

HARRISONBURG WATER & SEWER SUSTAINABILITY

March 10, 2020

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Long Term Financial Model

CITY COUNCIL VISION GOAL

Prepared for

**Harrisonburg Public
Utilities**

Prepared by

econics 

powered by
waterworth™ 



Long Term Financial Model

Annually with the CIP

Water

LFM - FY 2021



OpEx Inflation

3.0%

Inflation Rate (avg.)



CapEx Future Budget

Improvement Expansion

0	2018
\$0	50
0.00%	0.00%

Revenue

1.0%

Population Growth (avg.)

0.0%

Base Use Decline (avg.)

1.6%

Rate Increase (avg.)



Debt



Reserve Policies

Working Capital	0.0%
Contingency	0.0%
Rate Stabilization	25.0%
Capital Reserves	1.5%

Interest Income

2018

0.00%



Long Term Financial Model

Annually with the Budget

Sewer

LFM - FY 2021



OpEx Inflation

3.0%

Inflation Rate (avg.)



CapEx Future Budget

Improvement Expansion

0	0
\$0	\$0
0.00%	0.00%

Revenue

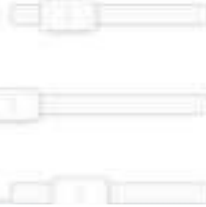
0.0%

Population Growth (avg.)

0.0%

Base Rate Decline (avg.)

1.9%



Debt



Reserve Policies

Working Capital	0.0%
Capital Contingency	0.0%
Rate Stabilization	25.0%
Capital Reserves	1.5%

Interest Income

2017

0.00%



LTFM CONSIDERATIONS

REVENUE

DEMAND

GROWTH

RATES

**NON-RATE
REVENUE**



**RATE ADJUSTMENTS
VS CASH POSITION**

EXPENSES

O&M

TRANSFERS

DEBT

**CAPITAL
OUTLAY**

**EXPANSION
CAPITAL**

**R&R
CAPITAL**





LTFM RECOMMENDATIONS

Water:

4.0% annual rate increase 2021 through 2031

Drivers: R&R Capital & 2025 Debt

Sewer:

2.5% annual rate increase 2022 through 2029

Drivers: R&R Capital; No HRRSA ILOS effect



CUSTOMER SENSITIVITY

YEAR	REFERENCE	RESIDENTIAL MONTHLY BILL	HMI THRESHOLD	1 MILLION GALLON MONTHLY BILL
2019	Harrisonburg	\$ 44.80	>\$26,880	\$8,666
2019	Virginia Control Study Group	\$ 81.38	>\$48,828	\$14,550
2031	Harrisonburg	\$ 65.31	>\$39,186	\$12,553



20 YEAR RETIREMENT INVENTORY = \$ 60 M

CIP 2021= \$1.1 M/YR

- ACSO = \$2.0 M/YR
CIP 2021= \$1.1 M/YR
- =====
- Backload CIP funding until rates will sustain; concept meets full 20 year CIP R&R funding
-
- Expenditures (\$)
- 2017 2026 2035 2044 2053 2062 2071 2080 2089 2098 2107 2116
- Legend:
- Pipes
 - Valves
 - Structures
 - Equipment
 - Hydrant
 - Pumping
 - Storage
 - Meter
 - Treatment
 - Scaff
- Annual Cost of Sustainable Ownership



SEWER ASSET R&R (MASL)

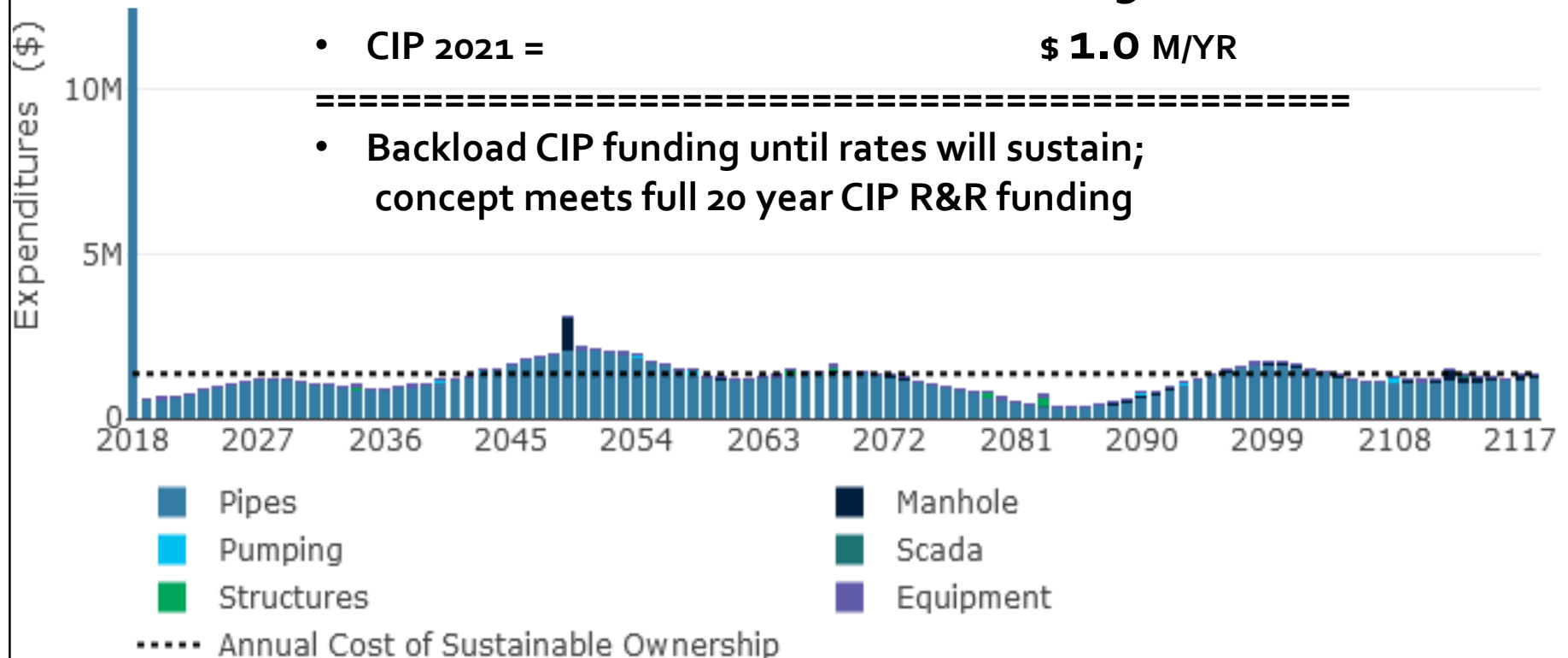
- SEWER ASSET INVENTORY = **\$102 M**
- 20 YEAR RETIREMENT INVENTORY = **\$ 37 M**

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- ACSO = **\$ 1.9 M/YR**
- CIP 2021 = **\$ 1.0 M/YR**

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- Backload CIP funding until rates will sustain;
concept meets full 20 year CIP R&R funding





How do we get better?

2019

- R&R Funding by Manufacturer's Anticipated Service Life (MASL)
- R&R Projects by AM-RISK

Future

- R&R Funding by AM-RISK
- R&R Projects by AM-RISK
- Improve RISK Management Skills



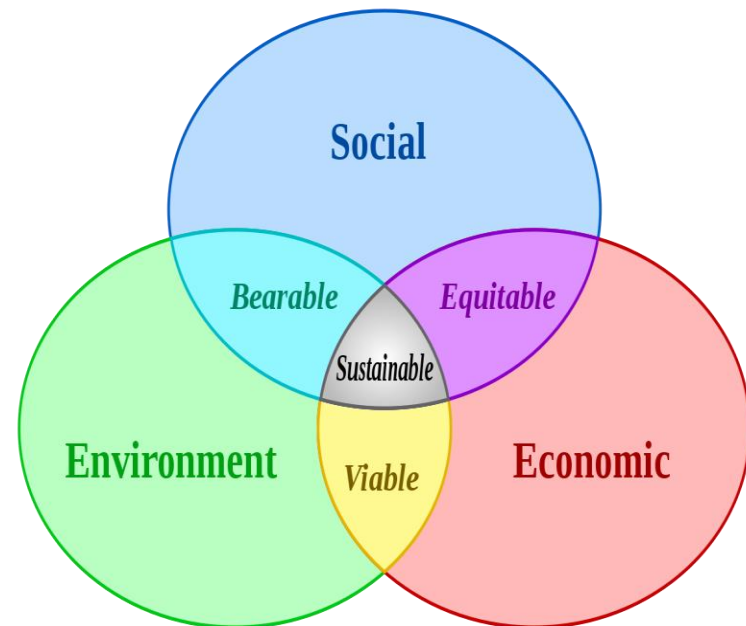
ASSET MANAGEMENT

RISK ANALYSIS

Failure Modes

- Capacity
- Performance
- Mortality
- Obsolescence


Criticality



Seattle Example: Cohort WWII pipes in pavement



How do we get there?

- **Commit to the process**
- **Affiliations—**   NUA
- **Staffing—engineers & field technicians**
- **Education—degrees, seminars,**
- **Training—certifications**
- **Technology—CCTV, developing industry !!!**
- **Processes— Asset AMPs**
- **Commit to sustainability**



Management Master Plans

- **Raw Water Supply Management Plan (RWSMP)**
- **Potable Water System Management Plan (PWSMP)**
- **Sanitary Sewer Management Plan (SSMP)**

Available on line at www.harrisonburgva.gov