

**PUBLIC WORKS COMMITTEE
JULY 29, 2014**

SUBJECT: CALLE BAJA SEWER SYSTEM REPLACEMENT

ISSUE: The existing Calle Baja Sewer System includes a lift station and force main which failed in October 2013 because of its age and corrosive conditions. The existing system provided sanitary sewer service to three single-family residences located adjacent to the roadway. They are currently using water in moderation and emptying the lift-station approximately every two weeks via a septic service company. The homeowners propose to install a new private-force main and lift station **at each residence** to convey sanitary sewer to the existing City of Rapid City gravity system near Falls Drive. To comply with Rapid City Infrastructure Design Criteria 3.14.4.m, established in 2012, which requires "each system shall have an emergency overflow tank with a minimum capacity of five-hundred (500) gallons." Adequate provisions should be made to empty the overflow tank when necessary. In the event of a power outage on Calle Baja, the 500-gallon tank would supposedly provide a backup system to contain and store sewer water. The Calle Baja homeowners requested an exception to the RCIDC 3.14.4.m, which was recommended for denial by the Engineering Service of Rapid City. **The residents of Calle Baja unanimously propose an emergency power backup generator be installed at each home to keep the grinder lift system operational should a power outage occur.**

ENGINEERING DEPARTMENT RECOMMENDATION:

The Engineering Department recommendation is to install at each residence a 500-gallon over-flow tank connecting to the hermetically (airtight) sealed lift station and later to remove the sewer water by commercial septic tank services.

RESPONSE BY HOMEOWNERS AND CONSULTANT ENGINEERS:

There are multiple "OBJECTIONS" to the Engineering Department's recommendation. They are as follows:

- 1** Sanitary sewer water would have to be stored on the property and then removed by septic tank truck. Septic tank trucks may have difficulty accessing the property and tank location due to geographic constraints or it **may be impossible to access the property due to severe weather(i.e. Oct 4, 2013).**
- 2** If the 500-gallon tank **becomes** filled, the lift station alarm would go off and **continue to operate**, creating a scenario where the **tank could overflow into Canyon Lake.**
- 3** The USA standard average of waste water produced per person is between 100 and 200 gallons per day. The holding capacity for 500-gallons by US standards of 2.6 residents per household is for only two (2) days.

4 The manufacturers of the hermetically-sealed grinder-lift stations indicated it is not typical to connect an over-flow tank to the system. (There may be a need to update the Rapid City Infrastructure Design Criteria 3.14.4.m which requires “each system shall have an emergency overflow tank with a minimum capacity of five-hundred (500) gallons, to be consistent with current manufacturer’s standards.

THE HOME OWNERS AND CONSULTANTS ENGINEERS RECOMMENDATIONS ARE AS FOLLOWS:

- 1 Install auxiliary electrical power connections for each grinder-lift station unit at each residence.**
- 2 In the event of a general power failure, a portable generator would be connected to the lift station and automatically be turned on to supply the grinder-lift pump with electrical power and remove the sewer water into the main city sewer on Falls Drive.**
- 3 The integration of an external power supply for the grinder-lift station would assure that the hermetically (air-tight) system not be compromised.**
- 4. This system, as designed by the manufacturer, is hermetically sealed, pressurized to assure no over-flow or leakage. Once the high water alarm goes off, any additional flow of water into the lift station could only backup into the home.**
- 5. The alarm system, using the latest wireless battery technology for the lift station would notify the homeowners via email, text, and visual signal, even if line power is out. The backup system will signal the homeowner to no longer use water. However, if an overflow tank is connected to the system the homeowner will have a false sense of additional capacity within the system. That system would have to be visually monitored once the alarm would go off.**

Therefore, the residents on Calle Baja request the Public Works Committee to approve their request for installation of auxiliary power backup for the grinder lift stations.