

Project Description - The site of the Stormwater management project was the Camel's Hump Farm Nature Education Center and Archibald Johnston Preserve in Bethlehem, PA, owned by the Friends of Johnston, Inc, a volunteer charitable 501c3 nonprofit Land Trust organization. The project was necessary because the stormwater drainage systems owned by PennDOT and Bethlehem City had failed leading to flooding of the 18 acre field receives stormwater from a 1.2 square mile urban, suburban mini watershed extending to the North, East and South. The overbuilding and more severe storms had caused the stormwater drainage system to fail causing flooding of route 191, the farm field and the nature center.

Project Timeframe – December 31, 2020 through December 31, 2022

Project Goals - The purpose of our project was to mitigate the stormwater, repair the damage and increase the capacity for future storms.

We consulted with the Northampton County Conservation District, DEP, our local municipalities, PennDOT, our engineer, landscape architect and hydrologist to evaluate the failing stormwater system. We developed a mitigation plan that took into account the opportunities that the open space offered for mitigation as part of a park improvement the large drainage area, the increased storms and the need for habitat improvement. We recognized that a multiprong approach needed to occur to allow for greater infiltration and cleansing of the water had to occur to decrease erosion, nutrient pollution and flooding.

Project Results - Phase I of the project was to meet with professionals to evaluate the area and develop a concept plan that would meet our goals.

Phase II was the stabilization of the field utilizing multiple DEP BMP's including: repair of erosion channels, riparian buffer enhancement, grass buffer strip, level spreaders, and wetland stabilization. (Concept Plan, Keystone CE plan)

Phase III was replacement of the failed bridge that was causing damming, flooding and severe erosion with an open bottom box culvert that increased the open space under the bridge by nearly 7 times channel capacity from 12 square feet to 80 square feet.

(KCE plan,)

Phase IV was the stabilization, restoration and continued maintenance of the drainage channel riparian buffer adjacent to the new culvert. (Plantique Concept plan, planting Weeding, planting and mulching)

Project Costs - \$94,016.00 Growing Greener plus an additional \$87,076.05 in match funds.