



## Sump Pumps

Sump pump systems are designed to capture surface or ground water that enters basements or crawl spaces and pump it away from the house. The basic sump system includes an exterior (and optional interior) perimeter drain system, a sump pit, a sump pump with a float or switch and a drain line. The sump pit extends below the floor slab and collects surface water that enters the basement/crawl space or ground water that rises to the slab.

Most Chaska homes and businesses are built on heavy clay soils that do not allow for water infiltration. For that reason, most buildings have a sump pump system to direct the water collected from the soil around the building outside to their yard or city street. The trouble comes when a flexible hose from the sump pump discharges, what other wise is known as clear-water, to a laundry tub or basement floor drain; this is called a cross connection. Wastewater that goes down drains in your house lead to the City's sanitary sewer system and eventually ends up at a wastewater treatment plant, where it is treated before being released back into the environment.

Discharging sump pump water, into a sanitary sewer system is illegal and can seriously overload the system. During March through October clear water increases the flow through the system one to two times the usual amount, primarily because of cross connections. During heavy rainstorms there have been peak events of 3 to 4 times the normal flow. The Metropolitan Council reports that a sump pump can contribute 7200 gallons of clear-water to the wastewater system in 24 hours, the equivalent of the normal flow from 26 houses. Sanitary sewer rates are based on the number of gallons that flow through the cities sanitary sewer collection system and into the Metropolitan Council Environmental Service (MCES) wastewater treatment facilities. Chaska pays a significant surcharge to treat clear-water and is reflected in the sewer bill of every Chaska resident.

Unchecked clear-water inflow and infiltration (termed I & I) can quickly consume the sewer system's capacity and ultimately be overwhelmed, causing among other things, sewer back-ups into houses. The system can eventually overflow from manholes causing flooding of raw sewage into the environment. This creates health and safety issues that would have significant costs associated with it.

Over the last several years Chaska's Utility Inspector has inspected about 99% of the homes in Chaska. About 5% of those home's sump pump systems were determined to be plumbed incorrectly. Those home owners were given 3 months to repair their systems. The clear-water I & I into our sanitary sewer system has been reduced significantly there by: reducing the cost of sewage treatment, maintenance of the wastewater treatment plant equipment, and postponing plant expansion projects.

Chaska Code of Ordinance Chapter 19, Article IV, section 63 & 64, amendment #801

<http://www.metrocouncil.org/environment/projectteams/documents/InflowInfiltrationFacts.pdf>