

Title: **Stormwater Infiltration System**

Full Scale Implementation OR Pilot Scale/Study

1. Description of the project: What is the issue and how did you fix it?

The issue was periodic flooding during large rain events in 2 outdoor areas of the facility. Flooding occurred due to aging stormwater infrastructure and required an engineered drainage solution to handle the stormwater runoff in these areas. After initially considering a conventional pipe and catch basin drainage system to direct water off site and into the municipal stormwater system, we decided instead to use green infrastructure methods to allow water to infiltrate on site. The project involved the installation of 2 bio-infiltration trenches capable of treating approximately 40,000 sq. feet of surface runoff.

2. Environmental Benefits: Conservation of raw materials or energy, reduction or elimination of emissions, wastes, toxics, water discharges, etc.

Stormwater runoff generated from impervious surfaces such as roofs and parking lots negatively impact natural waterways by increasing pollutants, causing erosion and contributing to combined sewer overflows. Using green infrastructure techniques, we are preventing approximately 25,000 gallons of water per 1 inch of rain from entering the municipal stormwater system and eventually discharging into natural waterways. According to the EPA, green infrastructure techniques “increase stormwater infiltration and storage capacity; thereby, slowing and reducing stormwater runoff and discharges associated with pollutant loading, flooding, combined sewer overflow (CSO) events, and erosion.”

3. Other Benefits: Productivity, health and safety, employee morale, etc.

The green infrastructure installations have brought aesthetic improvements to those outdoor areas of the facility, increasing employee morale. In addition, they have allowed us to utilize larger areas of outdoor storage without worrying about the risk of ponding or flooding.

4. Cost Savings: Capital cost, operating cost, ROI or other pertinent cost information.

Installing green infrastructure drainage facilities was cheaper than a conventional pipe drainage system as it required no concrete work, less excavation and fewer materials. Total cost for both installations was approximately \$20,000. There have also been savings in ongoing environmental compliance costs. Since the runoff in these areas is treated on site and does not discharge to receiving waters it is not subject to the same sampling and reporting measures under the industrial stormwater discharge permit. There will be some ongoing maintenance costs as the top 12" layer of the trench will become laden with sediment and need to be replaced with new material in about 5 years.

5. Applicability to other foundries and additional Comments

Yes, there is a wide range green infrastructure technique for managing stormwater runoff that may be employed at foundry facilities. Limitations depend on available space and existing infrastructure.

6. Applicable Environmental Categories and Foundry Processes. Select all that apply.

Environmental Categories

- Carbon (GHG) Emissions Measurement and Reduction
- Air Quality Water Use and Discharge Waste Management
- Beneficial Use Stormwater Material and Resource Conservation
- Community Engagement

Foundry Process(es) Impacted

- Melt Pour Mold Core sand system/reclaim
- Shakeout Heat Treat Quench Finishing Shipping
- Maintenance Pattern Shop Casting Design
- Management Systems and Metrics
- Other, explain:

7. Add photos to enhance your application, if applicable.