

EXHIBIT A

Lift Station Operation, Maintenance and Replacement Cost Estimate

Summit Valley / Bellatona / East Ridge / Stone Lake / Sienna Springs / Terra Verde / Turtle Crossing

Proposed Lift Station Sewer Service Area including expected number and type of residential units as well as the number of acres of other zoning classifications such as commercial, institutional, industrial, etc. If applicable, a phasing plan shall be submitted. Calculate estimated population equivalent to be served by the lift station (include total population and breakout by phases, if applicable). Estimated average daily wastewater flow (ADF) in gallons per day (GPD) and peak hourly flow in GPD utilizing generally accepted standards for per capita ADF or other data acceptable to the City of Norman.							
	Summit Valley (1006 Bellatona (692))	Sum. Valley & Bellatona Commercial	Sienna Springs (50) Stone Lake	Eastridge Duplex and Residential (42)	Turtle Crossing	Terra Verde	
	<u>Lots</u>	<u>Acres</u>	<u>Lots</u>	<u>Lots</u>	<u>Lots</u>	<u>Students</u>	<u>Total</u>
	1698	14.59	92	45 & 532	43	156	
Population Equivalent Per Category	2.55	5	2.55	5.1 & 2.55	2.55	0.1	
Estimated Population	4,330	73	235	1,587	110	16	6,335
Per Capita average daily wastewater flow (ADF)	100	100	100	100	100	100	
Estimated average daily wastewater flow (ADF) in gallons per day	433,000	7,300	23,500	158,700	11,000	1,600	635,100
Estimated peak hourly flow in GPD	1,732,000	29,200	94,000	634,800	44,000	6,400	2,540,400
Peaking Factor	4.0						
Drawings showing the location of the proposed lift station, force main and access roadways. Include sufficient data to allow the pump static head to be determined).							
The Engineering Report provided by the developer will include sufficient information to allow the City of Norman to calculate the approximate cost to operate, maintain and replace capital equipment for the life of the proposed lift station. This information shall include the following at a minimum: $HP = ((GPM) \times (TDH)) / ((3960) \times (0.50))$ where pump efficiency is assumed to be 50% (unless otherwise approved). Check if pump of estimated GPM and TDH is available; adjust HP as required.							
	<u>GPM</u>	<u>TDH</u>	<u>Efficiency</u>	<u>HP</u>			
	830	76	60%	25.00			
Estimate average annual electrical cost							
1. Pump time (hours per day) = ((ADF in GPD) x 24) / (1440 x (Pump Capacity in GPM))							
	<u>ADF</u>	<u>Pumping Capacity</u>	<u>Pumping Hours/day</u>				
	635,100	830	12.75				
2. kilowatt-hours (kWh) = (HP) x 0.746 x (pump time in hours per day) x 365							
	<u>HP</u>	<u>Pumping Hours/Day</u>	<u>Kwh Per Day</u>	<u>Kwh Per Year</u>			
	25.00	12.75	237.84	86,813			
3. Annual Electrical Cost = kWh per year x \$0.08 kWh							
	<u>Kwh Per Year</u>	<u>Cost per Kwh</u>	<u>Cost per Year</u>				
	86,813	0.08	\$6,945.04				
Estimate annual lift station and force main OM&R cost. Provide approximate cost for lift station and appurtenances. Include wetwell, pumps, discharge piping and valves, electrical controls, flow metering, force main quick-connect coupling, valve vault, fittings and valves, fencing, all weather access road, force main, air release valves and vaults, etc. Assume annual replacement cost is 5% of original construction cost. Annual OM&R Cost = 0.05 x Capital Cost							
	<u>Lift Station Cost</u>	<u>12" Force Mair Length</u>	<u>Force Main Per Foot</u>	<u>Force Main Cost</u>	<u>Total Cost</u>	<u>Annual Cost</u>	
	\$400,000.00	2,363	\$60.00	\$141,780.00	\$541,780.00	\$27,089.00	
Calculate Total Monthly OM&R Cost: Monthly OM&R Cost = (Annual Electrical Cost + Annual OM&R Cost) / 12							
	<u>Electrical Cost</u>	<u>OM&R Cost</u>	<u>Total Annual Cost</u>	<u>Total Monthly Cost</u>			
	\$6,945.04	\$27,089.00	\$34,034.04	\$2,836.17			
Calculate Lift Station Fee: The fee will be calculated on a residential lot basis as well as a per capita basis to accommodate other zoning classifications such as commercial, institutional, industrial, etc. $Monthly Per Capita Fee = ((Monthly OM\&R Cost) \times Per Capita ADF) / ((ADF) \times 30.417 \text{ days per month})$ Monthly Residential Fee = where the number of persons per household is the same as was assumed in the Engineering Report.							
	<u>Total Annual Monthly Cost</u>	<u>Monthly Cost Per Person</u>	<u>Monthly Cost Per Household</u>				
	\$2,836.17	\$0.448	\$1.142				
	Terra Verde School Gym =	\$6.98					