



Collaborative Effort Complete: Route 1 Project to Improve Canal Water Quality and Beautify South Bethany

Project Status

On October 19, 2011 excavation along South Bethany's Route 1 median commenced as the Center for the Inland Bay's (CIB) "Anchorage Canal Drainage Area Stormwater Retrofit Project" began its work in South Bethany. Except for a few outstanding "punch list" items, the work was completed on October 28. The end result is that the Route 1 median now features 11 landscaped bioretention areas with 88 new trees, multiple shrubs, and in the spring 2012 will include numerous herbaceous plants. The Town has worked collaboratively with the CIB, multiple state agencies, and two contractors to create bioretention areas that are specifically designed to capture storm water runoff, reduce nitrogen and phosphorous loads entering the network of canals throughout South Bethany and thus improve the canals' water quality. Mayor Jay Headman and Council Members George Junkin (Chair, Water Quality) and Sue Callaway (Chair, Beautification Committee) worked with CIB's Deputy Director Chris Bason and other team members for more than a year and are pleased to see the plan come to fruition. Funding from the CIB, DNREC (Natural Resources), DelDOT (Transportation), and DOA (Agriculture) made this project possible.

What is a bioretention area?

Bioretention is the process in which contaminants and sedimentation are removed from stormwater runoff. Stormwater is collected into the treatment area which consists of a grass buffer strip, ponding area, mulch layer, planting soil, and plants. The ponding area is graded, its center depressed to about 6 inches below the storm drain. The ponded water gradually infiltrates the bioretention area or is evaporated. The bioretention area is designed to hold the "first flush" of stormwater. This is the first ½ inch of rain which flushes the majority of the contaminants and sedimentation into the system. Excess runoff, more than ½ of rainfall, then flows into the storm drain. Stored water in the bioretention area is expected to infiltrate the soil over a period of not more than three days.

How was the landscape design developed?

South Bethany benefited from the expertise of Sue Barton, Extension Specialist for the University of Delaware and author of *Enhancing Delaware Highways*. Working closely with DelDOT to insure traffic visibility, Dr. Barton provided South Bethany with a professional landscape design plan that strategically determined the specific location and description of types of trees and plantings that are well-suited for living within a bioretention area. We now see native trees including Sweet Bay Magnolias, Muskogee Crepe Myrtles, Fringe and River Birch trees and indigenous shrubs and herbaceous plants that will enhance storm water management and introduce regionally appropriate trees and plants with enough diversity to avoid a monoculture. This carefully thought-out, collective effort has led to the creation of well-planned bioretention areas that will also beautify this extensive visual area of South Bethany's landscape. Following the Town's bid process, Lord's Landscaping was awarded the contract to carry-out the landscaping work, follow Dr. Barton's design, and complete the work by the October 28th deadline. Lord's worked hand-in-hand with the excavating and structural contractors to get the job done. Lord's will return in the spring to plant the herbaceous plants that will surround the trees and fill-in parts of the bioretention areas.

To view the landscape design plan click on the following links:

Exhibit B: www.southbethany.org/bioretention.areas/landscape.design.plan.exhibit.B.pdf

Exhibit C: www.southbethany.org/bioretention.areas/landscape.design.plan.exhibit.C.pdf

How was the excavation and landscaping of the bioretention areas funded?

The majority (90%) of the costs associated with the excavation and landscaping of the bioretention areas within the South Bethany Route 1 median areas was covered by funds from DNREC and CIB, DelDOT, DOA, South Bethany budgeted funds and contributions from the South Bethany Property Owners Association (SBPOA). As approved by the Town Council on September 22, 2011, final costs show that less than \$11,000 of reserve funds will be used. This support allowed South Bethany to complete all bioretention areas at one time and not incur future planning and MOT costs and to utilize all available tree grant monies being awarded the town – funds that may not be available at future times. Through a partnership with the Urban and Community Forestry Division of Delaware’s DOA, South Bethany received three grants that funded the purchase of all 88 trees: 70 trees planted within the 11 bioretention areas and an additional 18 trees (9 crepe myrtle and 9 river birch) that were planted individually in two median areas (north and south of the Layton traffic light) where it was too costly to excavate because of utility lines. The importance and value of volunteerism was evident as in-kind volunteer hours provided by Town Council Members and the Beautification Committee were an integral part of DOA’s matching funds requirement. The Town also applauds the efforts of Melvin Cusick, Town Manager, and Don Chrobot, Maintenance Supervisor, for their dedicated work in completing this project.

To view funding details click on the following link:

www.southbethany.org/bioretention.areas/funding.pdf

Conclusion

The true beauty of this project is the collaborative efforts that made it happen. The dedicated team was focused on the goals of improving water quality and creating a “wow factor” along Route 1. The combination of hard work, expertise, funding resources, and a professional design plan, has resulted in a new look for South Bethany’s main thoroughfare and future improvements in the quality of our canal waters – a winning combination for our Town!

To view pictures of the bioretention areas click on the following link:

www.southbethany.org/bioretention.areas/pictures.pdf