

**COMMISSION ADOPTED POLICY**  
***Hydraulic Grade Line (HGL) –  
System Operating Pressure***



Adopted: December 16, 2014

Revised: N/A

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**1.0 Purpose and Need**

HRSD's interceptor system is primarily pressurized. For new terminal pump station connections and upgrades, HRSD provides interceptor system pressure information to pump station design engineers at the proposed connection point. This policy defines the methodology that HRSD shall use in providing this information.

It is important to provide accurate operating pressure ranges for pump station designers. If the pump station pumps are too small, they will not be able to pump against a high head condition resulting in flow backing up into system causing a Sanitary Sewer Overflow (SSO). If the pump station pumps are too large, the pumps will cause operations and maintenance issues and result in premature pump failure.

**2.0 Definitions**

**Hydraulic Grade Line (HGL).** For pressurized pipes, the hydraulic grade line is that level water would rise to in a small, vertical tube connected to the pipe.

**Pressure Letter.** HRSD letter outlining the simulated pressure conditions at a specific connection point to be used for pump station design.

**Terminal Pump Station.** Any pump station that is directly impacted by HRSD's system operating pressure.

**Connection Point.** The point at HRSD's interceptor force main where terminal pump stations connect and where the typical delineation of ownership between HRSD and locality exists.

**Regional Hydraulic Model (RHM).** This is the hydraulic model developed for the region as a result of the EPA's Third Amended Consent Decree. This model serves a number of uses but primarily simulates pressure conditions under different flow scenarios.

**3.0 Guiding Principles**

HRSD's interceptor system pressure is dynamic and varies based on the connection point and flow rate. HRSD shall provide a range of pressures that a terminal pump station should expect to operate in. This range shall be based on the RHM and available pressure meter data.

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HRSD shall operate its interceptor system within this pressure range and periodically review available meter data to ensure this range is maintained. If the pressure range is not able to be maintained, HRSD will evaluate the system capacity to develop recommended improvements, which may include upgrading Locality pump stations at HRSD's cost.


**4.0 Procedures**


Pump station design engineers shall submit pressure letter requests to HRSD. HRSD will review the requests and provide the information in a timely manner.

Interim pressure letters may be issued defining current pressures and expected future pressures if future pressures will be changed as a result of the completion of programmed improvements or modifications to the HRSD sanitary sewer system known at the time HRSD receives the pressure letter request. Additional costs, if any, required to meet the current and future pressures shall be the responsibility of the owner of the pump station.

**5.0 Responsibility and Authority**

The Planning and Analysis Division shall issue pressure letters based on the RHM simulations and available pressure meter data. This policy shall supersede the previous Pressure Policy outlined in the Development Plan 2000.

Approved:  12/16/2014  
Vishnu K. Lakdawala, Ph.D. Date  
Commission Chairman

Attest:  12/16/2014  
Jennifer L. Cascio Date  
Commission Secretary