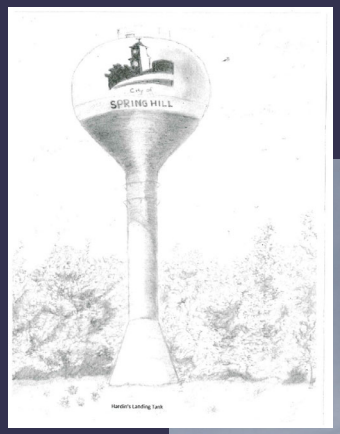

THE COMEBACK BEGINS NOW.
City of
SPRING HILL
TENNESSEE
DISCIPLINE
COMMITMENT
TOUGHNESS
EFFORT
PRIDE
8.27.24

What has Spring Hill done over the last 20 years?



Population -> 10,530 to 56,000

Planning Water & Sewer for Build-Out in Spring Hill

- Water and Sewer Capacity Modeling Update ($300k)
- Asset Management, Condition Assessment, and Work Order System ($1M)
  - Utilizing TN SWIG Non-Collaborative Grant and SRF Loans with Forgiveness
- Applied for $24M worth of TDEC ARP Competitive Grants
- Unified Utility Planning Framework for the Region
- Water Harvesting
- Purple Pipe
- Advanced Metering Infrastructure
- Federal Agency Approval of the DRA Drought Management Plan, the Normandy Reservoir Project, and the new downstream intake for CPWS
- Project SWIFT – Advanced Purification Project
- Reservoir Construction to address Permit CFS limitations
- Endangered Species Habitat Protection
- Endangered Species Habitat Mitigation
- Endangered Species Habitat Creation

WATER DEMAND AND SEWER FLOW PROJECTIONS: WATER & SEWER PER CAPITA

WATER & SEWER USE PER CAPITA

- Per capita use given to the developers engineer to calculate total impact of USTA Development was:
  - 84 gpd/capita sewer (includes a 10% contingency)
  - 90 gpd/capita water (includes a 10% contingency)

- 2022 WTP & WWTP Flow Evaluation

Annual Average Sewer Use, Including I/I: 4,203,000 gpd/55,000 capita = **76 gpd/person**
Annual Average, Water Use Including Irrigation: 4,527,000 gpd/55,000 capita = **82 gpd/person**

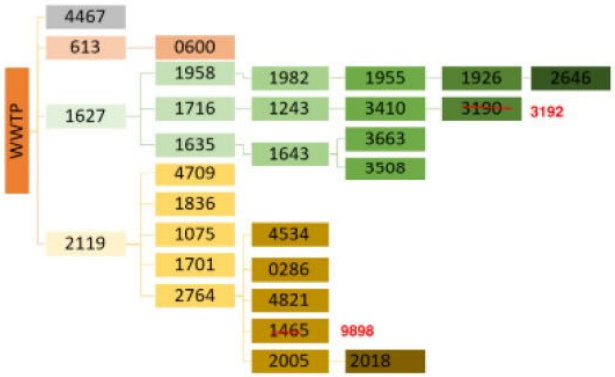
6-month Average Sewer Use, Excluding I/I, dry months May-October (2022): 3,695,000 gpd/55,000 capita = **67 gpd/person**
6-month Average Water Use Excluding Irrigation, wet months Nov-April (2022): 3,678,000 gpd/55,000 capita = **67 gpd/person**

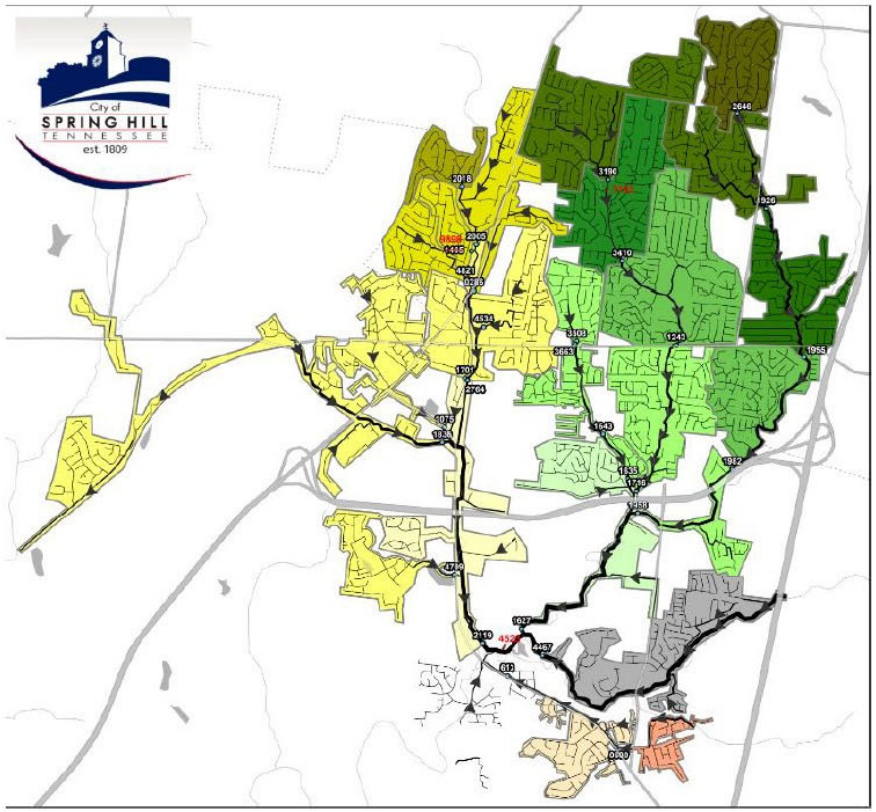
Peak Sewer Use, Including I/I during wettest month of 2022 (January): 5,591,000 gpd/55,000 capita = **102 gpd/person**
Peak Water Use, Including Irrigation during driest month of 2022 (July): 6,146,000 gpd/55,000 capita = **112 gpd/person**

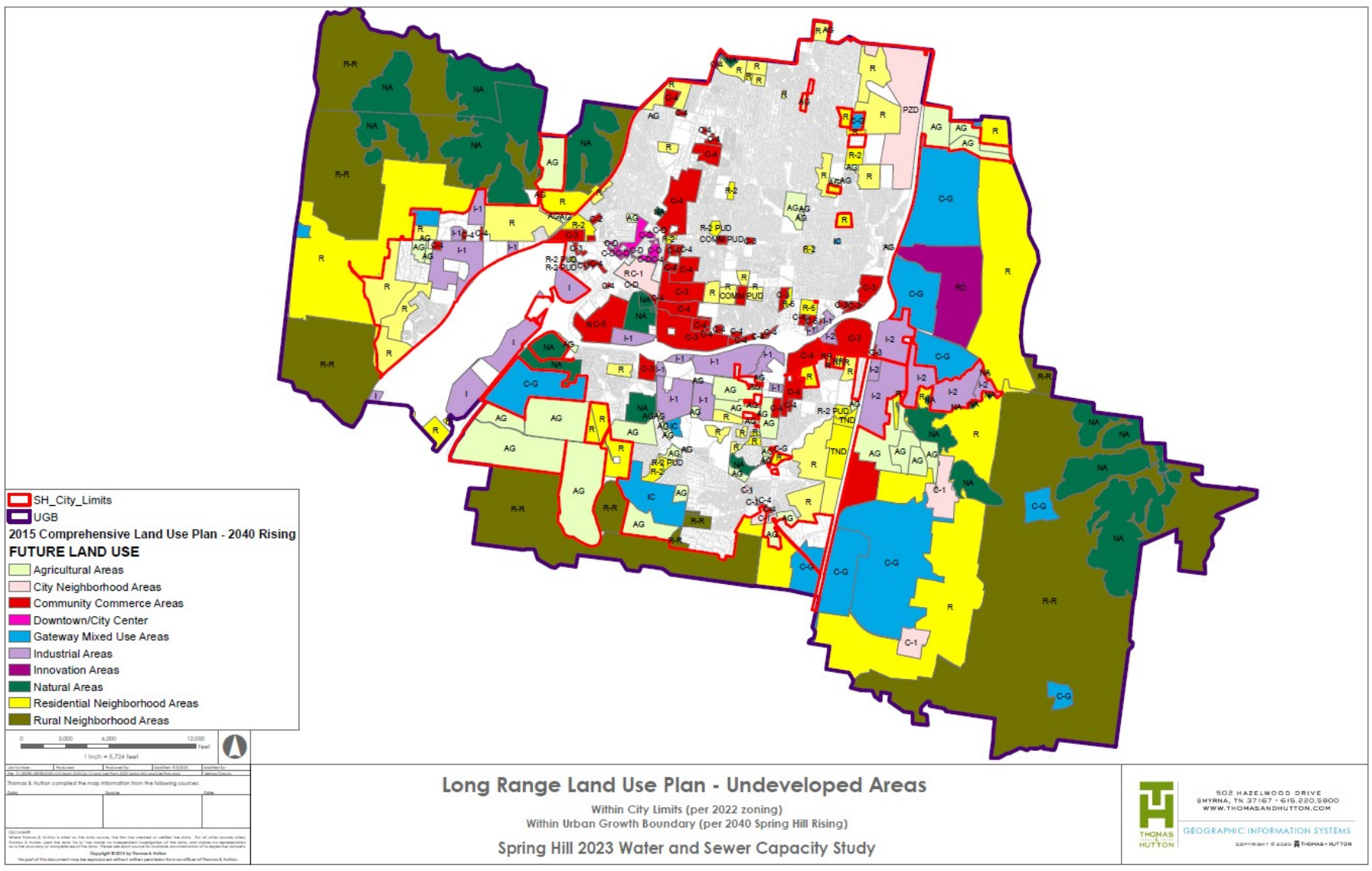
SEWER MODEL DEVELOPMENT

DIURNAL CURVES – SEWER MODEL

- 27 Sewer Sub-Basins
- Removed 0600 due to no flow data







Long Range Land Use Plan - Undeveloped Areas

Within City Limits (per 2022 zoning)
Within Urban Growth Boundary (per 2040 Spring Hill Rising)

Spring Hill 2023 Water and Sewer Capacity Study

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GEOGRAPHIC INFORMATION SYSTEMS

CITY OF SPRING HILL, TN

Assumptions to Estimate Future Water Demands

Average daily water use	58	gpd/person
Average daily sewer use (x 0.9 water)	52	gpd/person
Persons per dwelling unit (residential)	2.85	
Persons per dwelling unit (apartments)	2	
Persons per dwelling unit (rest homes)	1	
Commercial water use (Immediate Future)	25%	of residential demand
Commercial water use/1000 sq ft (Future Land Use)	75	gpd/person
Unmetered demand/Distribution System Losses	15%	in total demand
Water conservation	5%	reduction in total demand

CITY OF SPRING HILL, TN

Estimate of Utility Demand Summary

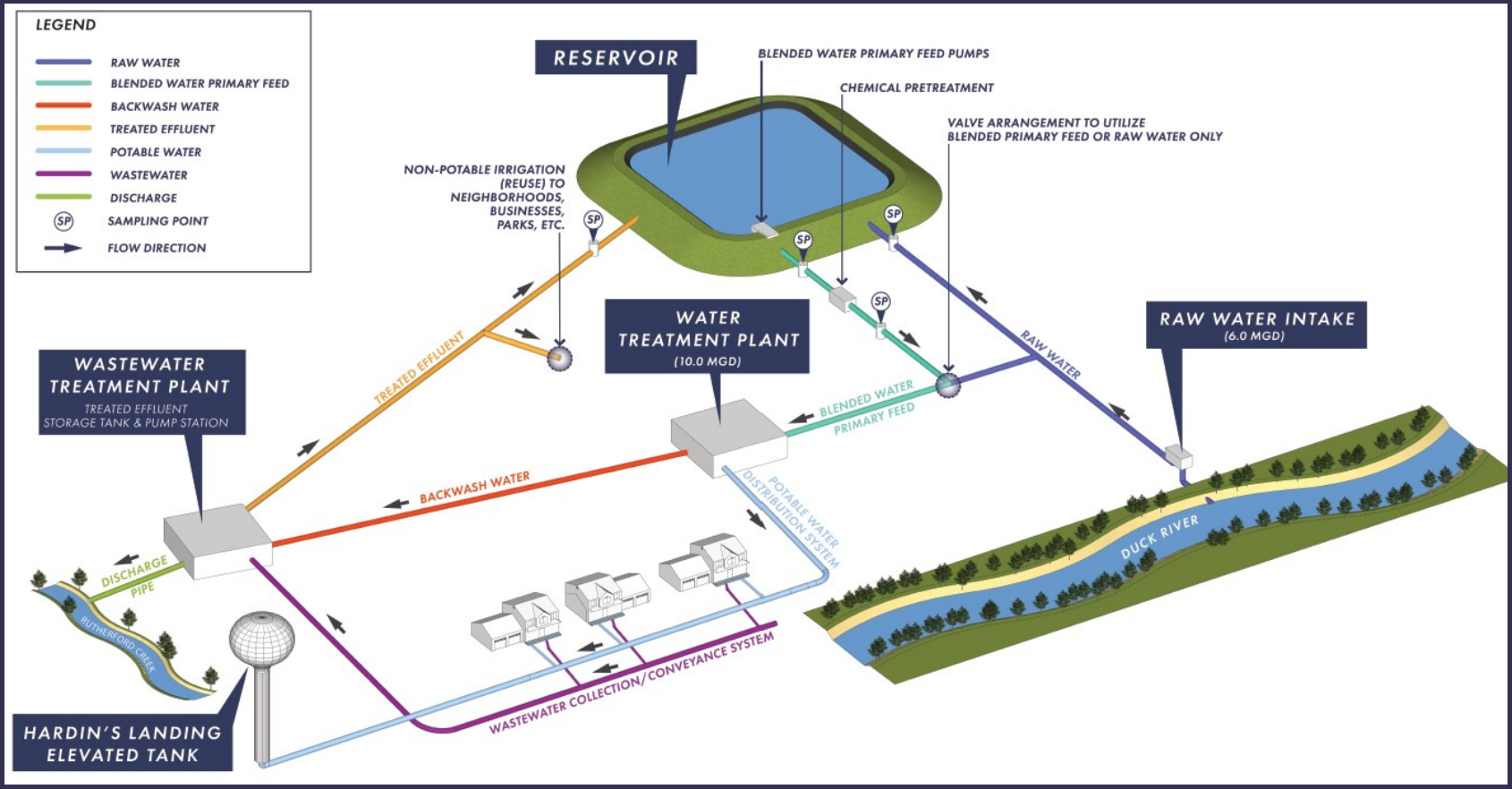
Description	Population	Avg Wtr	Peak Wtr	Avg Swr	Peak Swr
Base 2022	55,800	4,444,047	6,666,071	3,999,642	10,959,020
Near Term, Approved Subdivision Buildout	23,781	1,372,902	2,059,353	1,235,268	3,384,634
Near Term, Commercial (25% Est.) + Distribution System Losses (15%) - Water Conservation (-5%)	-	480,516	720,774	432,344	1,184,622
2060 Long Term Build-Out FLU Plan (within city water service)	13,112	2,405,837	3,608,755	1,778,719	4,446,797
Distribution System Losses (15%) - Water Conservation (-5%)	-	240,584	360,876	177,872	444,680
Long Term Build-Out FLU Plan (within urban growth boundary)	55,955	4,589,963	6,884,944	3,806,037	9,515,093
Distribution System Losses (15%) - Water Conservation (-5%)	-	458,996	688,494	380,604	951,509
Totals	148,647	13,992,844	20,989,266	11,810,486	30,886,355

2030 Near Term, Approved Subdivision Buildout	**MGD**	6.3	9.4	5.7	15.5
2045 Interim	**MGD**	7.6	11.4	6.6	18.0
2060 Long Term Build-Out FLU Plan (within city water service)	**MGD**	8.9	13.4	7.6	20.4
Long Term Build-Out FLU Plan (within urban growth boundary)	**MGD**	14.0	21.0	11.8	30.9

Peaking Factor WTP (xAvgWater)	1.5
Peaking Factor WWTP (xAvgSewer)	2.74
2060 Peaking Factor WWTP (xAvgSewer)	2.5

Avg Wtr = Average Daily Water Demands
Avg Swr = Average Daily Sewer Flows

Advanced Purification



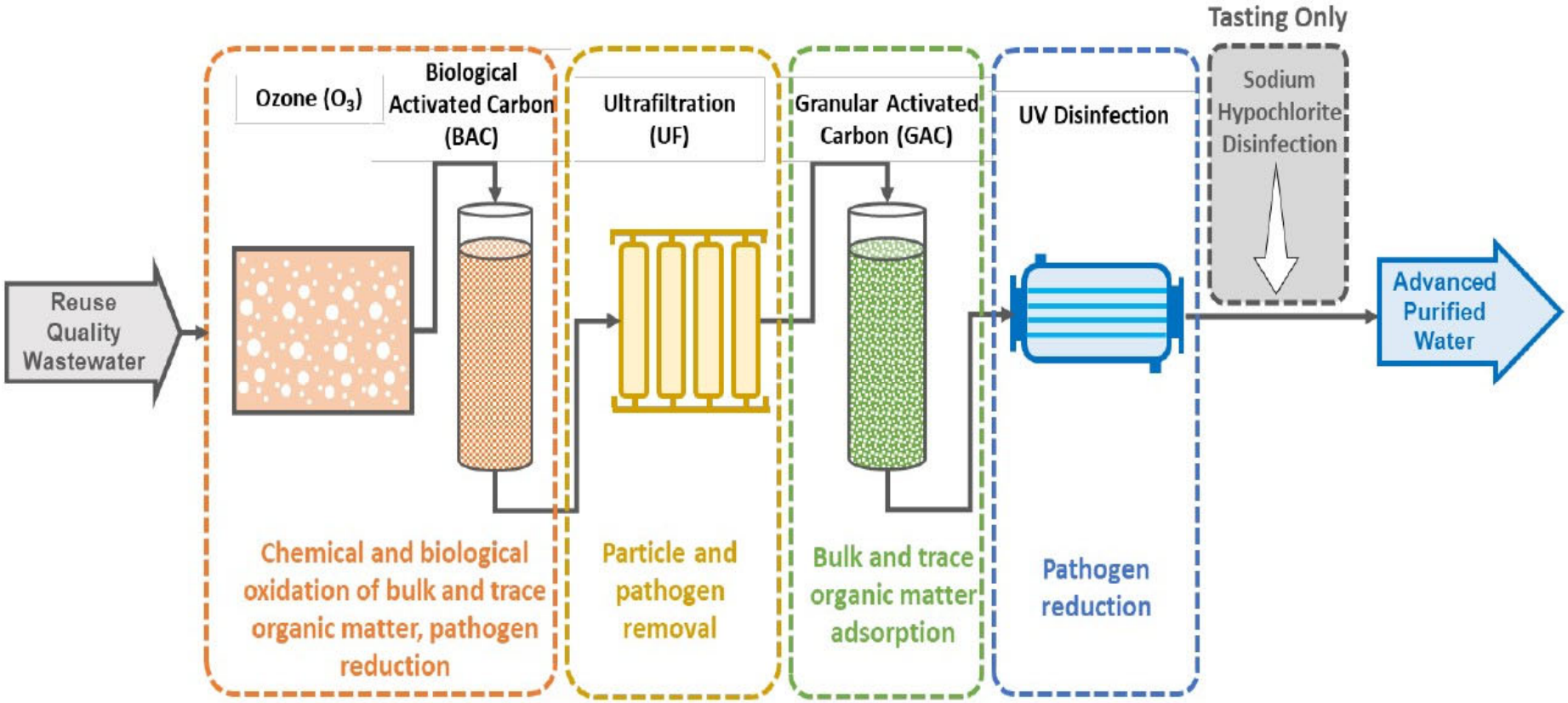


Figure 11 Proposed Advanced Purification Processes for the City of Spring Hill Pilot