

# ROWAN UNIVERSITY STORMWATER MANAGEMENT & LANDSCAPE MASTER PLAN

*Harnessing a hidden resource in plain sight.*



## 5 MOST IMPORTANT ISSUES

### INFRASTRUCTURE REQUIREMENTS

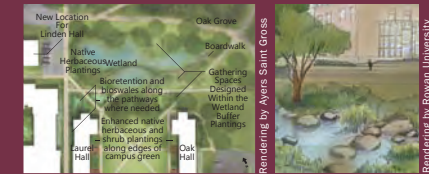
Rather than address flooding using traditional, site-specific, "hard engineering" solutions, the University and its planning team developed a holistic solution that harnesses the power of nature and charts the course for a more cohesive and connected campus. Viewed as living infrastructure, each stormwater practice on campus becomes a functional landscape, a component of a natural system that not only slows down and filters stormwater, but links open space, and connects the campus to its ecological context.



Rendering by Biohabitats

### SUSTAINABILITY

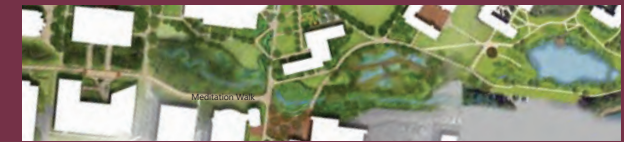
By seamlessly linking functional landscapes within the campus' ecological context the plan moves beyond sustainability to regeneration. With every application of the plan, new connections are forged. Ecological processes and human connections to the landscape are strengthened. New spaces for campus life and learning are created. Native plants, natural features, and green infrastructure become increasingly integral to the campus aesthetic, ecology, natural resource management, and academic mission. Each campus development project builds upon a growing, meaningful, cohesive, campus-wide statement about the power and beauty of natural systems.



Functional landscapes like this proposed wetland amenity weave ecology with stormwater management.

### OPEN SPACE AND PEDESTRIAN CIRCULATION

By viewing water as a resource rather than a problem, and by embracing the natural stream corridor unique to its campus Rowan is now transforming its landscape and the entire campus experience into one that is pedestrian-dominant and enriched and enlivened by the regional ecology.



An enhanced Meditation Walk along Chestnut Branch brings greater cohesion across the campus.

### PLANNING PROCESS

No one knows a campus better than its daily users. Stakeholders were engaged in hands-on planning exercises that yielded honest, meaningful input from Rowan's students, faculty, staff, and community members. Their feedback, including the identification of spaces where students love to enjoy nature or spaces that feel unsafe, was directly addressed in the plan.



Student participation included interactive work sessions.

### MASTER PLAN IMPLEMENTATION

With capital improvement projects already underway, there was a need to implement stormwater management projects while developing a comprehensive and long term stormwater and landscape master plan. The planning team recognized the opportunity to solve immediate problems in a way that would lead to greater landscape cohesion and the gradual realization of a new, vibrant campus landscape that is connected and defined by nature.



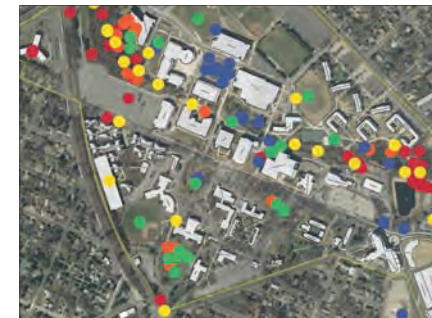
A phased prioritization of the planning projects ensures implementation can occur immediately.



## INTEGRATED PLANNING MAKING CONNECTIONS

Analysis began with data assessment to understand the regional setting and characteristics, planning and hydrologic history, ecology, stormwater, and regulatory and landscape contexts. Stakeholder interviews and activities uncovered user needs and challenges. Site walks and assessments yielded a more complete understanding of the campus experience and conditions.

Designs were developed collaboratively, with Rowan staff and stakeholders providing input at every stage. Concepts and landscape typologies were crafted for three 'focus areas' deemed representative of campuswide stormwater problems. With an emphasis on buildings currently under development, the concepts strengthened core open space and connectivity between north and south and restored the Chestnut Branch corridor as an east-west connection and ecological asset.

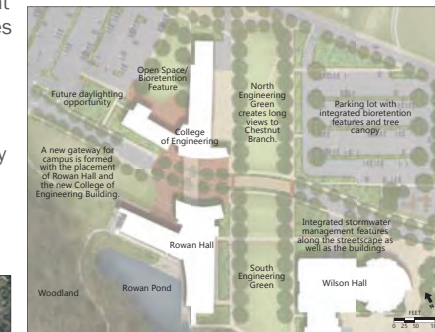


Students highlighted unsafe areas of campus, as well as the most popular open space areas.

*An interconnected pattern of historic streams and wetlands provided the model for a renewed campus hydrology.*



An historic aerial of the property shows extensive wetlands and streams.



A network of high-performing open spaces fosters learning and strengthens a sense of place.



Students took an active role in the planning process.

## IMPLEMENTATION IN THE GROUND & LAYING GROUNDWORK

Although the master plan is a long-term planning document, it needed to address an immediate stormwater problem and be applicable to campus development projects underway. Design and construction of Memorial Hall's landscape and stormwater BMPs began simultaneously with the development of this plan. This was viewed as an opportunity to seamlessly integrate the plan's vision for improved landscape function, aesthetics, and connectivity with existing development while creating a visible path for future implementation.



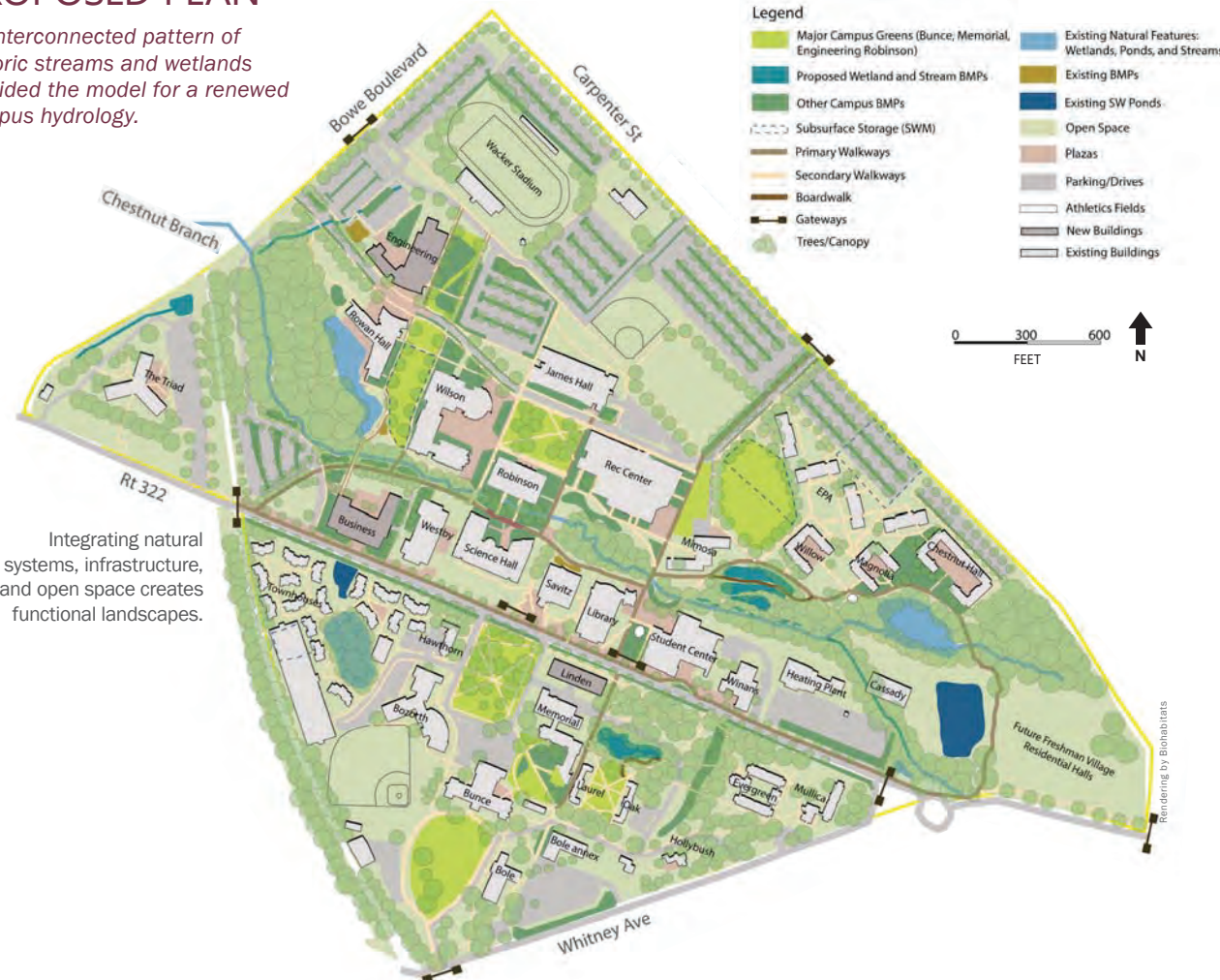
Recently completed stormwater garden and landscape upgrade at Memorial Hall.



Detailed site plan for Memorial Hall landscape improvements and stormwater management (December 2014).

## PROPOSED PLAN

*An interconnected pattern of historic streams and wetlands provided the model for a renewed campus hydrology.*



- Legend**
- Major Campus Greens (Bunce, Memorial, Engineering Robinson)
  - Proposed Wetland and Stream BMPs
  - Other Campus BMPs
  - Subsurface Storage (SWM)
  - Primary Walkways
  - Secondary Walkways
  - Boardwalk
  - Gateways
  - Trees/Canopy
  - Existing Natural Features: Wetlands, Ponds, and Stream
  - Existing BMPs
  - Existing SW Ponds
  - Open Space
  - Plazas
  - Parking/Drives
  - Athletics Fields
  - New Buildings
  - Existing Buildings

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Integrating natural systems, infrastructure, and open space creates functional landscapes.

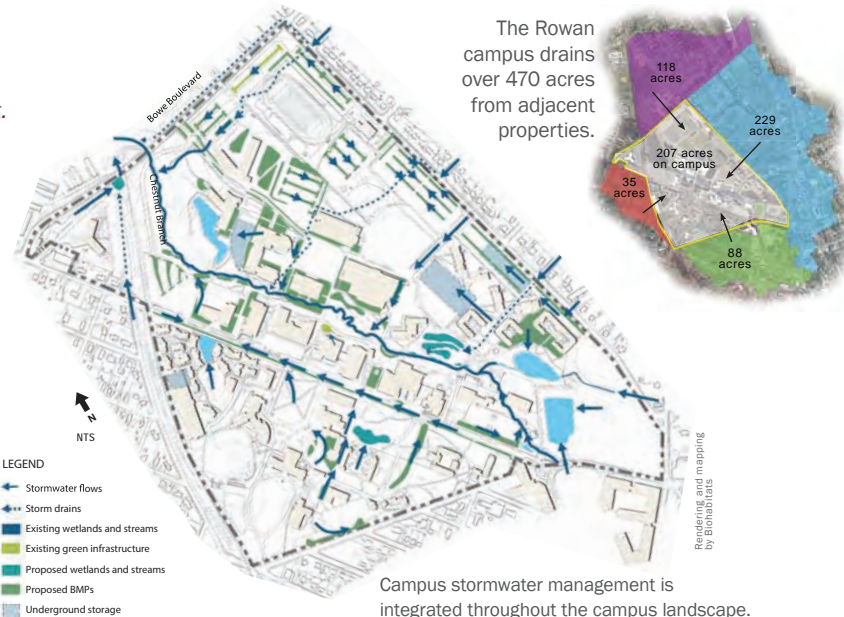
## SCOPE OF PROJECT

*By using Chestnut Branch and historic hydrology as guides, the plan seamlessly integrates green infrastructure and natural systems into the campus open space network.*

An immediately implementable plan that addresses flooding while knitting together a cohesive, functional, and engaging campus.

Specific goals:

- Stormwater management connects and enhances a fragmented campus landscape—mitigating ongoing flooding issues.
- Restoration of Chestnut Branch to improve ecological function.
- Creation of a cohesive, connected campus landscape that enhances the university experience.
- Promote mission of University with flexible open space and research opportunities



- LEGEND**
- Stormwater flows
  - Storm drains
  - Existing wetlands and streams
  - Existing green infrastructure
  - Proposed wetlands and streams
  - Proposed BMPs
  - Underground storage

Campus stormwater management is integrated throughout the campus landscape.

The Rowan campus drains over 470 acres from adjacent properties.

