HARRISONBURG PUBLIC UTILITIES
OUR BUSINESS MODEL

Harrisonburg Public Utilities

The City of Harrisonburg is an independent city located in the central Shenandoah Valley region of Virginia. It is the county seat of Rockingham County and encompasses 17.3 square miles, serving a population of approximately 54,000. Harrisonburg is located right along Interstate 81 and is only two hours away from both Richmond, Virginia and Washington, D.C. Harrisonburg is home to two university campuses – James Madison University and Eastern Mennonite University – as well as numerous other businesses, non-profit organizations, and a vibrant downtown. The Department of Public Utilities is responsible for providing water and sewer services to residences and businesses in the City of Harrisonburg and some in neighboring Rockingham County. Currently, our department manages 3 raw surface water sources, a class 1 multi-media filtration plant, 294 miles of waterlines, 186 miles of sewer pipes while serving approximately 18,000 accounts. We are member of the Harrisonburg Rockingham Regional Sewer Authority nutrient removal plant.

Harrisonburg Public Utilities
Mission Statement

HPU is endowed with the mission to continuously operate and improve under a business model that is effective and efficient to deliver water and sewer service to all of our customers. The service that we provide will meet the expectations of our stakeholders, will achieve sustainability through balance, and will embellish the core value from the City Of Harrisonburg. The business model that we create will safeguard our future for strategic, tactical, and operational performance through principles of high performance, asset management, and project management.

Mike Collins
Director

CITY OF HARRISONBURG, VIRGINIA

PUBLIC UTILTIES DEPARTMENT ORGANIZATION STRUCTURE FY2025 BUDGET

69.0 FTE; 3.59 PTE

ADMINISTRATION &ENGINEERING — 14.0 FTE

- DIRECTOR 1.0 FTE
- ASSISTANT DIRECTOR 1.0 FTE
- PROGRAM SPECIALISTS 2.0 FTE
- DIVISION MANAGER 1.0 FTE
- ENGINEER SENIOR 1.0 FTE
  ENGINEER 2.0 FTE
- PROJECT MANAGER 1.0 FTE
- BUSINESS ANALYST 1.0 FTE
  GIS TECHNICIAN 1.0 FTE
- ENG-FIELD LIAISON 1.0 FTE
  UTILITIES OPERATIONS TECHS 2.0 FTE

FIELD UTILITIES — 22.0 FTE

- DIVISION SUPERINTENDENT 1.0 FTE
- GENERAL SUPERVISOR & UTILITIES PLANNER 2.0 FTE
- CREW A
  CREW SUPERVISOR-TECHS 3.0 FTE
- CREW B
  CREW SUPERVISOR- TECHS 3.0 FTE
- CREW C
  CREW SUPERVSOR-TECHS 3.0 FTE
- CREW D
  CREW SUPERVISOR-TECHS 3.0 FTE
- CREW E
  CREW SUPERVISOR-TECHS 3.0 FTE
- CREW F
  CREW SUPERVISOR-TECHS 3.0 FTE
- EQUIPMENT SHOP MANAGER 1.0 FTE

PUMPS — 7.0 FTE

- DIVISION SUPERINTENDENT 1.0 FTE
- CONTROL & INSTRUMENTATION TECHS 2.0 FTE
- SPECIALISTS 4.0 FTE

BILLING — 14.0 FTE

- DIVISION SUPERINTENDENT / PROGRAM MANAGER 1.0 FTE
- ACCOUNT MANAGEMENT SUPERVISOR 1.0 FTE
- BILLING MGMT SPECIALIST 1.0 FTE
  CUSTOMER CARE GROUP 6.0 FTE
- BILLING MANAGEMENT SUPERVISOR 1.0 FTE
- AMI-METER MANAGER 1.0 FTE
- WATER SERVICE TECHS 3.0 FTE

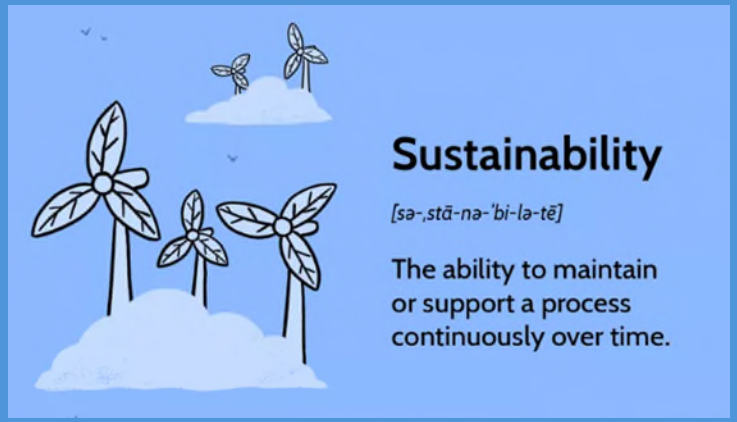
WATER TREATMENT — 12.0 FTE

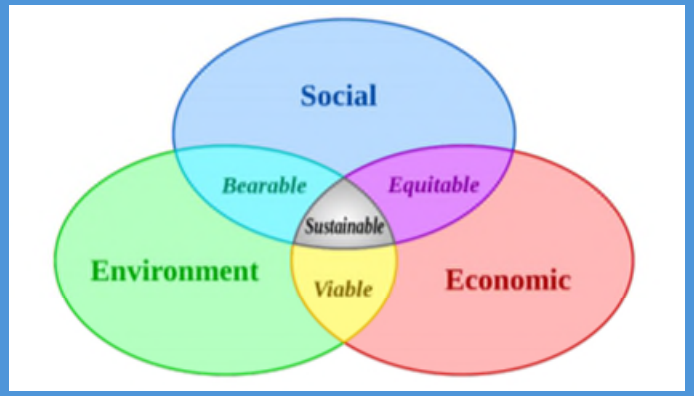
- DIVISION SUPERINTENDENT 1.0 FTE
- DIVISION ASSISTANT SUPERINTENDENT 1.0 FTE
- GENERAL SUPERVISOR 1.0 FTE
- SHIFT A OPERATORS 2.0 FTE
- SHIFT B OPERATORS 2.0 FTE
- SHIFT C OPERATORS 2.0 FTE
- SHIFT D OPERATORS 2.0 FTE
- NIGHT SHIFT OPERATOR 1.0 FTE

FULL TIME EMPLOYEES	
ADMINSTRATIVE/ENGINEERING	14.0 FTE
FIELD UTILITIES	22.0 FTE
PUMPS	7.0 FTE
UTILITY BILLING	14.0 FTE
WATER TREATMENT	12.0 FTE
	69.0 FTE

PART TIME EMPLOYEES	
ADMINSTRATIVE/ENGINEERING	1.90 PTE
FIELD UTILITIES	0.25 PTE
BILLING	1.44 PTE
	3.59 PTE

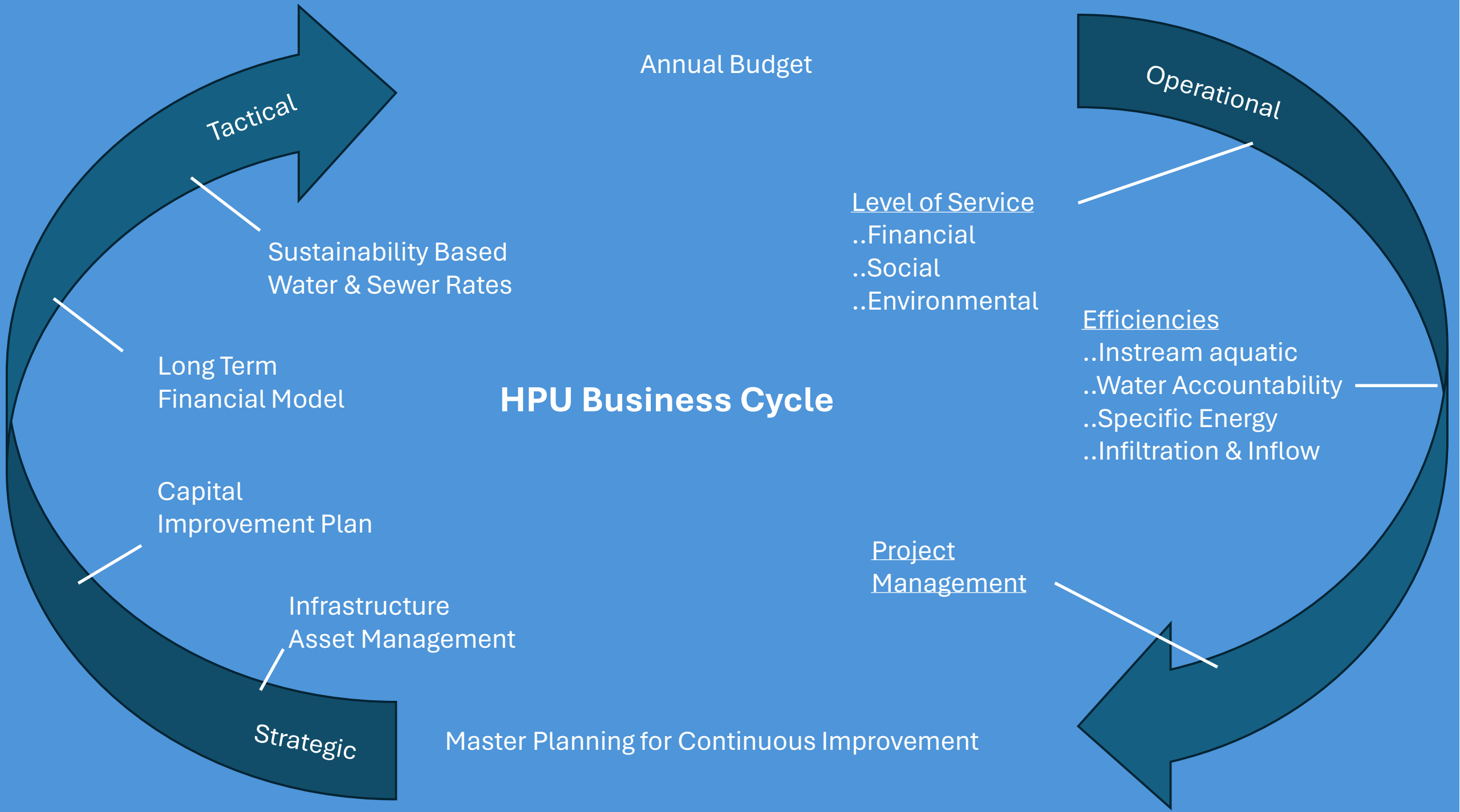
Harrisonburg Public Utilities
An Organization in Sustainability





Water is the most essential element of life, but we learn from nature that balance is key as too little or too much water can turn unfortunate.

In recognition of the value of balance, at HPU we operate to weigh our business decisions among social, economic and environmental priorities.



HPU Business Cycle

Harrisonburg Public Utilities
Water Long Term Financial Model FY2024
& Sustainability Based Rates

Model Inputs 2024-2049

Operating & Transfer Expenses
FY2024 budget allocations inflated 3% annually; $272.5M

Capital R&R Expenses
$ACSO_{25}$ = $2.87M / yr.
$57.6M
$5.0M deferred 2025-2029

Capital Expansion Expenses
$43.8M

Debt Expenses
$50.2M existing debt payments 2047
$29.3M new debt payments 2049

Model Outputs

Rate Increases	5K Gals / mo.
FY2025 - 5.0%	$21.05
FY2026 –5.0%	$22.10
FY2027 –5.0%	$23.21
FY2028 –5.0%	$23.37
FY20.29 -5.0%	$24.54

Virginia Benchmark Median	
Water 2023	$50.90
Water + Sewer 2023	$93.73 ($50.90)

Harrisonburg Public Utilities
Sewer Long Term Financial Model FY2024
& Sustainability Based Rates

Model Inputs-2024-2-49

Operating & Transfer Expenses
FY2024 budget allocations inflated 3% annually; $374M

Capital R&R Expenses
$ACSO_{25}$ = $735K / yr.;
$19.1M

Capital Expansion Expenses
$10.6M

Debt Expenses
$33.2M existing debt payments
$36.8M new debt payments

Model Outputs

FY 2023 Median Benchmark for 5K gallons

	Virginia	HPU
Sewer	$52.74	$30.95
Water + Sewer	$93.73	$41.30

Rate Increases	5K Gals / mo.
FY2025 – 2.75%	$32.75
FY2026 – 2.75%	$33.65
FY2027 – 2.75%	$34.58
FY2028 – 2.75%	$35.31
FY20.29 –2;75%	$36.28

Harrisonburg Public Utilities
Asset Management & Capital Improvement

Water Assets 8.23.23

CIP Fund	CARV	ACSO	Expansion
Western Raw Water	$ 28.9M	$300k/yr.	$26.3M
Eastern Raw Water	$ 40.0M	$ 0K/yr.	$25.0M
Rural Water Distribution	$ 15.5M	$ 80K/yr.	---------
Pumping, Storage, SCADA	$ 33.7M	$260K/yr.	
City Water Distribution	$109.4M	$1.3m/yr.	
Water Treatment	$ 21.4 M	$675k/yr.	---------
Metering	$ 2.4M	$ 25k/yr.	$ 3.0M
Water System	$251.3M	$2.87M	$54.3M

Sewer Assets 8.23.23

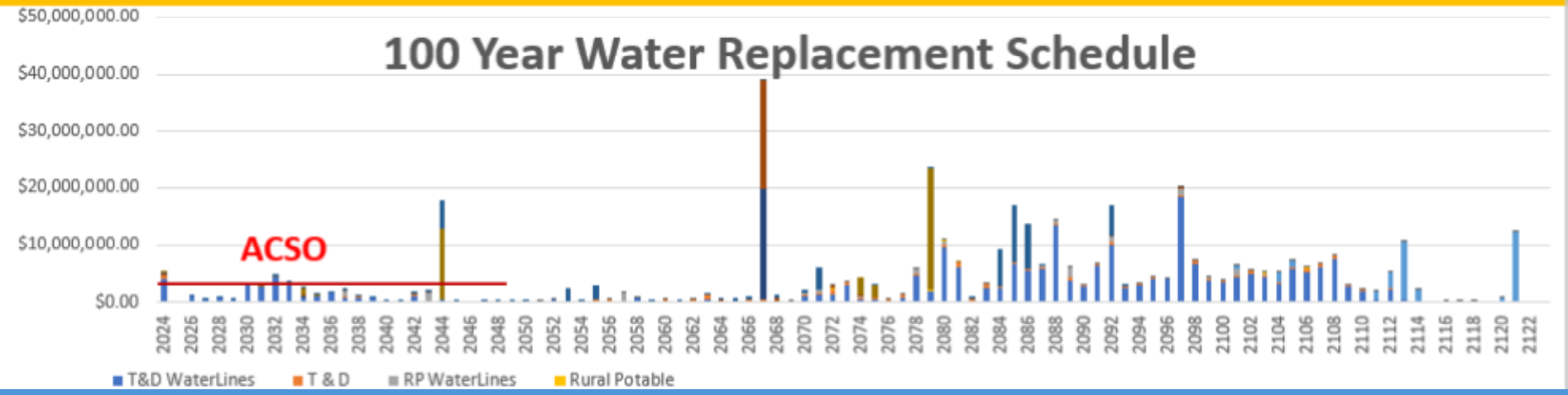
CIP Fund R&R	CARV	ACSO	Expansion
Interceptors	$ 29.6M	$100k/yr.	$10.6M(1)
Collectors	$129.5M	$550k/yr.	-------
Pumping	$ 1.8M	$ 50K/yr.	-------
Metering	$ 2.4M	$ 25k/yr.	-------
Other		$ 10K/yr.	-------
Sewer System	$153.3M	$735K/yr.	$10.6M

(1) City ILOs not yet included

Asset management & Long-Term Financial Planning

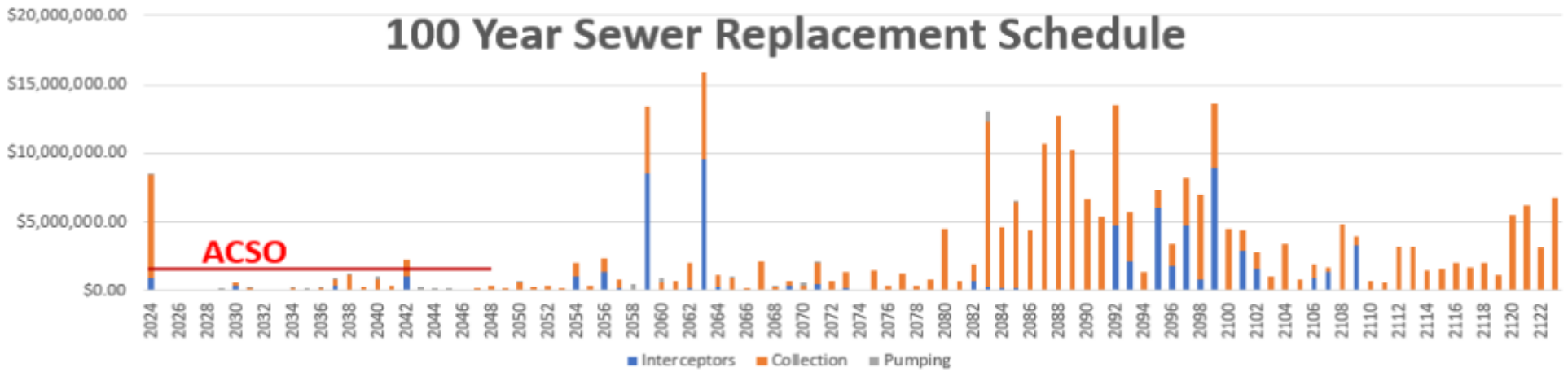
WATER CAPITAL: RETIREMENT & REPLACEMENT CHALLENGE

Years	Itemized Replacement Cost
0 to 5	$8,454,824
0 to 10	$23,453,120
0 to 15	$32,820,854
0 to 20	$38,718,232
0 to 25	$57,686,200



SEWER CAPITAL: RETIREMENT & REPLACEMENT CHALLENGE

Years	Itemized Replacement Cost
0 to 5	$8,782,220.19
0 to 10	$9,839,244.80
0 to 15	$12,733,287.66
0 to 20	$17,217,921.45
0 to 25	$18,174,382.12



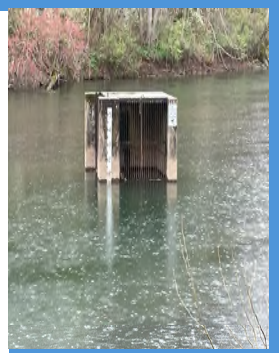
Harrisonburg Public Utilities
Instream Aquatic Protection for Raw Water Sources

Dry River Intake (DRI)

HPU operates Switzer Dam above our DRI; we also control the bypass at our DRI to a minimum 500,000 gpd. This intake will be retrofitted with 2 mm screens

North River Intake (NRI)

HPU manages raw water intake from the NRI to less than 12% of the instream daily flow rate. This intake will be retrofitted with 2 mm screens.



South Fork Shenandoah River Intake (SFI)

HPU manages raw water intake from the SFI to less than 10% of the instream daily flow rate. This intake will be constructed with 2 mm screens

Harrisonburg Public Utilities
Specific Energy
(Electrical Use per Millions Gallons Water

Water System Specific Energy (SE)

kilowatt hours / MG

Calendar Year	SE
2020	1,399
2021	1,384
2022	1,572
2023	1,510

Building Energy Utilization Intensity (EUI)

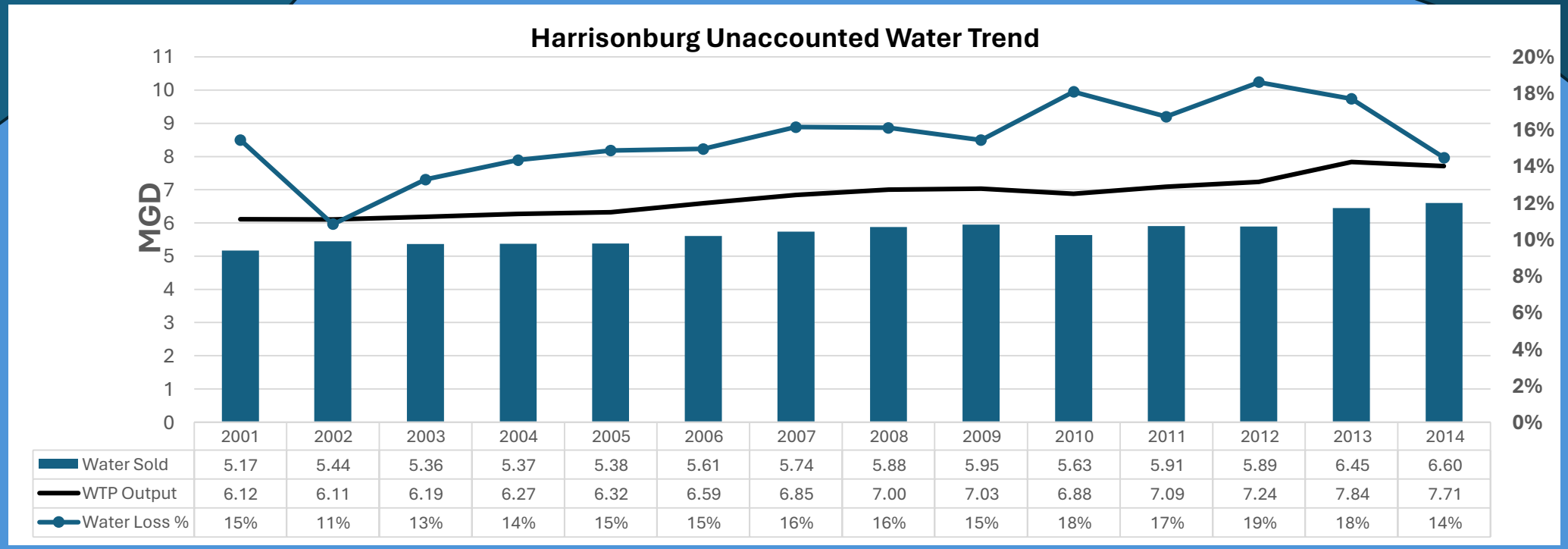
KBTU per Square Foot

Calendar Year	Operations Center	Treatment Plant
2020	73.8	43.7
2021	76.2	48.5
2022	75.5	47.6
2023	68.6	46.5

HPU is using AI internet continuous monitoring in its largest pump demand center; we performs six month SE pump inspections at each of our smaller demand centers

Building energy efficiency is managed under the City's EPSAC umbrella.

Harrisonburg Public Utilities
Unaccounted Water Management

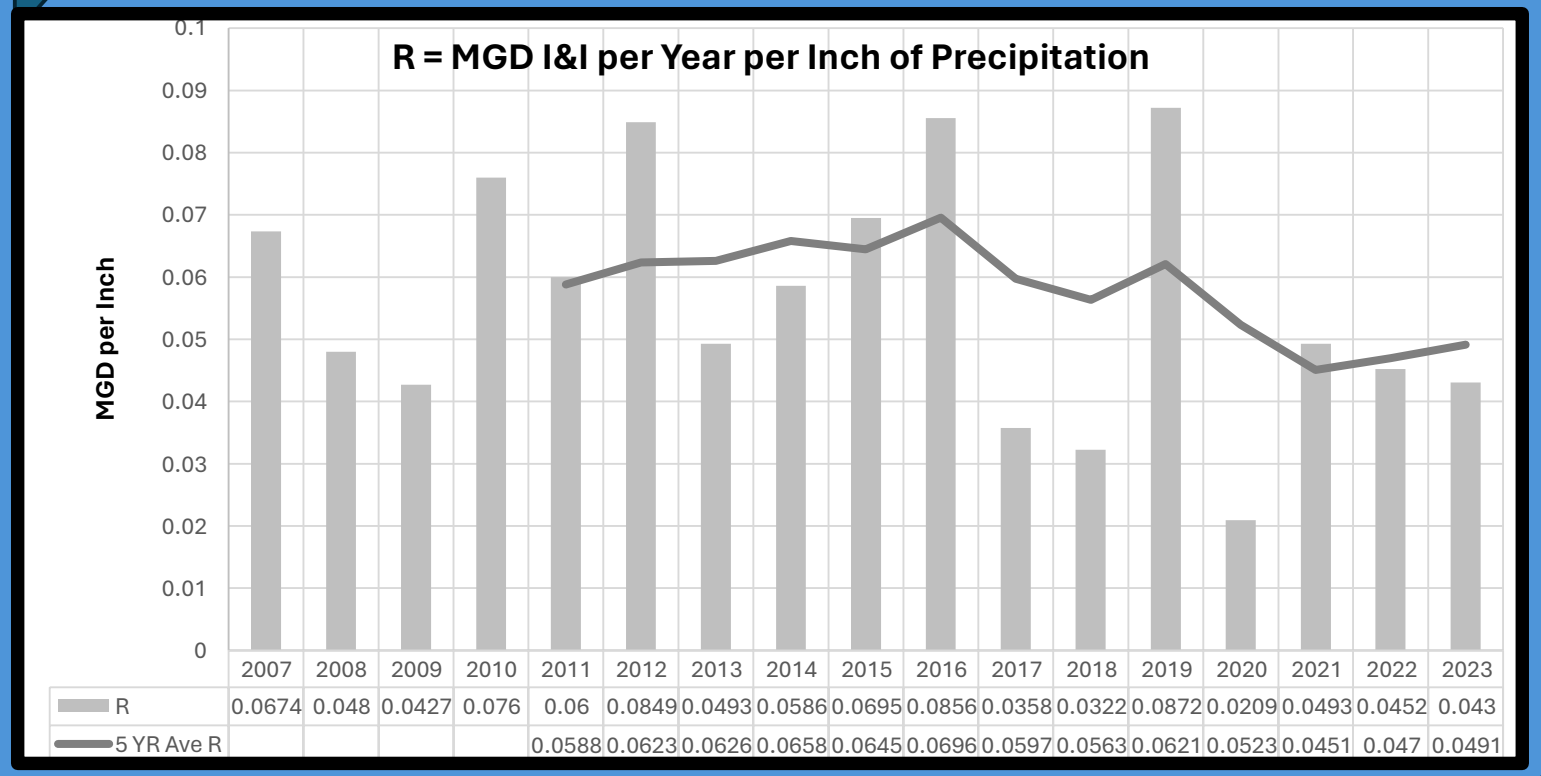


	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Water Sold	5.17	5.44	5.36	5.37	5.38	5.61	5.74	5.88	5.95	5.63	5.91	5.89	6.45	6.60
WTP Output	6.12	6.11	6.19	6.27	6.32	6.59	6.85	7.00	7.03	6.88	7.09	7.24	7.84	7.71
Water Loss %	15%	11%	13%	14%	15%	15%	16%	16%	15%	18%	17%	19%	18%	14%

A reasonable goal is 15% with an upper performance level at 10%

We use meter testing & manual leak detection; we are evaluating AI such as satellite detection and AMI metering with acoustical monitoring.

Harrisonburg Public Utilities
Sewer I&I Management



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
R	0.0674	0.048	0.0427	0.076	0.06	0.0849	0.0493	0.0586	0.0695	0.0856	0.0358	0.0322	0.0872	0.0209	0.0493	0.0452	0.043
5 YR Ave R					0.0588	0.0623	0.0626	0.0658	0.0645	0.0696	0.0597	0.0563	0.0621	0.0523	0.0451	0.047	0.0491

Our benchmark for undesirable I&I has shown a reduction is about 17% since 2011.