



# Ann Arbor District Library: Innovative Storm Water System



This project treats storm water from a 2.7-acre urban site in the Malletts Creek watershed. The goal is to reduce sediment, phosphorus, and peak flow velocities, with innovative storm water management techniques consistent with the MDEQ-approved Huron River watershed plan. These innovative techniques include a "green roof," overland flow, vegetated bioswales, and a retention basin. The bioswales are vegetated with native plants, which require no additional phosphorus. They are a key component of the system, because they slow runoff velocity, allow sediment to settle out, reduce erosion, and allow infiltration.



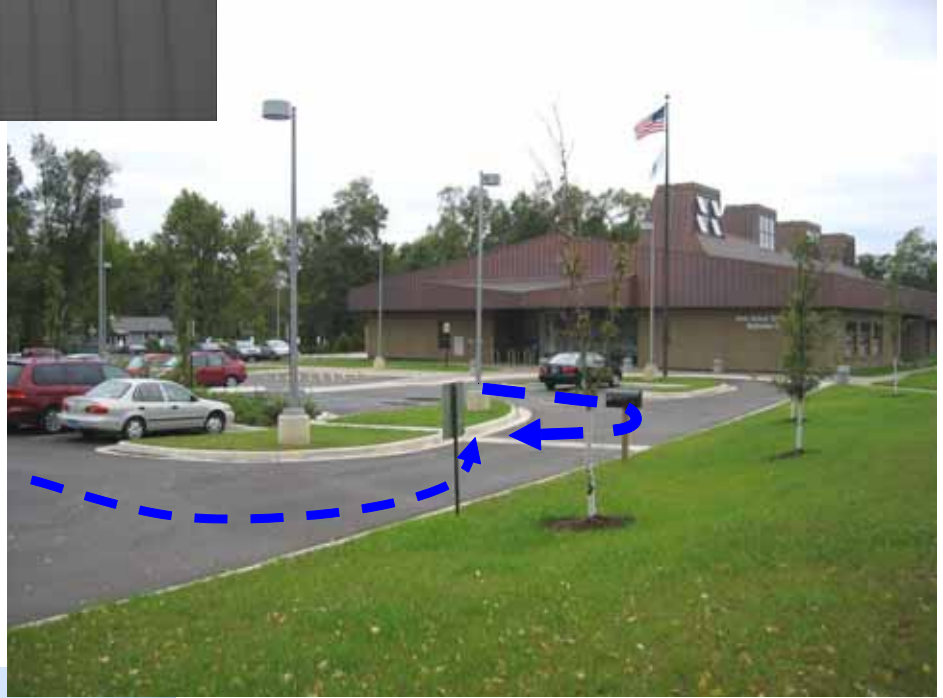


2

Water that falls on the green roof flows through a 3.5" mat planted with various species of sedum.

Funding provided by:  
Federal Clean Water Act  
Section 319

Grant: \$236,000  
Match: \$ 144,750  
Total: \$380,750



3

Runoff from the asphalt parking lot is directed to two bioswales, which are heavily vegetated with native forbs, grasses, and shrubs.



4

Bioswales slow water velocity, allowing suspended sediment to settle out. Runoff infiltrates into the ground and is taken up by the vegetation.



Close-up of vegetation in bioswale.



Curb marker.



Overflow Outlet

Rock-lined channel to retention basin

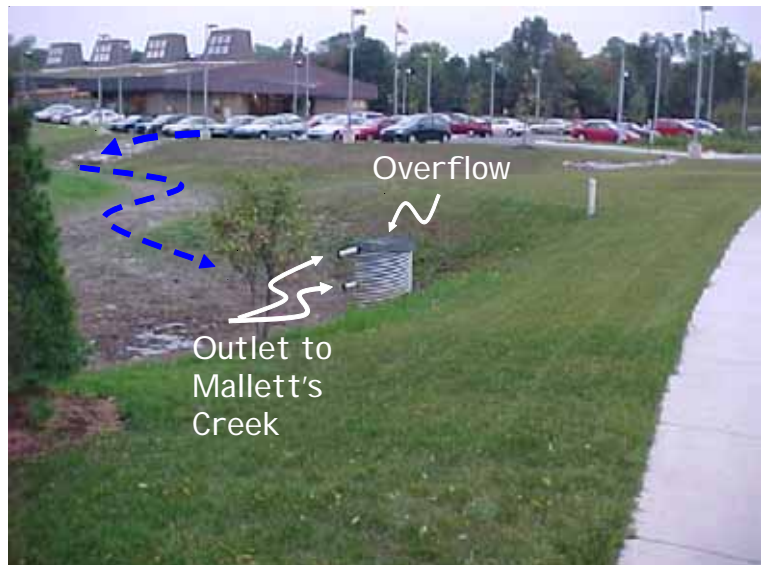
5

Rock riprap inlet to bioswale. Inlet slows runoff velocity and traps larger sediment particles.

6 Runoff from the bioswales and some runoff from the parking lot is directed to the retention basin by way of rock riprap-lined channels, as shown above.

Downstream end of retention basin. In the foreground, the outlet riser pipe is visible, with low-flow and high-flow outlets on the left side. The emergency overflow is through the top of the riser pipe. The retention basin discharges to Malletts Creek, which is piped through this area.

7



Overflow

Outlet to Mallett's Creek