



**PRINCE WILLIAM**  
COUNTY

# Prince William County Projection Methodology

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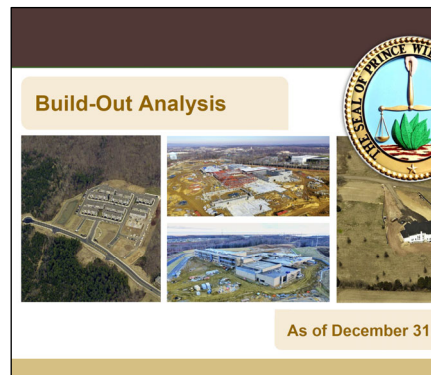
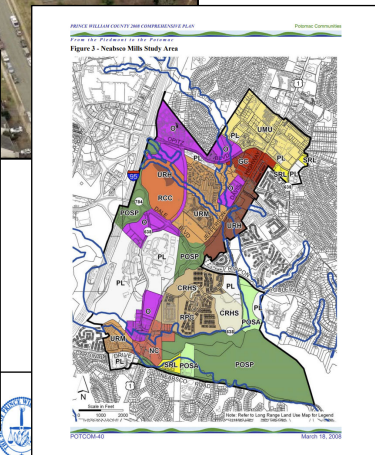
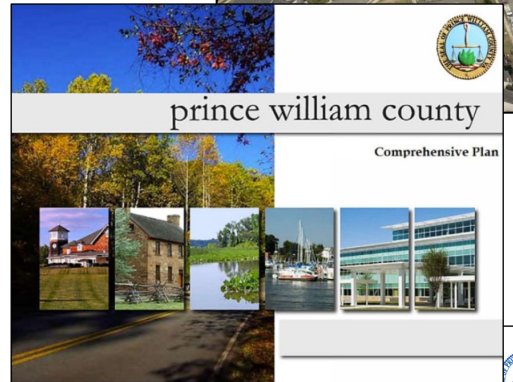
*Prince William County Planning Office*

*October 12, 2021*



# Prince William County Projection Methodology

- ❑ Prince William County has 730 PWC TAZs.
- ❑ What are the components that Prince William County uses to project future growth within each TAZ boundary?
  - Existing features
  - Comprehensive Plan
    - Sector Plans
    - Small Area Plans
  - Build-Out Analysis
  - Revitalization Areas

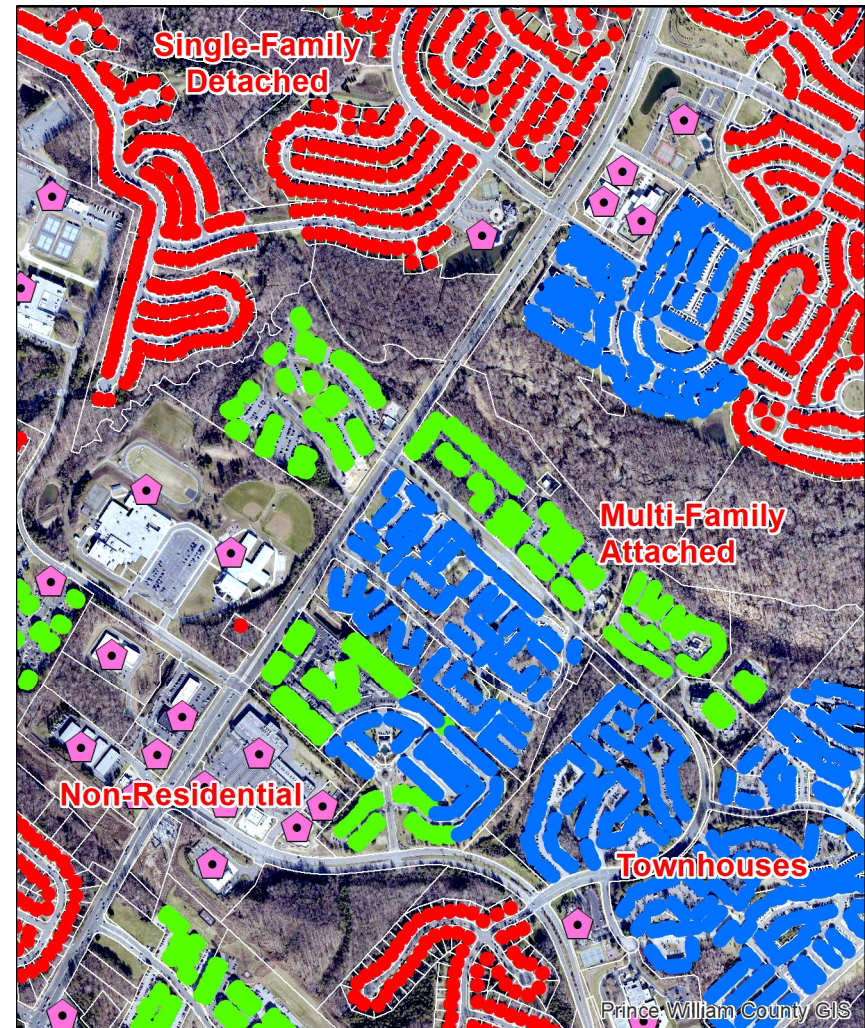


## Innovation Park Small Area Plan

Adopted December 15, 2020

# Prince William County Projection Methodology

- ❑ **Existing features:** Prince William County uses many **GIS layers** to track and identify residential and non-residential components.
  - Residential premise points with an Occupancy Permit by type.
    - Single-Family Detached
    - Townhouses
    - Multi-Family Attached
    - Manufactured Homes (Mobile)
  - Non-Residential premise points with Employment added by type.
  - Group Quarter locations with bed counts.





# Prince William County Projection Methodology



- ❑ **All features:** A consistent value is used for all calculations.
  - Population is calculated by housing type determined by the latest census.
    - 3.37 – Single-Family Detached
    - 3.16 – Single-Family Attached
    - 2.32 – Multi-Family
    - 2.32 – Manufactured Homes (Mobile)
    - An approximate vacancy rate of 3% is applied to determine households.
  - Existing employment uses REA use codes divided into 4 employment types. Some businesses are adjusted.
  - Potential employment is calculated by long-range land use designation.
  - FAR is used for mixed-use area calculations

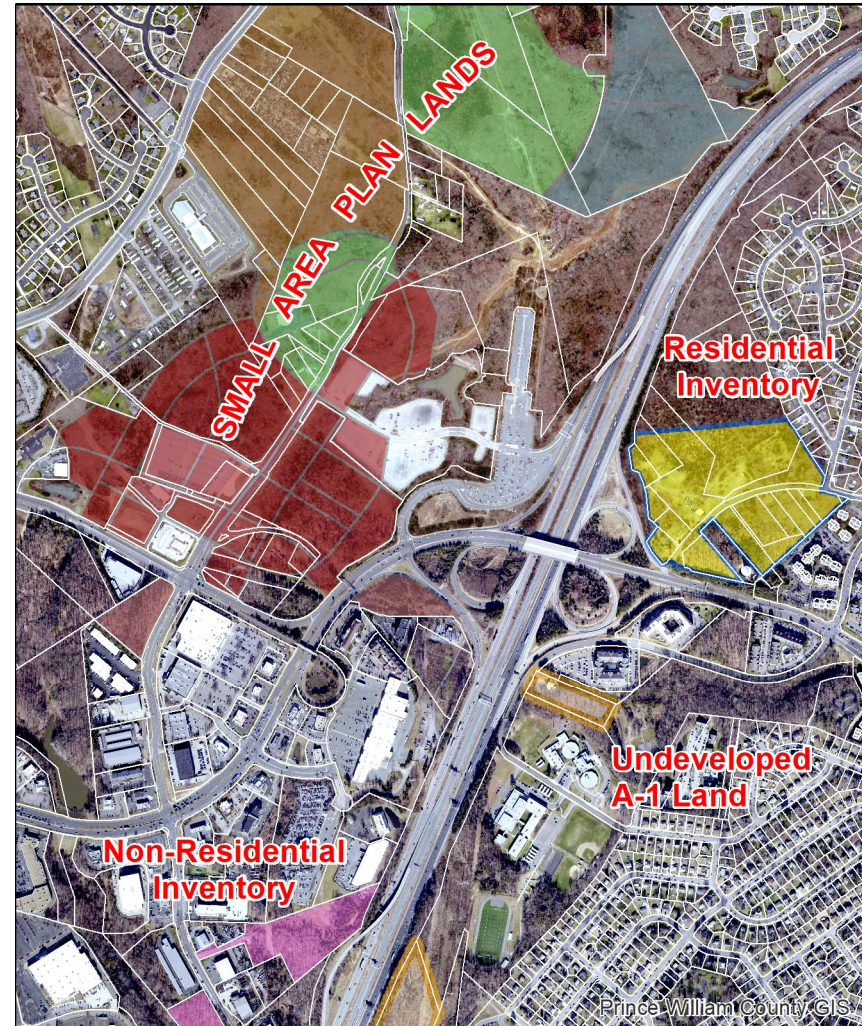
	A	B	D	E	F	G
1	USECO	Description	Office	Retail	Industrial	Other
79	217	Air Transportation	40%		30%	30%
80	218	Marine Terminals	40%		30%	30%
81	219	Other Transportation	40%		30%	30%
82	221	Electric Utilities	60%		40%	
83	222	Gas Utilities	60%		40%	
84	223	Water Utilities	60%		40%	
85	224	Sewage	60%		40%	
86	225	Solid Waste Disposal	60%		40%	
87	226	Pipeline ROW & PC Stations	60%		40%	
88	229	Other Utilities	60%		40%	
89	231	Telephone and Telegraph	60%		40%	
90	232	Radio and TV	60%		40%	
91	239	Other Communications	60%		40%	
92	311	Nbhd Shopping Center		100%		
93	312	Specialty Shopping Center		100%		
94	313	Community Shopping Center		100%		
95	314	Regional Shopping Center		100%		
96	315	Super Regional Shopping Center		100%		

	A	B
1	<b>Assumptions</b>	
2	Density	
3	SFD DU SqFt	2000
4	SFA DU SqFt	1600
5	MFA DU SqFt	1200
6	SFD DU population	3.3730
7	SFA DU population	3.1633
8	MFA DU population	2.3179
9	GSF Office Emp	250
10	GSF Retail Emp	450
11	GSF Industrial Emp	800
12	GSF Other Emp	800
13	Net Land Area Factor	75%



# Prince William County Projection Methodology

- ❑ **Zoned features:** This includes land areas that will most-likely be built in the near future.
  - **Residential Inventories.**
    - Zoned but not built.
    - Development Area.
    - Rural Area.
  - **Non-Residential Inventory.**
    - Zoned but not built.
    - Development Area only.
    - This may be a Rezoning or Special Use Permit case.





# Prince William County Projection Methodology

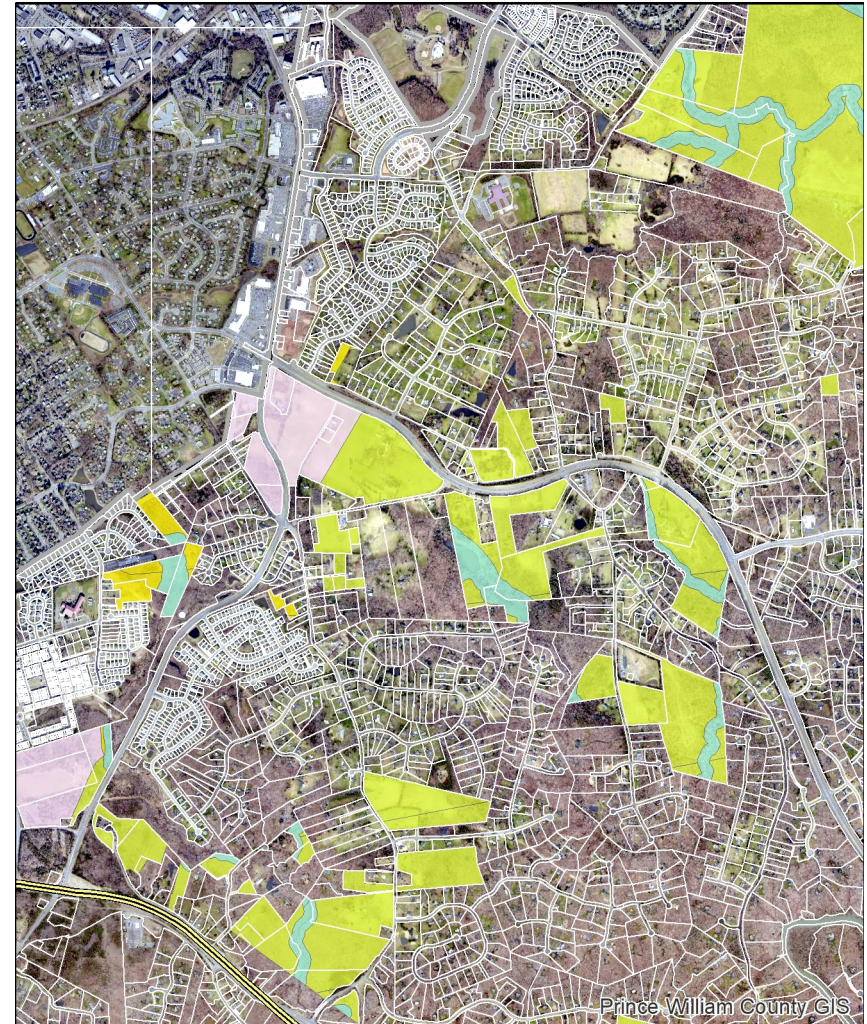
- ❑ **The Rural Area:** This area of PWC encompasses about 53% of the County's land. It is not Planned but is by-right.
  - For residential use, lots must be a **10-acre** minimum.
  - Only **single-family dwellings** are built.
    - To calculate what is remaining, all lots 10 acres or less with a dwelling are removed.
    - All unbuilt lots that are less than an acre are removed for septic reasons.
    - On an individual basis, The remaining lots are then calculated to determine how many additional 10-acre lots could be created.
    - The population can then be calculated from the lots using units per TAZ.
  - **NO non-residential** growth is assumed or projected.
  - There are farms and home-employment within the Rural area.





# Prince William County Projection Methodology

- ❑ **Planned features:** This includes land areas that are to be rezoned. This also includes some lands that are sparse and not being utilized for their intended purpose or potential. These tend to have a longer build-out time frame.
  - Undeveloped A-1 land in the Development Area.
  - Redevelopment Areas.
  - Sector Plans.
  - Small Area Plans (SAPs).
- ❑ **The Long-Range Land Use (LRLU)** designation is used for calculations.



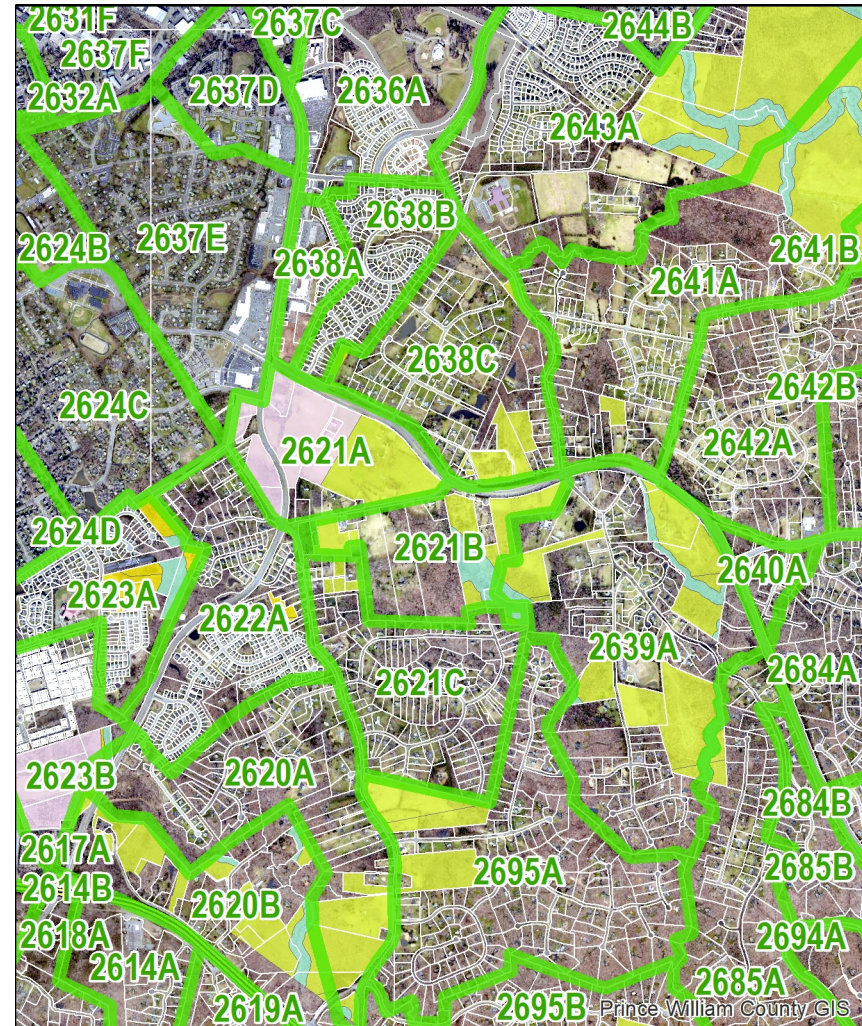


# Prince William County Projection Methodology

## □ What do we convert to TAZ areas?

- Residential and Non-Residential Inventory polygons may need to be **split for TAZ boundaries** and unit counts adjusted.
- Undeveloped A-1 land is cut by TAZ boundaries and an acreage is calculated by LRLU per polygon.
- Small Area Plans and Sector Plans are also divided to determine acreages.

## □ The Long-Range Land Use designation is used for calculations.



# Prince William County Projection Methodology

## □ How do we process SAPs and CPAs?

- We determine what is built and what is not, or what will be redeveloped.
- We create polygons by LRLU designation for any area that will be developed.
- These polygons will be cut by TAZs.
- Acreages are calculated.
- For ease of calculation, some areas are cut into smaller **mini-TAZs** then reassembled.
- This allows for existing areas to be separated from development or redevelopment areas.



# Prince William County Projection Methodology



## □ How do we calculate the acreages?

- **Excel formulas** determine low-, mid-, and high-ranges for each LRLU area per TAZ.
- Each LRLU designation uses **specific calculations**.
- Each TAZ or mini-TAZ is calculated individually and summed up.
- A **potential time frame** is determined by project type indicating when it will start and be completed in 5-year increments.
- These are then inserted into our COG projections at the appropriate time frame.

Mini TAZ	Project name	Acreage	Square Feet	Land Bay	Percent	Percent
	The Landing - PEC	0.00	0	T-2	80%	20%
3		30.01	1,307,221	T-3 - TF	0%	100%
5		9.65	420,457	T-4 - TC	80%	20%
6		25.31	1,102,597	T-5 - TC	80%	20%
7		2.29	99,623	T-4 - TC	80%	20%
8		5.05	219,801	T-6 - TC	80%	20%
11		9.72	423,414	T-3 - TC	80%	20%
12		11.49	500,344	T-4 - TC	80%	20%
13		62.54	2,724,241	T-2 - RC	100%	0%
16		5.52	240,572	T-4 - OMU	10%	90%
19		5.10	222,185	T-4 - TC	80%	20%
20		12.96	564,568	T-3 - TC	80%	20%
21		4.13	179,746	T-4 - TC	80%	20%
22		2.46	107,062	T-4 - TC	80%	20%
26		20.57	895,812	T-3 - TF	0%	100%
29		21.72	946,055	T-4 - CMU	15%	85%
30		7.00	304,908	T-3 - TF	0%	100%
33		4.16	181,154	T-4 - CMU	15%	85%
36		2.28	99,202	T-4 - TC	80%	20%
37		4.02	174,956	T-3 - CMU	15%	85%



# Prince William County Projection Methodology



❑ A table can be generated by the LRLU values to include:

- Residential units by type
  - Population
- Non-Residential GFA
  - By type of use
  - Employment by type

❑ This can be used to determine what the SAP or CPA can generate.

- Will it meet the County's requirements?
- Is it within range of the client's intentions?

The Landing - PEC				
<b>Total Acres</b>				<b>245.96</b>
Net Land Area Factor				60%
MFA DU Size in Sq Ft				1,200
		<b>Low</b>	<b>High</b>	<b>Average</b>
<b>Residential GFA</b>		<b>1,630,050</b>	<b>3,427,729</b>	<b>2,528,889</b>
<b>Non-Res GFA</b>		<b>1,661,887</b>	<b>3,820,761</b>	<b>2,741,324</b>
<b>Total Gross GFA</b>		<b>3,291,937</b>	<b>7,248,490</b>	<b>5,270,213</b>
<b>Total Employees</b>		<b>4,300</b>	<b>9,784</b>	<b>7,041</b>
<b>Total Dwellings</b>		<b>1,358</b>	<b>2,835</b>	<b>2,097</b>
SFD units		27	225	126
SFA units		9	75	42
MFA Units		1,322	2,535	1,929
<b>Residents</b>		<b>3,023</b>	<b>6,525</b>	<b>4,773</b>
Office Employees		2,619	5,905	4,261
Retail Employees		987	2,195	1,591
Industrial Employees		642	1,556	1,099
Other Employees		52	128	90
Retail GFA		447,648	992,541	720,095
Office GFA		656,723	1,478,446	1,067,584
Industrial GFA		514,630	1,245,945	880,287
Other GFA		42,886	103,829	73,357

# Prince William County Projection Methodology



□ **TAZs can be compared to see what the change would be over time.**

- We use this to verify the accuracy of the calculations.
- Residential and non-residential trends can be seen and compared against the plan.
- Data is then inserted into our working Excel data files to adjust or verify the updated COG projections.

Stage	PWCTAZ	SF2020HH	SF2025HH	SF2030HH	SF2035HH	SF2040HH	SF2045HH	TH2020HHT
NEW	2758A	0	0	0	0	0	0	0
OLD	2758A	0	0	0	0	0	0	0
difference		0	0	0	0	0	0	0
NEW	2758B	0	0	0	0	0	0	0
OLD	2758B	0	0	0	0	0	0	0
difference		0	0	0	0	0	0	0
NEW	2759A	1	1	0	0	0	0	0
OLD	2759A	1	1	1	1	1	1	0
difference		0	0	(1)	(1)	(1)	(1)	0
NEW	2759B	119	22	110	217	217	217	0
OLD	2759B	121	121	121	121	121	121	0
difference		(2)	(99)	(11)	96	96	96	0
NEW	2759C	10	9	2	2	2	2	0
OLD	2759C	9	9	9	9	9	9	13
difference		1	0	(7)	(7)	(7)	(7)	(13)
NEW	<b>Total</b>	130	32	112	219	219	219	0
OLD	<b>Total</b>	131	131	131	131	131	131	13
difference		(1)	(99)	(19)	88	88	88	(13)

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## Questions?