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MEMO

Date: August 15, 2022
To: East Alamosa Water and Sanitation District Board of Directors
From: Ricardo Goncalves, PE
Jordan Schneider, PE
Alex Wilde, EIT
RGA Job No. 1017.0010
RE: 2022 Lift Station Analysis (Revised 8/15/2022)

The purpose of this memorandum is to briefly analyze and recommend improvements for all the Lift Stations in the East Alamosa Water and Sanitation District (the District), except for Lift Stations 1 and 2, which have been previously rebuilt and are operating satisfactorily.

History

All of the District's lift stations were analyzed in 2013 in the *Water and Wastewater Preliminary Capital Improvement Plan* and updated in September of 2019. The result of the earlier plan led to the total reconstruction of Lift Stations #1 and #2 at a cost of \$382,645 for both. The 2019 report updated the cost and work efforts of remediating the remainder of the lift stations.

A development inquiry in 2019 for the development of some new apartment buildings led to the examination of whether there was sufficient capacity in the receiving lift station, LS #3, for the additional flows. While that development project did not plan out, there is renewed interest in said development and other developments, which has led to the need to answer the question of sufficient capacity in the rest of the lift stations. In addition, the District had budgeted a certain amount of funds for the purpose of upgrading the lift stations and was desirous of knowing the updated costs to upgrade the lift stations.

The two major questions then led to a two-part investigation of which this report is the summary. More simply put, this report will summarize first, the analysis of each lift station, its available capacity, existing flows from contributing areas, and the excess capacity available for new development. Secondly, it will analyze each of the lift stations for the needs and costs of upgrading them.

Lift Station Capacity Analysis

To analyze the capacity of each lift station, we first defined the contributing area to each lift station, then we counted all the existing users within that area. Next, we obtained the monthly and yearly operating records from the District, which conveyed run-hours for the pumps for each of the lift stations, from which we calculated the daily average flows and peak flows from each. Subtracting these flows from the lift stations' ultimate capacity then yields the amount of future development that each lift station can handle. We also calculated the contributing flows to each lift station into gallons per day/min per single family equivalent. The results of all these capacities and computations are shown below. We lastly examined the capacity of the receiving gravity sewer lines that each lift station discharges into to determine if there are any of these lines that are too small to accept the flows when both pumps are pumping.

LS #	Location	Max Month	Maximum Month Flow (gpm)	Peak Flow (gpm)	Pump Capacity (gpm)	Capacity (%)
1	Rio Grande Ave	February	92.1	368.4	675	54.6%
2	160 & Inn of Rio Grande	June	40.7	162.7	275	59.2%
3	McKinney & McQuerry	November	7.1	28.5	130	21.9%
4	Sunnyside Lane	July	5.7	22.8	90	25.4%
5	Blanca Vista Lane	October	45.2	180.7	275	65.7%
6	Rodeo Lane	December	17.2	69.0	75	91.9%
7	Adams Lane	July	9.2	36.9	50	73.9%
8	Brush Lane	January	0.6	2.3	30	7.6%
9	Price Avenue	November	8.7	35.0	125	28.0%

1. Lift Station Pump Hours provided by EAWSD via City of Alamosa for July 2021 - June 2022

2. Metcalf & Eddy, 4th Edition

Table 1 – Existing Lift Stations Pump Capacities

Constants			Known Additions				Known Future Conditions			
LS #	Location	Max Month	Unit Type	No. of Units	Flowrate(2) (gal/unit*day)	Total Flow (gpm)	Maximum Month Flow (gpm)	Peak Flow (gpm)	Pump Capacity (gpm)	Capacity (%)
1	Rio Grande Ave	February					92.1	368.4	675	54.6%
2	160 & Inn of Rio Grande	June					40.7	162.7	275	59.2%
3	McKinney & McQuerry	November	Apartment	32	120	2.67	9.8	39.2	130	30.1%
4	Sunnyside Lane	July					5.7	22.8	90	25.4%
5	Blanca Vista Lane	October					45.2	180.7	275	65.7%
6	Rodeo Lane	December					17.2	69.0	75	91.9%
7	Adams Lane	July					9.2	36.9	50	73.9%
8	Brush Lane	January					0.6	2.3	30	7.6%
9	Price Avenue	November					8.7	35.0	125	28.0%

Table 2 – Lift Station Capacities with Known Future Developments

Constants			Allowable Future Capacity	
LS #	Location	Max Month	Available Capacity (%)	Equivalent Single Family Residential Units
1	Rio Grande Ave	February	45%	547
2	160 & Inn of Rio Grande	June	41%	201
3	McKinney & McQuerry	November	70%	162
4	Sunnyside Lane	July	75%	120
5	Blanca Vista Lane	October	34%	168
6	Rodeo Lane	December	8%	11
7	Adams Lane	July	26%	23
8	Brush Lane	January	92%	49
9	Price Avenue	November	72%	161

Table 3 – Lift Stations Allowable Future Capacities

Lift Station Upgrade Analysis

The first step in determining the needs for upgrading of the lift stations was to obtain the operating records from each to examine what issues had arisen since the upgrade and cost summaries that had been prepared in 2019. After this examination, it became apparent that no new upgrades were necessary from what had been outlined in 2019.

When this revelation was made to the District, we were informed by the District's operator and the City of Alamosa crew that those reports do not "tell the complete story". To get detailed information on this, we then met with the operator, City crew, and the District's Manager on July 14, 2022. The concerns of the operator and crew was that for safety, access, reliability and reasonable modern facilitation of the lift stations, in any of the upgrades identified and priced in 2019 would be essentially wasted funds, as each of the lift stations needed to be completely replaced. Recognizing that this would have to be a staged process, due to the cost, we obtained from the operating crew and what order of priority they would rank each of the lift stations in terms of need for replacement. That ranking was from highest priority to lowest; #3, #6, #5, #4, #8, #9, and #7.

Given that the District does not have, or intend to acquire, sufficient funds to replace all the lift stations, but that the funds along with possible grants could be sufficient to replace the highest priority, Lift Station #3, and possibly Lift Station #6, we therefore did not attempt to provide replacement costs for all the rest of the lift stations but rather concentrated on Lift Stations #3 and #6.

Lift Station #3

Lift Station No. 3, also known as the McKinney and McQuery Lift Station, was rehabilitated in 1995 and consists of a precast concrete wet well, two submersible non-clog pumps (Barnes Model No. 4SE1926L), and a pump control panel. The lift station picks up flows from Lift Station No. 4 directly to the north and residential gravity flows from the Lift Station #3 Contributing Area. It then discharges into a manhole through a 4-inch diameter force main approximately 40 ft. to the south. A 6-inch diameter gravity sanitary line comes out of that manhole to the south and flows towards the manhole at Lift Station #2, bypassing Lift Station #9. The EAWSD Lift Stations Contributing Areas Exhibit is attached to this Report.

Lift Station #3 is the most maintenance-intensive lift station in the District, with maintenance required every two weeks. This lift station overflows because the 6-inch gravity line from the downstream manhole is too small to handle the pumping of both pumps simultaneously, and in turn, the volume of the vault cannot withstand the system's backlog. When pulled, both pumps must be disassembled, cleaned, un-clogged, reassembled, and reset on the rails before being lowered back into service. For operators to remove the pumps, the rails have to be disconnected and rotated so the pumps can fit through the access hatch.

The location of Lift Station #3 is also a concern because it is in the middle of an intersection and does not have a traffic-rated access hatch. This continual maintenance caused by the overflowing of the lift station needs traffic control and creates unnecessary upkeep for the District. In addition to the regular maintenance issues caused by the overflowing of the lift station, other issues have been reported by the District's maintenance personnel, including deteriorated and rusted pump rails which complicate raising the pumps, the shallow depth, and the narrow diameter of the wet well, which does not permit the required storage capacity.

Currently, Lift Station # 3 does not require an increase in pumping capacity. However, the existing wet well does not have adequate storage to provide for one hour of peak flow, as required by *Colorado Design Criteria for Domestic Wastewater Treatment Works*. In addition, the sanitary sewer main directly downstream from Lift Station #3 needs to be upsized from 6 inches to 8 inches to handle flows from both pumps, simultaneously. The requirement of additional overflow storage will require a Site Application Amendment through CDPHE. The lift station service area, and that of the upstream lift station, is mostly built out. If the proposed apartment complex of 32 multi-family units is constructed, the flow from the service area will not drastically change the peak inflows or require additional pumping capacity than what is currently available from the two pumps in Lift Station #3.

The work-plan for Lift Station #3 is then to relocate and replace it, by constructing a new lift station with new pumps, rails, chains, floats, wet well, and control panel, and increasing the diameter of all downstream gravity lines to handle the simultaneous pumping of both pumps. We also recommend relocating the lift station to the south and out of the intersection, between the existing Lift Station #3 wet well and the existing downstream manhole.

The basis for installing a larger pipe in the downstream manhole is such that the inlet head at the pipe entrance does not allow the manhole to build up above the rim of the manhole when both pumps are pumping at the same time. Our recommendations for replacing Lift Station #3 consist of flow-filling the existing wet well and converting it to a manhole that will collect all flows from the Lift Station #3 Contributing Area and convey them to a new, 6-foot diameter precast concrete wet well with adequate depth to maintain desirable pump-run times and an additional manhole to provide overflow storage. Additionally, we recommend installation of a 30-inch by 48-inch traffic-rated access hatch for easier system maintenance, two (2) new pumps and all ancillary equipment including rails, chains, and floats, and a new control panel installed adjacent to the lift station. Lastly, we recommend the pipes downstream from the new lift station be replaced with 8-inch SDR35 PVC pipe. The cost for the recommended improvements to Lift Station #3 are shown below.

EAST ALAMOSA WATER & SANITATION DISTRICT
Lift Station No. 3 Replacement

Estimate: August, 2022

RGA Job No.: 1017.0010

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
Lift Station Material					
1	Pumps, Rails, Chains, Floats and Control Panel (Installed)	1	LS	\$ 68,750	\$ 68,750
2	6' Diameter Precast Concrete Wet Well (15' Depth)	1	EA	\$ 11,875	\$ 11,875
3	6' Diameter Precast Concrete Overflow Manhole (15' Depth)	1	EA	\$ 11,875	\$ 11,875
4	Bilco Type JD 4.5' X 4.5' Double Leaf Access Hatch (Wet Well)	1	EA	\$ 6,250	\$ 6,250
5	Bilco Type J 2.5' X 3' Single Leaf Access Hatch (Valve Vault)	1	EA	\$ 5,000	\$ 5,000
6	4" Val-Matic Swing-Flex Check Valve (FLG)	2	EA	\$ 1,250	\$ 2,500
7	4" Val-Matic Plug Valve (FLG)	3	EA	\$ 1,000	\$ 3,000
8	4" Smith Blair Coupling	3	EA	\$ 906	\$ 2,719
9	4" 90° D.I. FLG Bend	4	EA	\$ 313	\$ 1,250
10	4" X 4" X 4" D.I. FLG Side Flow Tee	1	EA	\$ 2,250	\$ 2,250
11	4" SS FLG to Camlock Fitting & Dust Cover	1	EA	\$ 1,000	\$ 1,000
12	Vent Pipe	2	EA	\$ 3,125	\$ 6,250
13	8" DIA SDR 35 PVC Pipe	32	LF	\$ 88	\$ 2,800
14	8" DIA SDR 35 PVC Overflow Pipe	5	LF	\$ 88	\$ 438
15	4" DIA Ductile Iron Force Main	10	LF	\$ 75	\$ 750
16	4" DIA C900 Force Main	20	LF	\$ 75	\$ 1,500
17	4" M.J. Gate Valve and Box	1	EA	\$ 2,500	\$ 2,500
18	Temporary Sewer Pipe Connection to Proposed Lift Station	1	LS	\$ 625	\$ 625
19	Valve Vault Interior Pipe Painting	1	LS	\$ 3,125	\$ 3,125
20	Dewatering	5	DAY	\$ 1,500	\$ 7,500
21	Remove 6" DIA VCP Pipe and Replace with 8" DIA SDR 35 PVC Pipe	320	LF	\$ 100	\$ 32,000
Lift Station Material Subtotal					\$ 173,956
Additional Contractor Costs					
22	Contractor Bonding and Insurance (1.5% of Material)	1	LS	\$ 2,609	\$ 2,609
23	Mobilization / Demobilization / Site Restoration (10% of Material)	1	LS	\$ 17,396	\$ 17,396
24	Construction Survey (2.0% of Material)	1	LS	\$ 3,479	\$ 3,479
25	Erosion Control (0.5% of Material)	1	LS	\$ 870	\$ 870
Additional Contractor Costs Subtotal					\$ 24,354
CONSTRUCTION TOTAL					\$ 198,310
Design & Construction Management					
26	Design Survey and Geotechnical Analysis	1	LS	\$ 6,250	\$ 6,250
27	Engineering Design, Permitting and Bidding Services (15% of Construction Total)	1	LS	\$ 29,747	\$ 29,747
28	Construction management (10% of Construction Total)	1	LS	\$ 39,662	\$ 39,662
Design & Construction Management Total					\$ 75,659
DESIGN & CONSTRUCTION TOTAL					\$ 273,969
29	Contingency (20% of Design & Construction Total)	1	LS	\$ 54,794	\$ 54,793.73
ESTIMATED TOTAL PROJECT COST					\$ 328,762

Table 4 – Lift Station #3 Replacement Cost Estimate

Lift Station #6

Lift Station #6, also known as the Rodeo Lift Station, was rehabilitated in 1995 and consists of a precast concrete wet well, two submersible non-clog pumps (Barnes Model No. 4SE1946L), and a pump control panel. The lift station picks up residential gravity flows from the Lift Station #6 Contributing Area. It then discharges into a manhole through a 4-inch diameter force main approximately 925 ft. to the west. A 6-inch diameter gravity sanitary line comes out of that manhole to the west and flows through three additional manholes along Santa Fe Avenue (Highway 160) before flowing into Lift Station # 5. The EAWSD Lift Stations Contributing Areas Exhibit is attached to this Report.

Lift Station #6 is the second most maintenance-intensive lift station in the District, with maintenance required every two weeks. This lift station is very close to capacity at about 92%. The downstream gravity line has a reverse grade, so the pipe doesn't alleviate flow until it becomes full. The upstream gravity-feed sanitary sewer lines also have substantial root intrusion, which restricts flows out of the upstream manholes, causing them to overflow. When pulled, both pumps must be disassembled, cleaned, un-clogged, reassembled, and reset on the rails before being lowered back into service. The pumps need to be rewired with longer wires as they tend to get in the way during maintenance. The City operators have also stated that the two pumps in the lift station are also different sizes. This continual maintenance caused by the reverse sloping of the downstream pipe and the near capacity of the lift station creates unnecessary upkeep for the District.

In addition to the regular maintenance issues caused by the overflowing of Lift Station #6, other issues have been reported by the District's maintenance personnel. These issues include deteriorated and rusted pump rails which complicate raising the pumps, the necessity of traffic control during the maintenance procedure, and the depth of the wet well being too shallow.

Lift Station #6 will require an increase in pumping capacity as well as the addition of storage volume. The lift station service area has been developed along Femmer Road, with a mobile home park off Wild Acres Lane. If there is more expansion of the Lift Station #6 Contributing Area to the south of Santa Fe Avenue (Highway 160), contributing flows to Lift Station #6 may exceed its current capacity of 75 gallons per minute (GPM). The requirement of additional overflow storage will require a Site Application Amendment through CDPHE.

The work-plan for Lift Station #6 is then to relocate and replace it by constructing a new lift station with larger pumps, rails, chains, floats, wet well, and control panel, and to increase the diameter of the gravity lines upstream and replace the line with a reverse grade.

Our recommendations for improvements to Lift Station #6 consist of the installation of an upstream manhole that will combine all influent sanitary sewer flows before flowing into a new 6-foot diameter precast concrete wet well. If possible, the existing wet well could be utilized for this purpose. It is recommended that two (2) new, larger pumps be installed with all ancillary equipment, including rails, chains, and floats. These pumps will provide more overflow storage volume for the flows into the lift station. A 30-inch by 48-inch traffic-rated access hatch for easier system maintenance and a new control panel adjacent to the lift station are also include in this recommendation. We recommend that the wet well be constructed to an adequate depth to maintain desirable pump-run times, and that the pipes upstream be corrected and upsized. The cost for the recommended improvements to Lift Station #6 are shown below.

EAST ALAMOSA WATER & SANITATION DISTRICT
Lift Station No. 6 Replacement

Estimate: August, 2022

RGA Job No.: 1017.0010

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
Lift Station Material					
1	Pumps, Rails, Chains, Floats and Control Panel (Installed)	1	LS	\$ 68,750	\$ 68,750
2	6' Diameter Precast Concrete Wet Well (15' Depth)	1	EA	\$ 11,875	\$ 11,875
3	6' Diameter Precast Concrete Overflow Manhole (15' Depth)	1	EA	\$ 11,875	\$ 11,875
4	Bilco Type JD 4.5' X 4.5' Double Leaf Access Hatch (Wet Well)	1	EA	\$ 6,250	\$ 6,250
5	Bilco Type J 2.5' X 3' Single Leaf Access Hatch (Valve Vault)	1	EA	\$ 5,000	\$ 5,000
6	4" Val-Matic Swing-Flex Check Valve (FLG)	2	EA	\$ 1,250	\$ 2,500
7	4" Val-Matic Plug Valve (FLG)	3	EA	\$ 1,000	\$ 3,000
8	4" Smith Blair Coupling	3	EA	\$ 906	\$ 2,719
9	4" 90° D.I. FLG Bend	4	EA	\$ 313	\$ 1,250
10	4" X 4" X 4" D.I. FLG Side Flow Tee	1	EA	\$ 2,250	\$ 2,250
11	4" SS FLG to Camlock Fitting & Dust Cover	1	EA	\$ 1,000	\$ 1,000
12	Vent Pipe	2	EA	\$ 3,125	\$ 6,250
13	8" DIA SDR 35 PVC Pipe	190	LF	\$ 88	\$ 16,625
14	8" DIA SDR 35 PVC Overflow Pipe	5	LF	\$ 88	\$ 438
15	4" DIA Ductile Iron Force Main	15	LF	\$ 75	\$ 1,125
16	4" DIA C900 Force Main	20	LF	\$ 75	\$ 1,500
17	4" M.J. Gate Valve and Box	1	EA	\$ 2,500	\$ 2,500
18	Connect to Existing Force Main	1	LS	\$ 625	\$ 625
19	Temporary Sewer Pipe Connection to Proposed Lift Station	1	LS	\$ 625	\$ 625
20	Valve Vault Interior Pipe Painting	1	LS	\$ 3,125	\$ 3,125
21	Dewatering	5	DAY	\$ 1,500	\$ 7,500
Lift Station Material Subtotal					\$ 156,781
Additional Contractor Costs					
22	Contractor Bonding and Insurance (1.5% of Material)	1	LS	\$ 2,352	\$ 2,352
23	Mobilization / Demobilization / Site Restoration (10% of Material)	1	LS	\$ 15,678	\$ 15,678
24	Construction Survey (2.0% of Material)	1	LS	\$ 3,136	\$ 3,136
25	Erosion Control (0.5% of Material)	1	LS	\$ 784	\$ 784
Additional Contractor Costs Subtotal					\$ 21,949
CONSTRUCTION TOTAL					\$ 178,731
Design & Construction Management					
26	Design Survey and Geotechnical Analysis	1	LS	\$ 6,250	\$ 6,250
27	Engineering Design, Permitting and Bidding Services (15% of Construction Total)	1	LS	\$ 26,810	\$ 26,810
28	Construction management (10% of Construction Total)	1	LS	\$ 17,873	\$ 17,873
Design & Construction Management Total					\$ 50,933
DESIGN & CONSTRUCTION TOTAL					\$ 229,663
29	Contingency (20% of Design & Construction Total)	1	LS	\$ 45,933	\$ 45,932.66
ESTIMATED TOTAL PROJECT COST					\$ 275,596

Table 5 – Lift Station #6 Replacement Cost Estimate

Lift Stations #5, #4, #8, #9, and #7

Replacement for these lift stations hasn't been priced specifically for each individual lift station, but rather we have taken the Lift Station #6 Replacement cost and multiplied the quantities by 5, one for each lift station. Those upgrades and costs are shown below.

EAST ALAMOSA WATER & SANITATION DISTRICT					
Lift Stations No. 5, 4, 8, 9, & 7 Replacement					
Estimate: August, 2022				RGA Job No.: 1017.0010	
ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
Lift Station Material					
1	Pumps, Rails, Chains, Floats and Control Panel (Installed)	5	LS	\$ 68,750	\$ 343,750
2	6' Diameter Precast Concrete Wet Well (15' Depth)	5	EA	\$ 11,875	\$ 59,375
3	6' Diameter Precast Concrete Overflow Manhole (15' Depth)	5	EA	\$ 11,875	\$ 59,375
4	Bilco Type JD 4.5' X 4.5' Double Leaf Access Hatch (Wet Well)	5	EA	\$ 6,250	\$ 31,250
5	Bilco Type J 2.5' X 3' Single Leaf Access Hatch (Valve Vault)	5	EA	\$ 5,000	\$ 25,000
6	4" Val-Matic Swing-Flex Check Valve (FLG)	10	EA	\$ 1,250	\$ 12,500
7	4" Val-Matic Plug Valve (FLG)	15	EA	\$ 1,000	\$ 15,000
8	4" Smith Blair Coupling	15	EA	\$ 906	\$ 13,594
9	4" 90° D.I. FLG Bend	20	EA	\$ 313	\$ 6,250
10	4" X 4" X 4" D.I. FLG Side Flow Tee	5	EA	\$ 2,250	\$ 11,250
11	4" SS FLG to Camlock Fitting & Dust Cover	5	EA	\$ 1,000	\$ 5,000
12	Vent Pipe	10	EA	\$ 3,125	\$ 31,250
13	8" DIA SDR 35 PVC Overflow Pipe	25	LF	\$ 88	\$ 2,188
14	4" DIA Ductile Iron Force Main	75	LF	\$ 75	\$ 5,625
15	4" DIA C900 Force Main	100	LF	\$ 75	\$ 7,500
16	4" M.J. Gate Valve and Box	5	EA	\$ 2,500	\$ 12,500
17	Connect to Existing Force Main	5	LS	\$ 625	\$ 3,125
18	Temporary Sewer Pipe Connection to Proposed Lift Station	5	LS	\$ 625	\$ 3,125
19	Valve Vault Interior Pipe Painting	5	LS	\$ 3,125	\$ 15,625
20	Dewatering	25	DAY	\$ 1,500	\$ 37,500
Lift Station Material Subtotal					\$ 700,781
Additional Contractor Costs					
21	Contractor Bonding and Insurance (1.5% of Material)	1	LS	\$ 563	\$ 563
22	Mobilization / Demobilization / Site Restoration (10% of Material)	1	LS	\$ 3,750	\$ 3,750
23	Construction Survey (2.0% of Material)	1	LS	\$ 750	\$ 750
24	Erosion Control (0.5% of Material)	1	LS	\$ 188	\$ 188
Additional Contractor Costs Subtotal					\$ 5,250
CONSTRUCTION TOTAL					\$ 706,031
Design & Construction Management					
25	Design Survey and Geotechnical Analysis	5	LS	\$ 6,250	\$ 31,250
26	Engineering Design, Permitting and Bidding Services (15% of Construction Total)	1	LS	\$ 105,905	\$ 105,905
27	Construction management (10% of Construction Total)	1	LS	\$ 70,603	\$ 70,603
Design & Construction Management Total					\$ 207,758
DESIGN & CONSTRUCTION TOTAL					\$ 913,789
28	Contingency (20% of Design & Construction Total)	1	LS	\$ 182,758	\$ 182,757.81
ESTIMATED TOTAL PROJECT COST					\$ 1,096,547

Table 6 – Lift Station #5, 4, 8, 9, & 7 Replacement Cost Estimate

Summary of Lift Station Upgrades

The estimated costs for Lift Station #3, Lift Station #6, and Lift Stations #5, 4,8,9, &7 is summarized in the table below.

EAST ALAMOSA WATER & SANITATION DISTRICT	
District Lift Stations Replacement Cost	
Estimate: August, 2022	RGA Job No.: 1017.0010
ITEM	Cost
Lift Station #3	\$ 328,762
Lift Station #6	\$ 275,596
Lift Stations #5, 4, 8, 9, & 7	\$ 1,096,547
ESTIMATED SUBTOTAL	\$1,700,905.22

Table 7 – Summary of Costs to Replace District Lift Stations

Lift Station Design and Permitting Requirements

The recommended improvements for Lift Station #3 will not change the rated capacity of the lift station, however, because of the change in location, change in wet sell size, and the addition of an overflow manhole, a new Site Application will be required through CDPHE.

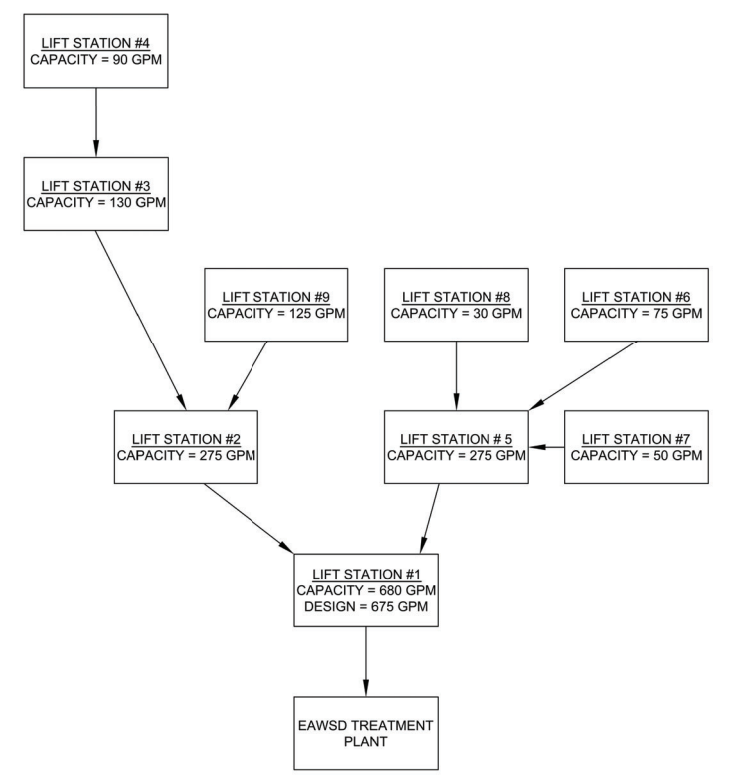
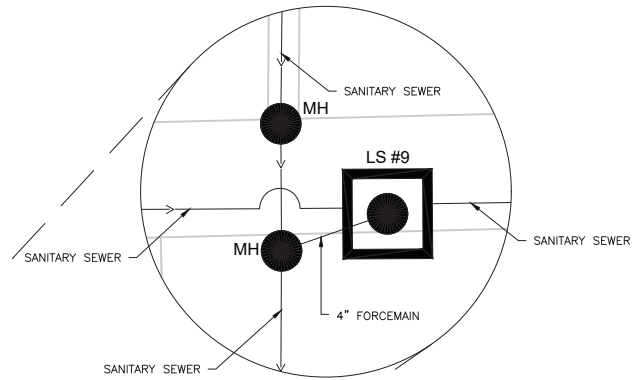
The recommended improvements for Lift Station #6 include the construction of a new lift station on the same site and adjacent to the existing lift station and will require the submittal and approval of a Site Application through CDPHE. This is required by CDPHE when modifications to an existing lift station (replacement/relocation on the same site, modifications to dry/wet well, etc.) occur.

A Site Application is required for all lift stations over 2,000 GPD. After a Site Application has been granted, further modifications require a Site Application Modification. The CDPHE submittal requirements for construction approval of a sanitary sewer lift station are as follows:

- Site Application Modification (CDPHE Review Goal: 60 Days)
 - Pay Review Fee to CDPHE
 - Complete and Submit Engineering Report
 - Complete and Submit Site Application Form
 - Complete and Submit 30% Concept Plans
- Final Design Plans and Specifications (CDPHE Review Goal: 45 Days)
 - Pay Review Fee to CDPHE
 - Basis of Design Report
 - 100% Plans and Specifications

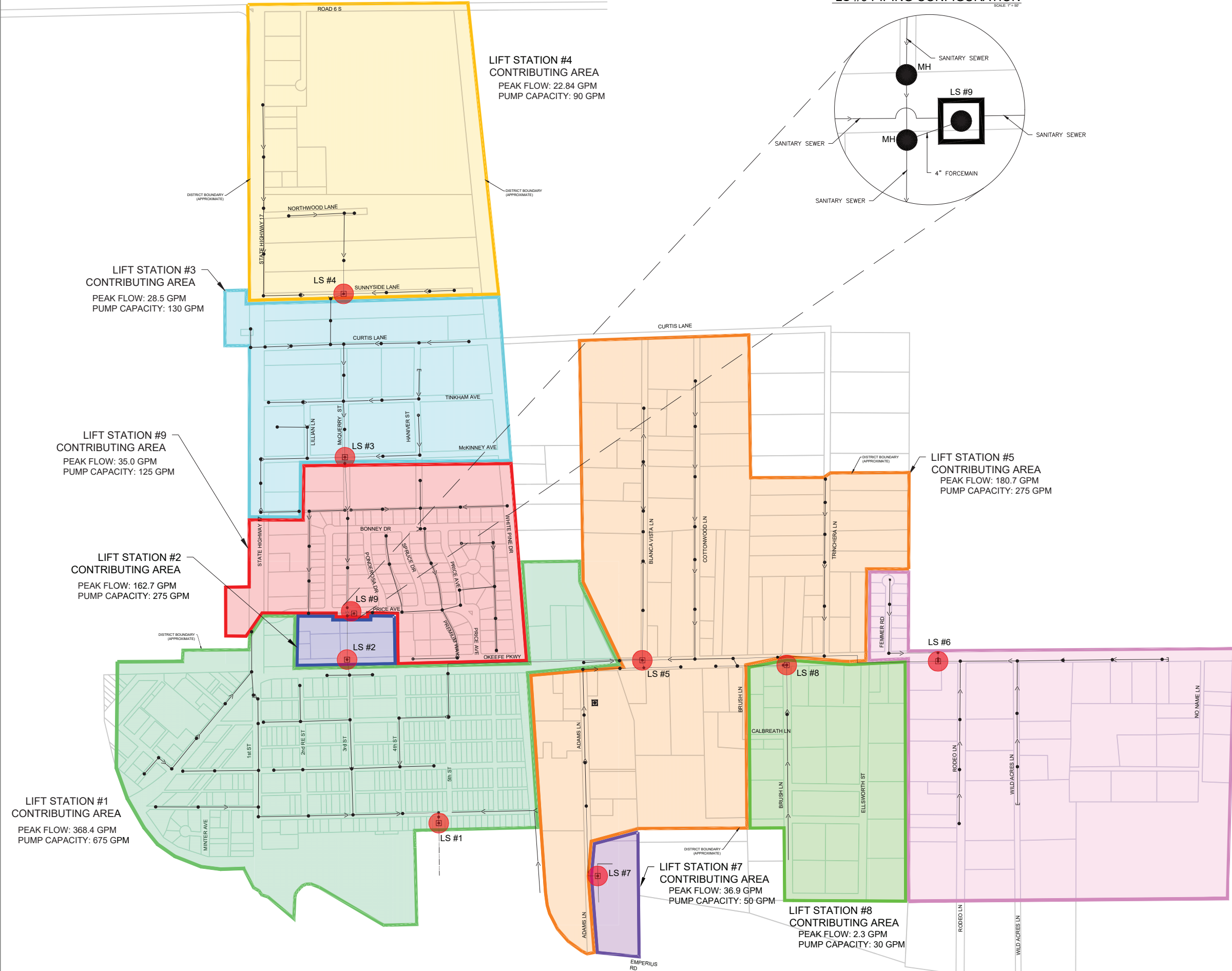
Fees associated with CDPHE permitting and approval are included in the estimated costs shown above. The Site Application submittal requirements are defined in more detail in Regulation 22 and the Regulation 22 Guidance Document.

LS #9 PIPING CONFIGURATION
SCALE: 1" = 50'

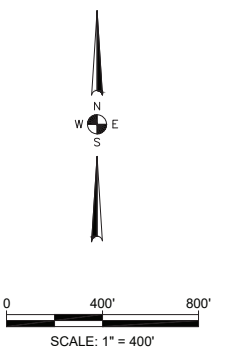


EAWS LIFT STATIONS FLOW DIAGRAM
SCALE: 1" = 50'

LIFT STATION REPLACEMENT PRIORITIES		
PRIORITY	LIFT STATION #	LOCATION
1	3	MCKINNEY & MCQUERY
2	6	RODEO LANE
3	5	BLANCA VISTA LANE
4	4	SUNNY SIDE LANE
5	8	BRUSH LANE
6	9	PRICE AVENUE
7	7	ADAMS LANE



LIFT STATION #6 CONTRIBUTING AREA
PEAK FLOW: 69.0 GPM
PUMP CAPACITY: 75 GPM



EAST ALAMOSA WATER AND SANITATION DISTRICT
2022 LIFT STATION ANALYSIS

RG AND ASSOCIATES, LLC
4885 Ward Road, Suite 100 • Wheat Ridge, CO • 80033
303-293-8107 • 303-293-8106 (fax) • www.rgengineers.com

LIFT STATIONS - CONTRIBUTING AREAS	
JOB NUMBER:	1017.0010
DATE:	AUGUST 2022
SCALE:	1" = 400'
SHEET NO.:	1 of 1