

# BROADNECK WRF ENR

## Background

This is one of seven Enhanced Nutrient Removal (ENR) projects that the County is pursuing in compliance with the State's Bay Restoration Program. When complete, nitrogen concentrate levels will be reduced from 8mg/L to 3 mg/L and phosphorus from 2 mg/L to 0.3 mg/L.

The current treatment process employed at the Broadneck WRF is an oxidation ditch modified to perform nitrogen removal. The process employs separate anoxic mixers and floor mounted diffuser grids. The process design was based on the earlier biological nutrient removal (BNR) goals of a seasonal total nitrogen (TN) level of 8 mg/L. The facility is rated to process 6.0 million gallons per day (mgd). In addition to providing ENR levels of treatment, this process increases processing capacity from 6 mgd to 8 mgd. Current average daily flows are 5.3 mgd.

The new process at the Broadneck WRF will modify the existing oxidation ditches to ensure nitrification and provide new denitrification filters. Additional air diffusers and new aeration controls will be used in the existing oxidation ditches to optimize and ensure nitrification. New denitrification filters will be constructed to optimize nitrogen removal and also provide phosphorus removal.

The project will also construct a new ultraviolet disinfection system and decommission the existing chlorine disinfection system.

## Benefits

- Meet pollutant load limits set in Bay Restoration Program
- Significantly reduce nitrogen effluent concentration from 8 mg/L to 3 mg/L, and phosphorous effluent concentration from 2mg/L to 0.3 mg/L.
- Significant reduction of chlorine residual in effluent being discharged to the Bay

## Funding Sources

- State Grant (38%)
- County Funds (62%)

## Project Status

- Construction underway

## Project Information



Project Manager: Ken Wiswall  
410-224-1270

Contractor: Galway Bay Corp.

Inspection Manager: Arcadis

Est. Total Project Cost: \$26.3 million

Construction Notice to Proceed: June 2011

Projected Completion Date: December 2013



*For more information contact Customer Relations at: 410-222-7582 or email us at [customer@aacounty.org](mailto:customer@aacounty.org)*