

## **The Hunt at Louviers Stormwater Basin Retrofits, Newark, Delaware**

(For more project specifics contact Shane Morgan at [mpc@whiteclay.org](mailto:mpc@whiteclay.org), or Kelley Dinsmore at <mailto:KDinsmore@Newark.de.us>)

### **Project Stats**

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Location: White Clay Creek Watershed, Newark, Delaware

Total Drainage Area Treated: 53.8 acres

Funding: (2012-13) \$75,000 Delaware Clean Water Initiative Grant Funding, \$15,000 in combined contributions from White Clay Wild and Scenic Rivers Program (WCWSRP), North Creek Nurseries and DNREC. (2014) \$1,000 United Water Delaware for additional landscape plugs, \$350 from WCWSRP for seeds.

Partners: City of Newark, North Creek Nurseries, Duffield Associates, CGC Geoservices, White Clay Wild and Scenic Program

More information and photo gallery can be found at: <http://whiteclay.org/watershed-priorities/projects/stormwater-basin-retrofits/>

### **Project Description**

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Three existing dry detention basins (originally constructed between 1990-93) originally designed with only water quantity in mind were retrofitted to address water quality by managing runoff from smaller (1-2") rain events. In each basin, site specific grading was performed to redirect and elongate the flow path of entering runoff, slow it down and allow native vegetation to promote infiltration and bio-filtration, with the added benefit of wildlife habitat creation.

### **Project Highlights**

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- 100 community volunteers helped plant over 28,000 landscape plugs, and broadcast 20 lbs. of a custom seed mix in the three basins on the 26 and 27 of April 2013.
- The Delaware Nursery and Landscape Association selected the basin retrofits as the award winning design project in the commercial category and showcased the project at the Delaware Horticulture Industry Expo in January 2014.
- The City of Newark contracted Brandywine Nurseries to manage the basins for 2 growing seasons post installation.



Hunt Basin Retrofits - Basins 1, 2, & 3  
BEFORE (2012) AFTER (2014)





**Hunt at Louviers  
Pollutant Loading Estimate for  
Basin Retrofit Project**

**Nitrogen**

	<b>Pre</b>	<b>Post</b>	<b>Initial Reduction</b>	<b>Uncertainty</b>	<b>Final Reduction</b>
	(lbs / yr)	(lbs / yr)	(lbs / yr)	(%)	(lbs / yr)
<b>Basin 1 - Hayden Way</b>	63.04	46.65	16.39	50%	8.20
<b>Basin 2 - Cullen Way</b>	129.72	95.58	34.14	50%	17.07
<b>Basin 3 - Cullen Way</b>	149.41	110.09	39.32	50%	19.66

**Phosphorous**

	<b>Pre</b>	<b>Post</b>	<b>Initial Reduction</b>	<b>Uncertainty</b>	<b>Final Reduction</b>
	(lbs / yr)	(lbs / yr)	(lbs / yr)	(%)	(lbs / yr)
<b>Basin 1 - Hayden Way</b>	8.06	5.38	2.68	50%	1.34
<b>Basin 2 - Cullen Way</b>	16.59	11.06	5.53	50%	2.77
<b>Basin 3 - Cullen Way</b>	19.11	12.74	6.37	50%	3.19

**Sediment (TSS per DURMM)**

	<b>Pre</b>	<b>Post</b>	<b>Initial Reduction</b>	<b>Uncertainty</b>	<b>Final Reduction</b>
	(lbs / yr)	(lbs / yr)	(lbs / yr)	(%)	(lbs / yr)
<b>Basin 1 - Hayden Way</b>	1791.78	398.17	1393.61	50%	696.81
<b>Basin 2 - Cullen Way</b>	3686.79	819.29	2867.5	50%	1433.75
<b>Basin 3 - Cullen Way</b>	4246.47	943.66	3302.81	50%	1651.41

Notes: Values per DURMM model (see attached spreadsheets).  
 Pre loading rates are based on Dry Detention Pond.  
 Post loading rates are based on Traditional Constructed Wetlands.  
 Uncertainty factor applied since retrofits do not meet some aspects  
 of Traditional Constructed Wetlands.  
 Values are estimates only. Sampling and analyses would be needed  
 to determine actual loading rates.