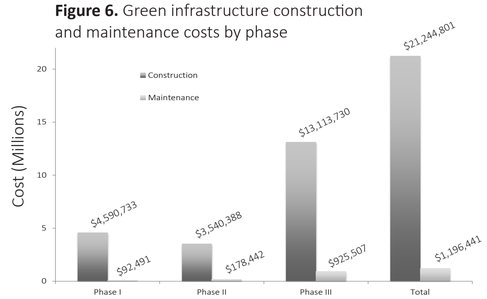
Urban Transformations
Implementation Plan

THE UNIVERSITY OF ILLINOIS AT CHICAGO

The Four Phases of Urban Transformation

Urban flooding in Chicago is chronic, systemic and costly. As urban flooding and its impacts become increasingly prevalent in Chicago and other cities, there is a growing demand for scientifically-robust and politically-nuanced strategies for transitioning cities towards more sustainable water management practices, such as green infrastructure. *Urban Transformations* demonstrates a strategic, incremental and adaptive approach for implementing green infrastructure that can be transferred to virtually any functional scale—from a university campus to a mega-region. There are several common barriers that communities face when attempting to implement green infrastructure, such as limited information about the performance of green infrastructure over time, limited financing options and lack of institutional know-how for installing and maintaining green infrastructure. Our project phasing is based on the premise that an incremental and adaptive approach to green infrastructure implementation will mitigate these barriers and improve the long-term viability of green infrastructure over time. We propose the following biophysical and institutional interventions for implementing the *Urban Transformations* Green Infrastructure Master Plan.

Figure 6. Green infrastructure construction and maintenance costs by phase



Phase 1: Demonstrate
2015-2017

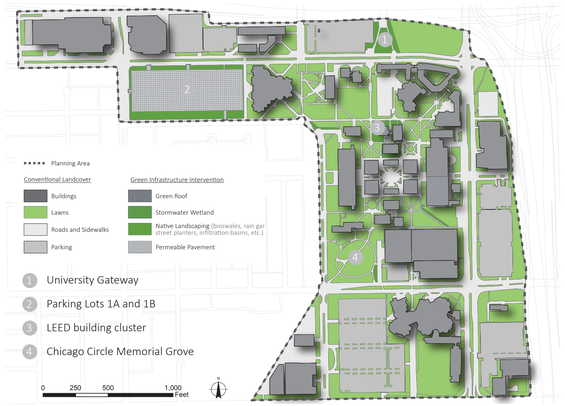


Figure 7. Phase 1 green infrastructure interventions

Phase 2: Optimize & Adapt
2018-2020

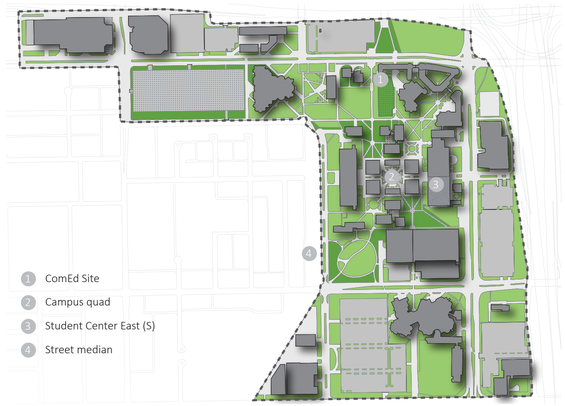


Figure 8. Phase 2 green infrastructure interventions

Phase 3: Integrate
2021-2025

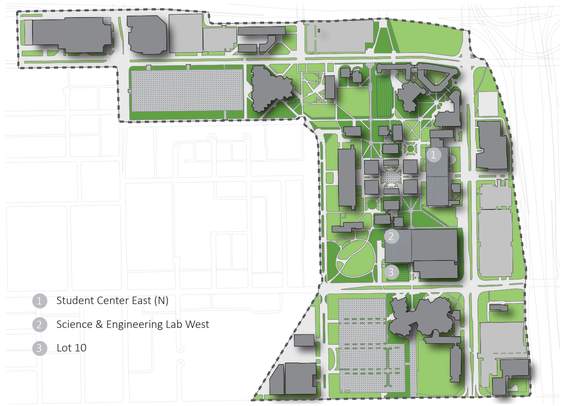


Figure 9. Phase 3 green infrastructure interventions

Phase 4: Transform
2025+

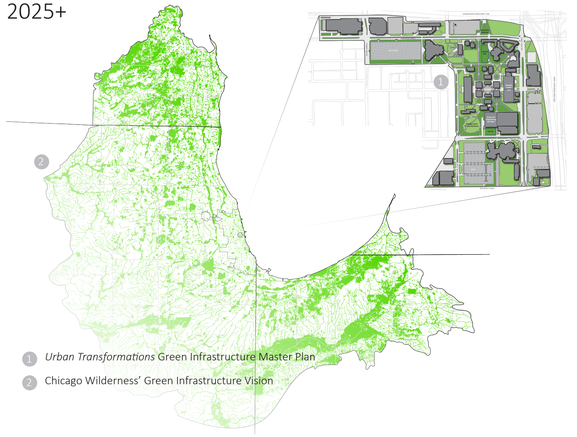


Figure 10. The *Urban Transformations* Green Infrastructure Master Plan will become part of the Chicago Wilderness region's green infrastructure network

Interventions & Benefits

Biophysical

- Install native landscaping along the University Gateway from the UIC-Halsted CTA station once Peoria St. construction is complete
- Install permeable pavement on flood-prone walkways and parking lots 1A and 1B
- Implement highly visible and cost-effective projects to generate awareness and support for green infrastructure on campus
- Install bioswales, rain gardens and native landscaping along edges of walkways to mitigate runoff from lawns
- Expand native landscaping in the Chicago Circle Memorial Grove
- Install monitoring equipment with new installations

- Remediate and transform the former ComEd site into a stormwater wetland
- Install a green roof on the south half of Student Center East
- Install permeable pavement and a cistern below the campus quad
- Increase the area and capacity of effective GI installations
- Install street planters or bioswales in all street medians and parking lots
- Consider stormwater management benefits when selecting the species and locations for campus tree plantings

- Expand and integrate fragmented GI installations into an ecologically and hydrologically interconnected network
- Install a green roof on the north half of Student Center East
- Install a green roof on Science & Engineering Lab West
- Install a stormwater wetland where Lot 10 is located
- Convert conventional lawns into native landscaping wherever feasible

- Integrate UIC's campus green infrastructure network with the growing green infrastructure network across Chicago and the region
- Coordinate with CDOT and other agencies to implement complete streets on Halsted St., Harrison St., Taylor St., And Roosevelt Rd.

[Modeled] [Anticipated]

% Runoff

% Infiltration + Evaporation

Institutional

- Initiate or re-start collaborative, interdepartmental processes to define a shared understanding of the problem, vision and goals
- Install educational signage to increase the public's water literacy
- Build on projects with institutional momentum
- Submit *Urban Transformations* to design competitions that carry funding for the implementation of demonstration projects
- Apply to NSF, EPA and other research-oriented agencies with funding for the implementation of research- and monitoring-focused green infrastructure installations

- Leverage monitoring data to learn, demonstrate success and garner additional grant funds
- Support public education and outreach programs targeted to the university community and residents from surrounding community areas
- Apply for green stormwater infrastructure, watershed improvement, and environmental education-oriented grants
- Apply for technical assistance through CMAP or CNT's RainReady program

- Integrate green infrastructure into all building standards, planned maintenance projects and capital improvement planning
- Develop a comprehensive plan for integrated green/gray infrastructure
- Create a publicly accessible campus geodatabase through which campus plans, GIS layers and hydrological data can be shared and downloaded
- Integrate green infrastructure into curriculum for urban planning, engineering, earth sciences, learning sciences, and other disciplines
- Explore willingness of students to increase the Campus Green Fee or allocate a larger proportion of it for green infrastructure on campus
- Align goals, strategies and metrics with the City of Chicago's Green Stormwater Infrastructure Strategy

- Brand UIC as leader in urban resilience research
- Establish an incubator through which to scale-up new sustainable water technologies other urban resilience-building ideas
- Explore willingness of residents within UIC's "sewershed" (i.e. MWRD drainage outlet area) to enter into a stormwater retention credit trading system and other market-based financing for GI
- Shift cost savings from lawn maintenance into green infrastructure installation and maintenance
- Equip future planners, engineers, scientists, and policy-makers with the interdisciplinary skills and knowledge needed to implement green infrastructure across spatial and jurisdictional scales

70
60
50
40
30
20
10
0
% Precipitation to Runoff vs. Infiltration + Evaporation

THE UNIVERSITY OF ILLINOIS AT CHICAGO

2014 EPA Campus RainWorks Challenge
Registration No. M17 | Master Plan: Design Board 2
Project Team: Annie Cosgrove; Emmanuel Dominguez; Nicholas A. Haas; David Klawitter; Eduardo Munoz; Curtis Witek (Project Manager); Lisha Wu; Dr. Ben O'Connor (Faculty Advisor)