

**Exhibit A**  
**Lift Station Operation, Maintenance Replacement Cost Estimate**  
**for East Ridge Lift Station Serving**  
**Siena Springs, Stone Lake and Terra Verde School Gym**

The Engineering Report provided by the developer provided information to allow calculation the approximate cost to operate, maintain and replace capital equipment for the life of the proposed lift station.							
Proposed Lift Station Sewer Service Area: The table below includes the expected number of residential units as well as the number of acres of commercial, institutional and industrial. Based on this data, the estimated population equivalent to be served by the lift station is calculated. The estimated average daily wastewater flow (ADF) in gallons per day (GPD) and peak hourly flow in GPD then calculated utilizing standards for per capita ADF acceptable to the City of Norman.							
Note:	Siena Springs	Stone Lake	Terra Verde	Eastridge	Eastridge	Eastridge	
	Residential	Residential	Gym	Duplex	Residential	Future	
	<u>Lots</u>	<u>Lots</u>	<u>Students</u>	<u>Lots</u>	<u>Lots</u>	<u>Acres</u>	<u>Total</u>
	50	42	156	45	532	0	
Population Equivalent Per Category*	2.55	2.55	0.10	5.1	2.55	9.29	
Estimated Population	128	107	16	230	1,357	-	1,838
Per Capita average daily wastewater flow (ADF)	100	100	100	100	100	100	
Estimated ADF in gallons per day	12,800	10,700	1,600	23,000	135,700	-	183,800
Estimated peak hourly flow in GPD	51,200	42,800	6,400	92,000	542,800	-	735,200
Peaking Factor	4.0						
	*2010 Census data						
The engineering drawings provided the location of the lift station and force main to allow the approximate pumping head to be determined.							
HP = ((GPM) x (TDH)) / ((3960) x (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>			
	800	49	60%	16.50			
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>				
	183,800	800	3.83				
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>			
	16.50	3.83	47.13	17,202			
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>				
	17,202	\$0.08	\$1,376.15				
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>Force Main Length</u>	<u>Force Main Per Foot</u>	<u>Force Main Cost (8-inch)</u>	<u>Total Cost</u>	<u>Annual Cost</u>	
	\$330,000	850	\$40	\$34,000	\$364,000	\$18,200	
Calculate Total Monthly OM&R Cost: Monthly OM&R Cost = (Annual Electrical Cost + Annual OM&R Cost) / 12							
	<u>Electrical Cost</u>	<u>OM&amp;R Cost</u>	<u>Total Annual Cost</u>	<u>Total Monthly Cost</u>			
	\$1,376	\$18,200	\$19,576	\$1,631			
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) x Per Capita ADF) / ((ADF) x 30.417 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>				
	\$1,631.35	\$0.89	\$2.27				
Terra Verde School Gym = \$14.24							