**Resources for Chapter 6. Water**

## 2010 iCAP water strategies:

* Connect campus raw water system, “yet to be activated” - need more info first
* Construct tile-drainage wetlands built at 5% wetland-to-watershed to reduce nitrate-N into Embarras River by 50%.
* Include true cost of water in energy billing system.
* Study “true cost of water,” like IL Sust. Tech. Ctr. did.
* Use non-potable water asap.

## FY13 summary of iCAP Progress:

The iCAP goals are 20% potable waste reduction by FY15, 30% by FY20, and 40% by FY25. As of FY12, we had met the FY15 goal.

* Connect the Raw Water System – This was specified in the iCAP for potable water reduction, but it has not been thoroughly evaluated at this time. There should be a cost/benefit analysis completed for this project. It is likely going to be more financially feasible in the future as potable water costs increase.
* Leak Assessment – F&S completed a leak assessment of the existing potable water distribution system and has been working to address the leaks.
* Low flow fixtures – These are used on a regular basis now.
* Green Stormwater Infrastructure – F&S staff are working with the community partners to maintain compliance for stormwater quality and quantity from campus. One effort includes the Storm Drain Murals. Another effort includes a Sustainability Fellow, evaluating the impact of different types of stormwater infrastructure on the spread of mosquitos.
* Campus projects for green infrastructure include the construction of green roofs. The Business Instructional Facility contains a green roof that involves plantings on part of the roof area to reduce rain run-off and the impact of heat on the building heating, ventilation and cooling systems. These plantings were specifically chosen because of their regional use and ability to thrive without irrigation or fertilizer. There are also green roofs installed on the Yeh Center, the Forbes Natural History Building, the Art and Design Building, and the long-term installation on KCPA.
* In FY2011, cooling towers constituted 30 percent of the total water use on campus. Due to the large water use of these towers, a ‘True Cost of Water Study’ was performed with the goals of benchmarking water use in cooling towers and generating ideas for improving water use efficiency. The study was conducted by the Illinois Sustainable Technology Center in collaboration with F&S and was funded by the SSC. In addition to identifying methods to reduce water usage for cooling towers, this study recommended options for using non-potable water on campus. Further investigation is needed to prioritize these non-potable water usage projects and begin implementation on campus.
* The 2010 iCAP recommended that campus “*include true cost of water in energy billing system.”* The water usage by building is now included in the online EBS reporting system, just like energy usage information. The cost is defined by the utility rates posted online at <http://www.fs.illinois.edu/docs/default-source/Utilities-Energy/utilities-rates.pdf?sfvrsn=0>. These costs include water supply costs, personnel costs, operations and maintenance costs, repair and replacement costs, distribution costs, and related debt service. The definition of “true cost” of water needs to be clarified.
* Construct tile-drainage wetlands built at 5% wetland-to-watershed to reduce nitrate-N into Embarras River by 50%. – not addressed

## iCAP Portal water projects:

1. [Water Conservation](https://icap.sustainability.illinois.edu/project/water-conservation)
   1. [Medicine Take-Back Program](https://icap.sustainability.illinois.edu/project/medicine-take-back-program)
   2. [Stormwater Management Program](https://icap.sustainability.illinois.edu/project/stormwater-management-program)
      1. [Green Infrastructure](https://icap.sustainability.illinois.edu/project/green-infrastructure)
         1. [Green Infrastructure Conference](https://icap.sustainability.illinois.edu/project/green-infrastructure-conference)
         2. [Porous Asphalt Parking Lot C9](https://icap.sustainability.illinois.edu/project/porous-asphalt-parking-lot-c9)
         3. [Rain Gardens on Campus](https://icap.sustainability.illinois.edu/project/rain-gardens-campus)
         4. [Rainwater Capture Systems](https://icap.sustainability.illinois.edu/project/rainwater-capture-systems)
      2. [Ikenberry Commons Stormwater Plan](https://icap.sustainability.illinois.edu/project/ikenberry-commons-stormwater-plan)
      3. [Construct Tile-Drainage Wetlands](https://icap.sustainability.illinois.edu/project/construct-tile-drainage-wetlands)
      4. [Clean up campus](https://icap.sustainability.illinois.edu/project/clean-campus)
         1. [Storm Drain Murals](https://icap.sustainability.illinois.edu/project/storm-drain-murals)
         2. [Boneyard Creek Community Day](https://icap.sustainability.illinois.edu/project/boneyard-creek-community-day)
   3. [Reduce Potable Water Usage](https://icap.sustainability.illinois.edu/project/reduce-potable-water-usage) 
      1. [Install Low Flow Fixtures throughout Campus](https://icap.sustainability.illinois.edu/project/install-low-flow-fixtures-throughout-campus) 
         1. [Green Nozzles](https://icap.sustainability.illinois.edu/project/green-nozzles)
      2. [Campus Rec Water Conservation Incentives](https://icap.sustainability.illinois.edu/project/campus-rec-water-conservation-incentives)
      3. [Connect Raw Water System](https://icap.sustainability.illinois.edu/project/connect-raw-water-system)
      4. [Pipe Leakage Assessment](https://icap.sustainability.illinois.edu/project/pipe-leakage-assessment)
      5. [Turner Greenhouse water cooling systems](https://icap.sustainability.illinois.edu/project/turner-greenhouse-water-cooling-systems)
      6. [University Housing Trayless Dining](https://icap.sustainability.illinois.edu/project/university-housing-trayless-dining)
      7. [Water Leak Detection & Repair](https://icap.sustainability.illinois.edu/project/water-leak-detection-repair)
   4. [True Cost of Water Study](https://icap.sustainability.illinois.edu/project/true-cost-water-study)
      1. [Charge for "true cost of water"](https://icap.sustainability.illinois.edu/project/charge-true-cost-water)
      2. [Conduct True Cost of Water Study for Chiller Plants](https://icap.sustainability.illinois.edu/project/conduct-true-cost-water-study-chiller-plants)
         1. [Implement changes recommended by the TCW Study](https://icap.sustainability.illinois.edu/project/implement-changes-recommended-tcw-study)
   5. [Use of Non-Potable Water](https://icap.sustainability.illinois.edu/project/use-non-potable-water)
      1. [BIF Greywater Pipe System](https://icap.sustainability.illinois.edu/project/bif-greywater-pipe-system)
      2. [State Laws for Non-Potable Water](https://icap.sustainability.illinois.edu/project/state-laws-non-potable-water)

## Questions from the STARS report:

The technical manual for STARS is online at <https://stars.aashe.org/pages/about/technical-manual.html>.

Our report is online at <https://stars.aashe.org/institutions/university-of-illinois-urbana-champaign-il/report/2013-07-31/>. The credit references listed below, are connected with the online report, except that the credits below are from the STARS 2.0 version, and the online report is version 1.2.

|  |  |
| --- | --- |
| **Credit** | **Reporting Field** |
| AC-8.1.17 | Is the institution utilizing the campus as a living laboratory in the area of Water? |
| AC-8.1.18 | A brief description of how the institution is using the campus as a living laboratory for Water and the positive outcomes associated with the work |
| OP-26.1 | Level of water risk for the institution’s main campus |
| OP-26.9 | Water recycled/reused on campus, performance year |
| OP-26.10 | Recycled/reused water withdrawn from off-campus sources, performance year |
| OP-26.11 | A brief description of any water recovery and reuse systems employed by the institution |
| OP-26.12 | A brief description of any water metering and management systems employed by the institution |
| OP-26.13 | A brief description of any building retrofit practices employed by the institution, e.g. to install high efficiency plumbing fixtures and fittings |
| OP-26.14 | A brief description of any policies or programs employed by the institution to replace appliances, equipment and systems with water-efficient alternatives |
| OP-26.15 | A brief description of any water-efficient landscape design practices employed by the institution (e.g. xeriscaping) |
| OP-26.16 | A brief description of any weather-informed irrigation technologies employed by the institution |
| OP-26.17 | A brief description of other water conservation and efficiency strategies employed by the institution |
| OP-26.18 | The website URL where information about the institution’s water conservation and efficiency initiatives is available |
| OP-27.1 | Does the institution use Low Impact Development (LID) practices as a matter of policy or standard practice to reduce rainwater/stormwater runoff volume and improve outgoing water quality for new construction, major renovation, and other projects? |
| OP-27.2 | A brief description of the institution’s Low Impact Development (LID) practices |
| OP-27.3 | Has the institution adopted a rainwater/stormwater management policy, plan, or strategies that mitigate the rainwater runoff impacts of ongoing campus operations through the use of green infrastructure? |
| OP-27.4 | A brief description of the institution’s rainwater/stormwater management policy, plan, and/or strategies for ongoing campus operations |
| OP-27.5 | A brief description of any rainwater harvesting employed by the institution |
| OP-27.6 | Rainwater harvested directly and stored/used by the institution, performance year |
| OP-27.7 | A brief description of any rainwater filtering systems employed by the institution to treat water prior to release |
| OP-27.8 | A brief description of any living or vegetated roofs on campus |
| OP-27.9 | A brief description of any porous (i.e. permeable) paving employed by the institution |
| OP-27.10 | A brief description of any downspout disconnection employed by the institution |
| OP-27.11 | A brief description of any rain gardens on campus |
| OP-27.12 | A brief description of any stormwater retention and/or detention ponds employed by the institution |
| OP-27.13 | A brief description of any bioswales on campus (vegetated, compost or stone) |
| OP-27.14 | A brief description of any other rainwater management technologies or strategies employed by the institution |
| OP-27.15 | The website URL where information about the institution’s rainwater management initiatives, plan or policy is available |
| OP-28.1 | Total wastewater discharged |
| OP-28.2 | Wastewater naturally handled |
| OP-28.3 | A brief description of the natural wastewater systems used to handle the institution’s wastewater |
| OP-28.4 | The website URL where information about the institution’s wastewater management practices is available |
| PA-2.62 | Does the institution have formally adopted plans to advance sustainability in Water? |
| PA-2.63 | Do the Water plan(s) include measurable objectives? |
| PA-2.64 | A brief description of the plan(s) to advance sustainability in Water |
| PA-2.65 | The measurable objectives, strategies and timeframes included in the Water plan(s) |
| PA-2.66 | Accountable parties, offices or departments for the Water plan(s) |