Save the Rain

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# Onondaga Lake
## Amended Consent Judgment Compliance Program Monthly Report

April 2012

Onondaga County Department of WATER ENVIRONMENT PROTECTION

Joanne M. Mahoney,
County Executive

# ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION

## VISION

*To be a respected leader in wastewater treatment, storm water management, and the protection of our environment using state-of-the-art, innovative technologies and sound scientific principles as our guide.*

## MISSION

*To protect and improve the water environment of Onondaga County in a cost-effective manner ensuring the health and sustainability of our community and economy.*

## CORE VALUES

**E***xcellence*

**T***eamwork*

**H***onesty*

**I***nnovation*

**C***ost-Effectiveness*

**S***afety*

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# Project Progress for the Month of April

## Report from Commissioner

The 2012 construction season for green infrastructure started in earnest with the opening of the asphalt batch plants on April 2. In addition to the finishing touches on several 2011 Save the Rain projects, additional new 2012 projects began construction in April; and at this time, fifty-nine (59) projects are presently scheduled to begin their construction phase later this year. By the year's end the Save the Rain program will be almost halfway to achieving compliance with the Amended Consent Judgment requirements to capture 250,000,000 gallons of storm water annually in the combined sewer system via the use of green infrastructure by 2018. This is truly remarkable progress!

The gray projects are also all progressing well toward meeting the next round of gray project milestones in December 2012. In April, the 022 sewer separation project in downtown Syracuse near West Genesee and Franklin streets progressed very rapidly. This sewer separation work eliminates the combined sanitary and storm sewers in the project work area, and all sanitary sewage will be transmitted to the Metro Wastewater Treatment Plant. This project also included the use of cured-in-place repair and relining of the existing sewer mains. By applying high strength resin liners to the old pipes, we plan to get decades of new life from these old pipes.

In April the County also submitted its official comments to the draft Total Maximum Daily Load (TMDL) for phosphorous in Onondaga Lake. A copy of the County's comment letter is attached. Everything is relative; we feel that the years of hard work in modeling, operations, and monitoring has returned a successful result in that we currently project "only" an additional outlay of $14,200,000 to meet these TMDL requirements if the final document is approved in a manner similar to the draft. It is worth noting that we have spent hundreds of millions so far to improve the lake and reduce phosphorous loads, but in comparison to the projected additional hundreds of millions, only very recently projected to be necessary if the TMDL further ratcheted down Metro's limits; this is potentially a very effective solution. Had we not had the incredibly robust modeling and reporting, the TMDL could have very easily resulted in an overly conservative and extraordinarily expensive result.

Finally, while not a part of the ACJ compliance progress, I note that the Suburban Save the Rain grants does include an important takeaway note for ACJ readers. The grant program projects will be delivering annual wet-weather capture at a cost of about $100,000 per million gallons of annual capture. This compares very favorably to some of our current gray capture projects which are in the range of six to thirteen times as costly per million gallons. Not all construction locations and conditions are transferrable or directly comparable, but this quick comparison is another affirmation of the overall cost effectiveness of green solutions.

Respectfully Submitted,

Tom Rhoads P.E.,
Commissioner

Attachment: TMDL Comment Letter

County of Onondaga
Office of the County Executive
John H. Mulroy Civic Center, 14th Floor
421 Montgomery Street, Syracuse, New York 13202
Phone: 315.435.3516 Fax: 315.435.8582
www.ongov.net

Joanne M. Mahoney
*County Executive*

Ann Rooney
*Deputy County Executive, Human Services*

William P. Fisher
*Deputy County Executive*

Matthew J. Millea
*Deputy County Executive, Physical Services*

April 26, 2012

Steve Gladding
NYS DEC - Division of Water, Bureau of Water Resource Management
625 Broadway, 4th Floor
Albany NY 12233-3508
smgladdi@gw.dec.state.ny.us

Dear Mr. Gladding:

On behalf of Onondaga County Executive Joanie Mahoney, thank you for the opportunity to comment on the draft Revised Onondaga Lake Phosphorus Total Maximum Daily Load (TMDL); you and your colleagues at DEC have worked collaboratively with our team for many years to bring resolution to this important element of furthering the cleanup of Onondaga Lake.

As you know, Onondaga Lake is a unique and complex system with many challenging facets. Reduced phosphorus input to the lake represents just one piece of the continuing success of Onondaga Lake's restoration, but certainly an important one with respect to water quality.

With respect to phosphorus levels in Onondaga Lake, and based upon the lake's current classifications under State Environmental Conservation Law(Class B and C waters), we are very pleased that the Draft TMDL recognizes that Onondaga Lake is meeting its designated best uses for both recreation and fishing.

It is with this important understanding in mind that Onondaga County is generally supportive of the TMDL as drafted; we are particularly supportive of the TMDL's reliance on the "adaptive management approach" to the implementation phase of the TMDL. Furthermore, the County strongly supports the prompt adoption of the State's proposed effluent limit at Metro's outfall 001 of 0.10 mg/l.

There are, however, elements of the TMDL we feel require further clarification. In particular, Onondaga County argues that no action be required at Metro outfall 002 if the phosphorus concentration in the lake remains at or near the final phosphorus target value for the lake. In the event that it becomes evident that phosphorus loading from the Metro effluent is causing a decline in water quality conditions in the lake, we request and expect flexibility, in the context of "adaptive management," to allow the County to pursue phosphorus reductions through other means, such as the deployment of aggressive green infrastructure in a distributed manner within the watershed.

While the County remains confident that the water quality improvement trends we have witnessed in recent years will continue in the years ahead, in the event additional actions may be required to address

phosphorous levels in Onondaga Lake we urge the state to provide Onondaga County with sufficient flexibility to facilitate the development of watershed wide load and waste load reduction trading/reallocation mechanisms so long as projected overall phosphorus loading reductions are met.

While additional options for phosphorus reductions are considered within the context of the final TMDL allocations, it is important to note the public has invested several hundred million dollars in wastewater collection and treatment upgrades over the past 14 years, and that there is a further commitment to invest several hundred million more dollars in the years ahead in both gray and green infrastructure that will yield significant, additional water quality benefits to Onondaga Lake and its tributaries.

Because these infrastructure improvements are extraordinarily costly, it remains critical that decision-makers exercise due diligence to ensure that additional public investments are cost-effective and yield meaningful results. Nearly unparalleled public resources have been expended to establish an extensive water quality data base, to develop sophisticated models capable of forecasting the lake's probable responses to various management alternatives, and to carry out cutting edge scientific studies, such as phosphorus bioavailability and tributary plunging flow studies to better understand the fate and transport of phosphorus in Onondaga Lake. Onondaga County has every expectation that the insights provided by these valuable tools will continue to help the State and the County determine how to best expend additional, scarce public resources as we continue to pursue Onondaga Lake restoration goals.

To this last point, the County remains concerned that placing too great a focus on meeting the guidance value of 0.02 mg/l may drive future demands for costly investments (whether imposed on Metro, on the Marcellus WWTP or on MS4s) that yield little additional tangible environmental gain. The Lake data incorporated into the draft TMDL confirms what the County has observed analyzing the extensive database created by the Onondaga Lake Ambient Monitoring Program (AMP): That the TMDL target phosphorous level for Onondaga Lake may not accurately reflect the stated relationship between phosphorus and public perceptions of impairment upon which the guidance value was premised. That is, at least with respect to Onondaga Lake, a target value of 0.02 mg/l total phosphorus concentration might be unnecessarily stringent, especially in light of the finding that a significant portion of the total phosphorus discharged from Metro is not bioavailable.

With regard to the Metropolitan Syracuse Wastewater Treatment Plant, the State has proposed a "bubble permit" of 27,212 $lb \cdot yr^{-1}$ outfall 001 and 002. The bubble approach appears to be aimed primarily at ensuring that phosphorus loads from outfall 002 - Metro's wet weather bypass outfall, where associated phosphorus loads presumably contain a higher percentage of bioavailable phosphorus - do not cause conditions in the lake to decline. The County is concerned that the premature imposition of the proposed combined Waste Load Allocation (WLA) is unnecessarily stringent and could require the commitment of scarce financial resources for costly improvements at outfall 002 when water quality conditions in the lake might not warrant it (that is, even if designated uses in the lake are still being met and phosphorus concentrations in the lake are still at or near the final phosphorus target value).

In line with the County's focus on adaptive management and smart growth, Onondaga County, through its Sustainable Development Plan, is working to promote new growth (Smart Growth) by redevelopment in the City of Syracuse and other existing urbanized areas. When successful, one would expect the flow to Metro, and therefore total phosphorus loads from Metro, to increase. If other measures already planned to be implemented result in a reduction in total phosphorus loading to the lake over the next several years, and/or if the phosphorus concentration in the lake remains at or near the final target value for phosphorus, it would be difficult to justify a commitment of tens of millions of dollars for costly

improvements at outfall 002 simply because the proposed bubble limit is exceeded. Consequently, it is the County's recommendation that the TMDL allow for the following:

1) Beyond the current investments in the CSOs, through green and gray capture and the Metro Phosphorus Optimization Project, no action should be required at outfall 002 if the phosphorus concentration in the lake remains at or near the final phosphorus target value for the lake; and

2) In the event increased phosphorus loading specifically from the Metro effluent is causing an observable decline in water quality conditions in the lake, as reflected in the matrix utilized by the Ambient Monitoring Program to assess in-Lake water quality, there must be enough flexibility in the TMDL implementation phase to allow the County to pursue phosphorus loading reductions through multiple means, giving preference to construction of additional green infrastructure and reducing infiltration and inflow within the sewershed; and

3) Implementation of proposed phosphorus reductions should be sufficiently flexible to facilitate the development of watershed wide load and waste load reduction trading/reallocation mechanisms so long as projected overall phosphorus loading reductions are met.

4) In the event Honeywell dredging operations extend beyond the anticipated five year period noted in the Draft TMDL, and the temporary additional flows and loads are sent to Metro for treatment, such flows and loads should not be counted against the County's waste load allocation.

The County supports the State's proposed target value for municipal separate storm sewer systems (MS4s) within the watershed. The proposed implementation schedule is reasonable, and allows for continued sampling and analysis to ensure costly investments will not be required unnecessarily. Again, the County recommends that the TMDL remain flexible enough to allow for the use of green infrastructure in new development to offset increases in loading.

We do remain somewhat disappointed that the draft TMDL is almost entirely focused on end-of-pipe solutions to nutrient management. Under the leadership of Onondaga County Executive Joanie Mahoney, Onondaga County and DEC successfully fought to reopen the Onondaga Lake Amended Consent Judgment and establishing our community as a national leader in the movement to address wet weather issues through the use of distributed green infrastructure solutions (please refer to Attachment 2 for supplementary information on strong regulatory support by EPA for using green infrastructure in TMDL implementation). Therefore, we request that the final TMDL should explicitly recognize the acceptability of using green infrastructure that, in addition to reducing flow to Metro and phosphorus to Onondaga Lake, also represents reinvestment in neighborhoods by the use of rain gardens, green roofing, trees, porous pavement, cisterns, etc. and represents a viable alternative to traditional gray solutions that tend to raze neighborhoods for treatment facilities.

Finally, as noted in the County's Phosphorus Work Plan (submitted to DEC in August 2010), "...performance of decision modeling and Compliance Plan development are not considered part of the studies mandated in the ACJ. However, these two efforts cannot start until a final TMDL is established, which is targeted from December 31, 2011." The State has advised the County that they now expect the TMDL to be finalized at the end of June, 2012, six months beyond the anticipated date. It is the County's expectation that the State will allow the County a six month extension, as well, to submit its Phosphorus TMDL Compliance Plan.

Thank you again for your efforts to complete this important document and for the opportunity to comment on the State's Draft Revised Onondaga Lake Phosphorus Total Maximum Daily Load. We have also included, as Attachment 1, specific suggested language changes to the TMDL for the State's consideration.

Respectfully,

Tom Rhoads, P.E.
Commissioner, Dept. of Water Env. Protection

David Coburn
Environmental Director

cc: Matthew Millea, Deputy County Executive for Physical Services
Kenneth Lynch, NYSDEC Region 7
Seth Ausubel, USEPA Region II
Michael Plochocki, County Legislature
Andrew Maxwell, City of Syracuse
Samuel Sage, Atlantic States Legal Foundation
Joe Heath, Onondaga Nation

**Attachment 1: Onondaga County Suggested Edits Draft Onondaga Lake Phosphorus TMDL**

**1.2 Problem Description**

Onondaga Lake is located on the northern edge of the City of Syracuse, in Onondaga County, New York. Historically, the Lake has had a number of domestic and industrial pollution problems resulting from population growth and industrialization in the Syracuse area over the last century. Onondaga Lake was identified as a high priority waterbody in the 1996 303(d) list of impaired waters as being impaired by phosphorus (NYSDEC, 1996). Additionally, Onondaga Lake experiences anoxia in the hypolimnion during summer stratification. Subsequent to the approved Phase I Phosphorus TMDL, Onondaga Lake was delisted for phosphorus.

**1.3 TMDL Scope**

The purpose of this TMDL is to address excess phosphorus loading to Onondaga Lake with the goal of protecting water quality such that the Lake continues to meet its current designated best use as identified in 6 NYCRR §895 (see also Table 4) by utilizing the extensive effluent and ambient monitoring data available along with enhanced water quality models. It is noted that this TMDL does not specifically address all of the water quality impairments identified in Table 1, however, the phosphorus load reductions and best management strategies specified in this TMDL, intended to meet recreational and aquatic life uses in Onondaga Lake, will provide additional water quality benefits throughout the watershed. Ongoing remediation of Superfund sites as well as CSO abatement will provide further benefits to water quality.

**3.3 *Numeric Water Quality Targets***
(Last paragraph)

Acknowledging that further phosphorus reductions will not address the DO depletion in the Lake this TMDL is being pursued to ensure that the Lake continues to meet its current designated best uses ~~of the Lake are met~~ (Table 4)."

***5.1.2* Results**
(Last Paragraph)

Even under those high loading conditions the model predicts a summer mean epilimnetic TP concentration of 0.20 $\mu g \cdot l^{-1}$. It was not until the following year that the summer mean epilimnetic TP concentration exceeded the guidance value at a modeled concentration of 0.21 $\mu g \cdot l^{-1}$ in 2013. The delay in response is attributed to a carryover of phosphorus to the following year. The model estimates that about 30% of the phosphorus load delivered to the Lake is from internal loading, most of which originates from material deposited within the last year (Anchor QEA, 2011a). The summer mean epilimnetic TP concentration in exceedance of the 0.20 $\mu g \cdot l^{-1}$ TMDL endpoint was only observed during the first 16 year model cycle, in model years 2013 and 2016 (Appendix G). The same watershed hydrologic loading conditions which produced the 2013 and 2016 model year results were repeated within the 48 year model period. Those loading conditions reoccurred as 2029 and 2032, respectively, and again as 2045 and 2048, respectively. For those years, 2029, 2032, 2045 and 2048, the summer mean epilimnetic TP concentrations is modeled to be 0.20 $\mu g l^{-1}$, which meets the water quality guidance value~~criteria~~. The model results indicate that, in the long term, and subject to the biological food web conditions described in Section 2.3 or yet to be experienced

impacts of climate change that exceed current projections, the water quality guidance value~~criteria~~ will be met even under occasional high years of watershed derived phosphorus loads.

**6.0 Pollutant Load Allocations**
**(First paragraph)**

The objective of a TMDL is to provide a basis for allocating acceptable loads among all of the known pollutant sources so that appropriate control measures can be implemented and water quality standards maintained ~~achieved~~."

**6.0 Pollutant Load Allocations**
**(Last paragraph)**

Additionally, some additional load capacity above current levels ~~is~~ might be required at Metro to allow for growth within the design capacity of the treatment plant, to account for load uncertainty and to allow Metro to accept the water from the dredging operations."

**6.4 Critical Conditions**

Paragraph 1) ...Degradation of these parameters during the summer ~~corresponds to impaired best uses for~~ increases the risk of impairment with respect to primary and secondary contact recreation.

**Add to end of Section 6.4:**

Green infrastructure has been incorporated into the ACJ as a strategy to aid in abatement of CSO discharges by reducing storm water inputs to the combined sewer system (CSS). (Fourth Stipulation and Order at Paragraphs 17, 20, 26 and 27.). EPA has also recognized the benefits of green infrastructure in addressing sediment and nutrient impairments and has expressly encouraged its incorporation as a pollutant control strategy in TMDLs as an implementation strategy and/or to address the impacts of future growth ("Incorporating Green Infrastructure Concepts into Total Maximum Daily Loads (TMDLs), October, 2008"). Green Infrastructure (GI) and Low Impact Development (LID) are terms used to describe storm water management approaches and practices that can be used to eliminate or reduce urban runoff and pollutant loadings by managing the runoff as close to its sources as possible. A collection of small-scale practices, linked together on a site, is used to reduce the impacts of development and redevelopment activities on water resources by maintaining or replicating the predevelopment hydrology of the site.

Green infrastructure, alone, or in combination with other strategies outlined in this section are available to achieve the waste load allocation and/or load reduction targets of this TMDL and/or to assure that future growth does not result in increases in phosphorus loads to Onondaga Lake that degrade current water quality. As use of green infrastructure gains wider acceptance and adoption, green infrastructure development practices can be expected to play an important role in protecting Onondaga Lake and its watershed while allowing for future growth in the Onondaga Lake watershed.

**Attachment 2: Supplementary information on EPA regulatory support for using green infrastructure in TMDL implementation**

Supporting Document #1:

On March 5, 2007, EPA issued a memorandum entitled "Using Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and other Water Programs".
(Available at:
http://water.epa.gov/infrastructure/greeninfrastructure/upload/greeninfrastructure_h2oprograms_07.pdf)

Key points in this EPA 2007 memo include:

- Green infrastructure can be both a cost effective and an environmentally preferable approach to reduce stormwater and other excess flows entering combined or separate sewer systems in combination with, or in lieu of, centralized hard infrastructure solutions.
- EPA strongly supports the use of green infrastructure approaches described in the NRDC report - Rooftops to Rivers: Green strategies for controlling stormwater and combined sewer overflows (NRDC, 2006).
- Green infrastructure has a number of benefits, including
    - Cleaner Water - Vegetation and green space reduce the amount of stormwater runoff and, in combined systems, the volume of combined sewer overflows.
    - Cost Savings - Green infrastructure may save capital costs on digging big tunnels and stormwater ponds, operations and maintenance expenses for treatment plants, pipes, and other hard infrastructure; energy costs for pumping water; and costs of wet weather treatment and of repairing stormwater and sewage pollution impacts, such as stream bank restoration.

Supporting Document #2:

In October 2008, EPA issued a fact sheet entitled "Incorporating Green Infrastructure Concepts into TMDL".
(Available at: http://water.epa.gov/aboutow/owow/upload/tmdl_lid_final.pdf)

Key points in this EPA fact sheet include:

- Incorporating GI/LID into TMDLs can point the way toward implementation actions that can reduce stormwater runoff loads and erosive effects, and help meet pollutant loadings identified in the TMDL.
- Two components of a TMDL can include a discussion of LID practices, where appropriate: Future Growth, and TMDL Implementation Plans. For example, if the future growth allocation for stormwater can be reduced by planning for GI/LID practices, this may create opportunities to increase other allocations in the TMDL and still meet overall pollutant reduction targets.
- The TMDL implementation plan (IP) specifically can discuss what LID/Green Infrastructure practices can be incorporated into both regulatory and non-regulatory programs. For example, the implementation plan can show how storm water NPDES permits can include performance standards for current sites [e.g. retrofits] or could incorporate specific practices to reduce future pollutant loadings.

**Supporting Document #3:**

On April 20, 2011, EPA issued another memorandum entitled "Protecting Water Quality with Green Infrastructure in EPA Water Permitting and Enforcement Programs".
(Available at:
http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_memo_protectingwaterquality.pdf)

**Key points in this 2011 EPA memo include:**

- **EPA recognizes that green infrastructure can be a cost-effective, flexible, and environmentally-sound approach to reduce stormwater runoff and sewer overflows and to meet CWA requirements.**
- **EPA Office of Water (OW) and the Office of Enforcement and Compliance Assurance (OECA) are committed to working with interested communities and water resource managers to successfully incorporate green infrastructure into NPDES permits, as well as remedies designed to address non-compliance with the CWA, to better manage both stormwater runoff and sewer overflows.**
- **Given the multiple benefits associated with green infrastructure, EPA encourages the use of green approaches to stormwater runoff and sewer overflow management to the maximum extent possible.**

# GRAY PROJECTS UPDATE

# Gray Projects Update

**Progress of Projects Under Construction**

Harbor Brook Interceptor Sewer (HBIS) Replacement and CSO Abatement Project (Construction Phase)
In April the contractor began restoration work in Skunk City, Wilbur Avenue, West Fayette Street, and Seymour Street. In addition, work began on the Delaware/Grand Rain Garden and Bio-retention Area. To date the project has installed 7,503 LF of new 18" to 36" interceptor sewer between Velasko Road and West Fayette Street on the west side of Syracuse. In addition, 5,222 LF of new local sewers was installed, ranging in size from 8" to 42" in diameter. The sewer installation is 100 percent complete, and the project, overall, is approximately 93 percent complete. The project is anticipated to be completed by July 2012.

Midland CSO 044 Abatement Project (Construction Phase)
Construction work continued on the 96" CSO conveyance pipeline that will connect CSO 044 in South Avenue to the Midland RTF. In April the contractor continued general site cleanup activities and the installation of the electrical conduits and systems for the flushing chambers. All work, including restoration, is anticipated to be complete in June of 2012.

Clinton CSO Storage Facility Project (Construction Phase)
In April the contractor continued construction activities associated with the storage facility that will collect 6 million gallons of combined sewage from 8 downtown Syracuse CSOs during wet-weather events. The contractor completed the West Chamber draw-down test and installation of the collar beam rebar. Forming and pouring concrete at the West Chamber began as well as excavation. The installation of the dewatering wells, piezometers, and inclinometers for the 84" conveyance sewer was completed and excavation has begun. Installation of the demising wall was ongoing in the month of April.

Lower Harbor Brook CSO Conveyance Project (Construction Phase)
The contractor completed the site clearing and grubbing and began to install the new CSO 003 regulator sewer in Hiawatha Blvd. between Harbor Brook and State Fair Boulevard. The project will transmit combined sewage from CSOs 003 (Hiawatha Boulevard) and 004 (State Fair Boulevard) to the new storage facility to be constructed on State Fair Boulevard and from CSO 063 in the future.

Lower Harbor Brook CSO Storage Facility Project (Construction Phase)
In April the contractor completed the new CSO 033 regulator sewer in Hiawatha Blvd. between Harbor Brook and State Fair Boulevard and began work on the CSO 003 conveyance sewer that will transmit combined sewage during wet-weather events to the new storage tank. The 8-inch water main relocation on Hiawatha Blvd. was also completed. The Hiawatha Boulevard work will be completed in June at which time the construction will switch to the CSO 004 conveyances sewer installation on State Fair Boulevard.

CSO 022/045 Sewer Separation Project (Construction Phase)
The general contractor, Joseph J. Lane Construction, continued to restore CSO 045 area on Rich Street, Crescent Avenue, Hudson Street, and West Castle Street after the sewer work was completed in March. J.J. Lane also continued work in CSO Area 022 including the 12-inch sanitary sewer installation on West Willow Street and the 10-inch sewer installation on West Genesee Street between North Franklin and

North Clinton. The plumbing contractor, Joy Process Mechanical, continued interior investigations and shall begin work in May. Once complete, the discharge of combined sewage from CSOs 022 and 045 will be eliminated, and all sanitary sewage will be transmitted to Metro via the Main Interceptor Sewer (MIS).

| | |
|---|---|
| Project: | Clinton CSO Storage |
| Project Owner: | Onondaga County |
| Project Location: | Trolley Lot, Syracuse |
| Sewershed: | Clinton/Lower MIS |
| Technology: | Storage Facility |
| Capacity: | 6,000,000 gallons |
| CSO Capture: | 114,000,000 gal/yr |
| # CSOs Abated: | 8 |
| Completion Date: | 12/ 31/13 |
| Contract amount: | $70,640,000 |
| Bid Date: | 7/14/11 |
| Prime Contractor: | Jett Industries |

# FACT SHEET
# Clinton CSO Storage Facility

**Project Description**: The Clinton CSO Storage Facility Project is a 6 million gallon combined sewer overflow storage facility that will be constructed in the parking area between the elevated rail tracks and Onondaga Creek just south of the Armory Square area of downtown Syracuse (formerly known as the Trolley Lot). During wet weather events, the facility's three, parallel 18-foot diameter, underground storage tunnels will capture flow from 8 combined sewer overflows (CSOs) in the vicinity of the former Trolley Lot. The wastewater will be stored in the tunnels until it can be conveyed via the main interceptor sewer to the Syracuse Metropolitan Sewage Treatment Plant (Metro) for treatment. The off-site conveyance piping, which will transmit the flow to the facility, was installed under the Clinton CSO Phase 1 and 2A conveyances projects completed in 2009. There will be additional on-site conveyance piping installed under this project to connect the existing sewers to the new facility. In addition to the tunnels there will be two-above ground structures located at either end (east and west) of the parking lot which provide access to the tunnels and house the pumping, grit collection, and odor control facilities.

**Green Components:** To further enhance the sustainability of the facility, the project includes green infrastructure components. The stormwater runoff from the entire site, which measures approximately 275,000 square feet or 6.3 acres, will be managed by green infrastructure. The stormwater from the area surrounding the main structure on the western half of the site will be collected by a series of catch basins and stormwater piping that will outfall into two bioretention basins. The bioretention basins will allow the stormwater to infiltrate into the ground rather than immediately run off to the creek. In addition, stormwater runoff from the eastern half of the project site, to be restored as a parking area, will be directed to a subsurface collection facility and used to flush the storage tunnels to clear them of grit and debris that may have settled or been left behind after the stored combined sewage was transmitted to Metro. In addition, a green roof will be installed on the west building.

**Construction Update:** In April, the contractor continued construction activities associated with the storage facility that will collect 6 million gallons of combined sewage from 8 downtown Syracuse CSOs during wet weather events. The contractor completed the West Chamber draw down test and installation of the collar beam rebar. Forming and pouring concrete at the West Chamber began as well as excavation. The installation of the dewatering wells, piezometers, and inclinometers for the 84" conveyance sewer was completed, and the excavation has begun. Installation of the demising wall was also ongoing in the month of April.

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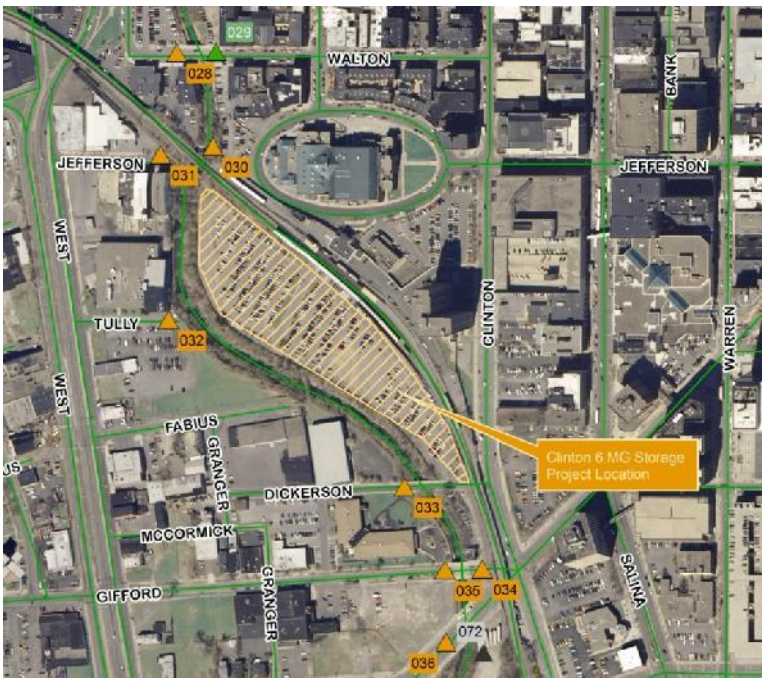
**Clinton CSO Storage Facility – Construction Progress April 16, 2012**




**Project Location Map**

**Clinton CSO Storage Facility Project Aerial View (January 11, 2012)**

Save
The Rain
Clean
The Lake
Joanne M. Mahoney
County Executive

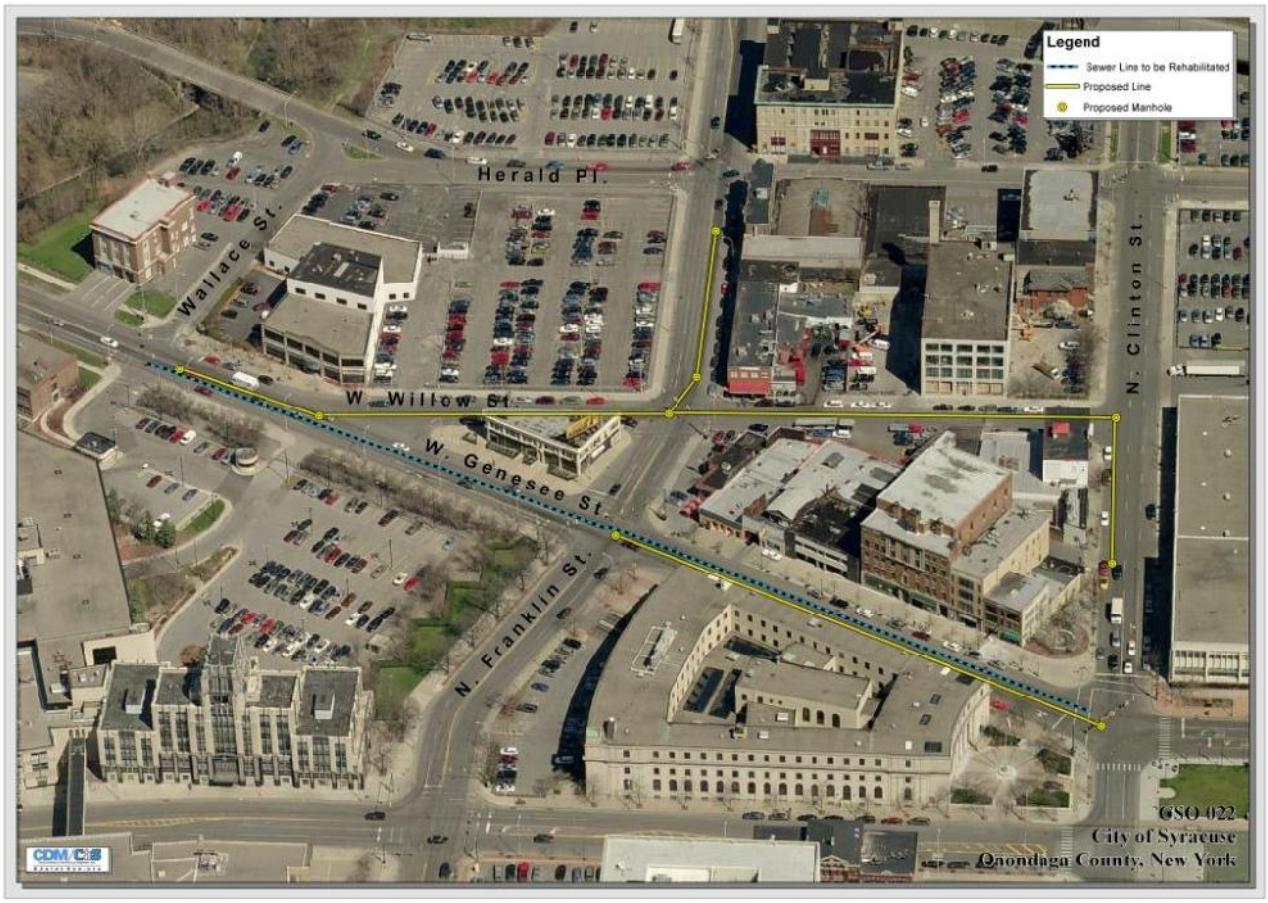
| | |
|---|---|
| Project: | CSO 022/045 Sewer Separation |
| Project Owner: | Onondaga County |
| Project Location: | Syracuse |
| Sewershed: | Clinton/Lower MIS & Midland |
| Technology: | Sewer Separation |
| CSO Capture: | 1,000,000 gal/yr |
| # CSOs Abated: | 2 |
| Completion Date: | 12/ 31/12 |
| Project Cost: | General - $4,581,888<br>Plumbing - $1,031,235 |
| Bid Date: | November 29, 2011 |
| Prime Contractor: | General – J. J. Lane<br>Plumbing – Joy Process Mechanical |

# FACT SHEET
# CSO Area 022 and 045 Sewer Separation Project

**Project Description**: In 2000, the separations of 13 separate CSO basins were designed to the 95 percent stage. The CSO areas represented basins whose full separation would be cost effective compared to other CSO abatement technologies. The remaining basins where the full separation has not been constructed are CSO areas 022 and 045. CSO area 022 is located in downtown Syracuse, and the tributary sewers are located in North Franklin, West Genesee, and Willow streets. The proposed work to be performed includes 2,000 linear feet (LF) of new sanitary sewer; 800 LF of sewer lining; and twenty (20) internal building separations. CSO area 045 is located south of downtown Syracuse with the outfall at the intersection of West Castle Street, Hudson Street, and Onondaga Creek. The combined sewage tributary to this outfall is conveyed by combined sewers located in Crescent and Hudson streets. The proposed work to be performed includes: 700 LF of new storm sewer in Hudson and Crescent streets, 1200 LF of sewer lining to convert the existing combined sewers in Crescent and Hudson streets to sanitary sewers, rehabilitation of the existing sanitary sewer in Rich Street between Hudson and Onondaga Creek, and one (1) private property separation.

**Green Components:** The County has successfully applied its "Greening the Gray" mission to the project through the implementation of green infrastructure as it related to the reconstruction of Robert R. Haggart Park, the pocket park on the corner of West Genesee and North Clinton streets. The park had fallen into disrepair due to settlement issues and will be rehabilitated with green components under the CSO 022 project.

**Project Update:** The general contractor, Joseph J. Lane Construction, continued to restore CSO area 045 on Rich Street, Crescent Avenue, Hudson Street, and West Castle Street after the sewer work was completed in March. J.J. Lane also continued work in CSO area 022, including the 12-inch sanitary sewer installation on West Willow Street and the 10-inch sewer installation on West Genesee Street between North Franklin and North Clinton. The plumbing contractor, Joy Process Mechanical, continued interior investigations and will begin work in May. Once complete, the discharge of combined sewage from CSOs 022 and 045 will be eliminated, and all sanitary sewage will be transmitted to Metro via the Main Interceptor Sewer (MIS).



**CSO 045 Project Area**

Version 4/30/2012

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| | |
|---|---|
| Project: | CSO 044 Conveyances |
| Project Owner: | Onondaga County |
| Project Location: | Syracuse |
| Sewershed: | Midland |
| Technology: | Storage & RTF |
| CSO Capture: | 6,000,000 gal/yr |
| # CSOs Abated: | 1 |
| Completion Date: | Partial - 12/31/11 |
| Contract amount: | $7,978,282 |
| Bid Date: | 9/21/10 |
| Prime Contractor: | J.J. Lane Construction |

# FACT SHEET
# CSO 044 Conveyances Project

**Project Description** The CSO 044 Conveyances Project provides for the transmission of wet weather flow from CSO 044, which discharges to Onondaga Creek at South Avenue and West Castle Street, to the Midland Regional Treatment Facility (RTF) on the south side of Syracuse. Conveyance of the combined sewer flow to the Midland RTF will be via approximately 500 linear feet of 96-inch diameter pipeline between the terminus of the 144-inch pipeline installed under the Midland Phase Two RTF and Conveyances Project to CSO 044.

**CSO 044 Conveyances Construction**
**January 11, 2012**

**Green Components:** In addition to the pipeline, the project will include the construction of a new regulator structure in South Avenue and two conveyance flushing chambers. The "Greening the Gray" components incorporated include the utilization of captured stormwater for the flushing chambers, the installation of rain gardens for stormwater infiltration, and an educational interpretive walkway.

**Project Update:** Construction continued work on the 96" CSO conveyance pipeline that will connect CSO 044 in South Avenue to the Midland RTF. In April, the Contractor continued general site cleanup activities and the installation of the electrical conduits and systems for the flushing chambers. The field office trailers were demobilized in April as well. All work, including restoration, is anticipated to be complete in June 2012.

Version 04/30/2012

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# FACT SHEET
# Harbor Brook Interceptor Sewer (HBIS) Replacement and CSO Abatement Project

| | |
|---|---|
| Project: | HBIS Replacement & CSO Abatement |
| Project Owner: | Onondaga County |
| Project Location: | Harbor Brook Corridor Fayette St. to Velasko Rd. |
| Sewershed: | Harbor Brook |
| Technology: | Interceptor Replacement |
| CSO Capture: | 36,000,000 gal/yr |
| CSOs Addressed: | 9 |
| Completion date: | 6/30/2012 |
| Contract amount: | $21,536,849 |
| Bid Date: | 11/2/09 |
| Prime Contractor: | J.J. Lane Construction |

**Project Description**: The HBIS Replacement Project provides for a much needed upgrade to the existing Harbor Brook Interceptor between West Fayette Street and Velasko Road on the west side of Syracuse. This length of the interceptor sewer conveys dry weather flow and a portion of the combined flow from CSOs 009, 010, 011, 013, 014, 015, 016, 017, and 018 to Metro for treatment. The existing interceptor is a U-shaped cast-in-place concrete pipe constructed in the 1920s and has fallen into disrepair. Due to the shape and age of the HBIS, flow restrictions have developed which have decreased capacity and increased infiltration in some areas. The project includes the installation of 7,600 linear feet (LF) of new HBIS ranging in size from 18- to 36-inches in diameter, 1,500 LF of new local sewers, rehabilitation of 860 LF of 30-inch brick sewer, installation of 4 new regulator manholes, and rehabilitation or replacement of 2500 LF of Harbor Brook culvert. In addition, during construction the available funding allowed CSO Areas 013 and 016 to be completely separated which will increase CSO capture and eliminate two CSO discharge points. As a result, the capture projection for this project is anticipated to be 0.9 percent or 36 million gallons.

**Green Components:** **T**he County has successfully applied its "Greening the Gray" mission to the HBIS Replacement Project. The GI components incorporated into this gray construction project include the installation of approximately 40 enhanced tree basins with infiltration zones and the construction of a bioretention area that will manage stormwater runoff from an area of approximately 3.2 acres. The enhanced tree basins will be located on Hartson, Herriman, and Hoeffler streets in the Skunk City area of Syracuse. The bioretention area will be located at the corner of Grand Avenue and Delaware Street and will contain a series of rain gardens and bioretention swales which will collect off-site runoff from impervious areas and manage the on-site stormwater as well. The site will have a "park-like" setting with an educational theme.

**Construction Update:** In April, the contractor began restoration work in Skunk City, and on Wilbur Avenue, West Fayette Street, and Seymour Street. In addition, work began on the Delaware/Grand Rain Garden and Bio-retention Area. To date the project has installed 7,503 LF of new 18" to 36" interceptor sewer between Velasko Road and West Fayette Street on the west side of Syracuse. In addition, 5,222 LF of new local sewers were installed, ranging in size from 8" to 42" in diameter. The sewer installation is 100 percent complete, and the project overall is approximately 93 percent complete. The project is anticipated to be complete by July 2012.

**New HBIS Alignment through Skunk City (in yellow)**

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# FACT SHEET
# Lower Harbor Brook CSO Storage and Conveyances Project

| | |
|---|---|
| Project: | LHB CSO Conveyances & Storage |
| Project Owner: | Onondaga County |
| Project Location: | State Fair Blvd., Syracuse |
| Sewershed: | Harbor Brook |
| Technology: | Underground Tank |
| Capacity: | 4,900,000 gallons |
| CSO Capture: | 55,000,000 gal/yr |
| # CSOs Abated: | 3 |
| Completion Date: | 12/31/13 |
| Contract Amount: | Conveyances – $4,147,888<br>Storage – $25,039,101 |
| Bid Date: | Conveyances – 8/30/11<br>Storage – 10/18/11 |
| Prime Contractor: | Conveyances – J.J. Lane<br>Storage – C.O. Falter |

**Project Description**: The Lower Harbor Brook CSO Conveyances and Storage Facility Project is a 4.9 million gallon combined sewer overflow storage facility that will be located on County owned property on State Fair Boulevard between Hiawatha Blvd. and West Genesee Street in the City of Syracuse. The facility will capture and store the overflows from CSOs 003, 004 and 063 for up to the 1-year, 2-hour design storm event. After the storm event subsides, the contents of the storage tank will be pumped to the existing Harbor Brook Interceptor Sewer for conveyance to the Metropolitan Treatment Plant (Metro) for full treatment. The project also includes construction of CSO conveyance pipelines on State Fair Blvd., Hiawatha Blvd., and Erie Blvd. to convey combined sewage from the overflow regulators to the storage tanks during rainfall and snowmelt events. Floatables and grit removal will be included in this facility. Odor control provisions will be incorporated into the facility design and the tank will be completely enclosed.

**Green Components:** To further enhance the sustainability of the facility, the project includes green infrastructure components. The stormwater runoff from the rooftops of the storage tank and controls building will be stored within the CSO storage tank and used for a second and third cleaning flush of the tank. This water will ultimately be treated at Metro eliminating the need for this stormwater to be treated on-site. The stormwater storage is designed to capture the 100-year storm (5.2 inches) from the tank and the control building rooftop.

**Project Update:** *Conveyances* - In April, the contractor completed the new CSO 003 regulator sewer in Hiawatha Boulevard between Harbor Brook and State Fair Boulevard, and began work on the CSO 003 conveyance sewer that will transmit combined sewage during wet weather events to the new storage tank. The 8-inch water main relocation on Hiawatha Blvd. was also completed. The Hiawatha Boulevard work will be completed in June and then the construction will switch to the CSO 004 conveyances sewer installation on State Fair Boulevard.

*Storage* - The contractor completed the installation of the sheeting and bracing and began excavation for the 60" conveyance line. In addition, the foundation and the walls for the junction chamber were formed and poured, and backfilling to the top slab began. The chamber will be the convergence point for the flow from CSOs 003, 004 and 063 prior to entering the facility. The storage facility will store combined sewage from the three CSOs during storm events, and transmit the sewage after the storm to Metro via the HBIS.

**Lower Harbor Brook CSO Storage Facility – View from State Fair Boulevard**

**Lower Harbor Brook CSO Storage Facility – View from the Northeast**

**Lower Harbor Brook CSO Storage and Conveyances Project Area**

# GREEN PROJECTS UPDATE

# Green Projects Update

April was a busy month for Save the Rain with completion efforts underway on several projects that began in 2011.

Phase II of the Water Street Green Gateway Project has begun with construction of the south side of the street that will include tree trenches and porous pavers adjacent to the sidewalk. The pavement removal project on East Water Street is also under construction with the addition of a bike lane to the parking lane on the street. Parking lot improvements at the Syracuse City School District Offices have started as well as tree plantings at Hughes Magnet School completed as part of the annual Arbor Day celebration.

Completion work on the Civic Strip has begun with final touches to the green corridor on Harrison Street and the installation of the cistern at the Atrium garage underway.

Work continues on green street renovations at Otisco Street and Avery Ave at Pass Arboretum.

In addition to the work outlined above, construction on significant projects with City of Syracuse Parks Department and the City/County Libraries are on track to commence shortly.

## 2011 Green Projects:

| | |
|---|---|
| Completed | 31 |
| Under Construction | 29 |
| **Total Projects for 2011 (as of 4/30/12)** | **60** |

## 2012 Green Projects:

| | |
|---|---|
| Completed | 2 |
| Under Construction | 2 |
| Contract Phase | 8 |
| Bid Phase | 5 |
| Final Design | 5 |
| 90% Design Phase | 10 |
| 50% Design Phase | 11 |
| Fieldwork Phase | 17 |
| Concept Phase | 11 |
| Other Projects | 9 |
| **Total Projects for 2012 (as of 4/30/12)** | **80** |

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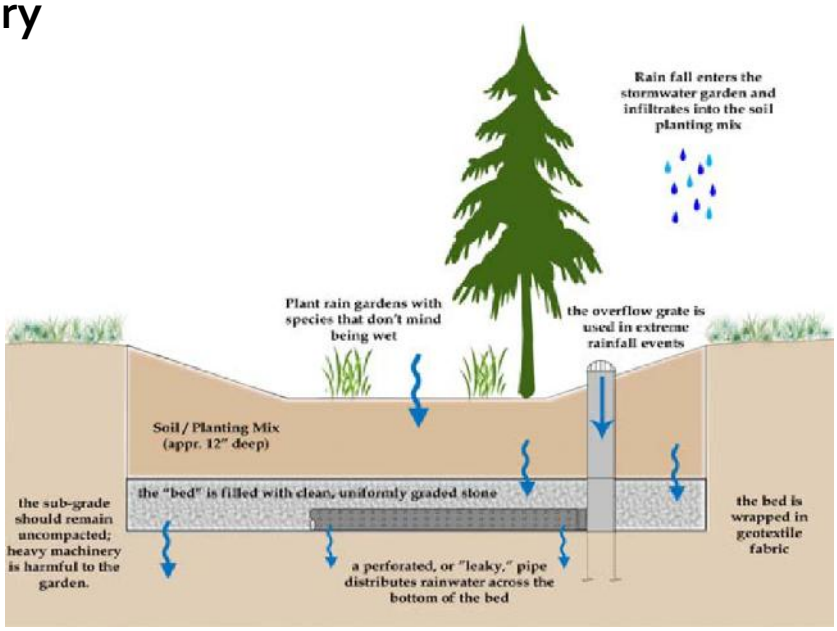
| | |
|---|---|
| Project: | Beauchamp Library |
| Project Owner: | Onondaga County Public Libraries |
| GI Technology: | Bioretention / Rain Garden |
| Project Location: | 2111 South Salina Street |
| Sewershed: | Midland |
| Capture Area: | 15,000 sq. ft. |
| Run-off Reduction: | 265,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $112,000 |
| Bid Date: | 04/02/12 |
| Prime Contractor: | Davis Wallbridge |

# FACT SHEET
# Onondaga County Public Libraries: Beauchamp Library

**Project Description**: The Beauchamp Library project is part of the Onondaga County Public Libraries (OCPL) "Green Library Initiative," a partnership between the Save the Rain program and OCPL to capture stormwater while providing aesthetic benefits to the libraries.

The Beauchamp Library project consists of installing a large bioretention area adjacent to the library building to capture runoff from the library roof, the main library parking lot and from East Colvin Street. In the conceptual rendering on the bottom right corner of this page, the green area represents bioretention area (also known as a rain garden) and the purple outlines the areas from which stormwater will flow into the garden.

The bioretention area is designed to capture this stormwater and have an overflow that does not allow water to pond more than 6 inches deep at any time. This green infrastructure project will capture approximately 265,000 gallons of stormwater annually.




**Schematic of Bioretention Area**

**Conceptual Rendering of Beauchamp Library Project**

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# FACT SHEET
# Onondaga County Public Libraries: Hazard Library

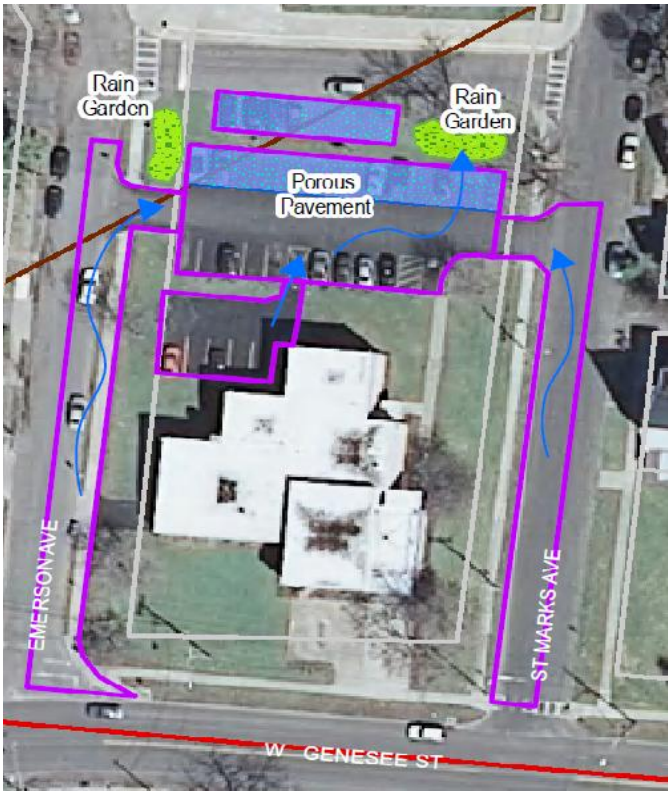
| | |
|---|---|
| Project: | Hazard Library Site Improvements |
| Project Owner: | Onondaga County Public Libraries |
| Project Location: | 1620 West Genesee St. |
| Sewershed: | Harbor Brook |
| GI Technology: | Porous Pavement, Bioretention |
| Capture Area: | 21,000 sq. ft. |
| Run-off Reduction: | 370,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $170,000 |
| Bid Date: | 04/02/12 |
| Prime Contractor: | Davis Wallbridge |

**Project Description**: The Hazard Library project is part of the Onondaga County Public Libraries (OCPL) "Green Library Initiative," a partnership between the Save the Rain program and OCPL to capture stormwater while providing aesthetic benefits to the libraries.

The Hazard Library Site Improvements project consists of porous concrete areas in the existing parking lot, as well as two new rain gardens at the edges of the parking lot to capture stormwater runoff from Emerson Ave. and St. Marks Ave. Beneath the porous concrete areas in the parking lot are infiltration beds that are connected via stormwater piping. The advantage to connecting these infiltration beds is that the piping between the infiltration beds will convey stormwater throughout the infiltration system. This will maximize the capture volume of this system. These green improvements contribute to a reduction of 370,000 gallons of stormwater from entering the combined system annually.

This will be the second Save the Rain project to be completed at the Hazard Library. In June 2011, the Hazard Library Green Roof project was bid and awarded to J&B Installations who will be constructing the green roof in late spring 2012.

**Photograph of Existing Parking Lot Prior to Construction**




**Conceptual Rendering of Hazard Branch Library Site Improvements Project**

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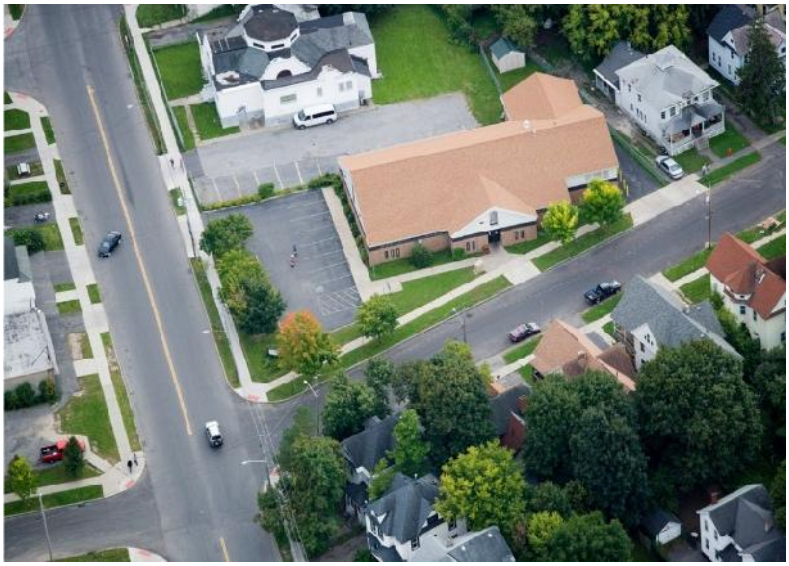
# FACT SHEET
# Onondaga County Public Libraries: Mundy Library

| | |
|---|---|
| Project: | Mundy Library |
| Project Owner: | Onondaga County Public Libraries |
| Project Location: | 1204 South Geddes St. |
| Sewershed: | Harbor Brook |
| GI Technology: | Porous Pavement, Tree Trench |
| Capture Area: | 12,000 sq. ft. |
| Run-off Reduction: | 215,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $188,000 |
| Bid Date: | 04/02/12 |
| Prime Contractor: | Davis Wallbridge |

**Project Description**: The Mundy Library project is part of the Onondaga County Public Libraries (OCPL) "Green Library Initiative," a partnership between the Save the Rain program and OCPL to capture stormwater while providing aesthetic benefits to the libraries.

The Mundy Library project consists of removing the entire existing parking lot surface and installing a new porous concrete surface. The porous concrete areas are designed to allow stormwater to infiltrate through into a subsurface infiltration bed. Stormwater piping will also be installed to capture runoff from portions of the library roof.

Additionally, a new tree trench will be installed along Rowland St. to capture street runoff. The tree trench will be installed with curb stormwater inlets to convey water from the street into the tree trench. In total, these green improvements contribute to a reduction of 215,000 gallons of stormwater from entering the combined system annually.



**Aerial Photograph of Mundy Library Prior to Construction**

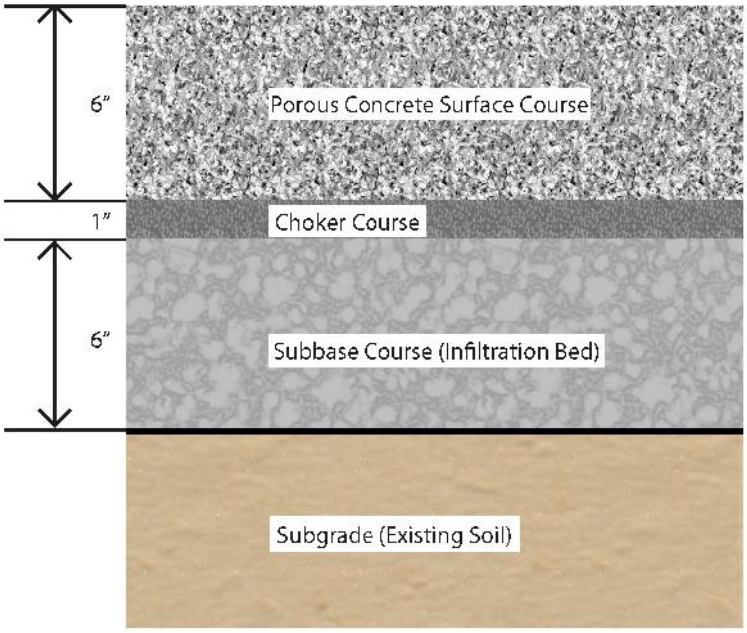
**Conceptual Rendering of Mundy Branch Library Green Infrastructure Project**

# FACT SHEET
# Onondaga County Public Libraries: Petit Library

| | |
|---|---|
| Project: | Petit Library |
| Project Owner: | Onondaga County Public Libraries |
| Project Location: | 105 Victoria Place |
| Sewershed: | Clinton/Lower MIS |
| GI Technology: | Porous Pavement, Roof Leader Disconnection |
| Capture Area: | 14,000 sq. ft. |
| Run-off Reduction: | 254,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $130,000 |
| Bid Date: | 04/02/12 |
| Prime Contractor: | Davis Wallbridge |

**Project Description**: The Petit Library project is part of the Onondaga County Public Libraries (OCPL) "Green Library Initiative," a partnership between the Save the Rain program and OCPL to capture stormwater while providing aesthetic benefits to the libraries.

The Petit Library project consists of porous concrete areas within the existing parking lots. Beneath the porous concrete areas are large stone infiltration basins designed to capture runoff from the whole parking lot. The two infiltration basins are also connected to an existing catch basin along Victoria Place so that in the event of a large storm, stormwater that exceeds the capacity of the infiltration basin systems will be allowed to overflow into the combined system. This project will capture approximately 254,000 gallons of stormwater annually.




**Schematic of Porous Concrete and Infiltration Bed**

**Conceptual Rendering of Petit Branch Library Project**

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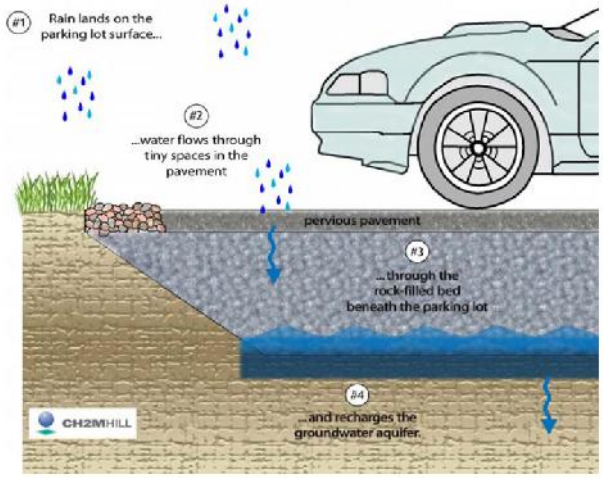
# FACT SHEET
# Onondaga County Public Libraries: White Library

| | |
|---|---|
| Project: | White Library |
| Project Owner: | Onondaga County Public Libraries |
| Project Location: | 763 Butternut Street |
| Sewershed: | Clinton/Lower MIS |
| GI Technology: | Porous Pavement, Rain Garden, Rain Barrel, Infiltration Trench |
| Capture Area: | 24,000 sq. ft. |
| Run-off Reduction: | 424,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $180,000 |
| Bid Date: | 04/02/12 |
| Prime Contractor: | Davis Wallbridge |

**Project Description**: The White Library project is part of the Onondaga County Public Libraries (OCPL) "Green Library Initiative," a partnership between the Save the Rain program and OCPL to capture stormwater while providing aesthetic benefits to the libraries.

The White Library project consists of a porous concrete area within the existing parking lot. The porous concrete area is designed to allow stormwater to infiltrate through into a subsurface infiltration bed. Stormwater from the roof of White Library will be captured in two ways; (1) via rerouting roof leaders into a bioretention area, and (2) capturing stormwater in a rain barrel. The bioretention area will be constructed with a subsurface infiltration bed that will allow for the infiltration of stormwater into the ground. Another green improvement at White Library involves the removal of excess pavement in the existing parking lot and installing a new infiltration trench to capture stormwater runoff from Peters St. These green improvements contribute to a reduction of 424,000 gallons of stormwater from entering the combined sewer system annually.

**Conceptual Rendering of White Branch Library Green Infrastructure Project**




**Schematic of Porous Pavement and Infiltration Trench**

Version 4/24/12

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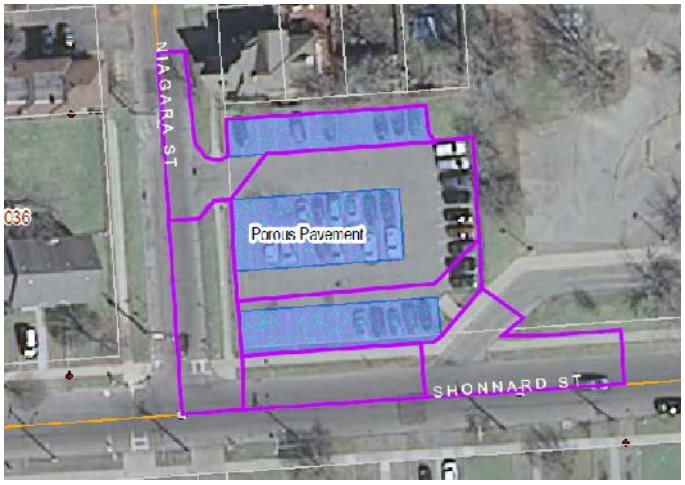
# FACT SHEET
# Seymour Academy Parking Lot

| | |
|---|---|
| Project: | Seymour Academy Parking Lot |
| Project Owner: | SCSD |
| Project Location: | 108 Shonnard St. |
| Sewershed: | Clinton |
| GI Technology: | Porous Pavement, Infiltration Beds |
| Capture Area: | 28,000 sq. ft |
| Run-off Reduction: | 498,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $215,000 *(Engineer's Estimate)* |
| Bid Date: | 5/9/12 |
| Prime Contractor: | TBD |

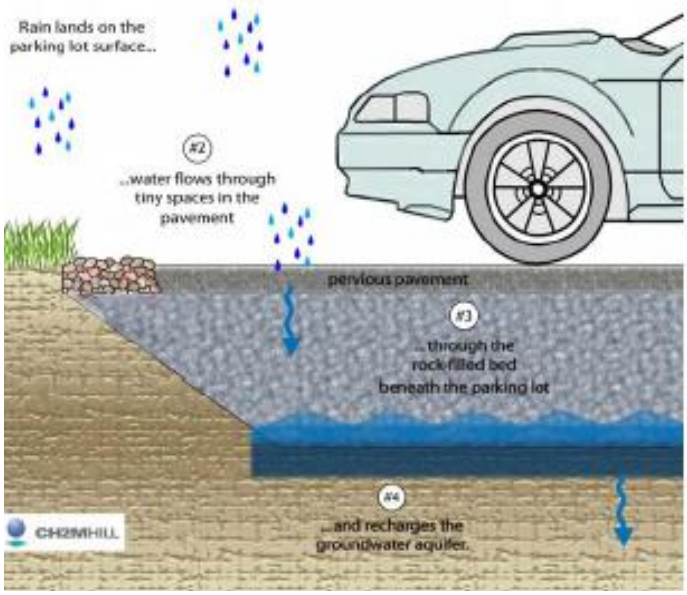
**Project Description**: Three porous concrete and infiltration bed areas will be constructed within the existing Seymour Academy parking lot on 108 Shonnard Street. The project has been designed to not only capture runoff from within the parking lot, but to also capture runoff from the streets surrounding the parking lot. The parking lot has been designed to have a clear distinction between the parking spaces and driving lanes with the porous concrete parking spaces.

The Seymour Academy Parking Lot project will be constructed in conjunction with the Seymour Academy Playground project in the summer of 2012. The amount of stormwater capture via the parking lot porous concrete and infiltration bed system is approximately 498,000 gallons annually. The two Seymour Academy projects combined will capture 1,217,000 gallons of stormwater annually.

**Aerial View of Seymour Academy Prior to Construction**




**Conceptual Rendering of Seymour Academy Parking Lot Project**




**Schematic of Porous Pavement and Infiltration Bed**

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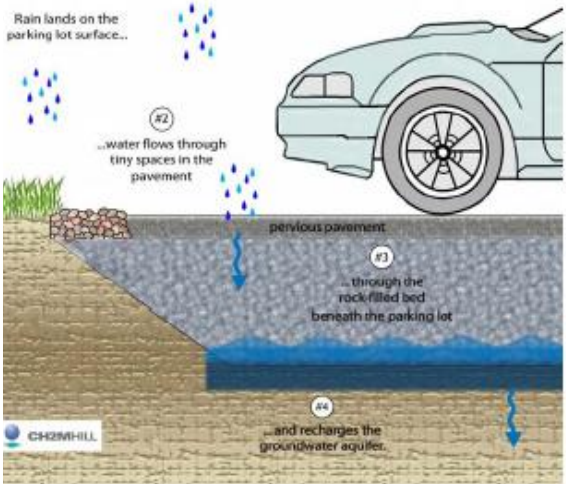
# FACT SHEET
# Seymour Academy Playground

| | |
|---|---|
| Project: | Seymour Academy Playground |
| Project Owner: | SCSD |
| Project Location: | 108 Shonnard St. |
| Sewershed: | Clinton |
| GI Technology: | Pavement Removal, Rain Garden, Tree Trench |
| Capture Area: | 40,000 sq. ft |
| Run-off Reduction: | 719,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $282,000 *(Engineer's Estimate)* |
| Bid Date: | 5/9/12 |
| Prime Contractor: | TBD |

**Project Description**: The existing Seymour Academy playground asphalt surfacing will be removed and a new rain garden and tree trench will be constructed. The new tree trench will be installed in the right-of-way on Seymour Street and has been designed to capture runoff from the roadway itself. Additionally, the new rain garden has been designed to capture runoff from the remaining asphalt within the playground.

The Seymour Academy Playground project will be constructed in conjunction with the Seymour Academy Parking Lot project in the summer of 2012. The amount of stormwater capture for the playground project via the asphalt pavement removal and tree trench and rain garden installation is approximately 719,000 gallons annually. The two Seymour Academy projects combined will capture 1,217,000 gallons of stormwater annually.

**Aerial View of Seymour Academy prior to Construction**




**Schematic of Porous Pavement and Infiltration Bed**

**Conceptual Rendering of Seymour Academy Parking Lot Project**

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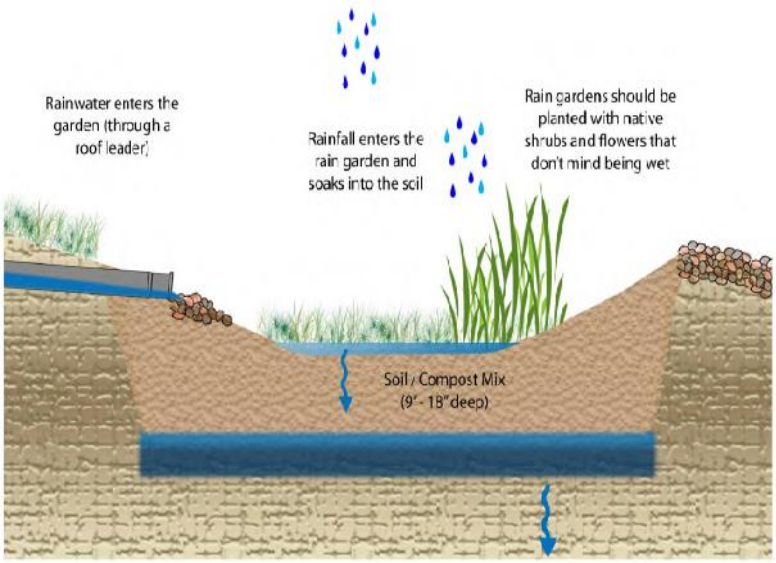
County Executive

| | |
|---|---|
| Project: | SUNY Upstate Biotechnology Center |
| GI Technology: | Bioretention |
| Project Location: | 820-900 E. Water Street |
| Project Owner: | SUNY Upstate |
| Sewershed: | Clinton/Lower MIS |
| Capture Area: | 179,000 square feet |
| Run-off Reduction: | 3,167,000 gallons/year |
| Year Contracted: | 2012 |
| Construction Cost: | TBD |
| Contractor: | TBD |

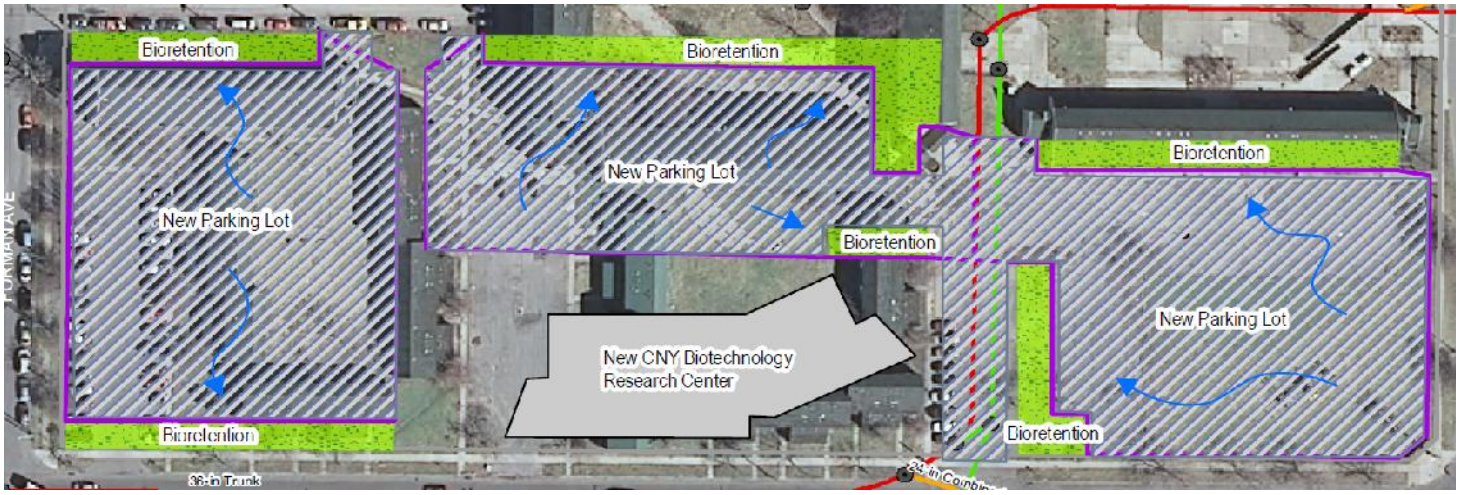
# FACT SHEET: SUNY Upstate Biotechnology Center

**Project Description**: The SUNY Upstate Biotechnology Center project is part of a continuing collaboration between the Save the Rain Program and SUNY Upstate. This project is the fourth SUNY Upstate project to be a part of the Save the Rain Program to date, and it is being completed in conjunction with the redevelopment of Kennedy Square.

Along with the demolition of the former apartment complex and construction of the new biotechnology center and new parking lots, multiple bioretention areas are being constructed to manage stormwater runoff from the site. In total, an area of 179,000 square feet will be managed, resulting in an annual stormwater capture of over 3 million gallons.




**Rendering of a Bioretention Area**




**Conceptual Rendering of SUNY Upstate Biotechnology Center Project**



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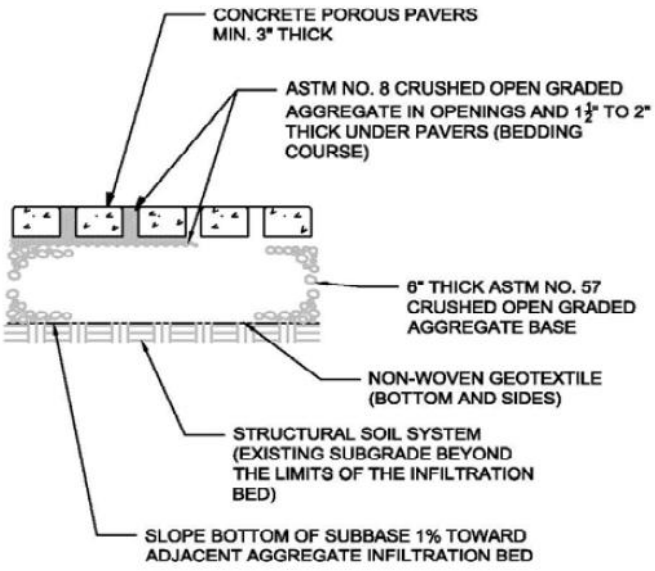
# FACT SHEET
# Westcott Community Center

| | |
|---|---|
| Project: | Westcott Community Center |
| Project Owner: | City of Syracuse Parks Dept. |
| Project Location: | 822 Euclid Ave. |
| Sewershed: | Clinton/Lower MIS |
| GI Technology: | Porous Pavers, Rain Barrel |
| Capture Area: | 9,000 sq. ft. |
| Run-off Reduction: | 153,000 gal/yr |
| Year Contracted: | 2012 |
| Construction Cost: | $52,500 |
| Bid Date: | 04/30/12 |
| Prime Contractor: | Ballard Construction |

**Project Description**: The Westcott Community Center project is part of a larger 2012 Save the Rain initiative involving both County and City owned parks located within the combined sewershed.

The project consists of retrofitting an existing plaza area adjacent to the Community Center by removing the existing compacted soils and installing new porous pavers. The porous pavers and associated infiltration bed are designed to handle runoff from the roof of the building as well as from Westcott Street. Additionally, two new rain barrels will be installed in the rear of the building to capture runoff from a small portion of the roof. In total, this project captures 153,000 gallons of stormwater runoff annually.




**Typical Porous Paver Installation Detail**

**Conceptual Rendering of the Green Infrastructure Project at the Westcott Community Center**

Version 3/27/12

Save the Rain

# GREEN IMPROVEMENT FUND

# Green Improvement Fund Update

The Green Improvement Fund (GIF) received three new applications in the month of April, bringing the total to 83 applications submitted to date.

There are a number of GIF projects scheduled to begin construction this spring. Additional opportunities for potential partnerships are currently being developed and the program continues to review current practices to ensure program efficiency.

## Green Improvement Fund Summary

| **Applications Received** | **83** |
|---|---|
| Complete | 19 |
| Under Contract/Implementation | 25 |
| Award Phase | 19 |
| Under Review | 9 |
| Inactive Applications | 11 |

# METRO WWTP PHOSPHORUS PROJECTS/TMDL/AMBIENT MONITORING PROGRAM UPDATE

# Metro WWTP Phosphorus Projects/TMDL/Ambient Monitoring Program Update:

## Metro Phosphorus Optimization Project

- The County developed a scope of work for Phase II studies to be conducted in 2012. The contract amendment is currently being reviewed for approval. A project schedule has been developed with a final report due February 2013.

## Metro Phosphorus Work Plan Project

- Received review comments on March 26, 2012, for project report transmitted to NYSDEC/ASLF on December 31, 2011.

- Currently working on Decision Model and Compliance Plan.

## Onondaga Lake Water Quality Model

- Final Model Validation Report to be completed and distributed in May 2012.

## TMDL

- NYSDEC released the draft Total Maximum Daily Load (TMDL) for Phosphorus in Onondaga Lake on March 28, 2012, for review and comment (posted on www.dec.ny.gov/chemical/67594.html) The comment period ended April 27, 2012. Comments received by this date will be considered by NYSDEC prior to submitting the final document to EPA for approval.

- County comments on the draft TMDL were submitted on April 26, 2012.

## Ambient Monitoring Program

WATER QUALITY SAMPLING SUMMARY (April 2012):

Tributary Sampling (April 2012)

- Tributary Bacteria sampling events conducted on April 5, 12 and 26.
- Tributary Biweekly sampling event conducted on April 10 and 24.

TRIBUTARY BACTERIA COMPLIANCE ASSESSMENT (March 2012)*:

- Bacteria in Compliance with the NYS Ambient Water Quality Standards (AWQS) for:

  Onondaga Creek at Dorwin Avenue, Harbor Brook at Bellevue Avenue, Bloody Brook at Onondaga Lake Parkway, Ley Creek at Park Street and Harbor Brook at Velasko Road.

- Bacteria in Non-Compliance for:

  Onondaga Creek at Kirkpatrick Street

*Note: *Compliance could not be assessed as 5 samples/month were not collected at sampling sites at Trib5A @ State Fair Blvd., Harbor Brook at Hiawatha Boulevard, and Ninemile Creek at Lakeland Rt 48 due to construction/road closure.*

Onondaga Lake Sampling (April 2012)

- Lake Weekly sampling events conducted on April 11 and 23.
- Lake Bacteria only sampling events conducted on April 19.
- Lake South Deep Biweekly sampling event conducted on April 17.
- Lake Quarterly (South and North Deep stations) sampling event conducted on April 3.

<u>BIOLOGICAL MONITORING PROGRAM SAMPLING SUMMARY (April 2012)</u>

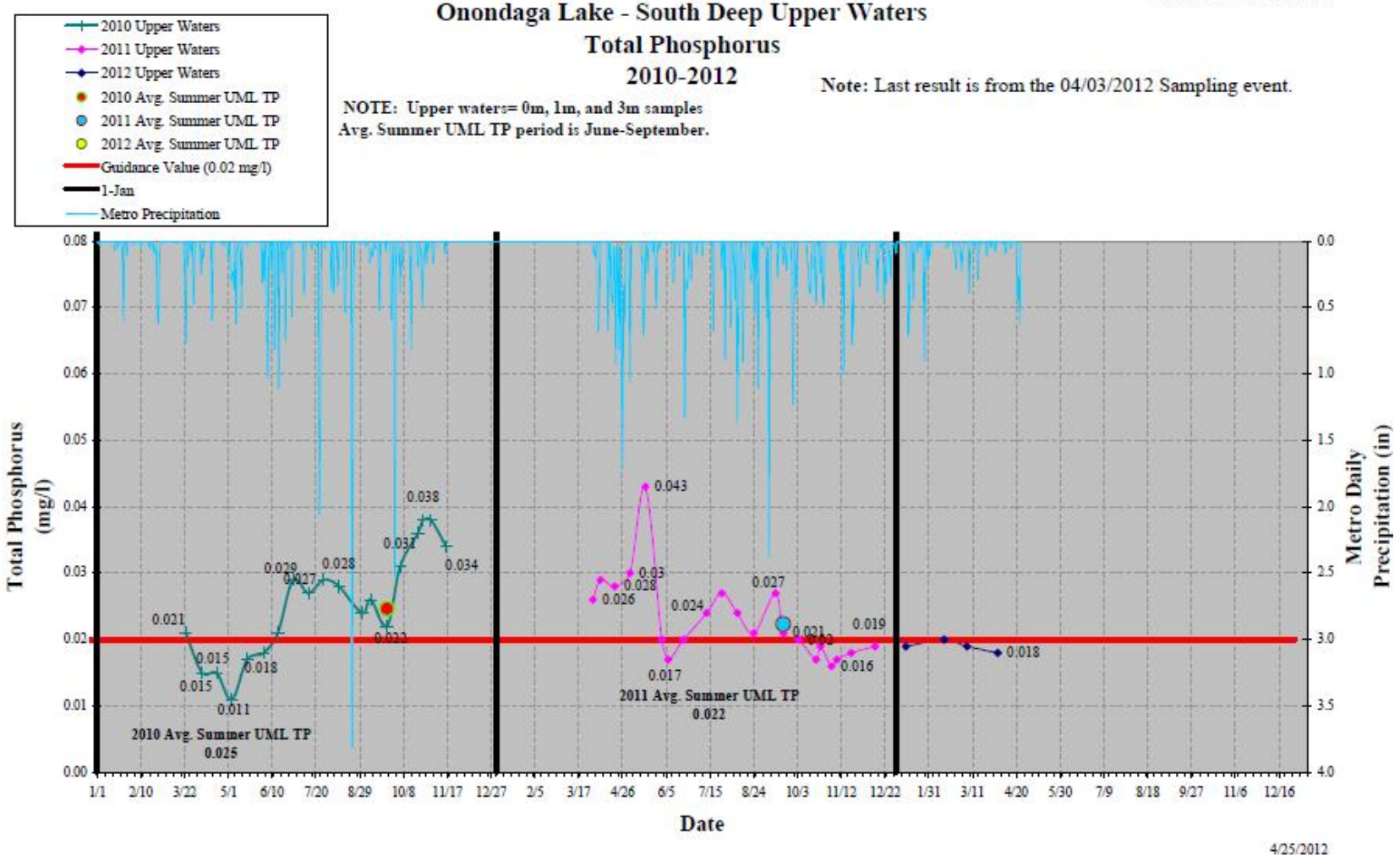
- No biological related sampling events conducted in April 2012.

2012 Data are Provisional

# Onondaga Lake - South Deep Upper Waters
## Total Phosphorus
## 2010-2012

Note: Last result is from the 04/03/2012 Sampling event.

**NOTE: Upper waters= 0m, 1m, and 3m samples**
**Avg. Summer UML TP period is June-September.**




4/25/2012

# LEGISLATIVE/REGULATORY/ MEDIA UPDATE

# Legislative/Regulatory Update

**Action Items for the County Legislature in the Month of April**

- Authorizing the acceptance of the option to purchase a permanent easement for the construction, operation, and maintenance of the Midland Avenue CSO Abatement Project ($3,000). Resolution No. 58.

**Action Items for the Environmental Protection Committee in the Month of May:**

- Lake Improvement: ACJ update.

- A resolution calling for a public hearing in connection with authorizing various green infrastructure projects located outside the City of Syracuse as outlined in Local Law 1-2011 for the purpose of mitigating inflow and infiltration of stormwater into the sanitary sewer system.

# DeWitt to host foray of Earth Day events

State Senator David Valesky, retired New York State Assemblywoman Joan Christensen and DeWitt Town Supervisor Ed Michalenko cut the ribbon to the new 51 KW photovoltaic array solar panel roof. Photo by Amanda Seef.

Joe Genco As of Monday, April 16, 2012 -2:58 p.m.

As Earth Day approaches, DeWitt is working to show its residents how they can help the environment year-round.

On Saturday, April 21, the day before Earth Day, the town of DeWitt will hold an Earth Day fair in addition to its annual "Clean Up to Green Up" trash pickup.

The fair, something the town first did last year, will include a series of presentations on sustainable and environmentally friendly practices to teach people how they can help the Earth, said Vicki Baker, a member of the town's sustainability committee.

"Info is key. We want to spread the message that Earth Day is about more than litter. We can help the Earth and make it a better place to live," said Baker, who served on the town board from 2007 to 2011. "The town has done a lot of work to become sustainable and now we are trying to educate people about what they can do."

http://www.eaglenewsonline.com/news/2012/apr/16/dewitt-host-foray-earth-day-events/

The fair, which begins at 9 a.m. at DeWitt Town Hall, will include presentations by the New York State Energy Research and Development Authority on making homes and businesses energy efficient. DeWitt and Onondaga County will present on their Community Sustainability initiatives, including a rain barrel demonstration to highlight the county's "Save the Rain" campaign. East Syracuse-Minoa High School students will present the work they have been doing with SUNY College of Environmental Science of Forestry and Minoa's Waste Water treatment facility.

In addition to the fair, the town will hold its 31st annual "Clean Up to Green Up." The town will give out gloves, bags and vests for trash pickup at a number of locations around DeWitt. Volunteers will also be instructed on sorting trash and recyclables, said Angela Epolito from the town supervisor's office.

The town of DeWitt has made sustainability a priority since Baker joined the town board in 2007. In 2009, the town joined New York State's Climate Smart Communities program, which aims to create a partnership between state and local governments to help communities reduce greenhouse gas emissions and become more sustainable.

The town has undertaken a number of green initiatives, many of which were paid for by state grant money through the Climate Smart program. These initiatives include installing solar panels, altering lighting and heating systems in town buildings, distributing blue recycle bins and running a metal recycling program, Baker said.

For more information on Earth Day events, visit townofdewitt.com.

SYRACUSE New Times

*COVER STORY / Wednesday, April 18,2012* *By Veronica Magan*

# LIFE AT THE TOP



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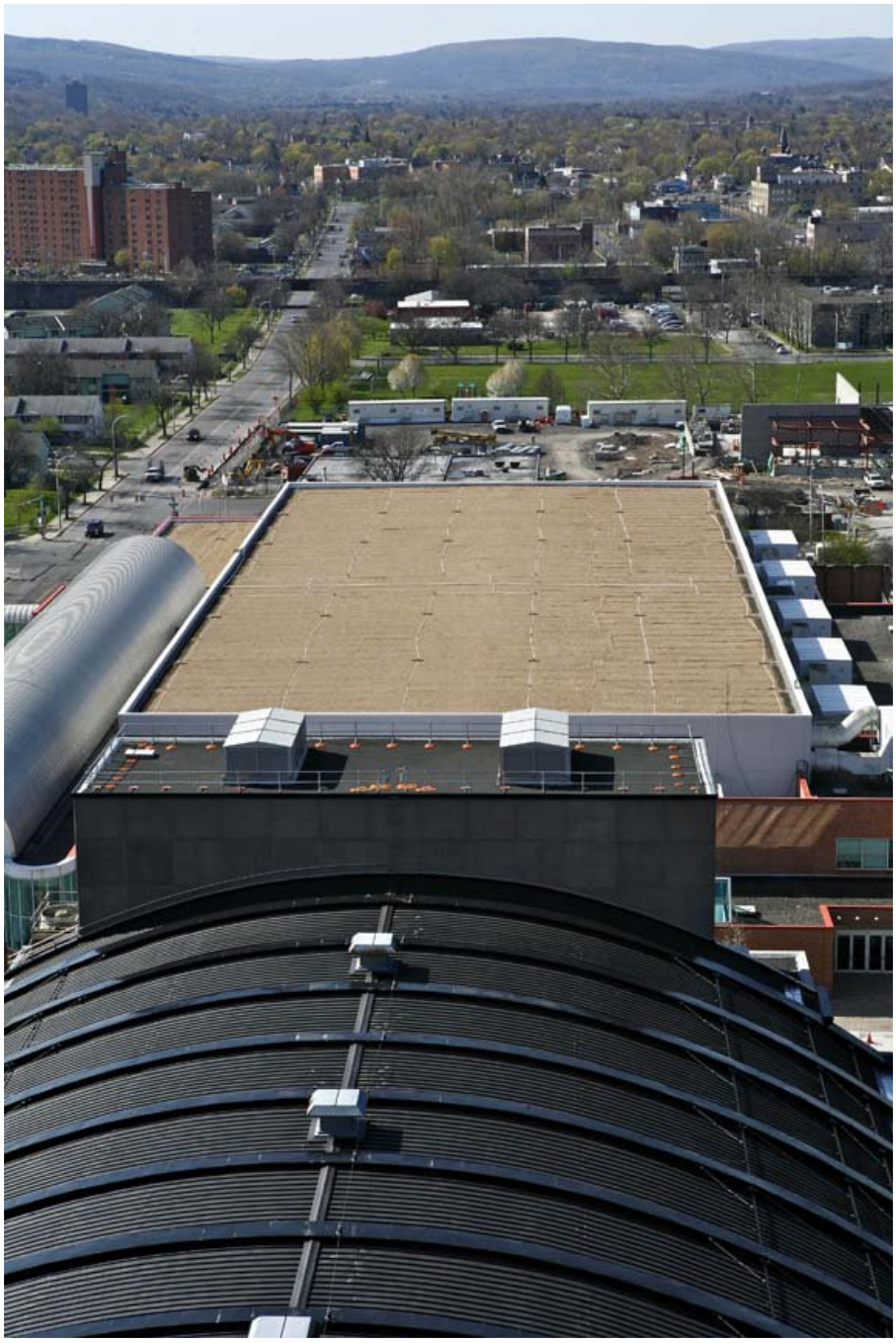
By the end of 2012 the black and gray rooftops of Syracuse will give way to green. As part of the movement that has brought attention to Syracuse as one of the greenest cities in America, according to the Environmental Protection Agency, Onondaga County and building owners have been working on transforming buildings' roofs into fully vegetated gardens.

With approximately 60,000 square feet—enough to cover a football field—and a million-dollar investment, the green roof at the Pirro Convention Center, 800 S. State St., is the largest in the city, the third largest in New York state, and the largest outside of New York City. It's the biggest investment in green infrastructure the county has made so far, but the benefits are not directly evident.

"The toughest part of having something like a green roof on the OnCenter is that, really, the only time people can see it is if they're above it or if they see a picture of it in the paper or on the Internet," says B.J. Adigun, program coordinator at CH2MHILL Syracuse, a firm that is working as a partner with the county for these types of initiatives. "It's not really something that is accessible for folks," he says, even though "folks" paid for it.

An initiative of the county's Save the Rain program, the massive green roof is part of Onondaga County's efforts to comply with a consent judgment order first issued by the District Court for the Northern District of New York in 1989 and amended for the fourth time in 2009 to include green infrastructure. Syracuse is one of more than 700 cities in the United States that use a combined sewer system, meaning that rainwater from the street and sewer water from homes and businesses are combined when heavy rains hit. This results in untreated, contaminated water flowing into Onondaga Creek and, ultimately, Onondaga Lake. A green roof helps retain water and prevents the sewers from overflowing.

Save the Rain's projects aim to install green infrastructure throughout the city to capture as much rainwater as possible. The county has to be able to capture 250 million gallons of rainwater by 2018 to meet the goals that the court order mandates, says Madison Quinn, program coordinator for Save the Rain. The OnCenter's green roof alone is expected to divert approximately 1 million gallons of rainwater each year.



**It may look brown, but it's still green: Part of the reason the OnCenter roof (behind the Onondaga County War Memorial) doesn't look like your back yard is the layer that protects the plants from the wind and helps retain the moisture necessary for them to thrive.**
MICHAEL DAVIS PHOTO

Buildings such as the Jefferson Clinton Commons, 500 S. Clinton St.; the Monroe building, 333 E. Onondaga St.; and King King Architects, 358 W. Jefferson St., also feature green roofs. This year, the Erie Canal Museum, 318 Erie Blvd. E.; Hazard Branch Library, 1620 W. Genesee St.; and the upcoming SUNY Upstate Cancer Center being constructed along East Adams Street, will all have green roofs. Together, these six buildings will capture around 925,500 gallons a year, working toward the court-mandated goal.

Three mechanisms help fund these projects, Adigun says: short-term loans provided by the state of New York; obligation funds, which are part of the county's budget dedicated to maintain all wastewater infrastructure such as sewers and treatment plants; and government grants.

“The state awarded the county a $3 million grant for work that we’re going to be doing at the Civic Strip {the Montgomery Street area where the Onondaga County Court House stands},” Adigun says. “So this actually is great for the taxpayers because it offsets the cost of a lot of these projects and allows us to do more in a lot of areas.”

Besides environmental benefits, the OnCenter’s green roof will save taxpayers money, too. Green roofs help reduce the operational costs of the buildings, says Rick Kier, president and owner of Pro Scapes, the landscape design company that installed the vegetation on top of the OnCenter. The installation also “acts as an insulating barrier that holds the heat inside the building as well as helps reflect the summer heat so that air-conditioning costs are lower,” Kier says.

Since the OnCenter is a county-owned building, reducing energy costs is a benefit for taxpayers because, ultimately, they pay those bills. But where Kier finds the biggest financial benefit of the OnCenter’s green roof is in its durability. He says such roofs last around 40 years, two to three times longer than a regular roof.

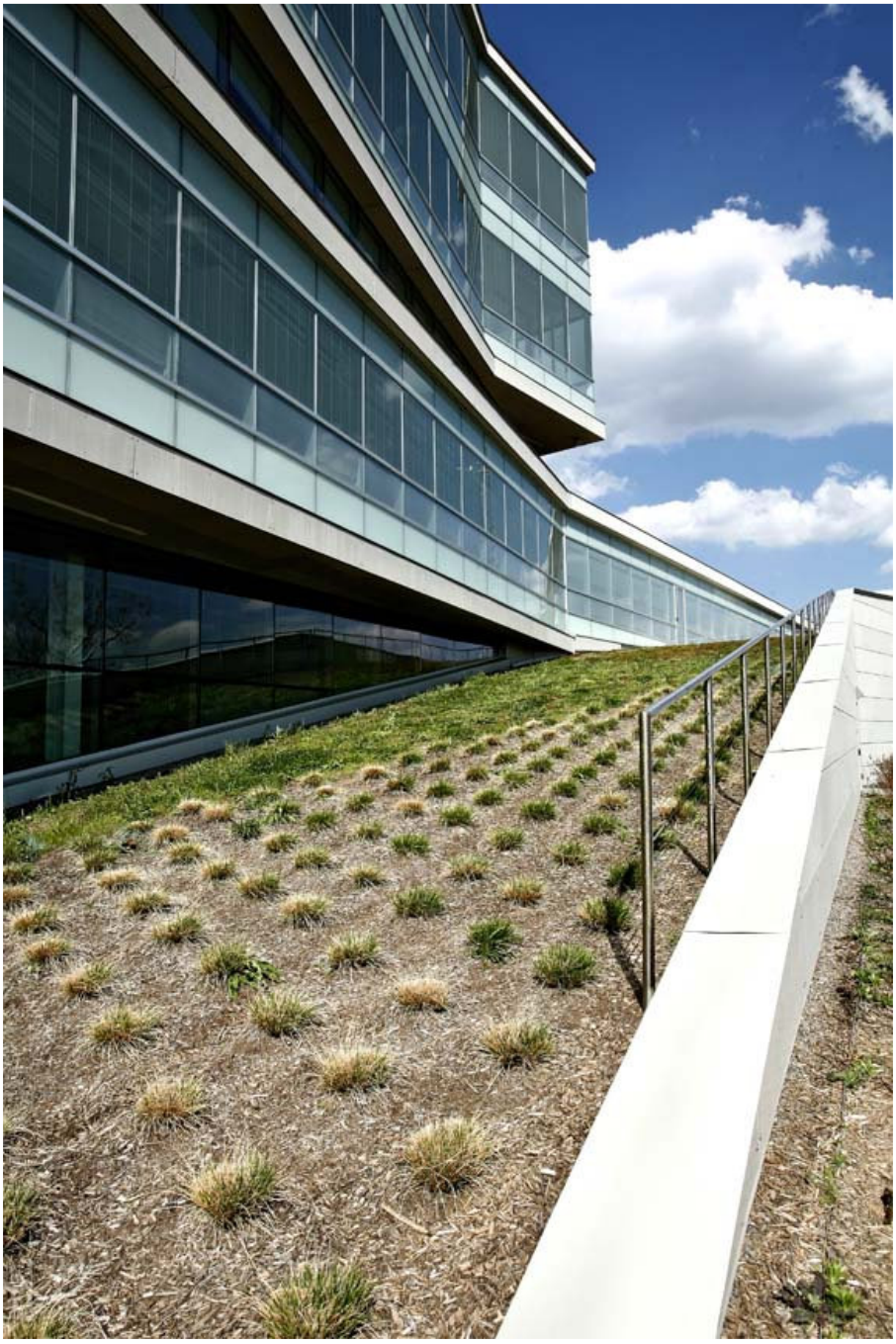
Kier acknowledges that sometimes people don’t recognize longevity as a payback because it’s a long-term return on investment. However, in the case of the OnCenter and its large surface, replacing a traditional roof can become costly. “Especially when it’s the taxpayers that are going to be paying the bill for replacing that roof in another 20 years if it were a standard roof,” Kier says.

Of course, there are also the environmental benefits—and necessities—for the community, which has suffered with a polluted lake for far too long. “This million-dollar investment to create this green roof in some communities may not have the return on investment that we have benefited from here in Onondaga County because of the issues with Onondaga Lake,” says Richard Kampas, a member of the board of directors of GreeningUSA, an environmental group in Central New York. “I think it has already saved money.”

## Green Roofs = Greenbacks

In fact, if the county hadn’t invested in the OnCenter’s green roof and other green infrastructure projects, it would have had to build an additional water treatment facility—which is even more expensive—or pay a fine to the New York state’s Department of Environmental Conservation for not complying with the court order, says Kampas.

Originally, the county was supposed to build four regional wastewater treatment facilities for about $120 million, most notably one in Armory Square and one on the South Side. Instead, the county is spending $78 million to achieve the same goals using green infrastructure, says Khris Dodson, public education and outreach coordinator for Save the Rain. “We’re not building sewage treatment plants in people’s back yards anymore, so I think that’s the biggest benefit for the community,” he says.



**Syracuse Center of Excellence: The green roof atop this remarkable building, at 727 E. Washington St., is just starting to show some actual green.**
MICHAEL DAVIS PHOTO

While understanding the importance of and welcoming the many benefits of this initiative, Kampas disagrees with the county's strategy for the OnCenter's green roof. He believes that not making it open and available to the public was a mistake.

Accessibility is happening in other municipalities, according to Kat Harrold, a green-roof designer for Maryland-based Green Roof Service LLC, a firm specializing in these types of projects. "In urban areas it's a way to provide a therapeutic environment for the people. It gives them something a bit nicer than just black tar to look at," she says.

The best example of this is the largest green roof in New York: the U.S. Postal Service's vegetated roof at the Morgan Processing and Distribution Center in New York City. Its 109,000 square feet feature benches and paths along the gardens, transforming this installation into a people-friendly space with great view of the city.

Opening the OnCenter's green roof to public visitation would have made it easier for the county to connect this investment with the community in a more direct way. But the decision wasn't that simple; installing green roofs demands certain specifications. The building has to be either designed to accommodate a green roof, or certified by an engineer as capable of supporting the weight of a green roof, says Kier.

As for any living plant, vegetation on green roofs needs soil and water to survive. By itself, the plants and soil add extra weight to the building, and when it rains, they become even heavier by absorbing water. “You have to make sure that the building is built to withstand that extra weight,” says Kier. “Otherwise, the building could collapse.”

Also, and particularly in Syracuse, snow weight needs to be taken into consideration when studying the viability of a green roof. To all that new weight being added that wasn’t part of the initial building plans, you’d have to add visitors’ weight.

Not that visitors can even get up there in the first place; the OnCenter’s roof “is standard of buildings of its age where there’s limited access,” says Dodson. Built in 1992, the OnCenter provides roof access just for mechanical and maintenance reasons, which means climbing up an open side ladder, where a fall could be dangerous.

Taking these factors into account, opening up the OnCenter’s green roof to the public presents logistical and functional difficulties. However, Adigun acknowledges the need for the community to feel part of these types of projects and takes it as a learning experience for future projects. “We found some real value in being able to put it on a facility like the OnCenter that is patronized by hundreds of thousands, if not millions, of visitors a year,” he says. “But I think moving forward, we are going to try to have some touch points.”

## Making Green Roofs Work

Simply put, a green roof is a garden on top of a building. Since roofs don’t have the necessary conditions for plants to survive, they need to be created. Once the installation is completed, the green roof starts to work.

When it rains, the water that falls onto rooftops has nowhere to go but directly to the sewers. Syracuse has a combined sewer system, which means that “our sewer system and our storm sewer both drain into the same pipe,” says Richard Kampas, a member of the board of directors of GreeningUSA, an environmental group in Central New York.

“During a large rainstorm, we are forcing way too much water through the sewage treatment plant, overburdening the capacity to treat sewage and therefore they’re bypassing it and dumping the raw sewage into the lake,” he says.

Much of the water that falls onto a green roof is absorbed and used by the plants that now live there—just like a regular garden—instead of going to the sewers. The OnCenter’s green roof will absorb 1 million gallons of water a year, a substantial amount.

Of course, plants don’t absorb water that fast. That’s why many layers are installed in a green roof to help store water that can be used later by the plants, or be evaporated back into the atmosphere,

**The green roof of the Monroe Building**
MICHAEL DAVIS PHOTO

according to Khris Dodson, public education and outreach coordinator for Onondaga County's Save the Rain campaign.

"The water that doesn't get absorbed by the plants or doesn't evaporate back into the atmosphere slowly drains down to the soil, where there's a moisture retention barrier—think of a thick blanket—that holds the water," Dodson says. "Below that there's a drainage system, so whatever the roof doesn't drink up, evaporate or hold, it drains through and then it runs down to the sewer."

By the time this water hits the sewers, it has probably already stopped raining and the sewers aren't overwhelmed. So this water can go directly to the Hiawatha Boulevard treatment plant.

**—Veronica Magan**

## Building a Green Roof

Installing a green roof combines the teamwork of engineers, roofing contractors and landscape specialists. Engineers must make sure the building is strong enough to resist the weight a green roof creates. Once the design gets approved, a roofing contractor starts applying a waterproof roofing membrane that protects the roof from any leaks and humidity that could damage and weaken the structure.

Then come the landscapers. “When they were done with that, that’s when we came in and we took over and we did the entire green roof from there up,” says Rick Kier, president and owner of Pro Scapes, the Syracuse landscaping company in charge of installing the green roof at the OnCenter.

Kier and his team placed a fabric on top of the roofing membrane to hold moisture and protect the membrane from the plants’ roots that might be able to reach that point. “If anything happens to that membrane,” he says, “you’re going to have a leak inside the building.”

Then, a layer of insulation protects even more of the roofing membrane and helps retain heat inside the building. Next, there’s a layer that “allows aeration, water storage and serves as the first root barrier,” says Madison Quinn, program coordinator for Onondaga County’s Save the Rain campaign.

The soil used for green roofs is not like the one you use for your plants or garden; it’s a special “lightweight soil product in which the vegetation grows,” Quinn says. This layer is about three inches thick.

Finally, the vegetation is applied. For the OnCenter’s green roof, workers planted a variety of sedum cuttings, “low-growing succulent plants that require very little maintenance,” says Quinn.

Then a last extra layer is placed: the temporary wind blanket. “{It} is made out of coconut,” Kier says. This fabric protects the cuttings from high-speed winds and helps retain the moisture necessary for them to grow. “{It}helps them get started,” he says. The plants will grow right through the blanket, which will be gradually absorbed. Thus, there is no need to “mow the lawn” or dedicate much time to an installation like this, making it convenient and with low maintenance costs.

**—Veronica Magan**

**Prehensile-Tailed Skink**
This skink gets its name from its tail which can be used curl around objects such as branches for balance.This is the only known species of skink with a prehensile, or grasping, tail.

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CATERING AT THE ZOO

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Favorite Homeschool Field Trip
uptake Best of 2009
Best of Syracuse

# Party for the Planet

**Saturday, April 21, 2012**
**10:00 a.m. - 4:30 p.m.**
***rain or shine!***

Join the zoo in celebrating Earth Day 2012! Learn about the zoo's efforts to protect wildlife and the environment and see how you and your family can make a difference, too! Enjoy endangered animal demonstrations and keeper talks, tours of our "green" building and "Flora for Fauna" garden, puppet shows and "green" booths and exhibitors.

Free for members and with paid zoo admission.

Note: Schedule subject to change

## Schedule of Activities:

| Time | Description | Location |
|---|---|---|
| 10:30 | Up Close & Personal: Raptor | Upper lobby |
| 11:00 | Elephant Meet & Greet | Elephant Encounter |
| 11:15 | Puppet Show | Alcove across from Jungle Cafe |
| 11:30 | Penguin feeding | Penguin exhibit |
| 12:00 | Up Close & Personal: Eastern box turtles | Outside U.S.S. Antiquities |
| 1:00 | Up Close & Personal: Poison dart frogs | Outside U.S.S. Antiquities |
| 1:30 | Up Close & Personal: Golden Conure | Lower lobby |
| 2:00 | Elephant Meet & Greet | Elephant Encounter |
| 2:30 | Puppet Show | Alcove across from Jungle Cafe |
| 2:45 | "Species at Risk" talk: Red Panda | Red panda exhibit |
| 3:00 | "Species at Risk" talk: Golden lion tamarin | Gold lion tamarin exhibit |
| 3:30 | "Species at Risk" talk: Panamanian golden frogs | Panamanian golden frog exhibit |

*Save the Rain tours with the Onondaga Earth Corps available by request.*
*Please inquire at the Save the Rain station.*

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Joanne M. Mahoney, County Executive
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What Do You Think?

## Center for Environmental Policy and Administration

Previous Events

# Rain Barrel Workshop

### Details

| | |
|---|---|
| Location: | Mundy Bank Library, 1204 S Geddes St. |
| Date: | Wed, Apr 25, 2012 |
| Time: | 5:30 PM |

### Additional Information

# Rain Barrel Workshop

**Sponsored by Onondaga County's Save the Rain program**

*Time: 5:30 - 7:15pm*

In collaboration with the Environmental Finance Center at SU, Onondaga County's "Save the Rain" campaign will be hosting a rain barrel workshop. Attendees will learn how to properly install and maintain a rain barrel.

**All city residents who attend the workshop are eligible to receive a FREE rain barrel.**

*To register, please email Amy Samuels at asamuels@oei2.org.*

Location: Mundy Brank Library
1204 South Geddes St., Syracuse NY

URL: http://cepa.maxwell.syr.edu/events/145.html
Center for Environmental Policy and Administration
The Maxwell School, Syracuse University
Revised 04/20/2012 08:59:01

# Trolley Lot project is full steam ahead in Downtown Syracuse

Video | Images

A $70 million project is full steam ahead at the Trolley Lot near Armory Square in Downtown Syracuse. (WSYR-TV)

Print Story

Share

Published: 4/24 9:44 am

Updated: 4/24 5:56 pm

Syracuse (WSYR-TV) - A $70 million project is full steam ahead at the Trolley Lot near Armory Square in Downtown Syracuse.

When it's completed, the site will house underground storage tanks that will regulate the flow of storm water into the Metro Sewage Treatment Facility. The tanks will hold approximately six million gallons of rainwater, which will be retained until the waste-treatment facility can handle the extra load.

The project is part of the county's overall effort to keep Onondaga Lake and Onondaga Creek cleaner.

"It's important to know why we're doing this. We're doing it because we were violating the Clean Water Act, we were polluting Onondaga Creek and Onondaga Lake as a community and this will put us in a position where we are complying with the Clean Water Act," said Deputy County Executive for Physical Services Matthew Millea.

If the project proceeds according to Onondaga County's plan, it should be completed by next year.

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ce NEWS
business and technology for civil engineers

# Using BIM to curb CSOs

April 2012 » Features » PROJECT CASE STUDY

**3D models enable efficient design of a major municipal stormwater project.**

*By Timothy Kivisto, P.E., Catherine Fiorello, P.E.*

**Building information modeling** (BIM) technology has progressed rapidly from being a new and innovative design tool to becoming the industry standard for project delivery in engineering and architecture. While the use of BIM technology is commonplace in the commercial and industrial sectors, its use in the municipal sector has been less popular. The Lower Harbor Brook Combined Sewer Overflow (CSO) Storage Facility project is an example of how BIM has been used to efficiently design a major municipal project.

**Project**
Lower Harbor Brook CSO Storage Facility, Syracuse, N.Y.

**Civil engineer**
Onondaga County Department of Water Environment Protection
O'Brien & Gere

**Product application**
BIM technology is key to project team coordination, conflict identification and resolution, and public outreach.

Onondaga Lake is located directly northwest of the city of Syracuse, N.Y., and has been recognized by the U.S. Environmental Protection Agency (EPA) to be among the most polluted lakes in the United States. Combinations of industrial and municipal waste discharged into the lake over many decades are to blame for the historically poor state of the lake. However, the conditions of the lake and its environment are improving thanks to a combination of lake restoration and pollution prevention programs funded by both the public and private sectors.

One such program is "Save the Rain," established by Onondaga County as a comprehensive stormwater management plan for reducing pollution released to Onondaga Lake and its tributaries, such as Harbor Brook. Since much of Onondaga County's older sewer infrastructure is comprised of combined sewers (sanitary and storm), heavy wet-weather flows cause CSO events that discharge a combination of untreated storm and sanitary sewage into Onondaga Lake via its tributaries. One of the priorities of Save the Rain is to reduce or eliminate the volume and frequency of these CSO events by capturing and treating overflows before they can be discharged into the lake.

The site layout and yard piping from Civil 3D, the process equipment from Cadworx Design Suite, and the different Revit models were combined and rendered using the built-in rendering engine.

The Lower Harbor Brook CSO Storage Facility Project is a 4.9 million-gallon CSO storage facility that will capture and store CSO events up to the one-year, two-hour design storm event. As capacity at the Metropolitan Syracuse Wastewater Treatment Plant (Metro WWTP) becomes available after the wet weather subsides, the contents of the storage facility will be pumped there for treatment. The storage facility project was designed for the Onondaga County Department of Water Environment Protection (OCDWEP) by O'Brien & Gere, as a member of Environmental Engineering Associates LLP, together with select local sub-consultant design firms.

The storage facility is a 150-foot-diameter cylindrical concrete storage tank that is located mostly below grade with an adjacent utility building. CSO will be conveyed to the site and pass through a below-grade junction chamber prior to being discharged to the storage facility via an 84-inch-diameter influent pipe. A major green component of the facility is that stormwater collected on the roof of the tank and the utility building will be stored in a compartment within the tank for use during cleaning operations.

Cleaning will be accomplished using a central flushing system and water cannons strategically located at the catwalk level near the top of the tank. Once the CSO is pumped to the Metro WWTP, the central flushing system will hold back some of the stored CSO and use it for flushing trapped materials into a perimeter trench drain that slopes to a collection pit. Subsequent flushes will be supplied by the rain water that was stored from the facility roof drains. The rain water collection system can capture up to the 100-year design storm. Facility personnel will use the mounted water cannons for washing off materials collected on the walls and interior columns.

http://www.cenews.com/magazine-article--4-2012-using_bim_to_curb_csos-8787.html

Because of the number of contributing design firms, the use of BIM technology was not only helpful, but essential for successful delivery of the project. The project had very strict deadlines tied to an Amended Consent Judgment; the project needs to be constructed and operational by December 2013. With an estimated construction period of two years, the design needed to be complete with construction underway by end of 2011. BIM technology played a key role in delivering the project design on schedule.

One of the most commonly thought of features of modern BIM technology is its use of 3D models. The 3D elements of the project were modeled using AutoCAD Civil 3D, Revit Architecture, Revit Structure, Revit MEP, and Cadworx Plant Design Suite. Since not all member firms of the project team were familiar and fluent with 3D modeling, some of the project was completed using 2D versions of AutoCAD. BIM technology had a role to play with even this older technology as well. Since Revit is capable of reading and writing 2D AutoCAD .dwg files, it was used extensively to facilitate coordination and communication between the 2D and 3D models.

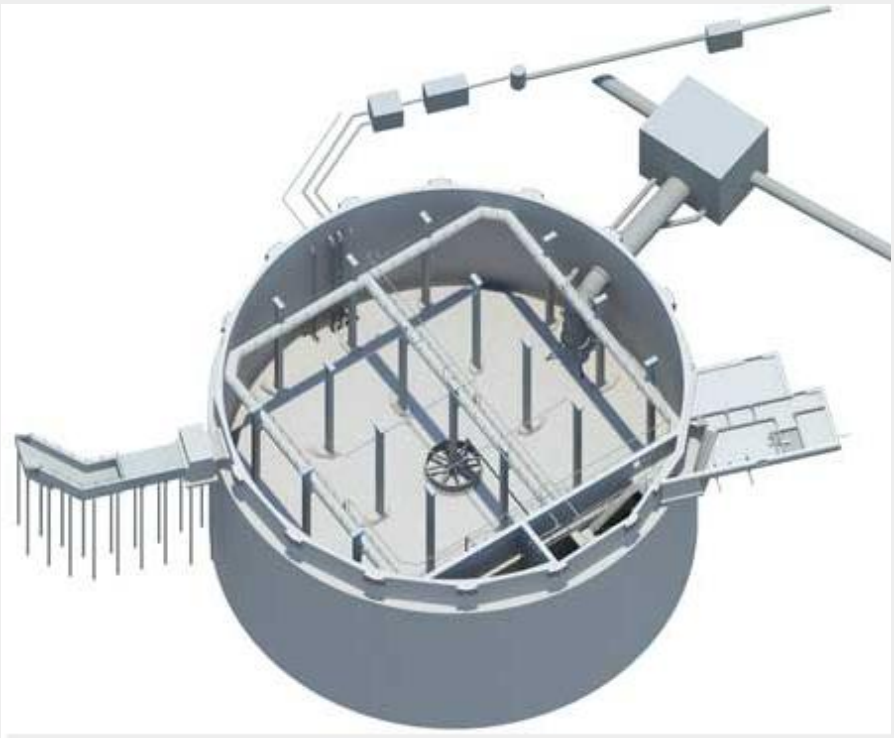
Of all the advantages that BIM technology can bring to a project, the ones that were most apparent during the design development were its usefulness for team coordination and for sharing project models outside of the project team. Tools built into Revit and Autodesk Navisworks allow for instantaneous visual identification of conflicting 3D models. By identifying conflicts between different models early in the design, the conflicts can be resolved and design progress can keep moving forward.

One such example was when the lighting and the HVAC ductwork conflicted below the ceiling in the mechanical room of the utility building. Once the conflict was discovered, the ductwork was lowered along with the matching exterior wall louver in the architectural and structural models to clear the conflict and to keep the design progress on track.

Autodesk Design Review .dwf files were made not only for electronic production and distribution of the contract design drawings, but also for the creation of a combined 3D model file that could be viewed by anyone (the software is available as a free download from Autodesk). Progress meetings with the client showcasing the 3D model in .dwf format went so well that the client had its IT department download and install the software on several client machines for project familiarization and training of OCDWEP maintenance personnel. A key feature of Design Review used on the project was the “walkthrough” that allows a live virtual tour of the 3D model. The building code official in particular was extremely impressed with being able to the see the facility virtually during design. The few concerns that he had were easy to identify and address, which saved time from his regular review procedure; but perhaps more crucially, it saved time for the project schedule.

The building code official was able to see the facility virtually during design — including the inside of the storage tank shown here.

Comparison of 3D models allowed early identification and resolution of conflicts, keeping design progress on track to meet a tight deadline.



The 3D elements of the project were modeled using AutoCAD Civil 3D, Revit Architecture, Revit Structure, Revit MEP, and Cadworx Plant Design Suite.

Within the design team, the advantages of BIM technology were showcased every day during design development and coordination. Thanks to BIM technology it is not just the tools and technology that are evolving; the conversations between team members are evolving as well. A simple, yet good example of this evolution can be showcased by the project roof drain coordination. With the drains located in the 2D CAD architectural roof plan, the plumbing designer set about connecting the drains with sloped pipe, fittings, and connections all the way to their final destination within the rainwater collection area. Instead of blindly connecting these paths with typical CAD lines in two dimensions, the plumbing designer made 3D paths around the structural roof beams, corbels, and columns and hung pipe supports from the structural aluminum catwalks within the 3D model. The structural designer in turn made appropriate holes in the roof for the drains, and provided guidance on pipe support locations and details. The teamwork that went into this one facet of the design is hopefully already commonplace in the industry, but by using BIM technology the end result was obtained much more quickly and with an accurate representation of what will be installed in the coming months.

Rendered images and rendered fly-by and drive-by videos for public outreach also were created using Revit. The site layout and yard piping from Civil 3D, the process equipment from Cadworx Design Suite, and the different Revit models were combined and rendered using the built-in rendering engine. For many municipal projects, rendered views and videos may be considered “icing on the cake,” but for this project they were helpful in establishing public acceptance since the facility is located adjacent to an existing banquet hall and on the periphery of an established Syracuse community.

BIM technology played a big role in the success of designing the Lower Harbor Brook CSO Storage Facility Project. BIM not only introduces new tools to projects in the municipal sector, but also enhances tools from the previous generation of design technology. The 3D modeling that is available with BIM technology is of itself very useful, but perhaps more importantly, it is the built-in intelligence and overall project streamlining that make BIM technology that much more of a powerful tool for successful project delivery.

***Tim Kivisto, P.E.,*** *is a senior project engineer in the Structural Engineering Group at O’Brien & Gere, Syracuse, N.Y. He can be contacted at tim.kivisto@obg.com.*
***Catherine Fiorello, P.E.,*** *is a senior project engineer in the Site/Civil Engineering Group at O’Brien & Gere. She can be contacted at catherine.fiorello@obg.com.*

Cornell University
Cooperative Extension
Onondaga County

The Atrium, Suite 170
2 Clinton Square
Syracuse, NY 13202
Telephone: 315.424.9485
Fax: 315.424.7056
E-mail: onondaga@cornell.edu
www.ExtendOnondaga.org

April 26, 2012

**FOR IMMEDIATE RELEASE:**

Contact: Fran Lawlor
Email: fml7@cornell.edu
Phone: 315-424-9485 ext 230

**Arbor Day Celebration and Tree City Growth Award at Hughes Elementary**

Arbor Day has been celebrated around the world since the day's not-so-humble beginnings in 1874 in Nebraska. Sterling J Morton, who was born in Jefferson County, NY, spearheaded the efforts behind the first Arbor Day, April 10, 1874, when citizens of the new territory planted a million trees. Trees were planted to prevent soil erosion, reduce the damaging effects of wind, provide shade and wildlife habitat and for building materials. Arbor Day has been celebrated every year since those 1,000,000 trees were planted in Nebraska. Arbor Day celebrations have become a tradition in schools nationwide since 1882.

The City of Syracuse celebrated its first Arbor Day in April, 2000 at Thornden Park and has been a Tree City USA since 1990. Since those first Syracuse beginnings Arbor Day has been celebrated at our city schools. Each year the Mayor proclaims our renewed commitment to being a Tree City. This year Syracuse will receive the Tree City Growth Award for sharing of services through the consolidated City-County Arborist position and for increasing planting rates by 100% through Onondaga County's Save The Rain Program.

The City of Syracuse will celebrate Arbor Day 2012 on April 27 at the Hughes Elementary School, to acknowledge and celebrate the contribution of trees to Onondaga County's Save The Rain green infrastructure projects at the school. There is a new porous pavement parking lot and 25 trees will be planted to intercept rainfall on the other parking lots and sidewalks at the school.

The agenda for the afternoon is as follows:

1:00 pm Welcome by Hughes School Principal Theresa Haley and Cornell Cooperative Extension Executive Director Dr. Richard Halpin;

1:05 pm Commissioner Muhammad receives the Tree City USA proclamation from **Ken Lynch** of New York State Department of Environmental Conservation;

1:10 pm Syracuse City Parks Commissioner, Baye Muhammad reads Arbor Day Proclamation

1:15 pm Tom Rhoads, Commissioner of Water Environment Protection, Save The Rain Program Projects at Hughes Elementary

1:20 pm Tree planting with Commissioner Muhammad and Commissioner Rhoades

1:25 pm Tree planting with Fifth grade students

###



Cornell University Cooperative Extension Onondaga County provides equal program and employment opportunities.
Please contact the CCE Onondaga County office if you have special needs.

LHNA

# Lincoln Hill Neighborhood Association Newsletter

April 2012 Volume 10, Number 1

## LHNA Neighborhood Meeting
## Wednesday, April 11th, 7:00 pm
### At the Reformed Church, 1228 Teall Avenue

## We need a few good people.

This issue of the Newsletter describes some available opportunities for you to become involved in the community life of Lincoln Hill. A neighborhood, like a garden, requires weeding and feeding for it to flourish.

If your free time or talents match any of these, email us at *contact@LincolnHillSyr.org* , or come to the next neighborhood meeting, and we'll talk them over.

***We need your help to make Lincoln Hill the best neighborhood.***

## Shuart Green Space Gardeners

***Benefits: outdoor exercise, meet your neighbors at the corner.***

Our Head Grounds Keeper, David Chrysler, is also looking for a few good weeders and trimmers to help keep the Green Space clean and neat.

Do you have an extra couple of hours each month? Email Dave at the website for more information.

## TNT Liaison

***Benefits: find out what other neighborhoods are doing, and what the City is doing***

TNT is the citizens' planning program for the City. Once a month there is a meeting to discuss North side issues.

The Liaison attends TNT meetings and reports back to the Board on issues.

## Welcome Wagon Person

***Benefit: an excuse to meet the new neighbors***

LHNA has welcome baskets of useful items and information, including a free annual membership.

The WW person checks the Sunday paper's real estate transactions for home sales to identify new residents.

A short visit, chat and presenting the basket completes the task.

## Web Master / Blog Master

***Benefits: be creative, discuss your ideas, and create an electronic neighborhood***

Our website also needs tender, loving care to keep it up to date – posting newsletters, maintaining the calendar, and adding new features.

We would like to add "a member's only blog" page where everyone can join in discussing current neighborhood issues.

## Thank you, D.P.W. -- No More Graffiti

Vandals spray-painted blue graffiti on one of the LH stone monuments several months ago. The Board discussed how to remove the paint from the stone. We called the Syracuse Department of Public Works to see if they had any suggestions about removal methods.

Before the Board's next meeting, the paint was gone! Thank you DPW.

Many cities believe that removing graffiti is an important visible sign of the residents taking back "ownership" from the vandals. We are pleased that Syracuse is committed to this idea. You can report graffiti by calling 448-2489.

## "Save the Rain" A tree in your front yard

***Benefits: get out doors, see the neighborhood, meet your neighbors, and get a new tree in your front yard.***

Onondaga County is planting trees to reduce the rain overflows at the municipal sewage plant. LHNA has started mapping locations for new trees which will be planted in the fall 2012.

Teams of trained people and new volunteers will walk LH and inventory available spaces.

So if you want to spend a couple of hours some evening or weekend enjoying a slow group walk, give us your email address or phone number, and we will keep you informed about scheduled dates.

## Earth Day at Lincoln Park, Saturday, April 21st

9 am- 11 am

See you at swimming pool parking lot

# FINANCIAL UPDATE

# Financial Update

## Contracts

New Contracts

**Green Improvement Fund (GIF)**

- Contract with St. Lucy's Church for reimbursement of green improvements (dry well) in the Clinton sewershed.

  Contract Amount: $17,700. Executed: 3/29/12

**Green Improvement Fund (GIF)**

- Contract with St. Lucy's Church for reimbursement of green improvements (parking lot) in the Clinton sewershed.

  Contract Amount: $51,900. Executed: 3/29/12

**Green Improvement Fund (GIF)**

- Contract with Loon Creek Properties, LLC for reimbursement of green improvements in the Clinton sewershed.

  Contract Amount: $137,350. Executed: 4/3/12

**Green Improvement Fund (GIF)**

- Contract with McMahon/Ryan Child Advocacy Center for reimbursement of green improvements in the Clinton sewershed.

  Contract Amount: $178,050. Executed 4/3/12

**Green Improvement Fund (GIF)**

- Contract with CNY Philanthropy Center for reimbursement of green improvements in the Clinton sewershed.

  Contract Amount: $62,700. Executed 4/16/12

Amendments to Existing Contracts

**Floatables Control Facility Plan**

- Contract with Arcadis of NY amended for targeted floatables assessment in the Harbor Brook & Onondaga Creek service areas.

  Contract Amendment Amount: $114,904. Executed: 4/3/12

Change Orders

- **None to report**.

**Funding**

Grants

State Bond Act Funds

- Reimbursements requested in April:
  Clinton Storage for $1,371,869.96 on 3/22/12

- Reimbursements received in April:
  Clinton Storage for $1,158,681.68 on 3/5/12

Total payments received to date in State Bond Act funds: $134,440.161.

Federal EPA Funds

- Reimbursements requested in April:
  Midland CSO 044 for $358,147 on 4/24/12

- Reimbursements received in April:
  Harbor Brook for $369,872.81 on 4/18/12

Federal Army Corps of Engineers Funds

- Reimbursements received in April:
  WQM for $22,223.09 on 4/5/12

- Reimbursements requested in April:
  Sewer Separation 022/045 for $466,552.73 on 4/30/12

**EFC Loans**

- Reimbursements received in April: None

- Reimbursements requested in April: None

- Long Term EFC loan requested in April: None

Total reimbursement monies received to date through EFC loans for the funded ACJ projects: $188,411,760 (short term) and $46,323,901 (long term).

**Onondaga County Lake Improvement Project**

4th Stipulation of the ACJ

Clinton/Lower MIS CSO Improvements

Summary of Current and County Authorizations

| ***Project*** **/Task**/Line Item | Total Project Costs | | |
|---|---|---|---|
| | Total Proposed Budget | Expended To Date | Authorization Remaining |
| ***Clinton Street CSO Facility Planning (Original)*** | | | |
| Engineering Services (EEA) | $ 751,266 | $ 751,266 | $ (0) |
| **Original Facility Plan Subtotal** | **$ 751,266** | **$ 751,266** | **$ (0)** |
| ***Clinton Street CSO Conveyances Project*** | | | |
| Contract No. 1 - Phase 1 Conveyances (Delaney) | $ 14,478,053 | $ 14,478,053 | $ (0) |
| Contract No. 2 - Phase 2A Conveyances (Delaney) | $ 4,074,455 | $ 4,074,455 | $ (0) |
| Construction Testing (CME) | $ 5,095 | $ 25,471 | $ (20,376) |
| Engineering/Construction Services (CDM/C&S) | $ 2,738,000 | $ 2,746,814 | $ (8,814) |
| **Conveyances Subtotal** | **$ 21,295,603** | **$ 21,324,793** | **$ (29,190)** |
| ***Clinton Storage Project*** (1) | | | |
| Construction Estimate (with contingency) | $ 58,000,000 | $ 7,458,886 | $ 50,541,114 |
| Engineering Services (EEA and others) | $ 8,500,000 | $ 7,054,819 | $ 1,445,181 |
| Construction Management and Administration | $ 3,600,000 | | $ 3,600,000 |
| Project Escalation to Midpoint of Construction | $ 3,500,000 | | $ 3,500,000 |
| **CSO Storage Subtotal** | **$ 73,600,000** | **$ 14,513,706** | **$ 59,086,294** |
| ***Facility Plan for CSOs 027 & 029*** | | | |
| Construction Estimate | $ 3,100,000 | | $ 3,100,000 |
| Engineering Services (Ch2MHill) | $ 88,944 | $ 91,186 | $ (2,242) |
| Engineering Services (TBD) | $ 770,000 | | $ 770,000 |
| County Administration and Other Costs | $ - | | $ - |
| **Facility Plan Subtotal** | **$ 3,958,944** | **$ 91,186** | **$ 3,867,758** |
| ***Clinton/Lower MIS Green Implementation Program*** | | | |
| Construction Contracts incl. GIF Public/Private | $ 38,508,611 | $ 6,762,108 | $ 31,746,503 |
| Ch2MHill Program Management & Engineering | $ 15,900,000 | $ 5,887,013 | $ 10,012,987 |
| **Green Subtotal** | **$ 54,408,611** | **$ 12,649,120** | **$ 41,759,491** |
| ***Program Management*** | | | |
| Project Management (CDM/C&S) | $ 1,811,903 | $ 1,641,925 | $ 169,978 |
| Project Management for Facility Plan (CDM/C&S) (2) | $ - | | $ - |
| **Program Management Subtotal** | **$ 1,811,903** | **$ 1,641,925** | **$ 169,978** |
| ***Miscellaneous County Costs*** | | | |
| Land Acquisition | $ 4,132,400 | $ 2,077,200 | $ 2,055,200 |
| IMA | $ 4,861,000 | $ 3,872,305 | $ 988,695 |
| Legal | $ 64,564 | $ 50,608 | $ 13,957 |
| Consulting (John Clare & Mezey) | $ 226,334 | $ 226,334 | $ 0 |
| Debt | $ 175,832 | $ 184,885 | $ (9,053) |
| Other | $ 117,644 | $ 141,135 | $ (23,491) |
| **Miscellaneous Subtotal** | **$ 9,577,774** | **$ 6,552,466** | **$ 3,025,308** |
| **Total** | **$ 165,404,101** | **$ 57,524,462** | **$ 107,879,639** |
| Authorized Master Budget 165,500,000 | | | |

Notes:

(1) Includes engineering costs from original Clinton RTF Project

(2) CDM/C&S Project Management costs are included in the total facility plan costs

**Onondaga County Lake Improvement Project**

4th Stipulation of the ACJ

Harbor Brook Drainage Basin CSO Abatement

Summary of Current and Proposed Costs, and County Authorizations

| | Total Project Costs | | |
|---|---|---|---|
| ***Project*** **/Task/**Line Item | Total Proposed Budget | Expended to Date | Authorization Remaining |
| ***Harbor Brook CSO Abatement Project*** | | | |
| **Original Engineering Expenses** | **$ 5,500,000** | **$ 5,500,000** | **$ -** |
| ***HBIS Replacement and CSO Abatement Project*** | | | |
| Construction Contract No. 1 (1) (JJ Lane) | $ 18,289,918 | $ 18,744,358 | $ (454,440) |
| Other Miscellaneous Work | $ 2,482,920 | $ - | $ 2,482,920 |
| Engineering/Construction Sevices (CDM/C&S) | $ 2,012,615 | $ 2,188,467 | $ (175,852) |
| County Administration and Other Costs | $ 114,547 | $ 118,662 | $ (4,115) |
| **HBIS Replacement and CSO Abatement Project Total** | **$ 22,900,000** | **$ 21,051,487** | **$ 1,848,513** |
| ***Lower Harbor Brook Storage & Conveyance*** | | | |
| Construction Estimate (with contingency) | $ 34,502,000 | $ - | $ 34,502,000 |
| Engineering Services (EEA) | $ 4,200,000 | $ 1,645,727 | $ 2,554,273 |
| Engineering Services (CDM/C&S) | $ 3,390,000 | $ 245,212 | $ 3,144,788 |
| Project Escalation to Midpoint of Construction | $ 2,280,000 | $ 48,450 | $ 2,231,550 |
| ***Lower Harbor Brook Storage & Conv Total*** | **$ 44,372,000** | **$ 1,939,389** | **$ 42,432,611** |
| ***Harbor Brook CSOs FCF Program*** | | | |
| Construction Estimate | $ 12,000,000 | | $ 12,000,000 |
| Engineering Services (Arcadis) | $ 1,878,731 | $ 74,300 | $ 1,804,432 |
| County Administration and Other Costs | $ 800,000 | | $ 800,000 |
| Project Escalation to Midpoint of Construction | $ 400,000 | | $ 400,000 |
| **FCF Program Total** | **$ 15,078,731** | **$ 74,300** | **$ 15,004,432** |
| ***Other Harbor Brook Green*** | | | |
| Construction Contracts incl. GIF Public/Private & Rain Barrels | $ 9,300,000 | $ 1,290,531 | $ 8,009,469 |
| Ch2MHill Engineering & Program Management | $ 3,650,000 | $ 1,851,381 | $ 1,798,619 |
| **Harbor Brook Green Project Total** | **$ 12,950,000** | **$ 3,141,912** | **$ 9,808,088** |
| ***Program Management*** | | | |
| Project Management (CDM/C&S) | $ 499,269 | $ 398,250 | $ 101,019 |
| Project Management for FCF Plan Implem (CDM/C&S) | $ - | | |
| **Program Management Total** | **$ 499,269** | **$ 398,250** | **$ 101,019** |
| ***Harbor Brook Mitigation*** | **$ 3,500,000** | **$ 3,265,000** | **$ 235,000** |
| **Total Costs for Harbor Brook CSO Area under 4th Stip** | **$ 104,800,000** | **$ 35,370,338** | **$ 69,429,662** |

**Onondaga County Lake Improvement Project**

4th Stipulation of the ACJ

Midland CSO Abatement

Summary of Current and Proposed Costs, and County Authorizations

| | Total Project Costs | | |
|---|---|---|---|
| ***Project*** **/Task**/Line Item | Total Proposed Budget | Expended to Date | Authorization Remaining |
| ***Midland Ave. RTF & Conveyances*** | | | |
| Midland Phase 1 Conveyances - Construction | $ 1,836,434 | $ 1,836,434 | $ (0) |
| Midland Phase 2 RTF & Conveyances - Construction | $ 53,372,390 | $ 53,372,689 | $ (299) |
| Midland Demolition Contracts - Construction | $ 748,483 | $ 748,483 | $ 0 |
| Other Construction | $ 124,579 | $ 124,579 | $ (0) |
| Phase 1 and 2 Engineering (Parsons & EEA) | $ 14,717,163 | $ 12,503,353 | $ 2,213,810 |
| CME Construction Testing | $ 213,745 | $ 164,192 | $ 49,553 |
| RTF Modifications (Construction, Eng, CM, Admin) | $ 3,000,000 | | $ 3,000,000 |
| **Facility Plan Total** | **$ 74,012,794** | **$ 68,749,730** | **$ 5,263,064** |
| | | | **$ 5,263,064** |
| ***CSO 044 Conveyances Project*** | | | |
| Contract No. 6. - JJ Lane | $ 7,701,898 | $ 6,066,869 | $ 1,635,029 |
| Construction Contingency 5% | $ 770,190 | $ - | $ 770,190 |
| Engineering Services (EEA) | $ 664,921 | $ 492,958 | $ 171,963 |
| Construction Management Sevices (CDM/C&S) see below | | | $ - |
| **Conveyances Project Total** | **$ 9,137,009** | **$ 6,559,827** | **$ 2,577,182** |
| | | | $ 2,577,182 |
| ***FCF Facility Plan*** | | | |
| Construction Estimate | $ 5,000,000 | $ - | $ 5,000,000 |
| Engineering Services (Arcadis and others) | $ 623,954 | $ 13,942 | $ 610,012 |
| Construction Management and Administration | $ 210,000 | | $ 210,000 |
| Project Escalation to Midpoint of Construction | $ - | | |
| **Clinton Storage Project Total** | **$ 5,833,954** | **$ 13,942** | **$ 5,820,012** |
| | | | **$ 5,820,012** |
| ***Facility Plan for Midland CSOs*** | | | |
| Construction Estimate | $ 14,900,000 | $ - | $ 14,900,000 |
| Engineering Services (Ch2MHill) | $ 118,384 | $ 121,368 | $ (2,984) |
| Engineering Services, County Admin, ect (TBD) | $ 3,720,000 | $ - | $ 3,720,000 |
| **Facility Plan Total** | **$ 18,738,384** | **$ 121,368** | **$ 18,617,016** |
| | | | $ 18,617,016 |
| ***Midland Green Implementation Program*** | | | |
| Construction Contracts incl. GIF Public/Private | $ 7,500,000 | $ 648,575 | $ 6,851,425 |
| Ch2MHill Program Management & Engineering | $ 3,202,341 | $ 961,303 | $ 2,241,038 |
| **Clinton Green Program Total** | **$ 10,702,341** | **$ 1,609,879** | **$ 9,092,462** |
| | | | $ 9,092,462 |
| ***Program Management*** | | | |
| Project Management (CDM/C&S) includes CSO 044 | $ 6,530,602 | $ 5,887,947 | $ 642,655 |
| Project Management for Facility Plan (CDM/C&S) [1] | | $ - | |
| **Program Management Total** | **$ 6,530,602** | **$ 5,887,947** | **$ 642,655** |
| | | | $ 642,655 |
| ***Miscellaneous County Costs*** | | | |
| Land Acquisition | $ 1,806,946 | $ 1,806,802 | $ 144 |
| IMA | | | |
| Legal | $ 182,323 | $181,975 | $ 348 |
| Consulting (John Clare & Mezey) | $ 208,317 | $ 194,317 | $ 14,000 |
| Debt | $ 635,031 | $ 495,031 | $ 140,000 |
| Other | $ 509,615 | $ 515,449 | $ (5,834) |
| **Miscellaneous Costs Total** | **$ 3,342,232** | **$ 3,193,573** | **$ 148,659** |
| **Total Cost for Midland project under 4th stipulation** | **$ 128,297,316** | **$ 86,136,268** | **$ 42,161,048** |
| Authorized Master Budget $128,300,000 | | | |

# Onondaga County Lake Improvement Project

4th Stipulation of the ACJ

Sewer Separation of CSO Areas 022/038/040/045/046A/046B/047/048/050/051/053/054

Summary of Current and Proposed Costs, and County Authorizations

| | Total Project Costs | | |
|---|---|---|---|
| ***Project*** **/Task/Line Item** | Total Proposed Budget | Expended to Date | Authorization Remaining |
| ***Sewer Separation Construction Contracts*** | | | |
| CSO 024 (Falter) | $698,864 | $698,864 | $0 |
| CSO 053/054 (Falter) | $2,000,817 | $2,000,817 | $0 |
| CSO 038//40/046A/046B (Falter) | $3,598,931 | $3,524,487 | $74,444 |
| CSO 047/048 (Falter) | $1,654,022 | $1,654,022 | $0 |
| CSO 050 (Lane) | $4,362,188 | $4,362,188 | $0 |
| CSO 051 (Lane) | $5,037,280 | $5,037,280 | $0 |
| CSO 022/045 (estimated Project Costs) | $6,750,000 | $0 | $6,750,000 |
| **Construction Total** | **$24,102,102** | **$17,277,659** | **$6,824,443** |
| ***Service Contracts (Engineering /Consulting /Program Management)*** | | | |
| ACE | $484,286 | $484,286 | $0 |
| CDM/C&S | $1,446,468 | $1,316,791 | $129,677 |
| CME | $109,492 | $49,704 | $59,788 |
| Department of the Army | $153,504 | $153,504 | $0 |
| Spectra | $437,996 | $437,996 | $0 |
| **Engineering/Management Total** | **$2,631,746** | **$2,442,280** | **$189,466** |
| ***Miscellaneous County Costs*** | | | |
| City of Syracuse | $135,084 | $135,084 | $0 |
| Consulting (John Clare & Mezey) | $101,425 | $101,425 | $0 |
| Debt | $116,269 | $106,269 | $10,000 |
| Legal | $14,235 | $14,235 | $0 |
| Other | $13,540 | $4,093 | $9,447 |
| **Miscellaneous Costs Total** | **$380,553** | **$361,105** | **$19,448** |
| **Total** | **$27,114,401** | **$20,081,045** | **$7,033,356** |
| Authorized by Legislature $27,684,286 | | | |

**Onondaga County Lake Improvement Project**
Save The Rain Education and Outreach Grant
Summary of Current and Additional Costs, and County Appropriations
April 2012

| Funding Sources | | | Appropriations |
|---|---|---|---|
| **Program Funding** | | | |
| 09,10,11 Appropriations | | | $ 875,000 |
| 2011 Suburban Green Infrastructure | | | $ 200,000 |
| 2012 Appropriation | | | $ 400,000 |
| 2011 Trolley Lot Parking Mitigation Appropriation* | | | $ 125,000 |
| **Total Appropriation** | | | $ 1,600,000 |
| **Funding Uses** | | | |
| ***Retz Advertising + Design*** | **Contract Amount** | **Expended to Date** | **Difference + (-)** |
| 2010/2011 Marketing Services | $ 411,789 | $ 411,789 | *$ -* |
| 2012 Marketing Services | $ 218,211 | $ 53,906 | *$ 164,305* |
| **Marketing Services Subtotal** | $ 630,000 | $ 465,695 | *$ 164,305* |
| ***Environmental Finance Center Education and Outreach*** | **Contract Amount** | **Expended to Date** | **Difference + (-)** |
| **2011 Education and Outreach** | **$ 346,677** | **$ 346,677** | **$ (0)** |
| *Environmental Finance Center* | *$ 48,475* | | *$ 48,475* |
| *SUNY ESF* | *$ 25,027* | | *$ 25,027* |
| *Onondaga Environmental Institute* | *$ 120,500* | | *$ 120,500* |
| *Onondaga Earth Corps* | *$ 23,503* | | *$ 23,503* |
| *Baltimore Woods Nature Center* | *$ 35,190* | | *$ 35,190* |
| *ASLF* | *$ 2,937* | | *$ 2,937* |
| ***Non Labor Expenses (EFC)*** | | | |
| *Printing* | *$ 20,461* | | *$ 20,461* |
| *Postage* | *$ 5,922* | | *$ 5,922* |
| *Travel* | *$ 196* | | *$ 196* |
| *Facilities* | *$ 6,665* | | *$ 6,665* |
| *Program Related Supplies* | *$ 7,282* | | *$ 7,282* |
| *Indirect/Overhead* | *$ 51,062* | | *$ 51,062* |
| **2012 Education and Outreach** | **$ 347,219** | **$ -** | **$ 347,219** |
| **Education & Outreach Subtotal** | **$ 693,896** | **$ 346,677** | **$ 347,219** |
| ***Miscelaneous Ed/Outreach Expenses*** | **Contract Amount** | **Expended to Date** | **Difference + (-)** |
| 2010/2011 Miscellaneous Exp. | $ 105,764 | $ 105,764 | $ - |
| 2012 Miscellaneous Exp. | $ 121,590 | | $ 121,590 |
| Purchase Card | | $ 324 | |
| CME | | $ 280 | |
| Travel | | $ 1,909 | |
| 2010/2011 media | $ 28,750 | $ 28,750 | $ - |
| 2012 Media | $ 20,000 | $ - | $ 20,000 |
| **Miscellaneous Subtotal** | $ 276,104 | $ 137,027 | $ 139,077 |
| **STR Education and Outreach Totals** | **Contract Amount** | **Expended to Date** | **Difference + (-)** |
| | **$ 1,600,000** | **$ 949,400** | **$ 650,600** |
| **Remaining Balance** | | | **$ 650,600** |

*Trolley lot parking mitigation money is from the Clinton CSO Storage Facility Budget and is funding education and outreach specific to that project.

# APPENDIX

**April 2012**

| FINANCIAL TRACKING SUMMARY: | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| FEDERAL & STATE GRANTS/LOANS APPLIED FOR, NOT YET APPROVED | | | | | |
| | | | | | |
| | | | | | |
| | ORIGINAL | EFC | EFC | | NYS |
| PROJECT NAME | BUDGET | SHORT TERM | LONG TERM | E.P.A. | FUNDING |
| | | | | | |
| **METRO - CURRENT** | | | | | |
| AERATION SYSTEM UPGRADE | $8,500,000 | | | | |
| AMMONIA REMOVAL DEMO | $2,000,000 | | | | |
| BIOSOLIDS - MECHANICAL THICKENERS | | | | | |
| DIGESTER MOD/CHEMICAL STORAGE | $5,600,000 | | | | |
| DIGITAL SYSTEM IMPROVEMENTS | $2,900,000 | | | | |
| MISCELLANEOUS IMPROVEMENTS | $1,400,000 | | | | |
| ODOR CONTROL | $7,700,000 | | | | |
| AMMONIA REMOVAL FULL SCALE/ STAGE II PHOSPHORUS REMOVAL | $190,000,000 | | | | |
| PHOSPHORUS REMOVAL PILOT | $5,000,000 | | | | |
| | | | | | |
| **CSO - CURRENT** | | | | | |
| CLINTON ST CONVEYANCE & RTF | $31,245,000 | | | | |
| ERIE BLVD SEW SEP STORAGE | $3,000,000 | | | | |
| FRANKLIN ST FCF | $3,200,000 | | | | |
| HARBOR BROOK FCF | $250,000 | | | | |
| HARBOR BROOK CSO ABATEMENT | $5,444,000 | | | | |
| HIAWATHA INTERCEPTOR/RTF | $8,000,000 | | | | |
| KIRKPATRICK ST PUMP STATION | $5,642,000 | | | | |
| MALTBIE ST FCF | $250,000 | | | | |
| MIDLAND AVE CONVEYANCE | $3,000,000 | | | | |
| MIDLAND AVE PHASE II & RTF | $45,000,000 | | | | |
| MIDLAND AVE PHASE III | $27,000,000 | | | | |
| MIDLAND AVE MITIGATION COSTS | | | | | |
| NEWELL ST FCF | $1,310,000 | | | | |
| ONONDAGA CREEK FCF | $3,000,000 | | | | |
| SEWER SEPARATION | $7,704,000 | | | | |
| SIPHON REHABILITATION | $1,230,000 | | | | |
| TEALL BROOK FCF | $175,000 | | | | |
| WEST ST SEWER SEPARATION | $1,000,000 | | | | |
| | | | | | |
| **OTHER** | | | | | |
| AMBIENT WATER MONITORING | $8,000,000 | | | | |
| OXYGENATION DEMO | $2,400,000 | | | | |
| SEQR REGULATORY | $50,000 | | | | |
| | | | | | |
| TOTAL DOLLARS | ***$380,000,000** | $0 | $0 | $0 | $0 |
| | | | | | |
| ***Original budget figures were based on 1997 dollars** | | | | | |

**April 2012**

| | FINANCIAL TRACKING SUMMARY: FEDERAL & STATE GRANTS/LOANS APPROVED & RECEIVED | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NYS | NYS | FED EPA | FED EPA | SHORT-TERM | SHORT-TERM | LONG-TERM | LONG-TERM | ACE | ACE |
| | PROJECT | GRANT | GRANT | GRANT | GRANT | EFC LOAN | EFC LOAN | EFC LOAN | EFC LOAN | GRANT | GRANT |
| PROJECT NAME | BUDGET | APPROVED | RECEIVED | APPROVED | RECEIVED | APPROVED | RECEIVED | APPROVED | RECEIVED | APPROVED | RECEIVED |
| **METRO - CURRENT** | | | | | | | | | | | |
| AERATION SYSTEM UPGRADE | $8,500,000 | $5,834,381 | $5,834,381 | | | $7,365,000 | $6,868,954 | $1,049,185 | $14,613 | | |
| AMMONIA REMOVAL DEMO | $2,000,000 | $1,145,109 | $1,145,109 | | | Full-Scale | $202,078 | | | | |
| BIOSOLIDS-MECHANICAL THICKENERS [c] | | | | | | | | $14,676,422 | $14,711,148 | | |
| DIGESTER MOD/CHEMICAL STORAGE | $5,600,000 | $4,319,819 | $4,319,819 | | | $4,938,419 | $4,938,419 | $775,509 | $154,126 | | |
| DIGITAL SYSTEM IMPROVEMENTS | $2,900,000 | $1,563,317 | $1,563,317 | | | $1,849,000 | $1,849,000 | $285,682 | $3,833 | | |
| MISCELLANEOUS IMPROVEMENTS | $1,400,000 | | | | | | | | | | |
| ODOR CONTROL | $7,700,000 | | | | | | | $7,413,199 | $7,389,197 | | |
| AMMONIA REMOVAL FULL SCALE/ STAGE II PHOSPHORUS REMOVAL | $190,000,000 | $47,331,203 | $47,331,203 | $54,705,015 | $54,705,015 | $108,000,000 | $105,860,930 | $17,200,000 | $989,323 | | |
| PHOSPHORUS REMOVAL PILOT | $5,000,000 | | | | | Full Scale | $1,936,991 | | | | |
| **CSO - CURRENT** | | | | | | | | | | | |
| CLINTON ST CONVEYANCE & RTF | $31,245,000 | $51,120,000 | $25,660,161 | | | $37,788,890 | $9,334,263 | $15,603,494 | $3,731,790 | | |
| ERIE BLVD SEW SEP STORAGE | $3,000,000 | $1,700,000 | $1,700,000 | | | $2,301,876 | $2,094,314 | $923,162 | $216,543 | | |
| FRANKLIN ST FCF | $3,200,000 | $3,828,053 | $3,828,053 | | | $4,726,762 | $4,589,759 | $1,179,012 | $296,823 | | |
| HARBOR BROOK FCF | $250,000 | $384,200 | $384,200 | | | | | $343,500 | $348,596 | | |
| HARBOR BROOK CSO ABATEMENT | $5,444,000 | $3,880,000 | $3,880,000 | | | $53,689,500 | $20,008,299 | | | | |
| HIAWATHA INTERCEPTOR/RTF [a] | $8,000,000 | | | | | | | $2,710,169 | $37,749 | $3,406,000 | $3,406,000 |
| KIRKPATRICK ST PUMP STATION | $5,642,000 | $7,502,302 | $7,502,302 | | | $12,000,000 | $10,940,632 | $4,246,376 | $828,115 | | |
| MALTBIE ST FCF | $250,000 | $211,097 | $211,097 | | | $212,000 | $188,106 | | | | |
| MIDLAND AVE CONVEYANCE | $3,000,000 | $26,055,238 | $26,055,238 | $48,904,185 | $31,706,143 | | | | | | |
| MIDLAND AVE PHASE II & RTF | $45,000,000 | | | | | $15,000,000 | $15,000,000 | $25,155,568 | $10,831,449 | | |
| MIDLAND AVE PHASE III | $27,000,000 | | | | | $10,000,000 | | | | | |
| MIDLAND AVE MITIGATION COSTS | | | | | | | | | | | |
| NEWELL ST FCF [b] | $1,310,000 | $367,737 | $367,737 | | | | | | | | |
| ONONDAGA CREEK FCF | $3,000,000 | $442,154 | $442,154 | | | | | | | | |
| SEWER SEPARATION [a] | $7,704,000 | | | | | | | $7,231,454 | $6,756,274 | $14,050,177 | $11,100,177 |
| SIPHON REHABILITATION | $1,230,000 | $870,768 | $870,768 | | | $1,435,500 | $1,024,433 | $140,623 | $1,958 | | |
| TEALL BROOK FCF | $175,000 | $1,045,162 | $1,045,162 | | | $1,236,594 | $1,094,139 | $188,809 | $5,743 | | |
| WEST ST SEWER SEPARATION | $1,000,000 | $2,299,460 | $2,299,460 | | | $3,059,716 | $2,481,443 | $395,540 | $6,621 | | |
| **OTHER** | | | | | | | | | | | |
| AMBIENT WATER MONITORING | $8,000,000 | | | | | | | | | | |
| OXYGENATION DEMO | $2,400,000 | | | | | | | | | | |
| SEQR REGULATORY | $50,000 | | | | | | | | | | |
| TOTAL DOLLARS | ***$380,000,000** | $159,900,000 | $134,440,161 | $103,609,200 | $86,411,158 | $263,603,257 | $188,411,760 | $99,517,704 | $46,323,901 | $17,456,177 | $14,506,177 |
| ***Original budget figures were based on 1997 dollars** | | | | | | | | | | | |
| (a) NOTE: PROJECT IS US ARMY CORPS OF ENGINEERS PROJECT | | | | | | | | | | | |
| (b) NOTE: PROJECT RECEIVED $40,500 COST SHARE GRANT FROM (NYSERDA) | | | | | | | | | | | |
| (c )NOTE: PROJECT RECEIVED $87,500 COST SHARE GRANT FROM (NYSERDA) | | | | | | | | | | | |

## Lake Improvement Project Status Report For The Period Ending 4/30/2012

| | Project Title | ACJ START DATE | ACJ FINISH DATE | COUNTY FINISH DATE | ORIGINAL BUDGET(2) | AUTHORIZED BUDGET | ENGINEER |
|---|---|---|---|---|---|---|---|
| | **METRO - Current** | | | | | | |
| 1 | AERATION SYSTEM UPGRADE | | 7/1/2002 | 01/03/00 | $ 8,500,000 | $ 6,925,115 | EEA |
| 2 | AMMON. REMOVAL DEMONSTRATION | 11/1/1998 | 3/1/2000 | 12/31/99 | $ 2,000,000 | $ 1,350,000 | EEA |
| 3 | BIOSOLIDS - MECHANICAL THICKENERS | | | | | $ 15,100,000 | |
| 4 | DIGESTER MOD/CHEMICAL STORAGE | | 7/1/2002 | 10/31/00 | $ 5,600,000 | $ 5,092,545 | C&S |
| 5 | DIGITAL SYSTEMS IMPROVEMENTS | | 7/1/2002 | 06/31/01 | $ 2,900,000 | $ 3,520,317 | Systems Integrated |
| 6 | MISCEL. IMPROVEMENTS | | 7/1/2002 | 01/31/99 | $ 1,400,000 | $ 1,400,000 | |
| 7 | ODOR CONTROL | | 7/1/2002 | 12/20/00 | $ 7,700,000 | $ 8,393,855 | OBG |
| 8 | AMMONIA REMOVAL FULL SCALE/ | 10/1/2001 | 11/1/2003 | 11/01/03 | $ 125,000,000 | $ 129,386,187 | EEA |
| | STAGE II PHOSPHORUS REMOVAL | 10/1/2003 | 4/1/2005 | | $ 65,000,000 | | |
| 9 | PHOSPHORUS REMOVAL - PILOT | 4/1/2006 | 4/1/2007 | 12/31/00 | $ 5,000,000 | $ 4,300,000 | EEA |
| | **CSO - Current** | | | | | | |
| 10 | CLINTON ST. CONVEYANCE/ | 5/1/2003 | 5/1/2007 | 10/28/06 | $ 15,987,190 | $ 165,500,042 | EEA |
| | CLINTON ST. RTF | 5/1/2007 | 1/1/2012 | 12/28/10 | $ 15,258,090 | | |
| 11 | ERIE BLVD STORAGE SYSTEM | | 7/1/2002 | 04/13/02 | $ 3,000,000 | $ 2,684,523 | Barton & Loguidice |
| 12 | FRANKLIN ST. FCF | 4/26/1999 | 5/1/2000 | 05/01/00 | $ 3,200,000 | $ 5,216,618 | EEA |
| 13 | HARBOR BROOK FCF | | 7/1/2002 | 07/01/02 | $ 250,000 | $ 889,109 | EEA |
| 14 | HARBOR BROOK CSO ABATEMENT | | 7/1/2002 | | $ 5,443,980 | $ 104,800,000 | Moffa & Assoc. |
| 15 | HIAWATHA INTERCEPTOR/RTF | | 7/1/2002 | 12/31/00 | $ 8,000,000 | $ 6,047,183 | EEA/Parsons |
| 16 | KIRKPATRICK ST. PUMP STATION | | 7/1/2002 | 10/29/02 | $ 5,641,860 | $ 12,558,335 | EEA |
| 17 | MALTBIE STREET FCF | 8/31/1998 | 7/1/2002 | 04/26/99 | $ 250,000 | $ 362,028 | EEA |
| 18 | MIDLAND AVE RTF & CSO ABATEMENT | 5/1/1999 | 5/1/2004 | 12/06/00 | $ 75,000,000 | $ 145,368,853 | EEA |
| 19 | MIDLAND AVE MITIGATION COSTS | | | | | $ 3,000,000 | |
| 20 | NEWELL STREET RTF | | 7/1/2002 | 07/01/01 | $ 1,310,000 | $ 473,132 | Moffa & Assoc. |
| 21 | ONONDAGA CREEK FCF | | 7/1/2002 | 07/01/02 | $ 3,000,000 | $ 648,342 | Parsons |
| 22 | SEWER SEPARATION | | 1/1/2012 | 01/01/12 | $ 7,703,880 | $ 27,684,286 | OBG |
| 23 | SIPHON REHABILITATION | | 7/1/2002 | 06/11/99 | $ 1,230,000 | $ 1,026,391 | C&S |
| 24 | TEALL BROOK FCF | | 7/1/2002 | 12/01/01 | $ 175,000 | $ 1,235,346 | EEA |
| 25 | WEST ST SEWER SEPARATION | 5/1/1999 | | 01/14/00 | $ 1,000,000 | $ 2,720,572 | CHA |
| 26 | ERIE BLVD CSO ABATEMENT | | | | | | New Project |
| | **OTHER** | | | | | | |
| 27 | AMBIENT WATER MONITORING | | 7/1/2002 | | $ 8,000,000 | | |
| 28 | OXYGENATION DEMO PROJECT | 5/1/1999 | 4/1/2003 | 02/25/04 | $ 2,400,000 | $ 10,087 | |
| 29 | SEQRA REGULATORY COMPLIANCE [1] | | | | $ 50,000 | $ 50,000 | Parsons |
| | | | | | | | |
| | TOTAL DOLLARS [2] | | | * | $ 380,000,000 | $ 655,742,866 | |
| | ***Original budget figures were based on 1997 dollars** | | | | | | |

(1) SEQR costs are reflected in the individual projects under total payments to date

(2) Original budget figures were based on 1997 dollars

## Lake Improvement Project Status Report For The Period Ending 4/30/2012

| | SOFT COST CONTRACTS | CONSTRUCTION CONTRACT AMOUNTS | | TOTAL PAYMENTS TO DATE | FORECASTED COSTS | TOTAL ESTIMATED COST | OVER/UNDER BUDGET | % COMPLETED EXPENDITURES |
|---|---|---|---|---|---|---|---|---|
| 1 | $ 352,747 | $ 6,473,110 | | $ 6,925,115 | | $ 6,925,115 | $ (1,574,885) | 100.00% |
| 2 | $ 1,346,856 | | | $ 1,347,187 | | $ 1,347,187 | $ (652,813) | 100.00% |
| 3 | $ 1,266,416 | $ 13,111,105 | | $ 14,773,814 | $ 5,500 | $ 14,779,314 | $ 14,779,314 | 99.96% |
| 4 | $ 748,386 | $ 4,357,480 | | $ 5,092,545 | | $ 5,092,545 | $ (507,455) | 100.00% |
| 5 | $ 451,713 | $ 2,974,514 | | $ 3,520,317 | | $ 3,520,317 | $ 620,317 | 100.00% |
| 6 | | | | $ 1,400,000 | | $ 1,400,000 | $ - | 100.00% |
| 7 | $ 999,299 | $ 6,956,868 | | $ 8,393,855 | | $ 8,393,855 | $ 693,855 | 100.00% |
| 8 | $ 21,289,868 | $ 106,962,810 | | $ 128,688,040 | | $ 128,688,040 | $ (61,311,960) | 100.00% |
| 9 | $ 4,055,734 | | | $ 4,111,714 | $ 2,109 | $ 4,113,823 | $ (886,178) | 99.95% |
| 10 | $ 33,844,338 | $ 100,824,666 | | $ 66,104,499 | $ 99,395,544 | $ 165,500,042 | $ 134,254,762 | 39.94% |
| 11 | $ 901,556 | $ 1,734,929 | | $ 2,684,523 | | $ 2,684,523 | $ (315,477) | 100.00% |
| 12 | $ 973,543 | $ 3,920,238 | | $ 4,948,516 | $ 2,018,689 | $ 6,967,205 | $ 3,767,205 | 71.03% |
| 13 | $ 436,363 | $ 373,370 | | $ 889,109 | | $ 889,109 | $ 639,109 | 100.00% |
| 14 | $ 16,389,460 | $ 56,615,196 | | $ 41,255,022 | $ 63,544,978 | $ 104,800,000 | $ 99,356,020 | 39.37% |
| 15 | $ 540,945 | $ 5,535,152 | | $ 6,047,183 | $ 3,406,000 | $ 9,453,183 | $ 1,453,183 | 63.97% |
| 16 | $ 2,520,394 | $ 9,882,154 | | $ 12,558,335 | | $ 12,558,335 | $ 6,916,475 | 100.00% |
| 17 | $ 109,483 | $ 152,418 | | $ 362,028 | | $ 362,028 | $ 112,028 | 100.00% |
| 18 | $ 23,943,017 | $ 65,231,872 | | $ 87,269,505 | $ 41,030,495 | $ 128,300,000 | $ 53,300,000 | 68.02% |
| 19 | | | | $ 3,000,000 | $ - | $ 3,000,000 | $ 3,000,000 | 100.00% |
| 20 | $ 472,572 | | | $ 473,132 | | $ 473,132 | $ (836,868) | 100.00% |
| 21 | $ 503,551 | | | $ 648,342 | | $ 648,342 | $ (2,351,658) | 100.00% |
| 22 | $ 1,963,173 | $ 22,881,164 | | $ 20,773,570 | $ 4,918,647 | $ 25,692,217 | $ 17,988,337 | 80.86% |
| 23 | | $ 1,021,823 | | $ 1,026,391 | | $ 1,026,391 | $ (203,609) | 100.00% |
| 24 | $ 320,039 | $ 903,566 | | $ 1,235,346 | | $ 1,235,346 | $ 1,060,346 | 100.00% |
| 25 | $ 403,332 | $ 2,311,126 | | $ 2,720,572 | | $ 2,720,572 | $ 1,720,572 | 100.00% |
| 26 | | | | | | $ - | | |
| 27 | | | | $ 15,849,937 | $ - | $ - | | |
| 28 | $ 10,087 | | | $ 10,087 | | $ 10,087 | $ (2,389,913) | 100.00% |
| 29 | | | | | | | | |
| | $ 113,842,871 | $ 412,223,562 | | $ 442,108,682 | $ 214,321,963 | $ 640,580,708 | $ 268,630,708 | |

**April 2012**

| | Project Title | TOTAL PAYMENTS TO DATE 4-30-12 | TOTAL PAYMENTS TO DATE 3-31-12 | Change |
|---|---|---|---|---|
| | **METRO - Current** | | | |
| 1 | AERATION SYSTEM UPGRADE | $ 6,925,115 | $ 6,925,115 | $ - |
| 2 | AMMON. REMOVAL DEMONSTRATION | $ 1,347,187 | $ 1,347,187 | $ - |
| 3 | BIOSOLIDS - MECHANICAL THICKENERS | $ 14,773,814 | $ 14,773,814 | $ - |
| 4 | DIGESTER MOD/CHEMICAL STORAGE | $ 5,092,545 | $ 5,092,545 | $ - |
| 5 | DIGITAL SYSTEMS IMPROVEMENTS | $ 3,520,317 | $ 3,520,317 | $ - |
| 6 | MISCEL. IMPROVEMENTS | $ 1,400,000 | $ 1,400,000 | $ - |
| 7 | ODOR CONTROL | $ 8,393,855 | $ 8,393,855 | $ - |
| 8 | AMMONIA REMOVAL FULL SCALE/ | $ 128,688,040 | $ 128,688,040 | $ - |
| | STAGE II PHOSPHORUS REMOVAL | $ - | $ - | |
| 9 | PHOSPHORUS REMOVAL - PILOT | $ 4,111,714 | $ 4,111,714 | $ - |
| | **CSO - Current** | | | $ - |
| 10 | CLINTON ST. CONVEYANCE/ | $ 66,104,499 | $ 60,682,932 | $ 5,421,566 |
| | CLINTON ST. RTF | $ - | | $ - |
| 11 | ERIE BLVD STORAGE SYSTEM | $ 2,684,523 | $ 2,684,523 | $ - |
| 12 | FRANKLIN ST. FCF | $ 4,948,516 | $ 4,948,516 | $ - |
| 13 | HARBOR BROOK FCF | $ 889,109 | $ 889,109 | $ - |
| 14 | HARBOR BROOK CSO ABATEMENT | $ 41,255,022 | $ 39,779,485 | $ 1,475,536 |
| 15 | HIAWATHA INTERCEPTOR/RTF | $ 6,047,183 | $ 6,047,183 | $ - |
| 16 | KIRKPATRICK ST. PUMP STATION | $ 12,558,335 | $ 12,558,335 | $ - |
| 17 | MALTBIE STREET FCF | $ 362,028 | $ 362,028 | $ - |
| 18 | MIDLAND AVE RTF & CSO ABATEMENT | $ 87,269,505 | $ 87,114,629 | $ 154,875 |
| 19 | MIDLAND AVE MITIGATION COSTS | $ 3,000,000 | $ 3,000,000 | $ - |
| 20 | NEWELL STREET RTF | $ 473,132 | $ 473,132 | $ - |
| 21 | ONONDAGA CREEK FCF | $ 648,342 | $ 648,342 | $ - |
| 22 | SEWER SEPARATION | $ 20,773,570 | $ 20,096,425 | $ 677,145 |
| 23 | SIPHON REHABILITATION | $ 1,026,391 | $ 1,026,391 | $ - |
| 24 | TEALL BROOK FCF | $ 1,235,346 | $ 1,235,346 | $ - |
| 25 | WEST ST SEWER SEPARATION | $ 2,720,572 | $ 2,720,572 | $ - |
| 26 | ERIE BLVD CSO ABATEMENT | $ - | $ - | $ - |
| | **OTHER** | | | |
| 27 | AMBIENT WATER MONITORING | $ 15,849,937 | $ 15,849,937 | $ - |
| 28 | OXYGENATION DEMO PROJECT | $ 10,087 | $ 10,087 | $ - |
| 29 | SEQRA REGULATORY COMPLIANCE | $ - | $ - | $ - |
| | | | | $ - |
| | **TOTAL DOLLARS** | $ 442,108,682 | $ 434,379,559 | $ 7,729,123 |

# Chronology
# of
# Project Construction Starts

| | Status | Location |
|---|---|---|
| Pre-ACJ Signing (1/20/98) | | |
| • General Improvements | Complete | Metro |
| • Odor Control and Residuals Handling | Complete | Metro |
| 1998 | | |
| • Digital Systems Upgrade | Complete | Metro |
| • Ammonia Removal Demonstration | Complete | Metro |
| • Aeration System Upgrade | Complete | Metro |
| • Hiawatha RTF - ACOE | Complete | Regional Market |
| • Newell St. RTF Demo/Improvements | Complete | W.Newell/Vale St. |
| • Maltbie St. FCF | Complete | Maltbie/Plum St. |
| • Siphon Rehab | Complete | Various |
| 1999 | | |
| • Digester Modifications/Chemical Storage | Complete | Metro |
| • Franklin St. FCF | Complete | I-690/Franklin |
| • West Street Sewer Separation | Complete | W. Genesee, Plum, Tracy, N. West St. |
| • Ammonia Trackdown | Complete | Metro |
| 2000 | | |
| • Midland Ave. Conveyance Phase I | Complete | Tallman/Oxford St. |
| • Phosphorus Removal – Phase I Pilot | Complete | Metro |
| 2001 | | |
| • Erie Blvd. Storage System Upgrade | Complete | Franklin to Teall |
| • Full Scale Ammonia Removal/ Stage II Phosphorus Removal | Complete | Metro |
| • Kirkpatrick St. Pump Station & Force Main | Complete | Kirkpatrick St. |
| • Onondaga Creek FCF | Complete | Inner Harbor |
| • Teall Brook FCF | Complete | Teall Ave. |
| • Water Street Sewer Separation (CSO 024) | Complete | Water Street |
| 2002 | | |
| • Harbor Brook FCF | Complete | W.Hiaw./I-690 |
| • Brighton Ave Sewer Separation (CSO 053/054) | Complete | Brighton/Bishop Ave |

| Project | Status | Location |
|---|---|---|
| **2004** | | |
| • Tallman/Onondaga Sewer Separation (CSO 038, 040, 046A &046B) | Complete | Tallman/Onondaga |
| • Midland Phase II RTF/Conveyances | Complete | Blaine/Oxford St. |
| **2005** | | |
| • Phosphorus Removal – Phase II Pilot | Complete | Metro |
| • Biosolids Handling Improvements | Complete | Metro |
| **2006** | | |
| • Sewer Separation – CSO 047 & 048 | Complete | South Ave/ Bissell St. |
| **2007** | | |
| • Sewer Separation – CSO 050 | Complete | Parkway/Rockland |
| • Clinton Phase I Conveyances | Complete | |
| **2008** | | |
| • Clinton Phase IIA Conveyances | Complete | |
| **2009** | | |
| • Sewer Separation – CSO 051 | Complete | Colvin St. |
| **2010** | | |
| • Harbor Brook Interceptor Sewer | Authorized/Underway | Velasko/Fayette |
| • Save the Rain Green Projects | Authorized/Complete | Various |
| **2011** | | |
| • Midland CSO 044 | Authorized | W. Castle/South Ave |
| • Clinton Storage Facility | Authorized/Underway | Armory Square |
| • Lower Harbor Brook (Conveyance & Storage) | Authorized/Underway | Hiawatha/State Fair Blvd. |
| • Save the Rain Green Projects | Authorized/Underway | Various |
| • CSO 022 Sewer Separation Project | Authorized | West Genesee/Franklin |
| • CSO 045 Sewer Separation Project | Authorized | South Avenue |

# CONTRACTORS for
# CONSTRUCTION PROJECTS
# Metro Treatment Plant

| | |
|---|---|
| **AERATION SYSTEM UPGRADE** | |
| Bongiovanni Construction (General) | $5,626,956.41 |
| Ridley Electric (Electrical) | $ 846,154.00 |
| **DIGITAL SYSTEM UPGRADE** | |
| Systems Integrated | $2,974,514.27 |
| **ODOR CONTROL CONTRACT # 1** | |
| Falconet, Inc. (General) | $4,872,660.53 |
| Scriba Electric (Electrical) | $ 315,580.30 |
| Burns Bros. (Heating/Ventilation) | $ 82,459.00 |
| Burns Bros. (Plumbing) | $ 50,168.00 |
| **ODOR CONTROL CONTRACT # 2** | |
| Murnane Construction | $1,636,000.00 |
| **PHASE III IMPROVEMENTS CONTRACT 1 – DIGESTER & LAGOON IMPROVEMENTS** | |
| Maxim Construction | $ 645,730.74 |
| **PHASE III IMPROVEMENTS CONTRACT 2 – CHEMICAL STORAGE & FEED FACILITIES** | |
| C.O.Falter Construction Corp. (General) | $2,527,300.08 |
| Barry & Barry Electrical Co. (Electrical) | $ 193,665.22 |
| Burns Bros. (HVAC) | $ 224,232.51 |
| Edward Joy Company (Plumbing) | $ 38,669.35 |
| **PHASE III IMPROVEMENTS CONTRACT 3 – DIGESTER & LAGOON CLEANING** | |
| Waste Stream Environmental Inc. | $ 727,881.80 |
| **FULL SCALE AMMONIA/PHOSPHORUS REMOVAL - FIELD OFFICE** | |
| James & Son Construction | $ 28,388.00 |
| Resun Leasing, Inc. | $ 112,224.00 |
| Ridley Electric Co. | $ 32,295.00 |
| Burns Brothers | $ 18,440.00 |
| **FULL SCALE AMMONIA/PHOSPHORUS REMOVAL** | |
| U.S. Filter – Kruger Products, Inc. | $ 8,261,182.00 |
| U.S. Filter – Kruger Products, Inc. | $ 3,918,080.00 |

# CONTRACTORS for CONSTRUCTION PROJECTS

## Metro Treatment Plant

FULL SCALE AMMONIA/PHOSPHORUS REMOVAL

SITE PREPARATION - CONTRACT 2

| | |
|---|---|
| C.O. Falter Construction Corp. (General) | $22,243,604.98 |
| Ridley Electric (Electrical) | $ 255,627.00 |
| C.O. Falter Construction Corp. (Pile Testing) | $ 431,008.00 |
| Moretrench Environmental | $ 4,602,086.57 |

PILE INSTALLATION – CONTRACT 3

| | |
|---|---|
| M.A. Bongiovanni Construction | $ 9,045,731.95 |

GENERAL - CONTRACT 4

| | |
|---|---|
| The Pike Company (General) | $46,860,263.46 |
| Ridley Electric Co. (Electrical) | $ 6,927,238.00 |
| Edward Joy Company (HVAC) | $ 3,009,057.61 |
| Burns Brothers (Plumbing/Fire Protection) | $ 1,217,583.74 |

BIOSOLIDS HANDLING IMPROVEMENTS

| | |
|---|---|
| C.O. Falter Construction Corp. (General) | $10,929,016.19 |
| Ridley Electric (Electrical) | $1,476,223.00 |
| Airside Technology (HVAC) | $ 532,187.00 |
| Burns Bros. (Plumbing) | $ 173,679.09 |

## CSOs

CLINTON CONVEYANCES PHASE I & 2A

| | |
|---|---|
| The Delaney Group, Inc. | $14,478,053.39 |
| The Delaney Group, Inc. | $ 4,074,455.32 |

CLINTON CSO ABATEMENT

| | |
|---|---|
| Ruston Paving (Farmers' Market Lot) | $ 188,046.14 |
| Davis Wallbridge (Pearl St/Lot 3) | $ 635,873.93 |
| Davis Wallbridge (Townsend St.) | $ 476,625.39 |
| J&B (Pirro Conv. Center) | $1,038,000.00 |
| VIP (Onondaga Library) | $ 37,141.66 |
| C.O. Falter (War Memorial) | $ 571,101.00 |
| Ridley (War Memorial) | $ 427,300.00 |
| Economy Paving (On Center) | $1,044,969.49 |
| J & B (Erie Canal Museum) | $ 73,480.00 |
| Jett Industries (Clinton Storage) | $70,640,000.00 |
| Joy Process Mechanical (Cistern War Memorial) | $ 79,540.00 |
| C&S Technical (Cistern War Memorial) | $ 188,021.00 |

# CONTRACTORS for
## CONSTRUCTION PROJECTS
## CSOs (cont)

| | |
|---|---|
| Walbridge (Streetscape/Water St) | $1,128,797.50 |
| Ruston Paving (Sunnycrest Parking Lot) | $ 407,000.00 |
| Acts II Construction (Skiddy Park) | $ 547,000.00 |
| D.E. Tarolli (Otisco Street) | $1,563,732.00 |
| Orchard Earth & Pipe (Syr School Dist Park Lot) | $ 403,500.00 |
| Slate Hill Construction (E. Water St) | $ 124,000.00 |
| Jeffrey DeRoberts (GIF) | $ 99,311.00 |
| King & King Architects (GIF) | $ 100,000.00 |
| Jefferson Clinton Commons (GIF) | $ 100,000.00 |
| ESF Foundation, Abby Lane Housing (GIF) | $ 78,000.00 |
| Hotel Skyler (GIF) | $ 100,000.00 |
| Near West Side Initiatives, Inc. (GIF) | $ 22,730.69 |
| Near West Side Initiatives, Inc. (GIF) | $ 78,000.00 |
| Tash Taskale (GIF) | $ 89,211.00 |
| St. Lucy's Church (GIF) | $ 125,000.00 |
| Putnam Properties (GIF) | $ 75,757.00 |
| Centro (GIF) | $ 65,390.00 |
| 500 W. Onondaga St. Inc. (GIF) | $ 52,740.00 |
| CNY Jazz Arts Foundation (GIF) | $ 52,188.00 |
| Jim & Juli Boeheim Foundation (GIF) | $ 163,203.51 |
| Home Headquarters, Inc. (GIF) | $ 36,045.00 |
| Galleries of Syr, 147 E. Onondaga St (GIF) | $ 100,000.00 |
| Syracuse Housing (GIF) | $ 120,290.00 |
| Kopp Billing Agency (GIF) | $ 25,300.00 |

ERIE BOULEVARD STORAGE SYSTEM

| | |
|---|---|
| M. Hubbard Construction | $1,556,752.00 |
| Ridley Electric (Electrical) | $ 154,059.00 |
| Burns Bros. (Mechanical) | $ 174,350.00 |
| Scriba Electric (Electrical) | $ 144,640.61 |
| Burns Bros. (Plumbing) | $ 33,217.97 |

HARBOR BROOK CSO ABATEMENT

| | |
|---|---|
| Joseph J. Lane Construction (Interceptor Sewer Replacement) | $21,536,849.00 |
| Bette Cring (Elephant Barn greening) | $ 207,701.00 |
| VIP (Onondaga Library) | $ 37,141.66 |
| John Dudley Construction (Geddes St) | $ 203,274.00 |
| J & B Installations (Hazard Library/Erie Canal Museum) | $ 67,275.00 |

# CONTRACTORS for CONSTRUCTION PROJECTS
## CSOs (cont)

| | |
|---|---|
| Economy Paving (Rosamond Gifford Zoo) | $ 616,410.00 |
| J.J. Lane (Lower HB) | $4,147,888.00 |
| A.J. Montclair (HB CSO Storage) | $ 260,000.00 |
| C.O. Falter (HB CSO Storage) | $25,039,101.00 |
| Vibrant Spaces, LLC (GIF) | $ 153,618.00 |
| NYSARC, Inc. (GIF) | $ 95,053.00 |

HARBOR BROOK FCF

| | |
|---|---|
| C.O. Falter Construction Corp. (General) | $ 373,370.21 |

KIRKPATRICK ST. PUMP STATION & FORCE MAIN

| | |
|---|---|
| C.O. Falter Construction Corp. | $ 4,398,009.12 |
| C.O. Falter Construction Corp. | $ 4,425,766.31 |
| Patricia Electric | $ 761,184.63 |
| King & King Mechanical | $ 245,569.51 |
| G.J. Adams Plumbing | $ 51,624.16 |

MALTBIE STREET FCF

| | |
|---|---|
| Over & Under Piping | $ 152,418.00 |

MIDLAND AVENUE CONVEYANCES

| | |
|---|---|
| Marcellus Construction (General) | $1,836,434.47 |

MIDLAND AVENUE PHASE II CONVEYANCES & RTF

| | |
|---|---|
| Empire Dismantlement Corp. (Demolition) | $ 457,681.50 |
| Murnane Building Contractors, Inc. (General) | $47,929,392.75 |
| Ridley Electric Company (Electrical) | $ 2,904,771.00 |
| Edward Joy Company (HVAC) | $ 2,053,808.50 |
| Edward Joy Company (Plumbing) | $ 484,717.17 |

MIDLAND AVENUE PHASE III CONVEYANCES

| | |
|---|---|
| Titan Wrecking & Environmental, LLC (Demolition) | $ 290,801.39 |
| JJ Lane | $ 7,978,282.00 |
| VIP Architectual (Onondaga Public Library) | $ 18,570.83 |
| Acts II (Hugh's Magnet School Parking Lot) | $ 288,700.00 |
| Jubilee Homes of Syracuse (GIF) | $ 100,000.00 |
| Dunbar Association, Inc. (GIF) | $ 99,840.00 |
| 500 W. Onondaga St. Inc. (GIF) | $ 60,000.00 |
| Syracuse Model Neighborhood (GIF) | $ 250,000.00 |

# CONTRACTORS for CONSTRUCTION PROJECTS

## CSOs (cont)

| | |
|---|---|
| Alexander Property West (GIF) | $ 81,000.00 |
| Viraj, NY, LLC (GIF) | $ 95,650.00 |
| People's AME Zion Church (GIF) | $ 54,700.00 |
| People's Community Dev. Corp (GIF) | $ 80,825.00 |
| Matawon Development Group (GIF) | $ 24,214.00 |
| Salina Shoe Salon (GIF) | $ 85,000.00 |
| People's AME Zion Church (GIF) | $ 80,677.00 |

SEWER SEPARATION – CSO 022/045

| | |
|---|---|
| Joy Process Mechanical (plumbing) | $ 1,031,235.00 |

SEWER SEPARATION – CSO 024

| | |
|---|---|
| C.O. Falter Construction Corp. | $ 701,799.00 |

SEWER SEPARATION – CSO 053/054

| | |
|---|---|
| C.O. Falter Construction Corp. | $ 2,211,604.54 |

SEWER SEPARATION – CSO 038, 040, 046A&B

| | |
|---|---|
| C.O. Falter Construction Corp. | $ 3,524,487.29 |

SEWER SEPARATION – CSO 047 & 048

| | |
|---|---|
| C.O. Falter Construction Corp. | $ 1,654,022.34 |

SEWER SEPARATION – CSO 050

| | |
|---|---|
| Joseph J. Lane Construction | $ 4,360,527.06 |

SEWER SEPARATION – CSO 051

| | |
|---|---|
| Joseph J. Lane Construction | $ 5,029,323.00 |

SIPHON REHABILITATION

| | |
|---|---|
| Insituform Metropolitan | $1,021,822.99 |

TEALL BROOK FCF

| | |
|---|---|
| C.O. Falter Construction Corp. (General) | $ 877,095.43 |
| Scriba Electric (Electrical) | $ 26,470.20 |

WEST STREET AREA SEWER SEPARATION

| | |
|---|---|
| Maxim Construction (General) | $2,311,125.85 |

# WEP ACRONYMS

| | |
|---|---|
| ACJ | Amended Consent Judgment |
| AMP | Ambient Monitoring Program |
| AMSA | Association of Metropolitan Sewerage Agencies |
| AWQS | Ambient Water Quality Standards |
| ARRA | American Recovery and Reinvestment Act |
| ASLF | Atlantic States Legal Foundation |
| BAF | Biological Aerated Filter (Biostyr) |
| BMP | Best Management Practice |
| BPJ | Best Professional Judgment |
| CALM | Consolidated Assessment and Listing Methodology |
| CAMP | Community Air Monitoring Plan |
| CIP | Capital Improvement Plan |
| CMOM | Capacity, Management, Operation, and Maintenance |
| CSLAP | Citizens Statewide Lake Assessment Program |
| CSO | Combined Sewer Overflow |
| CWA | Clean Water Act |
| DMR | Discharge Monitoring Report |
| DO | Dissolved Oxygen |
| EBM | Ecosystem-Based Management |
| ECM | Energy Conservation Measures |
| EECBG | Energy Efficiency and Conservation Block Grant |
| ELAP | Environmental Laboratory Approval Program |
| EMS | Environmental Management System |
| ERM | Environmental Resource Mapper |
| FCF | Floatable Control Facility |
| GIF | Green Improvement Fund |
| HRFS | High Rate Flocculation Settling |
| I & I | Inflow & Infiltration |
| IW | Industrial Wastewater |
| km | Kilometers |
| $km^2$ | Square Kilometers |
| LA | Load Allocations |

| | |
|---|---|
| LF | Linear Feet |
| LAN | Local Area Network |
| m | Meters |
| MCP | Municipal Compliance Plan |
| Metro | Metropolitan Syracuse Wastewater Treatment Plant |
| MGD | Million Gallons Per Day |
| mg/L | Milligrams Per Liter |
| MIS | Main Interceptor Sewer |
| MS4s | Municipal Separate Storm Sewer Systems |
| mt | Metric Tons |
| NACWA | National Association of Clean Water Agencies |
| NBP | National Biosolids Partnership |
| NELAC | National Environmental Laboratory Accreditation Conference |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDOH | New York State Department of Health |
| NYSEFC | New York State Environmental Facilities Corp. |
| NYWEA | New York Water Environmental Association |
| OLP | Onondaga Lake Partnership |
| OLWQM | Onondaga Lake Water Quality Model |
| OU | Odor Unit |
| P2 | Prevention Program |
| P2CO | Prevention Program County Operations |
| PdM | Predictive Maintenance |
| PIDs | Photo-ionization Detectors |
| PFRP | Process to Further Reduce Pathogens |
| PLA | Project Labor Agreement |
| RTF | Regional Treatment Facility |
| PWL | Priority Waterbodies List |
| SCA | Sediment Consolidation Area |
| SCADA | Supervisory Control and Data Acquisition |
| SEPS | Secondary Effluent Pump Station |
| SEQR | State Environmental Quality Review |
| SGIP | Suburban Green Infrastructure Program |
| SHB | Solids Handling Building |

| | |
|---|---|
| SMPs | Storm Water Management Practices |
| SOP | Standard Operating Procedure |
| SPDES | State Pollutant Discharge Elimination System |
| SRP | Soluble Reactive Phosphorus |
| SSES | Sanitary Sewer Evaluation Study |
| SSV | Site-Specific Variance |
| SUNY-ESF | State University of New York College of Science and Forestry |
| SWMM | Storm Water Management Modeling |
| SWMP | Storm Water Management Plan |
| SWPPP | Storm Water Pollution Prevention Plan |
| TDP | Total Dissolved Phosphorus |
| TMDL | Total Maximum Daily Load |
| TP | Total Phosphorus |
| TSI | Trophic State Index |
| UAA | Use Attainability Analysis |
| UFI | Upstate Freshwater Institute |
| ug/l | Micrograms per liter |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| UST | Underground Storage Tank |
| VOC | Volatile Organic Compounds |
| WAN | Wide Area Network |
| WLA | Waste Load Allocations |
| WEF | Water Environment Federation |
| WEP | Water Environment Protection |
| WSE | Waste Stream Environmental |