

LSC Southeast Corner Sump Pump
Jay Hanawalt 3/29/2018

Our current rain water drainage sump pump in the southeast corner of the park is, or is equivalent to, a Goulds WS1512D4 Submersible Sewage Pump. It is spec'd at 240 VAC, 1 Ph (phase), 1.5 HP (horsepower). It has a 4" dia. pipe flange output, and can handle up to 3" solids through it. It is spec'd to pump 225 gal/min at a 20' dynamic head. (Head is a measure [in feet of water] of the back-pressure on the pump due to the elevation the water must be lifted, and "dynamic" head adds the effects of the friction and restrictions of the water in the output pipe - lower head produces more water, higher head less water.) With the size of the area draining to the pump, the existing pump had demonstrated that it can remove the runoff of 1" of rain fall in about 3 hours. The current replacement cost of this pump (excluding taxes, shipping, and installation) is \$3,219 from Grainger, a national supply house.

Note: We recently increased the size of the pipe that is running from the pump to the ditch at the northeast corner outside the fence. This change lowered the dynamic head on the pump and allowed the pump to pump a bit more water per minute.

Our pump control panel and wiring is rated to handle up to a 3 HP, 240 VAC, 1Ph pump. Goulds offers a 3HP pump in the same series, the WS3012D4, that is identical to our existing pump except with a stronger motor and slightly larger diameter pump scroll, and with the same 4" dia output pipe flange so it would bolt in place of the existing pump. The current cost of this pump is \$3,711 (excluding taxes, shipping, and installation). This pump is spec'd at 440 gal/min at the same 20' head. The increased flow rate through the output pipe would have higher friction so the dynamic head will be increased somewhat.

The result is that a pump with almost twice the pumping capacity that could replace the existing pump with no changes to the piping or wiring, for not more than about \$5,000 total. This pump would remove the runoff from a 1" rainfall in 1.5 to 2 hours. Would it be worth the change? It would be up to the Board to decide.