



Case Study Category: MPWW

Case Study Title: Grit Evaluation method at City of Phoenix Water Services Department (CPWSD)

Utility Name: City of Phoenix Water Services Department

Case Study Abstract: This case study introduces grit evaluation methods used for sanitary sewer segments at City of Phoenix Water Service Department (CPWSD). A grit problem is the situation in which the sewer has to be cleaned prior to the inspection using equipment such as CCTV. Grit depositions not only can cause difficulties for the inspection equipment due to the depth the grit, but also cause problems in such as odors in sanitary sewer collection systems. CPWSD evaluated the grit deposition in a large separated gravity sanitary sewer system. The average shear stress for each pipe under peak flow conditions was predicted. Based on the shear stress, cleaning rate was predicted and the results agree well with the actual cleaning rate for each pipe size. The relationship between the shear stress of the flow and the grit deposition was identified. However, the shear stress is not a perfect indicator for grit deposition because it has been found that some flat lines had no grit problems while some very steep lines did have such problems. Older portions of the sewer system had greater grit depositions. A poor or no relationship was found between the data gathered from the surface (manhole stabs) and the grit depositions.

Case Study Link: <http://waterid.org/content/grit-evaluation-method-city-phoenix-water-services-department-cpwsd>