

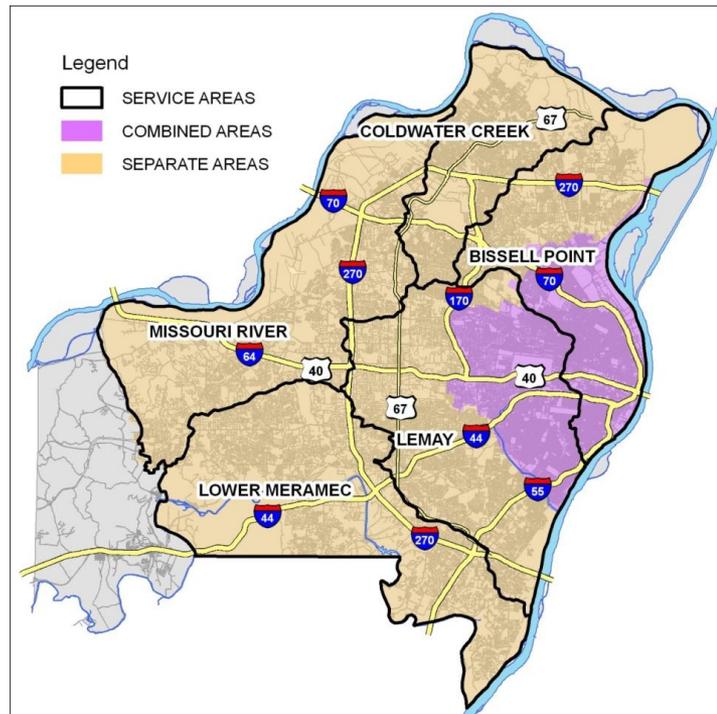
Rainscaping Incentive Program

Shaw Series

Greener Stormwater Solutions Training

2019-08-08

MSD Overview



- Two utilities in one
 - Stormwater
 - Sanitary
- 1.3 million people
- 520 sq. miles
- 75 sq. mile combined sewer area (storm and waste in same pipe)
- 9517 miles of sewer
- Oldest pipes ~1860s

Get the Rain Out

- 🌊 Stormwater Disconnections**
- 🌊 Rainscaping*
- 🌊 CitySheds Program*
- 🌊 Combined Sewer Separations*

Repair & Maintain

- 🌊 System Maintenance
- 🌊 System Inspection
- 🌊 System Rehabilitation and Replacement
- 🌊 Fats, Oil and Grease Control Program
- 🌊 Emergency Response

Build System Improvements

- 🌊 Tunnels
- 🌊 Storage Tanks
- 🌊 Relief Sewers
- 🌊 High-Rate Treatment*

**Combined sewer area only activities*

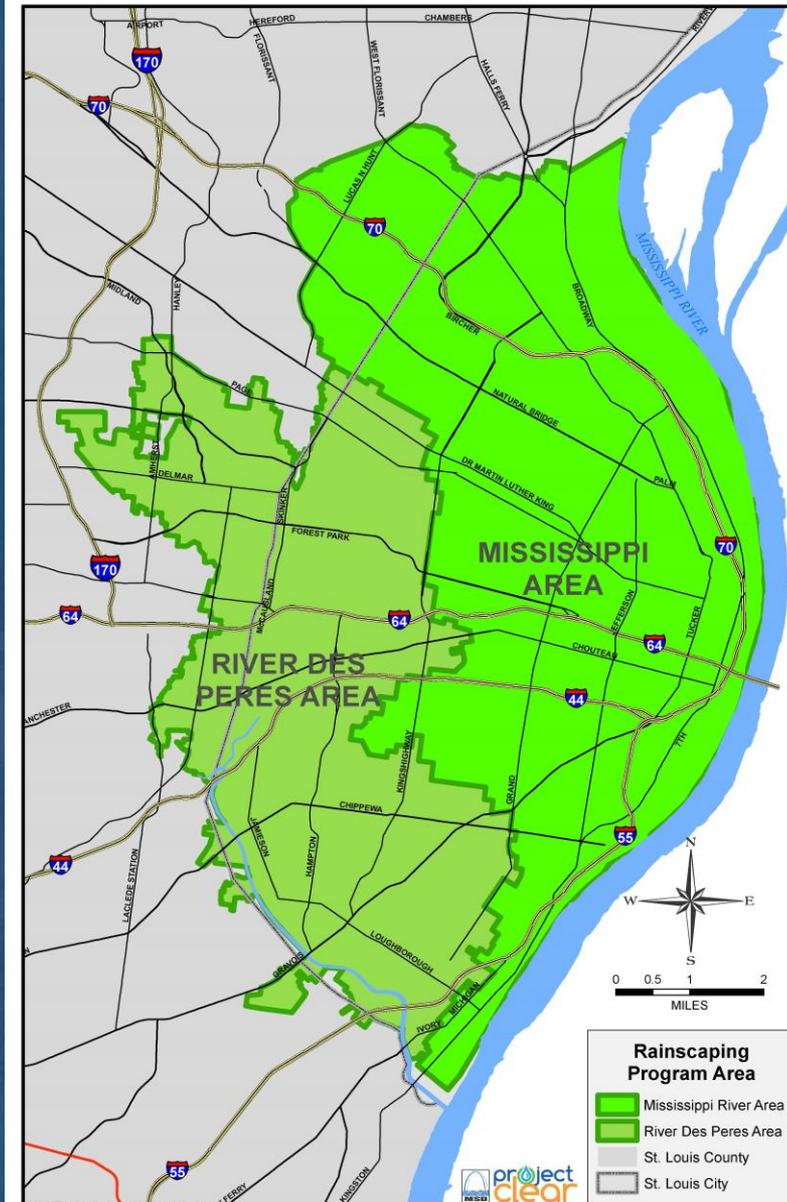
***Separate sewer area only activities*



wastewater + stormwater

Rainscaping (Green Infrastructure)

Rainscaping is any combination of plantings, water features, catch basins, permeable pavement... that manage stormwater as close as possible to where it falls.



Rainscaping Area

- Combined Sewer portions of the Mississippi and River Des Peres Watershed
- Primarily covers the City of St. Louis
- Spend \$120M over 20 years

Rainscaping Program

Indirect Projects

- 💧 Projects with Partners
- 💧 Green Infrastructure Grants
 - Rolling Program \$180,000/ AC drainage area
 - Annual Competition
- 💧 Targeted Partnerships
 - Schools
 - Parks and Rec Centers

Direct Projects

- 💧 MSD Owned Neighborhood Rain Gardens
- 💧 MSD's Facilities
 - Market
 - Pump Stations
 - Detention Basin Retrofits
- 💧 Cityshed Mitigation Program Opportunities
 - Separate program to reduce chronic flooding and backups using buyouts and detention
 - Permanent green space
 - Rainscaping around basins

Small Grants

- 💧 Education & Outreach
- 💧 Small features
- 💧 Individual landowners
- 💧 \$4 Million (max)

Demolitions

- 💧 LRA Partnership
- 💧 \$13.5 Million (max)

Green Infrastructure Program CSO Control Measure Performance Criteria (Minimums)

- Manage 405 Acres with Green Infrastructure (half impervious)
- Reduce the Mississippi River CSO volumes by 98 MG annually
- Spend \$120 Million

Green City Coalition

Partnership between:

- Missouri Department of Conservation
- City of St. Louis
- Metropolitan St. Louis Sewer District
- St. Louis Development Corporation

Co-creates and conserves ecologically rich urban green spaces that promote healthy, vibrant, engaged communities



Demolition

- \$13.5M to spend on demolishing vacant homes in St. Louis City with the Green City Coalition
- LRA-owned and Privately-owned vacancies
- Program started in 2017
- Ramping up to 300 demolitions/year
- “Green Lien”

	planning phase	construction phase	COMMUNITY GREEN SPACE
ACRES:	15	10	

COMPLETED OR IN PROGRESS

LRA-Owned Vacant & Condemned Buildings	286
Privately-Owned Vacant & Condemned Buildings	17
TOTAL	303

URBAN GREENING PROGRAM DEMOLITIONS

	Impervious Surface Removed to increase stormwater absorption	Acres of Land Protected for community resilience	COMBINED SEWER OVERFLOW REDUCTION
ACRES:	10	30	

Education!

Educate the public to understand how stormwater impacts the combined sewer system and associated issues



Small Grants

- Up to \$4,000 for small-scale methods of capturing stormwater
- Typically residential
- Spend up to \$4 million over life of MSD Project Clear
- \$250,000 - \$400,000 projected annual
- MSD partnered with Missouri Botanical Gardens to administrate the program

Small Grants Results

	Planting Dates	Orientation Attendance	# of Applications	# of Grants Awarded	Total Grant Requests Awarded
Model Round	Fall, 2014	10	8	8	\$ 19,764.99
Round 1	Spring/Fall, 2015	127	66	52	\$ 135,553.15
Round 2	Fall 2016/ Spring 2017	156	81	66	\$ 165,014.94
Round 3	Fall 2017/ Spring 2018	314	162	113	\$ 305,329.96
Round 4	Fall 2018/ Spring 2019	185	90	80	\$ 225,000.00
Round 5	Fall 2019/Spring 2020	Grant Budget: 80 in Mississippi CSO Area 30 in River Des Peres CSO Area			\$ 440,000.00?

MSD Direct Projects

- Projects that MSD owns and maintains
- Typically designed in-house with a contracted landscape architect
- Neighborhood-scale Rain Gardens
- Detention Basin Retrofits



THE VILLAGE
rain garden
A rain garden is a shallow depression in the yard that captures and filters rainwater from roofs, driveways, and lawns. It helps reduce runoff, prevent erosion, and improve water quality. Rain gardens are a simple and effective way to manage stormwater on your property.

project clear
Project Clear is a program of the Metropolitan Water Reclamation District of Greater Chicago. It provides technical assistance and incentives to help property owners install rain gardens and other stormwater management practices.



MSD Direct Projects Results

- 12 Neighborhood-Scale Rain Gardens in the ground
- 14 Neighborhood-Scale Rain Gardens in progress
- “Greening of Market” is under construction



Large Grants

- Annual Call for Application
 - Now Open! Through 10/31/2019
- Development Review Grant
 - Year-round rolling application

Large Grants



Eligible Project Elements

- Impervious area reduction
- Porous pavement
- Reinforced turf
- Amended soils
- Planter boxes
- Bioretention/Rain gardens
- Impervious area sheet flow to buffer
- Green roofs
- Blue roofs
- Green streets

Bioretention



Green Roof

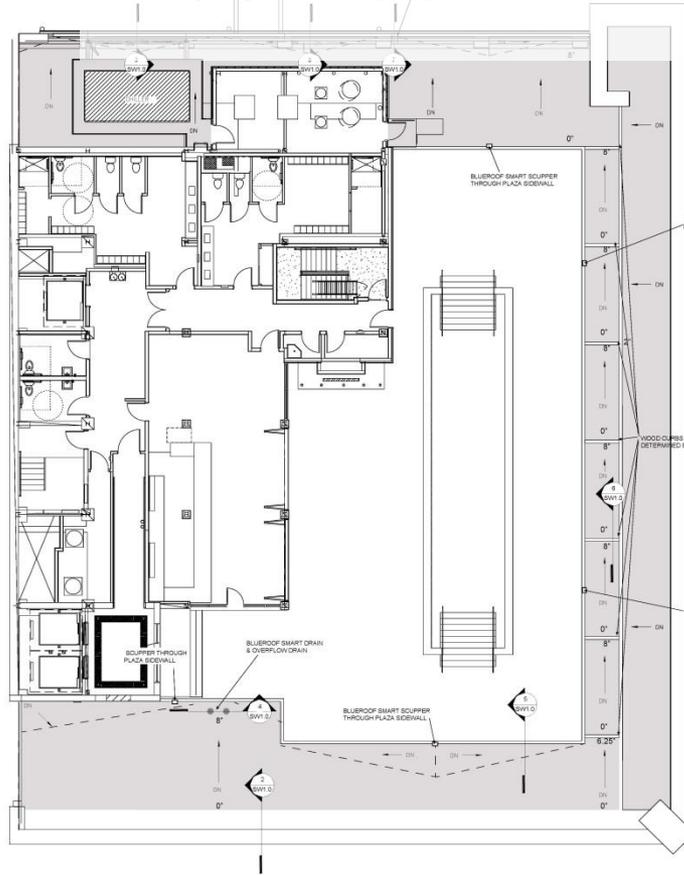


Permeable Pavement

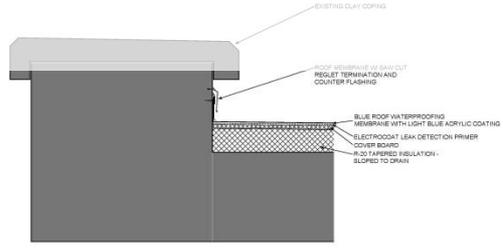


STORMWATER RETENTION EXTENTS
5' - STORMWATER RETENTION

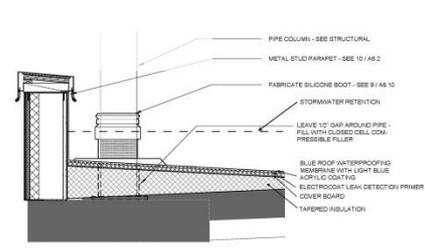
Blue Roof



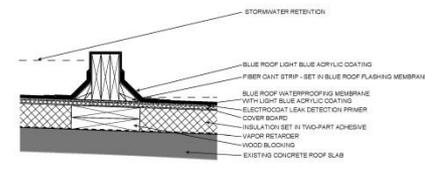
1 LEVEL 11 LOW ROOF STORMWATER PLAN
SW 1.0 1/8" = 1'-0"



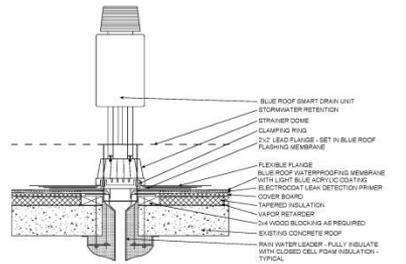
2 DETAIL AT LOW ROOF TO EXISTING PARAPET - TYP
SW 1.0 1/2" = 1'-0"



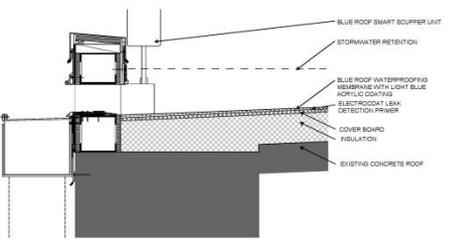
3 DETAIL AT STEEL FRAME TO EXISTING PARAPET
SW 1.0 1/2" = 1'-0"



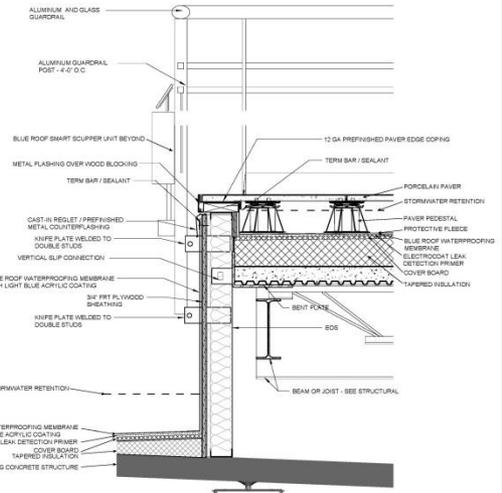
6 BLUE ROOF DETAIL AT WOOD CURB
SW 1.0 1/2" = 1'-0"



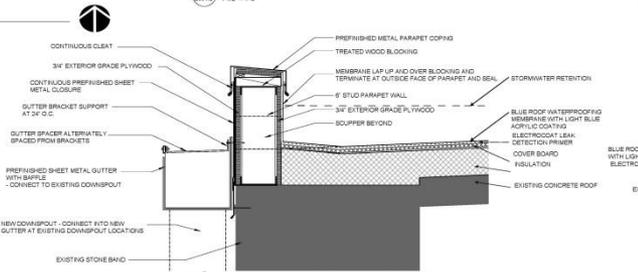
4 DETAIL AT SMART ROOF DRAIN UNIT
SW 1.0 1/2" = 1'-0"



7 DETAIL AT SMART ROOF SCUPPER UNIT
SW 1.0 1/2" = 1'-0"



5 SECTION AT PLAZA LOW WALL TO ROOF
SW 1.0 1/2" = 1'-0"



8 SECTION AT ROOF EDGE WITH GUTTER
SW 1.0 1/2" = 1'-0"

Green Streets



Large Grants



Annual Call for Applications

- Competitive
- No set maximum reimbursement rate
 - Projects are reviewed for cost effectiveness
- Creativity Encouraged

Large Grants



Development Review Grants

- **Streamlined Process**
 - Application with information typically submitted to Development Review with plans and follows Development Review procedure and timing
 - Additional documents – Program Application, Itemized Cost Estimate, Program Agreement
 - Not competitive and ongoing
- **Maximum Reimbursement Rate**
 - Currently \$180,000/acre of total drainage area managed

Average Time from Plan
Submittal to
Reimbursement:

2 years

Large Grants Results

- Annual Call for Applications
 - 50 projects awarded grants
 - 22 of those 50 have been reimbursed
 - 82 Acres Treated
 - 17 MG CSO removed
 - \$12.6M paid out to date
- Development Review Grants
 - 52 projects awarded grants
 - 12 of those 52 have been reimbursed
 - 80 Acres Treated
 - 17 MG CSO removed
 - \$1.4M paid out to date

<https://www.projectclearstl.org/>



The screenshot shows the Project Clear website interface. At the top left is the Project Clear logo. To its right is a blue box with white text: "MSD Project Clear is the initiative to improve water quality and address concerns in the St. Louis region. It will invest billions of dollars in designing, and building community rainscaping, system improvement, and a program of maintenance and repair." Below the logo is a navigation bar with four buttons: "Get the Rain Out", "Repair & Maintain", "Build System Improvements", and "FAQ". A dropdown menu is open under "Get the Rain Out", listing: "Stormwater Disconnections", "Rainscaping", "General Information", "Rainscaping Small Grants Program", "Rainscaping Large Grants Program" (highlighted in green), and "Cityshed Mitigation Program". The main content area features a large "project clear" logo and the text "by the numbers". Below this is a section titled "Project Clear By the Numbers" with a sub-heading "Jefferson Barracks Tur". The text below reads: "MSD Project Clear involves significant work across the Saint Louis City and County area, to build system improvements, repair and maintain the existing system, and to get excess rainwater out of the system." The page has a blue header and footer with three white dots in the bottom left corner.

Sewer blocked by a large Pooh



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