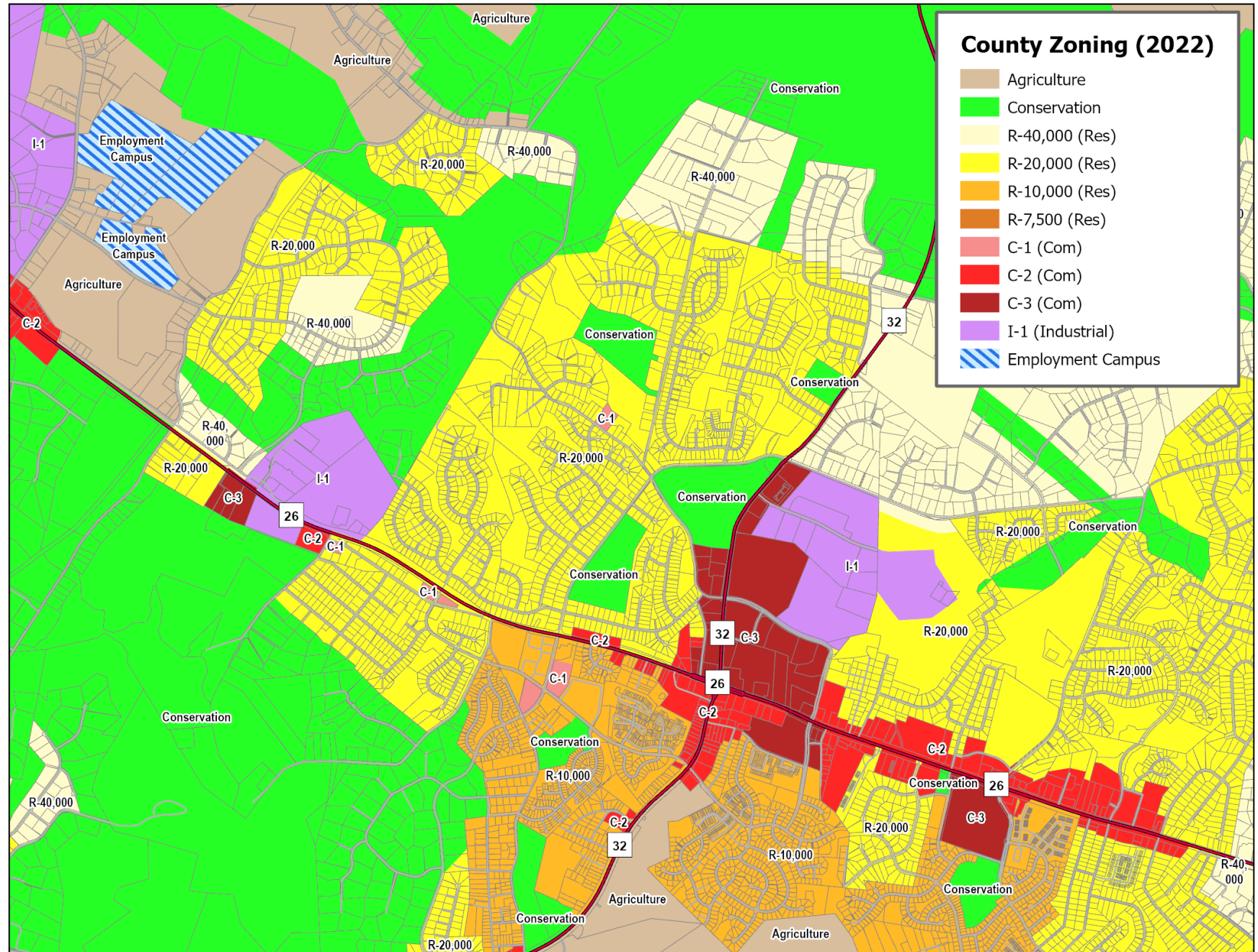


# Multipliers by Zoning for both Medium & Low Estimates

Zoning District	Multiplier	Minimum Lot Size (sq. ft.)
Agriculture	1	n/a
Conservation	0.95	130,680
R-40,000	0.925	40,000
R-20,000	0.9	20,000
R-10,000	0.875	10,000
R-7,500	0.85	7,500
<i>Heritage</i>	0.9	20,000

**\****Note: Multipliers are not used for parcels or parts of parcels falling in Commercial or Employment Campus Districts.*

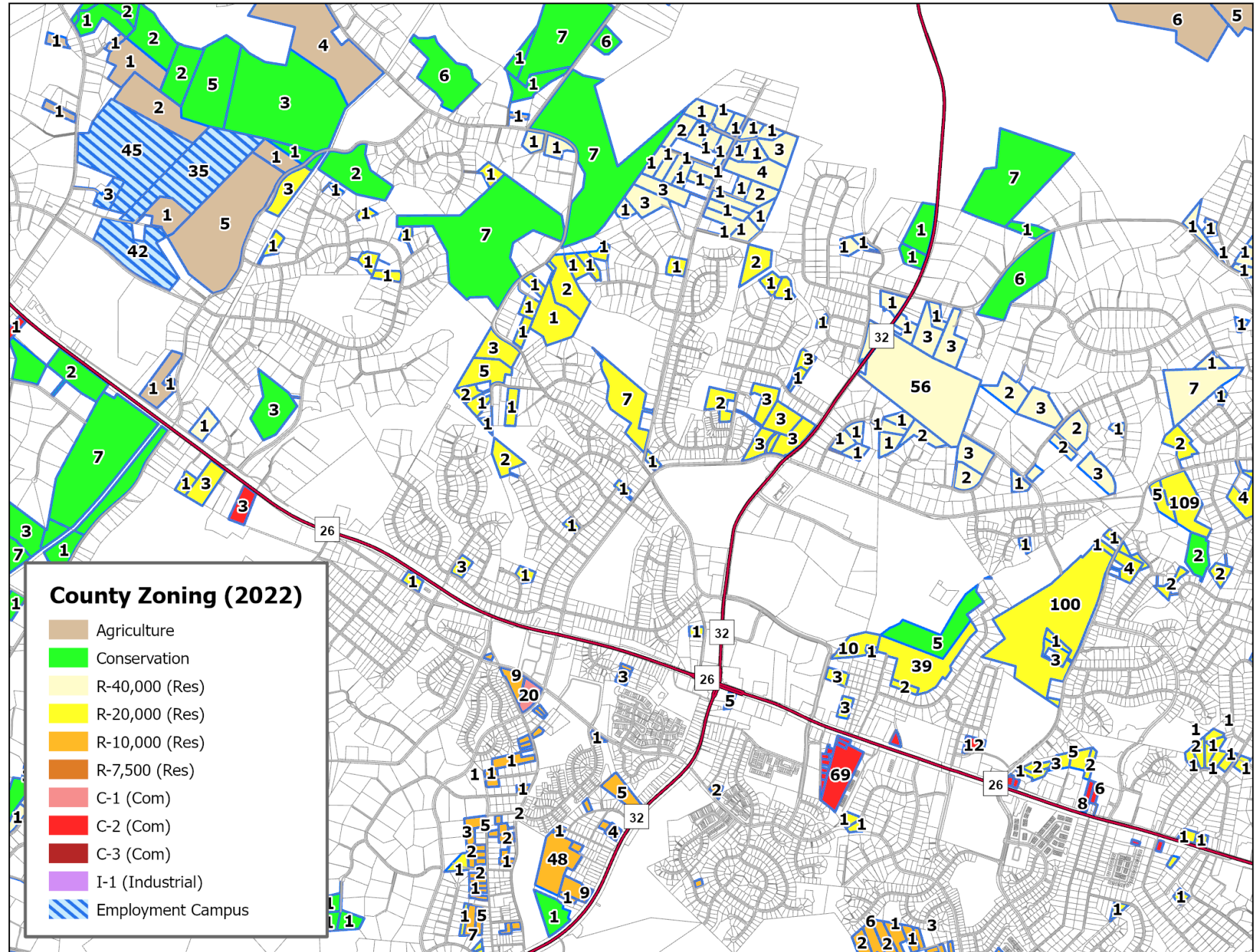
# Sample: County Zoning used for the BLI Estimates (Freedom Area)



Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)

# Sample: Residential BLI by Zoning (Medium Estimates - Allowed Units)

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)



## Step 10: Calculate 'Low' Estimates for parcels zoned *R-7500, R-10,000, R-20,000, R-40,000* and *Conservation*.

- ▶ Make a **new working/temporary *BLI Residential* feature class** for calculating the '**Low**' Estimates.
- ▶ Use the *Erase* function to **remove the 'Partial Constraints'** from the working *BLI Residential* feature class.
- ▶ *LowEst\_Area* field: Use the calculate geometry tool to update the 'square footage'.
- ▶ Use a definition query to isolate each zoning district separately ( i.e., Zoning = R40,000) and then calculate the estimates for each zoning district.
- ▶ The '**Low Estimates**' are calculated based on the *minimum lot size*, sewer service and the required *multipliers* for each zoning category following the same process used for the medium estimates..
- ▶ For Improved parcels subtract 1 from the result.
- ▶ Then round down the 'Low Estimates' to an integer value.
- ▶ Select the low estimate parcels that are greater than 1. The BLI 'Low Estimate' values are then stored in the *IntLots\_L* field in the final *BLI Residential* database layer.

# Step 11: Calculate the 'High', 'Medium', and 'Low' estimates for parcels zoned C1, C2, C3, and EC (Employment Campus)

- C-1, C-2, C-3, & EC (Employment Campus)** zones have an allowed residential lot yield when certain criteria are met. An additional separate process is used to determine this residential lot yield. Those numbers are then added into the final *BLI Residential* database.
- All **'Vacant' (unimproved) C1, C2, C3, and EC zoned parcels** are captured for review. Sewer service areas are used in this process. Using the criteria shown in the table provided below, 'High', 'Medium', and 'Low', determine the residential lot yields (allowed units) for each zoning category per sewer service availability.

Residential Yields in Commercial and Employment Campus Zones					
Zoning	Yield w/Sewer	Yield wo/Sewer	High	Medium	Low
C-1*	14 unit/ac	7 units per subdivision	14 unit/ac	6 unit/ac	3.5 unit/ac
C-2*	14 unit/ac	7 units per subdivision	14 unit/ac	6 unit/ac	3.5 unit/ac
C-3* (sites over 20 acres on water and sewer)	14 unit/ac	7 units per subdivision	14 unit/ac	6 unit/ac	3.5 unit/ac (up to 20% of the gross acreage)
EC	14 unit/ac	7 units per subdivision	14 unit/ac (up to 15% of gross acreage)	6 unit/ac (up to 15% of gross acreage)	3.5 unit/ac (up to 15% of gross acreage)

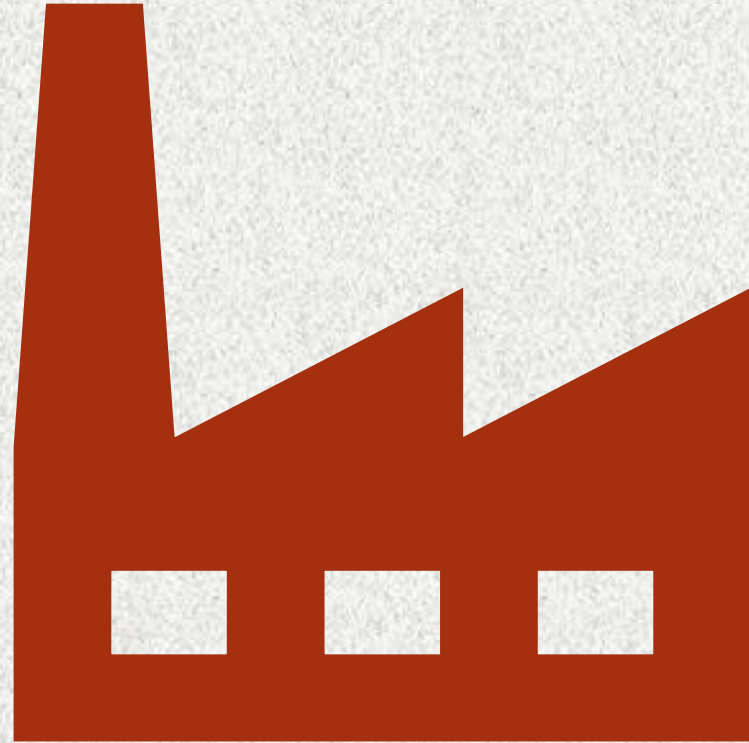
## Step 12: Clean the final 'Residential BLI' Database


- Review to ensure that parcels that have no residential lot potential are removed from the final Residential BLI database. Use the select by attribute tool and delete all parcels where Int\_Lots\_H <1.
- Remove working fields and clean up any other data fields to ensure accuracy and consistency.

	Jurisdiction	OriginalAc	NewAcres	NewArea	Multiplier	Mult_Area	Improved	Zoning	MinLotSize	BLI_Type	Sewer_Plan	Lots_M_Adj	PFA	DGA	RuralVill
1261	County	6.272928	6.290068	273994.268866	0.925	253444.698701	1	R-40,000	40000	Residential	No	3	In	In	Out
1262	County	2.855438	2.855437	124382.317677	0.925	115053.643851	1	R-40,000	40000	Residential	No	1	Out	In	Out
1263	County	2.130208	2.130528	92805.438272	0.925	85845.030401	1	R-40,000	40000	Residential	No	1	In	In	Out
1264	County	41.192363	41.192366	1794332.28845	0.95	1704615.67403	1	Conservation	130680	Residential	No	7	Out	In	Out
1265	County	2.070336	2.075745	90419.078385	0.925	83637.647506	1	R-40,000	40000	Residential	No	1	In	In	Out
1266	County	2.626987	2.630312	114575.91379	0.925	105982.720256	1	R-40,000	40000	Residential	No	1	In	In	Out
1267	County	2.149166	2.173137	94661.464655	1	94661.464655	0	Agriculture	217800	Residential	Yes	1	Out	In	Out
1268	County	3.980369	3.990849	173840.685739	0.925	160802.634309	1	R-40,000	40000	Residential	No	1	In	In	Out
1269	County	3.019364	0.836396	36433.279872	1	36433.279872	0	Agriculture	217800	Residential	No	1	Out	In	Out
1270	County	66.73979	47.279055	2059467.39131	0.95	1956494.02174	1	Conservation	130680	Residential	No	7	Out	In	Out
1271	County	6.878499	6.821023	297122.561795	0.95	282266.433705	1	Conservation	130680	Residential	No	1	Out	In	Out
1272	County	11.127111	9.712922	423093.183124	0.95	401938.523968	1	Conservation	130680	Residential	No	2	Out	In	Out

# Potential Commercial Development (BLI): (Zoning Method)

Potential Commercial/Industrial Acres





## General Process for Calculating Commercial BLI (Zoning Method)

**Step 1:** Update and assemble all needed data layers into a geodatabase file.

**Step 2:** Join the *Parcels* layer with *County Zoning* layers. Add 2 fields: *Location*, *Acres*. Delete parcels not having a commercial or industrial zoning designation.

**Step 3:** Identify improved / unimproved parcels using the County's address points layer.

**Step 4:** Identify absolute constraints and remove impacted parcels or erase portions of impacted parcels from the working *BLI* layer.

**Step 5:** Use the *Geometry Tool* to calculate the BLI 'Acres' field.

**Step 6:** Identify developed parcels that are not further developable based on parcel-by-parcel analysis of U&O's, approved subdivisions, etc. Delete from the database.

**Step 7 :** Clean the final **Commercial BLI** database layer and review for accuracy.





## Step 1: Assemble and Update Data Layers used for calculating the Commercial BLI:

- ▶ **A.** Assemble data layers (i.e., parcel layer, address points, etc.) used for calculating 'Commercial BLI' and update as needed. This includes the absolute constraints to commercial or industrial development: impervious surfaces (buildings, parking lots, roads, etc.), FEMA flood plains, and wetlands.
- ▶ **B.** Create a 'Commercial BLI' feature class working layer from the *Parcels* polygon layer and include select fields extracted from the parcel data needed for the analysis.

*\*Commercial BLI includes parcels with a commercial, employment campus or industrial zoning designation*

## Step 2: Spatially join the Parcel Data layer with the County Zoning layers (including municipalities).

- ▶ This will assign a zoning district to each parcel. Delete all parcels in the working layer that do not have a commercial, industrial or employment campus designation (*i.e.*, C1, C2, C3, I-1, I-2, EC, etc.) Add BLI fields: 'Location' and 'Acres' to the database.

PARCEL_1	Location	Zoning	Acres
1190	Mt Airy	DTZ	0.788622
	Mt Airy	DTZ	0.376774
	Mt Airy	DTZ	1.25741
0064	County	EC	12.402363
0490	County	EC	23.411904
0504	County	EC	3.376793
0484	County	EC	38.973489
0016	County	EC	50.381762
0690	NW	EC Employment Campus	2.748966
0001	NW	EC Employment Campus	4.510987
0001	NW	EC Employment Campus	2.903233
0001	NW	EC Employment Campus	5.169037
1581	Taneytown	Gen Bus	3.2579
0466	Taneytown	Gen Bus	4.204785

## Step 3: Identify improved / unimproved parcels using the County's *Address Points* layer.

- ➔ Add a field '*Vacant*' to the working database. Select those parcels from Step 2 that intersect the *Address Points* layer. These are the *Improved* parcels. For the selected parcels populate the newly added *Vacant* field with "No". Then switch the selection and populate the remaining as "Yes" for vacant.

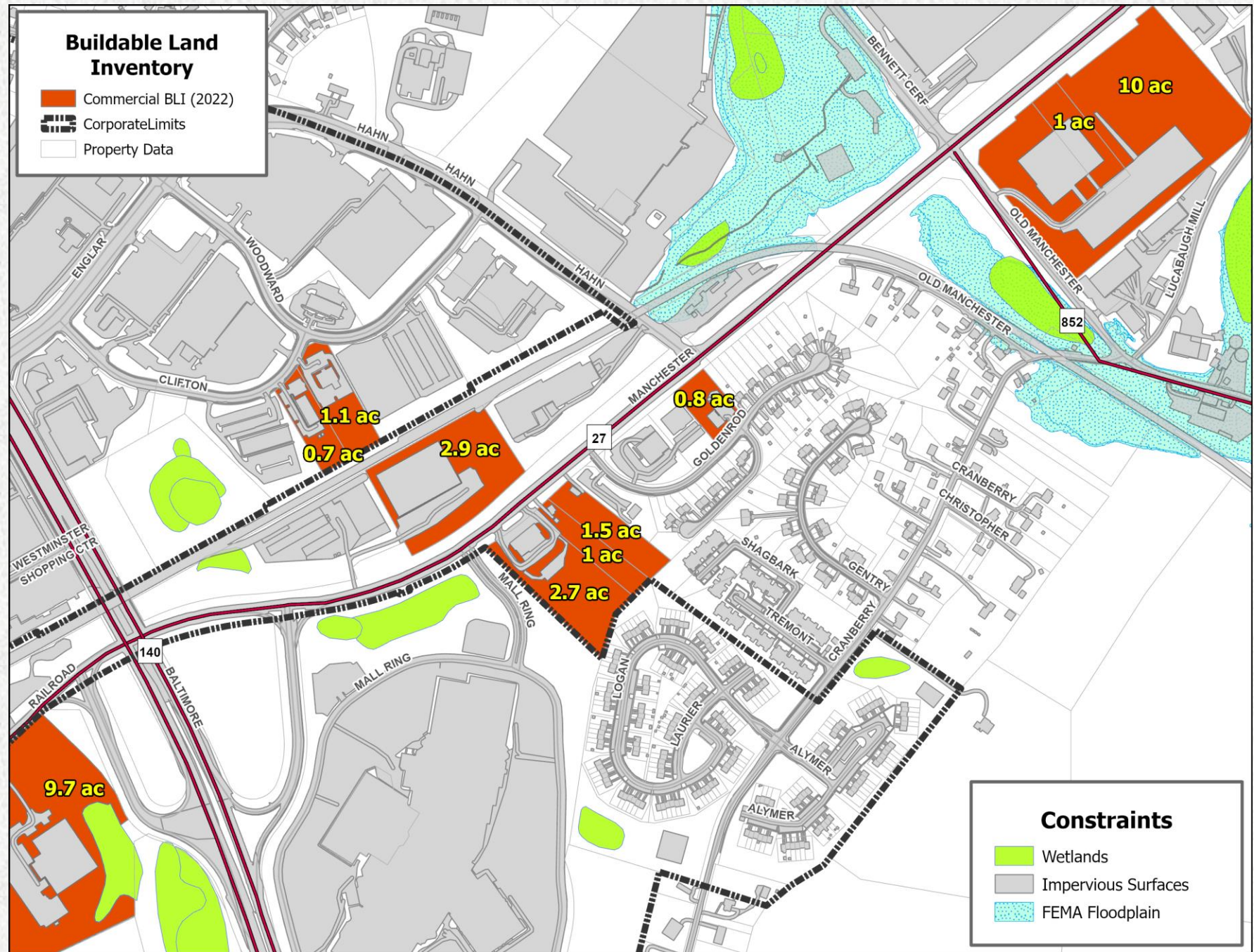
PARCEL_1	Location	Zoning	Acres	Vacant
1190	Mt Airy	DTZ	0.788622	yes
	Mt Airy	DTZ	0.376774	yes
	Mt Airy	DTZ	1.25741	yes
0064	County	EC	12.402363	no
0490	County	EC	23.411904	yes
0504	County	EC	3.376793	no
0484	County	EC	38.973489	yes
0016	County	EC	50.381762	yes
0690	NW	EC Employment Campus	2.748966	no
0001	NW	EC Employment Campus	4.510987	no
0001	NW	EC Employment Campus	2.903233	yes
0001	NW	EC Employment Campus	5.169037	no
1581	Taneytown	Gen Bus	3.2579	yes
0466	Taneytown	Gen Bus	4.204785	yes



## Step 4: Identify 'Absolute Constraints' and remove impacted parcels or portions of impacted parcels.

- **A.** Transportation ROW's can be deleted directly from the parcel layer by using the select by attribute tool where the *F\_CODE* field equals 2 (Street) or 4 (Railroad).
- **B.** Erase or cut out parcels or portions of parcels that are impacted by *Absolute Constraints*: impervious surfaces, FEMA flood plains and wetlands.

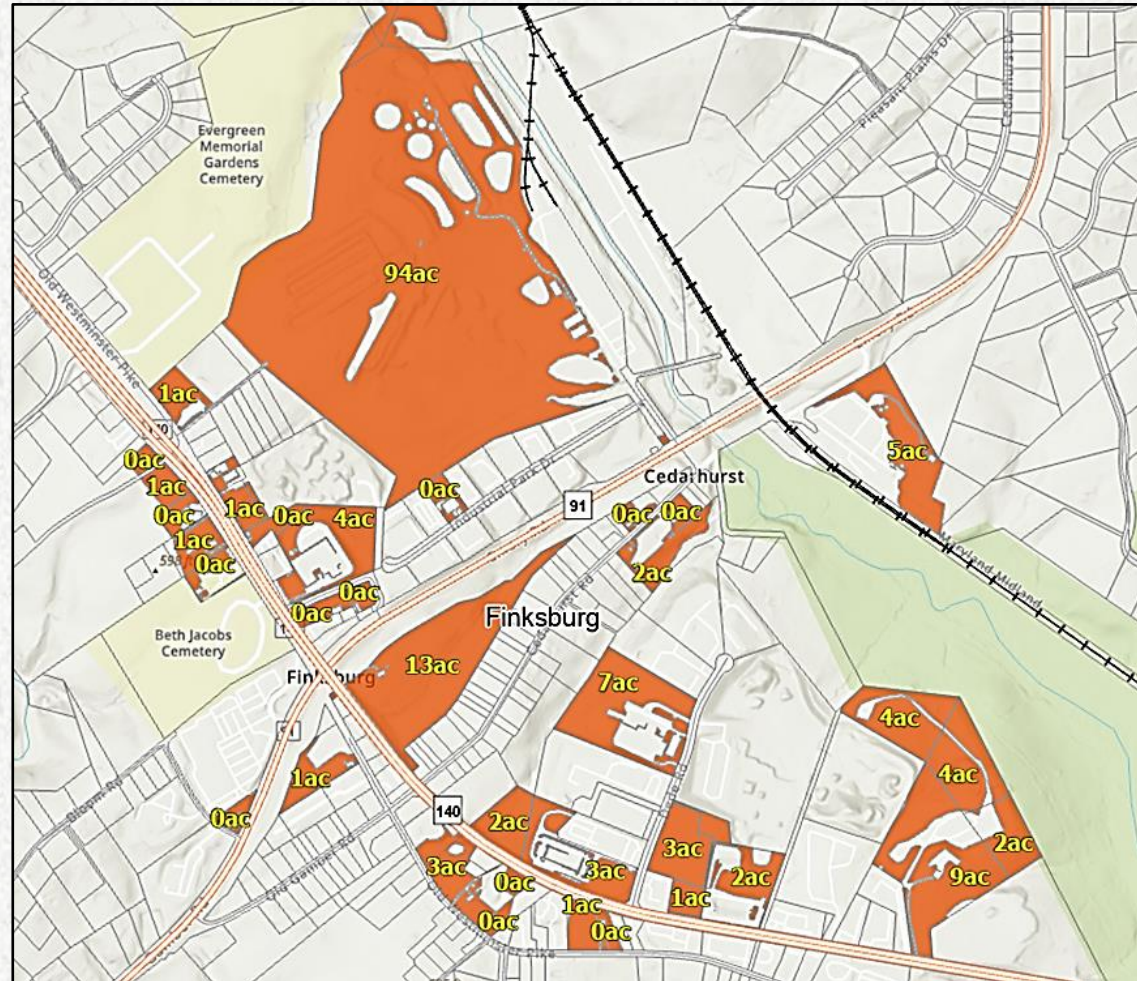
# Sample: Commercial BLI vs Constraints




Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)

## Step 5: Calculate the 'Commercial BLI' Acreages

- Use the *Geometry Tool* to calculate/populate the 'Acres' field for the remaining parcels in the **Commercial BLI** layer that allow for new commercial development.

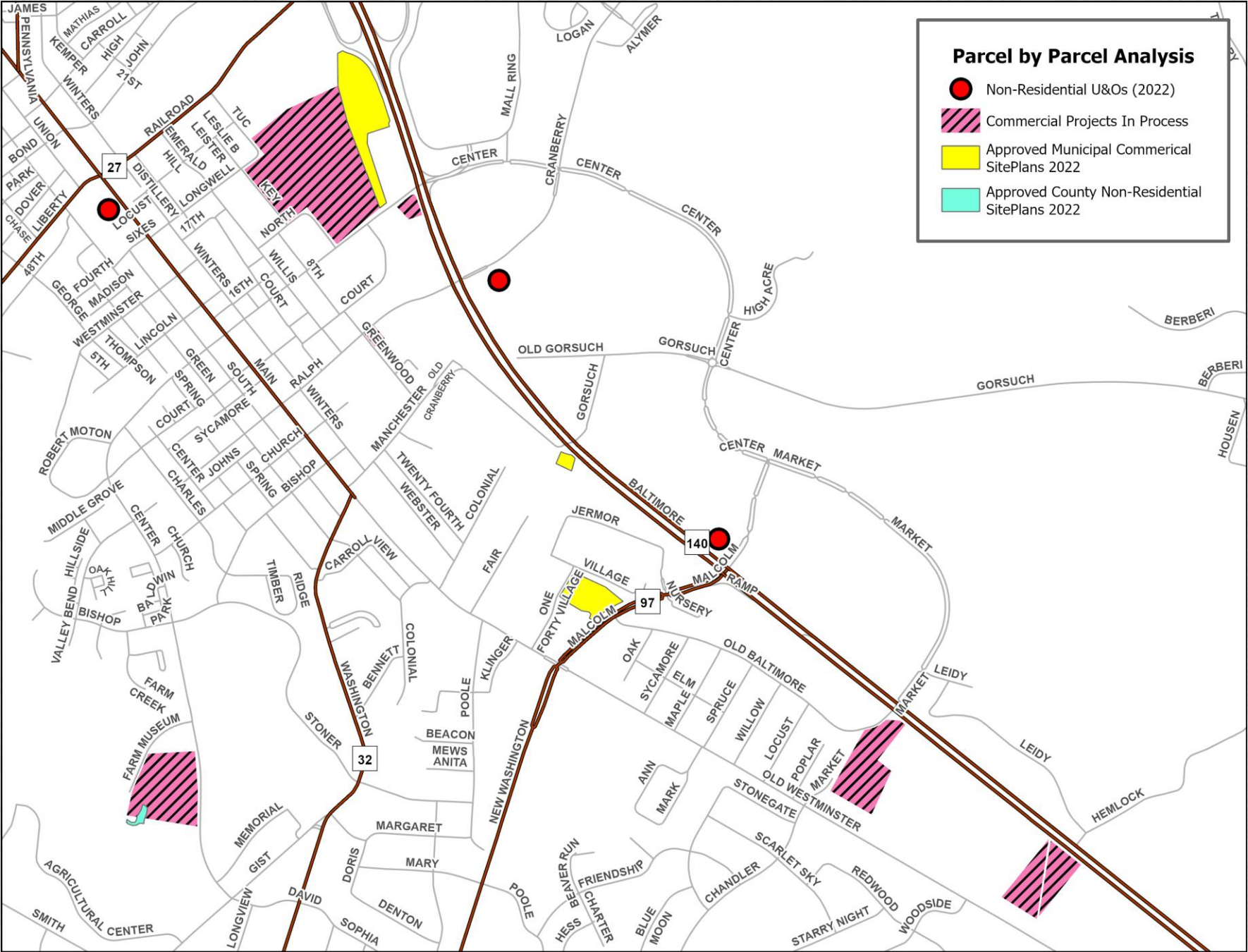




## Step 6: Identify developed parcels that are not further developable based on a manual ‘parcel-by-parcel’ analysis. Cut out or delete from the database.

- This process will look at each parcel to determine if it has further development potential. If it doesn't have further development potential, the parcel will be removed from the dataset including parcels less than .05 acres. If it is developed but has potential additional buildable land, then it will be determined to be partially developed.
- The ‘parcel-by-parcel’ analysis typically involves using additional layers in the review: *Commercial Projects in Process, Use & Occupancy data, Approved County & Municipal Commercial Subdivisions data, Stormwater Management data (facilities, pipes, and structures), Recorded Plats, Aerial Photography*, and staff knowledge. This analysis may require editing of the dataset by cutting and/or reworking the working polygon lines in the working layer.

# Sample: Layers Used for Parcel-by-Parcel Analysis



Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)



## Step 7: Clean the final 'Commercial BLI' Database

- Review the database to ensure that parcels and/or portions of parcels that have no commercial/industrial potential have been removed from the final 'Commercial BLI' database.
- Clean up any other data fields to ensure accuracy and consistency.

PARCEL_1	Location	Zoning	Acres	Vacant
0688	Sykesville	Plan Empl Ctr	22.7	yes
0161	County	I-1	22.3	no
0414	Hampstead	Res Ind	22.3	no
0833	Taneytown	Gen Bus	22.2	yes
0494	County	I-2	21.7	yes
0375	County	I-2	21	no
0106	County	I-1	21	no
4836	Westminster	I-R	20.1	yes
2671	Westminster	B	19.8	yes
1010	NW	LI	19.5	no
0278	County	I-1	18.4	yes
0067	County	I-2	18.3	yes
2611	Westminster	N-C	17.8	yes

# Final Residential and Commercial BLI Totals as per Zoning (2022: Medium Estimates Scenario)

Potential Developable Residential Lots by MGA/DGA (2022)			Potential Developable Commercial Acreage by MGA/DGA (2022)	
Location	Potential Lots as of 12/31/22	% of Total	Potential Acres as of 12/31/22	% Total
Finksburg	34	0.2%	184	5.2%
Freedom ( <i>Sykesville Excluded</i> )	2,726	14.4%	438	12.4%
Sykesville	185	1.0%	132	3.7%
Hampstead	740	3.9%	342	9.7%
Manchester	535	2.8%	53	1.5%
Mount Airy (CC only)	356	1.9%	262	7.4%
New Windsor	143	0.8%	118	3.3%
Taneytown	554	2.9%	329	9.3%
Union Bridge	774	4.1%	284	8.0%
Westminster	2,273	12.0%	714	20.2%
<i>Outside MGA/DGA</i>	10,612	56.1%	680	19.2%
<b>Total</b>	<b>18,932</b>	<b>100.0%</b>	<b>3,536</b>	<b>100.0%</b>

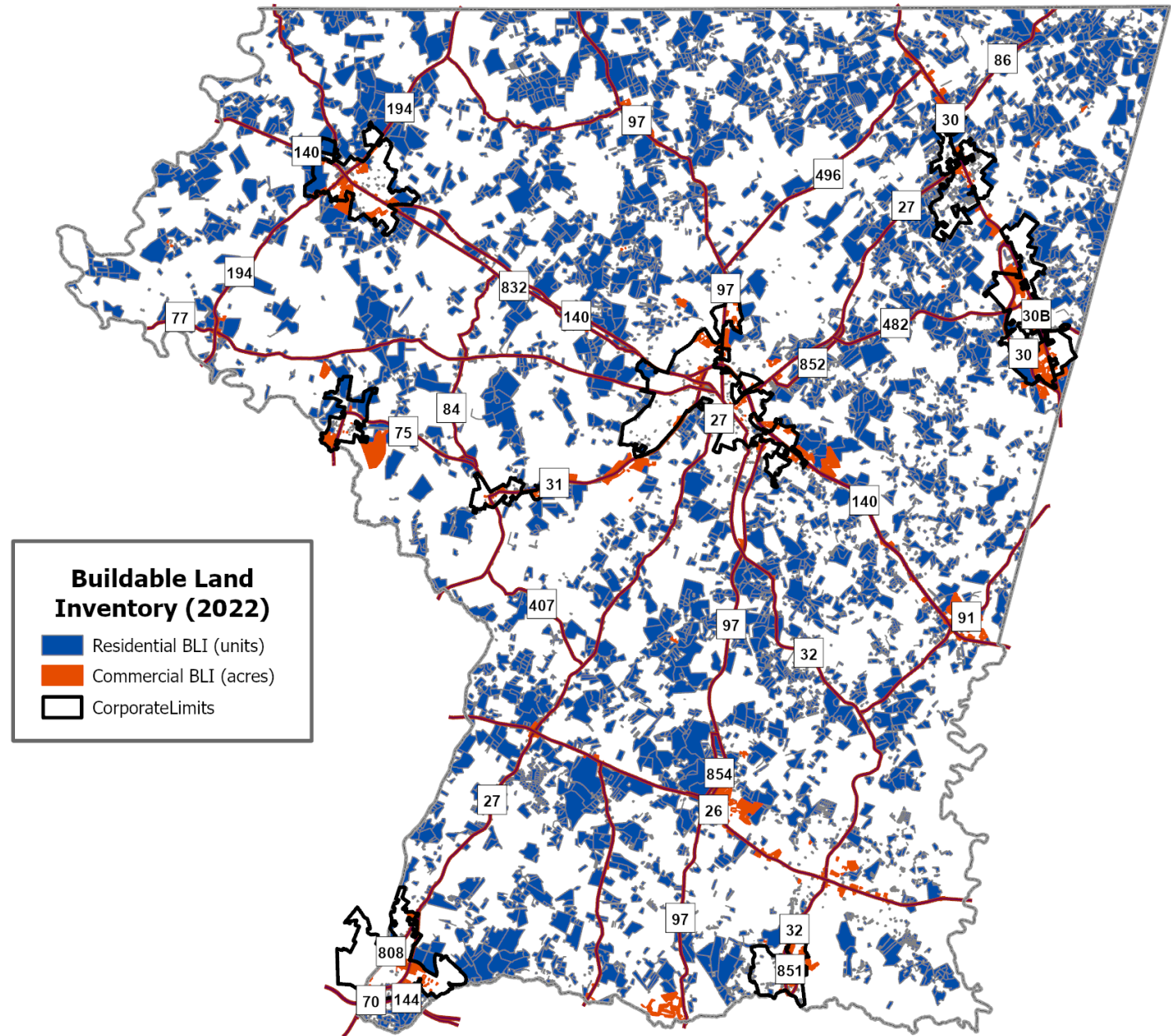
Source: Carroll County Department of Land and Resource Management

\*Potential Developable Residential Lots shown in chart, reflect "Medium" level estimates.

\*Potential Developable Commercial Acreage includes parcels with Commercial, Employment Campus, and Industrial zoning designations.

# County-wide Buildable Land Inventory (2022)

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)





# Contact Information:

For questions on Carroll County's Buildable Land Inventory Methodology (i.e., Holding Capacity) please feel free to contact the following:

**Residential BLI:** Mike Roberts [mroberts@carrollcountymd.gov](mailto:mroberts@carrollcountymd.gov) 410-386-2259

**Comm/Ind BLI:** Sandy Baber [sbaber@carrollcountymd.gov](mailto:sbabber@carrollcountymd.gov) 410-386-2063

Prepared by the Carroll County  
Departments of Planning and  
Land and Resource Management  
2023 (kc)