

CASE STUDY:

West Point Treatment Plant SEATTLE, WA (KING COUNTY)



KUSTERS-WATER
a division of ZIMA corporation

■ BACKGROUND

Prior to construction of the West Point Treatment Plant, Seattle's raw sewage spilled directly into Puget Sound. Built in 1966, West Point treats waste from approximately 1.6 million people in Seattle, Shoreline, north Lake Washington, north King County, and parts of south Snohomish County, as well as Seattle's combined storm water/wastewater sewer system.

■ THE PLANT

West Point Treatment Plant treats up to 90 million gallons of sewage a day during the dry months, and up to 440 million gallons a day during the rain/storm season.

■ THE PROBLEM

The existing facility had six climber style bar screens with 5/8" bar spacing. Over time the bars bent, allowing larger material to pass through the bar rack and into the facility, creating excessive maintenance issues. Per the solids permit, the County was mandated to have no identifiable plastics going to the wheat fields; therefore the existing screens would need to be replaced.

■ THE SOLUTION

King County and the design engineer, CDM Smith, reviewed many screening technologies, but ultimately decided on ProTechtor® Multi-Rake Bar Screens by Kusters Water with 6mm and 10mm bar spacing due to their reliability, low maintenance, and ability to efficiently clean the bar rack. Unlike the existing screens, which have one cleaning rake that typically takes up to two minutes to engage and clean the bar rack, the ProTechtor® Multi-Rake Bar Screen includes multiple rakes typically spaced on 5ft centers that clean the bar rack every five seconds at the highest speed setting. This increased cleaning frequency is advantageous, particularly under higher flow conditions.

One distinct feature of the ProTechtor® Multi-Rake Bar Screen is the individual "bolt-in" replaceable bars. If there is damage to the bar rack, each individual bar can be quickly and easily replaced by the County's maintenance personnel with simple hand tools.

The screens were placed into service in the summer of 2014, and plant operators have indicated improved screening removal efficiencies, as well as improved performance of downstream processes.

QUANTITY OF SCREENS	6
FLOW PER SCREEN	88 MGD
CHANNEL WIDTH	6 ft
CHANNEL DEPTH	17.25 ft
OVERALL SCREEN LENGTH	30.49 ft
ANGLE OF INSTALLATION	80°

EXISTING BAR SCREENS



NEW ProTechtor® SCREENS

