

SWATeam Recommendation

Name of SWATeam: Water/Stormwater

SWATeam Chair: Art Schmidt

Date Submitted to iSEE: 1 May 2019

Specific Actions/Policy Recommended (a few sentences):

The Water/Stormwater SWATTeam recommends that instrumentation to monitor the quality and quantity of runoff from parking lot F23 should be installed in the storm sewer carrying runoff from the lot. An instrumentation vault was installed at the southeast corner of the lot (where the storm sewer leaves the lot) several years ago, but no instrumentation installed. In order to demonstrate the impact of Green Stormwater Infrastructure (GSI), this instrumentation should be installed and operational for at least one year before GSI is installed on the lot to provide a baseline to compare the post-installation runoff quality and quantity. We suggest a pressure transducer to record continuous water level (providing the flow rate using a calibrated stage-flow rating), a water-quality multi-probe with sensors for: turbidity, nitrate, pH, dissolved oxygen, temperature, specific conductivity, fluorescent dye (which will be used to develop the stage-flow rating). The location would also need a data logger to record the measurements, and auxiliary components such as power supply and shelter.

Rationale for Recommendation (a few sentences):

The Urbana-Champaign campus includes approximately 163 acres of paved parking area. Most of this parking area was installed before runoff control rules. As a result, there is little or no mitigation of the storm water impact of this impervious parking area on the receiving streams.

Parking Department has indicated that parking lot F-23 (near Florida and Maryland) is a location where they would like to implement a green stormwater feasibility study in the next few years (Morgan White, written commun., 27 Nov 2018). Parking suggested this lot be upgraded to GSI, instead of lot F4 (as suggested in the EPA-award-winning *Campus Rainworks Challenge*) because of its visibility and because it is expected to remain as parking in the long-term campus master plan.

The iCAP goals clearly indicate the need to quantify the runoff impacts of stormwater runoff and of practice so reduce stormwater pollutant discharge. The proposed upgrade of F23 to incorporate GSI practices provides a unique opportunity to quantify the impact of GSI on parking (one of the primary impervious area categories). Installation of the instrumentation now provides the opportunity to collect baseline data before GSI practices are implemented.

Connection to iCAP Goals (a few sentences):

Installation of long-term runoff quantity and quality monitoring at parking lot F-23 would benefit the following iCAP goals.

Objective 5.6, “Investigate the water quality impacts of stormwater runoff and potential ways to reduce stormwater pollutant discharges by FY18.”

Objective 5.4, “Inventory and benchmark campus’ existing landscape performance by FY17.”

Objective 7.3, “Incorporate sustainability principles more fully into the Campus Master Plan.”

Perceived Challenges (a few sentences):

Both initial and on-going funding to calibrate and maintain the instrumentation and to make the data available to all interested parties.

Need to determine campus unit responsible to operate and maintain the station.

Suggested unit/department to address implementation:

Prairie Research Institute (State Water Survey), Academic Departments (ABE, CEE, GEOL, NRES)

Anticipated level of budget and/or policy impact (low, medium, high):

Cost would be medium. Instrumentation and installation would be on the order of \$40,000. Annual calibration, maintenance, data processing, etc. would be on the order of \$6000 - 8000

Individual comments are required from each SWATeam member (can be brief, if member fully agrees):

Team Member Name	Team Member's Comments
Art Schmidt (Chair)	Strongly support this recommendation. Collecting data to benchmark the performance of GSI is critical to implement GSI in an informed manner.
Rabin Bhattarai	I also strongly support this recommendation. Baseline data collection is an important aspect of GSI performance evaluation.
N Rajagopalan	
Claire Samojedny	
John Berens	This baseline evaluation should help facilitate the construction for more GSI on campus in the future.

Comments from Consultation Group (if any; these can be anonymous):

Explanation and Background (can be supplied in an attachment):