RSC – A Better Way

It is said that there is nothing new under the sun. That certainly seems to ring true when it comes to our landscaping and construction practices. We tend to keep doing the same things repeatedly with diminishing returns. Take stormwater run-off for example. We keep treating it like a waste product – like something to discard. It is never given the chance to return underground *before* it reaches our rivers, lakes, and streams. Roadside ditches, culverts, and detention ponds all exist to move rainfall and snowmelt to somewhere else. Flooding is increasing. Native plant and animal species diversity is dwindling, and our water quality is declining. Sounds like a good bit of innovation is needed.

Fortunately, that is happening at the intersection of Highway 31 and CTH KR in Kenosha County. The expansion of KR presented a golden opportunity to innovate in the form of an RSC – regenerative stormwater conveyance system. It is the first of its kind on a WisDOT project. Root-Pike Watershed Initiative Network (Root-Pike WIN) partnered with the Wisconsin Department of Transportation, the Wisconsin DNR, the Fund for Lake Michigan, Kenosha County and Stormwater Solutions Engineering, LLC on this important project.

Here is how it works. An RSC is a series of planted infiltration pools overlying a sand and woodchip bed. The design allows for flexibility in pools size, elevation, and location such that the entire RSC can be sculpted into the existing landscape, ultimately minimizing disturbance and associated costs due to excavation. Since RSC is a sand/woodchip-based system, storm water pollutants will be filtered from runoff, resulting in improved water quality and ecological benefits for the downstream Pike River. **RSC reduces suspended solids, nitrogen, and phosphorus by 50% more than that of a standard storm water pond at a similar cost.** The RSC also meets or exceeds the volume and velocity requirements for storm water conveyance. Where the right conditions exist, the RSC's benefits can be replicated on other transportation projects throughout Wisconsin. **Even with the added benefits, project costs associated with the RSC are similar to those using the standard pond design**. A grant from the Fund for Lake Michigan provided the funding for the beta design of the RSC so it could be analyzed against existing WisDOT requirements.

The RSC is vegetated with native Wisconsin plants whose extensive root systems supply pathways for stormwater infiltration. Above ground, these plants provide much needed habitat for native birds, insects – especially our native pollinators – and amphibians. Canada geese are not attracted to an RSC because there is no standing water for prolonged periods of time.

With time and luck this approach can become the norm. Native plants, water infiltration, cleaner run-off reduced in volume and velocity all result in a restored water cycle with multiple benefits. Definitely a WIN for our watershed!