

### **Breakout 3C – Creating and Enhancing Sustainable Communities through the Integration of Green Infrastructure**

Green infrastructure is defined as the utilization of natural systems and processes that typically deal with soil and vegetation to manage storm water. This talk was geared toward how green infrastructure is being used today to mitigate problems associated with combined sewer overflow as well as increase property value, health and environmental benefits.

The first panelist to speak was **Margot Walker**, of **NYC DEP, Office of Green Infrastructure (GI)**, who outlined what GI looks like in NYC now and where it is going. Margot manages the NYC Green Infrastructure Program and has been a very busy individual in keeping up with storm water in New York. It is practical to mention that the goal of all GI is to infiltrate water before it gets to the sewer system in a variety of different ways. Another goal of the Office of Green Infrastructure is to manage 10% (7800 acres) of impervious surfaces in combined sewer areas managing on inch of rain.

There are a few strategies that Margot's office has been employing to most effectively progress toward their goals. They look for large expanses of asphalt that can be reworked to encourage infiltration. For example, they have been working with school to remodel playgrounds to divert storm water toward gardens and other practical uses. Her office has been working on the publication of a Green Infrastructure Plan that identifies key areas that could benefit from the installation of GI like combined sewer areas that are prone to overflow.

Margot also mentioned a great program called the Green Infrastructure Grant Program that will actually pay 100% of the cost to develop systems to keep water out of sewers in the property is in a contributory sewer area. The office has also set up an asset management program and performance monitoring for improvement of systems that have been installed.

The press toward a more efficient approach to water management comes as climate change promises higher ocean levels and severe storms. The development of huge underground storage tanks and sub-surface tracks to carry water is expensive, energy intensive and doesn't give back to the community in ways that constructive use of storm water can. Margot noted that NYC has the most combined sewer overflow of any city in the U.S and its varying geology makes groundwater infiltration difficult in certain areas, especially those where bedrock is very near the surface.

The next panelist to speak was **Jeff Dey**, CEO of **Land Resource Solutions**, who discussed how Green Infrastructure is taking shape in New Jersey. Jeff discussed a specific Brownfield Development Area in New Jersey of roughly 145 acres that had benefit from the installation of Green infrastructure. The site had been an old industrial park site in Gloucester City, New Jersey and was inactive since the 1980s and was located at the confluence of the Delaware River and

Little Creek. Past uses included asbestos manufacturing, titanium manufacturing, ship yard and fire retardant material manufacturing that each had a part to play in contamination of the site.

As work started they soon found that they could not get the site down to residential standards of contamination. The elevation was way below the FEMA level so it was necessary to raise the grade. An organic food recycling facility and other manufactories were built in an attempt to bring the economic viability of the site back to the old days when it supported the population of the town. There was a significant amount of wetlands enhancement. The goal was to use a combination of engineered and natural systems to create the most sustainable and viable property.

The third and final panelist was **Brian Clemson**, a Senior Landscape Architect at **Hatch Mott MacDonald** who had worked on a brownfield site in Newark. The site, located near Nat Turner Park, had been undeveloped for roughly 30 years and had an extensive amount of historic fill material that needed to be excavated. However in an effort to reduce costs they developed a strategy to maintain most of the soil on site. Brian was even able to develop a micro urban forest on the site that satisfied the needs of the environment while also reducing visibility into the site. By the end of cleanup they were able to reduce impervious surfaces by 50% and dramatically reduce storm water runoff and flooding.