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Revised
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SQUAW VALLEY PUBLIC SERVICE DISTRICT

2016 WATER AND SEWER SYSTEM REPORT

Prepared April 2017
By
Josh Wilson and
John O'Neal

Squaw Valley Public Service District Annual Report 2016
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Fleet

EQUIPMENT CAPITAL REPLACMENT PROJECTS

Budget Year 2018 - 2022

Equipment Type	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	Project Total
Fleet						
Ford F-250			$ 49,900			$ 49,900
Ford F-350					$ 49,200	$ 49,200
Equipment						
Sewer Bypass Trailer and Hose	$ 45,000					$ 45,000
Towable 6" Sewer Bypass Pump				$ 35,000		$ 35,000
Backhoe	$ 150,000					$ 150,000
Small Tools and Equipment						
Air Compressor			$ 21,500			$ 21,500
SCBA Cart	$ 9,500					$ 9,500
Traffic Control Equipment	$ 15,000					$ 15,000
Radios	$ 15,000					$ 15,000
Locators	$ 5,000					$ 5,000
Pipe Freeze Kit/Crimpers	$ 5,000					$ 5,000
Listening Devices			$ 6,000			$ 6,000
Dewatering Pumps	$ 3,000					$ 3,000
New 5.5 kW Portable Generator	$ 4,000					$ 4,000
TOTAL	**$ 251,500**	**$ -**	**$ 77,400**	**$ 35,000**	**$ 49,200**	**$ 413,100**

WATER CAPITAL PROJECTS

Budget Year 2018 -2022

CAPITAL IMPROVEMENTS	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	Project Total
East Booster Replacement Project (67% CRP/33% CIP)				$ 168,300	$ 691,300	$ 859,600
Pressure Zone 1A Project					$ 191,400	$ 191,400
SVPSD/SVMWC Intertie			$ 185,000			$ 185,000
Fire Service Line Detector Check Installation Project		$ 50,000	$ 51,400	$ 52,800	$ 54,200	$ 208,400
TOTAL	**$ -**	**$ 50,000**	**$ 236,400**	**$ 221,100**	**$ 936,900**	**$ 1,444,400**
CAPITAL REPLACEMENTS (FARF's)	**FY 17/18**	**FY 18/19**	**FY 19/20**	**FY 20/21**	**FY 21/22**	**Project Total**
Victor/Hidden Lake 2" Waterline Replace	$ 15,000	$ 102,700				$ 117,700
Zone 3 Booster Pump Station Upgrades	$ 27,600					$ 27,600
West Tank Recoating Project	$ 211,000					$ 211,000
Zone 3 Tank Recoating Project		$ 54,500				$ 54,500
Residential Meter Replacement Project (Includes Irrigation Meter Removal on SFR)		$ 65,400	$ 67,000	$ 68,600	$ 70,300	$ 271,300
Fire Hydrant Replacement Project	$ 31,900	$ 32,800	$ 33,600	$ 34,500	$ 35,500	$ 168,300
TOTAL	**$ 285,500**	**$ 255,400**	**$ 100,600**	**$ 103,100**	**$ 105,800**	**$ 850,400**
GRAND TOTAL	**$ 285,500**	**$ 305,400**	**$ 337,000**	**$ 324,200**	**$ 1,042,700**	**$ 2,294,800**

SEWER CAPITAL PROJECTS

Budget Year 2018 - 2022

CAPITAL IMPROVEMENTS	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	Project Total
Truckee River Siphon Project	$ 261,900	$ 1,674,100				$ 1,936,000
Sewer Flow Meter Project		$ 21,100	$ 102,100			$ 123,200
Sewer Cleanout Installation Project (Point of Service Line Cleanouts)			$ 119,600	$ 253,400	$ 256,300	$ 629,300
TOTAL	**$ 261,900**	**$ 1,695,200**	**$ 221,700**	**$ 253,400**	**$ 256,300**	**$ 2,688,500**
CAPITAL IMPROVEMENTS	**FY 17/18**	**FY 18/19**	**FY 19/20**	**FY 20/21**	**FY 21/22**	**Project Total**
Manhole Inspection Project	$ 40,000					$ 40,000
Manhole Replacement/Rehabilitation Program			$ 218,000	$ 339,100		$ 557,100
Sewer System CCTV		$ 68,200	$ 69,500	$ 88,000	$ 37,700	$ 263,400
Backyard Easement Sewer Replacement Projects			$ 243,800		$ 257,200	$ 501,000
TOTAL	**$ 40,000**	**$ 68,200**	**$ 531,300**	**$ 427,100**	**$ 294,900**	**$ 1,361,500**
GRAND TOTAL	**$ 301,900**	**$ 1,763,400**	**$ 753,000**	**$ 680,500**	**$ 551,200**	**$ 4,050,000**

Utilities Report 2016

I. Flow Report

A. Water Production Total = 104.93 MG
Comparison: 9.73 MG More Than 2015

B. Sewer Collection Total = 87.15 MG
Comparison: 7.45 MG More Than 2015

C. Aquifer Level 2016 Maximum Level December 16 2016: 6191.2'
Minimum Level October 3 2016: 6180.9'

Total Change in Static Water Level 2015: 9.8'
Total Change in Static Water Level 2016: 10.3'

D. Precipitation Total 15/16 Water Year = 64.09"
53- Year average = 51.85"
15/16 Water Year % of the 53- Year average = 123.61%

E. Flow Report Conclusions: Water production increased 11% over the previous year. Sewer collection increased 9% over the previous year.

* 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 2015 through September 2016.

***** 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: 5
2. Water meters replaced or rebuilt: 4
3. Water meter upgrades: 0
4. Customer service water meters turned on or off: 8
5. Routine leak/high usage detection notification: 160
6. Customer requested leak detection services performed: 21
7. No water responses: 2
8. Fire hydrants flushed: 139
9. Blow-offs flushed: 14
10. Valves exercised: 13
11. Repair/Replace service line: 0
12. Repair leak on water main: 0
13. Backflow devices tested: 505
14. Test District backflows: 8
15. Quarterly vault inspections on Well 1R and Well 3: 8
16. Water tank inspections: 8
17. Water quality complaints serviced: 1
18. Tested commercial meters: 28
19. Replaced Air/Vac breakers: 0
20. Water samples collected:
    - Bacteriological: 32
    - Nitrate: 5
    - Asbestos: 1
    - Manganese: 1

B. Sewer

1. Sanitary sewer overflows: 0
2. Main line repairs: 0
3. Service line repairs: 0
4. Sewer cleanout repair: 0
5. Manhole repairs: 6
6. Manhole grouting: 5
7. Cleaning:
    - Spring and fall cleaning of high priority lines
    - Main sewer lines cleaned: 330
8. Inspections:
    - Sewer code related inspections: 22
    - Pre-remodel inspections: 15
    - Finals inspections: 17
    - USA locations: 94
    - FOG Inspections: 28
    - Toilet Inspections: 13

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.
2. Installed new decals on all vehicles.

B**.** Equipment

1. All small equipment received an annual service.
2. Installed new decals on all equipment.

V. Administrative

A. Hanson data input.
B. VUEWorks migration from Hanson.

VI. Operation & Maintenance Projects

A. Completed Well 5R project, piping and valves.
B. West Tank road repair.
C. Leak detection on district meters and fire hydrants.
D. SCADA upgrade project phase II completed and 2016-2017 SCADA upgrade substantially completed.
E. Horizontal Well brush, bushes and tree clearing.
F. Gate valve box repairs.
G. Continued Operations and Maintenance of SV Mutual Water Company.
H. Sewer System I/I inspection.
I. Cleaned sewers mains in front of the 4th phase of the CCTV Project.
J. Tested commercial meters for accuracy.
K. Manhole Repairs.
L. Spring and Fall Flushing.
M. Annual Sewer Cleaning.
N. High Priority Cleaning.

VII. Summary

This season the District was able to make many repairs to damaged assets. We completed Well 5R project, a much needed face lift with new valves, meter, spool and coated floor. 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.

VIII. Safety Training

1/8/2016	Slip Trips and Falls, SDRMA Safety Booklet Josh, Brandon, Jason, Jesse, John
3/11/2016	Water Industry Blood Borne Pathogens, SDRMA Online Devin, Jason, Schel, John
4/15/2016	Driving Safety, SDRMA Online Jason, Schel, John
5/6/2016	Hand Washing, SDRMA Safety Booklet Jesse, Josh, Brandon, John, Jason, Devin, Schel
5/19/2016	Sexual Harassment Awareness, SDRMA Online Devin
5/20/2016	Water Industry Lock-Out/Tag-Out, SDRMA Online Devin, Jason, Schel, John
6/10/2016	Strains and Sprains, SDRMA Safety Booklet Jason, Josh, Brandon, Schel, John, Devin
6/24/2016	Incident Reporting, SDRMA Safety Booklet John, Josh, Devin, Schel
7/15/2016	Water Industry Working in Extreme Temperatures, SDRMA Online Devin, Jason, Schel, Josh, John
8/18/2016	Office Safety, SDRMA Safety Booklet John, Jason, Devin, Schel, Brandon
10/14/2016	Fire Extinguishers, SDRMA Safety Booklet Shel, Josh, Devin, Jason
11/18/2016	Holiday Stress, SDRMA Safety Booklet Devin, John, Schel, Jason, Brandon, Josh

IX. Occupational Training

3/30/2016 Confined Space Certification, TSD
Schel, Josh

4/8/2016 Revised IIPP and Code of Safe Practices, Crew Room 305
Brandon, Schel, Jason, Devin, Josh, John

4/20/2016 UTA Locator Class, Sacramento
Brandon, John

4/28/2016 TCR Implementation Workshop, Sacramento
Brandon, Josh

6/22/2016 Certificate of Analysis, Crew Room 305
Josh, Schel, Jason, Devin

7/18/2016 Vac-Con Operation/Maintenance/Trouble Shooting, Sacramento
Jason, Josh, Schel

10/7/2016 SSMP Element 6 SSO Emergency Response Plan, Crew Room 305
Devin, Jason, Josh, John, Brandon

12/8/2016 Workplace Safety and OSHA Compliance, Reno
Josh, Brandon

Water System Inventory – 2016

Part I

1. Water Well #1R – 389 GPM averaged. *
2. Water Well #2R – 323 GPM averaged. *, **
3. Water Well #3 – 120 GPM averaged. *
4. Water Well #4 – (Not in Service)
5. Water Well #5R – 400 GPM averaged. *
6. Horizontal Well – 70 GPM averaged. *, ***

2016 Total average flow – 1,302 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. 800 Water Meters connected per Billing
12. 129 Fire Hydrants
13. 31 Air Release Valves
14. 505 Backflow Prevention Devices
15. 404 Gate Valves
16. 17 Butterfly Valves
17. 22 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

Water System Inventory – 2016

Part II

21. 12,761 Feet 12" Water Distribution Main

22. 10,752 Feet 10" Water Distribution Main

23. 29,461Feet 8" Water Distribution Main

24. 21,145 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. 2,638 Feet 2" Water Service Line

30. 254 Feet 1.25" Water Service Line

31. 39 Feet 1.5" Water Service Line

32. 3,003 Feet 1" Water Service Line

33. 128 Feet ¾" Water Service Line

Total Water Main = 75,805 Feet = 14.357 Miles
Total Water Services = 6,741 Feet = 1.276 Miles
Combined Total = 82,546 Feet = 15.677 Miles

* GPM averaged from the time wells were on and running.
** Well 2r GPM is affected by seasonal aquifer level changes. During low aquiver level years the well GPM is reduced to prevent pumping below the well screens. Flow averages in 2016 ranged from 293 GPM to 347 GPM.
*** Horizontal Well GPM is affected by gravity flow and changes from one year to the next. Longer periods of operation will lower the GPM average.
**** 2016 total average flow does not indication total capacity. This total is the combined GPM flows from all the wells as they were operated in 2016.

Squaw Valley Public Service District - Year End Water Audit Report

Report Date: March 24, 2017 Performed By: John O'Neal

Year: 2016

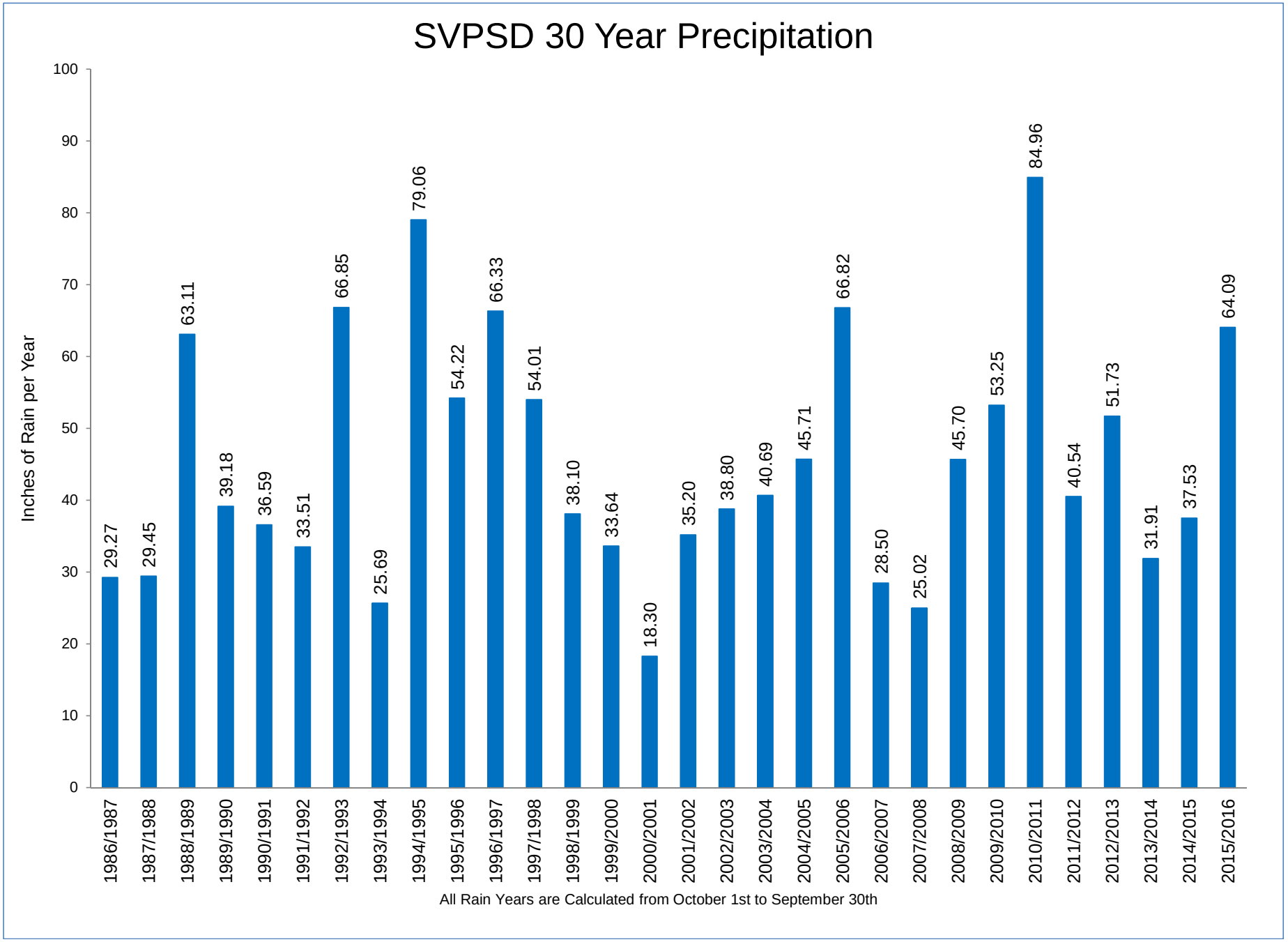
Begin Audit Period: December 31, 2015
End Audit Period: January 4, 2017

Total Metered Consumption for audit period specified (including hydrant meters):		89,433,598
Additional Consumption - Unmetered		
Fire Department Use:	101,500	
Hydrant Flushing:	849,888	
Blow-Off Flushing:	33,538	
Sewer Cleaning:	62,000	
Street Cleaning:		
Well Flushing:		
Tank Overflows:		
Unread Meter Estimated Reads:	50,000	
Other:		
Total Unmetered Consumption (for audit period specified):		1,096,926
Estimated Unknown Loss - Unmetered		
Known Theft:		
Known Illegal Connections:		
Total Estimated leaks that have been repaired:	150,800	
Total Estimated Unmetered (for audit period specified):		150,800
Total Production for audit period specified:		106,152,713
Total Metered/Unmetered Consumption for audit period specified:		90,681,324
Total Water Loss (Production - Consumption):		**15,471,389**
Loss Percentage:		**14.6%** ***

Comments: The production totals are different than the annual report due to a different time frame being used. The water audit uses the meter reading schedule dates. The water loss amount was brought down 41,684 gallons of water from 2015. The loss percentage was brought down 1.7% from 2015.

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

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


SVPSD 30 Year Precipitation
Inches of Rain per Year
100
90
80
70
60
50
40
30
20
10
0
29.27
29.45
63.11
39.18
36.59
33.51
66.85
25.69
79.06
54.22
66.33
54.01
38.10
33.64
18.30
35.20
38.80
40.69
45.71
66.82
28.50
25.02
45.70
53.25
84.96
40.54
51.73
31.91
37.53
64.09
1986/1987
1987/1988
1988/1989
1989/1990
1990/1991
1991/1992
1992/1993
1993/1994
1994/1995
1995/1996
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1999/2000
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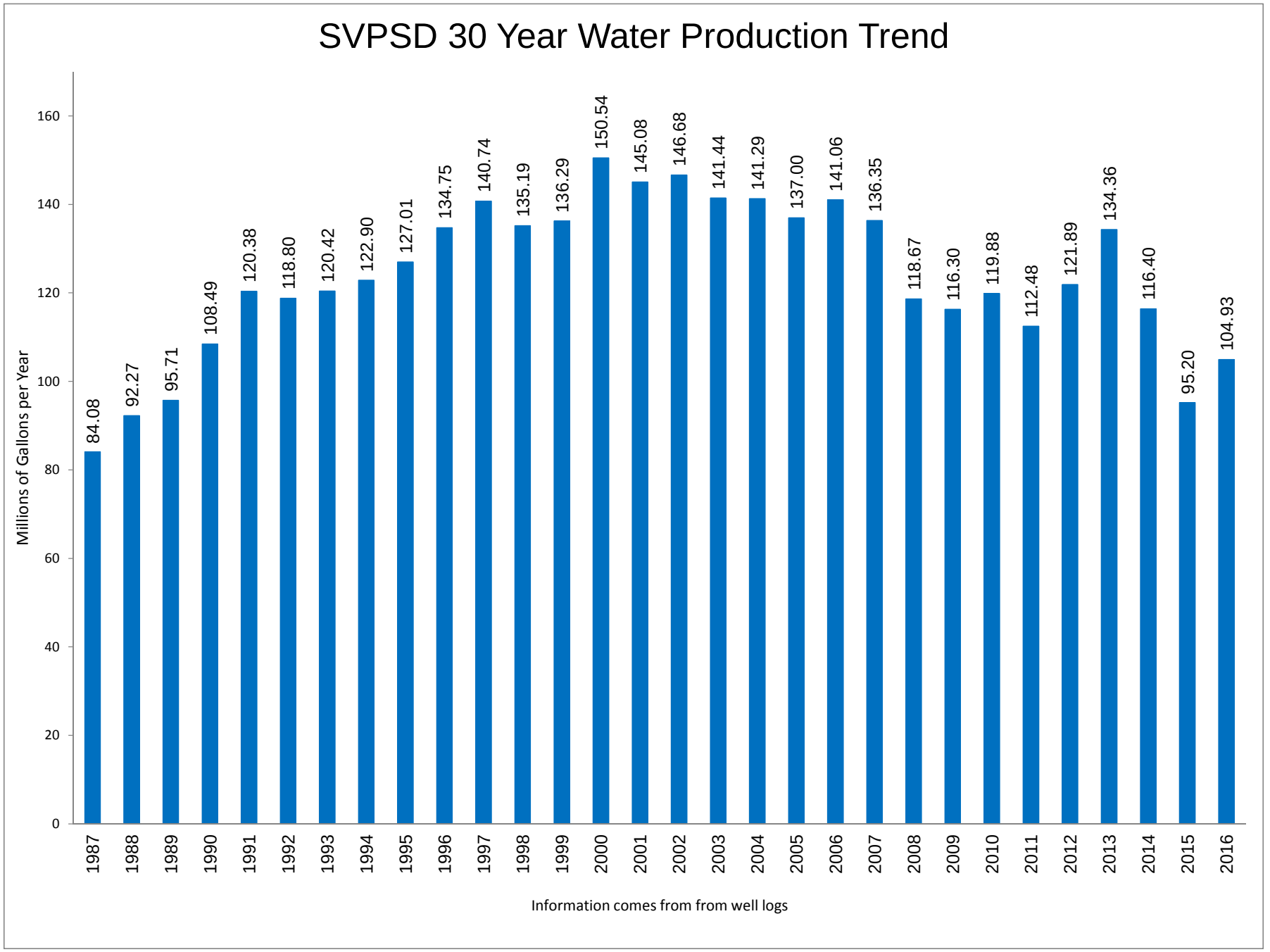
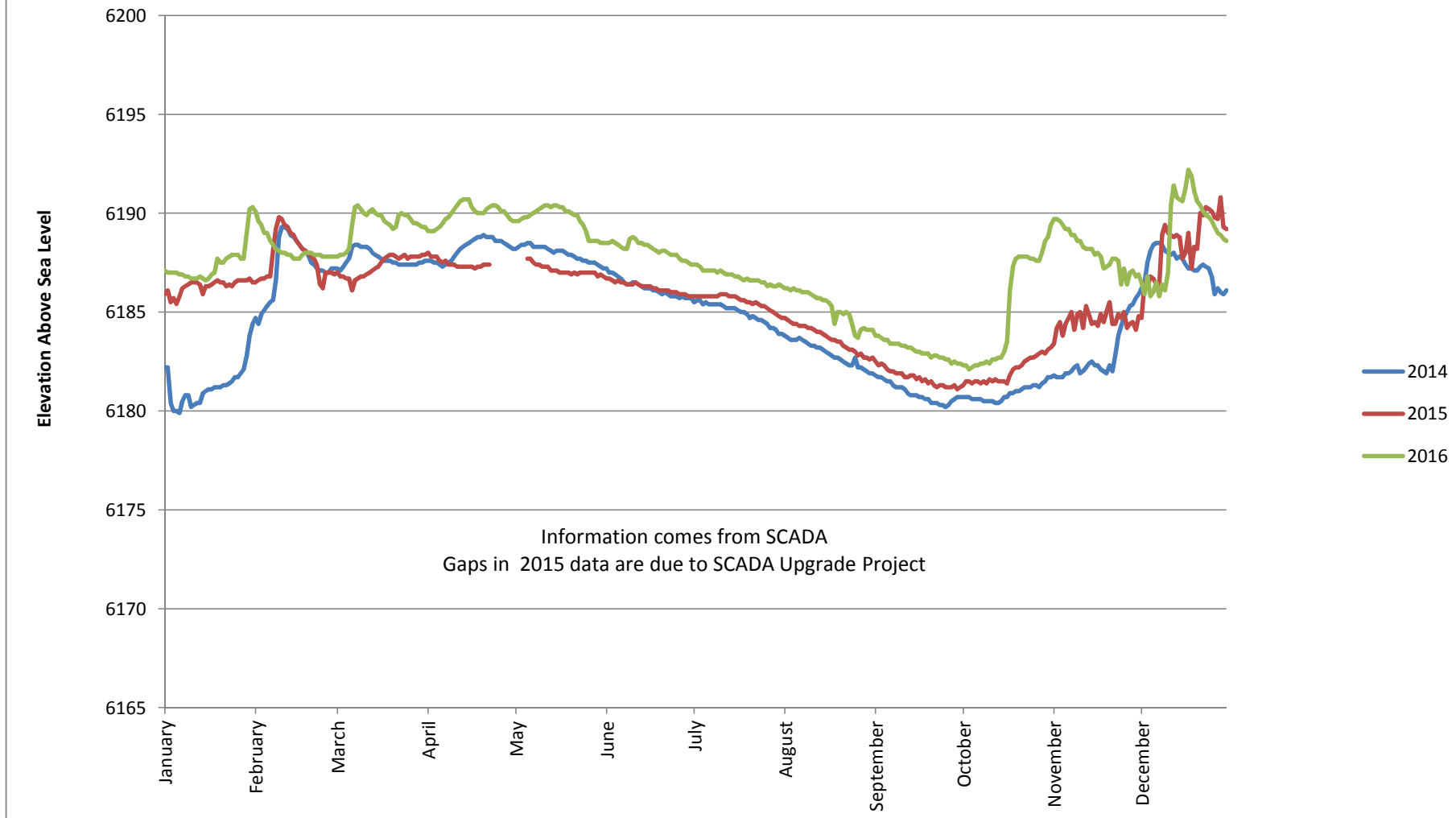
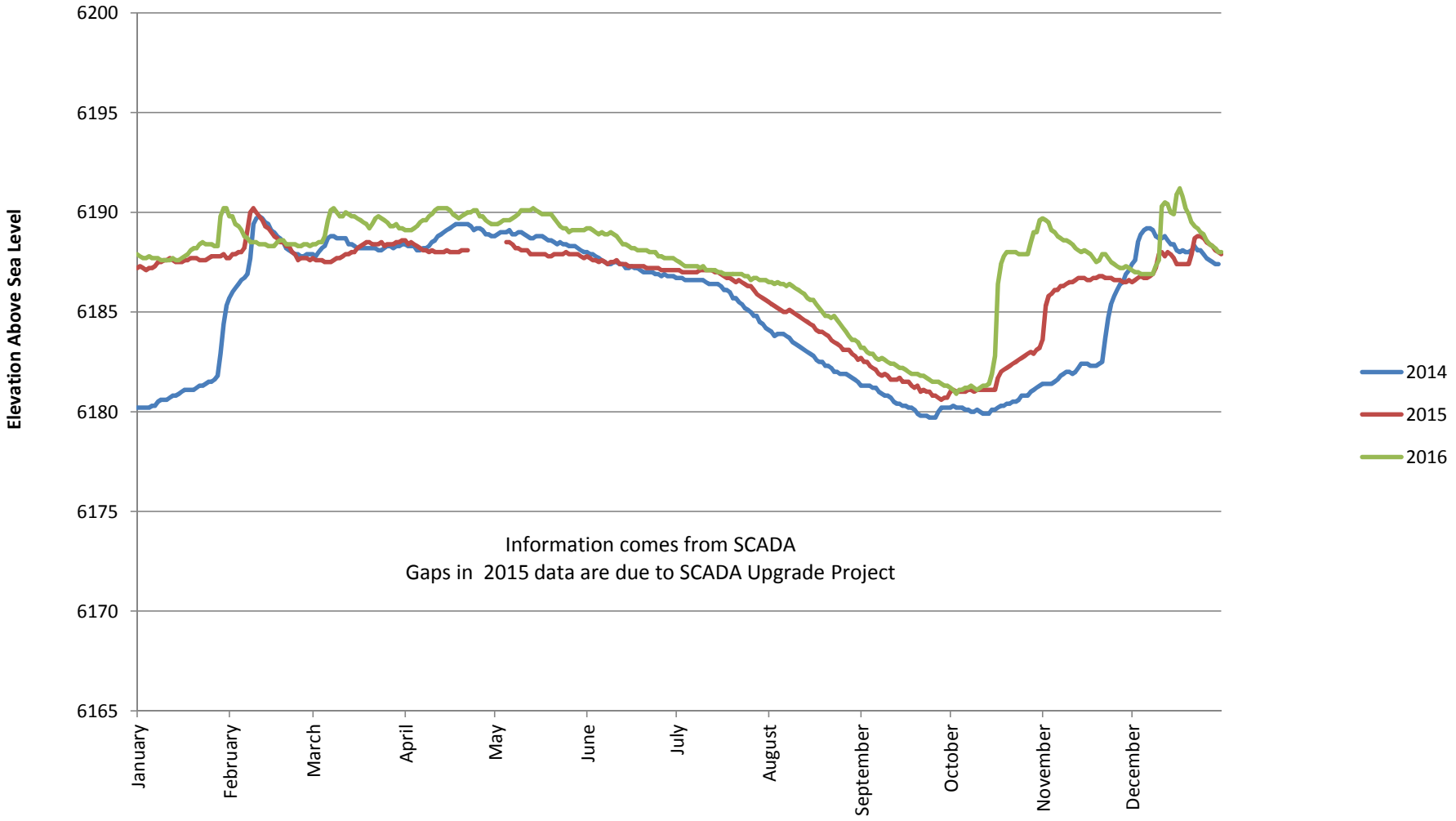
2001/2002
2002/2003
2003/2004
2004/2005
2005/2006
2006/2007
2007/2008
2008/2009
2009/2010
2010/2011
2011/2012
2012/2013
2013/2014
2014/2015
2015/2016
All Rain Years are Calculated from October 1st to September 30th

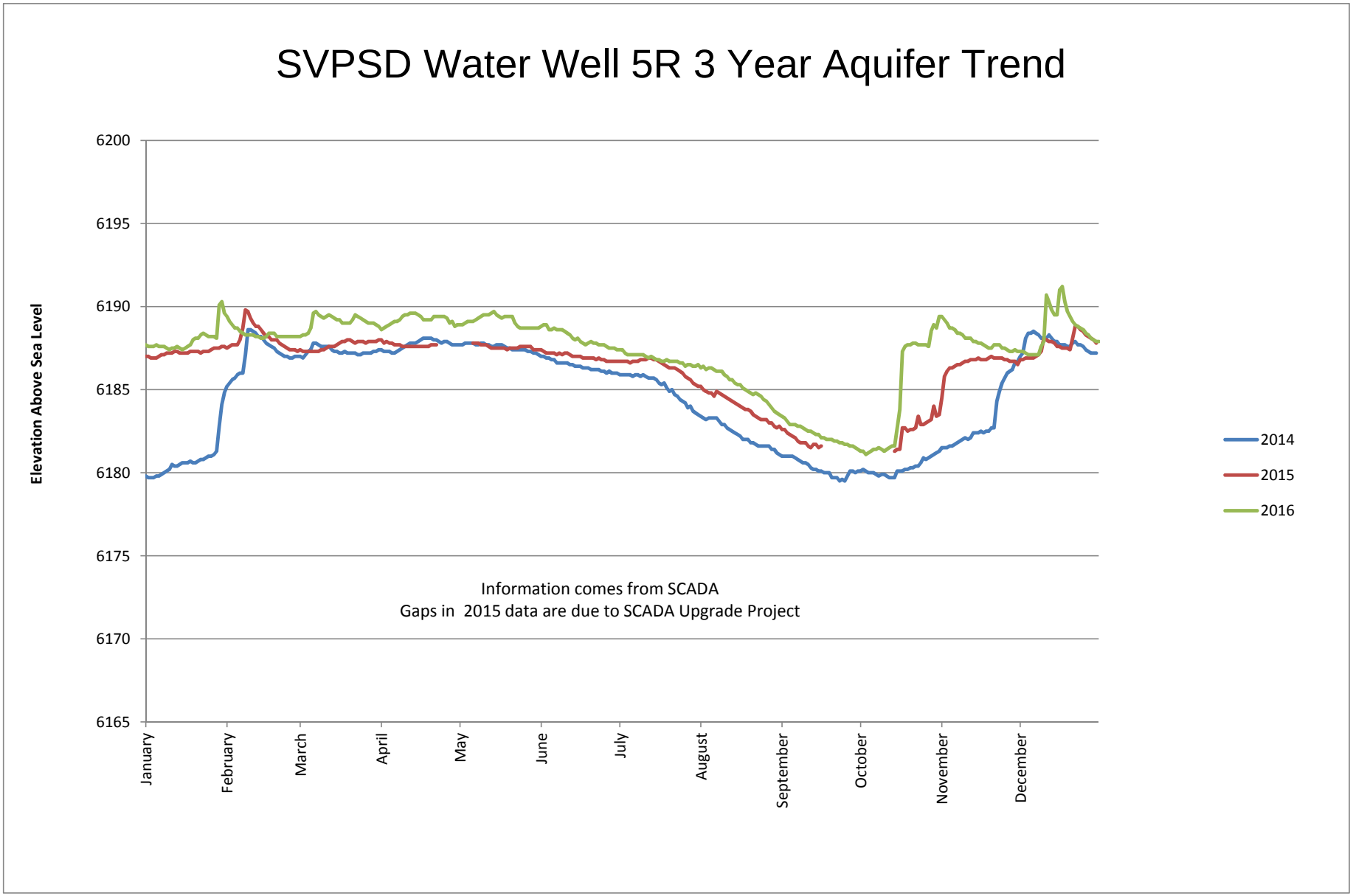

SVPSD 30 Year Water Production Trend
Millions of Gallons per Year
0
20
40
60
80
100
120
140
160
84.08
92.27
95.71
108.49
120.38
118.80
120.42
122.90
127.01
134.75
140.74
135.19
136.29
150.54
145.08
146.68
141.44
141.29
137.00
141.06
136.35
118.67
116.30
119.88
112.48
121.89
134.36
116.40
95.20
104.93
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
Information comes from from well logs

SVPSD Water Well 1R 3 Year Aquifer Trend



SVPSD Water Well 2R 3 Year Aquifer Trend

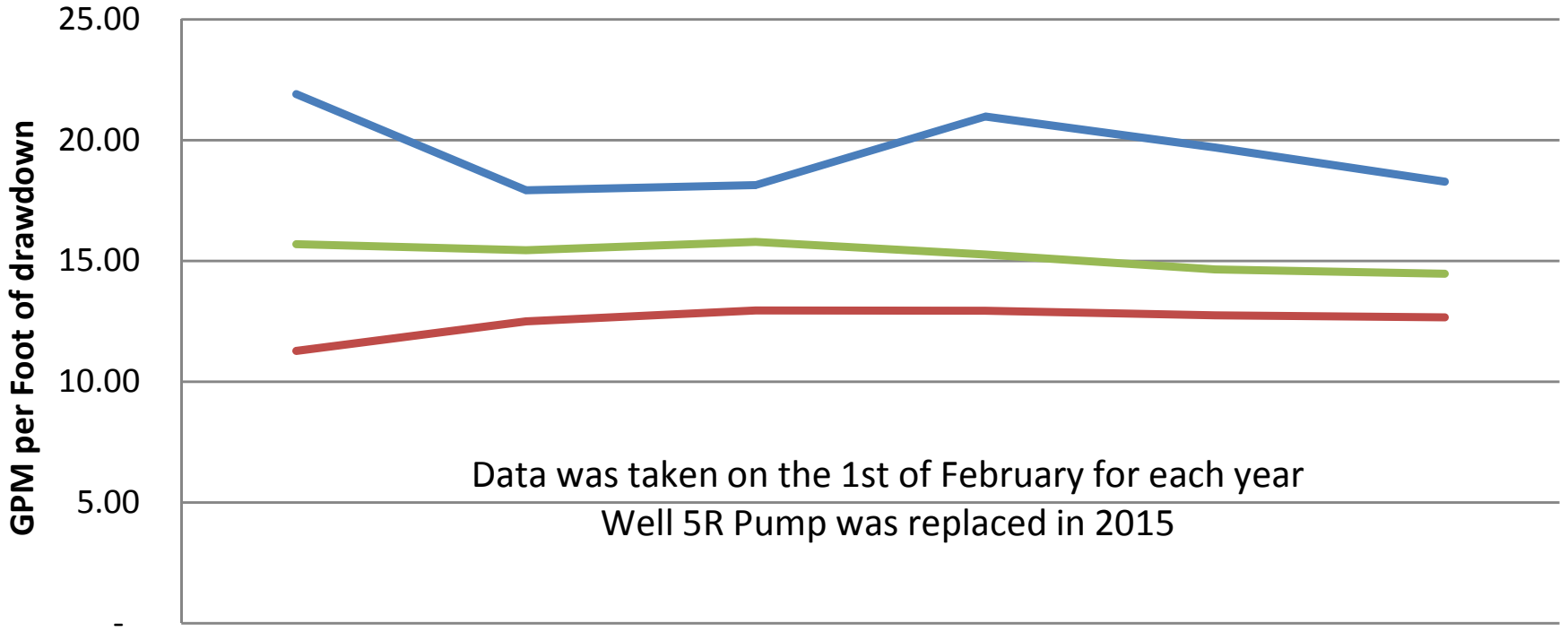



SVPSD Water Well 5R 3 Year Aquifer Trend
Elevation Above Sea Level
6200
6195
6190
6185
6180
6175
6170
6165
January
February
March
April
May
June
July
August
September
October
November
December
Information comes from SCADA
Gaps in 2015 data are due to SCADA Upgrade Project
2014
2015
2016

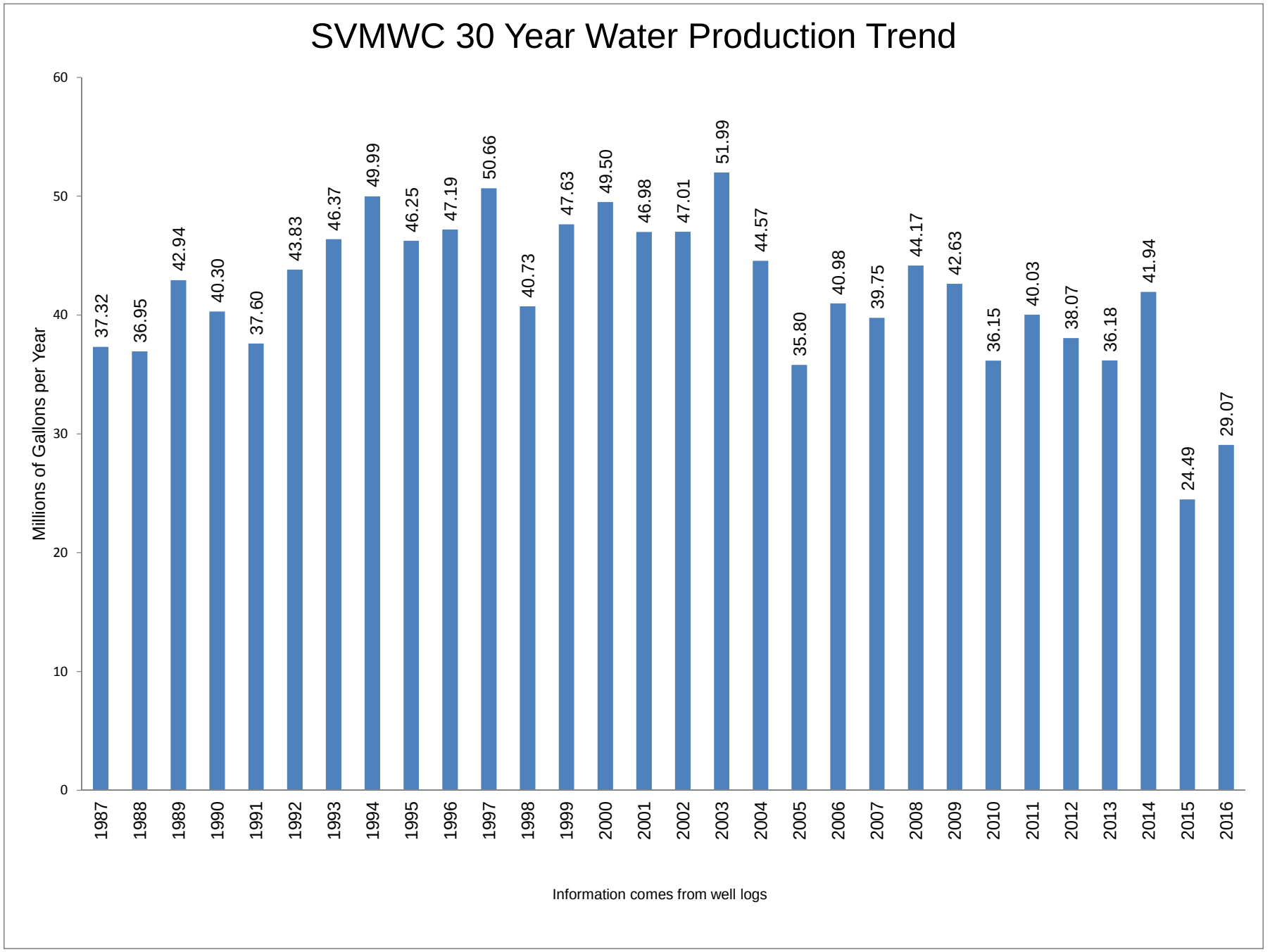
Pump Run Hours								
	Well #1R	**Well #2R**	**Well #3**	**Well #5R Motor**	**Well #5R Pump**	**East Boost**	**Zone-3 #1**	**Zone-3 #2**
Year Installed	2005	2011	2014	1999	2015	2015	1990	1990
1990							30	30
1991							98	66
1992							112	84
1993							120	99
1994							136	146
1995							223	160
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	1286	1,286	1,347	415	409
Total Hours	**17,626**	**8,889**	**3,317**	**9,982**	**1,436**	**1,695**	**10,542**	**9,446**

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.

SVPSD Production Wells Specific Capacity



	2012	2013	2014	2015	2016	2017
Well 1R	21.90	17.92	18.14	20.98	19.69	18.28
Well 2R	11.27	12.50	12.95	12.93	12.75	12.66
Well 5R	15.70	15.44	15.79	15.27	14.64	14.47


SVMWC 30 Year Water Production Trend
Millions of Gallons per Year
60
50
40
30
20
10
0
37.32
36.95
42.94
40.30
37.60
43.83
46.37
49.99
46.25
47.19
50.66
40.73
47.63
49.50
46.98
47.01
51.99
44.57
35.80
40.98
39.75
44.17
42.63
36.15
40.03
38.07
36.18
41.94
24.49
29.07
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
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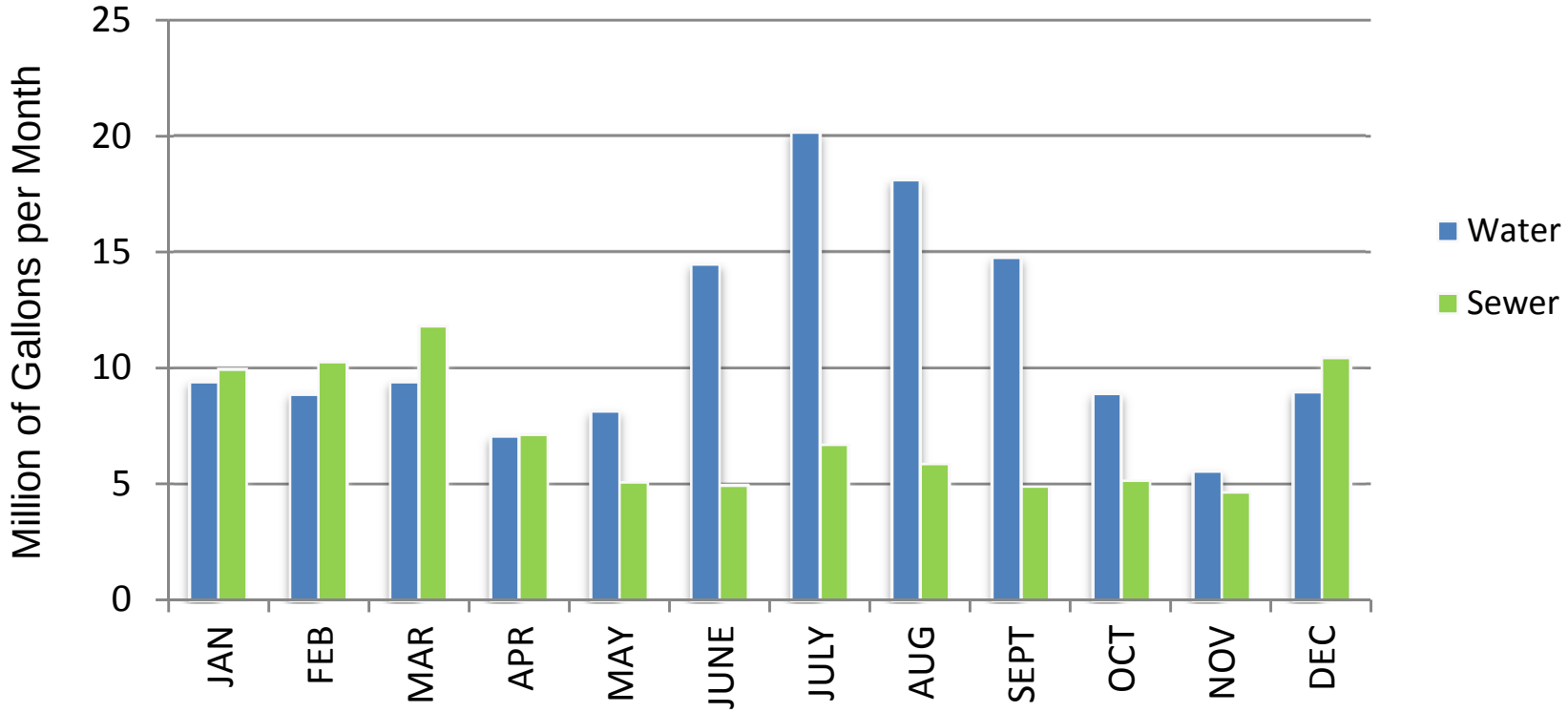
2015
2016
Information comes from well logs

2016 Water and Sewer Comparison

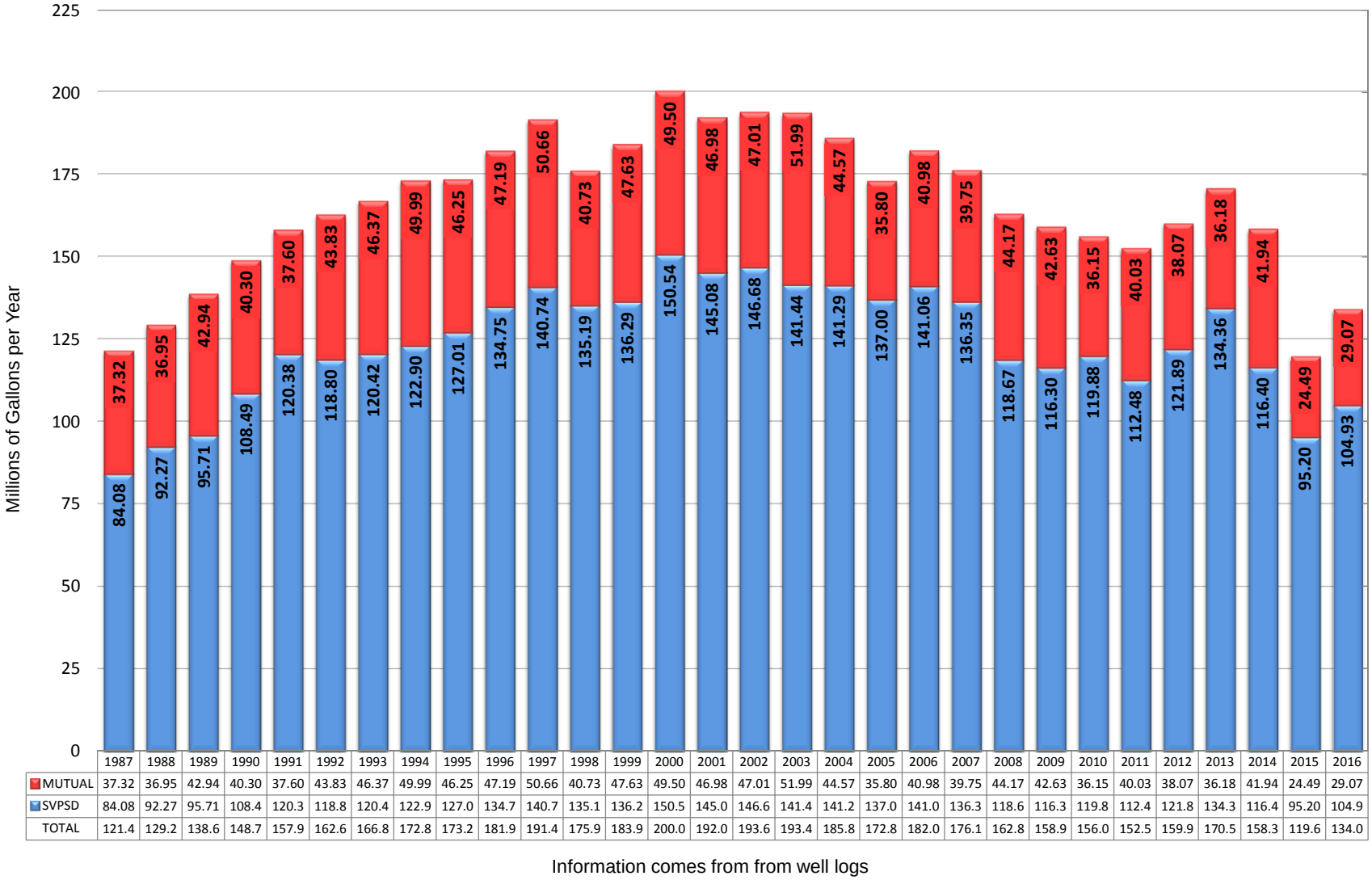


Compares Total Monthly Water Production to Total Sewer Collection
Water information comes from well logs
Water total includes SVPSD and SVMWD
Sewer information comes from SCADA

Water and Sewer Production 2016

	WATER	WATER	**WATER**	**SEWER**	
	SVPSD	MUTUAL	**TOTAL**	**TOTAL**	
JAN	8.07	1.36	9.43	9.98	
FEB	7.48	1.42	8.90	10.29	
MAR	7.28	2.14	9.42	11.84	
APR	5.85	1.24	7.09	7.16	
MAY	6.44	1.73	8.17	5.10	
JUNE	11.10	3.38	14.48	4.98	
JULY	15.49	4.68	20.17	6.71	
AUG	13.76	4.35	18.11	5.89	
SEPT	11.12	3.65	14.77	4.91	
OCT	6.79	2.12	8.91	5.16	
NOV	4.24	1.32	5.56	4.67	
DEC	7.31	1.66	8.97	10.46	
	104.93	29.07	134.00	87.15	Million Gallons
Water information comes from well logs					
Sewer information comes from SCADA					

30 Year SVPSD and SVMWC Combined Water Production Trend



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MUTUAL	37.32	36.95	42.94	40.30	37.60	43.83	46.37	49.99	46.25	47.19	50.66	40.73	47.63	49.50	46.98	47.01	51.99	44.57	35.80	40.98	39.75	44.17	42.63	36.15	40.03	38.07	36.18	41.94	24.49	29.07
SVPSD	84.08	92.27	95.71	108.4	120.3	118.8	120.4	122.9	127.0	134.7	140.7	135.1	136.2	150.5	145.0	146.6	141.4	141.2	137.0	141.0	136.3	118.6	116.3	119.8	112.4	121.8	134.3	116.4	95.20	104.9
TOTAL	121.4	129.2	138.6	148.7	157.9	162.6	166.8	172.8	173.2	181.9	191.4	175.9	183.9	200.0	192.0	193.6	193.4	185.8	172.8	182.0	176.1	162.8	158.9	156.0	152.5	159.9	170.5	158.3	119.6	134.0

Information comes from from well logs

SEWER SYSTEM INVENTORY – 2016

1. 435 Sanitary Manhole

2. 2 Siphons (6"-10")

3. 4 Sewer Flow Meter
   - Mag Meter, Painted Rock Siphon T-45A - District owned
   - Mag Meter, Mountain Run - Ski Corp owned
   - Mag Meter, HWY 89 - T-TSA owned
   - Flume Meter, HWY 89 - T-TSA owned (Not in Service)

4. 172 Feet 16" Sewer Main

5. 11,791 Feet 15" Sewer Main

6. 2,689 Feet 12" Sewer Main

7. 9,245 Feet 10" Sewer Main

8. 17,957 Feet 8" Sewer Main

9. 51,985 Feet 6" Sewer Main

10. 6,687 Feet 4" Sewer Main

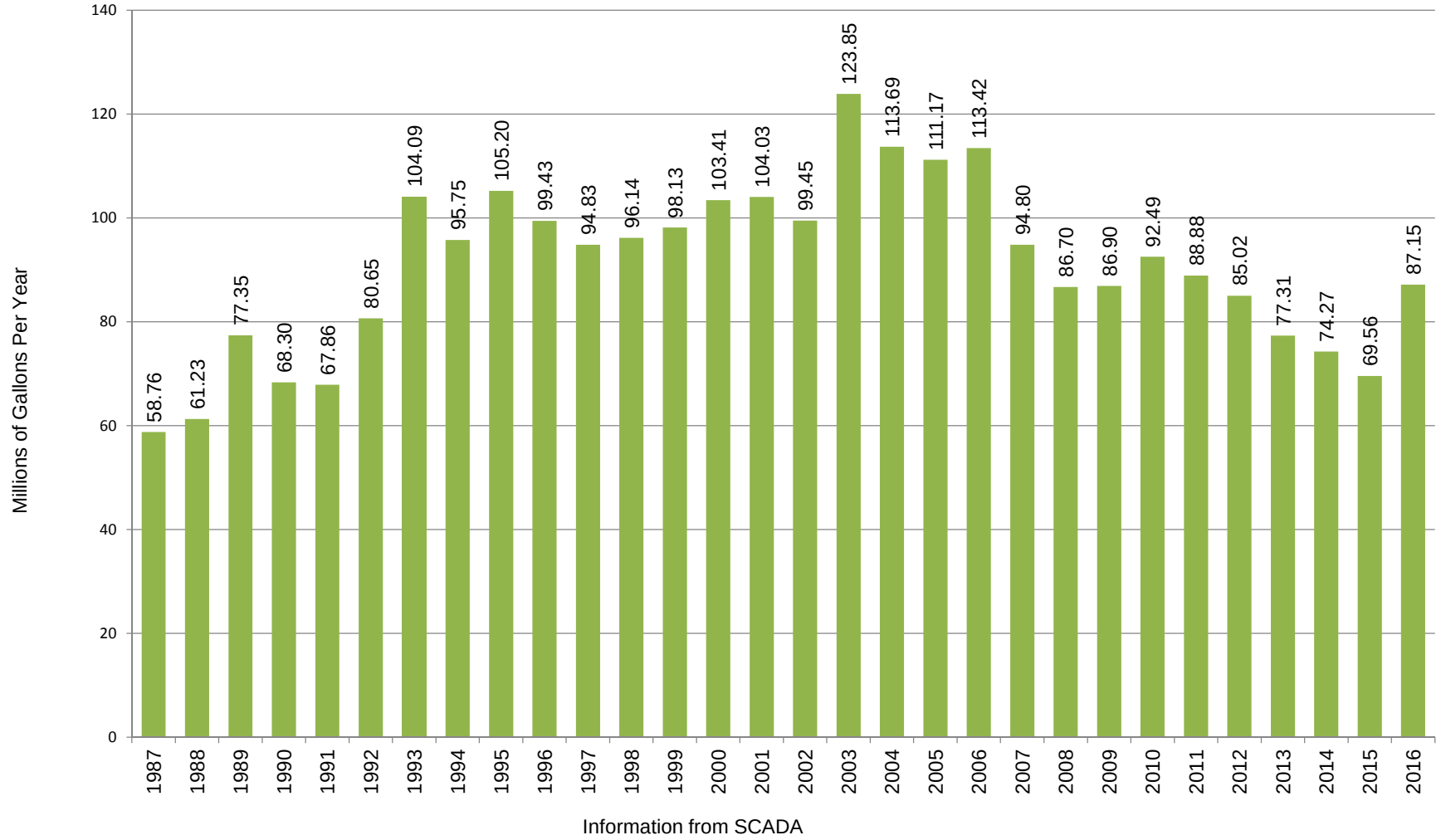
11. 44,152 Feet 4" Sewer Lateral

12. 1116 Sewer Connections per Billing

13. 2 Remote Terminal Units (RTU)

Total Sewer Main = 100,526 Feet = 19.039 Miles
Total Sewer Laterals = 44,152 Feet = 8.362 Miles
Combined Totals = 144,678 Feet = 27.401 Miles

SVPSD 30 YEAR SEWER FLOW TREND



2016 Annual Report on District Fleet

It is management's goal at the Squaw Valley Public Service District to have a robust emergency ready fleet capable of supporting a high level of maintenance and repair of the water and sewer infrastructure in Squaw Valley. Annual review of the fleet is integral to supporting this goal.

The overall age of the District fleet has increased slightly and is now 12.9 years. There is one vehicle being considered for replacement in 2017. The 1994 JCB Backhoe is passing the 23 year mark and will need new front tires and valve body repairs estimated at $6,000. The unit is underpowered for manhole work and undersized for pipeline replacement work.

The attached spreadsheet summarizes District vehicle and equipment by year, model, mileage, age, replacement schedule, and remaining service life. Additionally there are maintenance and cost projections for the coming budget year. Maintenance costs to date are on track with 2016 budget projections.

As management looks forward to the next few years of fleet management there are vehicles and equipment that should be analyzed and considered for replacement as follows:

1994 JCB Backhoe: The backhoe is 23 years old with 3,185 hours. Although the equipment was envisioned to last up to 25 years, We are projecting some potentially serious problems if replacement is delayed. There is a leak in the valve body that was estimated by both JCB and John Deere to cost about $6,000 to repair. There have been failures of the front spindles, which are likely to reoccur and there is a problem developing with the rear drive axel, which is loose and making noise. The JCB will need a new set of front tires this year.
The JCB dealer in Reno closed their doors several years ago and their mobile mechanic now comes from Sacramento making even minor repairs problematic; obsolescence due to age means parts must come from overseas or Canada. The JCB is a lightweight and low power alternative that cost far less than comparable equipment when purchased. Research shows present value around $15,000 to $18,000 retail. However, it is a tier zero engine that cannot be re-sold in California.
The Utility Department would benefit from a heavier and slightly more powerful replacement such as a John Deere 410 HL. We recommend replacement of this vehicle for the 2017/2018 budget cycle. The cost of replacement is estimated at $150,000.

1999 Ford F250 Utility Truck: This vehicle is 18 years old with 57,581 miles. This vehicle is in good condition with no known problems. We recommend the service be extended and replacement scheduled in 2019 or 2020.

Vac-Con Rear Engine Retrofit: Retrofit of the Vac-Con rear engine with a catalytic converter is required under California emission regulations by December 2018. The District will be required to begin reporting fleet emissions in 2018 and will not make the required fleet average unless this is accomplished. We are in the process of finding out who is capable of installing this and how much it will cost the district.

Replacement Timeline: Attached is a 5 year timeline for vehicle and equipment replacement with estimated costs. In the past 5 years the fleet average has climbed to 12.9 years and the budget is averaging $12,987 annually. Over the same decade maintenance manpower has moved from $10,422 annual average to $16,098 annual average. As our Fleet is aging our costs for maintenance and manpower are rising.

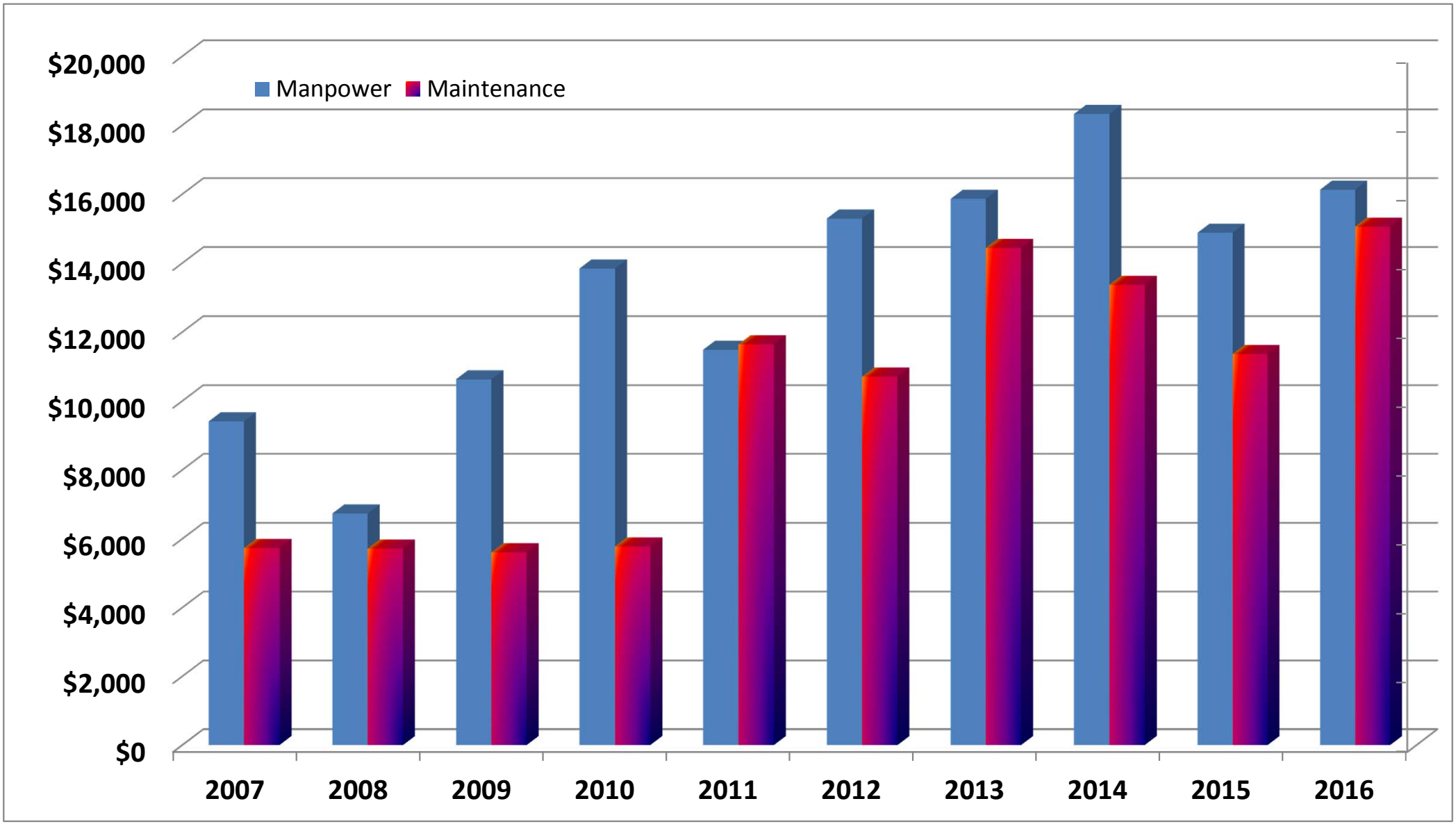
Recommendation: It is recommended that the JCB Backhoe be replaced in budget cycle 2017/2018. This will give us a more reliable and capable piece of equipment that we can use in the district. If replaced by January 1st 2018, we also will be credited by the Placer County Air Pollution Control District and will extend compliance for the rest of our vehicles through 2022.

Annual Report on District Fleet

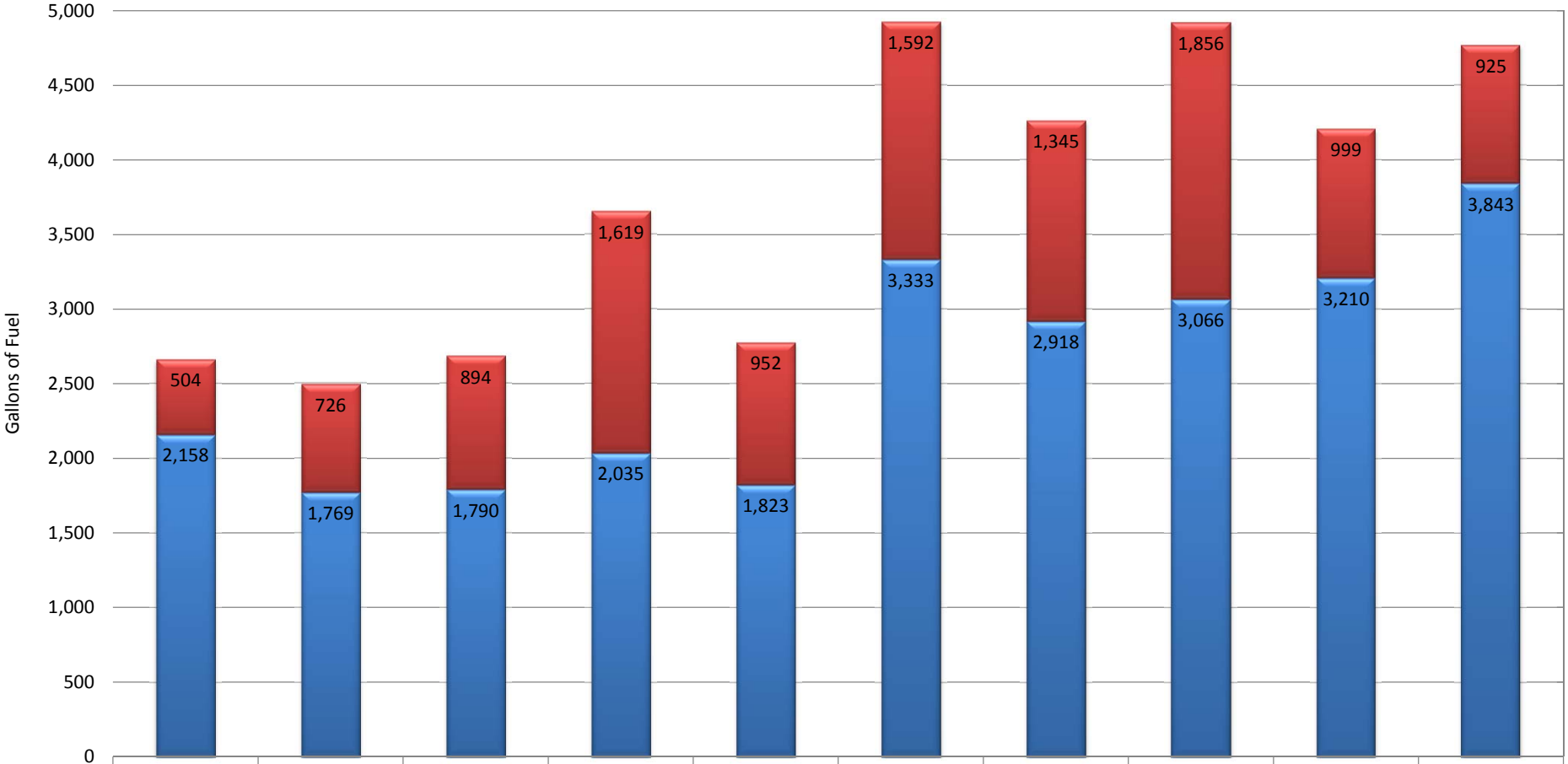
2017

Vehicle/Equipment	Mileage Hours	Age	Replacement Schedule	Service Life	Annual Use	Maintenance Performed	2016 2017	Maintenance Due	2017 2018
2008 Ford 1 Ton 4x4 Flat	32,452	9	15	6	2,490	Annual Service	$105	Annual Service	$125
						Starter/Battery	$270	Fuel/Air filters	$30
1999 Ford Utility 4x4	57,581	18	15	-3	3,181	Annual Service	$105	Annual Service	$125
						Battery	$151	Fuel/Air filters, Spark plugs	$70
2014 Dodge Ram 4x4	28,960	3	15	12	4,480	Annual Service	$105	Annual Service	$125
						Seasonal Tires Changed	$60	Seasonal Tires Changed	$60
1997 Ford Explorer	121,574	20	15	-5	1,960	Annual Service	$105	Annual Service	$125
								Fuel/Air Filters	$20
2014 F-150 4x4	42,180	3	15	12	16,137	2x Annual Service	$210	2x Annual Service	$250
						Seasonal Tires Changed	$60	Seasonal Tires Changed/Filters	$100
2008 F-750 Dump Truck	7,613	9	30	21	466	Annual Service	$105	Annual Service	$125
								Fuel/Trans./Air Filters, Coolant	$190
1998 JD 444H Loader	3,374	19	30	11	48	Annual Service	$105	Annual Service	$125
						Block Heater/Emissions Sticker	$150	Hydro fluid/filter,fuel filter,air filter	$720
1994 JCB Backhoe	3,185	23	30	7	47	Annual Service	$105	Annual Service	$125
								Front Tire Replacement	$2,000
1998 JD Air Compressor	364	19	20	1	6	Annual Service	$105	Annual Service	$125
								Fuel Filter	$25
2007 New Holland	392	10	30	20	9	Annual Service	$105	Annual Service	$125
Westa Sno Blower			20	10		Block Heater	$90	Hydro filters,Air filters,coolant filters	
						Shoot Motor, Clutch Repair	$628	Fuel filters	$300
2009 Vac-Con Hydro-Vac	7,446	8	30	22	531	Annual Service	$105	Annual Service	$150
Power Take Off (PTO)	239	8	30	22	9			Hydro/Air/Fuel Filters	$850
2009 Duetz Rear Engine	586.2	8	30	22	78	Annual Service	$105	Annual Service	$150
								Fuel/Air Filters	$250
2016 Ford Interceptor	3461	1	15	14	3,307	2x Annual Service	$210	2x Annual Service	$250
								Winter Tires	$1,200
6" Trash Pump (2000)	42.2	17	30	13	2	Annual Service	$105	Annual Service	$125
								Filters	$35
2010 Prowler Easement	41.3	7	20	13	5	Annual Service	$105	Annual Service	$125
Well House Generator	217.9	24	40	13	8	Annual Service	$105	Annual Service	$125
(1993)								Coolant, Fuel Filters	$80
1810 Generator (1991)	778	26	40	14	13	Annual Service	$105	Annual Service	$125
305 Generator (2004)	145	13	40	27	7	Annual Service	$105	Annual Service, Fuel/Air Filters	$270
Equipment/Old Vehicles							$100	Equipment	$600
Miscellaneous Shop Supplies						Rags,Cleaning supp. Ect.	$106	Rags, Cleaning Supp. Ect.	$800
Total	Fleet Ave.	12.9					**$3,715**		**$10,025**

Vehicle Manpower and Maintenance Costs



SVPSD Operation Department 10 Year Fuel Useage Trend



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Diesel	504.10	725.70	893.80	1,619.45	952.40	1,591.90	1,344.70	1,856.40	998.80	925.24
Unleaded	2,158.40	1,768.90	1,790.10	2,034.90	1,823.25	3,332.80	2,917.70	3,065.80	3,209.60	3,842.95