



Chesapeake Bay Policy Committee

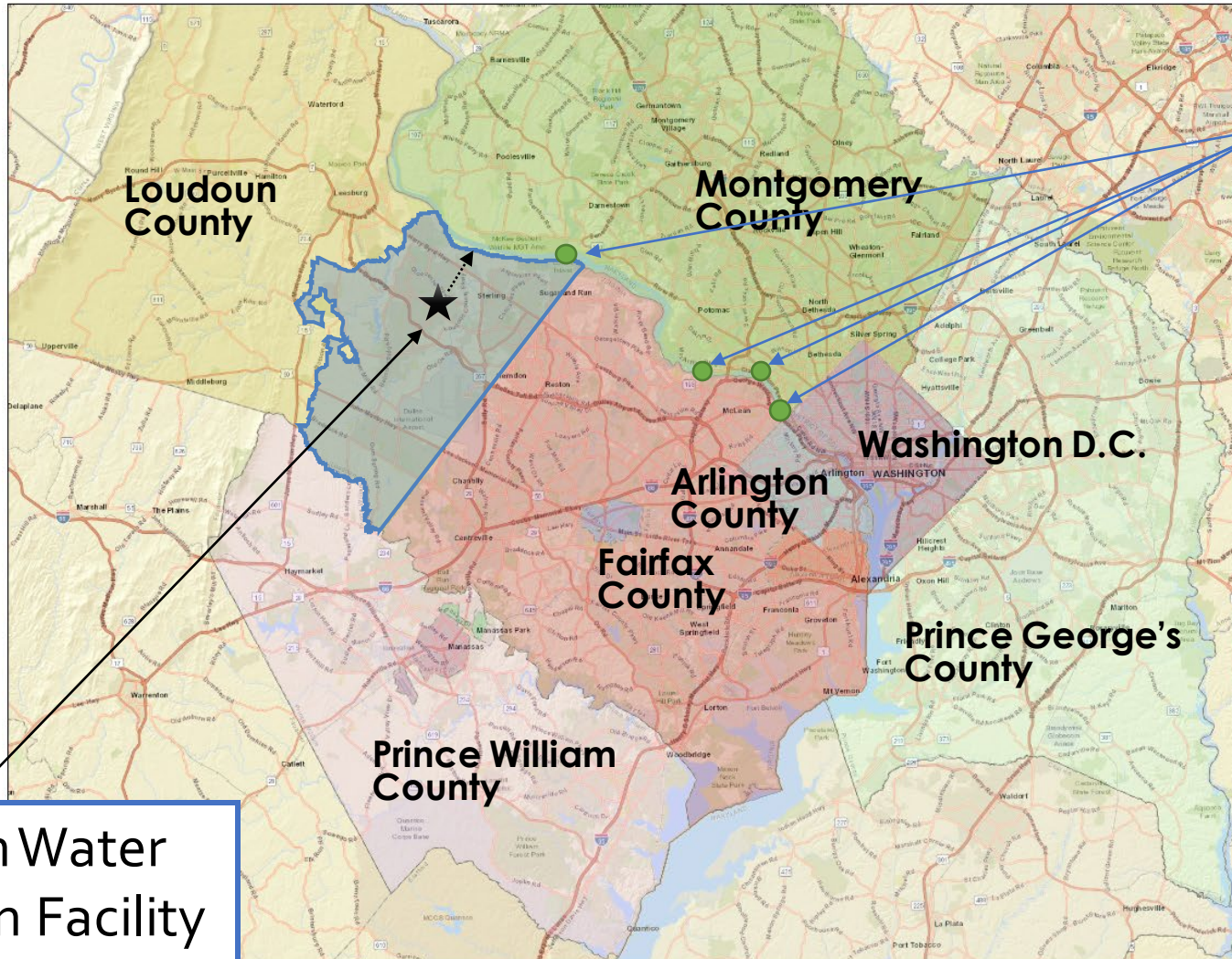
Water Quality Forum

Need to Accommodate Economic Growth

September 16, 2022



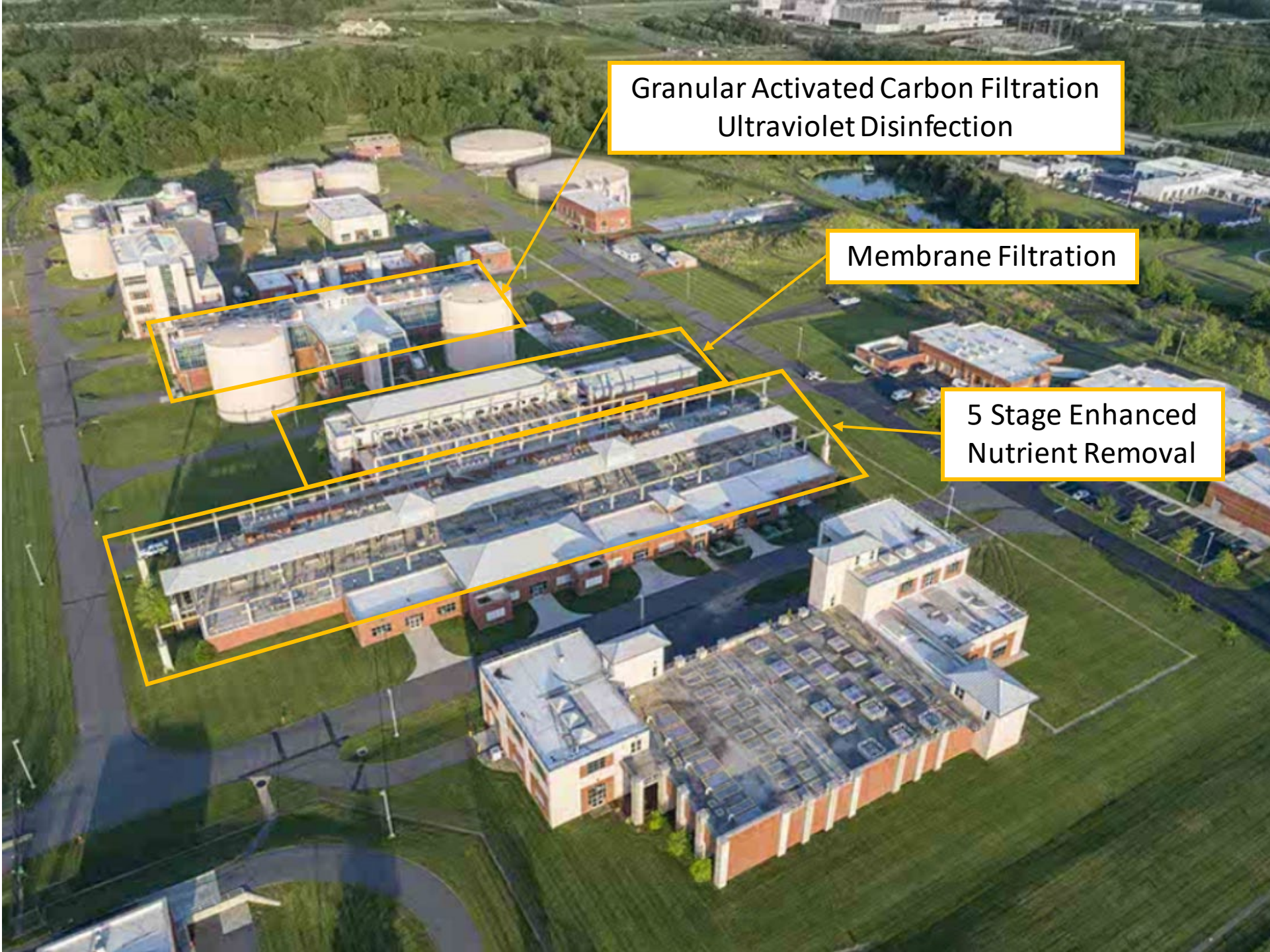
Central System Wastewater Treatment



Drinking Water Intakes on the Potomac

Broad Run Water Reclamation Facility

Dulles Area Watershed Policy
established BRWRF effluent standards based on drinking water intakes



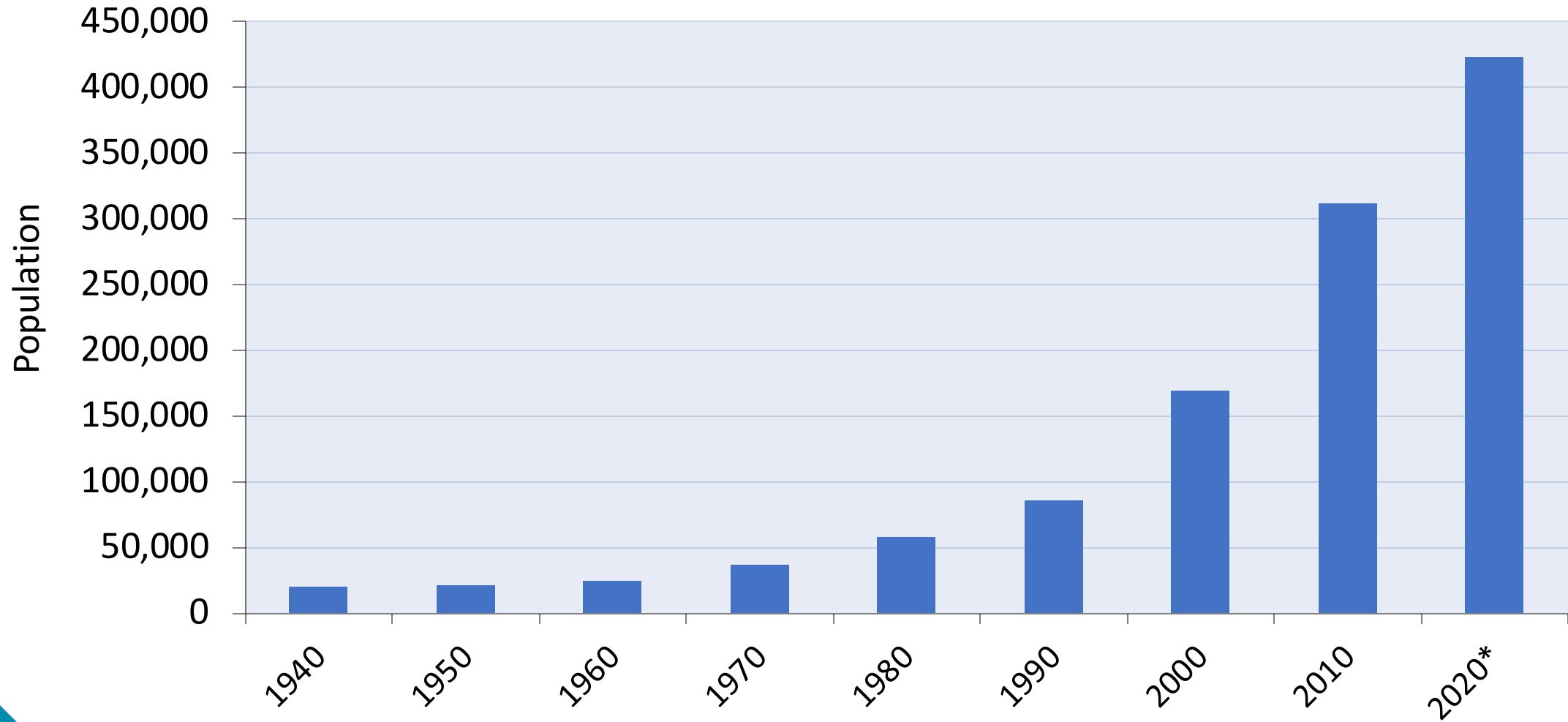
Granular Activated Carbon Filtration
Ultraviolet Disinfection

Membrane Filtration

5 Stage Enhanced
Nutrient Removal



Loudoun County – Historical Growth



Example of WLA Equivalent Concentrations

BRWRF Effluent Flow (mgd)	Equivalent TN (mg/L)	Equivalent TP (mg/L)
11.0	4.00	0.100
16.5	2.67	0.067
22.0	2.00	0.050
30.0	1.46	0.036
40.0	1.10	0.027

Unprecedented Permitted Treatment Levels



Questions?



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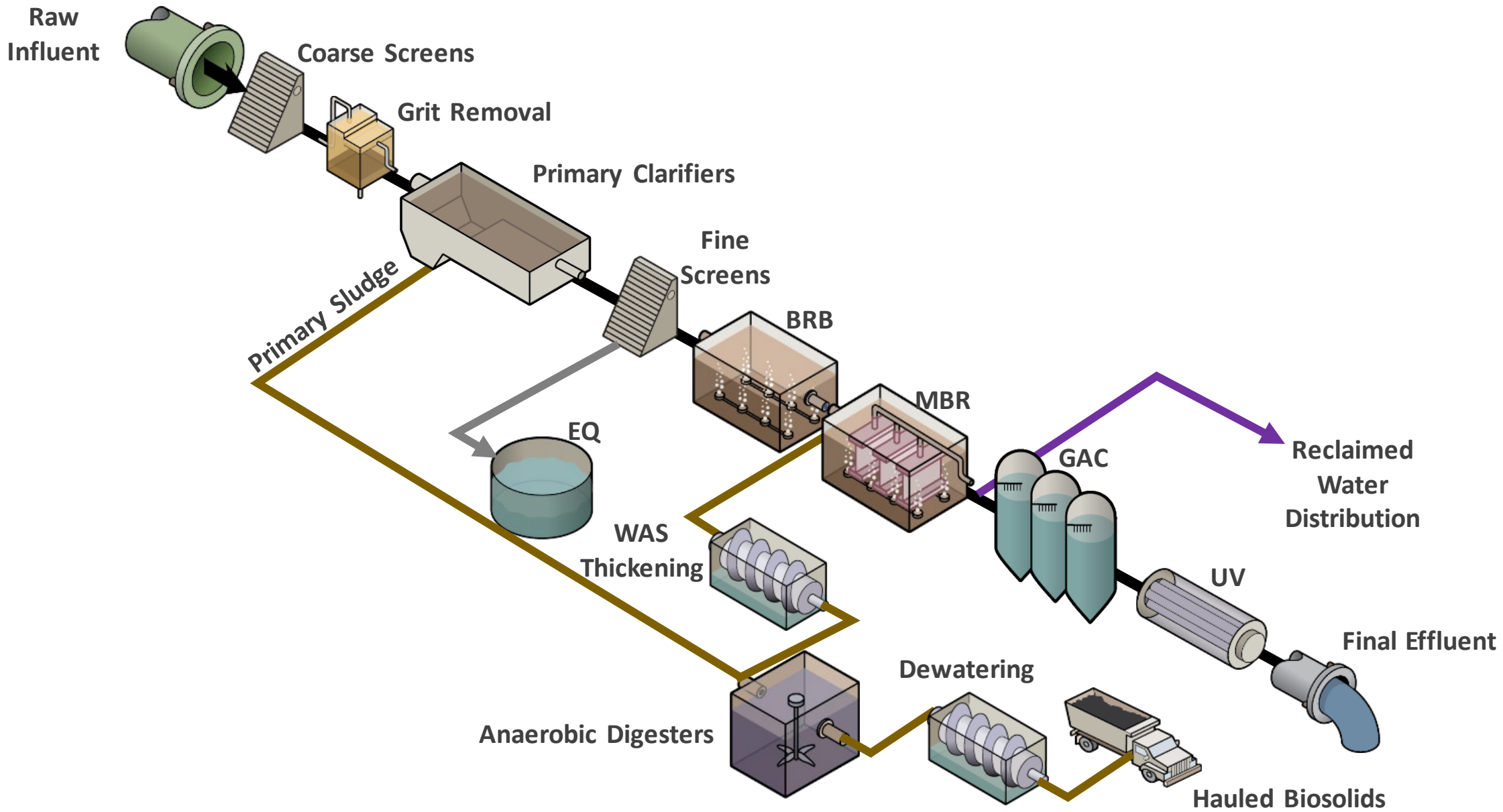
Broad Run WRF Treatment Requirements

Water Quality Parameter	Monthly Average
Chemical Oxygen Demand (COD)	10 mg/L
Total Suspended Solids (TSS)	1.0 mg/L
Total Kjeldahl Nitrogen (TKN = DON + NH ₃)	1.0 mg/L
Total Nitrogen (TN) <i>Annual Concentration Limit</i>	4 mg/L
Total Phosphorus (TP)	0.1 mg/L
Turbidity	0.5 NTU
E. Coli	Less than 2 per 100 mL

Chesapeake Bay Program Waste Load Allocation

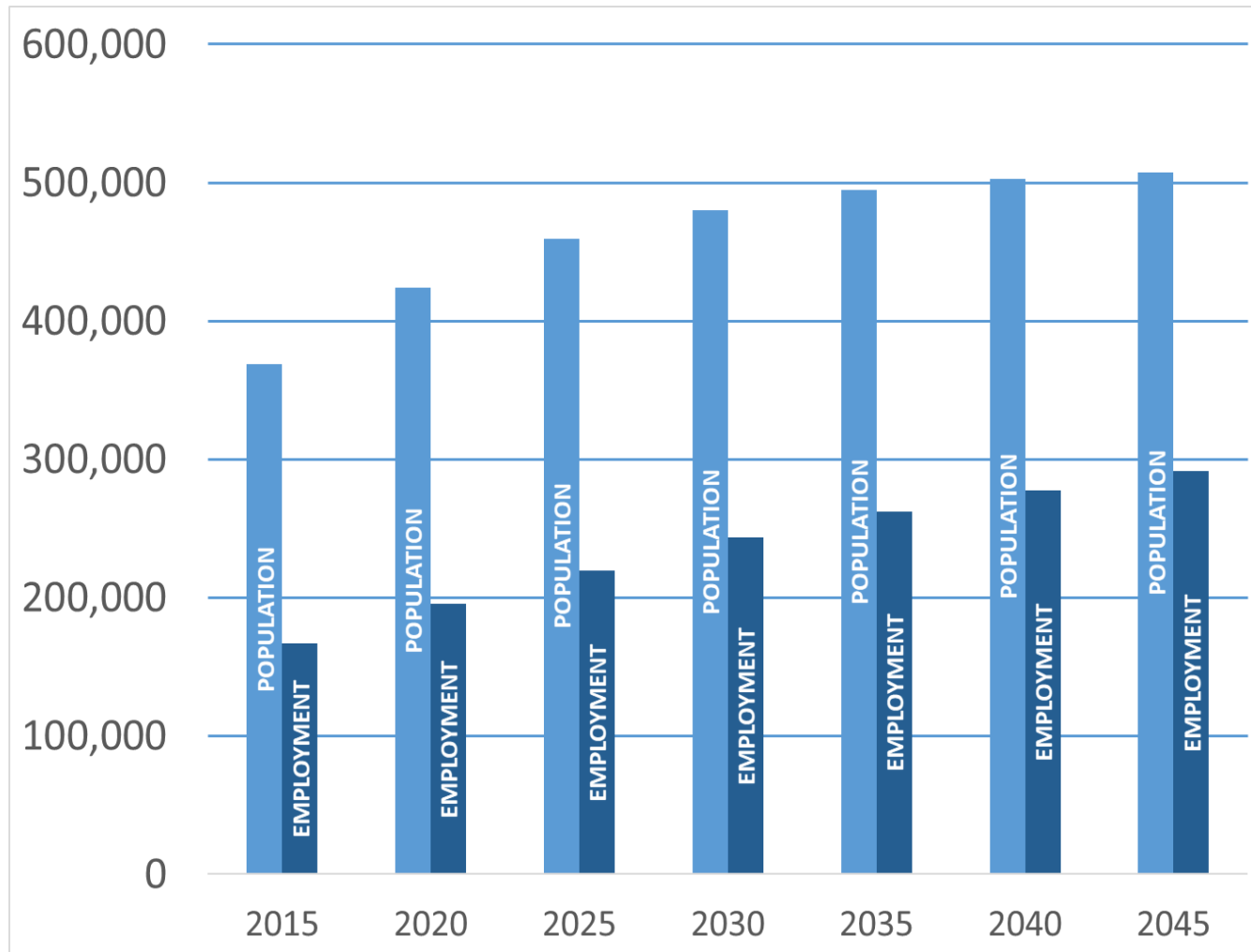
TN: 134,000 lbs/years

TP: 3,350 lbs/year





Loudoun County – Projected Growth

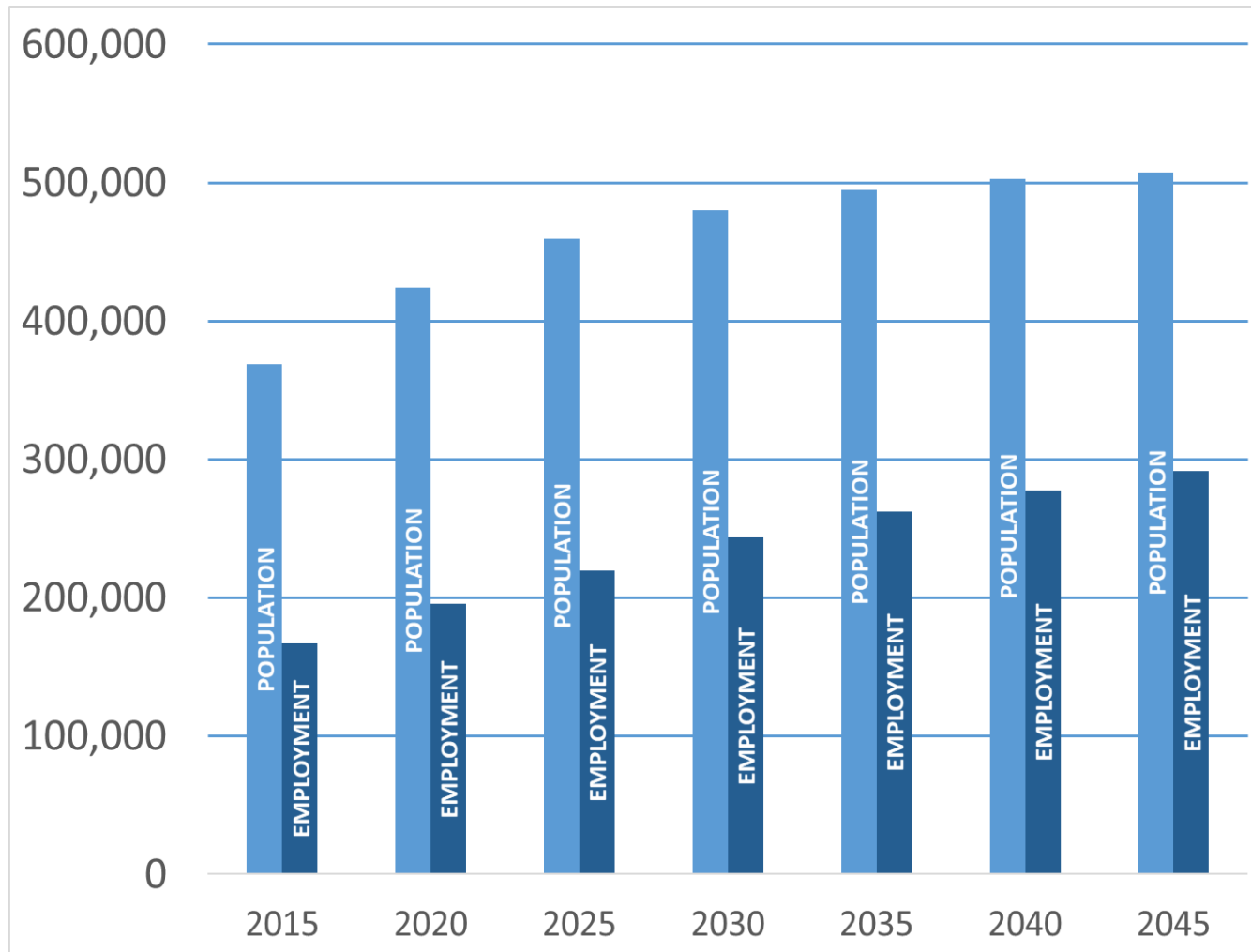


**LOUDOUN COUNTY
POPULATION AND
EMPLOYMENT ESTIMATES**

**2015 TO 2045
+ 139,000 PEOPLE
+ 124,000 EMPLOYEES**



Loudoun County – Projected Growth

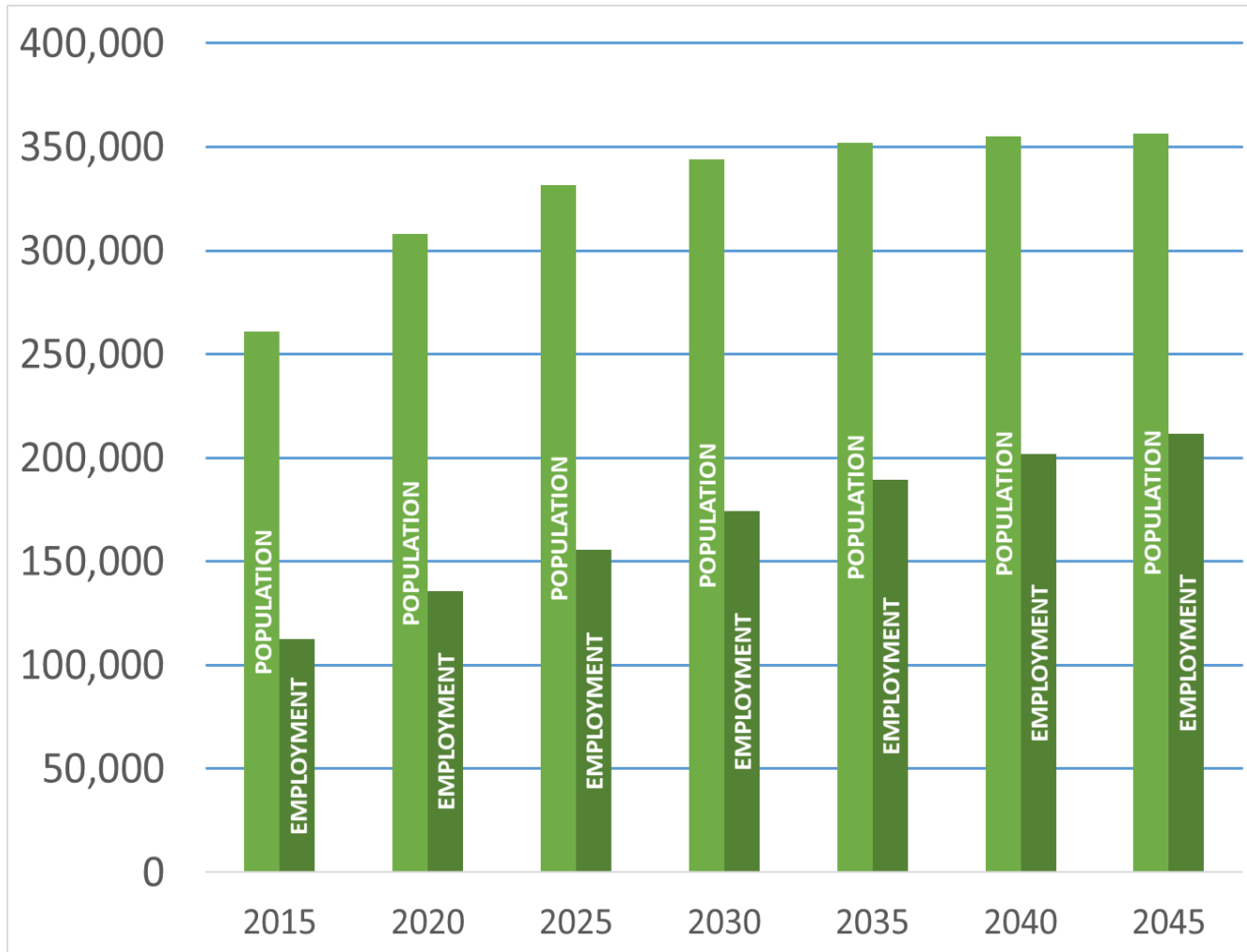


**LOUDOUN COUNTY
POPULATION AND
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**2015 TO 2045
+ 139,000 PEOPLE
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Loudoun Water – Projected Growth



**LOUDOUN WATER WILL SERVE
OVER 70% OF NEW GROWTH**

2015 TO 2045

**LW CENTRAL SERVICE AREA
GROWTH**

+ 95,000 PEOPLE

+ 99,000 EMPLOYEES