



Rain Gardens for Water Quality Improvement in the St. Jones Watershed

Delaware Clean Water Advisory Council and Partnership for the Delaware Estuary

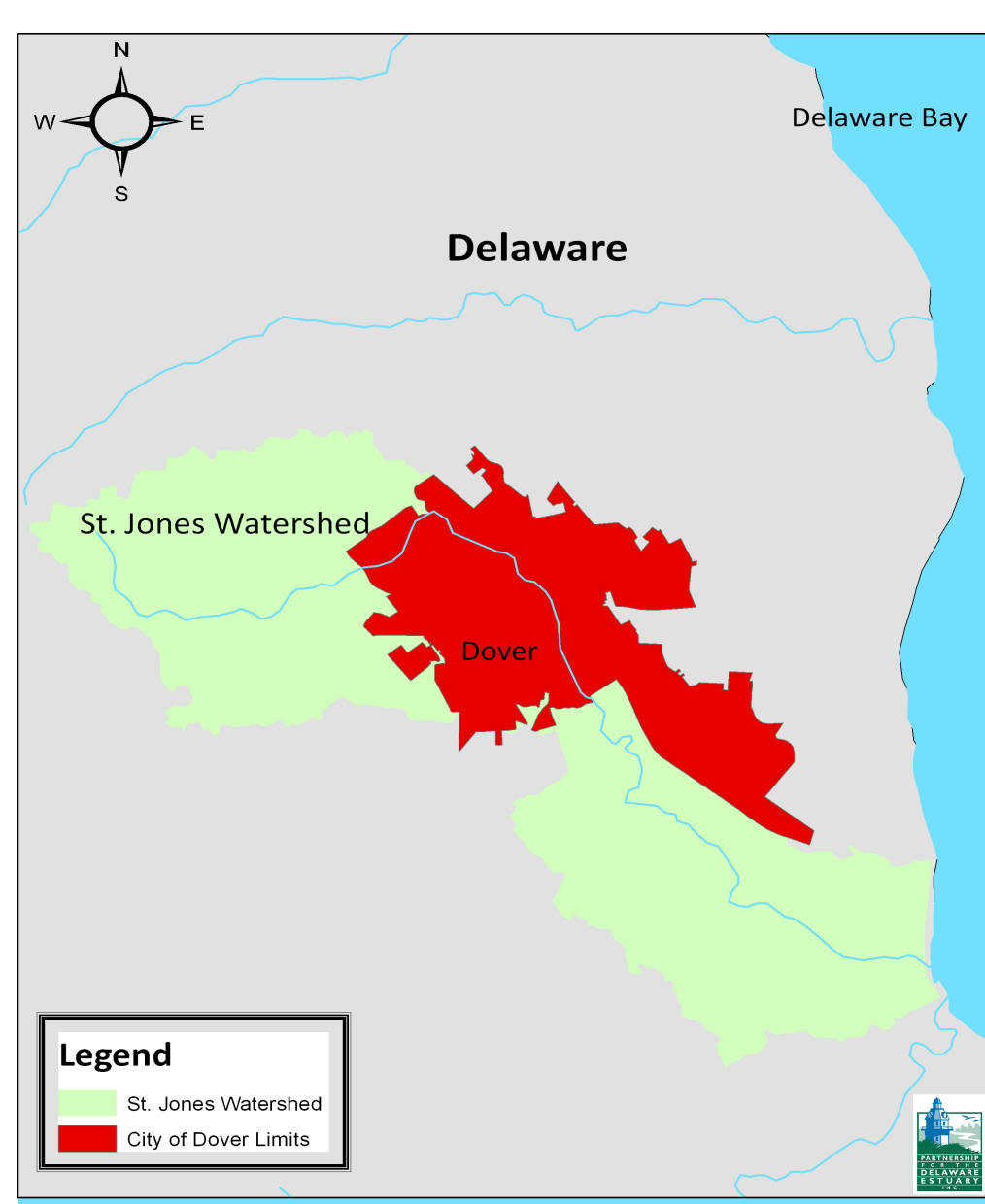


Laura Whalen, Partnership for the Delaware Estuary

Introduction:

Stormwater runoff is a growing concern in Delaware. With much of the state's open lands being developed, more stormwater is running off impervious surfaces and into our waterways than ever before. This stormwater runoff carries pollutants from impervious surfaces into our streams. In response, the Partnership for the Delaware Estuary (PDE) is received funding from the Clean Water Advisory Council to initiate a project to install 3 rain gardens at locations in the St. Jones Watershed, in Delaware's capital city of Dover.

Project sites include the Natural Resource Conservation Service (NRCS) office park, Caesar Rodney High School, and Fairview Elementary School (which will be completed in spring 2011). The installation of these rain gardens will improve water quality in the St. Jones, an impaired watershed within the Delaware Estuary.



By installing rain gardens in public areas, the amount of polluted stormwater runoff reaching the St. Jones River will be reduced, thereby conserving water, reducing landscape maintenance (time and money), and creating diverse habitat for birds and butterflies.



Why Rain Gardens?

This project will help reduce the amount of nonpoint source (NPS) pollution entering the St. Jones River through stormwater runoff, thereby helping reduce in-stream pollutant loading in this watershed. Research shows that rain gardens are particularly effective at reducing solids and nutrients in stormwater runoff from residential yards and parking lots. A study done at a parking lot in St. Paul, Minnesota found that a wetland area built into a parking lot to capture runoff reduced stormwater runoff volume by 73% and particulate matter export by 94% (Langer, 2001). Research done by the Center for Watershed Protection found that "BioRetention Facilities" installed in parking lots reduced total phosphorous measured in runoff by 65%, total nitrogen by 49%, and metals by 95-97% (Quigley and Lawrence 2001).

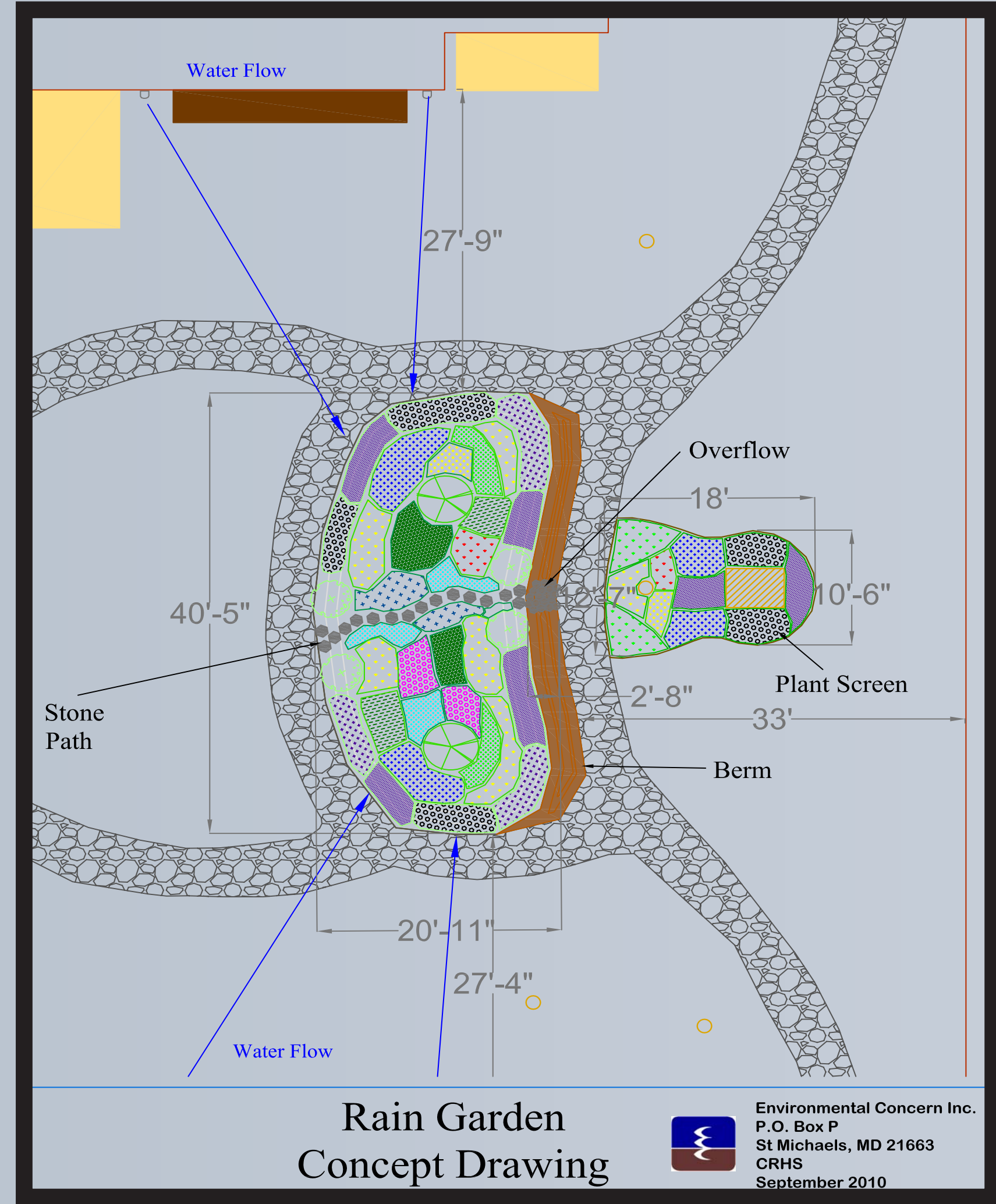
The 2004 Final 303(d) List for Delaware identifies many of the tributaries within the St. Jones Watershed as being impaired for nutrients, bacteria, and dissolved oxygen. In December 2006, a Total Maximum Daily Load (TMDL) was developed and adopted for the St. Jones. Because this watershed is highly developed and has a large number of residential developments, the major goal of this Rain Gardens for Water Quality Improvement in the St. Jones Watershed project is to intercept runoff before it enters the St. Jones River and its tributaries, helping reduce the levels of nutrients and bacteria entering the river from urban stormwater runoff.

PDE is currently involved with the Environmental Protection Agency (EPA) Region 3's "Rain Gardens for the Bays" campaign. This campaign is supported by the Mid-Atlantic National Estuary Programs, state, and local partners. PDE, the Center for the Inland Bays, and the Maryland Coastal Bays are collaborating to encourage healthier bays by creating thousands of rain gardens on school campuses, residential properties, town halls, libraries, local businesses, and corporate lands.

Natural Resource Conservation Society (NRCS) Rain Garden Project with help from North Dover Elementary School students: Start to Finish



Caesar Rodney High School Rain Garden Project: Start to Finish



The Delaware Clean Water Advisory Council funded these rain garden projects. PDE has partnered with Environmental Concern, NRCS, Kent County Conservation District, North Dover Elementary, Caesar Rodney High School, and Fairview Elementary to complete the 3 rain gardens.