



Raw

Water

Supply

Management

Plan

UPDATE FY2019



City of Harrisonburg, VA
Public Utilities Department (HPU)

**Raw Water Supply Management
Plan
(RWSMP)**

December 31, 2015

Revised: April 26, 2019

Available on line @ [www,harrisonburgva.gov](http://www.harrisonburgva.gov)



RWSMP FOCUS

R
W
S
M
P

Focus

- Reliability
- Sustainability
- Risk Management

Mode

- Drought
- Asset & Energy Optimization
- Contingency

Harrisonburg Raw Water Supply



DRY RIVER SOURCE

DRY RIVER
ELEV = 1688'

Cooper's Mountain Road

30" Pipe (1.5 Miles)

30" Pipe Incomplete
(6.8 Miles)

30" Pipe (2.2 Miles)

Bellevue
Road

WTP
ELEV = 1545'

SILVER LAKE
ELEV = 1218'

NORTH RIVER SOURCE

24" Pipe (1.3 Miles)

24" Pipe (2.4 Miles)

20" Pipe (2.9 Miles)

NORTH RIVER
ELEV = 1160'

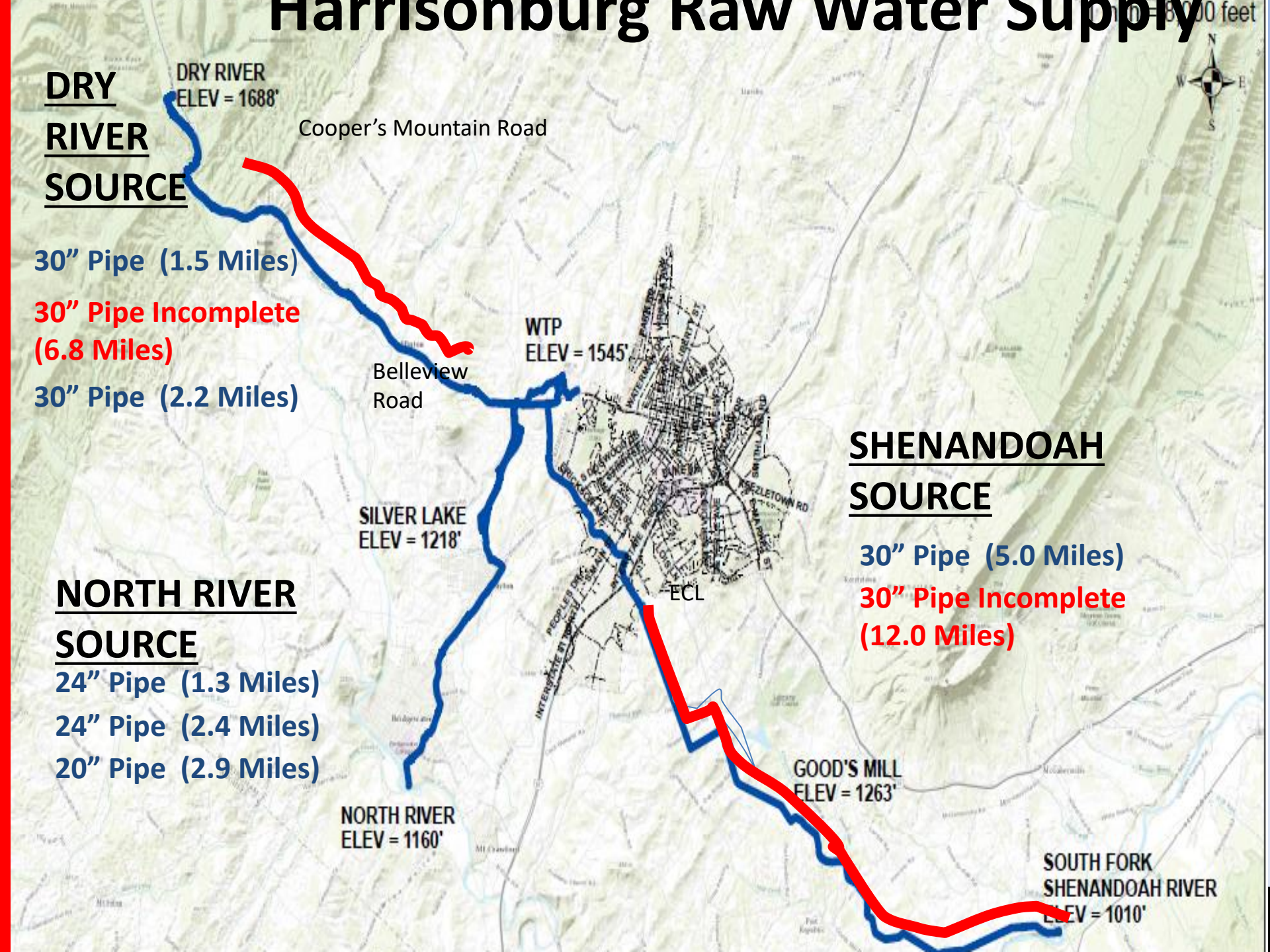
SHENANDOAH SOURCE

30" Pipe (5.0 Miles)

30" Pipe Incomplete
(12.0 Miles)

GOOD'S MILL
ELEV = 1263'

SOUTH FORK
SHENANDOAH RIVER
ELEV = 1010'

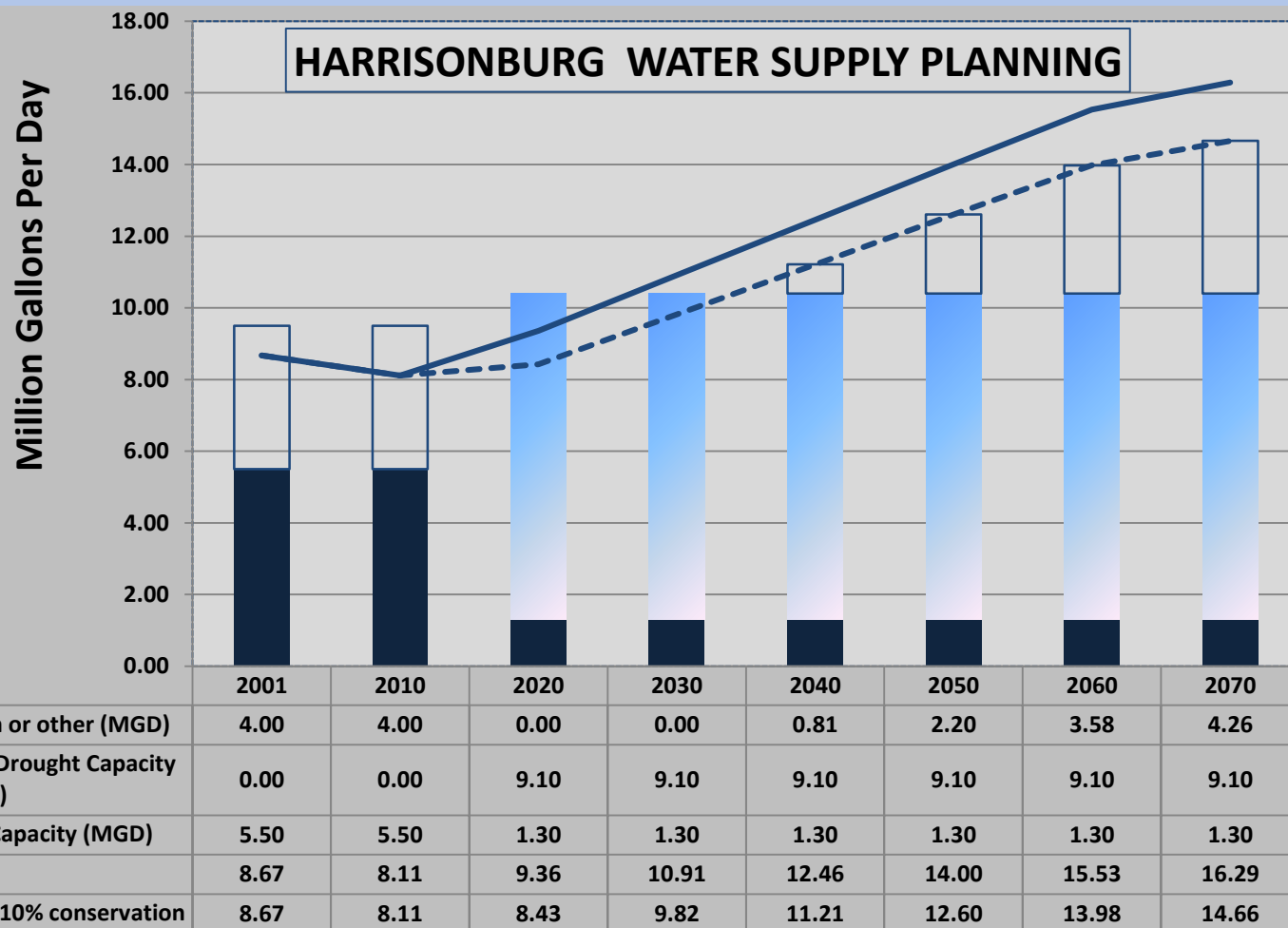




RWSMP: DROUGHT SUSTAINABILITY

The underlying principle to the RWSMP is to provide a roadmap to a reliable 14.63 MGD raw water supply that will meet a 12.60 MGD average annual water demand.

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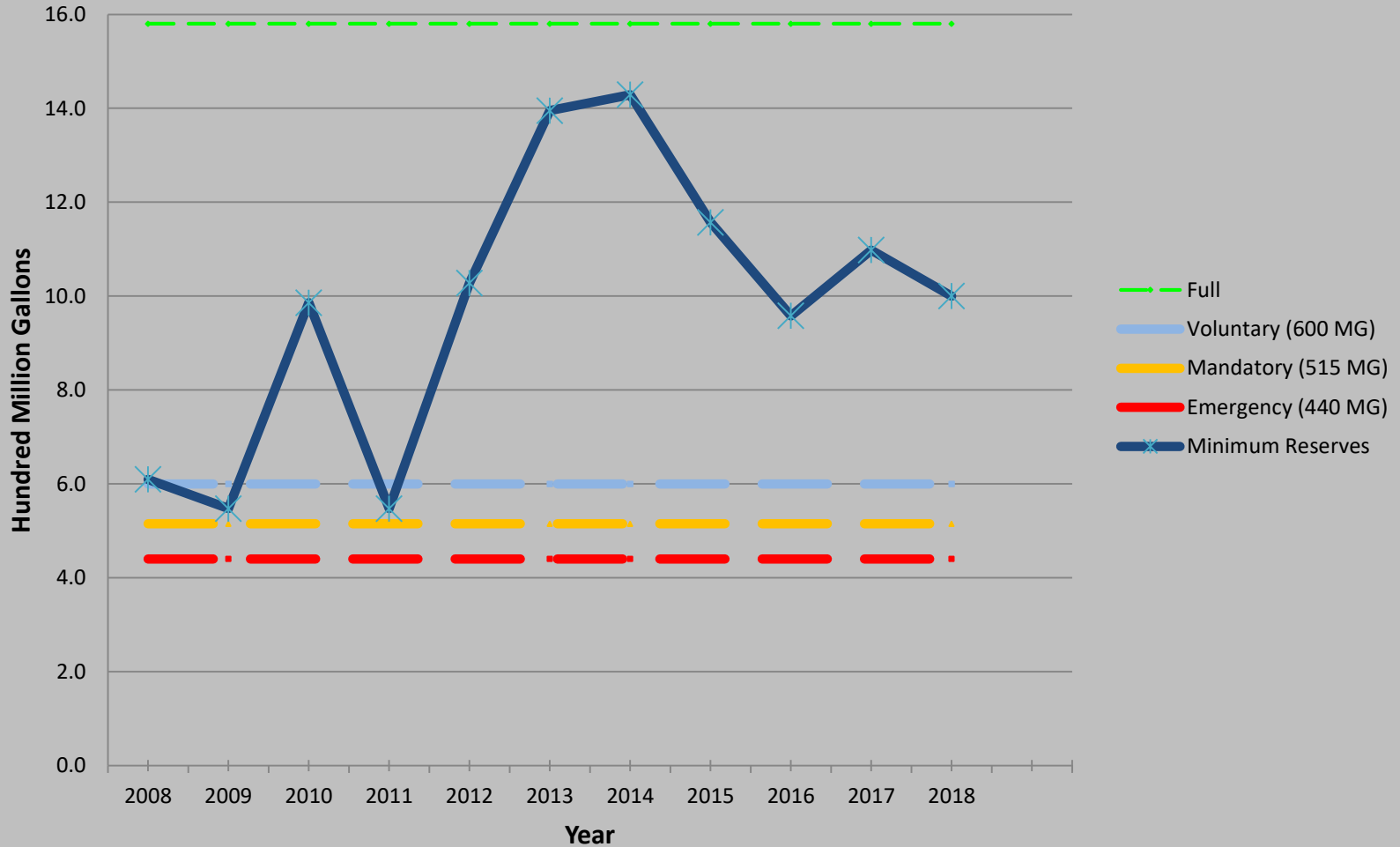




RWSMP: DROUGHT SUSTAINABILITY

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W
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Switzer Dam Water Storage Volume





VAC LOCAL AND REGIONAL WATER SUPPLY PLAN

R
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Plan Recommendation #1

- Maintain compliance with Virginia Administrative Code requirements for a regional and local water supply plan.

Goals

- ✓ 2013: Original plan approval by DEQ and adopted by resolution of City Council.
- ✓
 - 2018: DEQ re-approval
 - 2023: Next review.



VWWP #16-0730

Plan Recommendation #2

- Renew Virginia Water Withdrawal Permit # 98-1672
- Comply with requirements of re-issued permit

Permit #16-0730

- ✓ 2016 permit re-issued ; expires 2031

Permit requirements

- ✓ Conservation Ordinance adopted
- Install aquatic protection screens at all intakes \$4M-2025 CIP
- Comply with maximum withdrawals at all sources

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DRY RIVER

Plan Recommendation

#3

- Install new 55,000' raw water pipe.
- Transition 1959 pipe
- Decommission 1929 pipe
- Decommission 1898 pipe

FY 2019 Status

- ✓ 22,000 feet complete
- 11,400 feet 2025 CIP
\$4.3M
- 21,600 feet 2045 CIP
\$8.2M

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NORTH RIVER

Plan Recommendation #4

- Upgrade BWPS:
 - 1) Variable output
 - 2) power and energy efficiency
 - 3) Retire critical assets
 - 4) Add power loss response
 - 5) Model for

FY 2019 Status

- ✓
 - Project 100 % complete \$1.6M

R
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SILVER LAKE

#5

- R
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- 99 year lease with Town of Dayton.
 - Configure intake for temporary connection
 - Understand long term need to Silver Lake water

- ✓ Lease renewed.
- FY2020 CIP Intake Project
- Potential need included in RWSMP; await growth of City



SOUTH FORK SHENANDOAH RIVER

Plan Recommendation

#6

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Finalize scope, cost,
schedule and completion
of the South Fork
Shenandoah River Raw
Water Project

90,000 feet pipe

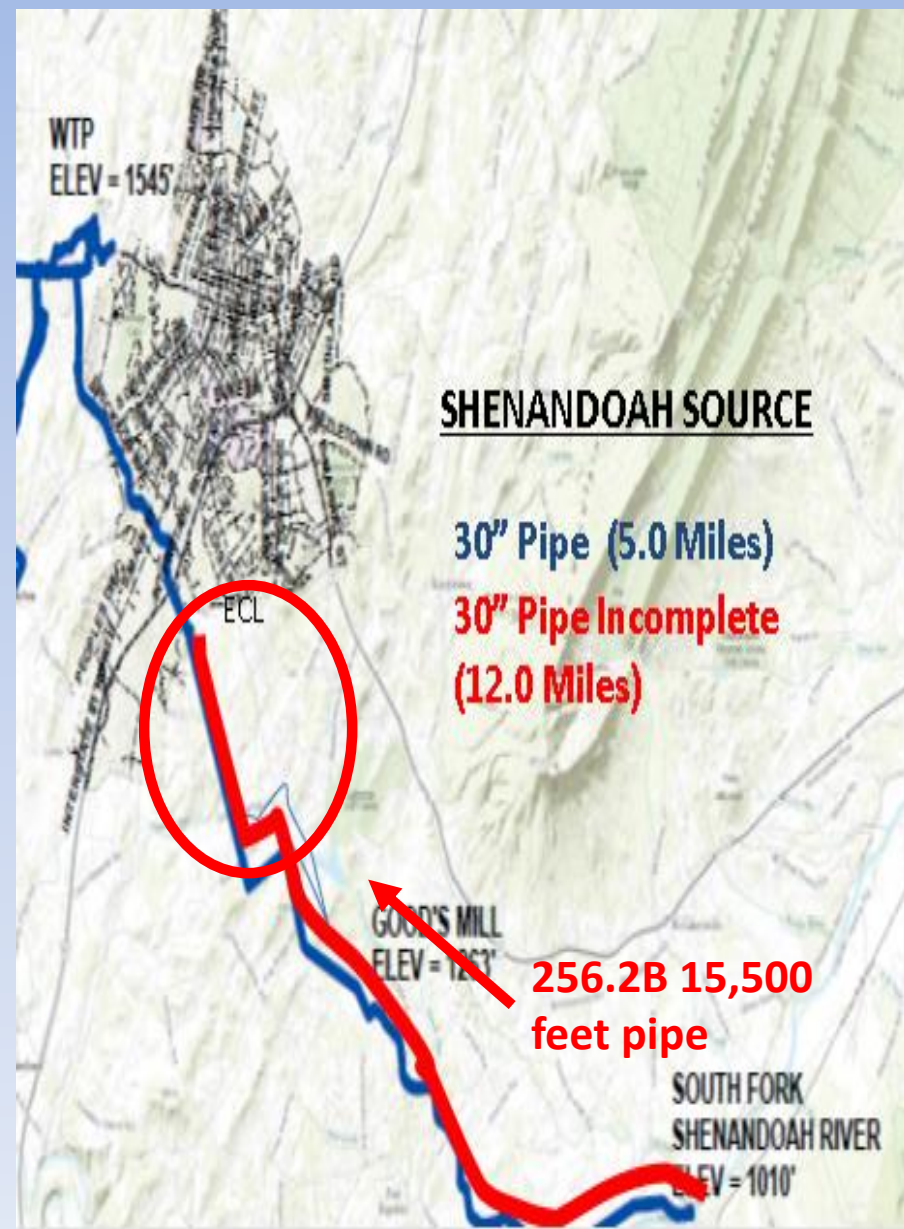
\$37M—50% funded

FY 2019 Status

- PD & GM PS...2021-2022
- 256.1.....2020-2022
- 256.2A.....2020-2022
- 256.2B.....2019-2020
- ✓ • 256.3A-E.....Complete
- ✓ • 256.4.....Complete
- ✓ • 256.5 A&B.....Complete
- 25,000 feet completed
- 65,000 feet 2020-2022

SHENANDOAH PROJECT 256.2B

Bid Date; June 6, 2019



- 1) Stakeholder Team:
 - 13 easement grantors
- 2) Compartmentalized:
 -a) tree removal
 -b) pipe supply contract
 -c) 830' high risk pipe install
- 3) Collaborated an encroachment agreement with Dominion Energy
- 4) Pre-permitted all VDOT road crossings as open cut
- 5) Pre-permitted erosion & sediment requirements
- 6) Pre-permitted wetlands delineations
- 7) Utility conflicts resolutions