WATER Goals

We will reduce potable water consumption by _____ , through the following storm water targets

1. Reduce potable water use for irrigation by ____% (target 50% 2020 or more?, 100% by 2030)

2. Increase storm water capture by ____% for ____% re-use on campus (e.g. target 25% for 50% by 2020)
                                                                        and for ____% infiltration/recharge (e.g. target other 50%)
(*can also state as* Reduce storm water runoff by _____% (with or without the re-use scenario)

3. Improve stormwater quality, including for any storm water leaving the campus (D.O., pollutant reduction, et cetera)

> *Others:*
> Restore the campus environment for human health (beauty, noise reduction, health increases)
= how to measure _____?

> Increase biodiversity on campus

> Create/increase interdisciplinary research and design across campus - become a model for
green infrastructure, how to measure - new programs, new degrees?

Strategies / recommendations / studies

20 year UIUC sustainable landscape master plan, we will:

> Evaluate and assess   - SF surfaces that can be converted:
>   impervious pavement to pervious pavement
>   underutilized turf to prairie
>   roof areas to green roofs (extensive)
>   - SF areas able to be regraded for watergardens (bioswale/biorentention)
>   coordinate with storm water flow, ex. landscape drainage patterns
>   - where cistern potential (above ground disconnect, underground tanks)
>   - green wall potential
>   - converting to passive irrigation for turf, only irrigate where necessary

> Calculate current rainfall annually across campus, assess where it falls for re-use potential
> (**This is the critical supply/demand study to meet #2 above. Currently over 3B gallons rainwater falls annually across 3,000 acres of campus.**)
>   - collection from pavements
>   - captured roof water (cistern)
>   - underground cistern
>   - collection from turf and other planted areas
>   - passive irrigation

> Assess where phased integration can occur
>   - existing potential conversion projects
>   - planned capital projects
>   - plan coordination with building retrofits
>   - and so on

> Assess carbon sequestration through
>   - increased biomass planting
>   - increased stormwater trees

Calculate true cost of campus landscape

Cost of potable irrigation water, including sewer fees, over 2015-2050 timeframe

Assess cost of current maintenance practices :
> turf maintenance, irrigation, mowing, fertilizer application,
>
> measure against prairie and meadow landscape maintenance
> (check LAF landscape performance data)

Assess (environmental) benefits of GHG reduction by reduction in mowing/fertilizer
> (see Pizzo study)

Assess training/workforce to maintain sustainable landscape (see Pizzo study)

Calculate potential quantity of water capture for re-use
> - where/can we use this for irrigation?
> - for use in buildings?
> - cooling?
> - agriculture?
> - recharge?

Estimate new infrastructure required for reliable capture and/or infiltration
> - e.g. underground tanks, cisterns
> - pavement retrofits
> - regrading and maintenance of campus prairies and rain gardens

Calculate microclimate impact, how/will/can this affect building performance

Assess phased cost/benefit of converting the campus landscape through green infrastructure

Programming/planning studies

Campus landscape programming assessment

Focus groups - students, faculty, staff

How is the campus used now?
What new programs could the campus envision, water-loving, water using landscapes?
I.e. can we begin to change land-use on campus?

What turf fields need to remain?

Can we imagine converting a quad to prairie? why or why not?

What new curriculum can be developed around water-based campus landscape?

Assess other $ benefits/support:

Student/faculty recruiting tool - healthy campus, environmental campus attracts students

Potential endowment

Timeline & phasing via

      capital planning / funding sources

      path of opportunity/coordination

      curriculum development

      internal support - mission-driven institution

      other opportunities? - green campaign? demo-pilot gardens?

SUMMARY OF RESEARCH/DATA NEEDS + ANALYSIS

Establish short/medium/long term cost/benefit study, use true cost of water as a basis

Phasing assessment, match implementation to goals

Design design design. sustainable landscape plan coordination (include capital planning)

Technical implementation plan

Identify Uncertainties - where are our major hurdles anticipated to be?

Assemble existing studies/data to support above, identify specific areas for research

Create UIUC sustainable landscape master plan (with consultant)
      Physical campus studies, assess the where of possibilities
      Develop cost and phasing plans
      Landscape (re)programming studies
      Physical implementation guidelines

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