

SWAT Water Team iCAP 2020 : Stormwater

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introductory “this is important” section:

Following an introduction about total water use reduction.....add:

Fundamental to achieving the water use reduction target will be the shift from managing storm water as a nuisance to managing storm water a resource. Meeting the goal of reduced potable water consumption can be met by maximizing storm water capture and re-use across campus through the development of green infrastructure systems that promote infiltration, passive irrigation, and storage of water flow into cisterns and storage tanks for re-use in buildings and facilities. Designing and managing the campus as a rain harvesting landscape will promote the identity of the University. Stormwater performance will promote the availability and quality of a vital resource, educate our students and community about regenerative design, and create beauty through a healthful, physical environment.

Water goals

Following an introduction about total water use reduction.....

Stormwater will be collected and infiltrated through landscapes and/or stored for re-use in buildings and for irrigation. Over time, captured storm water will be a significant source of water for the campus, as water prices for potable water and sewer continue to escalate.

To support the potable water reduction goal, we propose the following goals for storm water capture:

Increase storm water capture by 25% by 2020, of which 50% will be re-used on campus and 50% will contribute to infiltration/recharge.

Improve stormwater quality either infiltrating or leaving the campus, through evidence of reduced chemical pollutants and increased dissolved oxygen.

Water objectives

Restore and regenerate an ecological campus environment through the regenerative design of rainwater landscapes and water capture devices.

Increase biodiversity on campus to promote health across communities. Improve microclimate and reduce urban heat island through stormwater tree planting and evaporative cooling to gain improved environmental quality and building energy reduction.

Become a model university for green infrastructure research and implementation, monitoring, and maintenance. Create interdisciplinary programs around sustainability of urban and rural environments.

Water strategies

Complete and implement a sustainable landscape plan devoted to integrating its goals on water with those of energy, land-use, transportation, and food, as they can be realized through an ecological campus landscape. The University will implement this plan in order to coordinate recommended actions toward meeting the goals of iCAP.

- An important part of the sustainable campus landscape planning process will be the inventory and assessment of current landscape performance relative to existing pavement and landscape surfaces and features, against the long-term transition toward a water-positive campus environment.
- The transition to a sustainable landscape will require outreach and education with constituents on the co-benefits of green infrastructure implemented on a system-wide basis. Potential campus landscape programming and curriculum enhancements should be explored.
- Transformations to the campus landscape should provide a distinct University of Illinois identity, i.e. not utilize “off-the-shelf” materials, but reflect a regionally-vital and relevant campus through 21st century landscape design and technology.

Calculate the true cost/benefit of the traditional versus sustainable campus landscape maintenance and operations, to assist decisions in the transition to green stormwater infrastructure design. Include the current and future economic values of stormwater quantities capable of capture with green infrastructure, GHG emissions reductions by re-use of captured storm water, and installation and operation costs of re-use infrastructure.

Integrate rainwater capture strategies in tandem with other physical campus commitments and objectives such as carbon sequestration. E.g. coordinate landscape practices that convert unnecessary lawn areas to native and adapted planting that will store carbon, create increased biomass above and below the surface and capture storm water, and increase stormwater trees on campus.

Assess where phased integration can be implemented with current and planned capital improvement projects. Study the pattern and quantity of rainfall, and strategize re-use systems and programming. At some level, consider every project an opportunity to integrate water-regenerative design practices.

Utilize the Sustainable Sites Initiative (SITES) as a rating systems for all projects on campus, to promote education and assist coordination in developing high-performing sustainable landscape practices.