General Information

Information needed to properly select a pump:

- Voltage
- What is being pumped?
- How high do you have to pump vertically?
- How far do you have to pump horizontally?
- Type and size of pipe

Sizing a sewage pump: There are actually three ways to size a sewage pump. Each method will provide an estimate of peak flow conditions.

1. Fixture unit calculation This method uses the "Hunter Curves" for approximating water usage by a typical plumbing fixture. This is an acceptable way of estimating the pump flow requirement for residential and small commercial applications.
2. Larger capacity system chart This is a derivation of the fixture unit method. It takes into consideration that in a high density environment, a ratio of plumbing fixture use can be applied to approximate peak flows. This method can be utilized for structures such as motels, apartment complexes, trailer parks, large office buildings, etc.
3. Population method Method of calculating demand used by civil engineers when designing municipal sewage systems. A gallon-per-day usage pattern is established for each type of building structure. Then, a peak factor is applied, which is spread over a 24-hour period. This method is used for homes and other residences where sewage flows into a municipal sewage system. This method can only be used in those applications where a large basin is used.

Regardless of what your peak flow requirement is for a given application, the pump must always be able to provide a minimum velocity of 2 feet per second through the line. Line sizes, with their accompanied minimum flow rates, are as follows:

1.25" - 9 GPM	3" - 46 GPM	8" - 320 GPM
1.5" - 13 GPM	4" - 78 GPM	10" - 500 GPM
2" - 21 GPM	6" - 180 GPM	

Other factors concerning pump selection:

1. Total dynamic head (TDH) in feet is the total resistance in the piping network which you are pumping against. Do not select a pump if the TDH is less than the minimum point shown on its curve.
2. The pump selected must be capable of pumping to the highest vertical point in the system.
3. Do not under-size the basin. If possible, always select a pump and basin assembly which will allow for at least a 30-second pump cycle and no more than 6 starts per hour.

4. Air can interfere with the pump's ability to work. Always drill a vent hole in the discharge line between the pump and check valve. In long horizontal runs of pipe, air relief valves may be required.