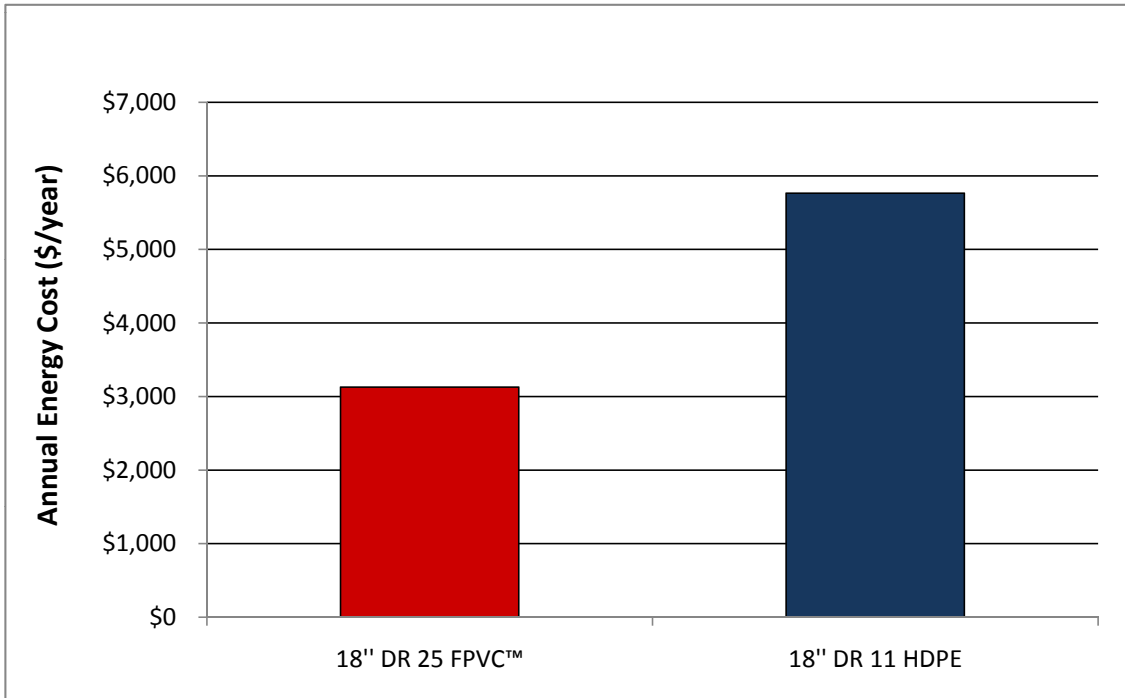


# Frictional Loss Energy Analysis



| Pipe Description | Total Flow Rate (MGD) | Total Head Loss (ft of H <sub>2</sub> O) | Pump Size (HP) | Energy Use (KWH/mo) | Energy Cost (\$/mo) | Annual Energy Cost (\$/yr) | Energy Cost Delta (\$/yr) |
|------------------|-----------------------|--|----------------|---------------------|---------------------|----------------------------|---------------------------|
| 18" DR 25 FPVC™  | 6.0                   | 4.0                                      | 4.2            | 3,236               | \$194               | \$3,128                    | -                         |
| 18" DR 11 HDPE   | 6.0                   | 7.3                                      | 7.7            | 5,963               | \$358               | \$5,764                    | \$2,636                   |

Assumptions:

1. Pump motor efficiency of 70%
2. Energy cost of \$0.06/KWH.
3. Demand cost of \$15/KW per month.
4. Pump operating time of 24 hours per day.
5. The annual energy costs shown are based on head loss only, and do not reflect actual pumping costs.