

OLYMPIC VALLEY PUBLIC SERVICE DISTRICT



2021 WATER AND SEWER SYSTEM REPORT

Prepared July 2022
By
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Olympic Valley Public Service District Annual Report 2021

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EQUIPMENT CAPITAL REPLACEMENT PROJECTS

Budget Year 2022 - 2026

| Equipment Type | Funding Source | FY 22/23 | FY 23/24 | FY 24/25 | FY 25/26 | FY 26/27 | Project Total |
|----------------------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------|-------------------|
| Fleet | | | | | | | |
| Ford F-250 | Water/Sewer FARF | | \$ 60,600 | | | | \$ 60,600 |
| Ford F-150 | Water/Sewer FARF | | | \$ 30,900 | | | \$ 30,900 |
| Ford F-350 | Water/Sewer FARF | | | | \$ 52,000 | | \$ 52,000 |
| Equipment | | | | | | | |
| Sewer Bypass Trailer and Hose | Sewer CIP | \$ 20,000 | \$ 35,000 | | | | \$ 55,000 |
| New Holland | Water/Sewer FARF | \$ 50,000 | | | \$ 95,500 | | \$ 145,500 |
| JD Loader | Water/Sewer FARF | | | \$ 150,000 | | | \$ 150,000 |
| Small Tools and Equipment | | | | | | | |
| Sewer Lateral CCTV Cam | Water/Sewer FARF | | \$ 20,000 | | | | \$ 20,000 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL | | \$ 70,000 | \$ 115,600 | \$ 180,900 | \$ 147,500 | \$ - | \$ 514,000 |

WATER CAPITAL PROJECTS

Budget Year 2022 - 2026

| CIP Projects | Funding Source | FY 22/23 | FY 23/24 | FY 24/25 | FY 25/26 | FY 26/27 | Project Total |
|---|----------------|--------------------|-------------------|-------------------|-------------------|--------------------|---------------------|
| Pressure Zone 1A Project | Water CIP | | \$ 60,000 | \$ 838,000 | | | \$ 898,000 |
| OVPSP/SVMWC Intertie | Water CIP | \$ 240,000 | \$ 240,000 | | | | |
| PlumpJack Well | Water CIP | \$ 10,000 | | | | \$1,250,000 | \$ 1,260,000 |
| TOTAL | | \$ 250,000 | \$ 300,000 | \$ 838,000 | \$ - | \$1,250,000 | \$ 2,158,000 |
| CRP Projects | | | | | | | |
| West Tank Recoating Project | Water FARF | \$ 600,000 | | | | | \$ 600,000 |
| Zone 3 Tank Recoating Project | Water FARF | | \$ 210,000 | | | | \$ 210,000 |
| Victor/Hidden Lake 2" Waterline Replacement Project | Water FARF | | | \$ 30,000 | \$ 225,000 | | \$ 255,000 |
| Residential Meter Replacement Project | Water FARF | \$ 300,000 | \$ 275,000 | | | | \$ 575,000 |
| Fire Hydrant Replacement Project | Water FARF | \$ 40,000 | \$ 21,000 | \$ 21,000 | \$ 21,000 | \$ 21,000 | \$ 124,000 |
| TOTAL | | \$ 940,000 | \$ 506,000 | \$ 51,000 | \$ 246,000 | \$ 21,000 | \$ 1,764,000 |
| GRAND TOTAL | | \$1,190,000 | \$ 806,000 | \$ 889,000 | \$ 246,000 | \$1,271,000 | \$ 3,922,000 |

SEWER CAPITAL PROJECTS

Budget Year 2022 - 2026

| Project Title | Funding Source | FY 22/23 | FY 23/24 | FY 24/25 | FY 25/26 | FY 26/27 | Project Total |
|--|----------------|-------------------|--------------------|------------------|-------------------|-------------|---------------------|
| CIP Projects | | | | | | | |
| Sewer Flow Meter Project | Sewer CIP | | | \$ 20,000 | \$ 130,000 | | |
| | | | | | | | |
| TOTAL | | \$ - | \$ - | \$ 20,000 | \$ 130,000 | \$ - | \$ 150,000 |
| CRP Projects | | | | | | | |
| Sewer Line and Manhole Rehabilitation | Sewer FARF | \$ 500,000 | \$1,000,000 | | | | \$ 1,500,000 |
| Backyard Easement Sewer Replacement Projects | Sewer FARF | | \$ 300,000 | | \$ 300,000 | | \$ 600,000 |
| TOTAL | | \$ 500,000 | \$1,300,000 | \$ - | \$ 300,000 | \$ - | \$ 2,100,000 |
| GRAND TOTAL | | \$ 500,000 | \$1,300,000 | \$ 20,000 | \$ 430,000 | \$ - | \$ 2,250,000 |

OVPSD Utilities Report 2021

I. Flow Report

- A. Water Production Total = 102.72 MG
Comparison: 4.51 MG Less Than 2020
- B. Sewer Collection Total = 70.90 MG
Comparison: 2.64 MG More Than 2020
- C. Aquifer Level 2021 Maximum Level May 8, 2021: 6189.9'
 Minimum Level October 6, 2021: 6177.3'
- Total Change in Static Water Level 2020: 12.6'
Total Change in Static Water Level 2021: 12.5'
- D. Precipitation Total 20/21 Water Year = 30.49"
 53-Year average = 52.98"
 20/21 Water Year % of the 53-Year average = 57.56%

- * The maximum level represents a rough average of the highest levels measured in the aquifer during spring melt period.
- ** The lowest level recorded in the aquifer was 6,174.0 feet above mean sea level on October 12, 2001. This level is not necessarily indicative of the total capacity of the aquifer.
- *** Creek bed elevation (per Kenneth Loy, West Yost Associates) near Well 2r is 6,186.9 feet.
- **** The season total for Precipitation is calculated from October 2020 through September 2021.
- ***** The true average could be higher or lower than the reported value due to the uncertainty of the Old Fire Station precipitation measurement during the period 1994 to 2004.
- ***** The production number is different than scada reports due to time of day reading issues.

II. Leaks, Repairs, and Maintenance

A. Water

1. New meters installed: 18
2. Water meters replaced or rebuilt: 0
3. Water meter upgrades: 0
4. Customer service water meters turned on or off: 18
5. Routine leak/high usage detection notification: 183
6. Customer requested leak detection services performed: 25
7. No water responses: 0
8. Fire hydrants flushed: 165
9. Blow-offs flushed: 20
10. Valves exercised: 132
11. Repair/Replace service line: 2
12. Repair leak on water main: 1
13. Backflow devices tested: 533
14. Test District backflows: 4
15. Quarterly vault inspections on Well 1R and Well 3: 8
16. Water tank inspections: 8
17. Water quality complaints serviced: 0
18. Tested commercial meters: 0
19. Replaced Air/Vac breakers: 0
20. Water samples collected:
 - Bacteriological: 32
 - Nitrate: 4

B. Sewer

1. Sanitary sewer overflows: 0
2. Main line repairs: 0
3. Service line repairs: 0
4. Sewer cleanout repairs: 3
5. Manhole repairs: 3
6. Manhole grouting: 0
7. Cleaning:
 - Spring and fall cleaning of high priority lines
 - Main sewer lines cleaned: 255
8. Inspections:
 - Underground Service Alerts: 146
 - Pre-remodel Inspections: 0
 - Final Inspections: 31
 - Fixture count Inspections: 0
 - Water service line Inspections: 32
 - Sewer service line Inspections: 40
 - Sewer service line pressure test: 66
 - Sewer main line Inspections: 0
 - Water quality complaint Investigations: 0
 - Water Backflow Inspections: 3
 - Fog Inspections: 0

III. Building and Grounds Maintenance and Repair

A. 305 Squaw Valley Road Fire Department and Administration

1. Continued monthly service and maintenance of facility and equipment.

B. 1810 Squaw Valley Road District Equipment Garage

1. Continued monthly service and maintenance of facility and equipment.

IV. Vehicles and Equipment

A. Vehicles

1. All vehicles received an annual service, with the exception of the Ford Interceptor and Ford F-150 which received biannual services.

B. Equipment

1. All small equipment received an annual service.

V. Administrative

- A. VUE Works data input.

VI. Operation & Maintenance Projects

- A. Vegetation removal from access roads to tanks
- B. Gate valve box repairs
- C. Continued Operations and Maintenance of SV Mutual Water Company.
- D. Sewer System I/I inspection
- E. 2021 CCTV Sewer Project
- F. Manhole Repairs
- G. Spring and Fall Flushing
- H. Annual Sewer Cleaning
- I. High Priority Cleaning
- J. Hydrant Ballard Repairs
- K. Tank Inspections
- L. Fire Hydrant Repairs
- M. Sewer C/O Locating
- N. Meter Box replacements

VII. Summary

2021 was another challenging year. OVPSD Operations Department has seen numerous operators leave the District. The Operations department was able to make a few repairs to assets in the district. The District continued a contract to operate and maintain the Squaw Valley Mutual Water Company. Training continued this year keeping the district crew as knowledgeable and up to date as possible so that we may provide the best available service to our customers.

Water System Inventory – 2021

1. Water Well #1R – 370 GPM average. *
2. Water Well #2R – 320 GPM average. *, **
3. Water Well #3 – 110 GPM average. *
4. Water Well #4 – (Not in Service)
5. Water Well #5R – 385 GPM average. *
6. Horizontal Well – (Out of Service). *, ***

2021 Total average flow – 1,185 GPM ****

7. West Tank - 1,150,000 Gallon Water Tank
8. East Tank - 500,000 Gallon Water Tank
9. Zone 3 Tank - 135,000 Gallon Water Tank

Total Storage – 1,785,000 Gallons

10. 2 Booster Pumping Stations
11. 860 Water Meters connected per Billing
12. 138 Fire Hydrants
13. 34 Air Release Valves
14. 575 Backflow Prevention Devices
15. 417 Gate Valves

Notes:

* GPM averaged from the time wells were on and running.

** Well 2R GPM is affected by seasonal aquifer level changes. During low aquifer level years the well GPM is reduced to prevent pumping below the well screens.

*** Horizontal Well is out of service. When it runs GPM is affected by gravity flow and changes from one year to the next. Longer periods of operation will lower the GPM. The average in 2016 was 70 GPM.

**** 2021 total average flow does not indicate total capacity. This total is the combined GPM flows from all the wells as they were operated in 2021 calendar year.

Water System Inventory – 2021

16. 17 Butterfly Valves
17. 23 Blow Off Assemblies
18. 5 Control Valves (Granite Chief, East Booster, Zone 3 Booster, Hz Well)
19. 3 Transducer Stations (West Tank, East Tank, and Zone Three Tank)
20. 7 Remote Terminal Units (RTU), SCADA Telemetry System
21. 12,761 Feet 12" Water Distribution Main
22. 10,752 Feet 10" Water Distribution Main
23. 32,312 Feet 8" Water Distribution Main
24. 21,015 Feet 6" Water Distribution Main
25. 696 Feet 4" Water Distribution Main
26. 990 Feet 2" Water Distribution Main
27. 439 Feet 6" Water Service Line
28. 240 Feet 4" Water Service Line
29. 3,170 Feet 2" Water Service Line
30. 254 Feet 1.25" Water Service Line
31. 39 Feet 1.5" Water Service Line
32. 3,033 Feet 1" Water Service Line
33. 128 Feet $\frac{3}{4}$ " Water Service Line

Total Water Main = 78,526 Feet = 14.872 Miles

Total Water Services = 7,303 Feet = 1.383 Miles

Combined Total = 85,829 Feet = 16.250 Miles

Olympic Valley Public Service District - Year End Water Audit Report

Report Date: January 10, 2022 Performed By: Brandon Burks

Year: 2021

Begin Audit Period: 12/31/20 12:00 AM

End Audit Period: 1/5/22 12:00 AM

Total Metered Consumption for audit period specified (including hydrant meters): 89,677,891

Additional Consumption - Unmetered

Fire Department Use: 106,500
 Hydrant Flushing: 1,508,653
 Blow-Off Flushing: 30,000
 Sewer Cleaning: 145,000
 Street Cleaning:
 Well Flushing: 120,000

Tank Overflows:
 Unread Meter Estimated Reads:
 Other:

Total Unmetered Consumption (for audit period specified): 1,910,153

Estimated Unknown Loss - Unmetered

Known Theft: _____
 Known Illegal Connections: _____
 Total Estimated leaks that have been repaired: 394,000
 Total Estimated Unmetered (for audit period specified): 394,000

Total Production for audit period specified: 104,621,965

Total Metered/Unmetered Consumption for audit period specified: 91,982,044

Total Water Loss (Production - Consumption): 12,639,921
Loss Percentage: 12.1% ***

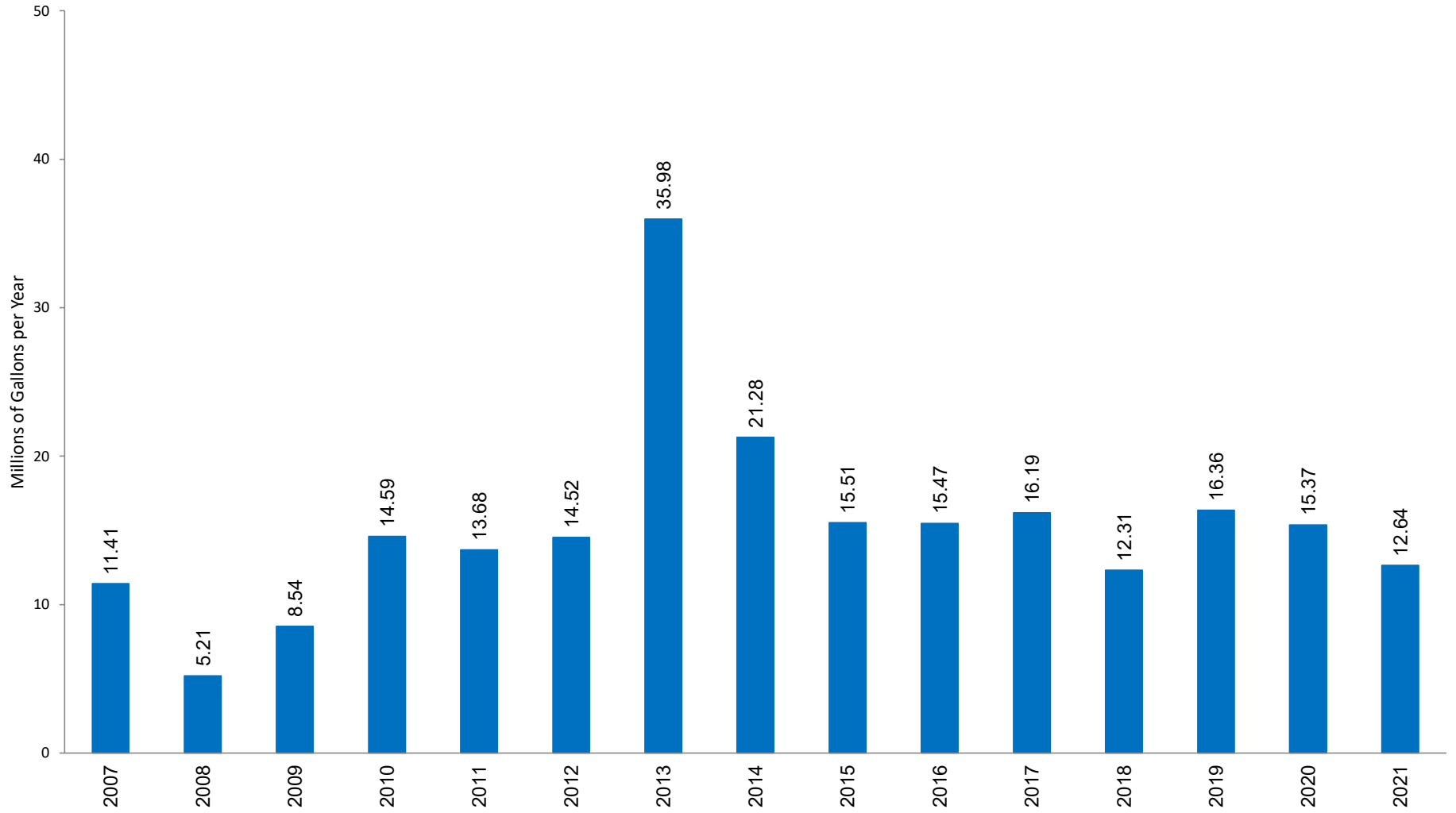
Comments: The production totals are different than the monthly report due to a different time frame being used.

* Instructions - Only fill in the blue cells *

* Note - All Production & Consumption Totals In U.S. Gallons *

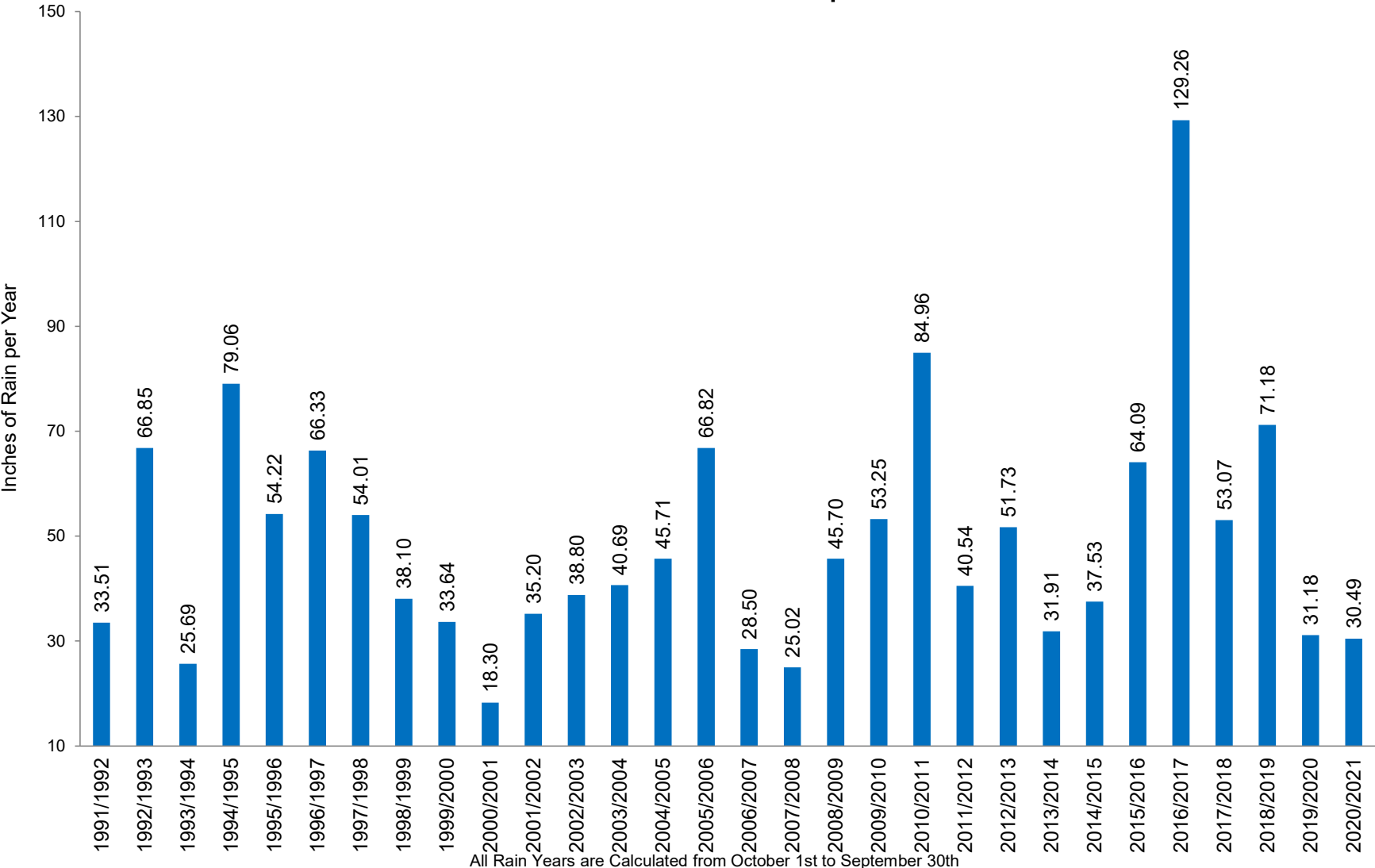
*** Note - Total Water Loss Percentage included theft, Illegal Connections or Leaks that have been repaired

OVPD 15 Year Water Loss Trend

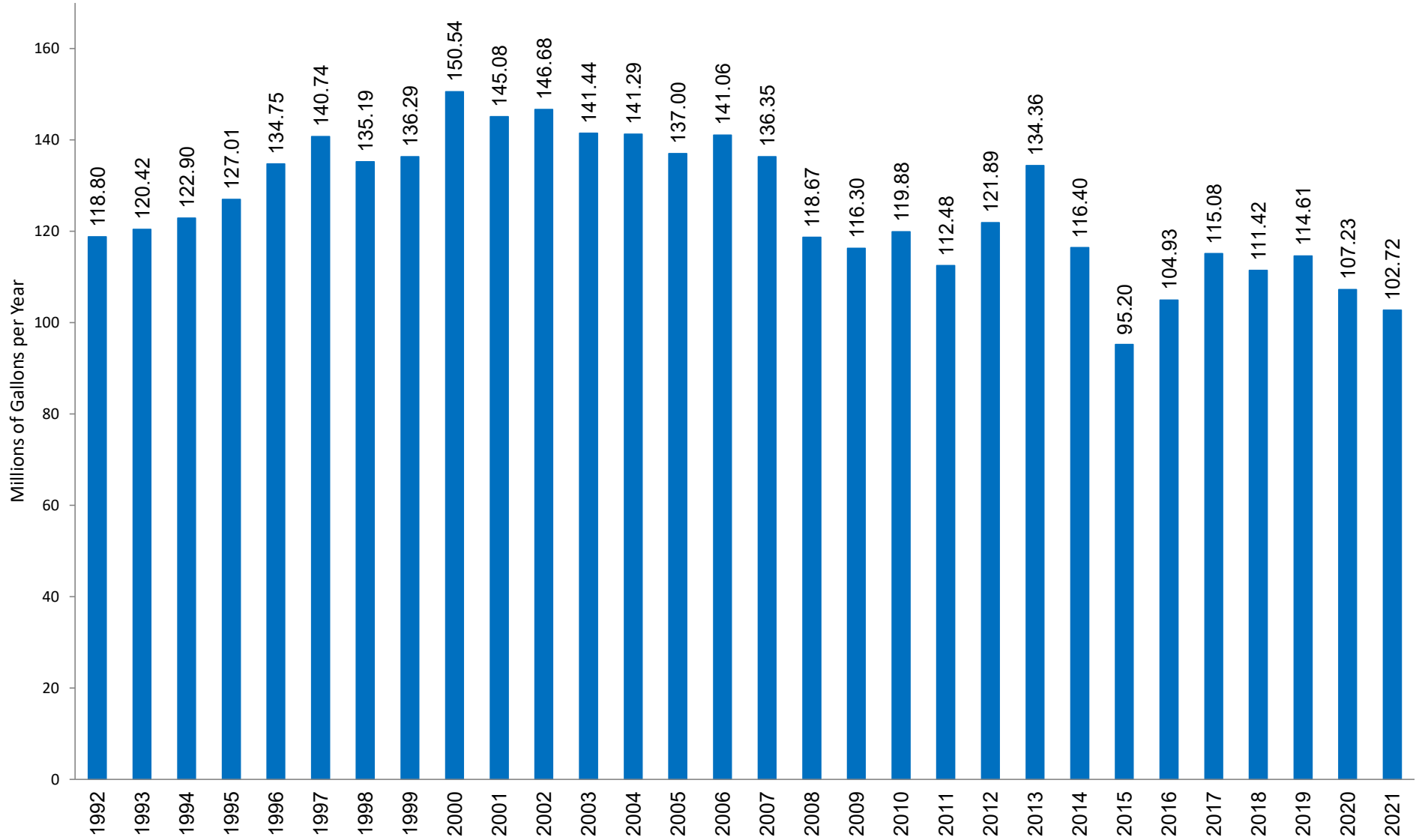


Information comes from from Year End Water Audit Report

OVPD 30 Year Precipitation



OVPD 30 Year Water Production Trend



Information comes from from well logs

| Pump Run Hours | | | | | | | | |
|-----------------------|-----------------|-----------------|----------------|-----------------------|----------------------|-------------------|------------------|------------------|
| | Well #1R | Well #2R | Well #3 | Well #5R Motor | Well #5R Pump | East Boost | Zone-3 #1 | Zone-3 #2 |
| Year Installed | 2005 | 2011 | 2014 | 1999 | 2015 | 2015 | 1990 | 1990 |
| 1990 | | | | | | | 30 | 30 |
| 1991 | | | | | | | 98 | 66 |
| 1992 | | | | | | | 112 | 84 |
| 1993 | | | | | | | 120 | 99 |
| 1994 | | | | | | | 136 | 146 |
| 1995 | | | | | | | 223 | 160 |
| 1996 | | | | | | | 363 | 145 |
| 1997 | | | | | | | 538 | 338 |
| 1998 | | | | | | | 438 | 352 |
| 1999 | | | | | | | 612 | 264 |
| 2000 | | | | | | | 527 | 640 |
| 2001 | | | | | | | 631 | 573 |
| 2002 | | | | | | | 493 | 514 |
| 2003 | | | | | | | 509 | 503 |
| 2004 | | | | | | | 541 | 550 |
| 2005 | 209 | | | | | | 486 | 473 |
| 2006 | 1,868 | | | | | | 455 | 468 |
| 2007 | 1,796 | | | | | | 438 | 467 |
| 2008 | 1,552 | | | | | | 477 | 460 |
| 2009 | 1,552 | | | | | | 533 | 388 |
| 2010 | 1,637 | | | 172 | | | 381 | 365 |
| 2011 | 1,866 | 687 | | 1,983 | | | 353 | 344 |
| 2012 | 1,570 | 1,569 | | 1,681 | | | 513 | 482 |
| 2013 | 1,927 | 1,923 | | 1,884 | | | 417 | 408 |
| 2014 | 933 | 1,985 | 642 | 1,991 | | | 391 | 393 |
| 2015 | 1,375 | 1,399 | 1,358 | 985 | 150 | 348 | 312 | 325 |
| 2016 | 1,341 | 1,326 | 1,317 | 1,286 | 1,286 | 1,347 | 415 | 409 |
| 2017 | 1,622 | 1,615 | 1,614 | 1,447 | 1,447 | 1,698 | 317 | 313 |
| 2018 | 1,643 | 1,542 | 1,547 | 1,476 | 1,476 | 1,769 | 342 | 338 |
| 2019 | 1,697 | 1,640 | 1,474 | 1,456 | 1,456 | 1,808 | 333 | 330 |
| 2020 | 1,628 | 1,608 | 955 | 1,608 | 1,608 | 1,628 | 336 | 355 |
| 2021 | | | | | | | | |
| Total Hours | 24,216 | 15,294 | 8,907 | 15,969 | 7,423 | 8,598 | 11,534 | 10,427 |

Notes:

Annual and total hours in this spreadsheet are restarted from the time of replacement or rebuild of equipment.

Well 1R - the pump and motor was replaced in 2005 after 24,756 hours in service.

Well 2R - the pump and motor was replaced in 2011 after 42,644 hours in service.

Well 3 - the motor was replaced in 2008 after 12,116 hours in service.

Well 3 - the motor was replaced in 2014 after 5,787 hours in service.

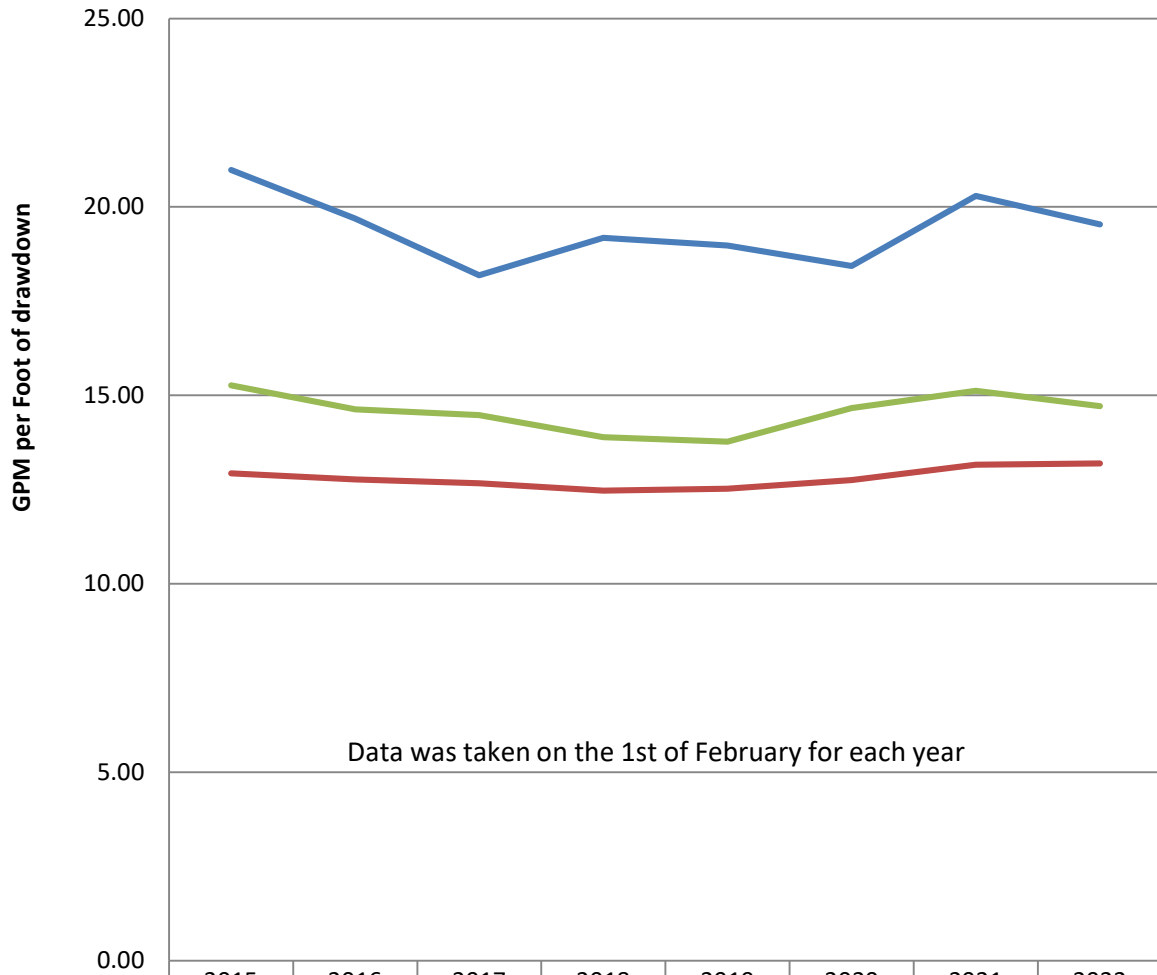
Well 3 - the pump was replaced in 2014 after 17,903 hours in service.

Well 5R - the motor was rebuilt in 2010 after 20,246 hours in service.

Well 5R - the pump was replaced in 2015 after 28,792 hours in service.

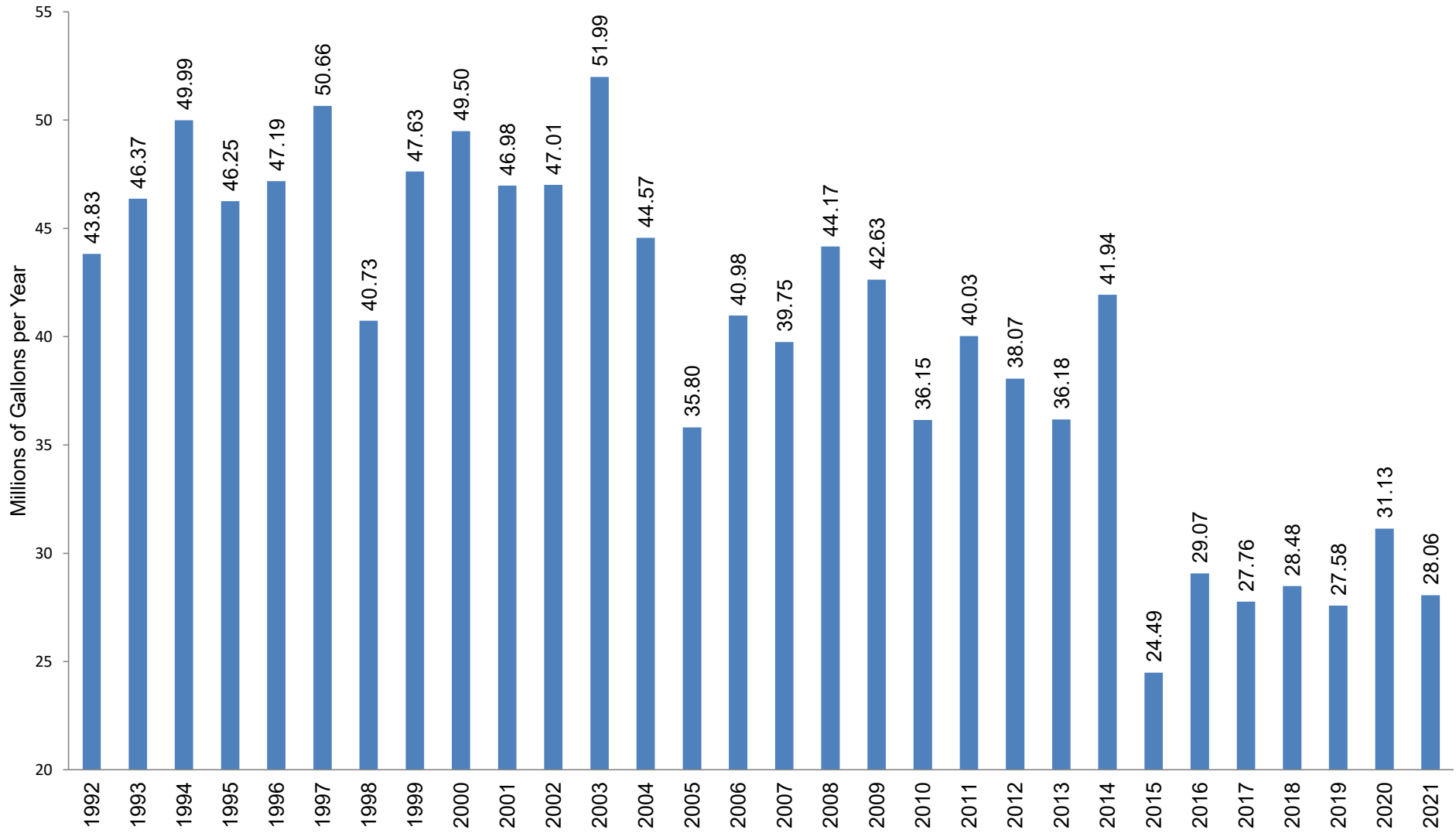
East Booster - the pump and motor was replaced in 2015 after 18,822 hours in service.

OVPSD Production Wells Specific Capacity



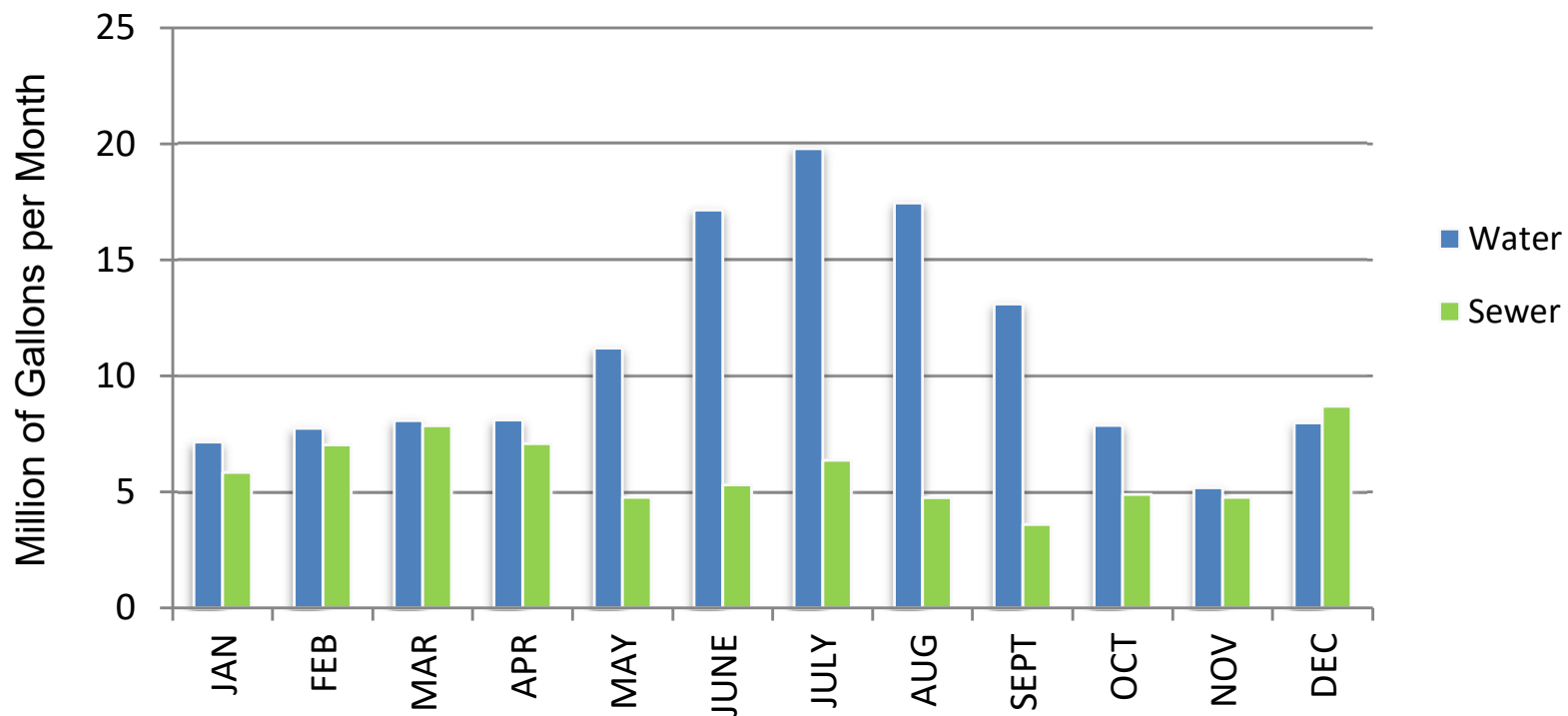
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| Well 1R | 20.98 | 19.69 | 18.19 | 19.18 | 18.97 | 18.43 | 20.29 | 19.54 |
| Well 2R | 12.93 | 12.77 | 12.66 | 12.48 | 12.52 | 12.75 | 13.16 | 13.20 |
| Well 5R | 15.27 | 14.63 | 14.47 | 13.89 | 13.78 | 14.66 | 15.12 | 14.72 |

SVMWC 30 Year Water Production Trend



Information comes from well logs

2020 Water and Sewer Comparison



Compares Total Monthly Water Production to Total Sewer Collection

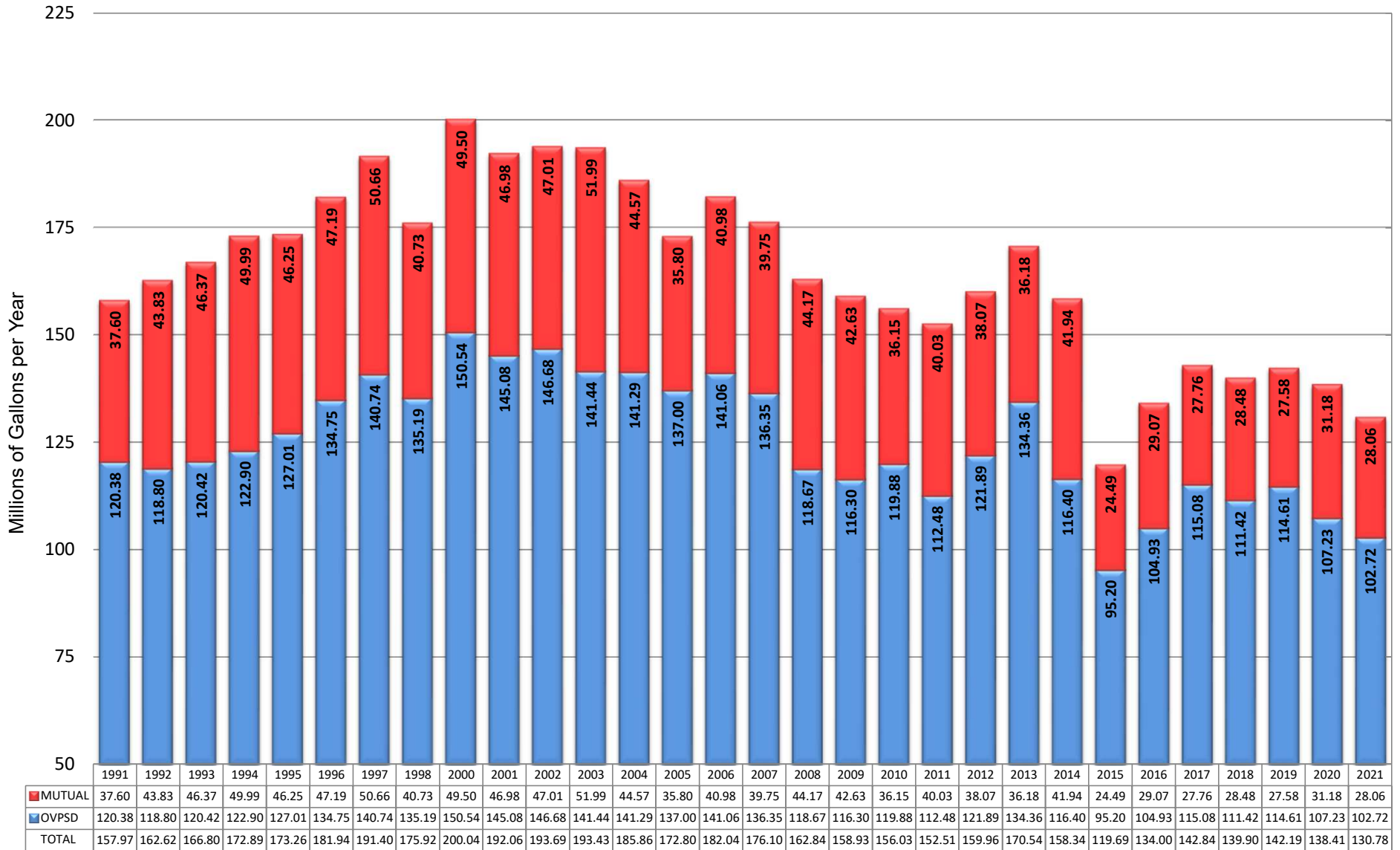
Water information comes from well logs

Water total includes SVPSD and SVMWC

Sewer information comes from SCADA

| Water and Sewer Production 2021 | | | | | |
|--|--------------|--------------|--------------|--------------|-----------------|
| | WATER | WATER | WATER | SEWER | |
| | OVPD | SVMWC | TOTAL | TOTAL | |
| JAN | 5.63 | 1.52 | 7.15 | 5.85 | |
| FEB | 6.41 | 1.34 | 7.75 | 7.01 | |
| MAR | 6.68 | 1.40 | 8.08 | 7.85 | |
| APR | 6.79 | 1.31 | 8.10 | 7.09 | |
| MAY | 8.65 | 2.55 | 11.20 | 4.77 | |
| JUNE | 13.34 | 3.80 | 17.14 | 5.30 | |
| JULY | 15.61 | 4.19 | 19.80 | 6.36 | |
| AUG | 13.63 | 3.82 | 17.45 | 4.74 | |
| SEPT | 9.90 | 3.19 | 13.09 | 3.58 | |
| OCT | 6.09 | 1.77 | 7.86 | 4.89 | |
| NOV | 3.75 | 1.44 | 5.19 | 4.76 | |
| DEC | 6.24 | 1.73 | 7.97 | 8.70 | |
| | 102.72 | 28.06 | 130.78 | 70.90 | Million Gallons |
| Water information comes from well logs | | | | | |
| Sewer information comes from SCADA | | | | | |

30 Year OVPD and SVMWC Combined Water Production Trend



Information comes from from well logs

SEWER SYSTEM INVENTORY – 2021

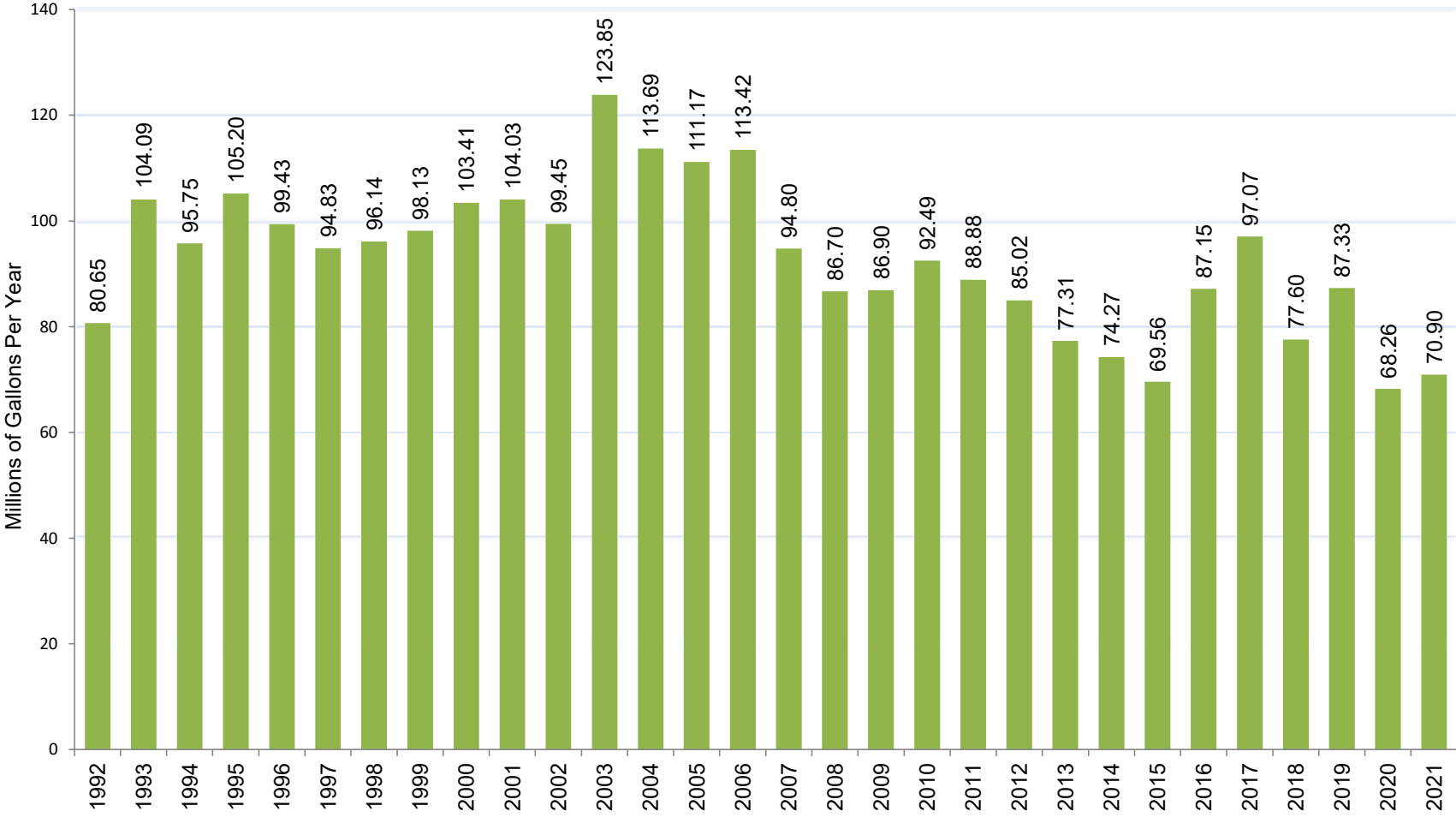
1. 456 Sanitary Manholes
2. 3 Siphons (6",12",16")
3. 3 Sewer Flow Meters
 - Mag Meter, Painted Rock Siphon T-45A - District owned
 - Mag Meter, Mountain Run - Ski Corp owned
 - Mag Meter, HWY 89 - T-TSA owned
4. 587 Feet 16" Sewer Main
5. 11,791 Feet 15" Sewer Main
6. 3,104 Feet 12" Sewer Main
7. 8,945 Feet 10" Sewer Main
8. 18,242 Feet 8" Sewer Main
9. 54,115 Feet 6" Sewer Main
10. 6,687 Feet 4" Sewer Main
11. 45,052 Feet 4" Sewer Lateral
12. 1,042 Sewer Connections per Billing
13. 2 Remote Terminal Units (RTU)

Total Sewer Main = 103,471 Feet = 19.597 Miles

Total Sewer Laterals = 44,152 Feet = 8.532 Miles

Combined Totals = 147,623 Feet = 27.959 Miles

OVPSD 30 YEAR SEWER FLOW TREND



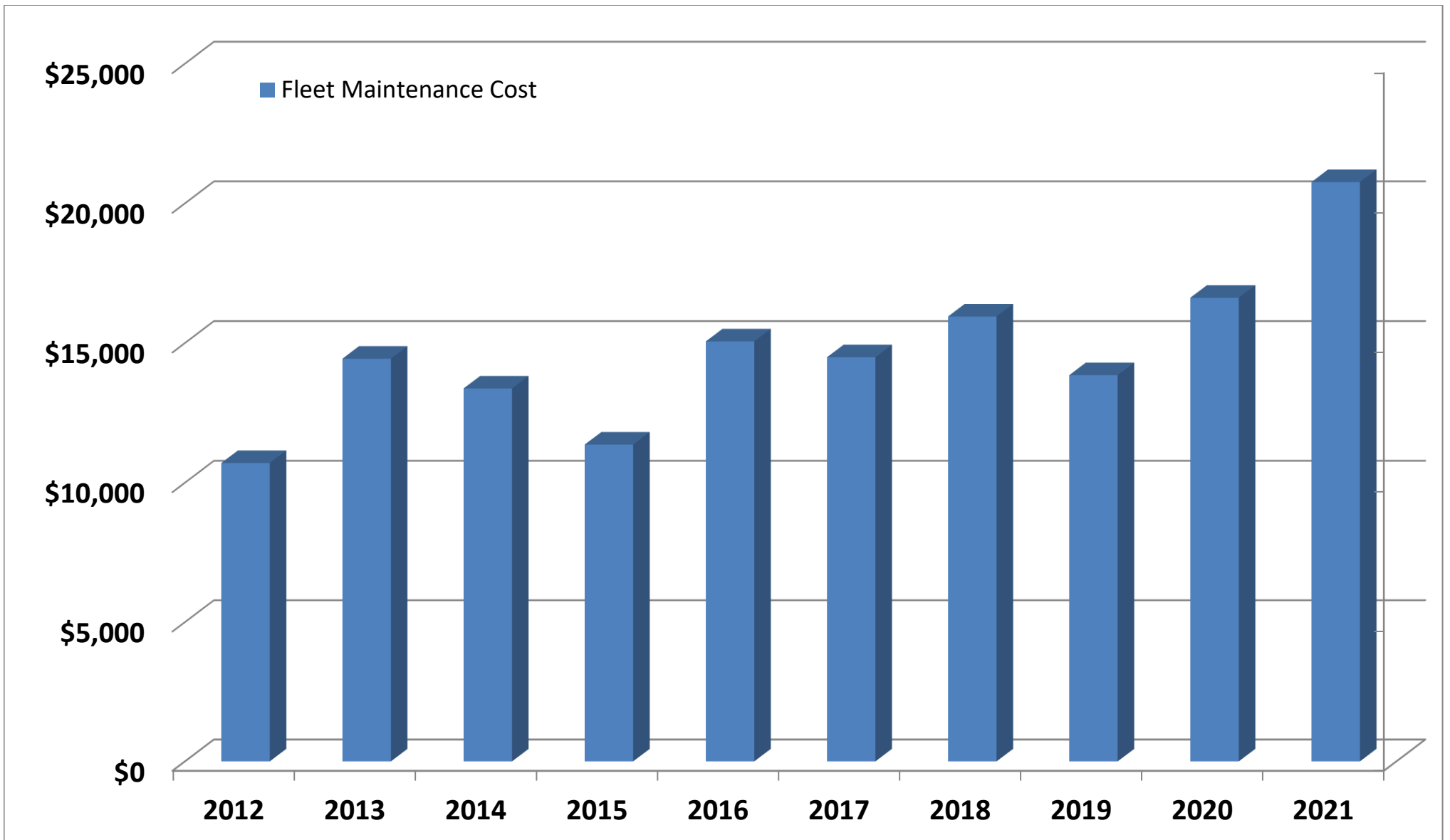
Information from SCADA

Annual Report on District Fleet

2021

| Vehicle/Equipment | Mileage Hours | Age | Replacement Schedule | Service Life | Annual Use | | Maintenance Due | 2021 2022 |
|--|-------------------|-------------|----------------------|--------------|------------|--|-------------------------------------|------------------|
| 2008 Ford 1 Ton 4x4 Flat | 46,387 | 14 | 15 | 1 | 2,353 | | Annual Service | \$300 |
| 1999 Ford Utility 4x4 | 75,139 | 23 | 15 | -8 | 2,857 | | Annual Service | \$300 |
| 2014 Dodge Ram 4x4 | 49,336 | 8 | 15 | 7 | 8,577 | | Annual Service | \$300 |
| 1997 Ford Explorer | 129,813 | 25 | 15 | -10 | 1,631 | | Annual Service | \$300 |
| 2014 F-150 4x4 | 146,948 | 8 | 15 | 7 | 16,816 | | 2x Annual Service New Tires | \$300 \$550 |
| 2008 F-750 Dump Truck | 11,276 | 14 | 30 | 16 | 762 | | Annual Service | \$300 |
| 1998 JD 444H Loader | 3,854 | 24 | 30 | 6 | 92 | | Annual Service Cutting Blade | \$300 \$1,500 |
| JD Backhoe | 464 | 4 | 30 | 26 | 118 | | Annual Service | \$300 |
| 2020 Isuzu Compressor I/R Compressor | 14 | 1 | 20 | 19 | 14 | | Annual Service | \$300 |
| 2007 New Holland Westa Sno Blower | 588 | 15 | 30 | 15 | 17 | | Annual Service | \$300 |
| | | 15 | 20 | 5 | | | Cutting blade/Wear shoes | \$1,000 |
| 2009 Vac-Con Hydro-Vac Power Take Off (PTO) | 9,395 309 | 13 13 | 30 30 | 17 17 | 392 31 | | Annual Service Hydraulic Filters | \$300 \$1,000 |
| 2009 Duetz Rear Engine | 997 | 13 | 30 | 17 | n/a | | Annual Service | \$300 |
| 2016 Ford Interceptor | 29,448 | 6 | 15 | 9 | 2,961 | | 2x Annual Service | \$300 |
| 6" Trash Pump (2020) Old Trash Pump | 4 | 1 | 30 | 29 | 2 | | Annual Service | \$300 |
| 2010 Prowler Easement | 242 | 12 | 20 | 8 | 9 | | Annual Service | \$300 |
| Well House Generator (1993) | 281 | 29 | 40 | 11 | 23 | | Annual Service | \$600 |
| 1810 Generator (1991) | 842 | 31 | 40 | 9 | 30 | | Annual Service | \$600 |
| 305 Generator (2004) | 214 | 18 | 40 | 22 | 29 | | Annual Service Equipment | \$600 \$1,000 |
| | | | | | | | Rags, Cleaning Supp. Ect. | \$600 |
| Total | Fleet Ave. | 14.4 | | | | | | \$11,950 |

10 Year Vehicle Maintenance Costs



OVPSD Operation Department 10 Year Fuel Usage Trend

