

BEAR VALLEY WATER DISTRICT

MEMORANDUM

TO BOARD OF DIRECTORS

FROM GARY S. GHIO, DISTRICT ENGINEER *GSG*

RE DISTRICT CAPACITY AND BUY-IN FEE CALCULATION UPDATE

DATE January 9, 2018

In 2014 the District adopted a buy-in fee to be charged to new customers based upon a District capacity of 245 additional EDUs along with a total cost of District completed improvements determined through the Eco-Logic 2006 Phase 1 Tertiary Facility Plan combined with the cost of improvements which were completed since the Plan was created. Attached to this memorandum is a copy of a memorandum to the Board of Directors dated November 20, 2014 which provides the basis for the current buy-in fee of \$5,414. (See pages 4 and 5)

When the buy-in fee was adopted in 2014 there were still several uncertainties associated with the District's potential ability to discharge into Bloods Creek; primarily the limited flow data which was available for Bloods Creek at that time combined with the fact that the District had not done any type of discharge previously to verify the adequacy of the discharge system.

Subsequent to this, the District received a new NPDES permit which removed some of the requirements which limited future District capacity to 245 additional EDUs. The primary limitation contained in the previous NPDES permit was the requirement that the polishing pond reach the two-thirds full level prior to discharge. This requirement was removed in the current, adopted NPDES permit and in June of 2016 the water balances were updated to reflect the potential change in NPDES permit. The result of this analysis indicated an increase in the District's capacity to 1,196 additional EDUs assuming no infiltration associated with said EDUs. Although this determination was made in June 2016, it was recommended to the Board not to modify District capacity due to the issues associated with lack of information on Bloods Creek flow. I have also attached a copy of the June 7, 2016 memorandum to the Board of Directors wherein these items were discussed. (See pages 6 - 9)

As the Board of Directors is aware, the winter of 2017/2018 once again exceeded the total precipitation criteria for 1 in 100 year storm season. Due to this, the District proceeded with its first ever successful discharge to Bloods Creek; and in addition, obtained valid creek flow data

for Bloods Creek for the entire January through June period. In addition, this successful discharge once again provides the District the opportunity to update its 1 in 100 year water balance to verify the assumptions, limitations and capacity determinations which were utilized in previous water balances.

2017 WATER BALANCE UPDATE

The following table presents a comparison of the total precipitation and snow water content projected in the 1 in 100 year water balances as well what occurred during the 2010/2011, 2015/2016, and 2017/2018 precipitation seasons.

	1 IN 100	2010/2011	2015/2016	2017/2018
Total Precipitation (In Inches)	83.00	84.73	54.62	90.91
Snow Water Content (In Inches)	60.00	60.82	34.56	43.32

As can be seen by the above comparisons of total precipitation and snow water content for 2010/2011 and 2017/2018, both storm seasons exceeded the 1 in 100 total precipitation amount, but the snow water content was significantly lower in 2017/2018 as compared to 2010/2011.

Attached to this memorandum is the 2017 water balance update with actual flows/precipitation which was calibrated based upon actual storage levels encountered for November through June. (See page 10) As can be seen by the water balance the estimated storage, predicted by the spreadsheet, tracks very closely with actual storage experienced during this time period which provides verification of the accuracy of the water balance.

The Regional Water Quality Control Board criteria to perform 1 in 100 year projections is to utilize a historical DWR monitoring site in order to derive the 100 year monthly distribution of precipitation. As no DWR site exists near Bear Valley which has this data, the previous water balances (2011 and 2016) and capacity determinations were based on the monthly distribution of precipitation that was experienced in 2011 which was the last year of 1 in 100 year total precipitation exceedance at that time. The 2017 precipitation year also exceeded the 1 in 100 year total precipitation amount, but the pattern differed significantly from what was experienced in 2010/2011. The 2017 1 in 100 year water balance projections which are attached to this memorandum (See pages 11-12) were performed utilizing both precipitation patterns reduced down to 1 in 100 year levels. This analysis was performed to ensure the water balances’ basis is the worst case precipitation level and pattern based upon available data.

In comparing the resulting two 2017 spreadsheets, the 2017 precipitation pattern would have been a worst year in terms of volumes as compared to 2010/2011 but not of such significance that it would alter the capacity determination from 2016 of an additional 1,196 EDUs. Based upon the results of this analysis, combined with a much higher level of confidence on the ability of the District to discharge the required volumes into Bloods Creek, indicates the Board of Directors could increase District capacity to an additional 1,196 EDUs over existing connections with confidence.

BUY-IN FEE UPDATE

As any change in adopted District capacity correlates directly to the buy-in fee which is charged to new development, District staff has re-examined the existing number of connections (EDUs) as well as actual costs of the District’s collection and treatment systems. Attached to this memorandum is a summary of the existing number of connections as of January 5, 2018 broken down by residential and commercial developments. (See page 13.) In addition, this table provides information on recent flows from not only the mountain but from the Forest Service and Lake Alpine Resort which were previously lacking. As can be seen from this table, the total number of EDUs currently connected to the District’s system is 650. Combining the current number of connected EDUs (650) with additional District capacity (1,196) yields a total District capacity of 1,846 EDUs.

In order to verify the actual costs of the District’s collection and treatment systems, the District’s depreciation schedule was updated to reflect all items currently owned by the District, the date purchased, and the original cost of the item. These costs were then escalated to December 2017 costs using the ENR 20 City Construction Cost Index. Based upon this analysis, the total value of the District’s collection and treatment systems in December 2017 dollars would be approximately \$13,605,000. See attached depreciation schedule for breakdown of items, date purchased, original and escalated costs (pages 14-16).

The following presents the calculation for the buy-in fee:

Cost of completed improvements = \$13,605,000
Existing plus Additional Capacity EDUs = 1846
Buy-in Fee = \$13,605,000 / 1846 = \$7,370 per EDU

Based upon the analysis of costs, 2017 Water Balance update, and increased confidence in the level of Bloods Creek flows and corresponding ability of the District to discharge required volumes it is recommended the Board of Directors adopt the District capacity as 1,196 additional EDUs and revised the Buy-in Fee amount to \$7,370/EDU.

I will be present at the January 22 Board meeting should the Board have questions on any of the items contained herein.

BEAR VALLEY WATER DISTRICT

MEMORANDUM

TO BOARD OF DIRECTORS
FROM GARY GHIO, DISTRICT ENGINEER
RE BUY-IN FEE CALCULATION
DATE NOVEMBER 20, 2014

Based upon discussions with Dan Schroeder, District Legal Counsel, it is recommended that in lieu of developing a revised connection fee for the District that the District charge a buy-in fee to new development until such time as the existing District capacity (245 EDU's) is reached.

The attached buy-in fee calculation reflects a recommended buy-in fee cost for each equivalent dwelling unit (EDU) served until such time as the District reaches its current capacity (245 additional EDU). This memo details the methodology used to determine the various components of the buy-in fee calculation.

Update of the previously determined existing facilities cost allocation:

Existing Facilities Cost Allocation per the 2006 Phase I Tertiary Facilities Plan = \$3,032 Average annual Construction Cost Index escalation rate history between 2006 and 2014 = 3.1% Using the single payment compound-amount interest factor, $\$3,032 (1+0.031)^8 = \$3,871$

Additional buy-in cost for completed improvements since 2006:

Cost of completed improvements and financing thereof = \$1,435,097 Existing plus Additional Capacity EDUs = 930 Additional buy-in cost = $\$1,435,097 / 930 = \$1,543$ per EDU
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Buy-in Fee = $\$3,871 + \$1,543 = \$5,414$
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List of Improvements

11/19/2014

Phase	Item #	Improvement Project Description	Cost
Completed Improvements	1	Outfall Project	\$815,000
	2	Main Pump Station	\$272,500
	3	Chlorine Tank	\$108,145
	4	Dechlorination Facility	\$22,618
			Total:

Reference

[1] & [2]

[1]

Jeff

Jeff

References:

- [1] 9/13/11 Connection Fee Memorandum from G. Ghio
- [2] 11/14/06 Connection Fee Memorandum from N. Colwell

Buy-in Fee Calculation

11/19/2014

Fee Component	Description	Value
Buy-in	Existing Facilities Cost Allocation per EDU ^a	\$3,871
	Cost of Completed Improvements ^b	\$1,218,263
	Cost of Financing for Completed Improvements ^b	\$216,834
Equivalent Dwelling Units	Current EDUs Served	685
	Existing District Capacity, EDU	245
	Total EDUs	930
Total Cost per EDU	Buy-in Cost	\$3,871
	Cost of Completed Improvements	\$1,543
	Buy-in cost per EDU:	\$5,414

Notes:

- a. Buy in cost of \$3,032/EDU per the 2006 Phase I Tertiary Facilities Plan adjusted to 2014 levels
- b. Projects completed since 2006 Connection Fee Analysis. Costs to be distributed over 930 customers

References:

- [1] 11/14/06 Connection Fee Memorandum from N. Colwell and Bear Valley Master Plan

BEAR VALLEY WATER DISTRICT

MEMORANDUM

TO BOARD OF DIRECTORS

FROM GARY S. GHIO, DISTRICT ENGINEER

RE 1 in 100 YEAR WATER BALANCE AND PROPOSED
NPDES PERMIT RENEWAL

DATE June 7, 2016

As directed, I have updated the District's 1 in 100 Year Water Balance in an effort to reflect the anticipated requirements which are contained within the draft renewal copy of the District's NPDES permit for discharges to Bloods Creek.

As the Board Members may recall, the District's current NPDES permit prohibits discharge to Bloods Creek from the polishing pond when there is greater than 35 MG of unused storage in the pond. The 35 MG threshold was dictated by the Regional Water Quality Control Board (RWQCB) during the NPDES renewal process in 2011 and was based upon the requirement of having the polishing pond two-thirds full before the discharge to Bloods Creek could commence. This limitation was incorporated into the District's 1 in 100 Year Water Balance and resulted in estimates of future District capacity of 245 RLUs. (See Bear Valley Water District Memorandum dated February 4, 2014.)

As the proposed NPDES permit has removed the two-thirds full requirement for discharge, and in an effort to determine the effects on District capacity, the 1 in 100 Year Water Balance (attached) was revised based upon the assumption that discharge to Bloods Creek would commence once flows within the creek were adequate to accept the District's discharge.

Bloods Creek Flow Data and Influent Flow Data

In order to determine potential monthly amounts of discharge to Bloods Creek based upon the 20:1 dilution requirement contained in the NPDES permit, 2015/2016 Bloods Creek flow data was utilized in the updated water balance in lieu of 2010/2011 data due to concerns with the accuracy of the 2010/2011 data. Both sets of data are attached to this memorandum for information purposes.

The following table presents a comparison of the total precipitation and snow water content projected in the 1 in 100 Year Water Balance as well as what occurred during the 2010/2011 and 2015/16 precipitation seasons.

	1 in 100	2010/2011	2015/2016
Total Precipitation (Inches)	83.00	84.73	54.62
Snow Water Content (Inches)	60.00	60.82	34.56

Although the 2015/2016 water year did not approach what was experienced in 2010/2011, which forms the basis for the 1 in 100 Year Water Balance, the potential discharge amounts for January thru May contained in the attached water balance, are based upon the 2015/2016 flow data and proposed permit limits. The amount of potential creek discharge for the month of June was assumed the same as May due to lack of data in 2015/2016 and the fact that discharges would have occurred thru June in the 2010/2011 scenario. This should result in a conservative estimate of District capacity.

In addition to updating the potential discharge amounts to Bloods Creek, the 90th percentile influent flows contained in the water balance were updated to include influent data thru May 2016.

Water Balance Results

As can be seen from the attached water balance, incorporating the items described above results in a potential District capacity of 1,196 RLUs assuming no infiltration associated with said RLUs.

The Board should remain cognizant that the water balances are to serve as a guide to capacity and total discharge amounts only. The exact timing of discharges to Bloods Creek as well as irrigation of the spray fields will differ from year to year. Due to the limited Bloods Creek flow data used in this analysis, it is not recommended the District revise the adopted estimate of future District capacity. This analysis is primarily to provide the Board members with information regarding the potential increase in capacity based upon the renewal of the NPDES permit.

Collection of accurate Bloods Creek flow data is essential to the determination of District Capacity and as additional data is collected during subsequent years the potential monthly discharge amounts should be refined. It should also be noted the District's waste discharge requirements (WDRs) currently contain a wastewater inflow limit of 100,000 gpd which will need to be revised as new customers are added and flows increase.

**BEAR VALLEY WATER DISTRICT
COMPARISON OF BLOOD CREEK FLOWS 2010/2011 AND 2015/2016
June 7, 2016**

BLOODS CREEK TOTAL FLOW (MG)

	January	February	March	April	May	June
2010/2011			232	736	1,163	1,705
2015/2016	92	189	402	711	600	

20:1 DILUTION BLOODS CREEK FLOWS (MG)

	January	February	March	April	May	June
2010/2011			11.0	35.1	55.4	81.2
2015/2016	4.4	9.0	19.1	33.8	28.6	

INPUT DATA	CLIMATOLOGICAL FACTORS												
PARAMETER / MONTH	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	ANNUAL
TREATMENT POND CHARACTERISTICS													
GROSS AREA (ac)	3.2	18.6											
WATER SURFACE AREA (ac)	2.9	14.2											
STORAGE RESERVOIR													
DISTRICT DISPOSAL LAND (AC)	80												
SOIL WATER DEFICIT BEFORE IRRIGATION (IN)	n/a												
FRACTION OF LAND IRRIGATED	n/a												
IRRIGATION EFFICIENCY (DECIMAL FRACT)	n/a												
FRACTION OF EST. PERC RATE	0.9												
STORAGE CAPACITY (MG)	76.43												
LAND PRECIP COLLECTED (FRAC)	0.9												
AVG PAN EVAP (IN)	0.76												
MAY-SEP EVAP/AVG EVAP RATIO	1.00												
OCT-APR EVAP/AVG EVAP RATIO	0.80												
PAN COEFFICIENT	1.00												
LAND PRECIP COLLECTED (FRAC)	0.9												

PARAMETER / MONTH	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	ANNUAL
DAYS IN MONTH	30	31	31	28	31	30	31	30	31	31	30	31	365
AVG PAN EVAP (IN)	0.69	0.61	0.76	0.83	2.14	3.69	5.34	6.64	7.63	6.87	5.17	3.05	49.62
ESTIMATED PRECIP (IN)	3.17	8.46	30.79	22.56	5.72	9.28	1.10	1.91	0.00	0.00	0.00	0.00	83.00
ESTIMATED SNOW ACCUM (IN Water)	2.23	4.46	27.12	42.39	39.69	38.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESTIMATED SNOW MELT IN MONTH (IN Water)	0.82	1.06	0.00	1.29	8.10	10.33	38.40	0.00	0.00	0.00	0.00	0.00	60.00
ESTIMATED NEW SNOW IN MONTH (IN Water)	3.05	3.29	22.86	16.56	5.40	9.04	0.00	0.00	0.00	0.00	0.00	0.00	60.00
ESTIMATED MAX PERCOLATION (IN)	10.0	29.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
# OF ADDITIONAL CONNECTIONS (RLU)	1,196	1,196	1,196	1,196	1,196	1,196	1,196	1,196	1,196	1,196	1,196	1,196	1,196
ADDITIONAL INFILTRANT FLOW (GAL/D)	240,396	240,396	240,396	240,396	240,396	240,396	240,396	240,396	240,396	240,396	240,396	240,396	240,396
90TH PERCENTILE EXISTING FLOWS (Avg. GAL/D)	35,340	75,835	83,020	109,378	123,884	184,549	184,988	125,446	74,976	64,231	40,142	32,953	273,349
TOTAL INFILTRANT FLOW (GAL/D)	275,736	316,231	323,416	348,972	384,280	424,945	425,284	365,842	315,372	304,827	280,538	273,349	273,349

CALCULATIONS													
WASTEWATER VOLUME (gal)	8,272,080												
EVAPORATION (IN)	0.5												
PRECIPITATION (IN)	3.17												
TREATMENT POND													
PERCOLATION (IN)	8.38												
PERC VOLUME (gal)	689,620												
EVAP. VOLUME (gal)	39,374												
PAN VOLUME (gal)	272,871												
PRECIP. VOLUME (gal)	4,261,233												
TREATMENT DISPOSAL (GAIN) (gal)	1,611,500												
POLISHING RESERVOIR													
PERCOLATION (IN)	0.00												
PERC VOLUME (gal)	0												
W.S. AREA (sq/ft)	6.20												
EVAP. VOLUME (gal)	84,162												
PRECIP. VOLUME (gal)	1,466,647												
MONTHLY AVAL SNOWMELT (IN)	0.82												
ESTIMATED SNOW CONTR. (%)	100%												
ESTIMATED AREA OF INFLUENCE (ac)	50												
ESTIMATED INFILTRANT FLOW (GAL/D)	1,115,990												
RESERVOIR DISPOSAL (GAIN) (gal)	5,055,352												
IRRIGATION													
IRRIGATION DISPOSAL (gal)	0												
STORAGE													
BEGINNING STORAGE (gal)	4,060,000												
CALCULATED STORAGE GAIN (gal)	10,374,371												
PROJECTED ESTIMATED STORAGE (gal)	14,434,371												
AMOUNT DISCHARGED TO BLOODS CREEK (gal)	0												
ESTIMATED STORAGE (gal)	14,434,371												
ANNUAL INFLOW (MG)	122.18												
WASTEWATER	47.46												
PRECIPITATION	29.95												
SNOW INFILX (MG)	199.62												
TOTAL	499.21												
ANNUAL DISCHARGE TO BLOODS CREEK (MG)	119.70												
EVAPORATION	12.35												
PERCOLATION	8.39												
IRRIGATION	62.68												
TOTAL	203.12												
OVERBALLANCE													
UNUSED DISPOSAL CAPACITY (MG)	-0.56												
(MUST NOT BE NEGATIVE)													
UNUSED STORAGE CAPACITY (MG)	9.85												
(MUST NOT BE NEGATIVE)													
MAXIMUM STORAGE (MG)	66.68												
AVAILABLE STORAGE (MG)	76.43												
SUMMARY													
ANNUAL INFLOW (MG)	499.21												
WASTEWATER	122.18												
PRECIPITATION	29.95												
SNOW INFILX (MG)	199.62												
TOTAL	499.21												
ANNUAL DISCHARGE TO BLOODS CREEK (MG)	119.70												
EVAPORATION	12.35												
PERCOLATION	8.39												
IRRIGATION	62.68												
TOTAL	203.12												

(a) Estimated percolation based upon measured inflow components, estimated evaporation, and actual reservoir levels in 2011 - in Storage Reservoir only.
 (b) Reservoir water surface area is a function of storage volume at start of month.
 (c) Estimated snowmelt volume available for inflow to storage reservoir.
 (d) Estimated percentage of snowmelt contributing to inflow to reservoir.
 (e) Estimated based on fraction of accumulated snow within reservoir "area of influence" entering the reservoir during snowmelt months.
 (f) Disposal capacity based on maximum estimated land disposal volumes.
 (g) Per Bloods Creek Gauging Station
 (h) Not used in calculations

(2017 update) 2017 PRECIP. PATTERN 1in100waterbalance (90th percentile 2000-2011) plus 1196 rdu.xls

**BEAR VALLEY WATER DISTRICT
EXISTING NUMBER OF CONNECTIONS (EDUs)
1/16/2018**

RESIDENTIAL DEVELOPMENT	Number of Connections (EDUs)		
	2005 ¹¹	2018	Buildout
Single Family Parcels			
<u>Northside</u>			
SF - 1 ¹ (Old Sub)	41	45	59
SF - 2, 3, 4, 6 ² (New Sub)	283	301	436
Lake Alpine Basin Cabins ⁴	22	22	37
North Side Sub Total	346	368	532
<u>Southside</u>			
SF - 5	0	0	44
SF - 7	0	0	50
SF - 8	0	0	22
SF - 9	0	0	44
SF - 10	0	0	1
Southside Sub Total	0	0	161
Residential Sub Total	346	368	693
Multi Family Parcels			
<u>Northside</u>			
MF - 1 ³ (Condo Bear)	16	16	16
MF - 2, 3 ³ (Creekside)	113	113	132
MF - 4 ³ (Tamarack)	20	20	20
MF - 5 (Pine Tree Village / Silver Mountain)	0	20	100
MF - 6 ³ (Sundowner)	0	12	12
MF - 9	0	0	30
MF - 11	0	0	12
MF - 10 (Black Forest)	0	0	45
MF - 12 (Bear Paw Ridge)	0	0	113
North Side Sub Total	149	181	480
<u>Southside</u>			
MF - 12 (Southside)	0	0	34
MF - 13 (Southside)	0	0	54
MF - 14 (Southside)	0	0	62
MF - 15 (Southside)	0	0	122
MF - 16 (Southside)	0	0	40
South Side Sub Total	0	0	312
Multi Family Sub Total	149	181	792
Single Family + Multi Family Total	495	549	1485
COMMERCIAL DEVELOPMENT			
VC - 1 (Bear Valley Village - Existing) ⁵	54	54	76
VC - 2 (Bear Valley Village - Proposed) ⁵	0	0	385
Bear Valley Mountain Resort ^{7 8}	21	21	29
Bear Top Lodge (Proposed) ⁹	0	0	14
US Forest Service Facilities (Resort/Campgrounds) ¹⁰	26	26	26
Commercial Sub Total	101	101	530
Grand Total	596	650	2015
Total Number of EDUs Per 1978 Master Plan =	596	650	2015
EDUs Remaining - System Total - 1846 EDUs =	1250	1196	-169

¹ BVMP General Development Plan - SF 1

² - BVMP General Development Plan - SF 2, 3, 4, 6, MF-11, MF-12 (New Sub incl Cub Lane, Avalanche, Flynn Road, Granite Ridge)

³ Existing Condos - Creekside = 113, Condo Bear = 16, Tamarack = 20, Sundowner = 12; Total = 161

⁴ (22) Special Use Permit (SUP) Cabins Invoiced (connected to BVWD); 37 Cabins Total - Assumes All Could Connect to BVWD

⁵ BVMP General Development Plan - VC 1 + C 1

⁶ 2012 BVV EIR 2012 Addendum - The project would generate a net demand for 385 new SFEs :
(350 residential SFEs + 16.8 employee housing SFEs + 45 commercial SFEs - 26.5 Bear Valley Lodge SFEs = 385 SFEs).
Rather than defining a unit as a two-bedroom residence, the applicant is proposing to define the residential portion of the project in terms of Equivalent Dwelling Units where one EDU is equivalent to 1,350 sf of residential space.

⁷ 2012 BVV EIR Addendum - Increasing skier visitation by 40,000 (i.e., from 140,000 to 180,000 skiers per season) represents a 29 percent increase. Therefore, the ski area improvements could generate demand for an additional 7 SFEs (i.e., a 29-percent increase over 24 SFEs).

⁸ Bear Valley Mountain - Wastewater Flow 543,300 gal - 12 month

⁹ 2012 Bear Valley Mountain Expansion EA - 12,500 sq ft Bear Top Lodge - 270 seat capacity - 14 RLUs

¹⁰ USFS - Day Use Bathrooms (4) 131,150 gal - 12 month
USFS - Campground Bathrooms (14) 303,980 gal - 12 month
Lake Alpine Resort (Rest/Cabins/Store) 295,191 gal - 12 month

¹¹ 2006 BVWD - ECO:LOGIC Engineering - Phase 1 Tertiary Facilities Plan 13

**Bear Valley Water District
Depreciation Schedule - Book Data
Year Ended 12/31/2017
Buy-In Fee Calculation**

<u>Set No.</u>	<u>Asset Description</u>	<u>Life</u>	<u>Date Purchased</u>	<u>Original Cost</u>	<u>Date Constructed</u> <u>ENR Construction Cost Index</u>	<u>Dec. 2017</u> <u>ENR Construction Cost Index</u>	<u>Adjusted</u> <u>Dec 2017 Cost</u>
(c) 1: LAND							
1.0 Land	1.0 Land	0	1/19/20	\$25,805			
© 1: LAND				\$25,805			
(c) 21: PLANT & ADMIN							
11.0	1993 Ford 4X4 Pickup Truck	5	6/1/93	\$12,747	5260	10870	\$26,342
14.0	Snowblower	5	10/1/97	\$1,925	5848	10870	\$3,578
15.0	Office Building	40	10/31/97	\$288,204	5848	10870	\$535,701
17.0	Dodge Ram Pickup	6	1/1/99	\$16,846	6000	10870	\$30,519
197.0	Utility Transfer Switch	20	8/24/15	\$1,555	10039	10870	\$1,684
	Phone System		2016	\$2,240	10338	10870	\$2,355
	Web Site		2014	\$1,775	9806	10870	\$1,968
© 21: PLANT & ADMIN - 18 Asset(s)				\$325,292	\$602,147		
(c) 22: SEWAGE - LIFT STATIONS							
21.0	Generator	20	11/1/91	\$12,402	4896	10870	\$27,535
23.0	Boat Ramp	15	12/1/92	\$6,299	5059	10870	\$13,534
25.0	Chickaree Pump House	10	6/1/98	\$3,190	5895	10870	\$5,882
26.0	Chickaree Pump House	10	1/1/99	\$1,126	6000	10870	\$2,040
27.0	Lake Alpine Pumps & Auto Dialer	15	1/1/05	\$76,657	7297	10870	\$114,192
28.0	Irr. Pump #2 & Upgrades	15	1/1/05	\$2,720	7297	10870	\$4,052
29.0	Remodel Costs	15	1/1/05	\$8,765	7297	10870	\$13,057
30.0	Boat Ramp	15	1/1/05	\$2,567	7297	10870	\$3,824
31.0	Auto Dialer	15	9/1/05	\$3,516	7540	10870	\$5,069
33.0	A/B 100 HP Start w/Controls	15	10/13/06	\$13,621	7883	10870	\$18,782
199.0	Phase Converter L.A.	10	6/30/17	\$6,891	10703	10870	\$6,999
	(2) Apollo Actuator Valves - Lake Alpine Boat Ramp		2017	\$5,959	10870	10870	\$5,959
© 22: SEWAGE - LIFT STATIONS - 17 Asset (s)				\$143,713	\$220,924		
© 23: SEWAGE COLLECTION							
37.0	Main & LA Pump Station	40	9/1/79	\$33,186	3003	10870	\$120,124
38.0	Connector	10	10/1/79	\$7,846	3003	10870	\$28,400
39.0	Pump Station Modification	40	10/1/79	\$6,748	3003	10870	\$24,426
40.0	Log Cabin Bypass	20	11/1/79	\$8,157	3003	10870	\$29,526
42.0	Containment Basin	10	9/1/79	\$5,716	3003	10870	\$20,690
43.0	Comminutor	10	10/1/79	\$3,289	3003	10870	\$11,905
44.0	Pump	10	7/31/80	\$2,236	3237	10870	\$7,509
46.0	Pump & Switch Gear	10	11/1/80	\$2,478	3237	10870	\$8,321
48.0	Raco High Water Alarm	10	10/18/83	\$1,809	4066	10870	\$4,836
49.0	Transformer	10	10/1/84	\$4,567	4146	10870	\$11,974
52.0	Relief Control Valve-LA Pump	10	7/1/85	\$1,947	4195	10870	\$5,045
53.0	Press Relief Valves - Boat Ramp	10	7/1/85	\$518	4195	10870	\$1,342
57.0	Leak Detection System	10	9/1/86	\$1,982	4295	10870	\$5,016
61.0	Overflow Tanks	10	6/1/88	\$9,339	4519	10870	\$22,464
63.0	Smart Pump LC Unitype	10	10/1/89	\$1,129	4615	10870	\$2,659
64.0	New Pump - Lake Alpine	10	10/1/89	\$6,778	4615	10870	\$15,965
67.0	Generator (Emergency Response)	15	8/1/02	\$9,547	6592	10870	\$15,743
70.0	System Maps	10	11/1/03	\$6,928	6794	10870	\$11,084
71.0	Waterman Valve	10	11/1/03	\$5,954	6794	10870	\$9,526
75.0	2007 Chevy Truck	5	10/13/06	\$8,330	7883	10870	\$11,486
77.0	Confined Space Entry Equipment	10	1/1/09	\$4,219	8549	10870	\$5,364
177.0	Main Pump Station Flood Control	20	6/30/12	\$171,561	9291	10870	\$200,718
182.0	Ebara K Series Pump	10	6/25/13	\$6,114	9542	10870	\$6,965
183.0	Versight Pro 200 Push Camera	10	8/30/13	\$11,910	9545	10870	\$13,563
185.0	Additional Ebara Pump Costs	10	9/30/13	\$688	9552	10870	\$783
198.0	Smartcover Monitor/Alarm	7	6/30/17	\$15,390	10703	10870	\$15,630
	New E&H 8" Mag Flow Meter - Main Pump St.		2017	\$16,185	10870	10870	\$16,185
© 23: SEWAGE COLLECTION 47 Asset (s)				\$354,551	\$627,250		

<u>Set No.</u>	<u>Asset Description</u>	<u>Life</u>	<u>Date Purchased</u>	<u>Original Cost</u>	<u>Date Constructed</u> <u>ENR Construction</u> <u>Cost Index</u>	<u>Dec. 2017</u> <u>ENR Construction</u> <u>Cost Index</u>	<u>Adjusted</u> <u>Dec 2017 Cost</u>
© 24:	SEWAGE DISPOSAL FACILITY						
76.0	Bloods Creek Outfall	40	6/30/08	\$742,797	8185	10870	\$986,463
78.0	Disposal Facilities	40	1/1/71	\$8,587	1581	10870	\$59,039
79.0	Engineering	40	1/1/77	\$6,648	2576	10870	\$28,053
80.0	Irrigation Pipe	10	8/1/80	\$7,567	3237	10870	\$25,410
81.0	Spray Field Phase I	10	1/1/83	\$48,778	4066	10870	\$130,403
82.0	Sprayfield Additions	20	9/1/85	\$6,644	4195	10870	\$17,216
83.0	Pump & Irrigation Valves	10	8/1/86	\$7,074	4295	10870	\$17,903
84.0	Irrigation Systems	10	8/1/87	\$5,070	4406	10870	\$12,508
85.0	New Irrigation System	7	7/1/88	\$522	4519	10870	\$1,256
86.0	Absorbion Trench	10	7/1/88	\$1,970	4519	10870	\$4,739
87.0	Trench	10	9/1/88	\$5,123	4519	10870	\$12,323
88.0	Sprayfield	10	7/1/89	\$1,068	4615	10870	\$2,516
89.0	Sprayfield	10	9/1/89	\$445	4615	10870	\$1,048
90.0	Sprayfield	10	4/1/90	\$10,237	4693	10870	\$23,711
91.0	Pump	10	7/1/90	\$7,643	4734	10870	\$17,550
92.0	Sprayfield Expansion	10	10/1/91	\$4,251	4892	10870	\$9,446
93.0	Sprayfield Expansion	10	6/1/93	\$420	5260	10870	\$868
94.0	Sprayfield Expansion	10	8/1/93	\$13,353	5230	10870	\$27,753
95.0	Extend Sprayfield	10	12/1/96	\$10,131	5744	10870	\$19,172
96.0	Irrigation Pipe	10	3/1/98	\$898	5875	10870	\$1,661
97.0	Booster Pump MDL 8C-4	10	7/1/01	\$8,940	6404	10870	\$15,175
98.0	Guard-It Auto Dialer	10	9/1/01	\$1,053	6391	10870	\$1,791
99.0	Pumps	10	8/1/01	\$8,399	6389	10870	\$14,290
100.0	Effluent 100 HP Pump	10	10/1/01	\$7,000	6397	10870	\$11,895
101.0	Peerless Pump	10	9/1/02	\$5,974	6589	10870	\$9,855
102.0	Simfloo Pump	7	10/1/02	\$2,365	6579	10870	\$3,908
103.0	Irrigation Flow Meter	10	6/1/04	\$9,841	7109	10870	\$15,047
104.0	Groundwater Monitoring Wells	10	1/1/05	\$10,785	7297	10870	\$16,066
105.0	Paco Pumps	10	10/23/06	\$4,050	7883	10870	\$5,585
106.0	Outfall Permit & Design	50	1/5/07	\$51,378	7880	10870	\$70,873
107.0	NPDES Permit - 2011	5	7/1/11	\$60,189	9080	10870	\$72,054
108.0	DSP Facilities/Sprayfield Pipe	5	6/30/12	\$17,442	9291	10870	\$20,406
109.0	Dechlorination System	10	7/1/12	\$21,540	9324	10870	\$25,112
110.0	Outfall Bypass	25	8/24/14	\$28,914	9846	10870	\$31,921
111.0	Pump Rebuild	15	9/22/14	\$20,199	9870	10870	\$22,246
112.0	Softstart for Pump	15	9/17/14	\$8,545	9870	10870	\$9,411
113.0	Cla-Val Irrigation Pump	20	11/24/14	\$7,229	9912	10870	\$7,928
114.0	Sprayfield Pipes	5	6/30/17	\$5,965	10703	10870	\$6,058
115.0	MPS Pump Contoller - SCADA Power Fail Relay	10	6/30/17	\$1,188	10703	10870	\$1,207
178.0	Sigma Flow Meter - Analog Connections	10	6/30/17	\$2,072	10703	10870	\$2,104
	2015 Mixing Zone Study		2015	\$37,612	10035	10870	\$40,741
179.0	2017 Mixing Zone Study	5	6/30/17	\$13,234	10703	10870	\$13,440
181.0	NPDES Permit - 2016	5	6/30/17	\$10,345	10703	10870	\$10,506
190.0	Priority Pollutant Test	5	6/30/17	\$10,378	10703	10870	\$10,540
	Chronic and Acute Toxicity Tests		2017	\$7,361	10870	10870	\$7,361
	SCADA Monitoring Alarm System (2014-2017)		2017	\$122,348	10870	10870	\$122,348
	Sprayfield Access Road Improvements		2017	\$12,515	10870	10870	\$12,515
	ATI Chlorine & Sulfite Analyzers + Install		2017	\$21,657	10870	10870	\$21,657
© 24:	SEWAGE DISPOSAL FACILITY			\$1,407,744			\$2,001,075

© 25:	SUBSURFACE LINES						
116.0	Sewage Lines	99	1/19/71	\$72,801	1581	10870	\$500,536
117.0	Engineering	99	8/30/71	\$1,003	1581	10870	\$6,896
118.0	System (1972-1)	99	1/19/74	\$564,625	2020	10870	\$3,038,353
119.0	Tract #5 Sewer System (1974-1)	99	1/19/76	\$34,732	2401	10870	\$157,241
120.0	Lake Alpine Col Sys 1 Pump Station	99	1/1/76	\$502,742	2401	10870	\$2,276,054
121.0	Sewer Line	75	9/19/64	\$5,500	936	10870	\$63,873
122.0	Subsurface Lines	75	11/1/97	\$1,941	5838	10870	\$3,614
123.0	Sewer Lateral To Lot 1-7	75	12/1/01	\$3,978	6390	10870	\$6,767
124.0	Sewage Lines - Pain - Inst.	99	1/1/77	\$4,167	2576	10870	\$17,584
125.0	Sewer Lines Lissen Project	50	7/31/10	\$5,000	8844	10870	\$6,145
	ESRI ArcGIS - GIS System		2017	\$12,674	10870	10870	\$12,674
	NexGen AMS - Asset Management System		2017	\$13,888	10870	10870	\$13,888
	US Jetter Model 4018-75		2017	\$59,272	10870	10870	\$59,272
© 25:	SUBSURFACE LINES 12 Asset(s)			\$1,282,323			\$6,162,897

<u>Set No.</u>	<u>Asset Description</u>	<u>Life</u>	<u>Date Purchased</u>	<u>Original Cost</u>	<u>Date Constructed</u> <u>ENR Construction</u> <u>Cost Index</u>	<u>Dec. 2017</u> <u>ENR Construction</u> <u>Cost Index</u>	<u>Adjusted</u> <u>Dec 2017 Cost</u>
© 26:	TREATMENT FACILITY						
127.0	Treatment Facility	40	1/19/71	\$27,918	1581	10870	\$191,947
128.0	Soil Test & Pollution Study	40	1/19/73	\$3,276	1895	10870	\$18,792
129.0	Treatment Plant & Disposal System	40	1/1/76	\$658,865	2401	10870	\$2,982,867
130.0	Spring Field Phase II	40	11/1/83	\$107,354	4066	10870	\$286,999
131.0	A Frame	40	9/1/83	\$2,669	4066	10870	\$7,135
132.0	Lake Alpine Col System & Pump Station	99	6/12/78	\$43,200	2776	10870	\$169,159
133.0	Pump, NSC	10	7/1/89	\$3,226	4615	10870	\$7,598
134.0	Comminutor	10	10/1/89	\$11,384	4615	10870	\$26,813
135.0	Pump	10	10/1/91	\$6,323	4892	10870	\$14,050
136.0	Comminutor	10	3/1/94	\$3,492	5381	10870	\$7,054
137.0	Truck	5	7/1/01	\$9,322	6404	10870	\$15,823
138.0	WWTF Sampling Equipment	10	1/1/04	\$1,388	6825	10870	\$2,211
139.0	Chlorine Safety Upgrades	5	11/1/05	\$4,405	7630	10870	\$6,276
140.0	Toshiba 30HP Air Compressor	10	9/5/06	\$1,329	7763	10870	\$1,861
141.0	2007 Chevy Truck	5	10/13/06	\$8,330	7883	10870	\$11,486
142.0	Chlorine Contact Tank Project	30	7/31/10	\$108,145	8844	10870	\$132,919
143.0	Chlorine Gas Detection System	10	10/1/13	\$5,420	9689	10870	\$6,081
144.0	Addn'l Chlorine Gas Dection System	10	11/22/13	\$490	9666	10870	\$551
145.0	Addn'l Chlorine Gas Dection System	10	1/13/14	\$308	9664	10870	\$346
146.0	D. O. Probe	10	9/1/14	\$10,101	9870	10870	\$11,124
147.0	Gardner Denver VFD Blower	15	12/9/14	\$41,437	9936	10870	\$45,332
148.0	TSS Probe	10	8/1/15	\$3,929	10039	10870	\$4,254
149.0	Lighteneing /Surge Protector - EH	25	11/30/15	\$3,315	10092	10870	\$3,571
150.0	Treatment Pond Dock	70	6/30/16	\$10,582	10337	10870	\$11,128
	(2) Paco 350 GPM Transfer Pumps + Install		2017	\$22,486	10870	10870	\$22,486
	Regal 100 PPD Chlorination System		2017	\$3,260	10870	10870	\$3,260

© 26:	TREATMENT FACILITY 56 Asset(s)			\$1,101,954			\$3,991,122
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GRAND TOTALS				\$4,641,381			\$13,605,417
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ADMIN FACILITIES				\$351,097			\$602,147
COLLECTION SYSTEM				\$1,282,323			\$6,162,897
LIFT STATIONS				\$498,264			\$848,175
TREATMENT FACILITY				\$1,101,954			\$3,991,122
DISPOSAL FACILITY				\$1,407,744			\$2,001,075
TOTAL				\$4,641,381			\$13,605,417

CURRENT EDUs:	650
ADDITIONAL EDUs:	1196
TOTAL:	1846

BUY IN FEE:	\$7,370
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