Stormwater Best Management Practices

Private Lift Stations and Sanitary Sewer Overflows

Help protect our valley's water supply

What is a Lift Station?

A lift station is an underground facility containing submersible pumps, designed to pump (or lift) wastewater from a lower elevation to a sewer line at a higher elevation (Fig. 1).

Lift stations are installed at points along the sewer system where the gradient does not allow for natural gravity flow. While public lift stations are maintained by public utilities, maintenance of private lift stations is the responsibility of the property owner. Private lift stations are common in apartment/housing complexes and commercial plazas, and require regular maintenance.

Lift stations are facilities with many auxiliary systems that require routine preventative maintenance to ensure normal functioning and to identify potential problems. A well-planned maintenance program prevents unnecessary equipment wear and downtime. Components that are susceptible to failure, includes pumps, floats, check valves, alarm systems, and control panels. Lack of maintenance will lead to equipment failure that can result in a sanitary sewer overflow.

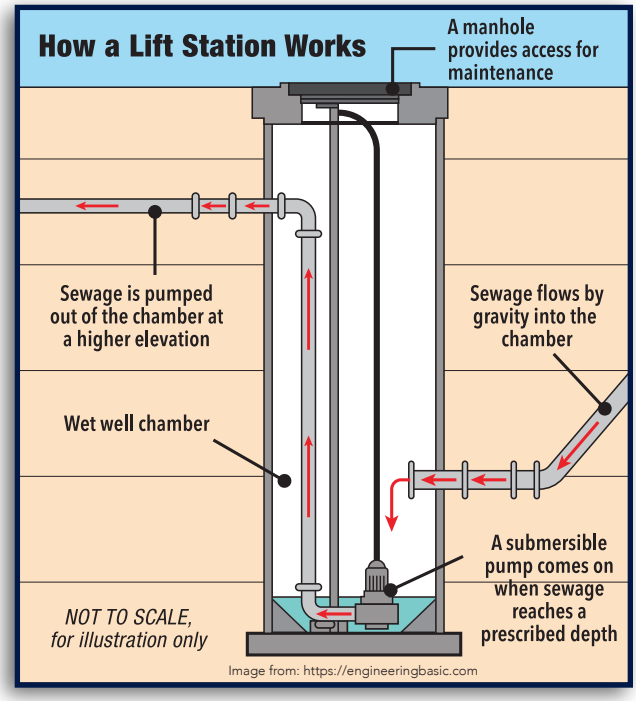

Fig. 1: A schematic illustrating the operation of a wet-well lift station. Once the well is full, a pump "lifts" the wastewater upwards using a pressurized force main pump. The water enters the sewer pipe on the left and continues its journey by gravity to the wastewater treatment plant.

Fig. 2: Raw sewage, pieces of toilet paper, and other solids spilling out of a clean-out. The raw sewage and solids brought to the surface contaminate roads, streets, and Lake Mead.

What are Sanitary Sewer Overflows?

A sanitary sewer overflow (SSO) is any spill, release, or discharge of untreated wastewater from the sanitary sewer system to the storm drain system. When the flow of wastewater is obstructed in the sewer system, it backs up and can surface through a lift station, manhole, or clean-out (Fig. 2). A common culprit of SSOs is flushable wipes, which do not break down in the sewer system, leading to blocked pipes, clogged pumps, and damaged lift stations.

Once in the storm drain system, the wastewater enters the Las Vegas Wash as it flows to Lake Mead without treatment (Fig. 3). Lake Mead is the Valley's primary source of drinking water. Key concerns with SSOs are the impacts on human health and on water quality, which include harm to aquatic wildlife and contamination of waterways.

Private Lift Station Maintenance

Sewage overflows are an indication that the system needs repairs, upgrades, or expanded capacity. Follow these 10 recommendations to help reduce the occurrence of SSOs:

1. Pump out and clean wet-well lift stations a minimum of twice a year, or more often if necessary, to prevent solids and grease build-ups.
2. Inspect submersible pumps and impellers quarterly.
3. Inspect check valves semi-annually.
4. Clean and inspect floats quarterly to ensure proper performance.
5. Test the alarm system weekly to ensure proper electronic notifications and warning lights are working properly.
6. Install monitoring equipment on the pump motors to facilitate preventative maintenance.
7. Monitor the amperage readings at each station motor monthly.
8. Perform semi-annual inspections of all electrical motor control equipment.
9. Perform routine inspections and service the basin, clean-outs, miscellaneous moving parts, and covers to prevent build-up.
10. Maintain accurate maintenance records.

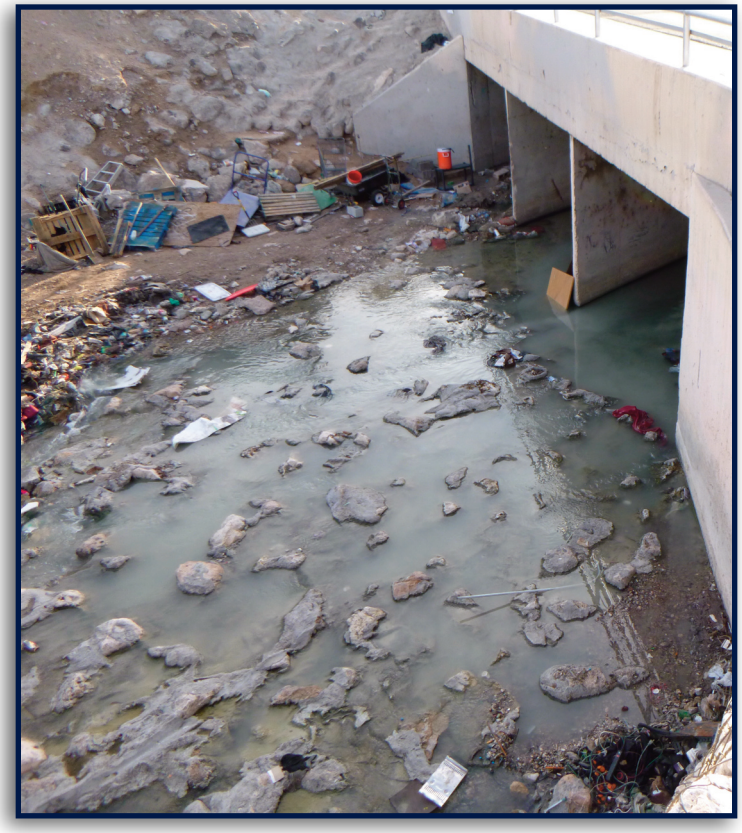

Fig. 3: Raw sewage from a nearby SSO flowed into the Las Vegas Wash.

Thank you for improving the quality of our water

If you would like more information on water quality pollution prevention, contact your jurisdiction's stormwater agency:

Clark County

702-668-8674
e-mail: waterquality@cleanwaterteam.com
website: ClarkCountyNV.gov/water-quality

City of Las Vegas

702-229-7318
e-mail: EOS@lasvegasnevada.gov
website: lasvegasnevada.gov/Government/Departments/Public-Works/Environmental-Oversight-Services

City of North Las Vegas

702-633-1252
e-mail: mclaughlinr@cityofnorthlasvegas.com
website: cityofnorthlasvegas.com/departments/public_works

City of Henderson

website: cityofhenderson.com/public-works/flood-control/public-outreach

only rain in the storm drain