

Lift Station Operation, Maintenance and Replacement Cost Estimate

Exhibit A									
Post Oak Lift Station									
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:									
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.									
	Parcel 1 The Links	Parcel 2A (Commercial)	Parcel 2B (Residential)	Parcel 3 (Industrial)	Parcel 4 (Mixed Use)	Parcel 5 (LDR)	Parcel 6 (LDR)	Parcel 7 (LDR)	Total
	Units	Acres	Units	Acres	Acres	Acres	Units	Acres	
	924	29.27	400	5.45	7.01	137.90	1	48.42	
Population Equivalent Per Category	1.60	14.38	1.60	10.00	14.38	8.89	2.54	8.89	
Estimated Population	1,478	421	640	54	101	1,226	3	430	4,354
Estimated average daily wastewater flow (ADF) in gallons per day using 125 gpcd	184,800	52,613	80,000	6,809	12,600	153,241	318	53,807	544,188
Estimated peak hourly flow in GPD	739,200	210,451	320,000	27,235	50,402	612,966	1,270	215,227	2,176,751
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).									
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.									
	GPM	TDH	Efficiency	HP					
	1000	120	50%	60.61					
Estimate average annual electrical cost									
1. Pump time (hours per day) = ((ADF in GPD) x 24) / (1440 x (Pump Capacity in GPM))									
	ADF	Pumping Capacity	Pumping Hours/day						
	544,188	1000	9.07						
2. kilowatt-hours (kWh) = (HP) x 0.746 x (pump time in hours per day) x 365									
	HP	Pumping Hours/Day	Kwh Per Day	Kwh Per Year					
	60.61	9.07	410.06	149,674					
3. Annual Electrical Cost = kWh per year x \$0.08 kWh									
	Kwh Per Year	Cost per Kwh	Cost per Year						
	149,674	\$0.08	\$11,973.89						
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									
	Lift Station	Force Main	12" Force Main	Force Main	Total	Annual			
	Cost	Length	Per Foot	Cost	Cost	Cost			
	\$580,484.00	9,350	\$36.00	\$336,600	\$917,084	\$45,854			
Calculate Total Monthly OM&R Cost: Monthly OM&R Cost = (Annual Electrical Cost + Annual OM&R Cost) / 12									
	Electrical	OM&R	Total Annual	Total Monthly					
	Cost	Cost	Cost	Cost					
	\$11,973.89	\$45,854.20	\$57,828.09	\$4,819.01					
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.									
	Total Annual	Monthly	Monthly	Monthly	Monthly				
	Monthly	Cost Per	Cost Per	Cost Per	Cost Per				
	Cost	Person	Household	Apartment	Business				
Original Agreement Rate	\$4,819.01	\$1.11	\$2.81	\$1.77	\$31.06				
Current Rate w/ Inflation (adj. 7/1/23)		\$1.69	\$4.29	\$2.70	\$47.42				