

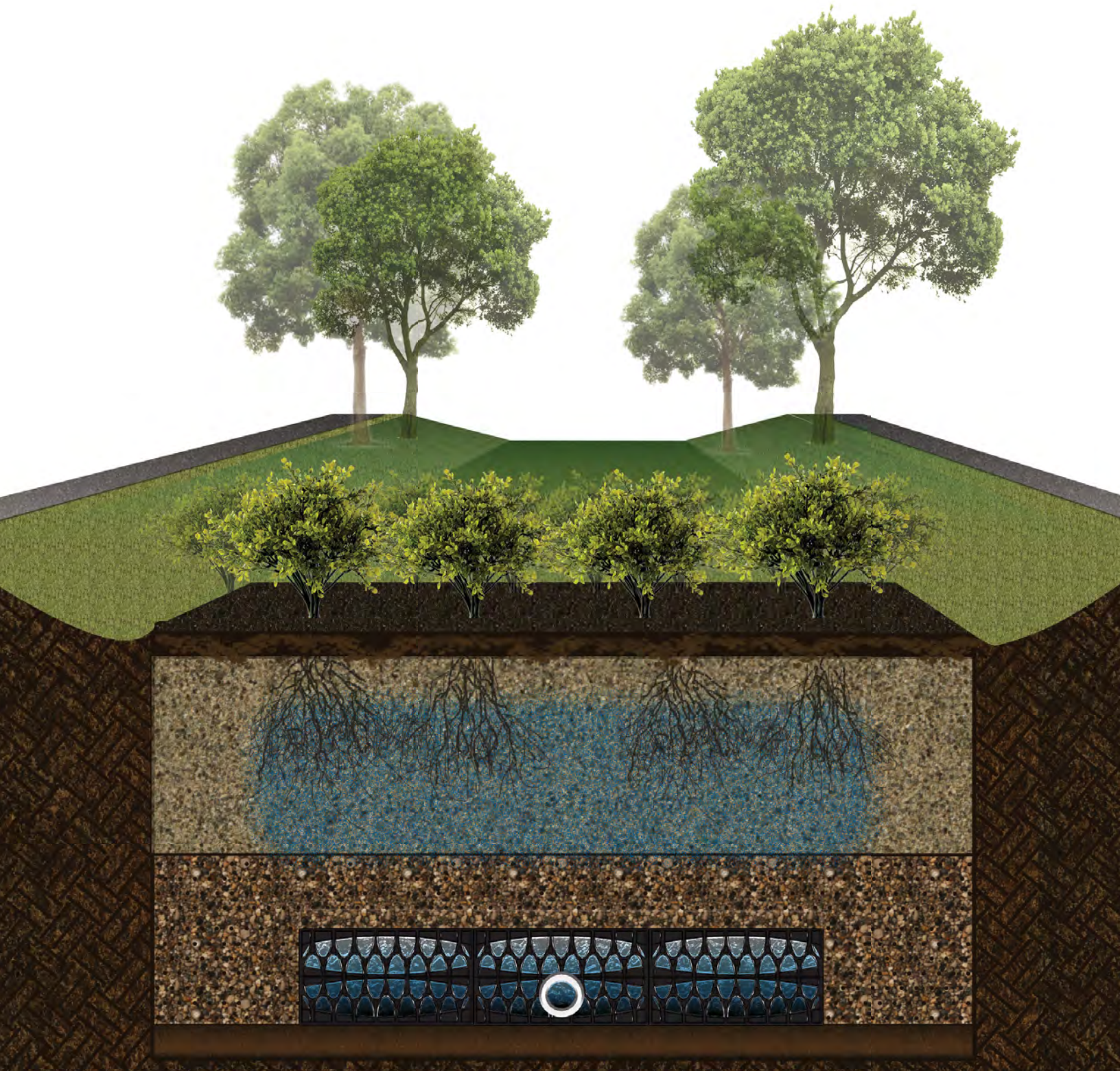
# Next Generation Bioretention

High Performance Modular  
Biofiltration Systems

The logo for FocalPoint Biofiltration Systems. It features the word "FocalPoint" in a large, bold, black sans-serif font. Above the letter "i" in "Point" is a green triangle containing a white stylized leaf or drop shape. Below "FocalPoint" is the text "BIOFILTRATION SYSTEMS" in a smaller, all-caps, black sans-serif font, underlined. The background of the entire page is a photograph of a bioretention system. In the foreground, a concrete curb with the words "BIORETENTION" and "CONVERGENT WATER" embossed on it runs diagonally. Behind the curb is a bed of dark gravel with a metal grate. The bed is filled with green iris plants and some small white and yellow flowers. In the background, there are more green plants, trees, and a brick building.



FocalPoint High Performance Modular Biofiltration Systems (HPMBS) are scalable biofiltration systems which combine the efficiency of high flow rate engineered soils with the durability and modularity of a highly pervious expandable underdrain/storage/infiltration system. The modular FocalPoint HPMBS is a complete, integrated system with a demanding specification that insures functionality, performance and maintainability. With rigorous quality assurance standards and post-construction in-situ performance verification, FocalPoint HPMBS provides guaranteed performance.



# Uniquely Specified, Site Built

## System Components

### High Flow Media

At the heart of every FocalPoint HPMBS is its high performance engineered soil blend. Developed by LID pioneer, Larry Coffman, advanced high flow rate biofiltration media utilizes physical, chemical and biological mechanisms of the soil, plant and microbe complex to remove pollutants found in stormwater runoff. Infiltration rates at 100" per hour or more overcome many of the challenges inherent in traditional slow flow rate media and creates design flexibilities that drive lower costs and greater application opportunities.

### Separation Layer

An open mesh material is combined with bridging stone to separate the media from the underdrain system. This unique combination of materials eliminates the use of geotextiles, which can limit the life expectancy of traditional bioretention systems.

### Open Cell Underdrain

A high infiltration rate underdrain system with 95% open surface area accepts water from the high flow media significantly faster than traditional pipe underdrains. Once water enters the underdrain, the modular system can be designed to exfiltrate water into the subgrade or connect to an outlet pipe. The underdrain can be expanded to accommodate detention requirements.

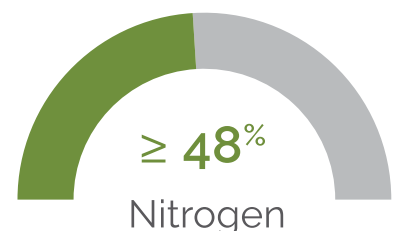
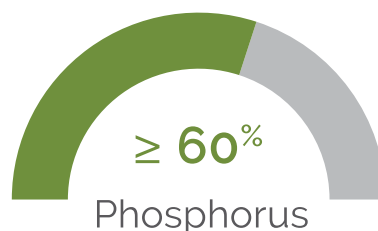
### Mulch

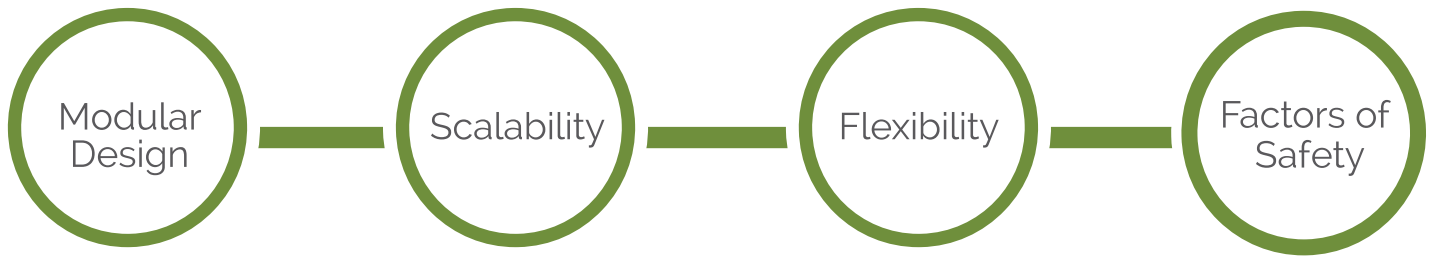
Shredded, hardwood mulch acts as a pre-treatment mechanism, capturing silt, sediment and certain other pollutants, and preventing trash from entering the system. Removal and replacement of mulch is typically necessary at 6-12 month intervals and is the most significant maintenance activity required with the FocalPoint HPMBS.

### Plants

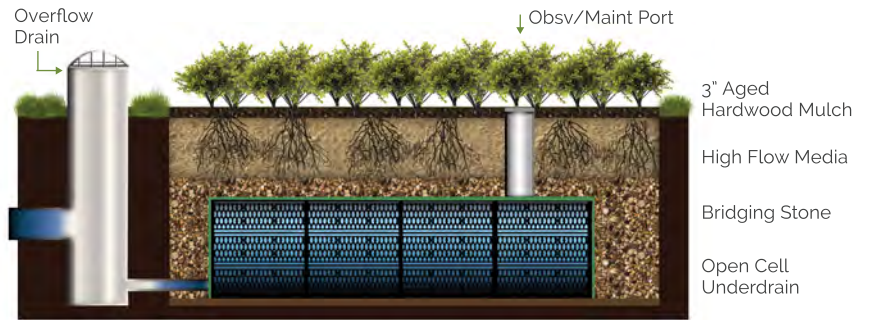
Native plants are preferred, but a broad palette of plants which thrive in FocalPoint HPMBS systems exist. They typically are characterized by rhizomatous root systems and tolerate both drought and inundation.

## Pollutant Removal Efficiency



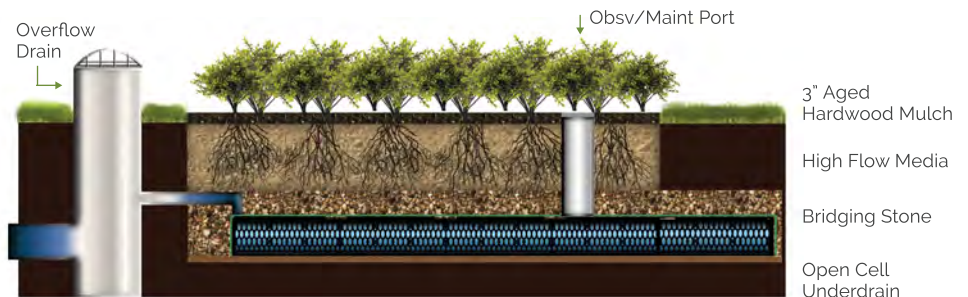


The FocalPoint's modular underdrain, unlike a traditional perforated pipe, not only supports the flow rate of the media, but can be expanded beyond the footprint of the media bed to provide unlimited underground detention, infiltration and/or storage for water reuse/infiltration.



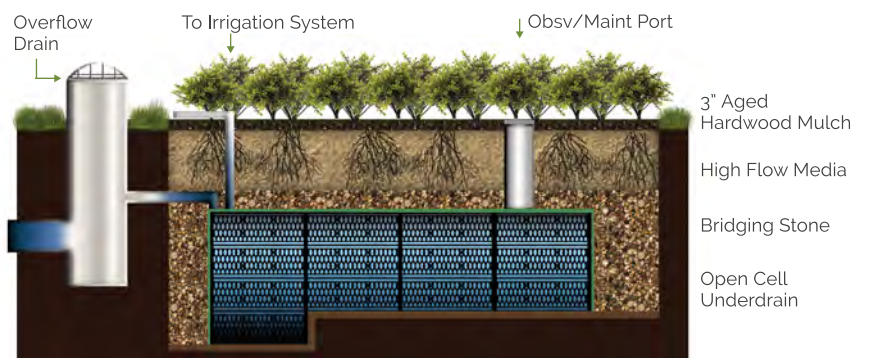
Expanded Detention

FocalPoint HPMBS gives designers maximum flexibility in meeting both water quality and volume requirements



Expanded Infiltration

The system can be used in combination with traditional LID BMPs such as grassy swales and vegetated depressions. It enables implementation of green streets using urban sidewalk planters; which because of the small footprint can support designs with large trees. These systems are also used for downspout planters, replacing underground treatment systems and are an easy retrofit for failed traditional bioretention systems. FocalPoint provides unlimited application opportunities for new construction and redevelopment.



Rainwater Harvesting

## 'Cap & Seal' Protection

### During Ongoing Construction Activity

Protecting the FocalPoint HPMBs during construction is of the utmost importance. The 'Cap & Seal' protection ensures a viable system regardless of the construction sequencing by sealing off the media bed until the contributing drainage area is stabilized. Solving this problem removes one of the most problematic issues in bioretention. Due to its small scale, FocalPoint HPMBs can be capped and sealed, allowing installation to take place early in the project construction cycle when other site utilities are installed.



Convergent Water Technologies **guarantees post-construction performance** and we make sure your client gets it.



## Performance Guaranteed

### Post-Installation Verification

This hydraulic conductivity test procedure measures the entire media profile under saturated conditions to produce a reliable and accurate result.

To ensure the highest level of effectiveness, Convergent specifies that the FocalPoint HPMBs be tested within 90 days of commissioning, but no more than 270 days and we recommend the system be tested annually thereafter to provide ongoing quality assurance.

## Maintenance In Mind

### Simple & Cost Effective

The first year's maintenance is included in all FocalPoint HPMBs installations to ensure that the system is given the best opportunity to succeed, and low cost annual maintenance contracts are available.

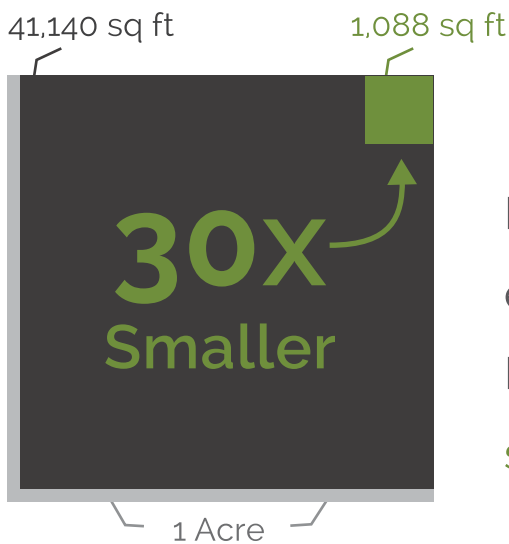
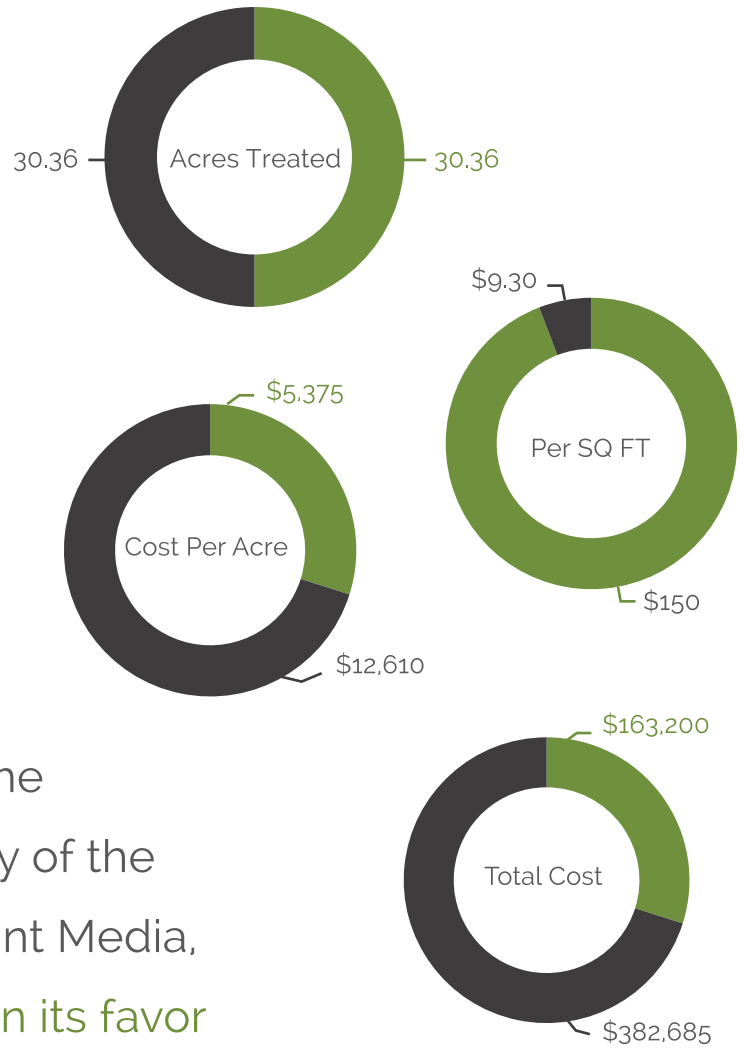
The potential failure for most LID/GI BMP's is highest within the first year and success or failure is often dependent on whether the system is being properly inspected and maintained. Convergent's commitment to system success doesn't stop when the installation is complete.

# The Economic Case

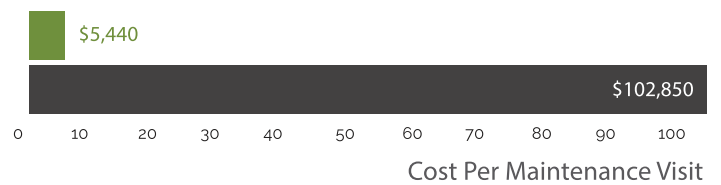
## FocalPoint HPMBS vs Traditional Bioretention Soils

- FocalPoint HPMBS
- Traditional Bioretention

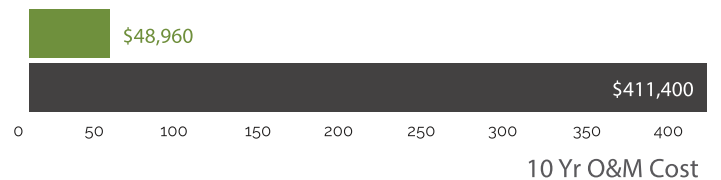
The typical economic case for the FocalPoint HPMBS is demonstrated on both the upfront and life cycle cost of a recent project. Both the FocalPoint HPMBS and Traditional Bioretention system were budgeted by a contractor specializing in the installation of Low Impact Development Systems. Although the price per square foot of FocalPoint is many times higher than traditional bioretention, the efficiency of the FocalPoint High Performance Media makes the system more than 30 times smaller, per acre treated, resulting in a 50% cost savings.



Due to the efficiency of the FocalPoint Media, scale is in its favor



Due to the size, maintenance is a fraction of the cost.





## GreenRoads Silver Certified

Bagby Street, Houston, TX

Midtown Redevelopment

The design team's goal for Bagby Street was to provide large street trees within the right of way while also removing pollutants such as heavy metals, floatables, sediment and oil and grease from the roadway stormwater runoff before it outfalls to nearby Buffalo Bayou. With the FocalPoint HPMBs high flow-rate engineered media, the designers didn't need to fill the entire planter box with a bioretention media and underdrain system. This allowed placing the HPMBs away from the tree roots and allowed the design team to meet their objective of having both street trees and biofiltration. The result was an award winning project.



## Multi-Family Development

Queenston Manor Apartment

At Queenston Manor Apartments, all of the drainage areas are also common areas and courtyards so it was imperative that the system drain within 24 hours of a rain event. The FocalPoint HPMBs was placed at the lowest elevation in the four landscaped swale systems on the site to provide a reliable drainage, detention and water quality solution. The design team was able to decrease the surface storage volume requirements enough to reclaim the land needed to build two additional apartment buildings. For the developers, the 48 additional apartment units was the difference between success and a canceled project.



## Parking Lot Retrofit

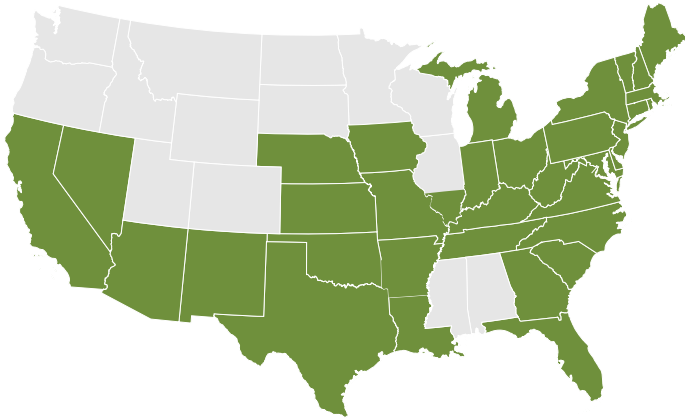
Sugar Land Conference Center

A complete parking lot retrofit incorporates a combination of bioswales, FocalPoint HPMBs, and an expanded underdrain Rainwater Harvesting System. This Low Impact Development and Green Infrastructure retrofit has increased aesthetic appeal, increased time of concentration and decreased peak flows. The reuse system reduces annual potable water use by over 50% and the FocalPoint HPMBs removes more than 80% of the TSS from the discharge along with hydrocarbons, phosphorus, nitrogen and other pollutants before delivering it to the harvesting system.



# VAR Connection

## Changing Stormwater Systems Distribution



The Convergent Value-Added Reseller (VAR) network consists of regional organizations that focus on cost-effective answers to all manner of stormwater problems, utilizing innovative systems that deliver value that's greater than the sum of their parts.

Convergent provides its VARs with the latest technologies, guidance and innovations, and like Convergent, these VARs are firms whose value-added approach has required them to take a non-traditional path in the stormwater industry; it's a path that leads to the experience, diverse relationships and solutions orientation that is so rare and critically needed in the stormwater industry.

Convergent's VARs are locally rooted and deeply connected in the communities they serve. They know the local regulations and act as agents of beneficial change. On average, Convergent VAR firms have been in business for 21 years; old enough to know their markets well and experienced enough to recognize and respond quickly to the LID/Green Infrastructure paradigm that is remaking our industry.

Capitalizing on the power of collaborative effort VAR network firms are able to respond rapidly to changing regulations, access 'lessons learned' by network peers and respond to the opportunity to be a driving force for innovation in the stormwater marketplace.

The firms which make up this network serve in exclusive territories, and incorporate both sales and service elements (directly or indirectly) in their operations. Every VAR will provide installation, oversight, verification and maintenance for Convergent Systems. Like Low Impact Development itself, the Convergent VAR network is cumulatively powerful and can deliver more cost-effective solutions than traditional distribution.



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