Metropolitan Planning Council's

Milwaukee Avenue Green Development Corridor Sub-Granting Program

A sub-granting program to assist private property owners in investing in green stormwater infrastructure to improve the quality of Chicago's waterways.

Illinois Green Infrastructure Grant (IGIG1109)
Small Project Category
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Summary

An Illinois Environmental Protection Agency's Illinois Green Infrastructure Grant (IGIG1109) was used to create a sub-granting program to encourage citizens in Chicago's Logan Square community to implement green stormwater infrastructure on their property to reduce the amount of stormwater runoff entering the Combined Sewer System. Stormwater runoff is currently directed through the combined sewer system to the North Side Water Reclamation Plant, which is operated by the Metropolitan Water Reclamation District of Greater Chicago (MWRD). After primary and secondary treatment, this effluent is released into the North Branch of the Chicago River, where it flows south to the Des Plaines River. When the stormwater system is overwhelmed during wet weather events, Combined Sewer Overflow (CSO) is released into these rivers, which degrades the quality of the water. The program was originally proposed by the 35th Ward Alderman Rey Colon, in partnership with the Metropolitan Planning Council, who implemented the project from November 30, 2011 through November 30, 2014. The program was extended to May 30, 2015 to accommodate a large single family residential green roof project, which was later canceled due to timing and difficulties with construction permitting (unrelated to the green roof). The program was designed to:

- Improve the quality of stormwater runoff through the implementation of green stormwater infrastructure best management practices (BMPs);
- reduce stormwater runoff volume through infiltration;
- educate the Logan Square community and the greater Chicago community about the benefits of green infrastructure;
- raise the visibility of related projects and develop interest for green infrastructure projects outside the target area by creating a condensed and highly visible green infrastructure corridor; and
- pilot an innovative sub-granting program that could be replicated to fund future green infrastructure funding projects.

Chicago's Logan Square neighborhood is over 95% impervious and contributes significantly to combined sewer overflows, which degrade the quality of the North Branch of the Chicago and the Des Plaines rivers. The 79 urban acre corridor was selected for this pilot due to a high frequency of 311 calls for flooding and basement backups, the highly impervious nature of the surface in this neighborhood, and strong support from Alderman Colon[1]. While the program was initially designed to target the building and business owners adjacent to Milwaukee Avenue, the vast majority of investments were made on residential property, despite robust outreach efforts to business owners within the initial target corridor.

[1] 311 is the City of Chicago's non-emergency service number.

MPC worked with the 35th ward Alderman Colon's office, the Chicago Community Loan Fund, City of Chicago's Sustainable Backyards program and local contractors with expertise in green infrastructure installation to educate the Logan Square community about the benefits of green stormwater infrastructure. While the initial targets of the program were property owners along N. Milwaukee Avenue, the geographic scope was broadened to the residential neighborhoods surrounding the corridor due to strong interest from residential property owners and an overall lack of commitment from commercial property owners. All program participants were required to attend a community workshop where they learned about BMPs and considered the feasibility of various strategies on their individual property.

Introduction

Through the Illinois Environmental Protection Agency's (ILEPA) IGIG program, the Metropolitan Planning Council (MPC) partnered with 35th Ward Alderman Colon to develop and implement the Milwaukee Avenue Green Development Corridor (MAGDC). The project was a sub-granting reimbursement program that enabled private property owners to invest in green stormwater infrastructure on their properties in order to reduce urban runoff that adversely impacts the Chicago and Des Plaines rivers. The initial project target area focused on an approximately 79 acre urban corridor along N. Milwaukee Avenue between N. Kimball Avenue and N. California Avenue in Chicago's 35th Ward. This area is comprised of dense commercial space fronting N. Milwaukee Avenue and includes mixed commercial and residential properties backing on to the alleys behind these properties. Natural resources in this area are limited due to the dense urban setting: approximately 0.6 acres of public parks at the Logan Square Boulevard intersection and approximately 200 trees. Turf and urban fill permeable surfaces are negligible. Urban runoff is directed through the combined sewer system to the North Side Water Reclamation Plant, which is operated by the Metropolitan Water Reclamation District of Greater Chicago (MWRD). After primary and secondary treatment, this effluent is released into the North Branch of the Chicago River, where it flows south to the Des Plaines River. During extreme storm events, the system is overwhelmed, causing Combined Sewer Overflow (CSO), which is released into these rivers and degrades the quality of the water. 35th Ward Alderman Rey Colon was highly supportive of the project taking place in his ward due to high instances of basement flooding – a direct result of CSOs taking place during wet weather events.

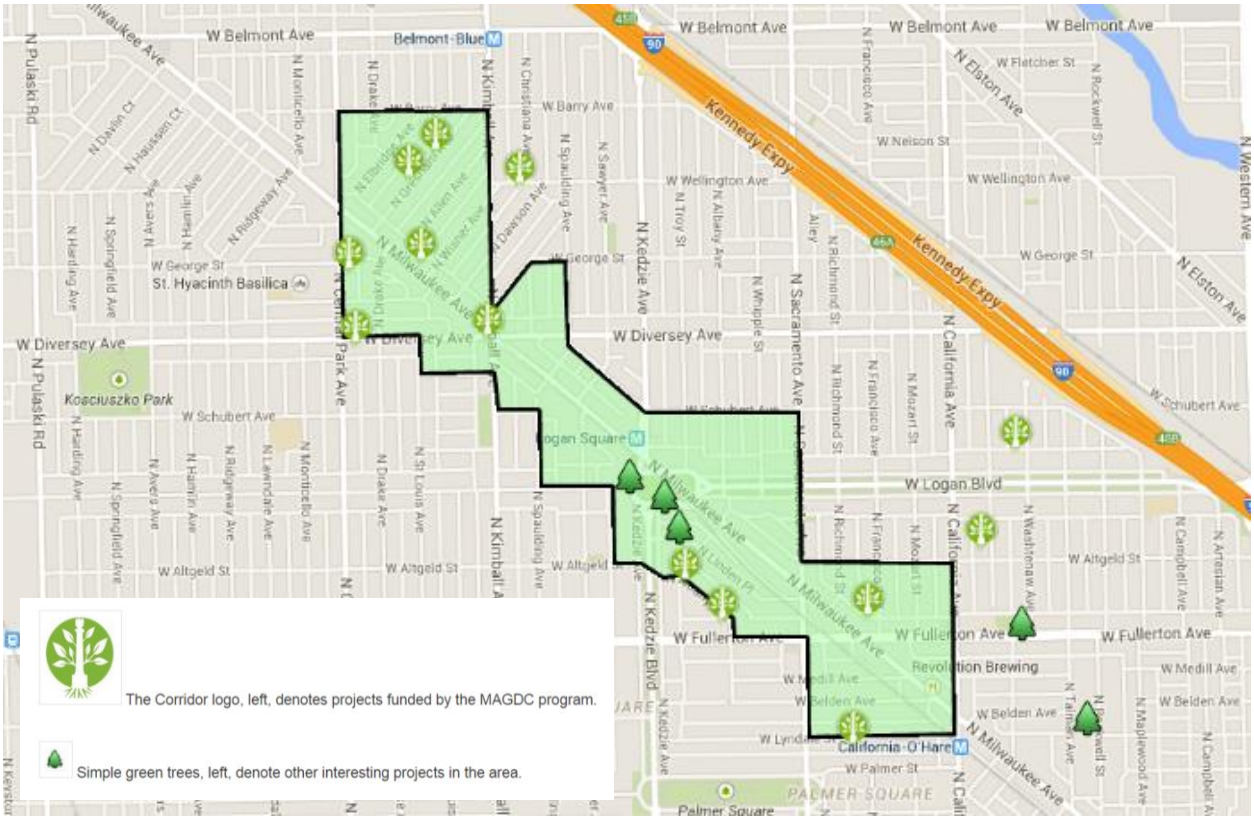
The sub-granting program allowed twelve property owners (including the City of Chicago's Department of Transportation) to install green roofs, rain gardens, permeable paving and other green infrastructure systems best suited to their property. The MAGDC granting program

facilitated green infrastructure improvements on private property for the following best management practices (BMPs):

- Porous pavers
- Rain garden
- Rain barrel
- Bioswales
- Porous – other
- Vegetative cover
- Rainwater harvesting system
- Porous concrete
- Dry well
- Runnel
- Catch basin

In total, $173,253.87 in IGIG funding (75% of project costs) which directly leveraged $64,536.23 in private funding. In-kind technical assistance was provided by the Metropolitan Planning Council (MPC), Center for Neighborhood Technology (CNT), Wahaso, Inc., and Chris B. Burke Engineering, Ltd. Additionally, the Chicago Community Loan Fund (CCLF) offered upfront capital for qualified commercial applicants, which would have greatly expedited the process of completing larger projects, however, none of the applicants were eligible for this opportunity. This pilot project was a unique partnership that delivered water quality and stormwater management benefits, created a model sub-granting program, and increased public understanding of green infrastructure.

Milwaukee Avenue Green Development Corridor Map



Discussion:

The project sought to address CSO events and the impairment of waterways from urban runoff and start to raise awareness of the role green infrastructure can have in reducing localized basement and street flooding, which threatens health, sanitation and property. The objectives of the program included improving the quality of stormwater runoff through the installation of BMPs, reducing the volume of stormwater runoff through infiltration, educating the local and broader community of the benefits of green infrastructure and how individual property owners could assist in managing the problem, and creating an innovative model for future green infrastructure funding opportunities. Rain gardens, permeable paving, green roofs, rain barrels, infiltration planters, downspout disconnects, cisterns, native planting, porous gravel and stormwater reuse systems were all eligible for funding. BMPs are in their second year of functionality and are capturing 8,748.98 gallons of stormwater per wet weather event.

Strategy:

The program implementation period began November 30, 2011 and was scheduled to conclude on November 30, 2014. The program was extended to May 30, 2015 to accommodate a large single family residential green roof project, which was later canceled due to timing and

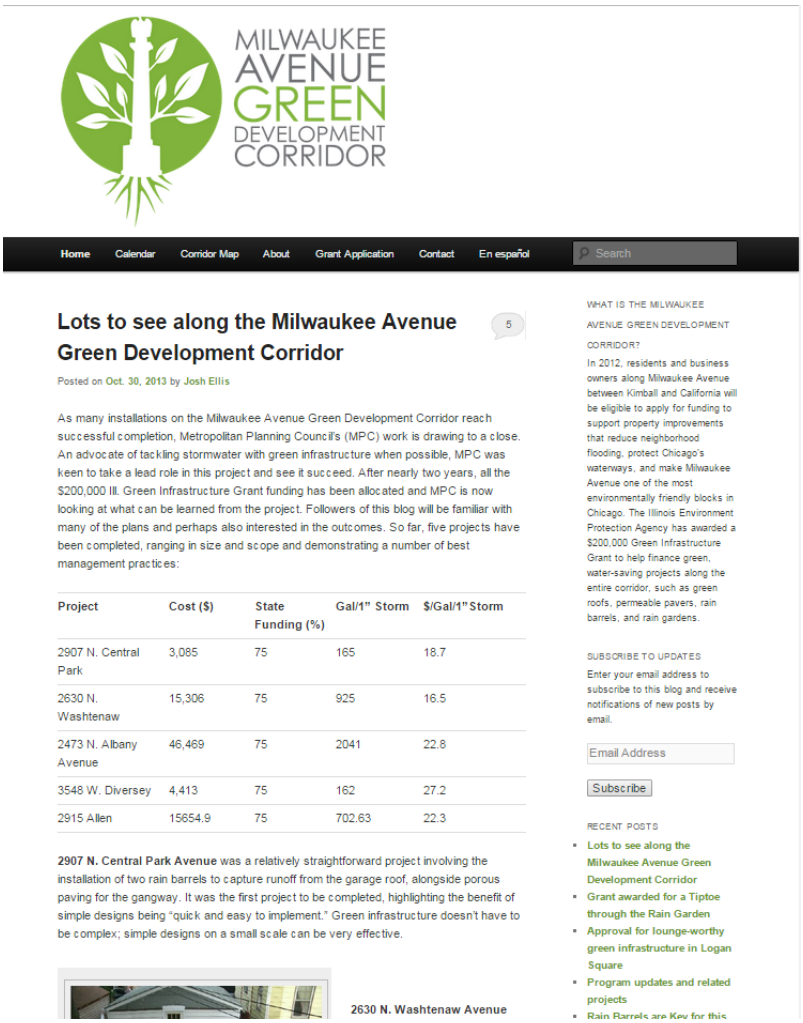
difficulties with construction permitting (unrelated to the green roof). This project originally included a complete gut rehab of the entire existing structure, which took longer than the property owner and construction contractor initially projected. MPC and ILEPA agreed to grant the initial extension, but was unable to grant the additional extension that was requested in April 2015.

In addition to collaborating with the 35th Ward office and the Chicago Community Loan fund, MPC regularly convened a project advisory committee to review all proposals before passing them on to ILEPA on a rolling, quarterly basis. For any given sub-grant project, IGIG funding covered a maximum of 75% of project costs. IGIG funding was used for construction and materials – no design or engineering costs. Sub-grant applicants were responsible for at least 25% of total project costs, including the entirety of any design or engineering costs. Only approved projects were eligible for reimbursement. ILEPA staff reviewed each application, provided feedback and made the final decision to approve or reject an application. All sub-grant applicants submitted a ten year operations and maintenance (O&M) plan and installed a sign on their property indicating their participation in the project.

MPC staff conducted extensive outreach to Logan Square community members to educate them on the benefits of green infrastructure and explore opportunities for property owners to participate in the MAGDC project. The format of the public meetings included “speed dating” sessions, where prospective applicants could meet many green infrastructure professionals to identify their property on a map and discuss potential projects that they may pursue. Each applicant was required to attend one of four public meetings and submit an application detailing each BMP proposed for their project, committing to a ten year O&M schedule, demonstrating property ownership and agreeing to provide access to project staff once the project was complete for education purposes – including posting a sign that is visible from the street about the project on the property. In total, MPC staff hosted seven public meetings and spoke about the project at 27 public events.

MPC also launched a robust communications strategy, which included mailing a postcard to every resident within the project boundaries notifying them of the project and public meetings. MPC developed the logansquareh2o.org website had, which had 13,726 visits. Before the public meetings kicked off, MPC hosted a logo design competition. The logo below won the contest and became the logo for the project. It was designed by a Logan Square resident and includes the Logan Square monument and project title name.

Winning design for the MAGDC logo contest.



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Lots to see along the Milwaukee Avenue Green Development Corridor

5

Posted on Oct. 30, 2013 by Josh Ellis

As many installations on the Milwaukee Avenue Green Development Corridor reach successful completion, Metropolitan Planning Council's (MPC) work is drawing to a close. An advocate of tackling stormwater with green infrastructure when possible, MPC was keen to take a lead role in this project and see it succeed. After nearly two years, all the $200,000 Ill. Green Infrastructure Grant funding has been allocated and MPC is now looking at what can be learned from the project. Followers of this blog will be familiar with many of the plans and perhaps also interested in the outcomes. So far, five projects have been completed, ranging in size and scope and demonstrating a number of best management practices:

Project	Cost ($)	State Funding (%)	Gal/1" Storm	$/Gal/1"Storm
2907 N. Central Park	3,085	75	165	18.7
2630 N. Washtenaw	15,306	75	925	16.5
2473 N. Albany Avenue	46,469	75	2041	22.8
3548 W. Diversey	4,413	75	162	27.2
2915 Allen	15654.9	75	702.63	22.3

2907 N. Central Park Avenue was a relatively straightforward project involving the installation of two rain barrels to capture runoff from the garage roof, alongside porous paving for the gangway. It was the first project to be completed, highlighting the benefit of simple designs being "quick and easy to implement." Green infrastructure doesn't have to be complex; simple designs on a small scale can be very effective.

2630 N. Washtenaw Avenue

WHAT IS THE MILWAUKEE AVENUE GREEN DEVELOPMENT CORRIDOR?

In 2012, residents and business owners along Milwaukee Avenue between Kimball and California will be eligible to apply for funding to support property improvements that reduce neighborhood flooding, protect Chicago's waterways, and make Milwaukee Avenue one of the most environmentally friendly blocks in Chicago. The Illinois Environment Protection Agency has awarded a $200,000 Green Infrastructure Grant to help finance green, water-saving projects along the entire corridor, such as green roofs, permeable pavers, rain barrels, and rain gardens.

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Logansquareh2o.org website had over 13,000 hits during the project period.

While the initial target applicants were business owners and property owners along the Milwaukee Avenue corridor, this stakeholder group was reluctant to participate in this project due to other priorities and concerns about unrelated code violations that may be uncovered by undertaking a retrofitting process. Through extensive outreach, the team also learned that while residential property owners were enthusiastic about the project, they were reluctant to tackle a project on their property without employing a professional landscape architect to

manage design and construction, even though design costs were not eligible for reimbursement. Additionally, property owners' interest in participating in the program increased when they considered the dual benefit of green infrastructure – helping reduce CSOs while improving the aesthetics of their property. While the project attempted to encourage and support property owners taking a "Do It Yourself" approach, participants did not feel equipped to tackle this type of project independently. This unforeseen issue likely resulted in increased project costs, due to the associated labor required for each project. This issue was brought to MPC staff's attention while applicants were both planning the project and completing many of the documents required in application. Every participant opted to hire a contractor to design and build their projects.

While applications were accepted on a quarterly basis, there were many rounds of revisions and countless conversations to amend applications before approved projects were selected. The technical nature of the program was a challenge because the contractors that were hired to design and construct the projects were unaccustomed to providing the level of detail required to approve the green infrastructure projects.

Project cost summary

The original budget for the project was set at $293,334.00, with $26,667 allocated for grant administration and $266,667 allocated for BMP construction.

The final* total cost for the project was $264,165.61. The table below summarizes the cost breakdown for the final project cost. The IEPA provided $192,459.06 (72.86%) in IGIG funds, while local landowners provided $71,706.42 in matching funds (27.14%).

Task	**Cost**
Grant Administration	$26,375.51
BMP Construction Cost	$237,790.10
TOTAL	**$264,165.61**

* The remaining project funds were applied to *Illinois Green Infrastructure Grant Program Analysis* project conducted by the Metropolitan Planning Council. The efforts and outcomes of that project will be documented under a separate final project report.

	Spent To Date	Balance Remaining
Administration TD	$26,375.51	$291.49
Construction TD	$237,790.10	$28,876.90
Total TD	$264,165.61	$29,168.39
Invoice Total TD	$264,165.61	
		Balance
Project total		$29,168.39
IGIG		$27,540.94
Local Match		$1,627.58

O & M plan

Each applicant submitted a ten year Operations and Maintenance Plan with their initial application that detailed the required ongoing maintenance of each BMP installed as part of the IGIG project and included details described below.

> *The O&M plan should identify appropriate regular inspection needs and management activities such as sediment and debris removal, replacement of vegetation and hardware, chemical treatment, etc., to maintain the project in good condition for 10 years. The O&M plan should identify who will perform these functions, a timeline, and the financial resources necessary for implementation.*
>
> *The property owners will be responsible for operations and maintenance of this landscape's sustainable features. The following maintenance activities should be followed to ensure proper function of sustainable features for 10 years or longer.*
>
> ***Permeable Pavers:***
> *Permeable paving areas should be kept free of sediment and debris. Paver joints should be inspected 3-5 times each year for sediment build up that can impair the ability to infiltrate water. Joints should be sweep at least once a year. If excessive build up*

occurs, a lower pressure water sprayer can be used to flush the joints. The ten year cost is estimated to be less than $100.

Porous Gravel:
Porous gravel should be kept free of debris and sediment. Gravel should be checked 3-5 times a year for sediment build up that can impair the ability to infiltrate water. The decorative bluestone chip should be raked smooth each spring to repair any rutting caused by winter snow plowing. Bluestone chip can be top-dressed with fresh chips every 3-5 years or as necessary. The ten year cost is estimated to be $400-$500.

Rain Gardens, Bioswale, and Filter Strip:
The rain gardens, bioswale, and filter strip are planted with native species designed to function as plant communities. It is necessary to remove weeds as they occur throughout the growing season. Yearly controlled burn management is recommended but may not be practical for this site. A spring mowing should be performed in lieu of controlled burn management. The downspouts and porous gravel allowing infiltration and directing flow into the rain garden and bioswale should be kept free of debris and sediment as well. Gutters should be cleaned each fall to prevent leaves from clogging downspouts and drainage channels. The ten year cost is estimated to be less than $100.

Native Plantings:
Similar to the rain gardens, the native planting areas are designed to function as plant communities. It is necessary to remove weeds as they occur throughout the growing season. Yearly controlled burn management is recommended but may not be practical for this site. In lieu of burning, dormant plantings can be cut back in the spring or fall but seed heads and grasses serve as important habitat and food sources for wildlife, so spring cutting is preferred. The ten year cost is estimated to be less than $100.

Rain Barrel:
Keep gutters clean to prevent debris from entering your rain barrel. The Rain barrel should have protective screening covering the top or any other permanent opening to prevent mosquito growth. Empty your rain barrel once a month either by plant irrigation or draining into your rain garden. This will prevent stagnation and algae growth. Rinse out the rain barrel once a year; preferably during a period when the barrel is dry. Periodically check for leaks and repair as necessary. Ten year cost is estimated to be less than $25.

Tables

Table 1 below show the total volume captured with the BMPs installed for each project. Table 2 shows the number of BMPs installed in the entire corridor and the pollutants kept out of the waterway based on the implementation of the associated BMPs.

Table 1

Address	BMPs	Volume captured [gal]
2907 N. Central Park	Porous pavers	165
2520 N. Fairfield	Rain garden, rainwater harvesting system	564.44
3548 W. Diversey	Rain garden, rainwater harvesting system	163.12
2915 N. Allen	Rain garden, porous pavers, vegetative cover	702.63
3050 N. Gresham	Porous pavers, rain garden, rainwater harvesting system	346.8
2630 N. Washentaw	Rain garden, vegetative cover, bioswale, rainwater harvesting system	925.73
2473 N. Albany	Porous pavers, rain garden, bioswale, vegetative cover	2041.02
Woodard Plaza	Rain garden, porous pavers	1298.87
2334 N. Lawndale	Rain garden, rainwater harvesting system	143.31
3006 N. Christiana	Porous pavers, rainwater harvesting system, rain garden	641.21
2918 W. Lyndale	Rain garden, vegetative cover	73.5
2426 N. Francisco	Porous pavers, vegetative cover, rainwater harvesting system	623.59
TOTAL		**7689.22**

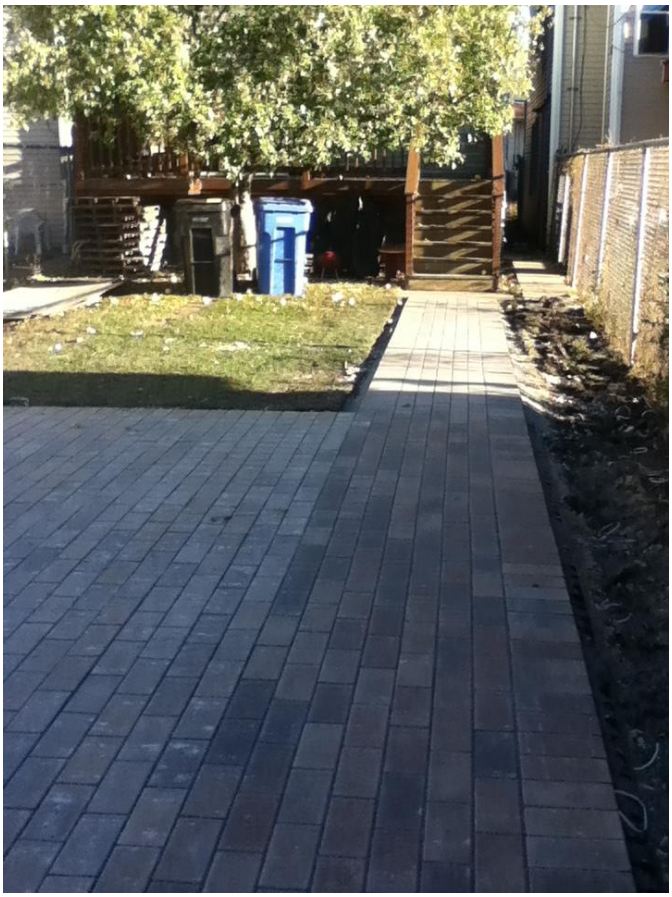
Table 2

BMP Type	Count of BMP Type	Sum of Area (acres)	Sum of N (lbs * yr^{-1})	Sum of P (lbs * yr^{-1})	Sum of TSS (lbs * yr^{-1})
BioSwale	2	0	0	0	3
Curb and Gutter	1	0	0	0	1
Other	3	0	0	0	465
Porous Concrete	1	0.002915519	0	0	1
Porous Pavers	8	0.067975207	0	0	17
Porous-Other	6	0.039141414	0	0	11
Rain Garden	10	0.109205693	0	0	67
Rainwater Harvesting System	8	0	0	0	62
Vegetative Cover	6	0	0	0	26
Total	**45**	**0.219237833**	**0**	**0**	**653**

<u>Photographs</u>

Signs posted on each participant's property.

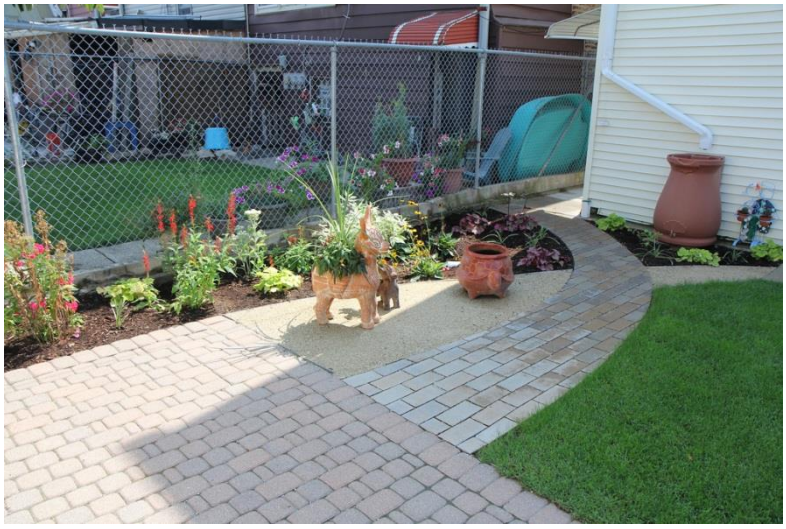
This permeable patio project was completed under budget and included permeable paving, native plants and a rain barrel.



Permeable walkway and patio.

Rain barrels capture runoff from the roof of the garage.

Completed project includes a permeable patio and walkway, native plants, and a rain garden.



This backyard was retrofitted with permeable paving, a rain barrel and native plants.

Rain barrels capture runoff from the roof of a multifamily home at 2473 N. Albany Avenue.