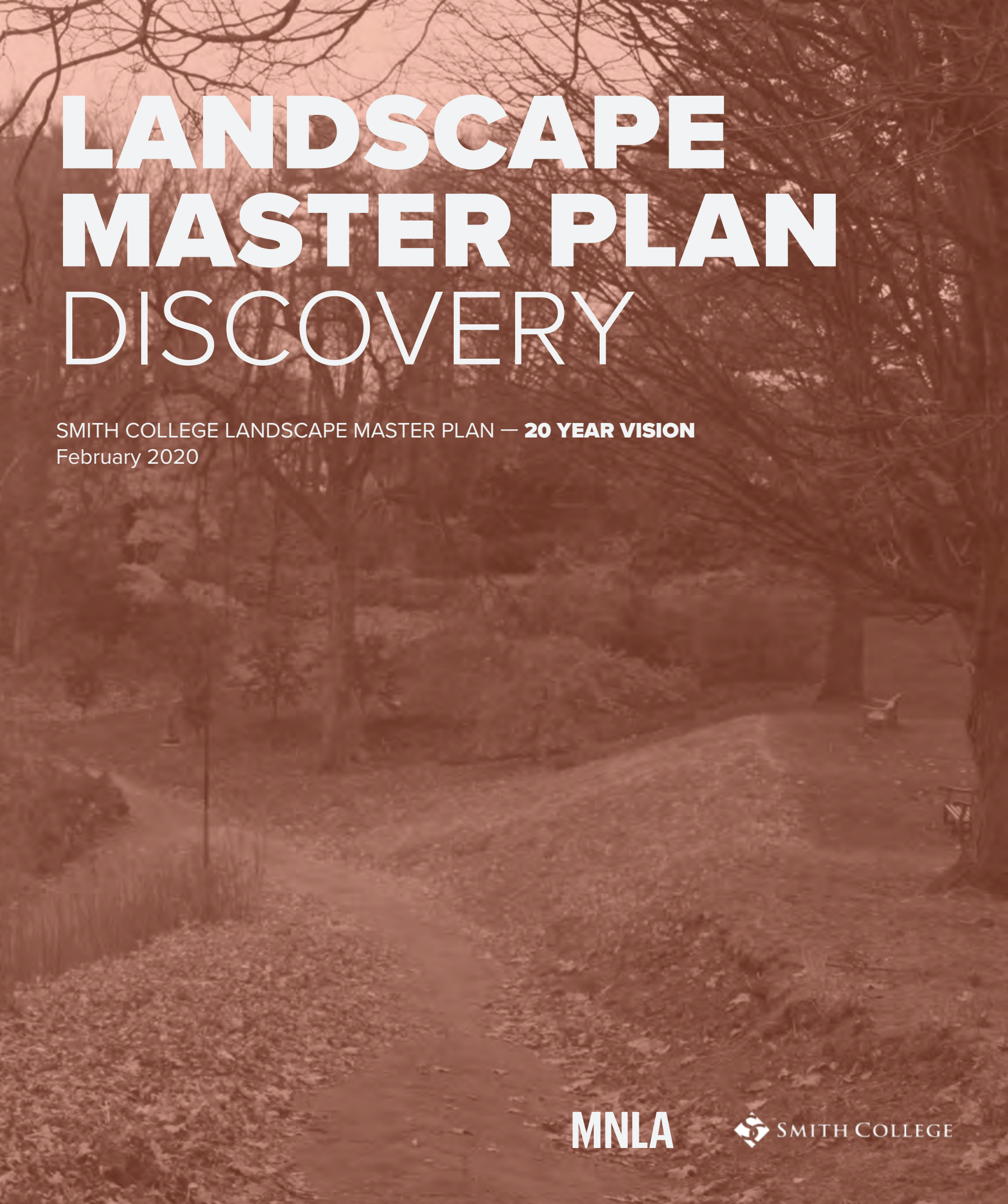

LANDSCAPE MASTER PLAN DISCOVERY

SMITH COLLEGE LANDSCAPE MASTER PLAN — **20 YEAR VISION**
February 2020

MNLA

SMITH COLLEGE

LANDSCAPE MASTER PLAN

The Smith campus has long been recognized for its magnificent landscape. For those of us who are students, alumnae, faculty or staff, the gardens, pathways, pond, glades, and lawns shape both first impressions and lasting memories of our time at Smith.

Over the course of the 2019–2020 academic year, the Landscape Master Plan Committee is overseeing the development of a new landscape master plan (LMP) for Smith College. The LMP is being developed by MNLA, a landscape architecture firm, with targeted input from LEC environmental consultants and SiteWorks, landscape management and cost estimating consultants.

Since the last landscape master plan was completed more than 20 years ago, changes in student priorities, pedagogy, technology, climate and landscape management practices have resulted in the need for a critical reassessment of the college's landscape.

Smith set out the following guiding principles for the LMP:

1. The plan should be a model of responsible environmental practices that anticipates the impacts of climate change and prioritizes regenerative ecological functions.

2. Protects, stewards, and enhances the historic campus including the botanic garden, heritage trees, and distinctive spaces.

3. Connects the campus to its surrounding context while maintaining its distinctive character.

4. Ensures the safety of pedestrians and cyclists through well connected, accessible and clear routes.

5. Promotes use of the landscape for teaching, learning and scholarship by making natural processes visible and legible.

6. Creates inclusive, multi-use outdoor environments that are universally accessible, democratic in spirit, welcoming, and conducive to social interaction for the entire campus community.

7. Creates and nurtures natural environments and green spaces that promote health and wellness and foster wellbeing for residential students.

The LMP will establish an overarching philosophy for the landscape and mission statement for Smith College landscape for the next 20 years with regard to:

Inclusivity

Capacity of the landscape to strengthen and advance social and cultural identity and promote health and well-being;

Education

Capacity of the landscape to be a teaching and learning environment that fosters stewardship and scholarship;

Adaptation

Capacity of the landscape to be resilient to the forces of climate change and prioritizes regenerative ecological function.

The LMP process has three distinct phases: Discovery, Alternative Frameworks and Draft Master Plan. There are opportunities for the Smith community to express their thoughts during each step in this process through both on-campus engagement sessions and *Groundswell Magazine*, an online resource used to both inform the community of the project development and to collect their feedback and comments.

This booklet documents the team's analysis and findings of the campus landscape during the Discovery phase.

↑ Historic view of Laura Scales House.

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↑ Laura Scales House in 2019.

KEY FINDINGS

Key findings represent the results of both site analysis and community engagement process carried out as part of the Discovery Phase of the Landscape Master Plan. The MNLA team wishes to thank the many students, faculty, administrators, staff, and alumnae who contributed their time and effort to assist in advancing the Discovery Phase. As evidenced in this document, we heard a wide range of suggestions, criticisms, visionary ideas, and practical recommendations in response to the community engagement tools. We have represented this spectrum through quotes, imagery, mapping, and data compilation which offers a balanced, unbiased record of the community engagement process.

There are a plethora of key findings contained within this document. MNLA has organized these first by categories of investigation: environment, human history, pedestrian experience, vehicular access and parking, and campus spaces and second by intended outcomes: inclusivity, education, and adaptation.

Summary statements and conclusions are MNLA's interpretation of the community engagement process and site investigation through our professional lens as landscape architects.

→ Students sitting by the water, MNLA, 2019.

SYNTHESIS OF KEY FINDINGS

INCLUSIVE LANDSCAPE | **ADAPTABLE LANDSCAPE** | **EDUCATIONAL LANDSCAPE**

ENVIRONMENT

▶**Climate change is already having an impact** on the campus as evidenced by increased Mill River flooding, intensity and frequency of rainfall, warming temperatures, and seasonal shifts that impact both student engagement with the outdoors and disruption to natural processes.

▶Glacial processes have driven the campus surficial geology and topography, loosely forming three terraces that cascade 120' down to the Mill River. Well-draining sandy soils overlay an impermeable layer of varved clay. The majority of the campus is suitable for **stormwater interventions**; however, type, scale, and engineering requirements will vary and need to be assessed on a site scale.

▶With **67% of open space comprised of lawn**, the campus is neither ecologically diverse nor well-suited to climate adaptation.

HUMAN HISTORY

▶First Peoples occupied the land in and around Smith College. Moving forward, the campus landscape should recognize and celebrate the human history of the land that pre-dates the establishment of the College.

▶The main campus has been shaped by multiple plans and ideals over its nearly 150-year history. This evolutionary trajectory allows for **continued change** within the context of continuity.

▶The campus has evolved from a 27-acre core of buildings forming an exterior perimeter to 147 acres that are now both outward and inward-facing. While this evolution creates the charm of the campus, it has led to circulation routes that do not always lead to front entries, causing **confusion in spatial relationships**, underutilized "lost" space, and redundant paths.

▶The combination of natural and human forces has created a campus with stunning views. Today, many of these **views are compromised** by various encroachments.

PEDESTRIAN EXPERIENCE

▶The campus has been trending towards prioritizing vehicular circulation over pedestrians and cyclists. This results in many areas of conflict, lack of pedestrian and bicycle connectivity, and **safety issues** both within the campus and along public streets.

▶Asphalt is the predominant paving material, and with 95% of all campus routes paved in the same material, there is a **lack of circulation hierarchy.**

▶The campus topography as well as evolution of the campus structure has often resulted in paths and front entrances that are **not universally accessible**.

▶Clearer **wayfinding** is needed to improve the visitor experience for campus visitors and for the larger community of users of the campus landscape and Mill River Greenway.

VEHICULAR ACCESS

▶**Dispersed small and medium-sized parking lots** throughout the campus compromise prominent views, student and visitor experience, and exacerbate environmental challenges.

▶The **amount of paving** has increased over the years and should be reassessed for appropriately scaled widths to better serve the necessary functions.

CAMPUS SPACES

▶Clearly identified **building-specific open spaces** would encourage greater dialogue and inclusivity.

▶Major campus lawns are well-used but could be made **more conducive to learning and social interaction** with amenities such as diversified seating, electrical outlets and wifi.

▶**Fences and barriers** have negative connotations to the campus and larger community.

▶The campus can broaden **learning opportunities** by making fuller use of its diverse landscape.

Each of the key findings, synthesized herein, can be found at the end of the document.

INCLUSIVE LANDSCAPE

Inclusive is a word that connotes different meanings to different people, as the MNLA team learned from its extensive outreach. For some community members, inclusivity is about ensuring that all buildings and outdoor spaces are accessible to all users. For others, feeling that a space is inviting and welcoming defines inclusive; still others responded with physical interventions such as seating, artworks, and better illumination as mechanisms to encourage more social interaction and engagement with the landscape.

In 2019-20 Smith undegraduate students represented 72 countries. 34.3% of first year students were Black, Hispanic, Native American or Asian. The LMP should incorporate broader representation of different cultures and spiritual practices, including people of color, to foster a greater sense of belonging. In some instances, subtraction of fences and barriers were recommended as means to improve inclusion.

In summary, there are many tangible ways the landscape can foster both the perception and reality of inclusivity throughout the campus.

"**Accessible** to those in wheelchairs as much as possible..."

"By remaining its historic self, but also by adding unobtrusive **handicap access** where necessary."

"All students, faculty, and staff should **feel welcomed** across all spaces on campus. The landscape should help break down barriers and not create them."

"By building spaces that are welcoming to people of **all identities**."

"Including **indigenous and culturally appropriate plants**, different landscapes with different feelings..."

"...more **benches, tables,** etc. places to just —be— outside..."

"Consider adding **statuary** by/ of women of color."

"By providing green space for **exploration**, **contemplation**, and **reflection**."

"Make it **well-lit** so we feel comfortable walking around at night."

"Priority for **native plants**, explanation/signage around why exotic ornamentals were used in the past."

"By engaging **five senses** and serving as possibly welcoming a first time botanic garden visitor."

"Be outward facing to strengthen the ties between Smith and the **Northampton community**."

—All quotes above are submitted via www.groundswellmagazine.com

"Incorporating **spirituality** into landscape."

"Collaborating with the Art Department to reach people with **different interests**."

—All quotes above are submitted via on-campus engagement

ADAPTABLE LANDSCAPE

The specific local impacts of climate change are interpreted differently by scientists, but there are clear and threatening signs which are already manifesting themselves on the campus. Building on Smith's 2017 *Report of the Smith College Study Group on Climate Change*, the Landscape Master Plan should strive to address the recommendations put forth such that the landscape embodies climate change adaptation and mitigation. Respondents within all groups articulated a host of suggestions from small but scalable initiatives to ones that speak to campus-wide initiatives.

The campus landscape is a multi-acre canvas that can serve to demonstrate adaptation and mitigation strategies to combat climate change. With more than 34 acres in pavements, there are a host of adaptive measures to be explored to improve permeability, reduce and retain runoff, mitigate the heat island effect, and the like. With 67% of the campus land cover in lawns, there are a wide array of best management practices that should be deployed. Some of these include reduced use of chemicals, fuel and costs for lawn care, conversion of non-critical lawns to native habitats and biofiltration zones, and protection and enhancement of the sensitive riparian landscape around the river and pond.

Significantly, visible physical adaptive strategies are not only beneficial to mitigating climate change, they also dovetail with goals associated with improving the educational opportunities throughout the campus.

"It is imperative that Smith be an example of forward-looking **climate-aware practices**."

"Where possible make paths/ sidewalks semi-**permeable** so we allow water under paved areas."

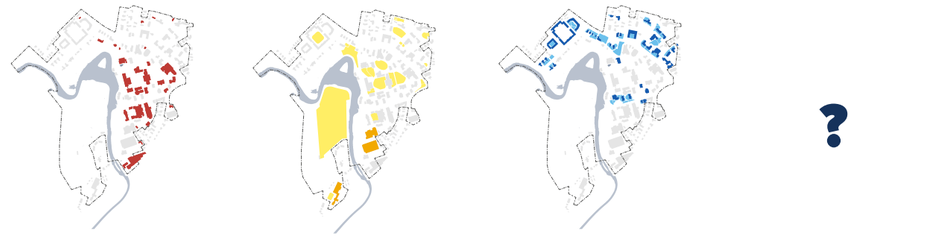
"**Green parking lots**."

"More **reusable** water [bottle] filling stations."

"We may need to start including **plants better adapted** to more severe weather, and a more hot environment."

"Plant **more trees**! Make use of green spaces that students don't typically use for plants."

"The landscape needs to be **easily maintained** and not require excessive mowing, watering, or treatments with pesticides."



"Include **bee and butterfly-nourishing flowers** as much as possible."

"Smith can adapt by **helping the communities around**"

"Better **pond maintenance**."

"Dates of first and last flowering can be enlightening and so can dates of first and last sightings. Rain gauges, snow measurement, wind... **facts** are powerful."

"Reduce any reliance on unseasonal watering, encourage planting for **native wildlife** and pollinators over long stretches of lawn where possible (but keep the Quad and central campus areas for lounging/ playing!)"

—All quotes above are submitted via www.groundswellmagazine.com

"Look at detrimental effects of **Paradise Pond** and whether it is worth maintaining."

—Quote above is submitted via on-campus engagement

EDUCATIONAL LANDSCAPE

The Smith campus as a learning environment falls into two essential tracks: pedagogical and experiential. A number of faculty respondents articulated physical improvements that could facilitate structured learning, including more comfortable places to hold classes outdoors, expansion and diversification of the Botanic Garden's collection, creating a broader range of educational landscape typologies, and better management of and accessibility to unique ecosystems within the campus.

Students also suggested pedagogical improvements such as interpretive or cultural signage; however, the majority of students expressed a desire to engage more deeply with the landscape in unstructured ways such as while walking between classes, eating outside, or taking a quiet stroll. Essentially they were verbalizing a clear dissonance between what they are being educated to understand are environmentally responsible landscapes and what they see and experience daily on campus.

Aligning the goals of an adaptive landscape with expanding the educational value of the Smith campus, will lead to a transformation in the way the campus performs at multiple scales.

"More **plaques** with info about trees and history."

"The addition of trees with educational materials posted about their **impact** on absorption of carbon."

"Signage! tell us how our campus is going to change from **climate change** and the impacts on students."

"I think there's a lot to learn from the **Mill River**."

"Plan for how to have classes outside or **outdoor classroom** space."

"More areas of **native plants** with **signage** to educate and events surrounding them! Native medicinal plant garden?"

"Putting up **art work** to show **history**. Having **native plants**. Playful path for kids to discover trees and plants"

"More classes tied by curriculum to landscape. Let us teach ourselves by providing **seating**."

"We should continue to use our landscape to educate in obvious ways like biology, astronomy, geology, etc. We should also focus on **local natural history** and continue projects like Tree Speak."

"Gardens themed to teach **plant evolution**."

—All quotes above are submitted via www.groundswellmagazine.com

EDUCATIONAL LANDSCAPE

?

ROAM LINGER MOVE LEARN

We can create inviting **outdoor classroom** spaces to help facilitate/ acknowledge history that has happened at Smith."

"**Murals**, **art**, more **sculpture** (outdoors?) exhibitions. **Gardens** that grow food!"

"Embedding local knowledge and histories into the space. Using creative ways to educate. Site specific **public art**!"

—All quotes above are submitted via on-campus engagement

METHODS

➜ Student Government Association members working on their vision collages.

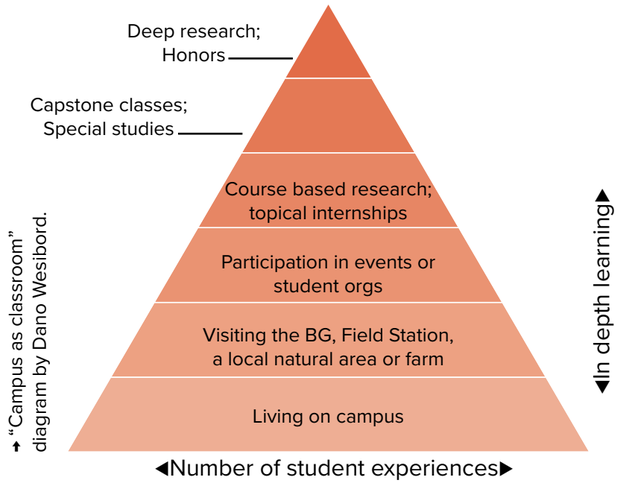
STUDENT RESEARCH

COMMUNITY ENGAGEMENT

Student research projects conducted prior to the commencement of the LMP were critical to the Landscape Master Plan Committee's role in articulating the principles which were encapsulated in the Request for Qualifications issued to consultants. Subsequently, MNLA, the selected consultant to develop the LMP, has met with several of these students to understand more fully their goals and research that led to their important contributions to this process. The student work was prepared by Emerson Barry'19, Cara Dietz'19, Hazel Edwards'19, Mia Fuentes Deonate'21, Kate Hanks'18, Emily Hitchcock'19, Jane Holcomb'19, James Maeley, Greta Mundt'21, Victoria Ochoa'19, Elsbeth Pendleton-Wheeler'19, Krista Smathers'18. For the full list of student work, see Bibliography.

"The Smith College landscape of today must 1) provide aesthetic appeal and comfortable, functional space for students and college community members to move through and to spend time in and 2) hold educational and scientific value. While continuing to accomplish these important objectives, the central mission of updating the Landscape Master Plan today is to design a landscape that acknowledges the predetermined **impacts of climate change** on the campus and the potential that the landscape design has to reduce the campus contribution to climate change and even to slow its progress."

"Updating Smith College's Landscape Masterplan in the Context of Climate Change" by Emerson Barry '19, Cara Dietz '19, Emily Hitchcock '19, Jane Holcomb '19, & Victoria Ochoa '19.



"New LMP should focus on using the campus to **render visible all the college's values** and recognize this as an opportunity to make Smith a leader."

"Guiding Themes for the New Landscape Master Plan" by Emily Hitchcock '19, Elsbeth Pendleton-Wheeler '19, Hazel Edwards '19, and Kate Hanks '19.

STAFF AND FACULTY

COMMUNITY ENGAGEMENT

18 phone interviews
5 focus meetings

STAFF

- Admission
- College Archives
- Athletics
- Botanic Garden
- Campus Police
- CEEDS
- College Relations
- Dean of the College Office
- Dining Services
- Disability Services
- Office of Alumnae Relations and Development
- Disability Services
- Facilities Management
- Finance & Administration
- Global Studies Center
- Health Services
- Information Technology Services
- International Students and Scholars
- Office of Student Engagement
- Office for Equity and Inclusion
- President's Office
- Provost/Dean of Faculty
- Student Affairs
- Religious and Spiritual Life

FACULTY

- Astronomy
- Biological Sciences
- Geosciences
- Environmental Science & Policy
- Landscape Studies
- Mathematics
- Psychology
- Biology

"Decolonizing the Smith College Landscape" by Mia Fuentes Deonate'21

Place of Healing and Spirituality Qualities:

- A Space to be able to gather in groups;
- A place to reflect individually;
- A space that rejects imported European design;
- A space that respects and reflects Indigenous culture and identity.

"Learning Goals for Unstructured Learning" by Greta Mundt '21

Learning Goals for Unstructured Learning:

- Notice the landscape;
- Understand local ecology;
- Recognize responsible environmental practices and climate change mitigation;
- See both their own and differing perspectives within the landscape;
- Understand how history and culture influence place;
- Understand the landscape as a learning resource across disciplines.

MAPPING AND RESEARCH

SITE ANALYSIS

CAMPUS VISITS

May 2019
MNLA Site Analysis – Mapping of open space, views, circulation, hardscape and softscape;

July 2019
LEC Environmental Analysis – Mapping of vegetation typology and storm water flow;

August 2019
LEC Environmental Analysis – Mapping of habitat assessment;

September 2019
MNLA Site Analysis – Verification of initial mapping when school is in session;

September 2019
MNLA Archives Research – Comparison of historic and current iconic views;

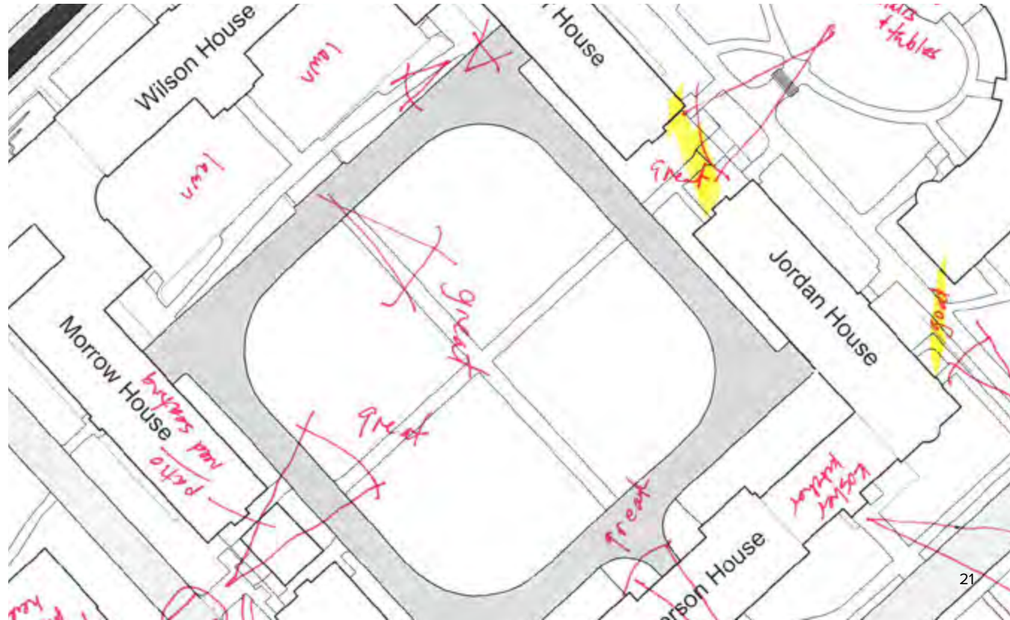
October 2019
MNLA Site Analysis – Site walks with key Smith staff and faculty;

November 2019
MNLA Site Analysis – Site walks with key Smith staff and faculty;

BIBLIOGRAPHY

See Appendix

↑ MNLA team on one of the site visits.



↑ MNLA field notes.

COMMUNITY INPUT

COMMUNITY ENGAGEMENT

With the goal of creating a meaningful and continuous community engagement process, the MNLA employed a number of tools that helped to both understand the campus as it is experienced today and to inform the community of the project.

Individual and small group meetings with staff members, administrators and faculty, revealed the ways the campus currently functions and what it aspires to be in the future. Open to all, interactive on-campus activities brought light to the everyday experience of the landscape. *Groundswell Magazine*, an online tool created for the project, reached alumnae and allowed for a continuous flow of comments, ideas and aspirations.

1,594 responses across Discovery phase

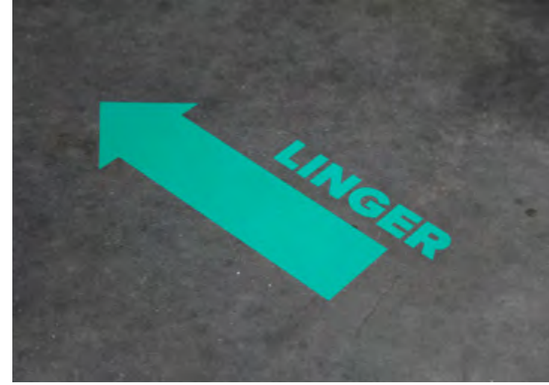
70% of responses came from students (1110 responses)
4% of responses came from alumnae (61 responses)
4% of responses came from faculty (66 responses)
5% of responses came from staff (77 responses)
10% of responses came from unidentified respondents (162 responses)
—These numbers represent responses via www.groundswellmagazine.com and on-campus engagement, not the number of participants.

1,095 visits to *Groundswell Magazine*

45% Northampton
11% New York
4% Boston
39% Other locations

6,405+ reached on Instagram

—via Smith College Instagram, the number represents the number of views.



↑ Floor stickers for on-campus engagement.

↑ Participants sharing their vision collages.

ONLINE ENGAGEMENT

COMMUNITY ENGAGEMENT

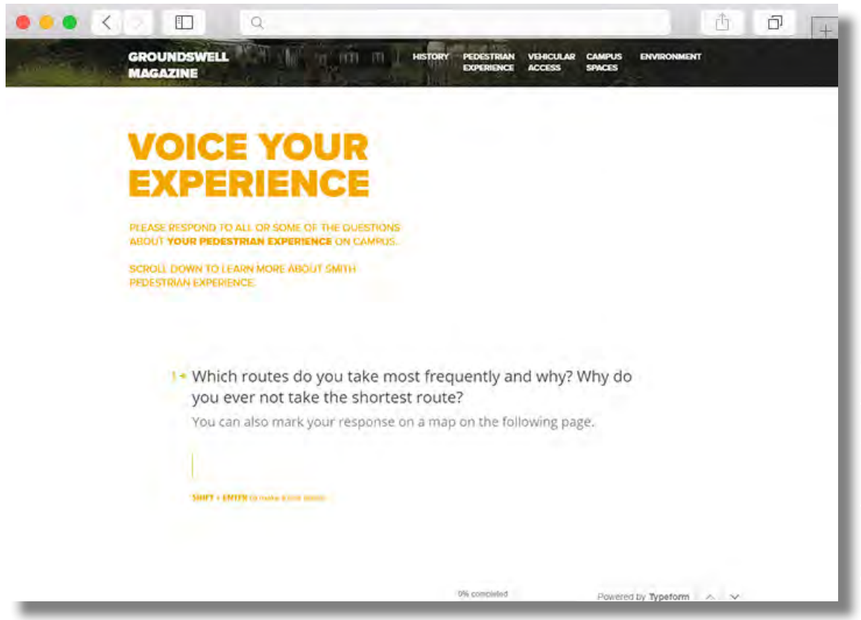
To ensure that students, faculty, staff and alumnae always have a place to go to learn more about the project and to voice their experience and thoughts, MNLA created an interactive online magazine, *Groundswell*. Each following phase of the project will be accompanied by a new issue of the magazine. Developed in conversation with the Landscape Master Plan Committee and a group of students, Issue 1 of the magazine featured five chapters focused on Human History, Pedestrian Experience, Vehicular Access, Campus Spaces and Environment. Each chapter included draft site analysis maps and associated online surveys and interactive maps. The input has been collected and used to refine site analysis findings that can be found in this volume.

▸VOICE YOUR EXPERIENCE ONLINE

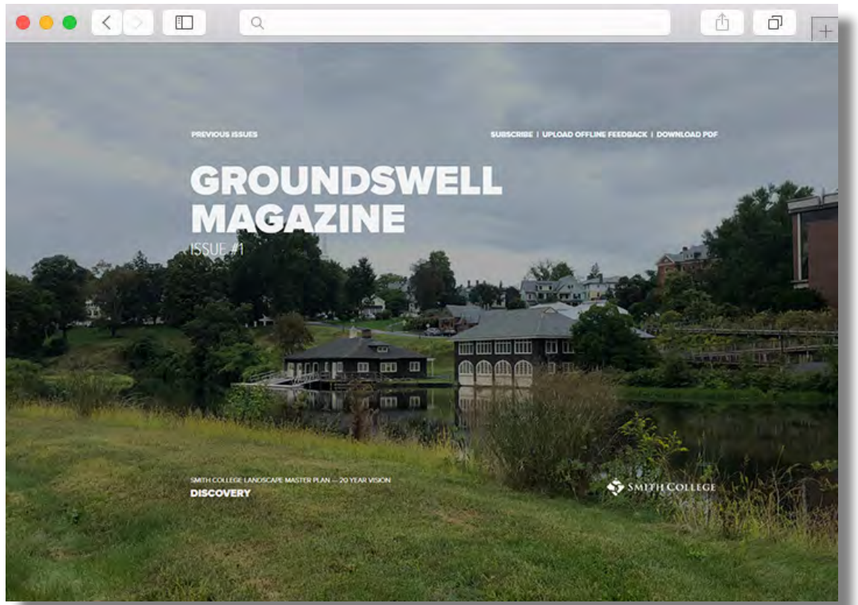
Total of **169** responses.
57% Students
33% Alumnae
4% Faculty
2% Staff
4% Unidentified

▸INTERACTIVE MAPS

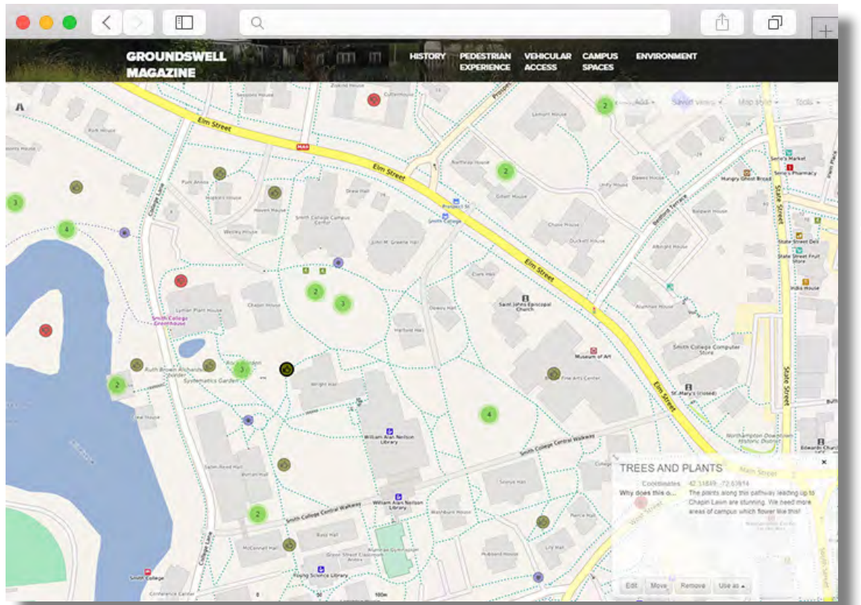
Total of **115** responses were received via interactive maps. Questions were focused on Pedestrian Experience, Vehicular Access and Campus Spaces.



↑ Surveys focused on five Discovery themes were included alongside the draft analysis maps.



↑ *Groundswell* is an online magazine created to collect Smith community's feedback and share project updates.



↑ Through interactive maps embedded in *Groundswell Magazine*, participants were able to tie their responses to a location on campus.

MAPPING EXPERIENCE

COMMUNITY ENGAGEMENT

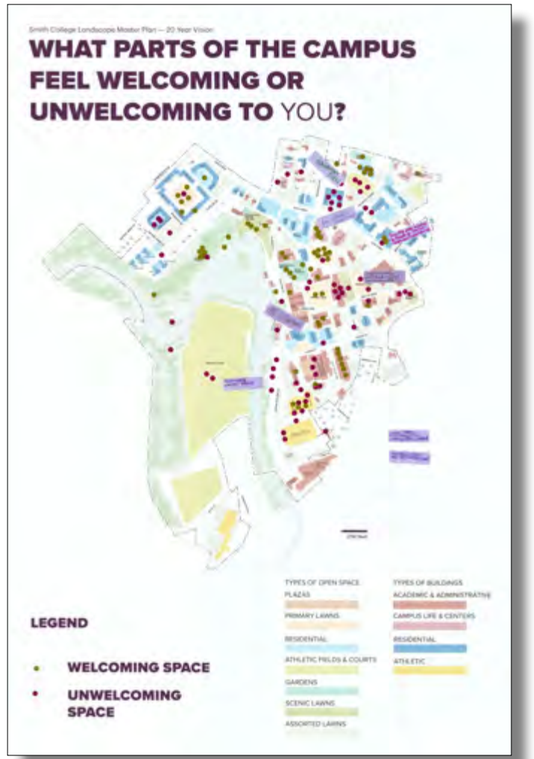
To understand how the campus landscape is experienced today, MNLA created a series of large site analysis maps associated with provocative questions. These were posted in the Campus Center over a period of three days. Stickers associated with map legends were provided to capture input from the campus community. Assisted by MNLA and student facilitators, the participants created these collective maps that formed the basis for the experiential maps presented in the volume and revealing patterns of use and perceptions of different landscape elements.

▸MAP ACTIVITY ON CAMPUS

Total of **777** responses were received via interactive mapping on campus across **8** interactive maps.

Mapping activity questions:

- Which routes do you take most frequently and why?
- What parts of the campus feel welcoming or unwelcoming to you?
- What parts of the campus feel remote to you and why?
- Which campus landscapes offer you an opportunity to learn or teach?
- What views of the campus and natural context inspire you?
- Where are the areas where you feel uncomfortable to walk or bike?
- Which outdoor spaces do you use?
- Which environmental impact would you like to see smith's landscape address?



↑ One of 8 interactive maps filled out by the participants.

↑ Mapping activity taking place at the Campus Center.

↑ Participants mapping the views that inspire them.

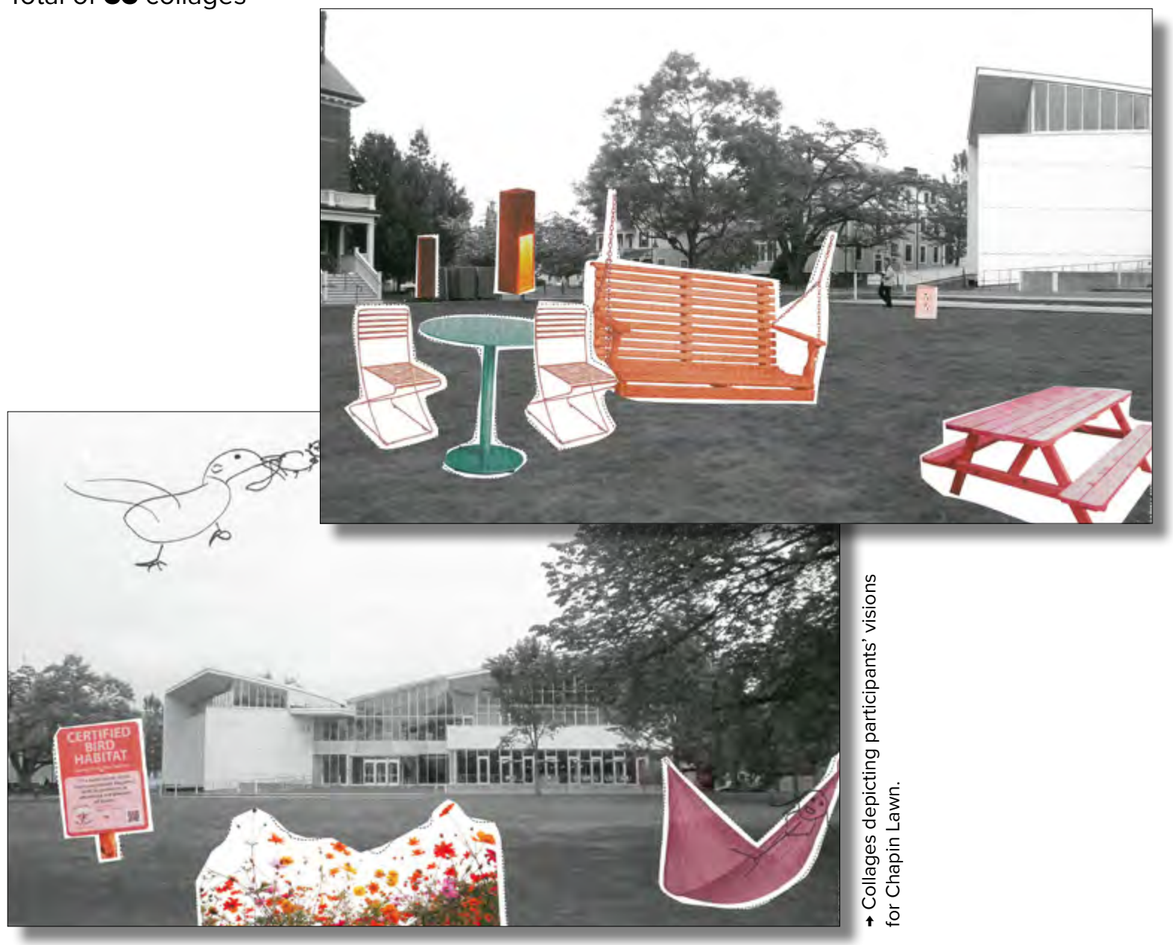
VISION COLLAGES

COMMUNITY ENGAGEMENT

To identify the aspirations and values that Smith students, faculty and staff prioritize when thinking about the future of the campus landscape, MNLA set up open-to-all collaging sessions and invited the participants to create visions for particular spaces on campus. MNLA provided a wide array of types of campus improvements from which students could select those elements that best fit their visions.

▸COLLAGING ON CAMPUS

Total of **66** collages



↑ Collages depicting participants' visions for Chapin Lawn.

POSTCARDS

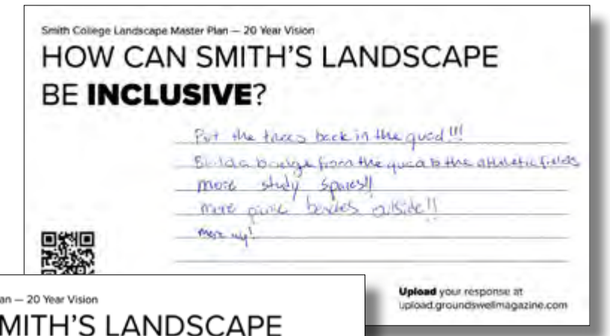
COMMUNITY ENGAGEMENT

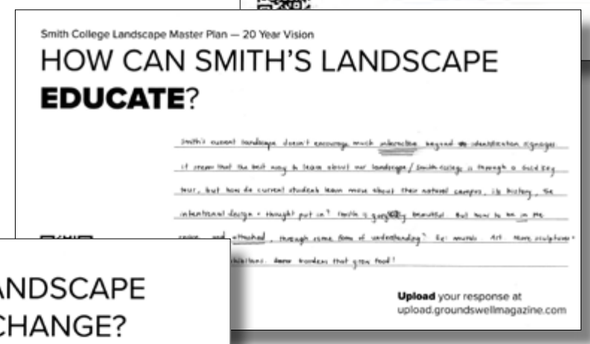
To allow students to take more time thinking about their priorities for the future of the Smith's landscape, MNLA created a three postcard series, each focused on one of the goals of the Landscape Master Plan, Inclusivity, Adaptation and Education. Students could take the postcard home, fill out and upload a photo to *Groundswell Magazine* online.

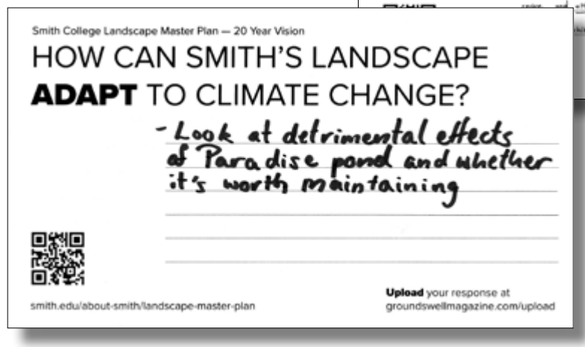
▸POSTCARDS ACTIVITY

Total of **43** responses

Postcard questions:
How can Smith's landscape be inclusive?
How can Smith's landscape educate?
How can Smith's landscape adapt to climate change?







OUTREACH BY STUDENTS

COMMUNITY ENGAGEMENT

During the Discovery phase, a group of Smith students including Greta Mundt, Mia Fuentes Deonate, Julia Mettler-Grove and Tess Abbot engaged fellow students and faculty members in conversations about the LMP and invited them to voice their experience online. Through in-class presentations, tabling sessions and house meetings, they engaged roughly 140 Smith community members.

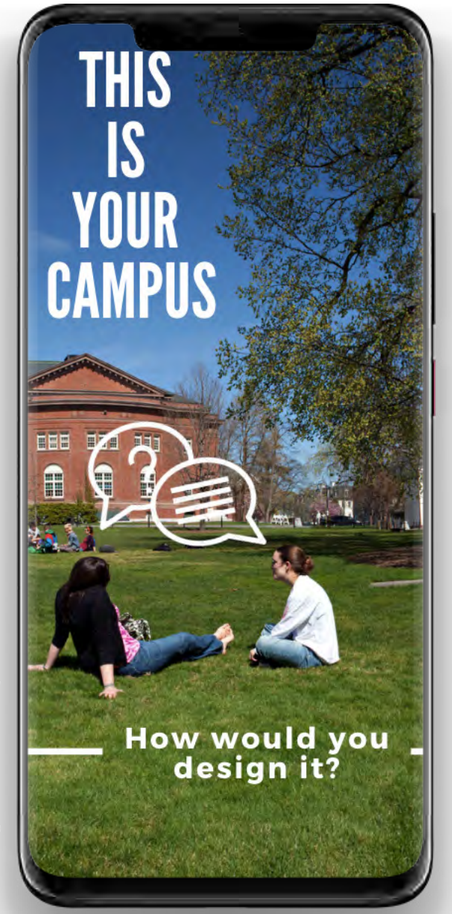
2 Instagram take-overs
3 in class presentation
1 tabling session
1 faculty meeting
2 house meetings

INSTAGRAM TAKE-OVER 1
Feed post: reach: 6,405; likes: 1,074

INSTAGRAM TAKE-OVER 2
Story: 2,736

IN CLASS PRESENTATIONS
LSS 230 Power, Place, Politics, and People: The Contested Urban Landscape;
LSS 389 Broad-Scale Design & Planning Studio
SPN 205 Cities.

↑ Greta Mundt engaging her peers at Emerson House.



↑ Instagram take-over by Tess Abbot and Mia Fuentes Deonate.

↑ Julia Mettler-Grove running a tabling session.

ENVIRONMENT

Smith College is part of the Pioneer Valley Landscape. Formed through metamorphic, glacial, and now anthropomorphic processes, the campus is hydrologically connected to the Connecticut Valley by the Mill River. The Smith landscape is largely pastoral, comprised of lawns, shade trees, and residential-scale planting beds with pictureqsue ‘wilds,’ meadows and woodlands that are more naturalistic and less maintained. The need for balancing use, maintenance practices, and environmental benefits of the outdoor spaces necessitates reconsidering some of the plant palette that constitutes the historic and current image of Smith’s landscape.

Understanding the environmental history and current condition of the campus landscape, as well as understanding its use, is fundamental to forming strategies for the Landscape Master Plan and aligning the sustainablility and environmental goals of the campus with its physical surrounding landscape. The Smith campus is a performative landscape that can be enhanced ecologically and socially, specifically by strengthening its role as an educational tool.

→ Map of Northampton in 1831.

WHICH ENVIRONMENTAL IMPACT WOULD YOU LIKE TO SEE SMITH'S LANDSCAPE ADDRESS?

COMMUNITY ENGAGEMENT

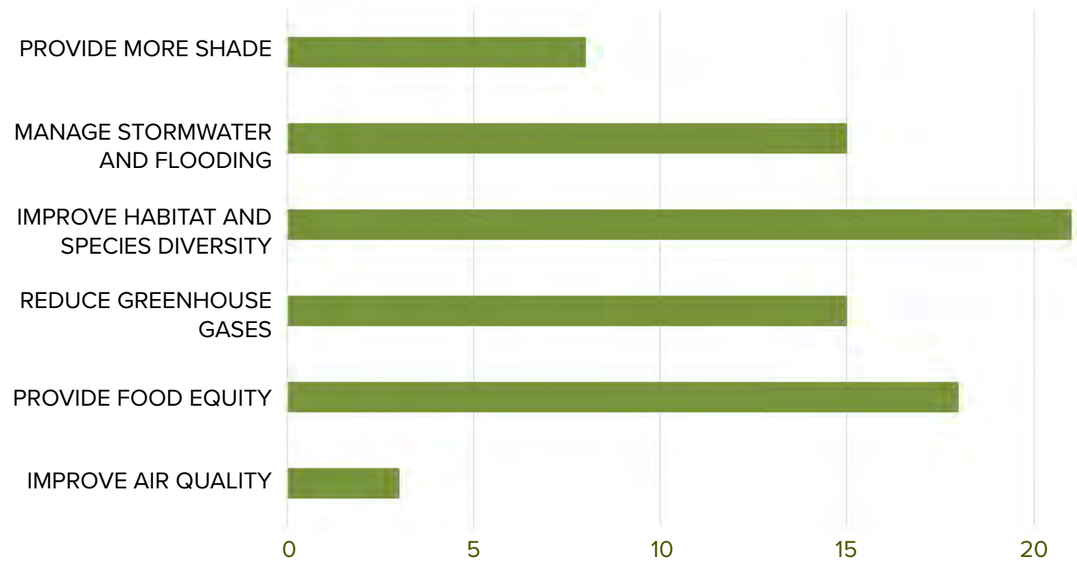
"Foster **pollinators** and **native species** as much as possible!"
"Stop using **pesticide** on the lawns that are toxic to the environment."

"**Reduce** the amount of **lawn** or replace with native grasses that don't require so much water and maintenance."

"Encourage people to drive less by **removing** the **parking lot** between Lawrence and Hubbard."
—Submitted via www.groundswellmagazine.com

"Think about what plants will survive different **climates**. How can the **pond** become more **sustainable**. **Permeable pavement**."
—Submitted via on campus engagement

"Throughout history, female-identifying people have been instrumental in the process of growing and preparing food and are now disproportionately affected by issues in the food system. It's impossible to have the mission of "educating women for the world" without including **food** in the conversation."
— "Growing Smith: A Reflection on the Possibility of a Campus Farm" by Elsbeth Pendleton-Wheeler '19, Ella Martin-Gachot '19, Emily Hitchcock '19 and Hazel Edwards 19'.



—Results of on online and on- campus engagement.

CLIMATE CHANGE

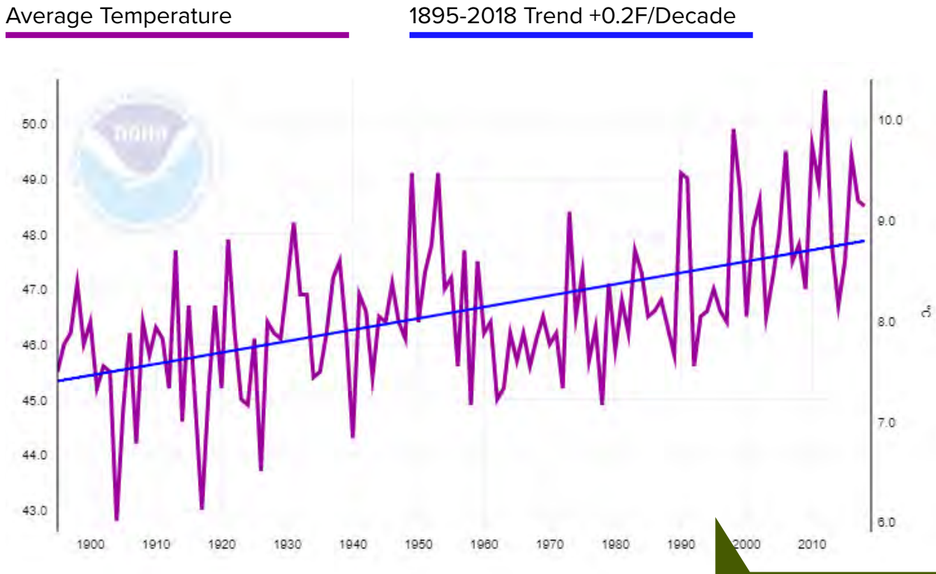
SITE ANALYSIS

Overview: Hampshire county is classified as having a warm summer continental climate by the Köppen Climate Classification system. The four seasons are moderate in both temperature and precipitation with the most precipitation in September and least in February (NOAA, 2019). Annual average precipitation increased from 44 inches in to 49 inches between 1895 and 2018 (NOAA). Precipitation is expected to increase by 12-30 percent with an increase in extreme storm events (Spierre, 2010), a trend supported by annual peak flows seen for Mill River since 1943 (NOAA, 2019). Annual average temperature has increased from around 45F to 48F between 1895 and 2018 with evidence of a north shifting snow-rain line noted by LEC and earlier ice melt by the National Climate Assessment (USGCRP, 2019). By 2100 Massachusetts is projected to experience 5-10F increase in ambient temperature and 30-60 days annually of temperatures above 90F. Smith is on the cusp of a shifting USDA plant hardiness zone as temperatures warm the region is shifting from 5b to 6a (Climate Central, 2019). In 2018 Northampton issued a water ban due to drought, recognized as a significant climate anomaly in the National Climate Report (NOAA, 2018).

Warming temperature and increased precipitation have implications for the campus. The Smith campus needs to understand the risks and vulnerabilities associated with the effects of climate change and minimize their impacts through effective planning and management. For example, the campus should develop measures that preserve, protect, and restore natural habitats and the hydrology of its watershed. This will help to buffer the increased stormwater runoff and erosion potential from heavier storms. Extreme heat is a health stressor and can be dangerous for at risk populations and athletes. Planning for future shade in appropriate locations can help mitigate this impact locally.

AVERAGE TEMPERATURE

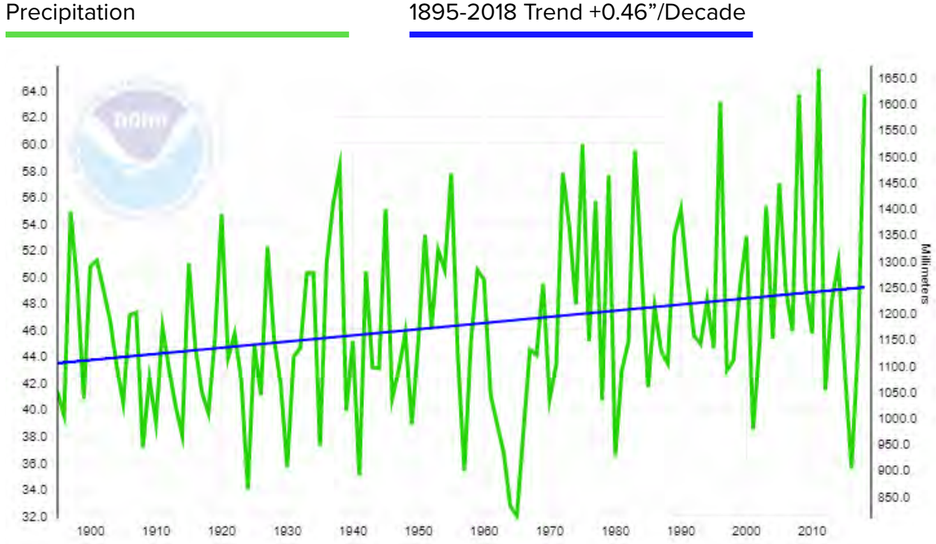
Hampshire County, Massachusetts, January-December



KEY FINDING: **BOTH AVERAGE TEMPERATURE AND AMOUNT OF PRECIPITATION ARE INCREASING IN HAMPSHIRE COUNTY.**

AVERAGE PRECIPITATION

Hampshire County, Massachusetts, January-December



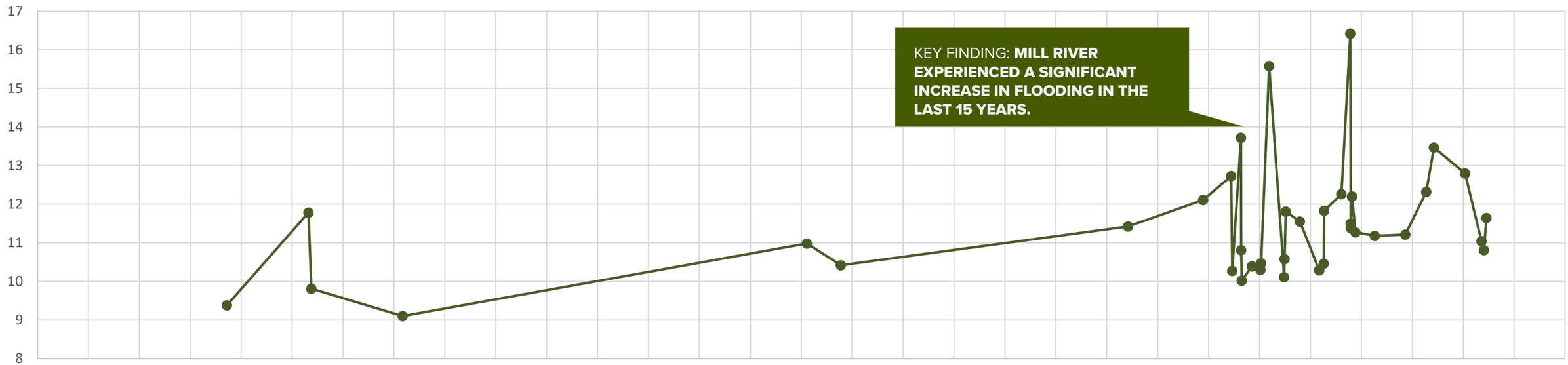
NOAA National Centers for Environmental information, Climate at a Glance: County Time Series

CLIMATE CHANGE

SITE ANALYSIS

HISTORIC CRESTS (FT)

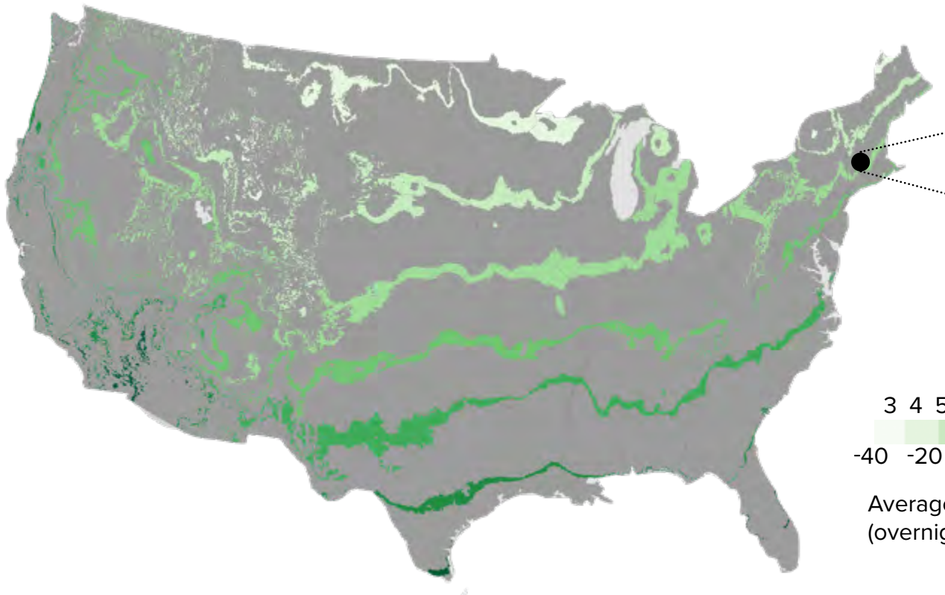
—NOAA. Nat Weather Service

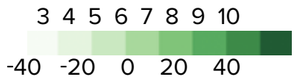


KEY FINDING: **MILL RIVER EXPERIENCED A SIGNIFICANT INCREASE IN FLOODING IN THE LAST 15 YEARS.**

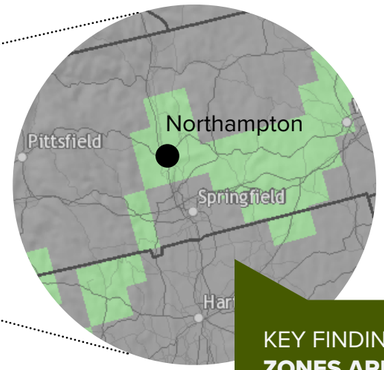
SHIFT IN PLANTING ZONES

(between the 30-year period of 1971-2000 and the period from 1981-2010)





Average annual minimum (overnight law) temperature



—NOAA. “Shifts in U.S. planting zones between 1971-2000 and 1981-2010”.

KEY FINDING: **CLIMATE-RELATED PLANTING ZONES ARE SHIFTING WITH CLIMATE CHANGE. NORTHAMPTON HAS ALREADY SHIFTED FROM ZONE 5 TO ZONE 6.**

—NOAA

View of Falls at Mill River and Paradise Pond, MNP, 2019

CAMPUS GEOLOGY

SITE ANALYSIS

Overview: Geologic history has shaped the topography of the campus and informs the local hydrologic patterns and soil suitability for infiltration. Future planning must take these conditions into consideration when recommending land cover strategies.

20,000 years ago the Laurentian Ice Sheet covered the Pioneer Valley and carved the land with thick ice; as climate warmed, the glacier receded, filling the valley with meltwater and creating Lake Hitchcock, including the land where Smith sits today. This too drained over time, leaving the Connecticut River winding through the former lakebed of the valley.

After retreat of last glacier, much of campus south of Elm Street was a lake leaving deposits of varved clay (lake sediment). This is underlain by glacial till (deposited between 16,000-70,000 years ago) over Red Sandstone from the Triassic era. North of Elm Street surficial geology is Delta sands. Ice sheet formed drumlins, one of which is Round Hill, located on the periphery of the campus.

While the regional surficial geology and soils are useful at a broad scale, localized interventions will require in situ investigation. There may be inclusions in the larger surficial geology and soil categories which do not have similar properties. For example, soils are considered ‘well drained’ for nearly the entire Smith campus, however, observations of poorly drained soils have been noted extensively, likely due to clayey lacustrine deposits from Lake Hitchcock.

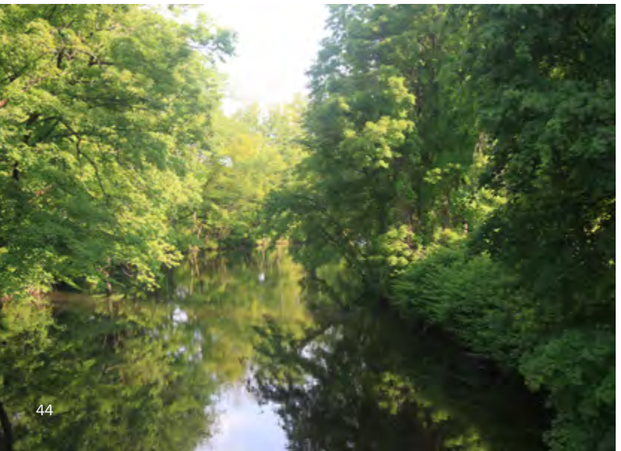
- Artificial Fill
- Postglacial Deposits - Swamp and Marsh Deposits
- Postglacial Deposits - Alluvium
- Postglacial Deposits - Talus
- Early Postglacial Deposits - Steam-Terrace
- Glacial Stratified Deposits - Gaciolacustrine Fine
- Glacial Stratified Deposits - Coarse
- Shallow Bedrock and Abundant Outcropping
- Till Bedrock - Thick Till and Moraine
- Bedrock Outcrops and Thin Till
- Bedrock Outcrop

REGIONAL HYDROLOGY

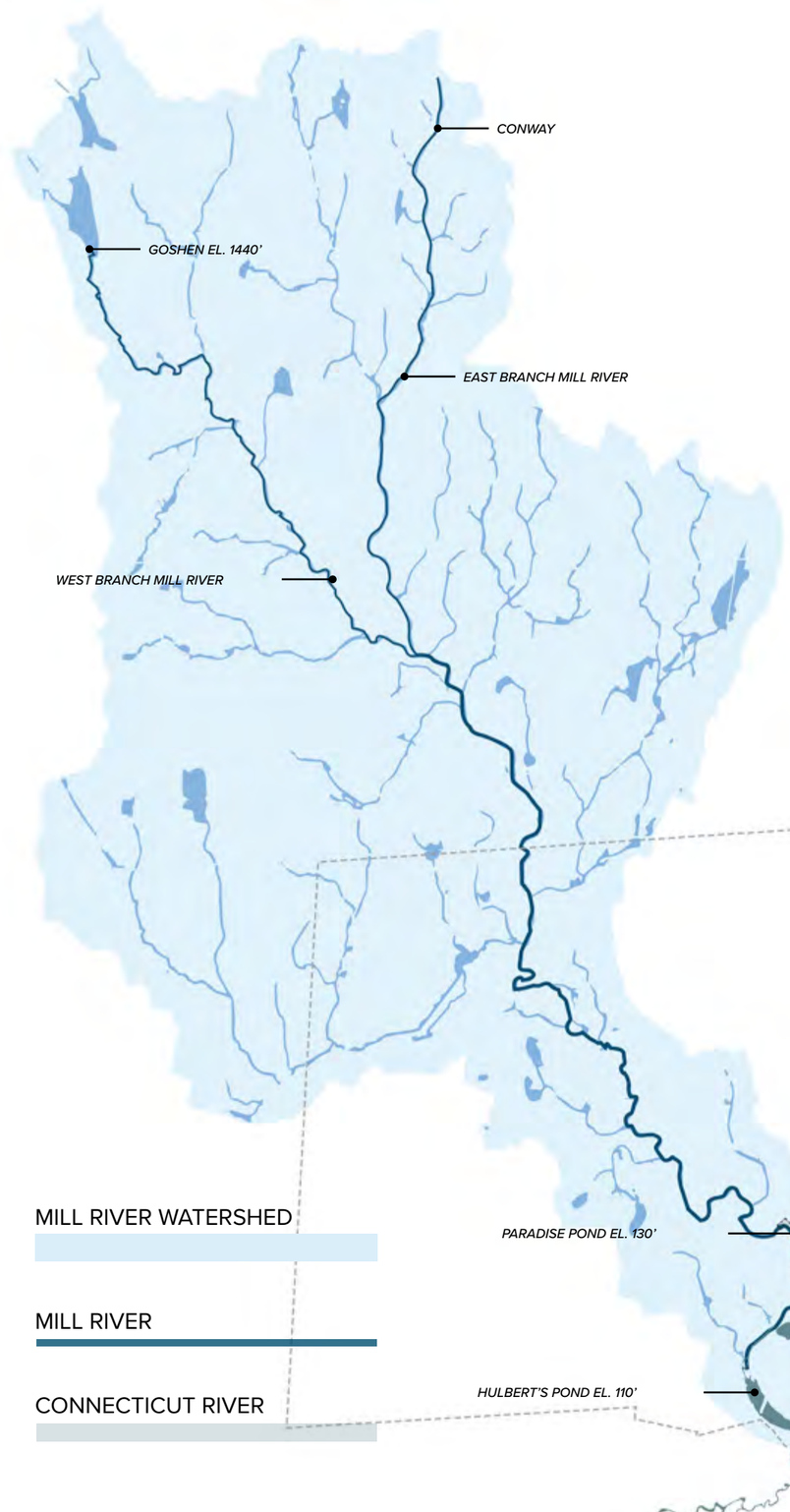
SITE ANALYSIS

Overview: The Mill River Basin is 54 square miles located within the Connecticut River Valley basin, with headwaters located in Goshen. The Connecticut River tributary is 13.5 miles long, dropping 1,330 feet of elevation, with approximately 4,000 linear feet running though the Smith Campus. Mill River north of Smith College is listed by MA Division of Fisheries and Wildlife as a Coldwater Fish Resource and by the MA Department of Environmental Protection, Division of Water Pollution Control, as a Class B water resource, a classification that means that the water is designated as a fish and aquatic habitat.

Understanding the impact of Smith College on the greater watershed and Mill River system is essential to improving water quality.



→View of the Mill River.



KEY FINDING: **WATER QUALITY HAS BEEN GRADUALLY IMPROVING OVER THE LAST 50 YEARS, AND SMITH COLLEGE SHOULD CONTINUE TO AID IN THE EFFORT THOUGH BEST MANAGEMENT PRACTICES.**

REGIONAL HYDROLOGY

SITE ANALYSIS

Overview: Regionally, the Mill River has been heavily engineered to prevent flooding. Early flood control efforts in the 1700s were moderately successful but major floods in the late 19th and early 20th centuries, including a major flood in 1936, spurred an Army Corp of Engineers effort to divert and levee the river to its current alignment running south of Paradise Pond to Hulberts pond. As part of the larger flood control system that resulted in diversion of the Mill River, the Smith campus has an earthen dike which connects to a concrete flood wall originating at the Paradise Pond Dam on the south end of campus. Paradise Pond dam is coded as a “High Hazard” by the MA Office of Dam Safety, meaning that dam failure would lead to loss of life, property, and public infrastructure.

Per an agreement between Northampton and the US Army Corps of Engineers signed in April 1945, Northampton (and by agreement, Smith College) is obligated to maintain the flood control system in accordance with Operations and Maintenance Manual. Practically, this results in strict limitations associated with tree planting and landform alteration within the earthen dike. In 2010, as a result of constructing an artificial turf athletic field, Smith is required by the Northampton Conservation Commission to eradicate and monitor invasive species within the riparian zone in perpetuity.

Developing a comprehensive approach to riparian zone stewardship and flood control system maintenance will help maintain this critical infrastructure while enhancing the ecological value of the critical habitat. This includes planting appropriate native species, in addition to the current practice of hiring outside contractors to annually remove invasives while keeping within the regulated maintenance requirements.

NORTHAMPTON BOUNDARY

MILL RIVER

ORIGINAL RIVERBED

1710 DIVERSION

1940 DIVERSIONS

1940 FLOOD CONTROL LEVEES

PARADISE POND DAM

WETLANDS

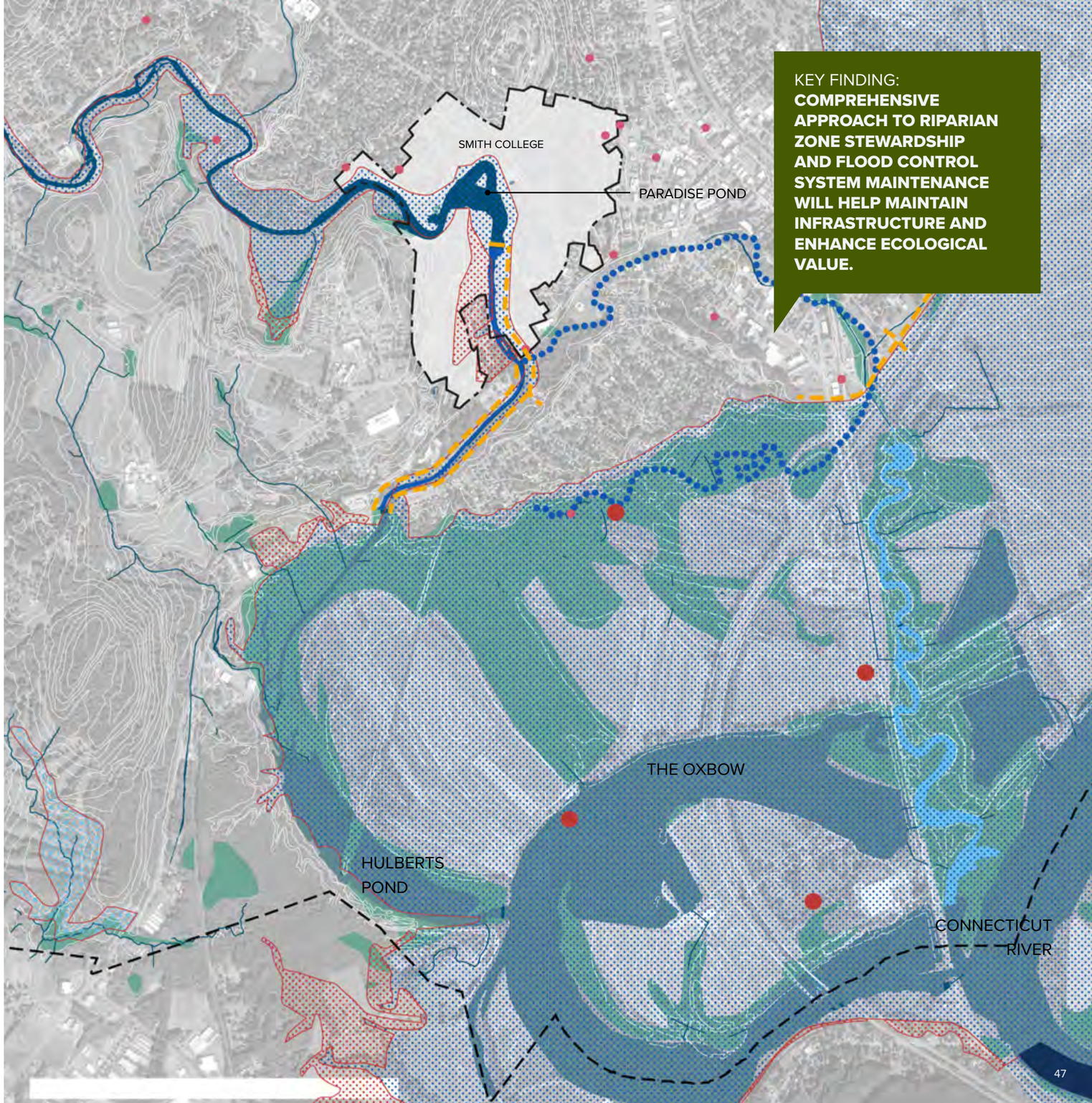
AE FEMA FLOOD ZONE
(Areas subject to inundation by the 1-percent-annual-chance flood event)

X500 FEMA FLOOD ZONE
(Areas inundated by 0.2% annual chance flooding)

REGULATORY FLOODWAY

FLOOD DAMAGE REPORTS
(1999 Reports of Hurricane Floyd flood damage)

REPETITIVE FLOOD INSURANCE CLAIM



KEY FINDING:
COMPREHENSIVE APPROACH TO RIPARIAN ZONE STEWARDSHIP AND FLOOD CONTROL SYSTEM MAINTENANCE WILL HELP MAINTAIN INFRASTRUCTURE AND ENHANCE ECOLOGICAL VALUE.

REGIONAL ECOLOGY

SITE ANALYSIS

Overview: Northampton lies on the border of the Berkshire Transition and the Connecticut River Valley Ecoregions. The most ecologically significant portion of the Smith campus, as identified by MA Division of Fisheries and Wildlife, National Heritage Endangered Species Program, is adjacent to the Mill River upstream and downstream of the Paradise Pond dam. This area is classified as a “Core Habitat” that is critical for the long-term persistence of rare species as well as a wide diversity of natural communities. A 200 foot riparian zone, demarcated by the Massachusetts Natural Heritage and Endangered Species Program as “Priority Habitat of Rare Species,” borders the pond and river and together with the core habitat make the “Critical Habitat” map designation.

The Mill River has small permanent wetlands along its length, including a few designated wetlands within the Smith Campus. Vernal pools, the small, seasonal wetlands that provide important wildlife habitat, particularly for amphibians and invertebrate animals that use them to breed, have been mapped upstream of Mill Pond and are included in Massachusetts’ Wetland Protection Act. Both wetlands and vernal pools are mapped en masse downstream of the campus, surrounding the Oxbow.

These critical habitats are impacted by the stormwater runoff from Smith Campus and include the Skillet Clubtail, listed as a threatened species, and many listed as “special concern” including the Wood Turtle, Ocellated Darner, Creeper Mussel and Brook Snaketail Dragonfly.

CRITICAL HABITAT

PRIORITY HABITATS OF RARE SPECIES AS DESIGNATED BY NHESP
(The Natural Heritage & Endangered Species Program)

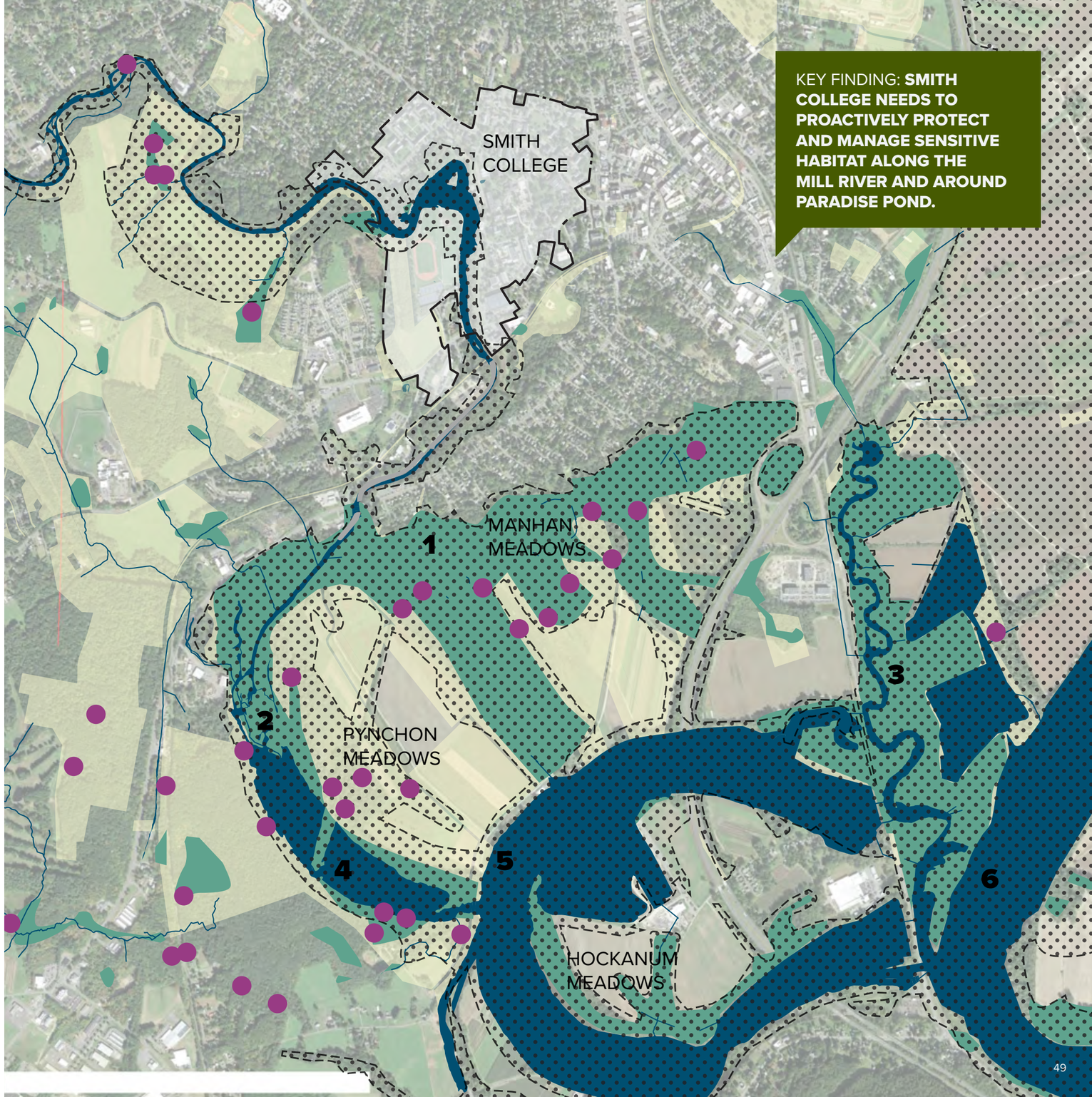
1 Meadows Conservation Area
2 Arcadia Wildlife Sanctuary
3 Silio O Conte National Fish & Wildlife Refuge

OPEN WATER

4 Hulberts Pond
5 The Oxbow
6 Connecticut River

VERNAL POOLS

WETLANDS



KEY FINDING: **SMITH COLLEGE NEEDS TO PROACTIVELY PROTECT AND MANAGE SENSITIVE HABITAT ALONG THE MILL RIVER AND AROUND PARADISE POND.**

SPECIES OF SPECIAL CONCERN WITHIN CRITICAL HABITATS

SITE ANALYSIS

Overview: The project site is located within Priority Habitat 2064 and Estimated Habitat 1359 as indicated in the Massachusetts Natural Heritage Atlas (14th Edition) for the following state listed rare species:

Skillet Clubtail (Gomphus ventricosus), Wood Turtle (Gomphus ventricosus), Ocellated Darner (Boyeria Grafiana), Creeper (Strophitus undulatus), Brook Snaketail (Ophiogomphus aspersus).

—The species Natural Heritage & Endangered Species Program of the MA Division of Fisheries & Wildlife.

Wood Turtle

Brook Snaketail

Creeper

Skillet Clubtail

Mill River, MNLA, 2019

→ View of the drained Paradise Pond, MNLA, 2019.

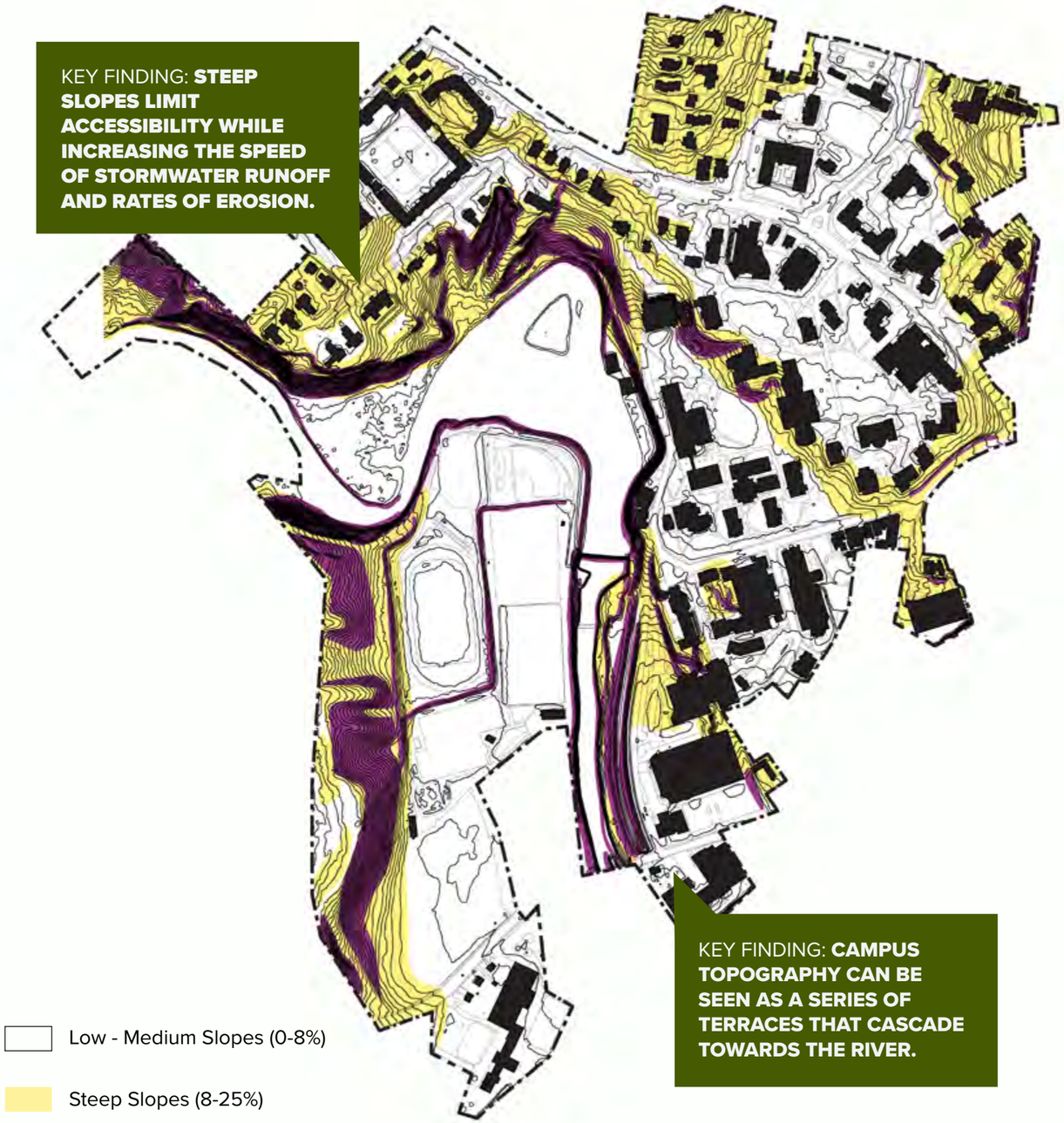
TOPOGRAPHY & SLOPE

SITE ANALYSIS

Overview: Topography on Smith Campus was driven by natural factors with glacier recession depositing outwash and the Mill River cutting through the deposition eroding to bedrock in some locations. The campus was further regraded to dam the river and to accommodate roads, buildings, lawns, and other developed areas. This alters the natural drainage, speed of runoff, and rates of erosion from the upland portion of campus to the Mill River. While the majority of campus is lightly sloped, there areas of steep slopes along the Mill River and Paradise Pond, at the East edges of campus and banded within central campus, roughly terracing the campus.

↑ View across Paradise Pond, MNLA, 2019.

KEY FINDING: **STEEP SLOPES LIMIT ACCESSIBILITY WHILE INCREASING THE SPEED OF STORMWATER RUNOFF AND RATES OF EROSION.**



KEY FINDING: **CAMPUS TOPOGRAPHY CAN BE SEEN AS A SERIES OF TERRACES THAT CASCADE TOWARDS THE RIVER.**

Low - Medium Slopes (0-8%)

Steep Slopes (8-25%)

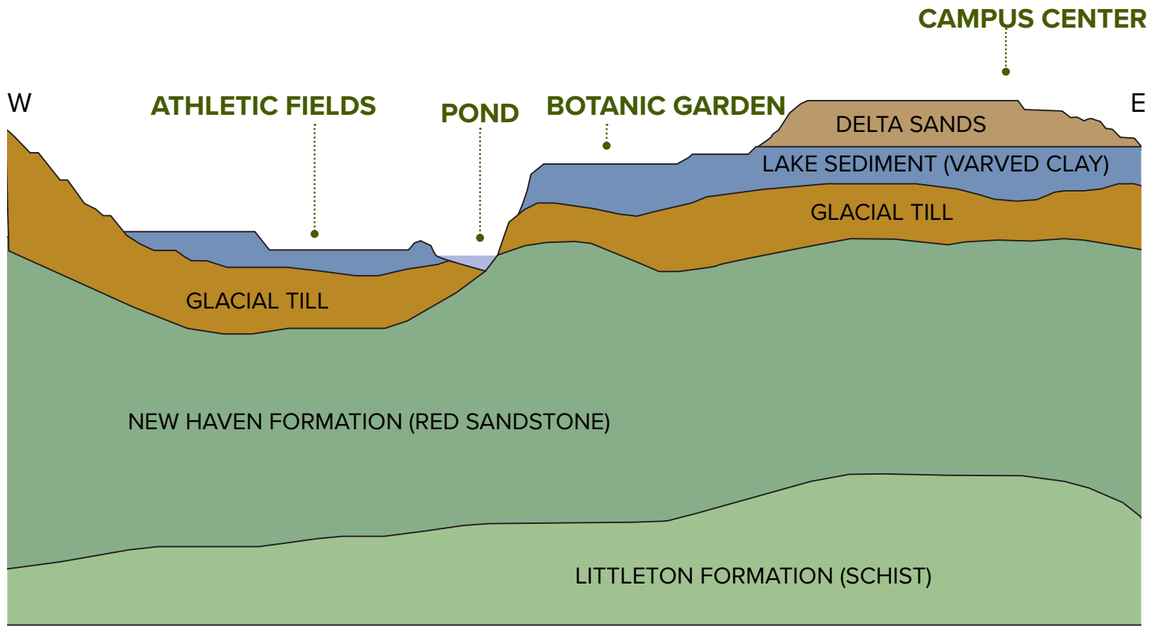
Extreme Slopes (>25%)

250 feet

CAMPUS SURFICIAL GEOLOGY

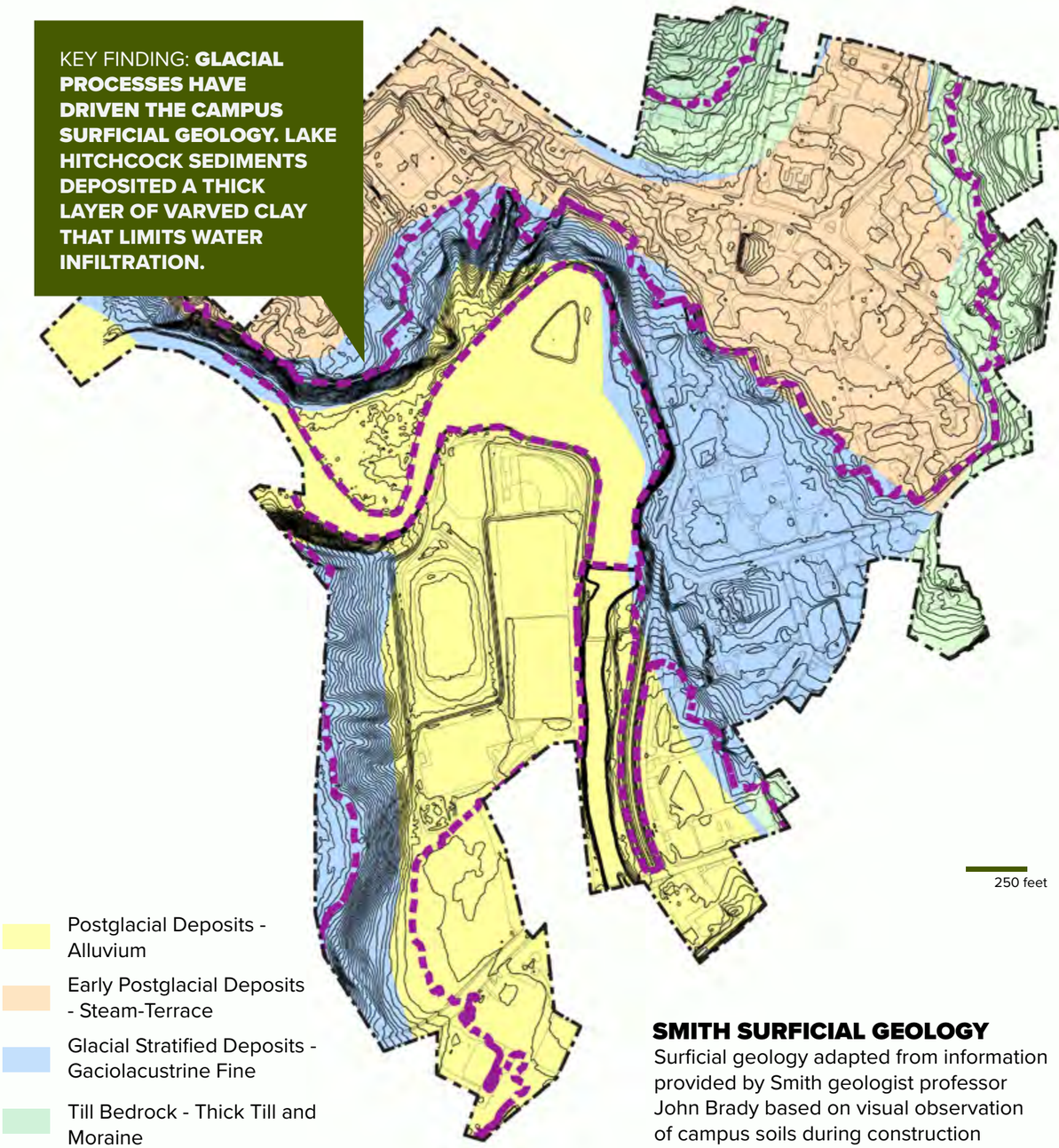
SITE ANALYSIS

Overview: Surficial geology describes surface landforms and the geologic forces that created them. USGS mapped surficial geology is useful for planning at a large scale but is less accurate at a site scale. Smith Professor John Brady has sampled and documented soil pits created during construction on the Smith campus delineating the surficial geology based on samples, observation, and topography. Geologically, the campus is essentially horizontally layered with the Mill River slicing through vertically. Metamorphic Schist forms the deep bedrock overlaid with red sandstone from the Triassic period. Glacial processes largely form the remaining layers with early glacial melt depositing glacial till prior to the formation of Lake Hitchcock. Round Hill to the north of campus was the only landmass not underwater in Lake Hitchcock (not shown in section). The varved clay deposited in Lake Hitchcock forms a deep poorly drained layer along the Mill River and below the surface well drained Delta Sand soils of the campus.



—Information and graphic by John Brady

KEY FINDING: **GLACIAL PROCESSES HAVE DRIVEN THE CAMPUS SURFICIAL GEOLOGY. LAKE HITCHCOCK SEDIMENTS DEPOSITED A THICK LAYER OF VARVED CLAY THAT LIMITS WATER INFILTRATION.**



Postglacial Deposits - Alluvium

Early Postglacial Deposits - Steam-Terrace

Glacial Stratified Deposits - Gaciolacustrine Fine

Till Bedrock - Thick Till and Moraine

Bedrock Outcrops and Thin Till

SMITH SURFICIAL GEOLOGY

Surficial geology adapted from information provided by Smith geologist professor John Brady based on visual observation of campus soils during construction interpolated by elevation.

SOILS

SITE ANALYSIS

Overview: Soils, mapped by Natural Resources Conservation Services (NRCS), provide a large scale planning tool to make initial site planning assessments. The maps were derived based on local geology, geomorphology, ecology, observation, and sampling at a range of scales, with the most local being 1:12,000. The majority of the Smith College campus is an Amostown-Windsor Silty Stratum Urban Land Complex, this is a description for a number of soil types grouped together by similar properties with the undefined “urban” designation due to the development of the campus. In addition to the major components of the soil type (Amostown and Windsor) there are minor inclusions. Thus for any site scale intervention, in situ analysis will be required to refine this general soil information.

Inset:

Soil hydrology groups are used as an initial suitability measure for stormwater interventions such as permeable parking lots. An A/B rating implies that the soil is well drained to a minimum recommended depth (36”) and may not require subdrainage. Soils with C or D ratings likely will require subdrainage. “X” indicates the unknown ratings for urban soils and other minor soil inclusions.

AMOSTOWN-WINDSOR SILTY SUBSTRATUM URBAN LAND COMPLEX (741A)
SLOPES: 0-3%

RAYNHAM SILT LOAM (30A)
SLOPES: 0-3%

MILL RIVER

WINOOSKI SILT LOAM (98A)
SLOPES: 0-3%

BOXFORD SILT LOAM (220C)
SLOPES: 8-15%

BOXFORD SILT LOAM (220B)
SLOPES: 3-8%

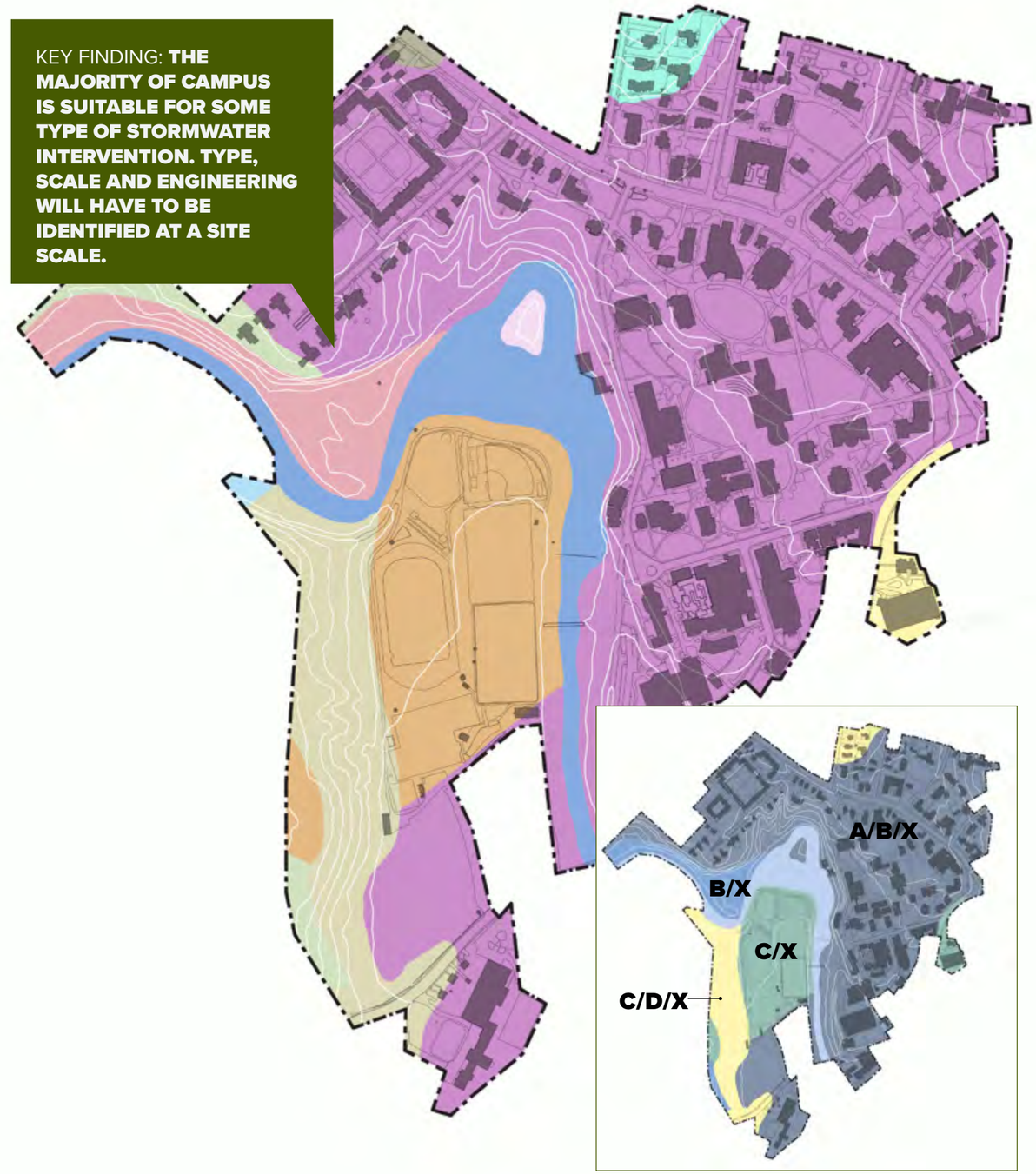
BELGRADE SILT LOAM (225B)
SLOPES: 3-8%

PAXTON-CHARLTON URBAN LAND COMPLEX (747C)
SLOPES: 3-15%

UDORTHENTS, SMOOTHED (651)

↑Soil Profile exposed by construction.
Photo by John Brady.

KEY FINDING: **THE MAJORITY OF CAMPUS IS SUITABLE FOR SOME TYPE OF STORMWATER INTERVENTION. TYPE, SCALE AND ENGINEERING WILL HAVE TO BE IDENTIFIED AT A SITE SCALE.**



INSET: NRCS HYDROLOGY GROUPS

CAMPUS HYDROLOGY

SITE ANALYSIS

Overview: Sewer outfalls, seven of which are from the campus, flow directly into Paradise Pond. The runoff conveyed through these outfalls are point sources of sediment and lawn chemicals particularly from Quad, Science Quadrangle, Campus Center, Upper Elm and athletic fields. Overland flow of sediment and chemicals used for maintenance are additional non-point sources of pollutants. Water quality of the Mill River is adversely impacted by this runoff.

Sediment accumulation behind the Paradise Pond dam impacts recreational uses of the pond, flood storage capacity, and dam safety. As such, removal of accumulated sediment within Paradise Pond is periodically required. These activities are incorporated into Smith College's Paradise Pond Maintenance Plan.

Dam removal, mentioned by many members of the campus community, would require significant hydrologic and ecological studies to assess impacts to downstream habitats and potential flooding impacts to property and infrastructure.

Balancing the economic and social importance of the Paradise Pond Dam and related flood control infrastructure and ecological value of the riparian corridor along the Mill River, future initiatives should improve the vegetated buffers along the pond and watershed to decrease the velocity of runoff, infiltrate where soils are satisfactory, as well as sediment settling basins and biofiltration or vegetated retention basins.

Erosion is evident along engineered and natural drainage corridors and along the stream bank.

Mill River bank stabilization should pursue non-structural bioengineered solution where possible; in areas of severe bank destabilization, integrated solutions such as vegetated rip rap or vegetated gabions should be pursued in lieu of exclusively structural solutions such as retaining walls. There are steep slopes particularly on the north side of the river and pond where erosion has been observed due to poor management of runoff and likely high soil erodibility.

AE FEMA FLOOD ZONE
(Areas subject to inundation by the 1-percent-annual-chance flood event)

X500 FEMA FLOOD ZONE
(Areas inundated by 0.2% annual chance flooding)

MILL RIVER

IMPERVIOUS SURFACES
Road, paved paths, parking lots and buildings that have little to no permeability

1940 FLOOD CONTROL LEVEES

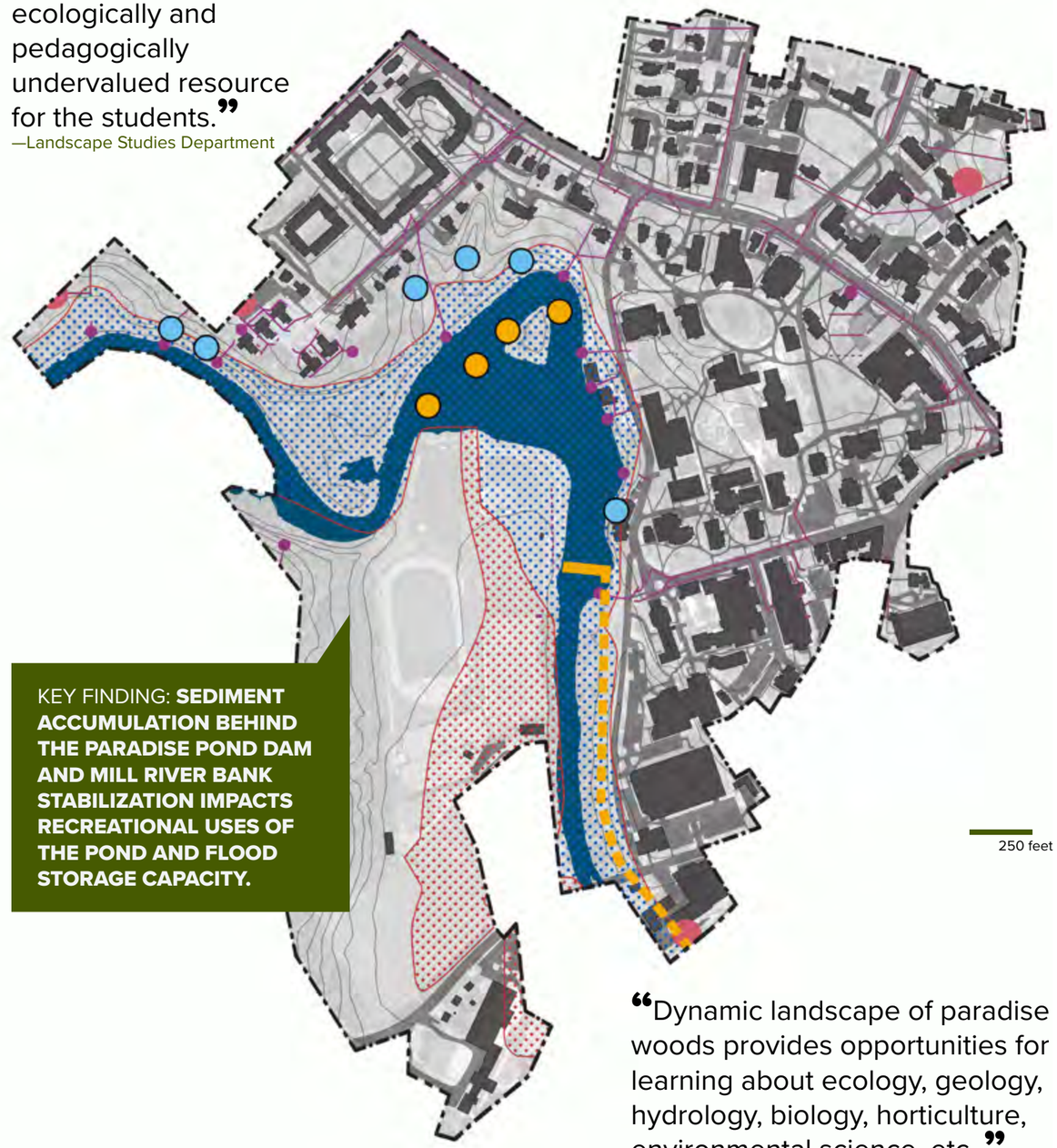
DRAIN OUTFALL & MAIN

RECENT FLOOD DAMAGE REPORTS

OBSERVED EROSION (LEC 7/10/2019)

OBSERVED ACCUMULATION (LEC 7/10/2019)

"The pond is an ecologically and pedagogically undervalued resource for the students."
—Landscape Studies Department



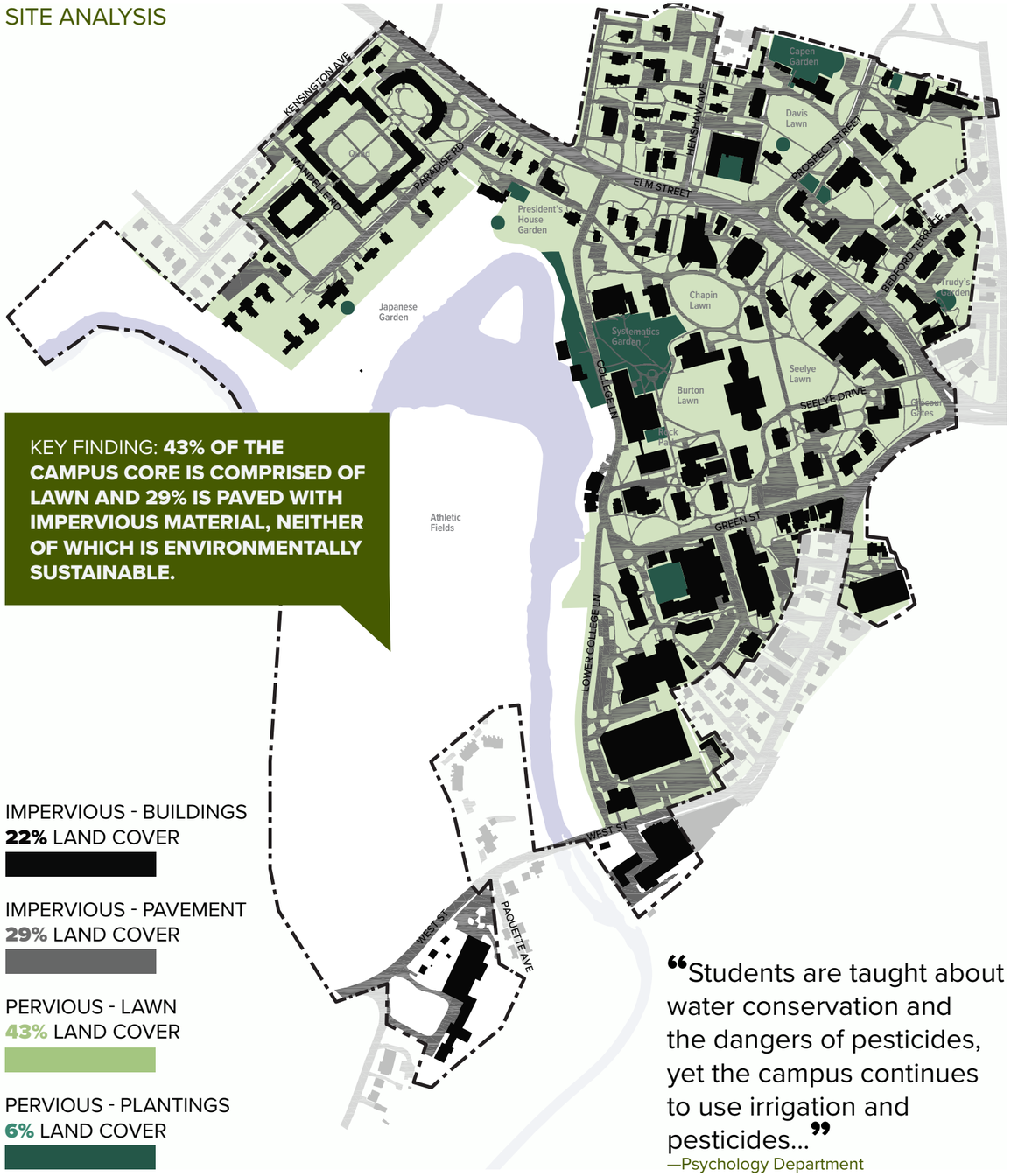
KEY FINDING: **SEDIMENT ACCUMULATION BEHIND THE PARADISE POND DAM AND MILL RIVER BANK STABILIZATION IMPACTS RECREATIONAL USES OF THE POND AND FLOOD STORAGE CAPACITY.**

"Dynamic landscape of paradise woods provides opportunities for learning about ecology, geology, hydrology, biology, horticulture, environmental science, etc."
—"Paradise Woods: Rediscovering A Beloved Landscape" by James Mealey, Summer Intern at Smith College Botanic Garden

→ Ilex verticillata, MNLA, 2019.

LAND COVER

SITE ANALYSIS



KEY FINDING: **43% OF THE CAMPUS CORE IS COMPRISED OF LAWN AND 29% IS PAVED WITH IMPERVIOUS MATERIAL, NEITHER OF WHICH IS ENVIRONMENTALLY SUSTAINABLE.**

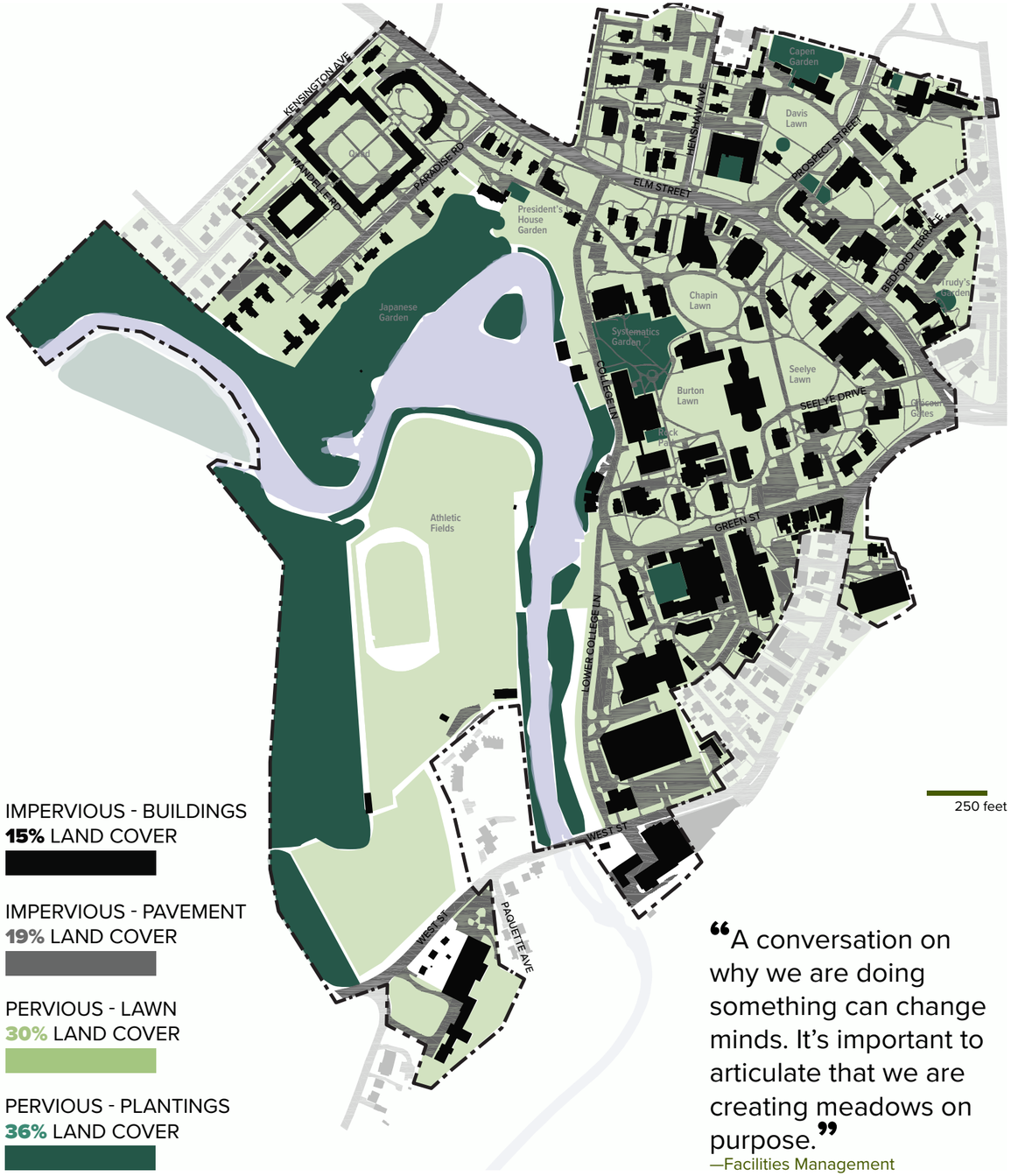
IMPERVIOUS - BUILDINGS
22% LAND COVER

IMPERVIOUS - PAVEMENT
29% LAND COVER

PERVIOUS - LAWN
43% LAND COVER

PERVIOUS - PLANTINGS
6% LAND COVER

"Students are taught about water conservation and the dangers of pesticides, yet the campus continues to use irrigation and pesticides..."
—Psychology Department



IMPERVIOUS - BUILDINGS
15% LAND COVER

IMPERVIOUS - PAVEMENT
19% LAND COVER

PERVIOUS - LAWN
30% LAND COVER

PERVIOUS - PLANTINGS
36% LAND COVER

250 feet

"A conversation on why we are doing something can change minds. It's important to articulate that we are creating meadows on purpose."
—Facilities Management

VEGETATION TYPOLOGY ZONES

SITE ANALYSIS

Overview: The Smith campus contains a diversity of vegetation typologies, generally including high maintenance gardens, lawns, athletic fields and low maintenance ‘wild’ areas. The campus landscape is generally well maintained and serves the needs of the campus community appropriately, however both high and low maintained landscapes could be improved to increase their social and environmental value.

From an ecological perspective, the various vegetation typologies do not fully incorporate best management practices that not only serve the social functions of the landscape but also the environmental. Alternatives to pesticides can effectively manage pests while allowing pollinators to thrive and reducing chemical runoff downstream. Reducing the amount of lawn provides an opportunity to improve stormwater runoff quality and lessen Smith’s carbon footprint and increase biological diversity.

The ‘wild’ areas, encompassing the woodland and riparian edges near Mill River, could be significantly enhanced from the standpoints of accessibility, pedagogical and experiential learning, and ecological management.

As a totality, the Smith campus has a disproportionate amount of high maintenance, low environmentally performative lawn which has a cumulatively negative impact on students’ experiential learning, pedagogical opportunity, and natural resources.

CAMPUS GARDENS

1 Capen Garden
2 Happy Chace ‘28 Garden
3 Woodland & Wildflower Garden
4 Japanese Garden
5 Systematics Garden
6 Rock Garden
7 Perennial Border
8 Xerophyte Garden
9 Wilson Bulb Bank
10 Trudy’s Garden
11 Science Center Rock Park
12 Rose Garden

OTHER DESIGNED SPACES

13 Mendenhall Courtyard
14 Cutter/Ziskind Courtyard
15 Community Garden

REMNANT GARDENS

16 Ten Prospect Street
17 58 Paradise Road

PASTORAL CAMPUS

18 Chapin Lawn
19 Burton Lawn
20 Seeyle Lawn

WILDS - WOODLAND

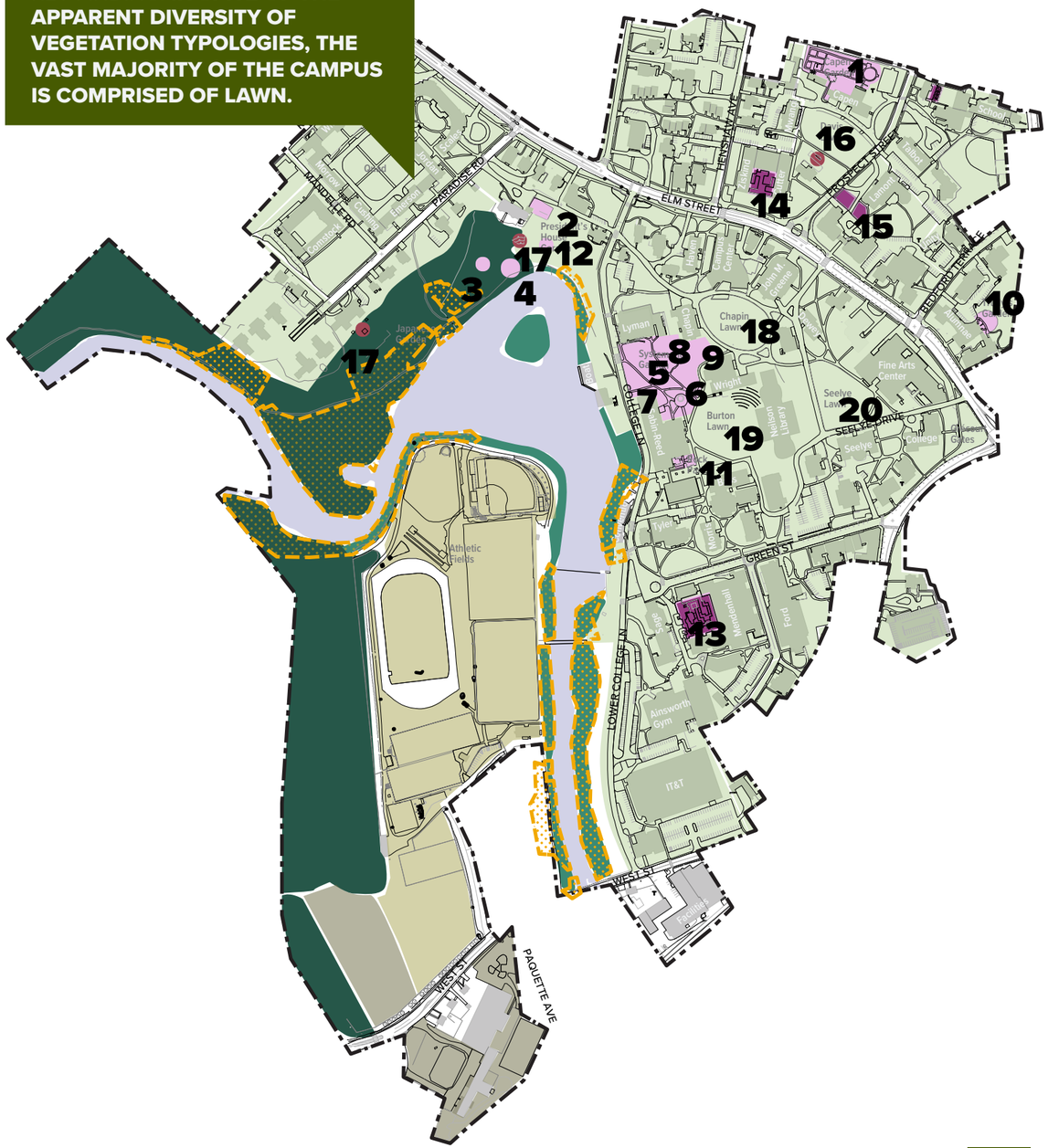
WILDS - RIPARIAN

MEADOW

ATHLETIC FIELDS

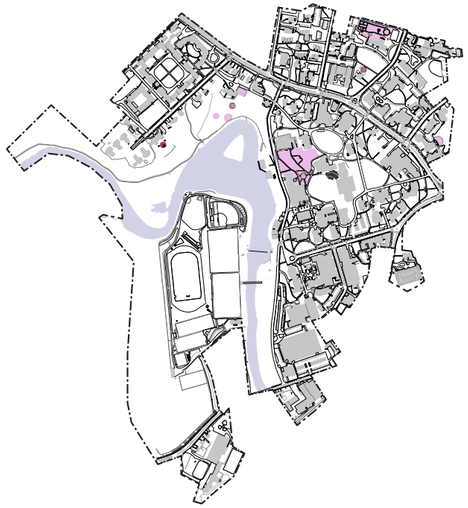
INVASIVE SPECIES MANAGEMENT AREA

KEY FINDING: **IN SPITE OF THE APPARENT DIVERSITY OF VEGETATION TYPOLOGIES, THE VAST MAJORITY OF THE CAMPUS IS COMPRISED OF LAWN.**



VEGETATION TYPOLOGY ZONES

SITE ANALYSIS



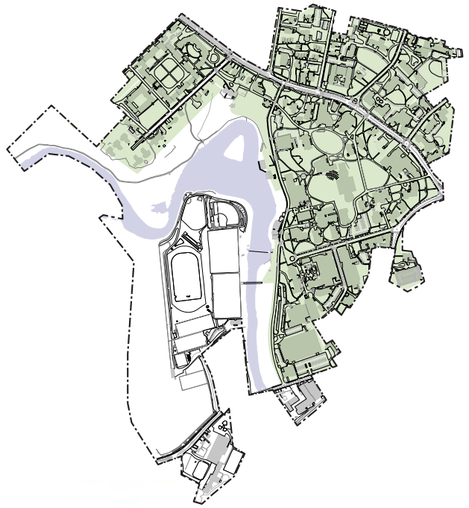
GARDEN SPACES
4% LAND COVER

CAMPUS GARDENS

OTHER DESIGNED SPACES

REMNANT GARDENS

Designated botanic gardens and areas of more complex or formal planting with higher maintenance requirements. Areas embody planting as program.

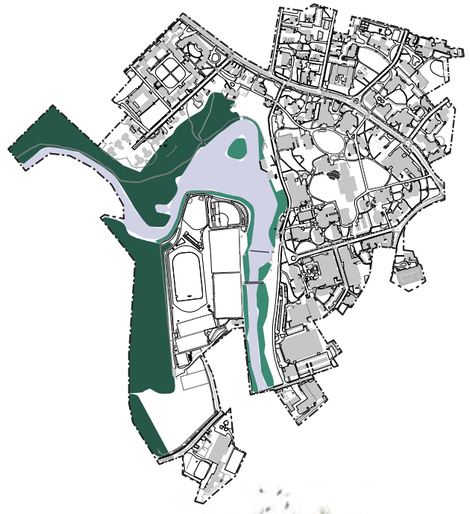


PASTORAL CAMPUS
45% LAND COVER

PASTORAL CAMPUS

The campus core and residential areas are predominantly pastoral in character, comprised of lawns, tree canopy, and residential-scale plant beds and foundation plantings.

KEY FINDING: **ROUGHLY 67% OF THE ENTIRE CAMPUS ACREAGE IS COMPRISED OF LAWN.**

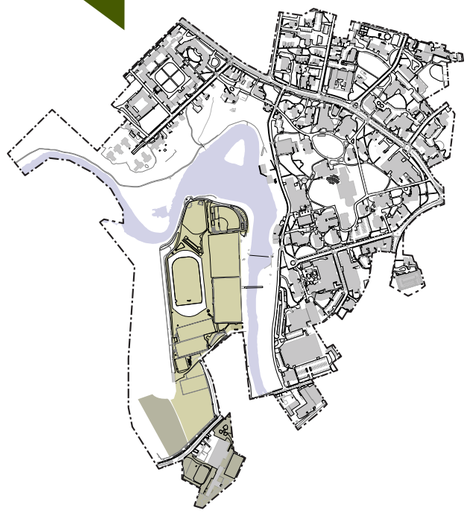


WILDS
29% LAND COVER

WOODLAND

RIPARIAN

Areas of naturalized planting with infrequent or low maintenance. Includes predominantly wooded slopes and riparian edges organized around the Mill River corridor. These areas are most vulnerable to invasive plant species.



MISCELLANEOUS
22% LAND COVER

MEADOW

ATHLETIC FIELDS

Includes peripheral landscapes with undetermined or transitional use and infrequent or low maintenance.

CAMPUS HABITAT

SITE ANALYSIS

Overview: The ‘wilds’ of Smith Campus have a number of unique ecologic typologies based on their landscape form and coverage. Notably, the campus has a large swath of critical habitat that extends into the maintained lawn and athletic field grounds.

WILDS - WOODLAND

CRITICAL HABITAT

Priority Habitats of Rare Species as designated by NHESP

CAMPUS GROUNDS

Lawn and Athletic Fields

FORESTED

Forested Upland (Softwoods w/mixed deciduous) with riverine wetland fringe

Forested Upland (Northern Hardwoods-Hemlock Forest) with riverine/pond wetland fringe

Forested Hillside Upland (Mixed deciduous) with riverine wetland fringe

Floodplain Forest

Forested Wetland

WILDS - RIPARIAN

SCRUB/SHRUB

Scrub/Shrub-Woodland hillside with riverine wetland fringe

Scrub/Shrub-woodland (select dying/dead canopy) with wetland fringe

MEADOW

Wet Meadow

Meadow and Scrub/Shrub upland with riverine/pond wetland fringe

Lawn with riverine forested upland and wetland fringe

Lawn and scrub/shrub-woodland with wetland fringe adjacent to pond

GARDENS

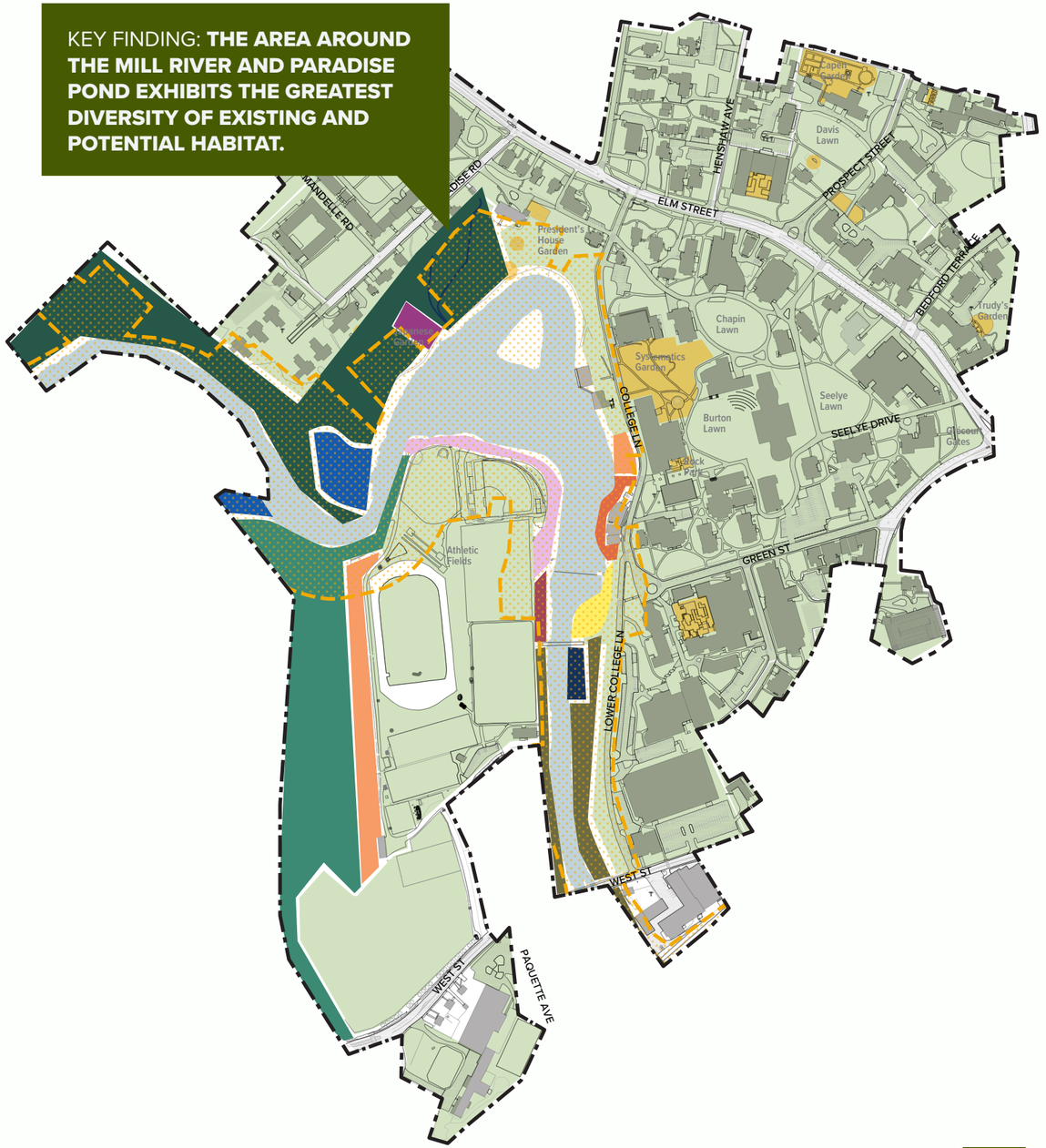
Gardens/designed spaces

WATER

Mill River

Hillside intermittent stream

KEY FINDING: **THE AREA AROUND THE MILL RIVER AND PARADISE POND EXHIBITS THE GREATEST DIVERSITY OF EXISTING AND POTENTIAL HABITAT.**



TREE CANOPY

SITE ANALYSIS

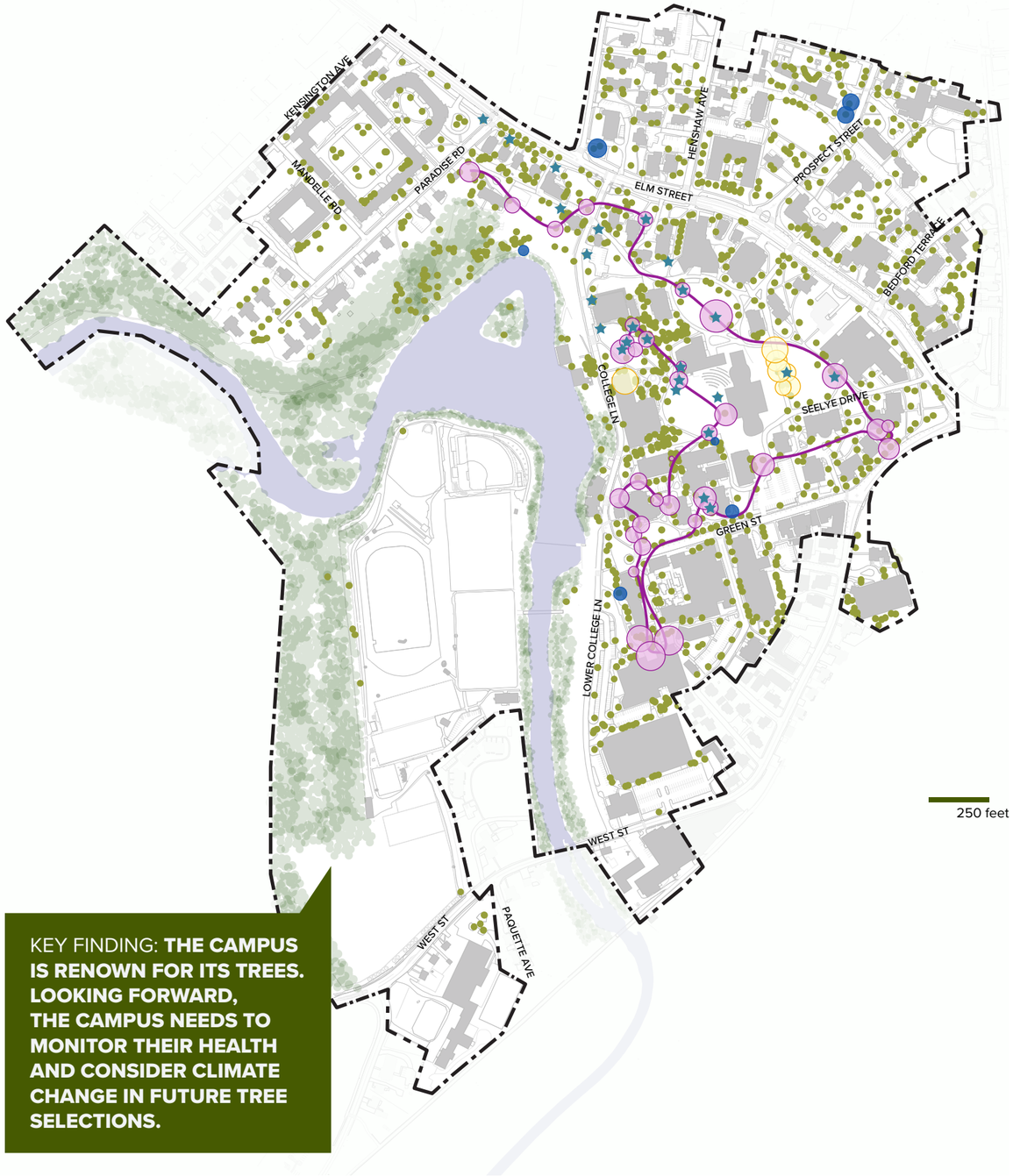
Overview: Ranked as a Level III Arboretum by ArbNet, singular champion trees, designed groupings, and natural masses create the overstory canopy at Smith College, valued for its aesthetics, ecological service, shade, and stress reduction.

The majority of trees are in good to excellent condition and receive proper pruning, with the poor tree condition noted likely the result of utility trenching (photo below). Regular monitoring and maintenance, care during construction activities, and climate change considerations are needed for tree health as the campus plans for the future.

Monitoring trees over 100 years old for decline and improving methods to adequately detect and treat pests and diseases likely to affect trees of all ages will help to preserve a healthy canopy. Meanwhile, planning for replacements with suitable species is foundational to a future healthy canopy. The Botanic Garden has a Collections Policy which will serve as a guide for new species selection, importantly including climate change and ecological considerations.

While lack of shade in lawns and along paths was not mentioned by the campus community, large expanses of asphalt, such as parking lots, would benefit from tree planting, as would the Quad.

↑Trenching at the Oak allee, John Brady



- CAMPUS TREES
- BOTANIC WALK TREES
- TREE WALKING TOUR
- TREESPEAK TREES
- MEMORIAL AND HONORARIA TREES
- SIGNIFICANT TREES AT RISK

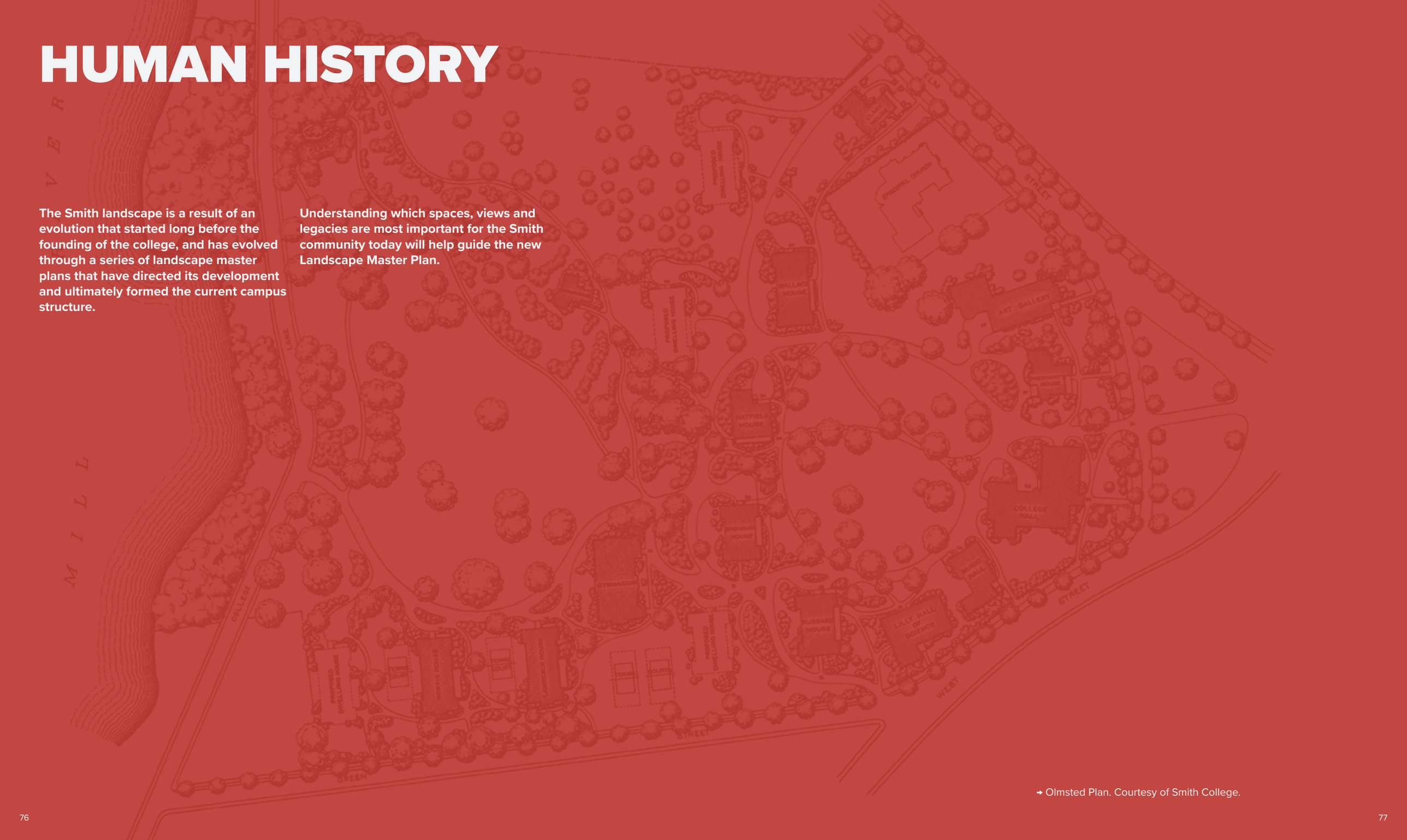
KEY FINDING: **THE CAMPUS IS RENOWN FOR ITS TREES. LOOKING FORWARD, THE CAMPUS NEEDS TO MONITOR THEIR HEALTH AND CONSIDER CLIMATE CHANGE IN FUTURE TREE SELECTIONS.**

→ Quad, Signe Nielsen, 1972.

HUMAN HISTORY

The Smith landscape is a result of an evolution that started long before the founding of the college, and has evolved through a series of landscape master plans that have directed its development and ultimately formed the current campus structure.

Understanding which spaces, views and legacies are most important for the Smith community today will help guide the new Landscape Master Plan.



→ Olmsted Plan. Courtesy of Smith College.

NONOTUCK LANDS

SITE ANALYSIS

Overview: At the end of the last ice age, approximately 10,000 years ago, Native American peoples began to settle the Connecticut River Valley. Attracted by natural resources and fertile soil, First Peoples occupied many sites within Pioneer Valley including Nono Tuck, today's Northampton.

"Steady pressure from English settlements reduced the traditional homelands of Native Americans and destroyed the populations of game and fur-bearing animals. The defeat of Metacom in King Philip's War of 1675-1676 put an end to large-scale armed resistance to English settlement in Northampton, but not to Indian inhabitation."

"Native Presence in Nonotuck and Northampton" by Margaret Bruchac.

4000 BC–1640s

Western Abenaki settle in Connecticut River Valley; Nonotuck peoples farm and hunt along Mill River and its rich floodplain. Native peoples shaped the landscape through fire, forest clearing, planting and hunting.

1640s–1700s

Trading of corn and pelts begins between Nonotuck and first colonists. Nonotuck build fortified enclosure/ encampment at Fort Hill. Repeated wars kill or uproot Nonotucks.

1700s–PRESENT DAY

Western Abenaki, scattered throughout New England, especially Vermont and Maine, continue to seek title to some of their homeland.

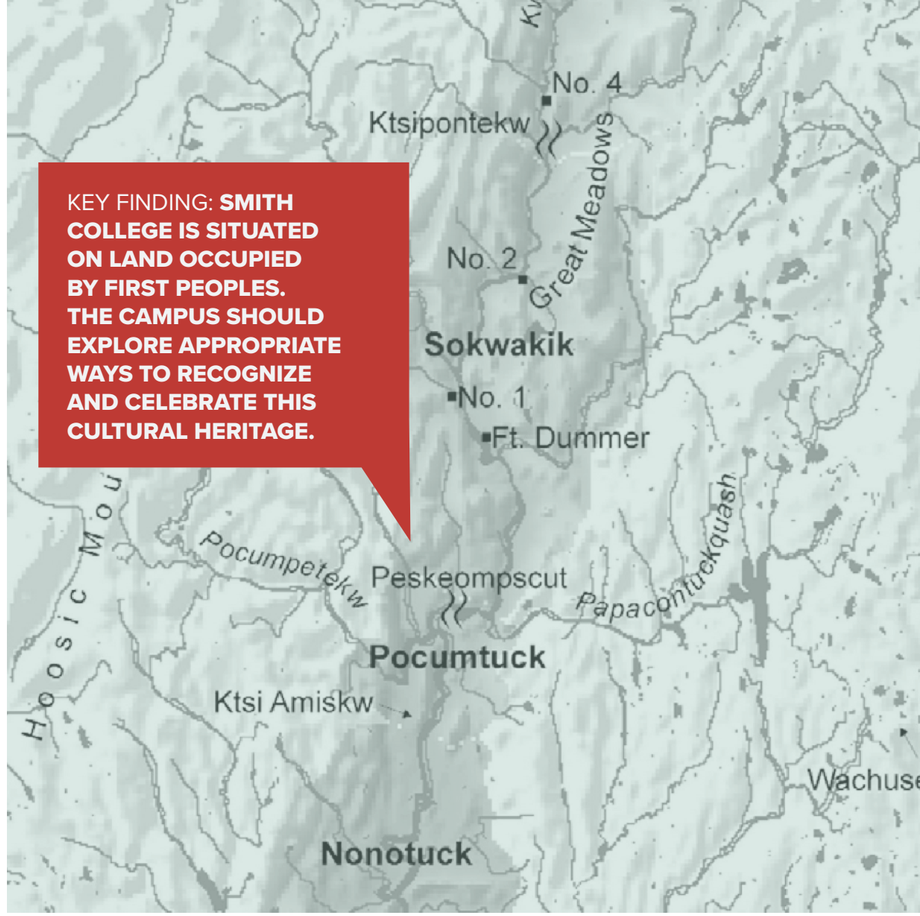
↑Nonotuck Village

"Ask indigenous communities how they'd like indigenous history recognized, and how they'd like today's indigenous communities welcomed in the campus landscape."

—Smith Student via www.groundswellmagazine.com

"Make sure that it is not just about history. It is not the past... it is a current fact, not just a historical event."

—Smith Student via on-campus discussion



→Nonotuck lands map, " The Common Pot: the Recovery of Native Space in the Northeast" by Lisa Brooks

HOW CAN WE RECOGNIZE THE INDIGENOUS HISTORY OF THE CAMPUS?

66.7% create installations educating about indigenous history;
12.5% create spaces on campus for indigenous students to practice spiritual ceremonies;
20.8% other.

—Total 24 responses submitted via www.groundswellmagazine.com

INDUSTRIAL HISTORY

SITE ANALYSIS

Overview: Since the mid-1600's, the Mill River and its tributaries spawned various industries powered by its waters. Grist mills appeared first, followed by textiles, paper and furniture factories. However, three centuries of major floods resulting in repeated destruction of property and human lives, prompted the US Army Corps of Engineers to construct a flood protection project which remains functional in the southern part of the campus.

1660–1740

A natural cascade in the Mill River's course becomes source of hydro power for industries. First grist mill constructed at Paradise Pond (Upper Mills) in 1660. Green Street built to connect Northampton to its mills in 1670s.

1740–1840

Small industries sprout along the Mill River. More than 70 mills built between Williamsburg and Northampton.

1840–1940

Mills and factories along Mill River gradually disappear due to repeated floods and fires. Maynard Hoe Factory constructed on the banks of Paradise Pond in 1866, remaining operational until 1905.

1940

US Army Corps of Engineers builds extensive flood control system.

↑ Maynard Hoe Factory, 1895

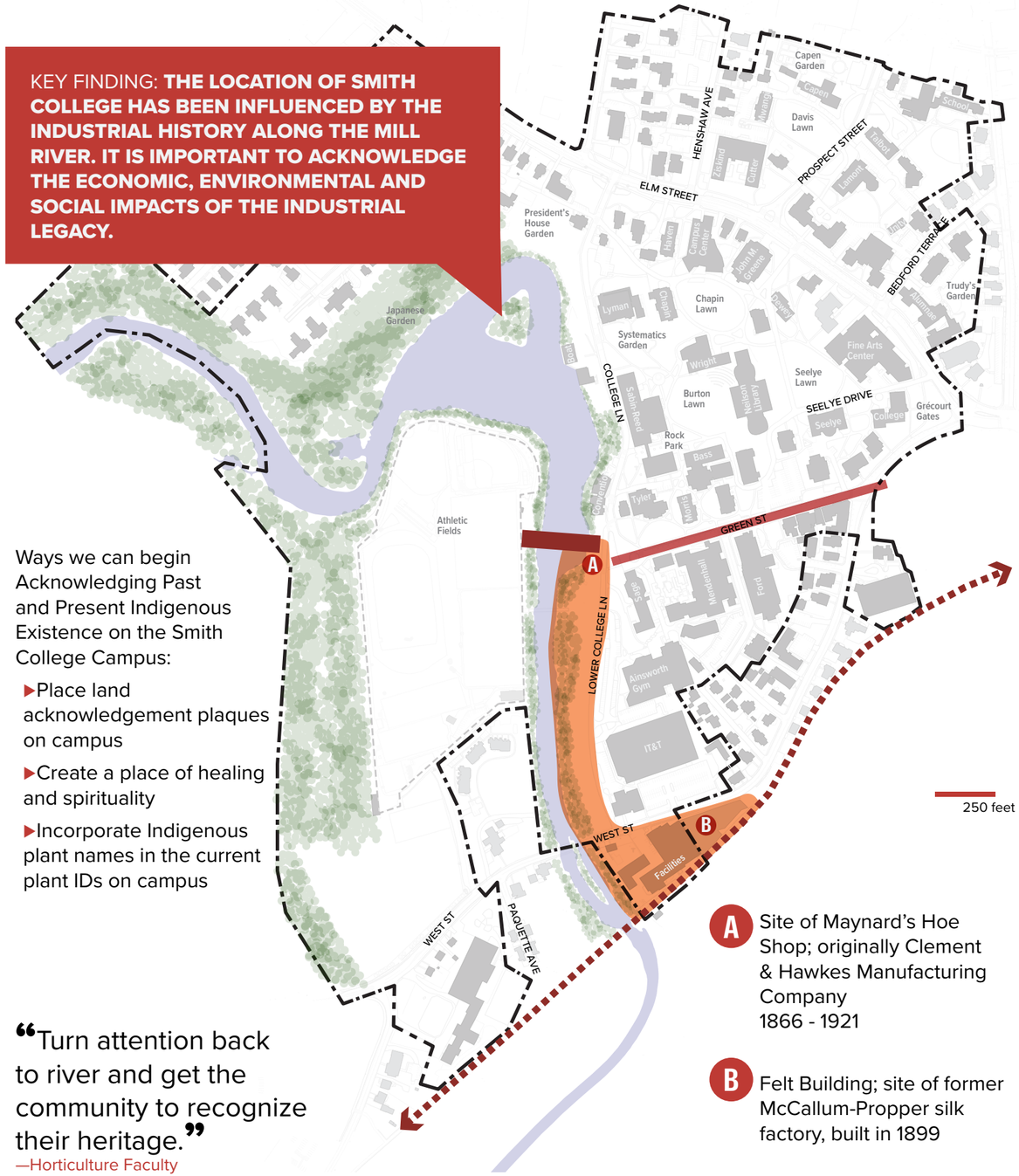
UPPER MILLS INDUSTRIAL AREA

PARADISE POND DAM
(ORIGINAL DAM BUILT IN 1666)

GREEN STREET

CENTRAL MASS RAILROAD

KEY FINDING: **THE LOCATION OF SMITH COLLEGE HAS BEEN INFLUENCED BY THE INDUSTRIAL HISTORY ALONG THE MILL RIVER. IT IS IMPORTANT TO ACKNOWLEDGE THE ECONOMIC, ENVIRONMENTAL AND SOCIAL IMPACTS OF THE INDUSTRIAL LEGACY.**



Ways we can begin Acknowledging Past and Present Indigenous Existence on the Smith College Campus:

- Place land acknowledgement plaques on campus
- Create a place of healing and spirituality
- Incorporate Indigenous plant names in the current plant IDs on campus

"Turn attention back to river and get the community to recognize their heritage."
—Horticulture Faculty

A Site of Maynard's Hoe Shop; originally Clement & Hawkes Manufacturing Company
1866 - 1921

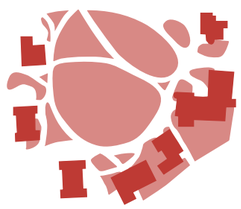
B Felt Building; site of former McCallum-Propper silk factory, built in 1899

CAMPUS LANDSCAPE EVOLUTION AND PLANNING EFFORTS

SITE ANALYSIS

Olmsted (1893)

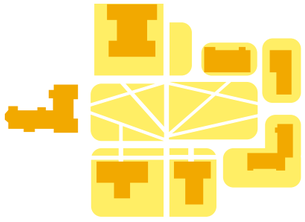
PARK-LIKE SETTING



The Olmsted Plan promoted a park-like setting, with gently curving paths and residential homes. Few of the plan's specific gestures are visible on campus today, but its naturalistic legacy is still felt within the campus core.

Nolen (1914)

FORMAL ORGANIZATION

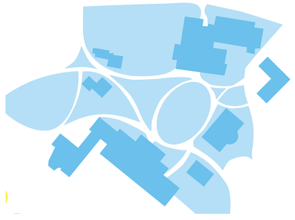


The Nolen Plan proposed a formal campus organization, modeled on the formal quadrangle approach pursued in many campus designs. This plan was was not adopted by the trustees and was not implemented.

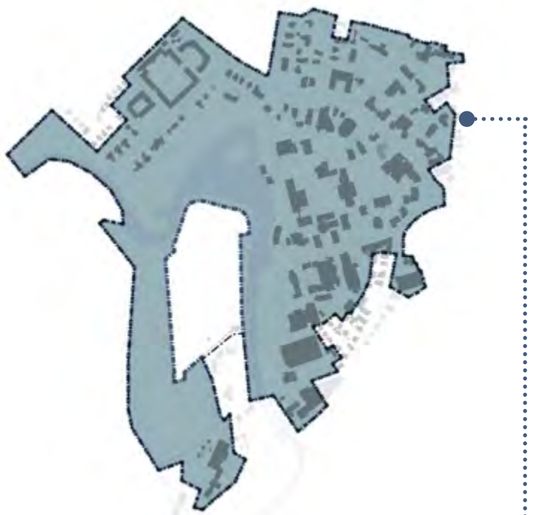
Rolland Towers (1996)

with Cornelia Hahn Oberlander

GROWTH



The Rolland Towers Plan attempted to revive the character of the Olmsted proposal, while adapting it to the modern and enlarged campus condition.



MNLA (2020)

ADAPTIVE, INLUSIVE, EDUCATIONAL

The MNLA Landscape Master Plan (LMP) will address how the campus landscape can manifest Smith's values, educational goals, and strategic priorities.

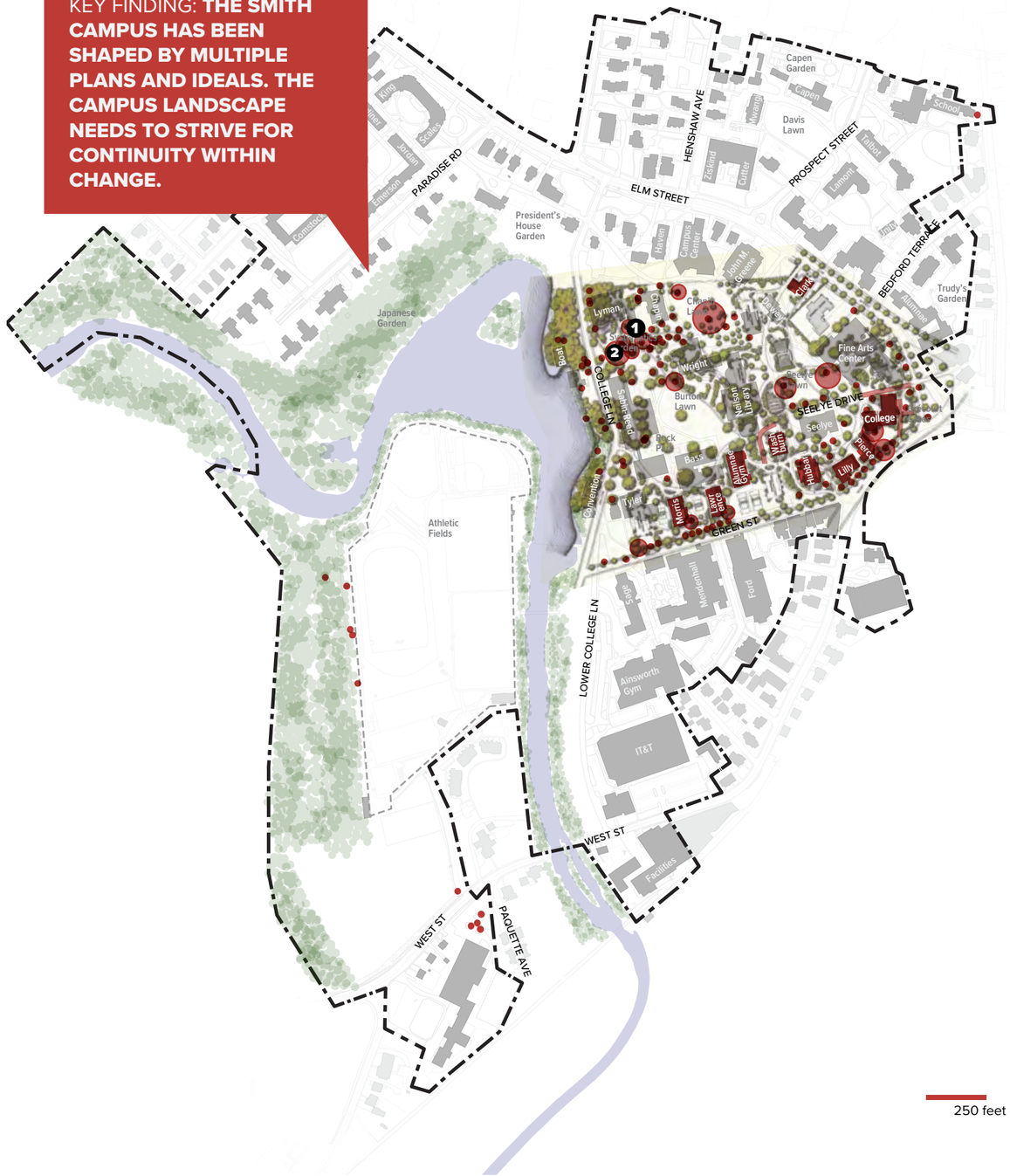
OLMSTED LEGACY

SITE ANALYSIS

Overview: Olmsted Sr. followed by his sons, the Olmsted Brothers, planned 26 acres of the original Smith campus. This original 1893, plan prepared by Frederick Law Olmsted, set the tone for much of the campus core. Though this plan was implemented in various degrees over many years, it left a potent legacy of a park-like and picturesque aesthetic of trees amid large expanses of lawn. Many other individuals, before and after the Olmsteds, have played a role in the campus's development. The landscape has been conceived in many lights from a pedagogical experiment to a daily relationship with nature.

➜ Contemporary and historic photographs of the Ginkgo and Camperdown Elm tree at the Botanic Garden. The Ginkgo was included in the Olmsted firm's planting plan. Evidence suggests that the Camperdown Elm was selected by Olmsted's firm. Credit: Taz Mueller, Laura Krok-Horton, Aixin Li, Jessica Robinson, Laura Rosenbauer, Steven Moga, Gaby Immerman.

KEY FINDING: **THE SMITH CAMPUS HAS BEEN SHAPED BY MULTIPLE PLANS AND IDEALS. THE CAMPUS LANDSCAPE NEEDS TO STRIVE FOR CONTINUITY WITHIN CHANGE.**



CAMPUS STRUCTURE

SITE ANALYSIS

HOW CAN SMITH'S LANDSCAPE MAKE THE HISTORY OF THE CAMPUS STRUCTURE AND LANDSCAPE MORE LEGIBLE?

"QR codes or similar near to points/plants/buildings of interest, or the placards like the ones we see in the Botanical Gardens are pretty good, too."

"Identification tags help, and if supplementary information/explanations can be accessed easily that's even better. Put plants and landscape details into an historical context."

"QR code's that lead to articles about campus, I see this in cities all the time and it could be a cool addition to Smith!"
—Submitted via www.groundswellmagazine.com

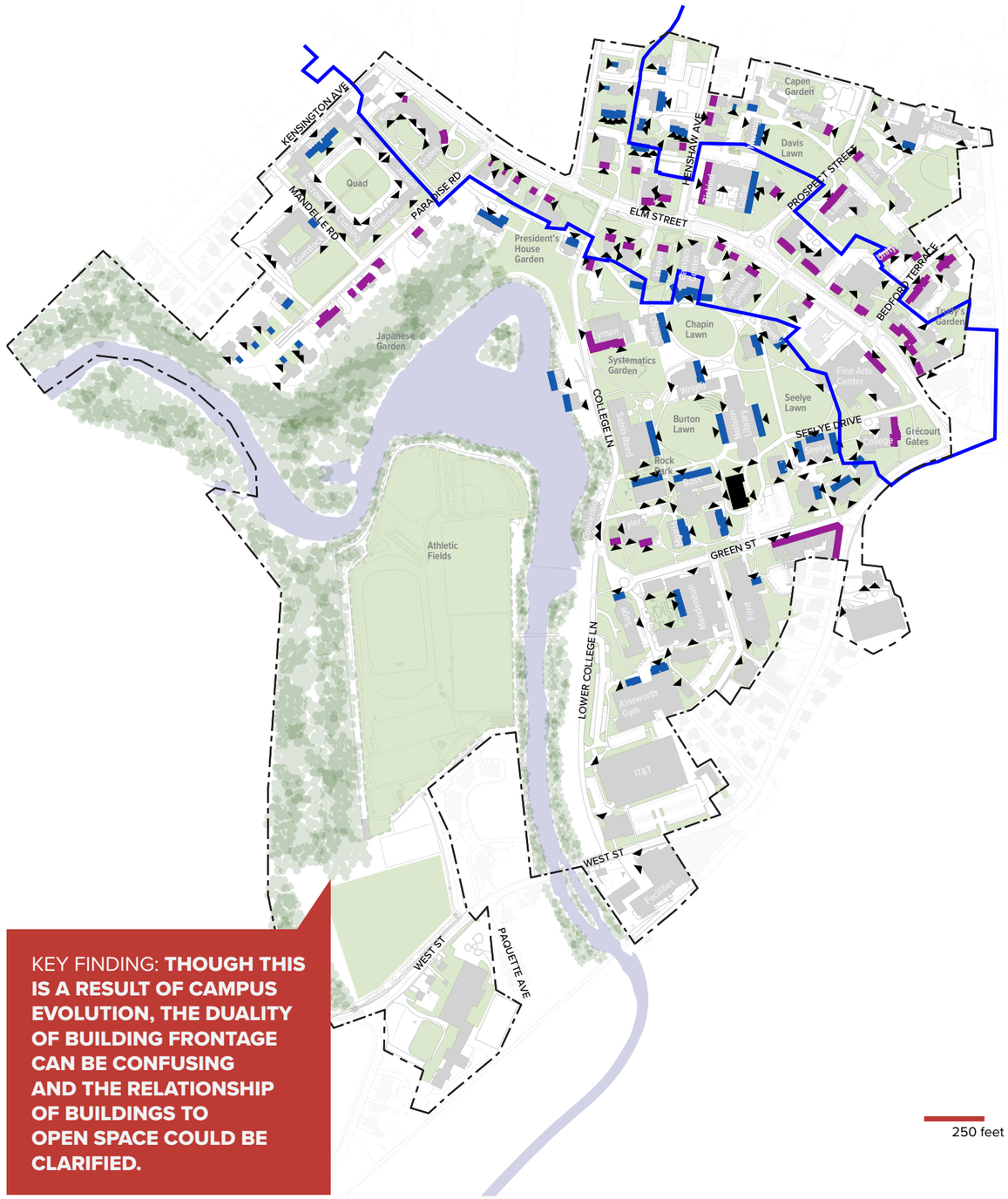
ELM STREET HISTORIC DISTRICT

STREET FACING BUILDING FRONTAGE

CAMPUS FACING BUILDING FRONTAGE

BUILDING ENTRANCE

ALUMNAE GYM (NATIONAL REGISTER OF HISTORIC PLACES)



KEY FINDING: **THOUGH THIS IS A RESULT OF CAMPUS EVOLUTION, THE DUALITY OF BUILDING FRONTAGE CAN BE CONFUSING AND THE RELATIONSHIP OF BUILDINGS TO OPEN SPACE COULD BE CLARIFIED.**

ICONIC VIEWS

SITE ANALYSIS

“The benches overlooking the dam, and the green space near the falls are some of my favorite places to work and relax on campus. I find the white noise of the falls very soothing and often necessary when I’m stressed.”

—Submitted via www.groundswellmagazine.com

↑ View of Paradise Pond, 2019.

ICONIC VIEWS

A PARADISE POND

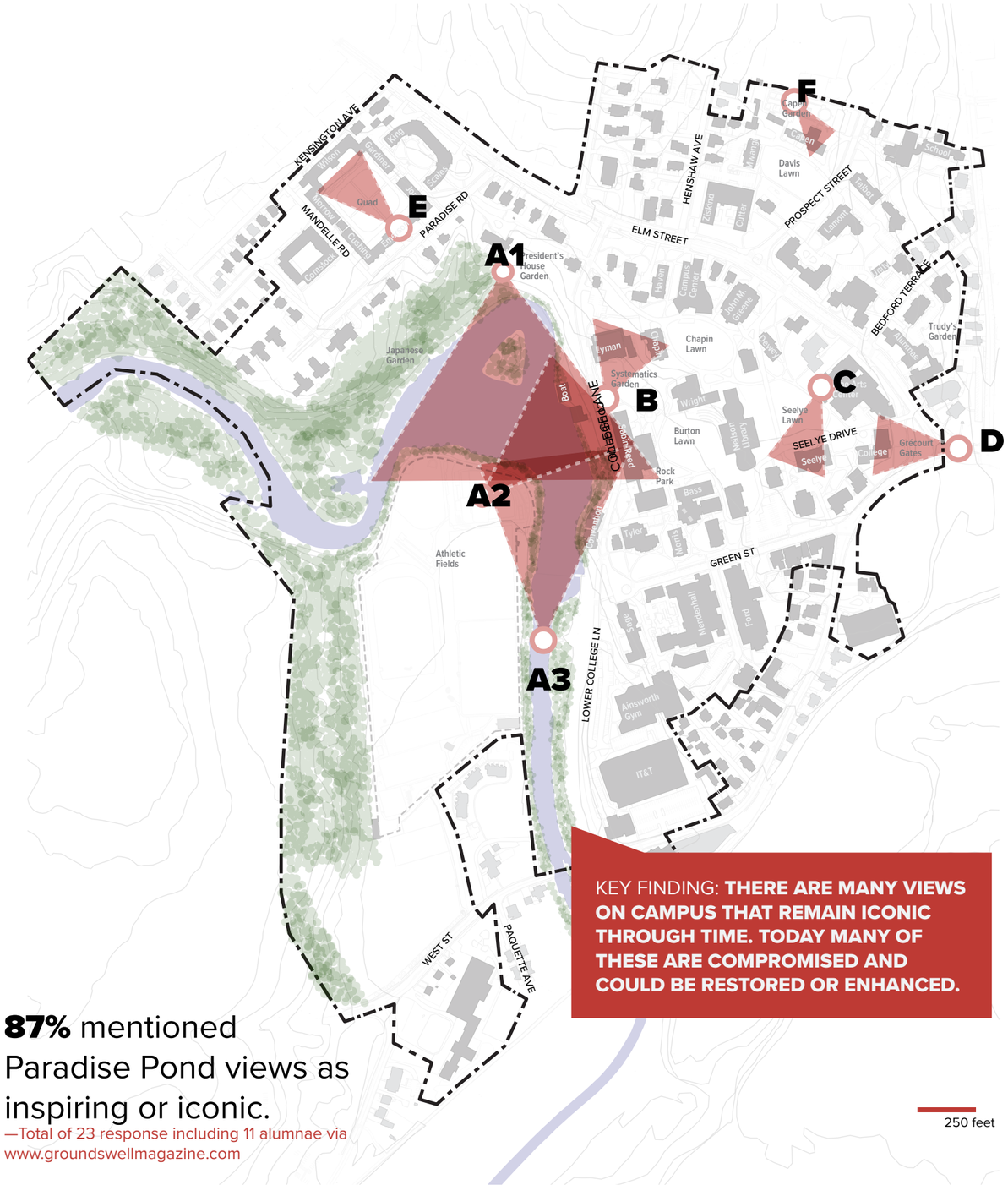
B BOTANIC GARDEN

C SEELYE LAWN

D COLLEGE HALL

E QUAD COURTYARDS

F CAPEN GARDEN



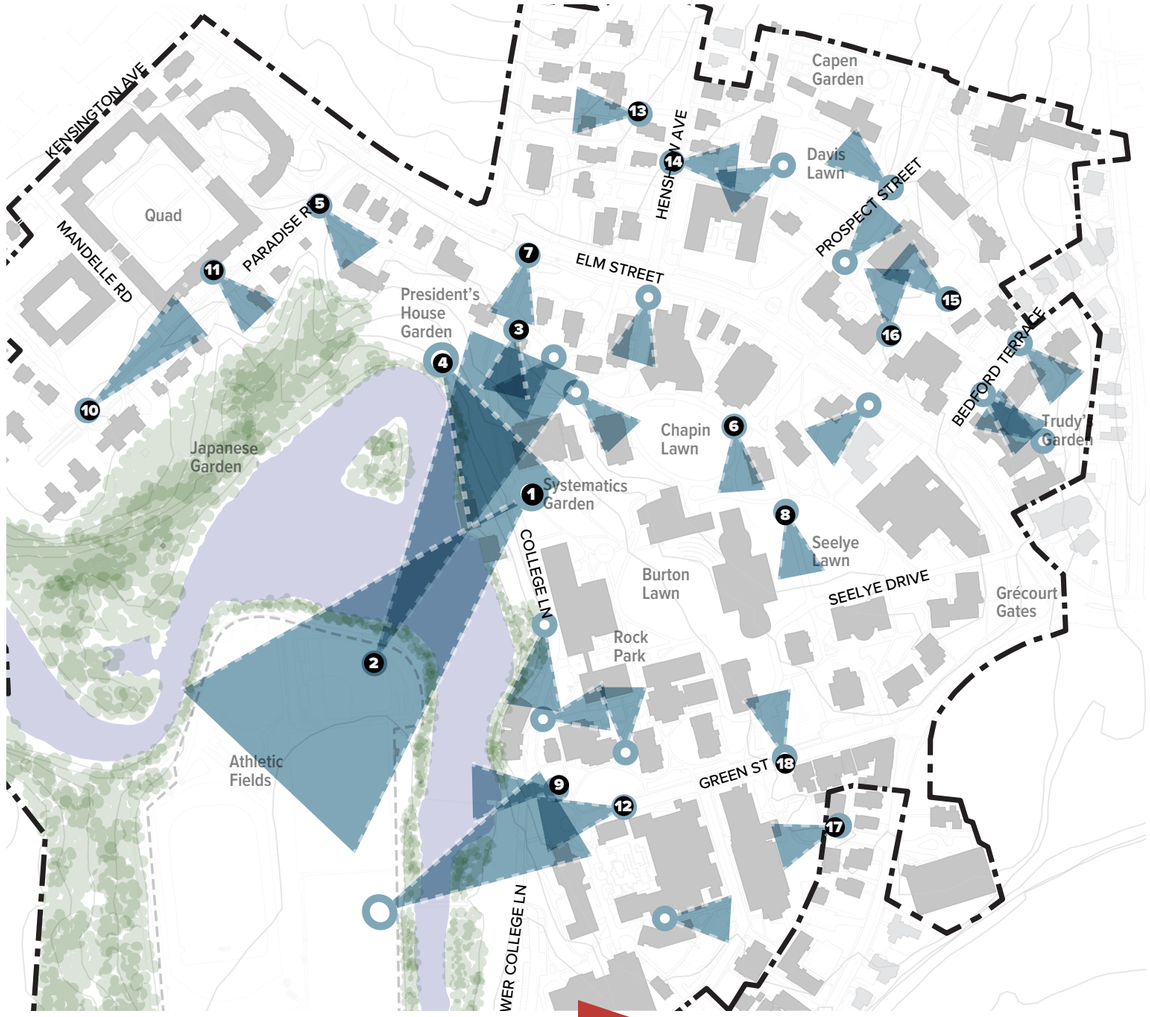
87% mentioned Paradise Pond views as inspiring or iconic.

—Total of 23 response including 11 alumnae via www.groundswellmagazine.com

KEY FINDING: **THERE ARE MANY VIEWS ON CAMPUS THAT REMAIN ICONIC THROUGH TIME. TODAY MANY OF THESE ARE COMPROMISED AND COULD BE RESTORED OR ENHANCED.**

COMPROMISED VIEWS

SITE ANALYSIS

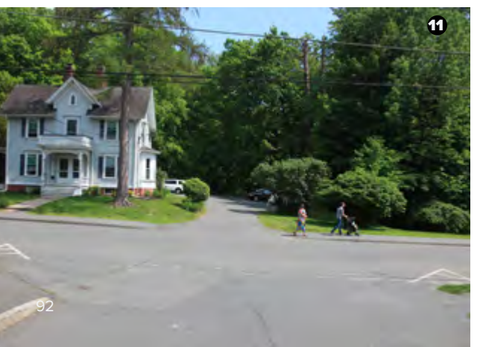


COMPROMISED VIEWS

KEY FINDING: **MANY OF THE ICONIC VIEWS ARE COMPROMISED DUE THE ENCROACHMENT OF VEHICLES WITHIN THE PEDESTRIAN REALM.**

COMPROMISED VIEWS

SITE ANALYSIS



WHAT VIEWS OF THE CAMPUS AND NATURAL CONTEXT INSPIRE YOU?

COMMUNITY ENGAGEMENT

“The view of the pond from anywhere on campus is gorgeous and so revitalizing. I also love the view of the campus from the Japanese Tea Hut area.”

—Smith alum, submitted via www.groundswellmagazine.com

“I love the view of Mount Holyoke from the hill by the pond or the roof of Lyman.”

—Smith alum, submitted via www.groundswellmagazine.com

“The view over the pond toward Mt. Tom. Our amazing trees like the ginkgo and metasequoia. The path along the Mill River.”

—Smith faculty member, submitted via www.groundswellmagazine.com

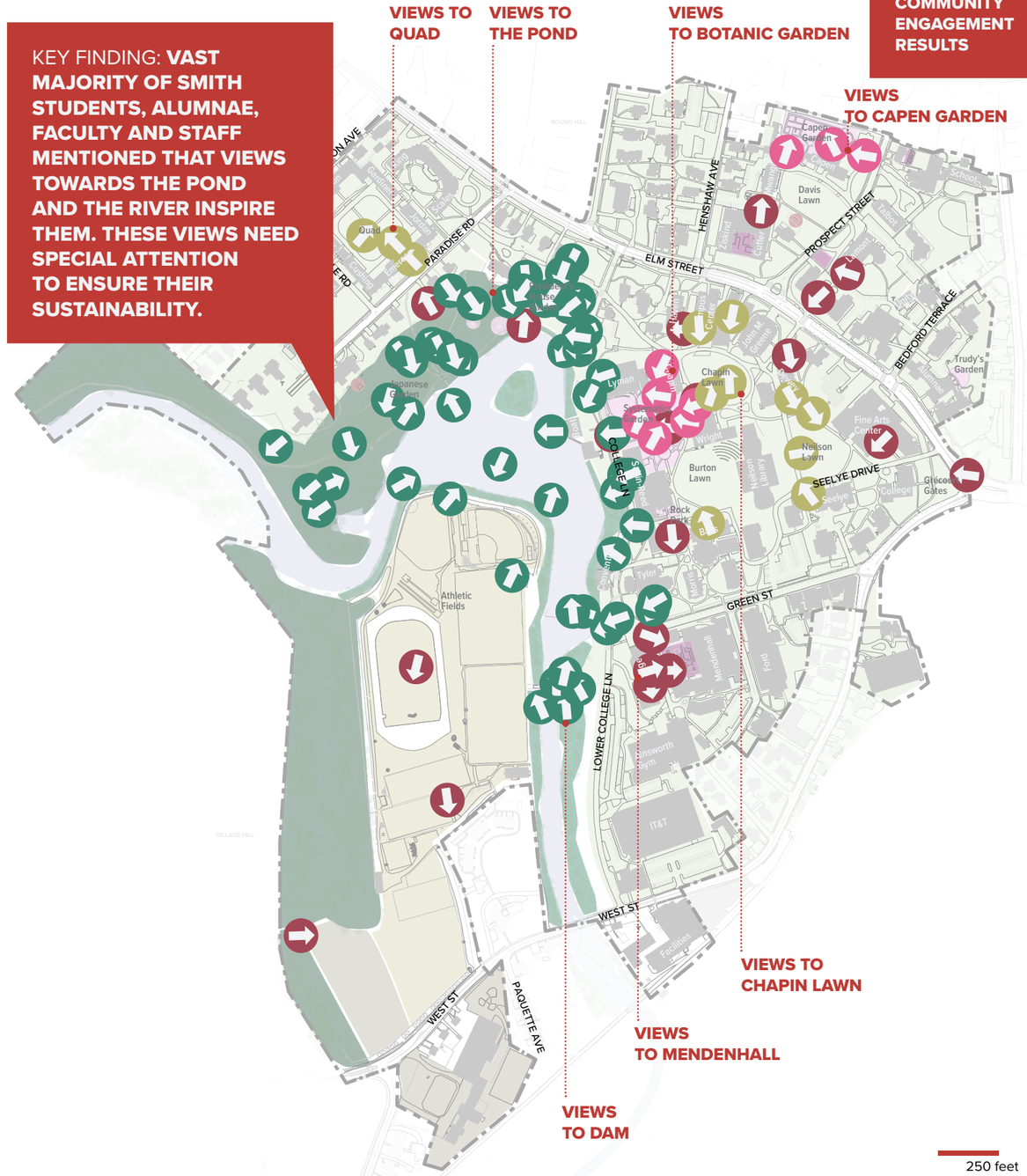
67 % VIEWS TO THE POND AND RIVER

9% VIEWS TO GARDENS

12% VIEWS TO LAWNS

22% OTHER VIEWS

KEY FINDING: **VAST MAJORITY OF SMITH STUDENTS, ALUMNAE, FACULTY AND STAFF MENTIONED THAT VIEWS TOWARDS THE POND AND THE RIVER INSPIRE THEM. THESE VIEWS NEED SPECIAL ATTENTION TO ENSURE THEIR SUSTAINABILITY.**



—Total of 97 responses via on campus engagement.

➔Unknown photographer and date.

➔Signe Nielsen, 1972.

➔MNLA, 2019.

Frederick Kneeland, pre-1938

“Paradise woods has provided inspiration to generations of smithies and Northampton residents alike; Smith College has a duty to preserve and protect this heritage.”

—”Paradise Woods: Rediscovering A Beloved Landscape” by James Mealey, Summer Intern at Smith College Botanic Garden

A1 PARADISE POND:
FROM NORTH BANK TOWARDS BOATHOUSE

MNLA, 2019

“Definitely the view of the pond from near the President's House, on the way to the Quad. The pond has had its ups and downs, i think, and i would love to see it thriving.”

—Submitted via www.groundswellmagazine.com

Photographer unknown, pre-1942

MNLA, 2019

A2 PARADISE POND: FROM ATHLETIC FIELDS TOWARDS PRESIDENT'S HOUSE

Photographer unknown, 1920

MNLA, 2019

A3 PARADISE POND:
FROM LAMONT BRIDGE TOWARDS BOATHOUSE

Edgar T Scott, pre 1940

Signe Nielsen, 1971

MNLA, 2019

B BOTANIC GARDEN: LYMAN PLANT HOUSE

Photographer unknown, pre 1924

MNLA, 2019

“I love capen garden for its quiet beauty, and the edge of the pond below the crew house for its serenity.”
—Submitted via www.groundswellmagazine.com

→View to Paradise Pond as envisioned by one of the participants.

PEDESTRIAN EXPERIENCE

The Smith campus includes numerous walkways ranging in width, material, and level of accessibility that facilitate circulation between residential and academic spaces. Understanding how the Smith community, including those with mobility challenges, those living on campus and those visiting, moves around the campus today will help identify strategies for improving the pedestrian experience as part of the Landscape Master Plan.

➔ Cutter House Architectural Sketch. Courtesy of Smith College.

WHICH ROUTES ARE THE MOST FREQUENTLY USED AND WHY?

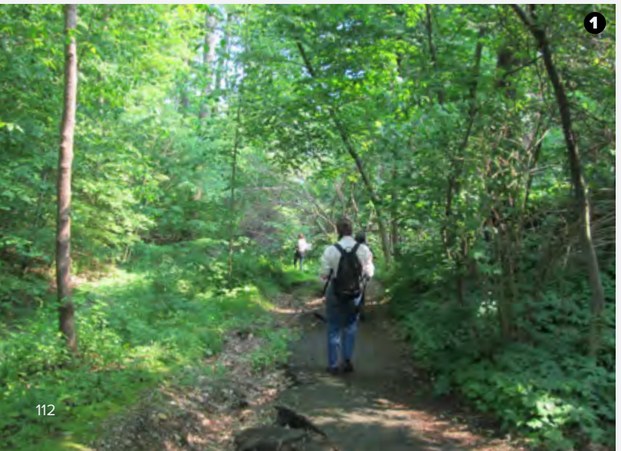
COMMUNITY ENGAGEMENT

Overview: During the on-campus and online engagement, participants were asked to mark the routes they use most frequently. Combined results show that College Lane, the path from Campus Center along Seeyle Lawn, Green Street and Elm Street at the Campus Center are the most heavily used. Most of those pedestrian and bicycle routes coincide with the vehicular ways creating potential conflict. Pedestrian routes are currently affected by the Neilson Library construction site in the center of the campus, and the circulation patterns of 'frequently used' routes will likely change once the library is re-opened.

"I walk along the pond with the slimmest of excuses. I find it relaxing to not take a route that is a straight line."
—Smith alum, submitted via www.groundswellmagazine.com

"I would take longer routes if they were prettier, but the paths around campus are made with ugly, uneven asphalt and there are not enough trees."
—Smith student, submitted via www.groundswellmagazine.com

"I usually take the most direct route if I am in a hurry. If I am not in a hurry, I might take a scenic route around the pond."
—Smith student, submitted via www.groundswellmagazine.com



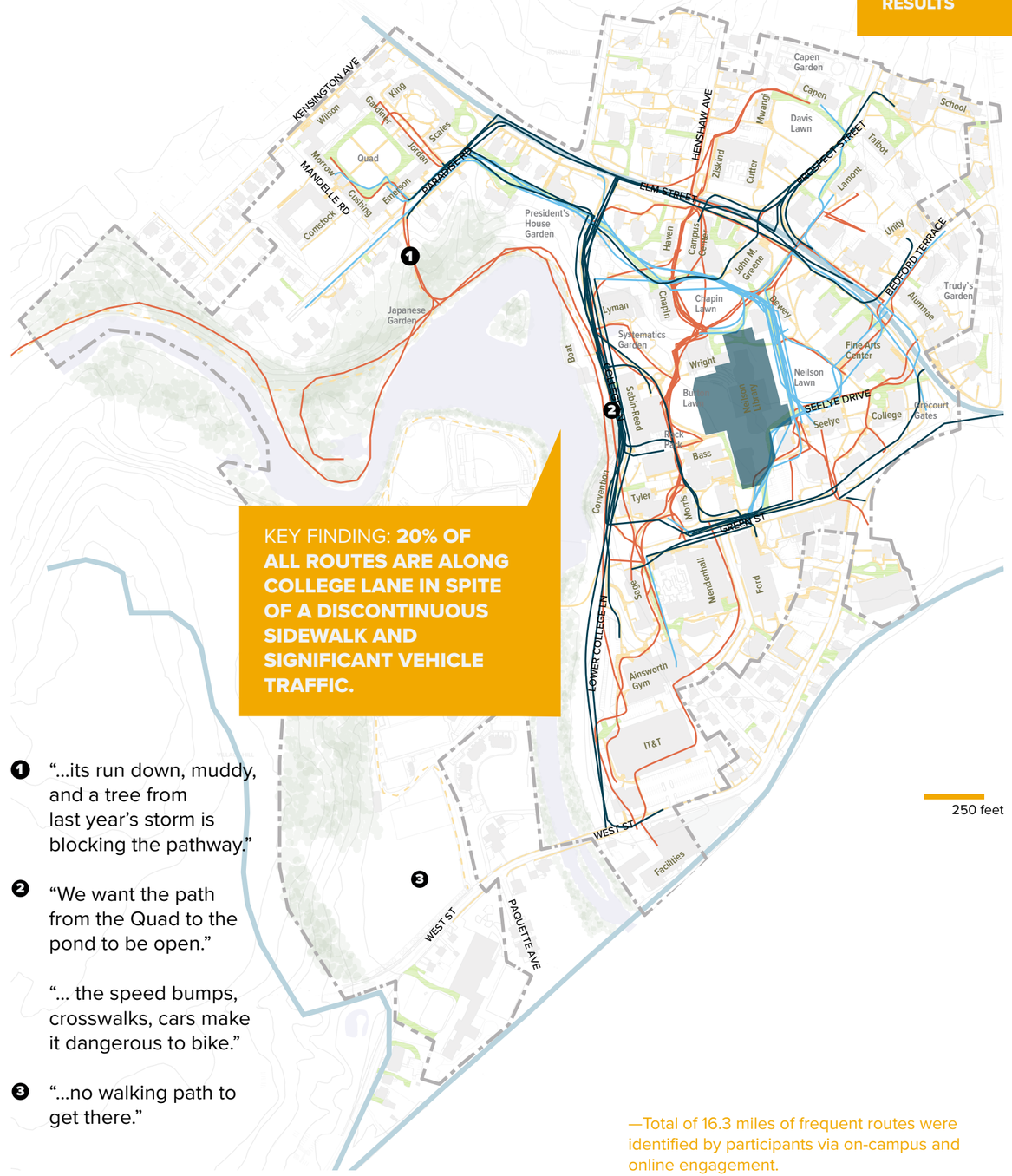
→Although informal, the path from Quad to the Pond is frequently used.

34% ROUTES ALONG ROADS

23% ROUTES ALONG SHARED PATHS

43% ROUTES ALONG WALKWAYS

NEILSON LIBRARY CONSTRUCTION SITE



KEY FINDING: **20% OF ALL ROUTES ARE ALONG COLLEGE LANE IN SPITE OF A DISCONTINUOUS SIDEWALK AND SIGNIFICANT VEHICLE TRAFFIC.**

❶ "...its run down, muddy, and a tree from last year's storm is blocking the pathway."

❷ "We want the path from the Quad to the pond to be open."

"... the speed bumps, crosswalks, cars make it dangerous to bike."

❸ "...no walking path to get there."

—Total of 16.3 miles of frequent routes were identified by participants via on-campus and online engagement.

PEDESTRIAN AND BICYCLE CIRCULATION ROUTES

SITE ANALYSIS

↑College Lane.

↑Path along Paradise Pond.

BIKE RACK

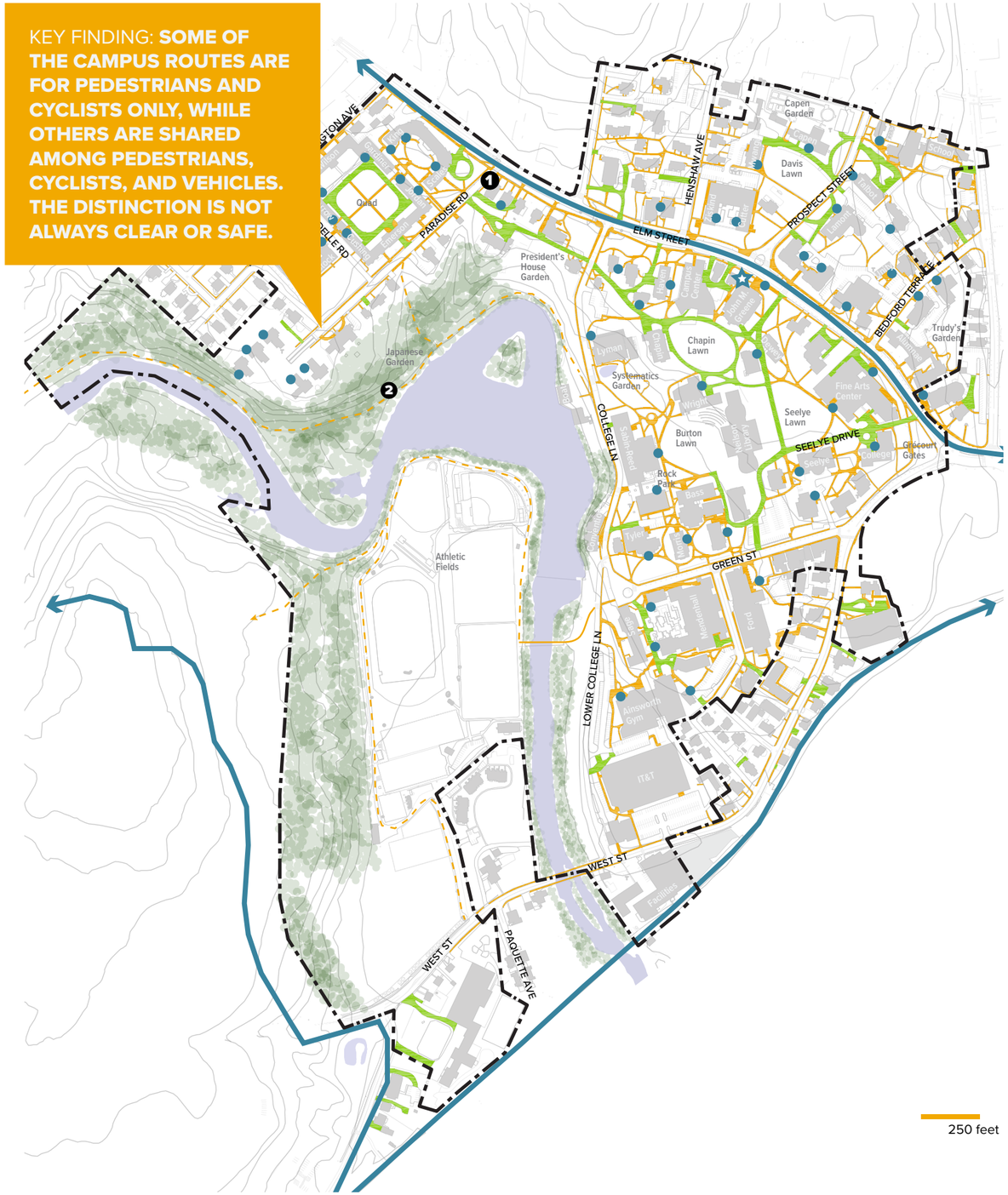
VALLEYBIKE ELECTRIC BIKE SHARE

DEDICATED BIKE LANE

WALKWAY
WIDTH LESS THAN 11’
PEDESTRIANS AND BIKES

SHARED PATH
WIDTH 11-20’
PEDESTRIANS, BIKES, VEHICLES (1 WAY)

KEY FINDING: **SOME OF THE CAMPUS ROUTES ARE FOR PEDESTRIANS AND CYCLISTS ONLY, WHILE OTHERS ARE SHARED AMONG PEDESTRIANS, CYCLISTS, AND VEHICLES. THE DISTINCTION IS NOT ALWAYS CLEAR OR SAFE.**



→ View of the College Lane, MNLA, 2019.

PAVING MATERIALS

SITE ANALYSIS

Overview: Paving materials on campus are mostly limited to asphalt with only 5% of the campus hardscape area finished with other materials. Because of the lack of diversity, paving fails to create a sense of hierarchy and, therefore, is unable to clarify prioritization of modes of movement.

95% ASPHALT

ROAD 456,300 SF

PARKING LOT 500,200 SF

DRIVEWAY 26,800 SF

PEDESTRIAN PATH 428,000 SF

PAVERS 16,700 SF

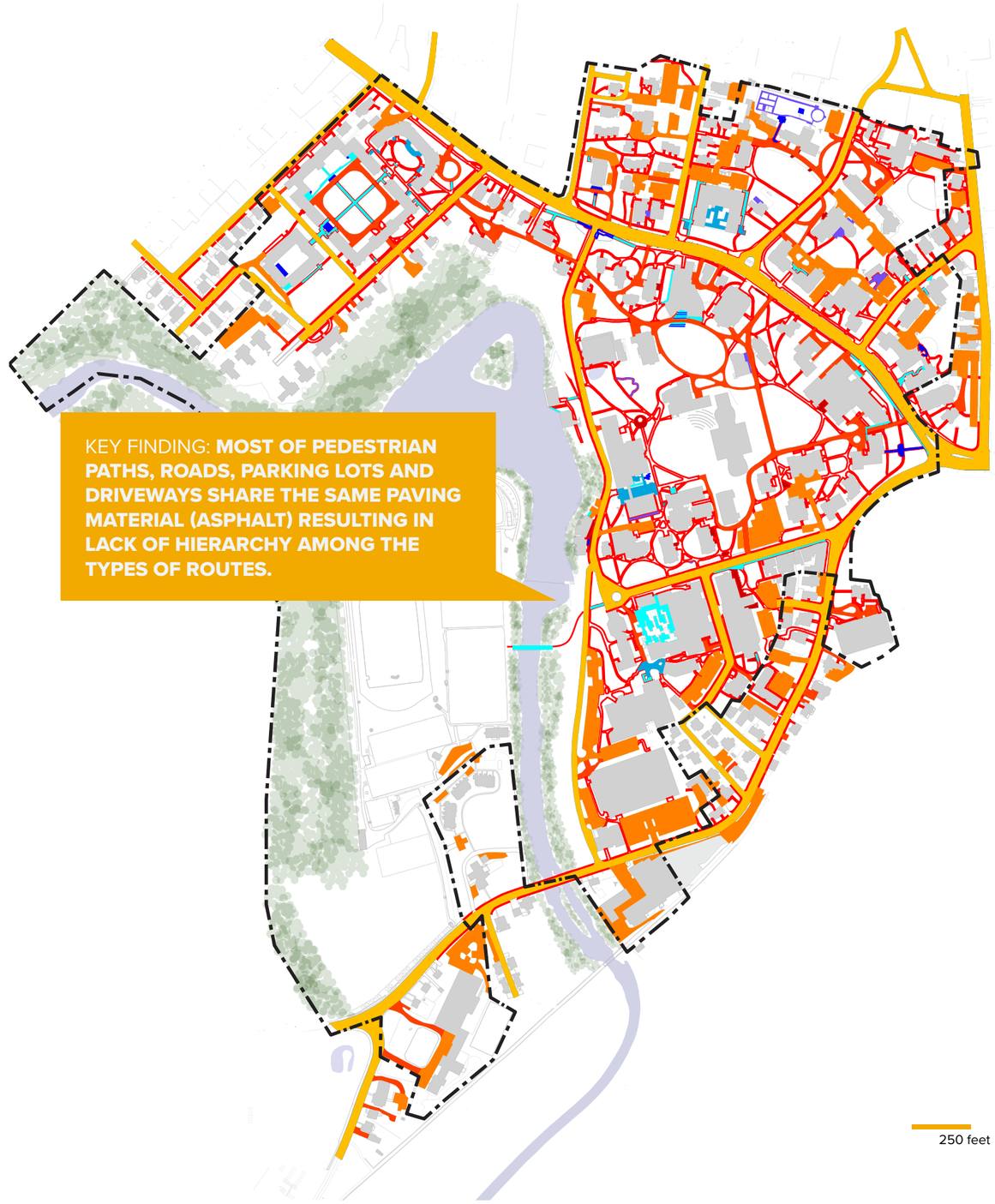
5% OTHER MATERIALS

CONCRETE SIDEWALK 44,400 SF

CONCRETE PAVERS 19,600 SF

STONE PAVERS 5,200 SF

OTHER 8,100 SF



WHERE ARE THE AREAS WHERE YOU FEEL UNCOMFORTABLE TO WALK OR BIKE?

COMMUNITY ENGAGEMENT

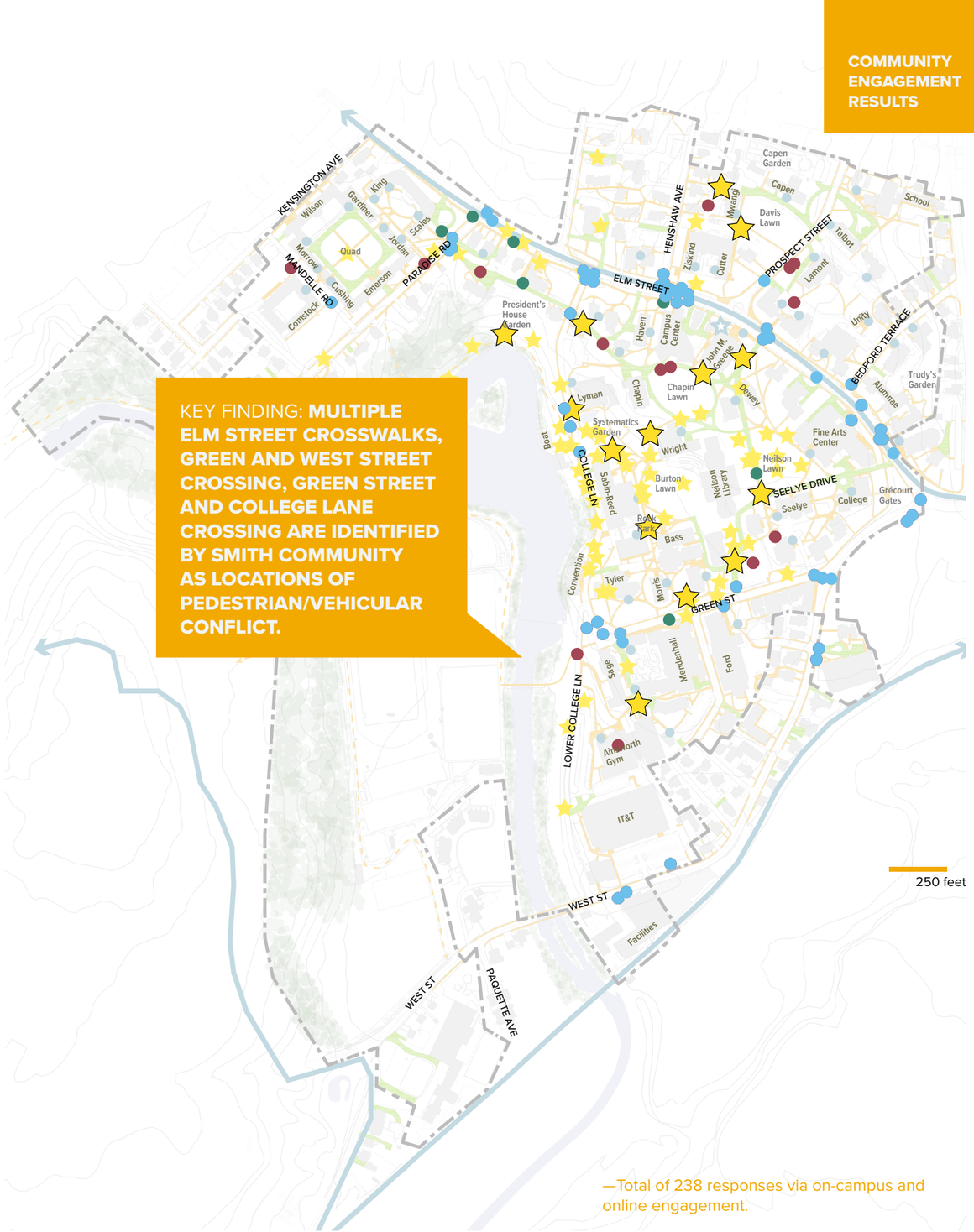
“People and plants need darkness. Lighting should not focus on *more* light but on the *right* light uniformity.”
—Astronomy Department Faculty

“Lighting is the number one issue that students note as a concern.”
—Campus Police Officer, paraphrased

“College Lane and Neilson Drive are very congested, as there is no place for delivery trucks to pull over. These areas are accidents waiting to happen.”
—Campus Police Officer, paraphrased

↑College Lane features multiple elements aimed at reducing pedestrian / vehicular conflict.

- PEDESTRIAN/VEHICULAR CONFLICTS AT STREETS
- PEDESTRIAN/VEHICULAR CONFLICT AT SHARED PATHS
- POOR LIGHTING (IDENTIFIED BY PARTICIPANTS)
- POOR LIGHTING (PER CAMPUS LIGHTING WALK)
- FEEL PERSONALLY THREATENED



KEY FINDING: **MULTIPLE ELM STREET CROSSWALKS, GREEN AND WEST STREET CROSSING, GREEN STREET AND COLLEGE LANE CROSSING ARE IDENTIFIED BY SMITH COMMUNITY AS LOCATIONS OF PEDESTRIAN/VEHICULAR CONFLICT.**

—Total of 238 responses via on-campus and online engagement.

VISITOR ROUTES

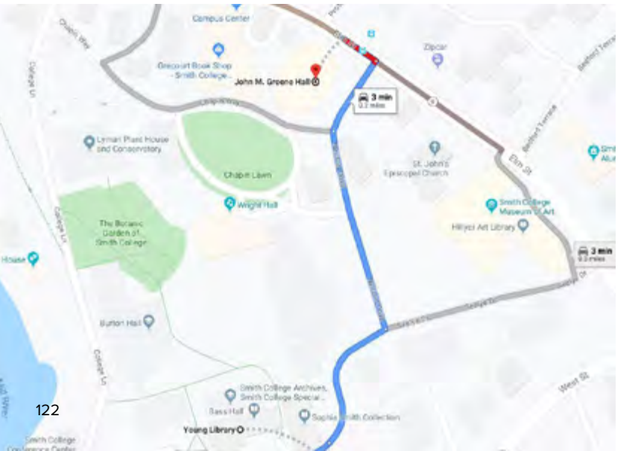
SITE ANALYSIS

Overview: There are numerous types of visitors to the Smith campus: prospective students and their families, returning alumnae, attendees of graduation-related events, local residents and visitors to Smith-hosted events. Each of these visitors is bound for different destinations. Existing parking facilities, including on-street and on campus, are not always available or clearly articulated on the Smith web site. Travel apps and maps can misdirect visitors on to campus roads.

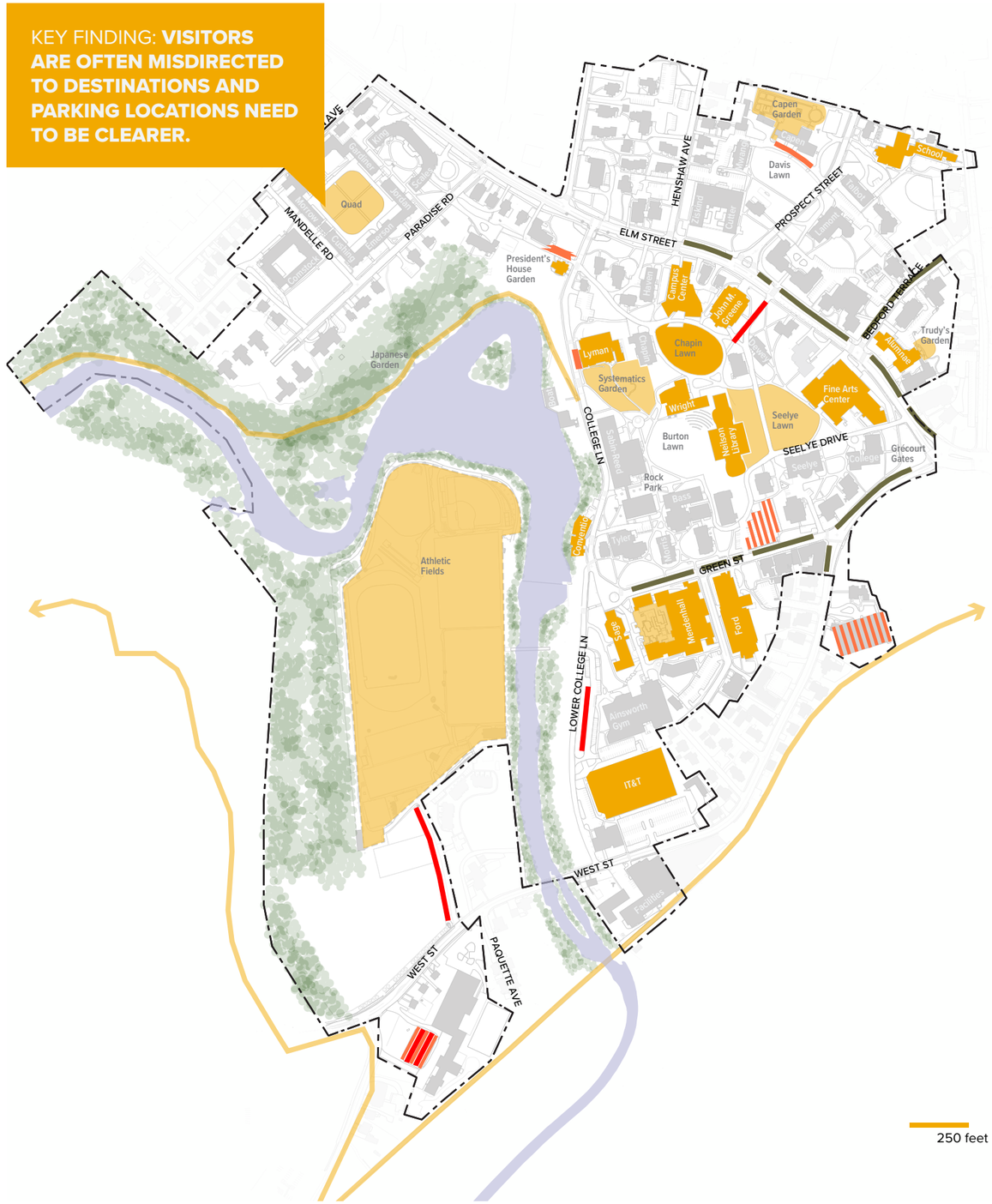
The campus has made significant improvements in recent years to physically mark gateways to the campus, but approaches from West Street warrant landscape improvements.

"The unkempt river's edge and maintenance area give a bad first impression to visiting teams."
—Athletics Department Staff

"Parking is an issue. We have 6-7 spaces with 1 handicap space for the Office of Admission. If it's full, most visitors will try to find space on Elm Street, as the College Lane lot across the street is usually full of staff or faculty cars."
—Visitor Services Staff, Office of Admission



↑Google map providing vehicular directions through campus core.



ACCESSIBILITY

SITE ANALYSIS

Overview: There are a number of existing conditions driven by the campus topography that result in streets and sidewalks exceeding the allowable gradients stipulated by the Americans for Disabilities Act. It is obviously impossible to regrade public streets, but routes within the campus should provide, where possible, alternative accessible routes. Some buildings remain inaccessible in spite of many recently-installed accessible entry ramps. Furthermore, some routes, though providing accessible ramps, do not deliver an equal landscape experience.

"Textured pavement to mark an accessible route would be helpful for the vision impaired."
—Disability Services

"Accessible ramps often go into the parking lot instead connecting to the central campus. Disabled students don't get to experience the same joy of the campus."
—Smith student during on-campus discussion

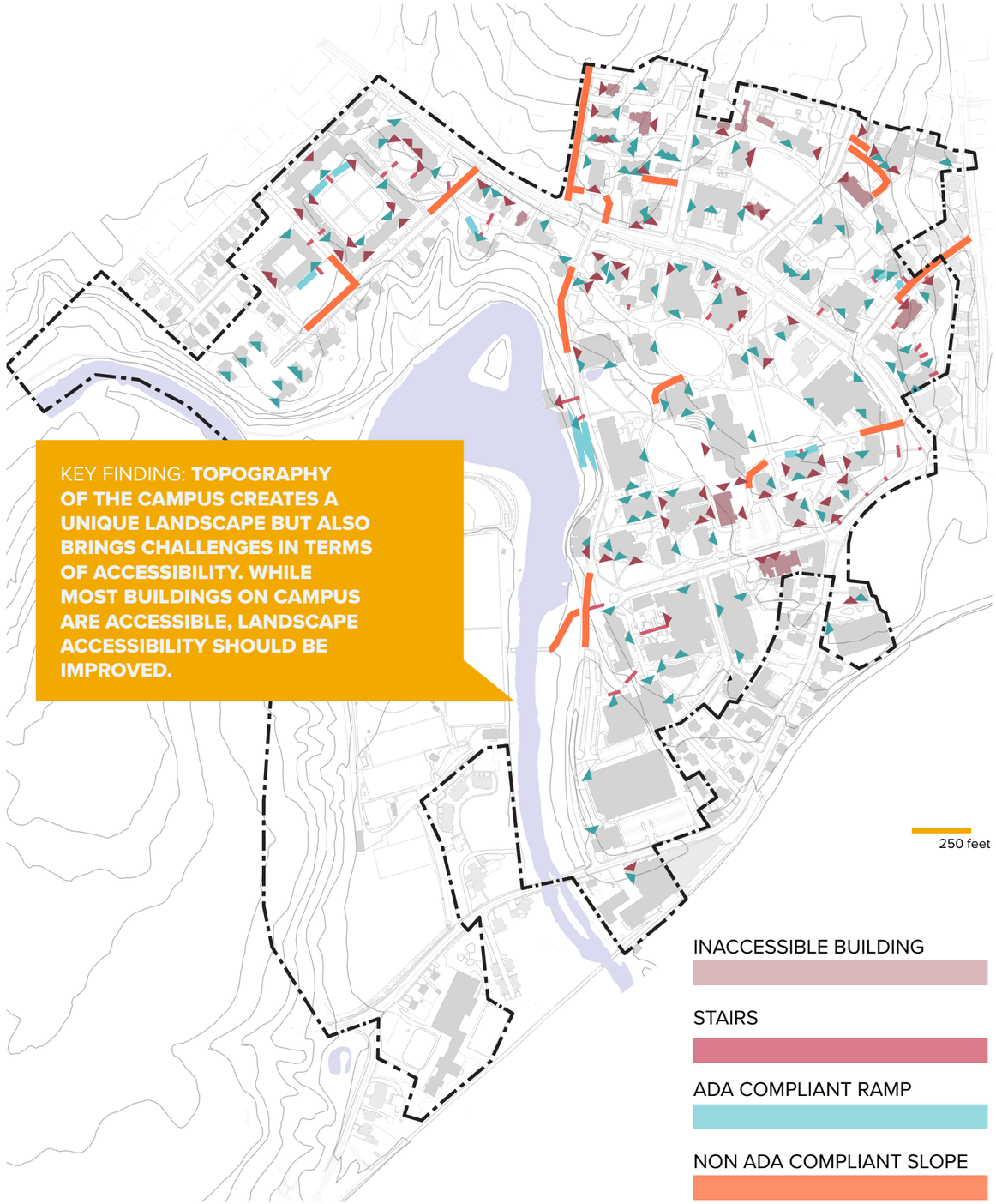
↑ Ramp at the Boat House.

→Photos by Greta Mundt

▼ ACCESSIBLE ENTRANCE

▼ INACCESSIBLE ENTRANCE

Note: the accessible entrance is not always the primary entrance.



→ View of the steep path along Wright Hall, MNLA, 2019.

WHICH PARTS OF THE CAMPUS FEEL REMOTE TO YOU AND WHY?

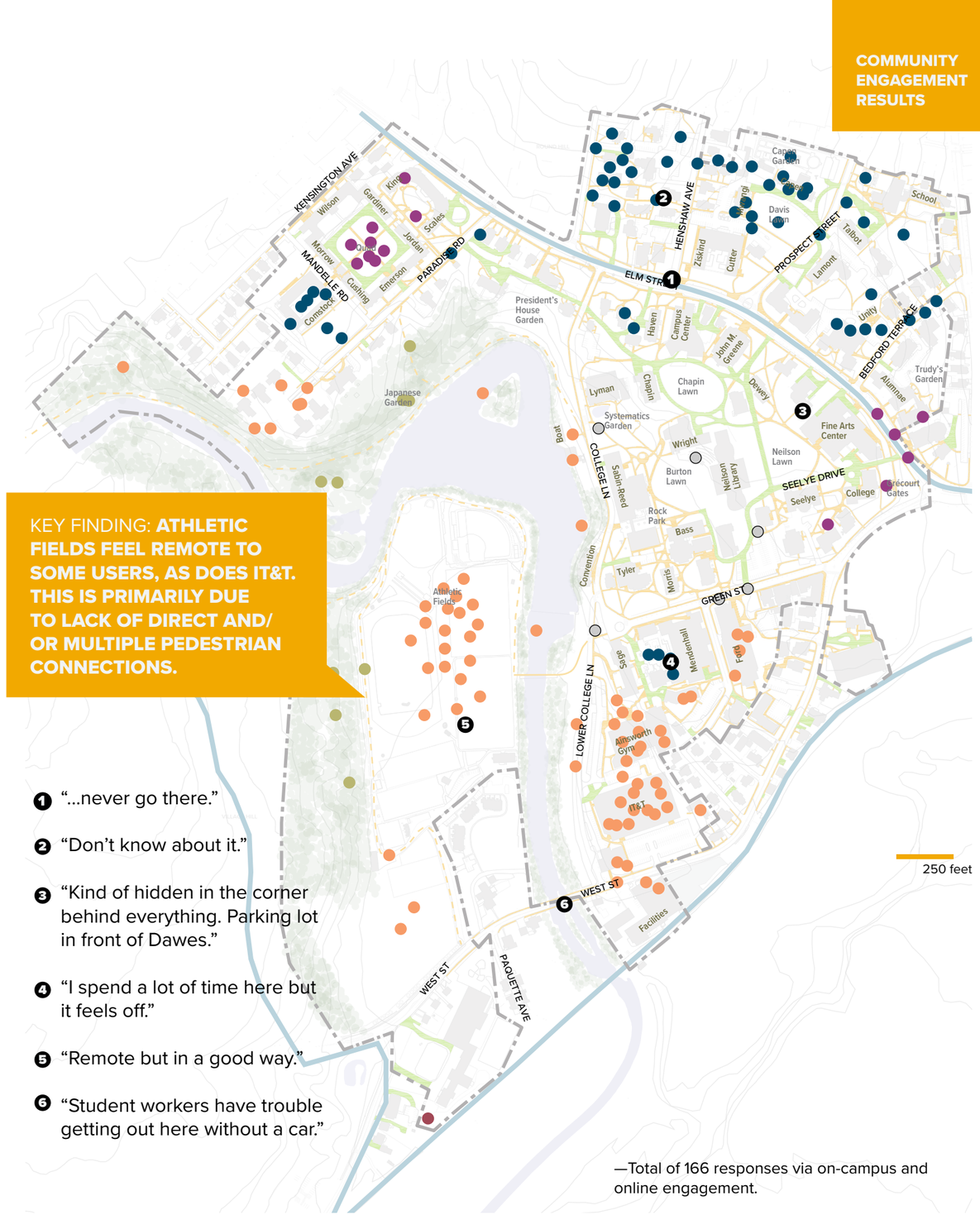
SITE ANALYSIS

“[Mendenhall] ...has potential as a gathering space and feels remote because it is away from the more academic-building concentration of campus. Though sometimes these remote places can provide a nice respite.”

—Submitted via www.groundswellmagazine.com

↑Open space in front of Mendenhall Center.

- NOT A DAILY DESTINATION
- HARD TO ACCESS (Too far / grade change)
- HIDDEN / UNKNOWN
- WOODED AREA
- OTHERS



KEY FINDING: **ATHLETIC FIELDS FEEL REMOTE TO SOME USERS, AS DOES IT&T. THIS IS PRIMARILY DUE TO LACK OF DIRECT AND/OR MULTIPLE PEDESTRIAN CONNECTIONS.**

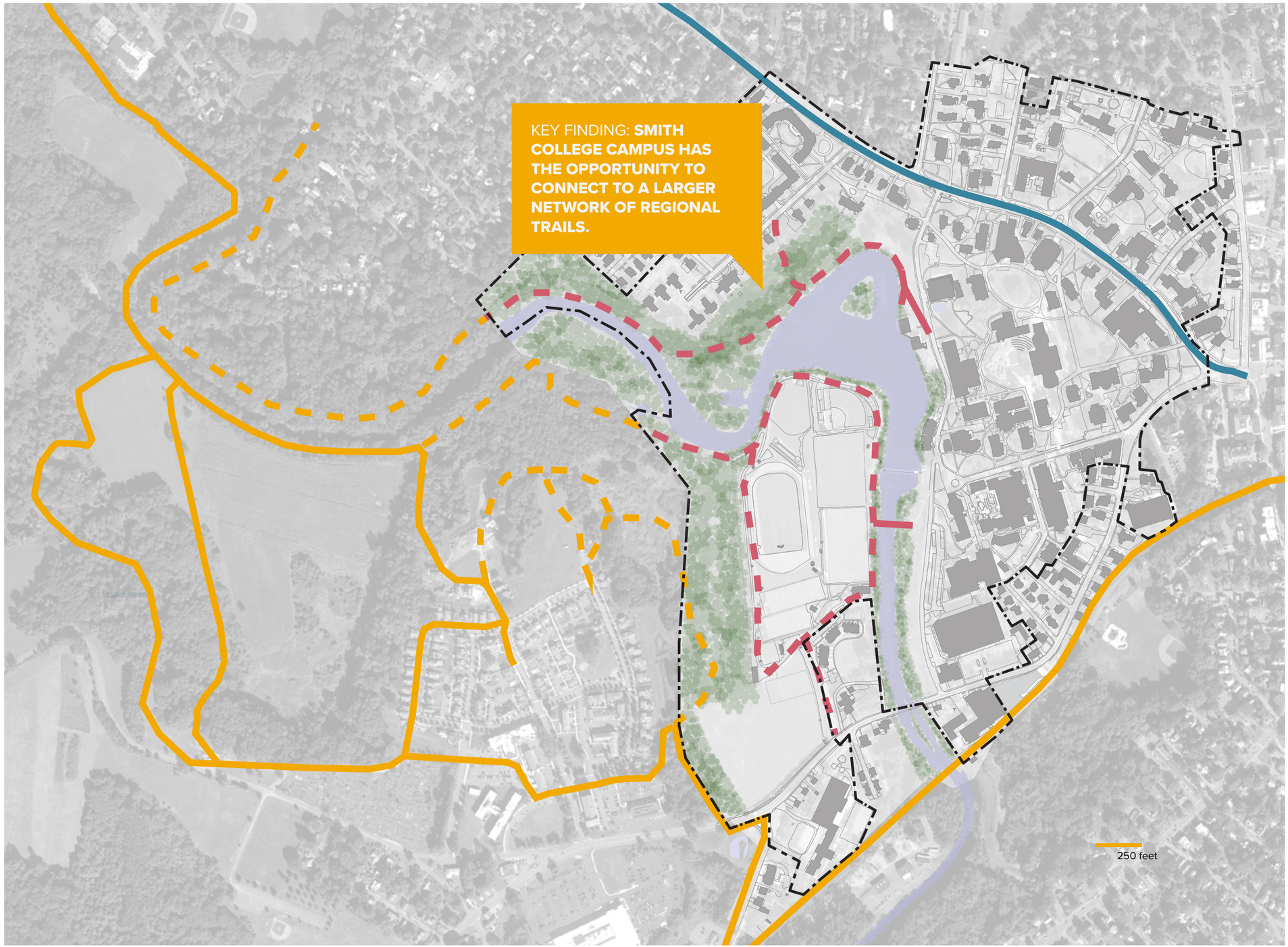
1. “...never go there.”
2. “Don’t know about it.”
3. “Kind of hidden in the corner behind everything. Parking lot in front of Dawes.”
4. “I spend a lot of time here but it feels off.”
5. “Remote but in a good way.”
6. “Student workers have trouble getting out here without a car.”

—Total of 166 responses via on-campus and online engagement.

REGIONAL CIRCULATION

SITE ANALYSIS

Overview: The campus is part of a larger, and ever-expanding, series of regional pedestrian and bicycle networks. These routes offer students access to alternative ways to experience the campus landscape as well as to connect to regional destinations. There are two significant missing links however. One is to complete a connection to the Mill River Greenway and the other is to create a clear and safe connection to Manhan Trail.



CITY BIKE LANE

UNPAVED TRAIL AT SMITH

UNPAVED TRAIL OUTSIDE OF SMITH

PAVED TRAIL AT SMITH

PAVED TRAIL OUTSIDE OF SMITH

➜ View of the trail along the Pond, MNLA, 2019.

VEHICULAR ACCESS & PARKING

Smith College is accessed and serviced by vehicles and is closely interconnected with the City of Northampton. Identifying where the Smith community experiences conflicts among pedestrians, cyclists, and vehicles, as well as parking needs, will help create strategies for a safer environment that can be addressed in the Landscape Master Plan.

→ Map of Northampton circa 1700.

VEHICULAR ROUTES

SITE ANALYSIS

Overview: The campus, because of its dispersed house system and dining halls, event spaces and destinations, and academic and athletic facilities, necessitates that every building has separate service and emergency access. This sometimes results in a conflict among vehicles and pedestrian such as Campus School drop-off and pick-up. This results in on-campus routes serving as “shared” access routes.

It appears that over the years, paving has proliferated without a conscious attempt to clarify or rationalize pavement widths to actual needs among the different user groups.

SHARED PATH
WIDTH 11-20’
PEDESTRIANS, BIKES, VEHICLES (1 WAY)

COMMUNITY LOCAL
WIDTH 20-25’
2-WAY VEHICULAR

COMMUNITY MAIN
WIDTH 25-35’
2-WAY VEHICULAR WITH PARKING

DOWNTOWN MAIN
WIDTH MORE THAN 35’
2-WAY VEHICULAR, PARKING, BUS/BIKE LANE

AREAS OF VEHICULAR/ PEDESTRIAN CONFLICT

SITE ANALYSIS

Overview: As a result of the campus sharing many pedestrian and bicycle routes with local streets, there are multiple conflict locations. This problem is exacerbated by the often confusing signals given to drivers and pedestrians at the crossings.

It is noteworthy that many of the identified areas of conflict are actually within the campus, primarily along College Lane. Over time, local residents have found it more convenient to cut through the campus to and from West Street rather than deal with the intersection of Elm and West Streets.

“Campus is too welcoming to vehicles - why is College Lane a cut through to Elm!??”
—Submitted via www.groundswellmagazine.com

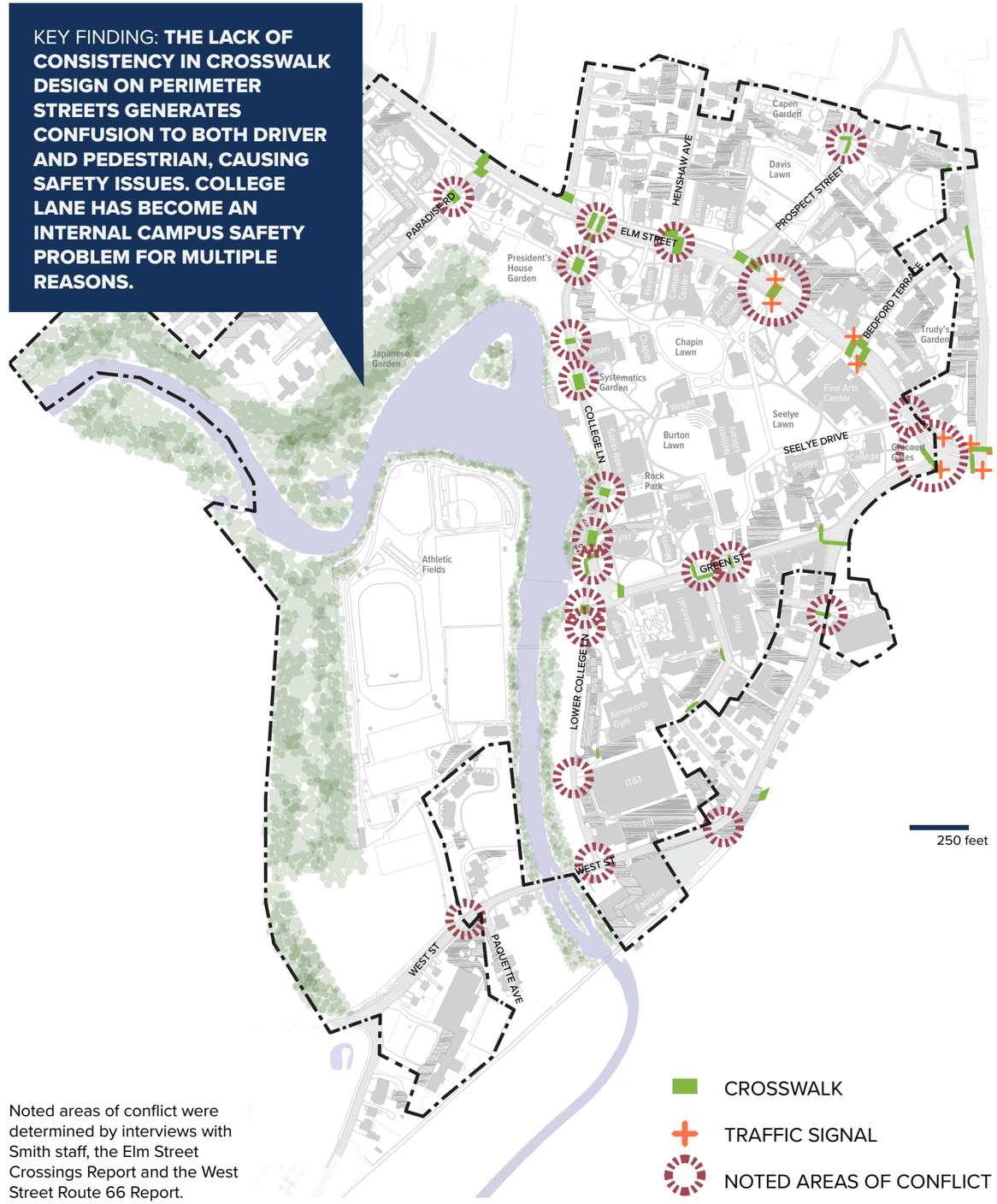
ARE THERE PLACES OF CONFLICT BETWEEN PEDESTRIANS AND VEHICLES?

100% yes
0% no

—Total 24 responses submitted via www.groundswellmagazine.com

↑Area of pedestrian and vehicular conflict.

KEY FINDING: **THE LACK OF CONSISTENCY IN CROSSWALK DESIGN ON PERIMETER STREETS GENERATES CONFUSION TO BOTH DRIVER AND PEDESTRIAN, CAUSING SAFETY ISSUES. COLLEGE LANE HAS BECOME AN INTERNAL CAMPUS SAFETY PROBLEM FOR MULTIPLE REASONS.**



Noted areas of conflict were determined by interviews with Smith staff, the Elm Street Crossings Report and the West Street Route 66 Report.

GATEWAYS AND EDGES

SITE ANALYSIS

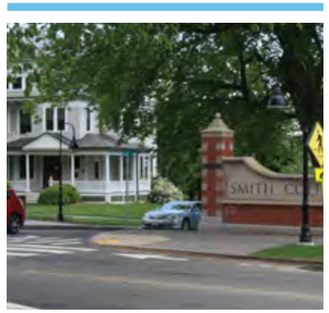
“Keep the campus wide open to the town. Smith benefits from townies walking through campus.”
—Submitted via www.groundswellmagazine.com

GATEWAY

POST AND CHAIN FENCE

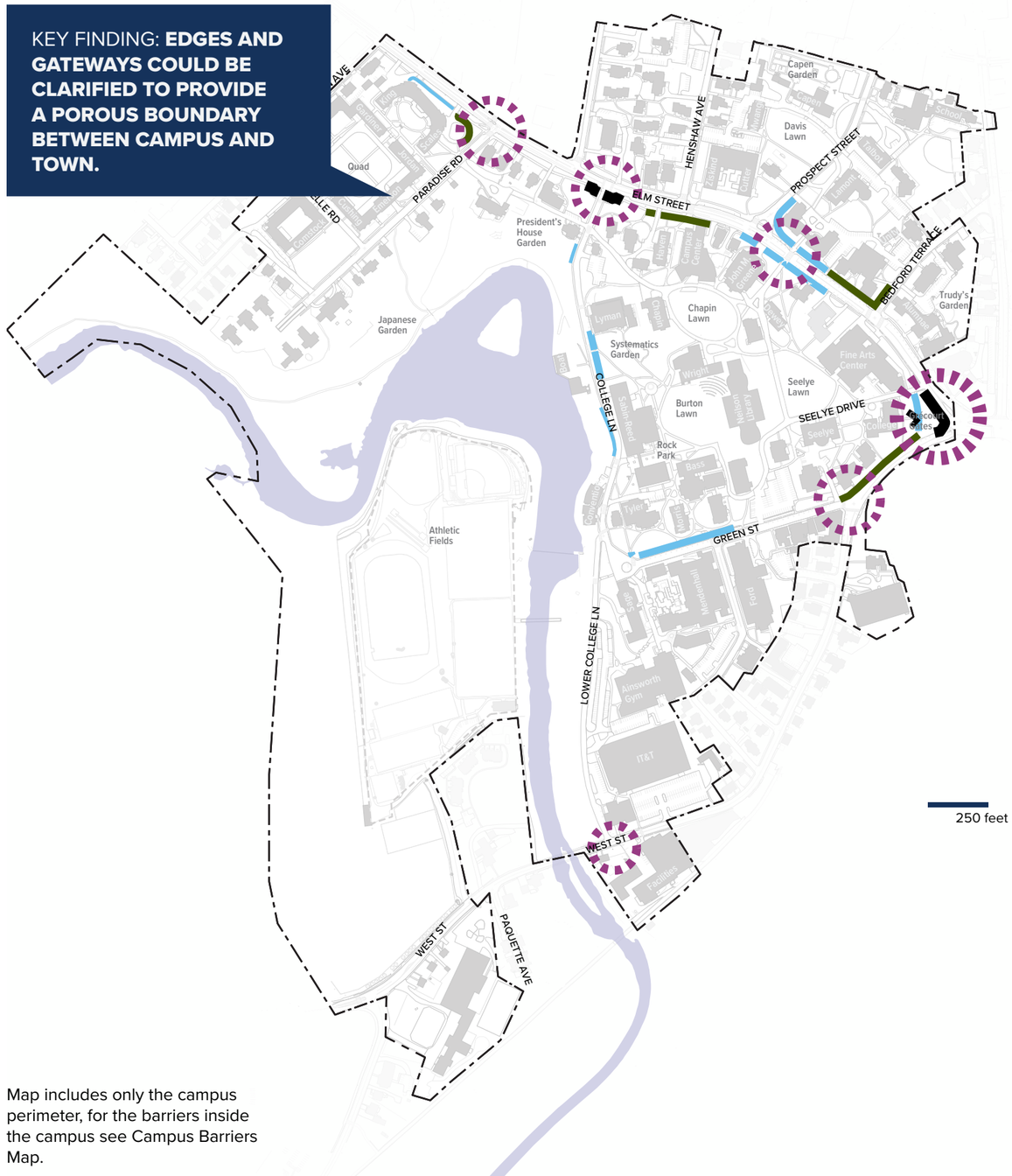
HEDGE

METAL PICKET FENCE



WALL

KEY FINDING: **EDGES AND GATEWAYS COULD BE CLARIFIED TO PROVIDE A POROUS BOUNDARY BETWEEN CAMPUS AND TOWN.**



Map includes only the campus perimeter, for the barriers inside the campus see Campus Barriers Map.

PARKING

SITE ANALYSIS

Overview: Parking is always a challenging topic on college campuses: not enough and not in the right locations. The key aesthetic issue on the Smith campus is that there are several small to medium sized parking areas in the campus core which are highly visible from sensitive and important views.

Parking lots, in general, are environmentally problematic from the standpoints of runoff and heat island effect; the concentration of these problems is clear from the map.

AUTHORIZED PARKING IS DESIGNATED BY PARKING LINE COLOR

LINE COLOR	PARKING TYPE
BLUE	VISITOR
WHITE	STAFF/FACULTY
GREEN	STUDENT
RED	COMMUTER

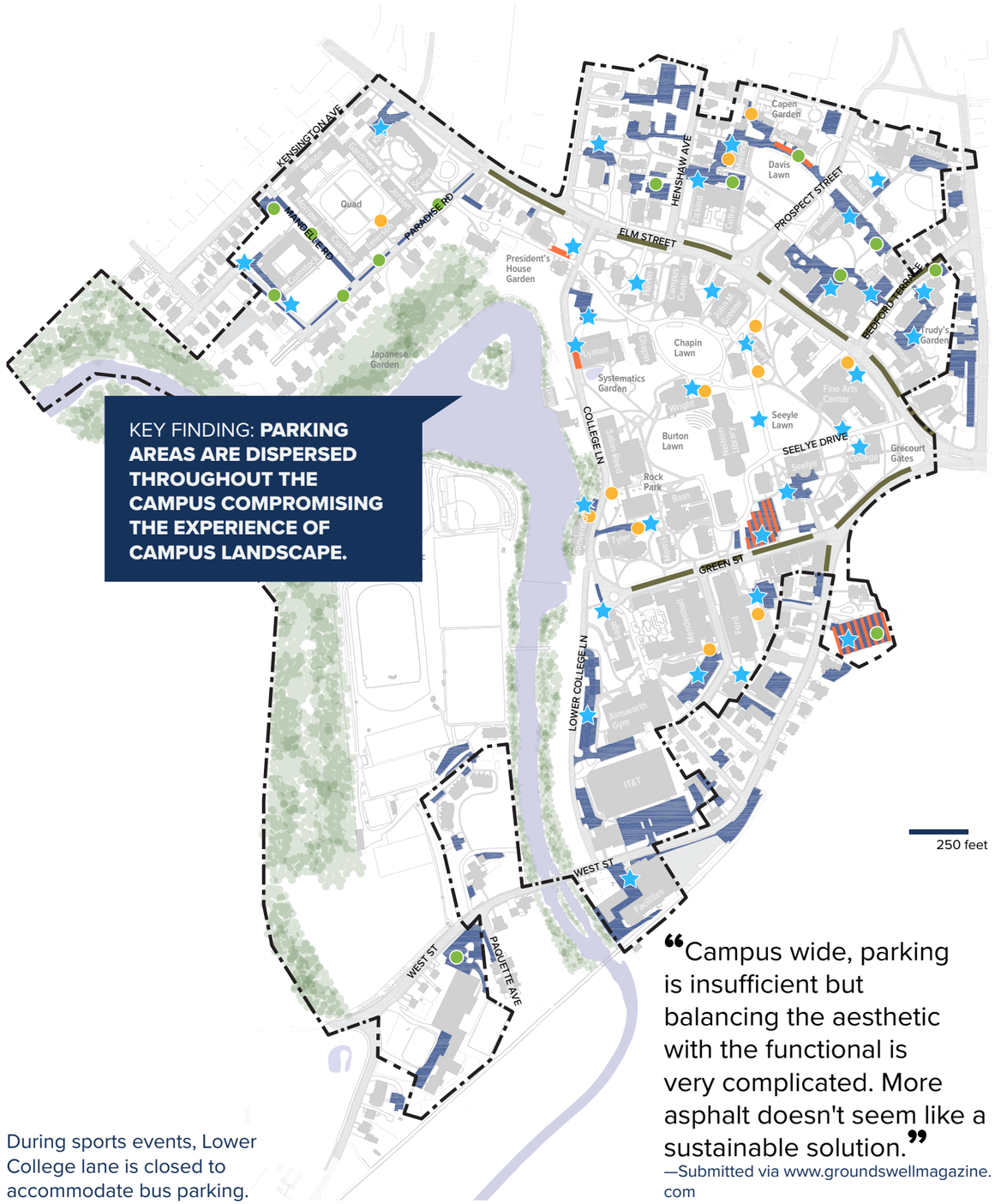
VISITOR PARKING IS AVAILABLE IN THE PARKING GARAGE IN VISITOR MARKED AREAS

↑Smith College parking rules.

ARE THERE AREAS WHERE PARKING (ESPECIALLY ACCESSIBLE PARKING) IS INSUFFICIENT?

42% yes, in the Quad
26% yes
16% no
16% other
—Total 24 responses submitted via www.groundswellmagazine.com

↑A parking lot located off College Lane.



KEY FINDING: **PARKING AREAS ARE DISPERSED THROUGHOUT THE CAMPUS COMPROMISING THE EXPERIENCE OF CAMPUS LANDSCAPE.**

STAFF & FACULTY PARKING

VISITOR PARKING

PUBLIC PARKING

STUDENT PARKING

HANDICAP PARKING

SERVICE VEHICLES ONLY

During sports events, Lower College lane is closed to accommodate bus parking.

"Campus wide, parking is insufficient but balancing the aesthetic with the functional is very complicated. More asphalt doesn't seem like a sustainable solution."
—Submitted via www.groundswellmagazine.com

→ Approach to Smith College from Visitor Parking Garage, MNLA, 2019.

CAMPUS SPACES

Many of the buildings on campus have outdoor spaces associated with them, such as residential front yards, or lawns and plazas adjacent to academic and administrative buildings. There are also multiple spaces that exist independently of buildings, many of which present opportunities for accommodating future goals and programs.

Understanding how the outdoor spaces are used today, which spaces feel more welcoming for the Smith community than others and where spaces are lacking, can help define appropriate programs, maintenance practices, planting typologies, and materials as part of the Landscape Master Plan.

→ Map of Northampton in 1895.

CAMPUS SPACES & TYPOLOGIES

SITE ANALYSIS

Overview: The Smith campus has a wealth of different types of spaces. Many are well used such as the primary lawns, others perform specific functions such as athletic fields, while others serve as essential mission-driven and pedagogical gardens. The buildings with the greatest disparities in terms of adequacy and functionality of open spaces are academic buildings and residence halls. Some but not all academic and residential buildings have welcoming thresholds and gathering areas which are important spaces for impromptu social interaction. There are other campus spaces which are essentially underdeveloped interstitial spaces that could be better defined to serve a variety of purposes from small social spaces to demonstration spaces for environmental stewardship or potentially expansion of botanic education.

TYPES OF BUILDINGS

ACADEMIC & ADMINISTRATIVE

CAMPUS LIFE & CENTERS

RESIDENTIAL

ATHLETIC

TYPES OF OPEN SPACE

PLAZAS

PRIMARY LAWNS

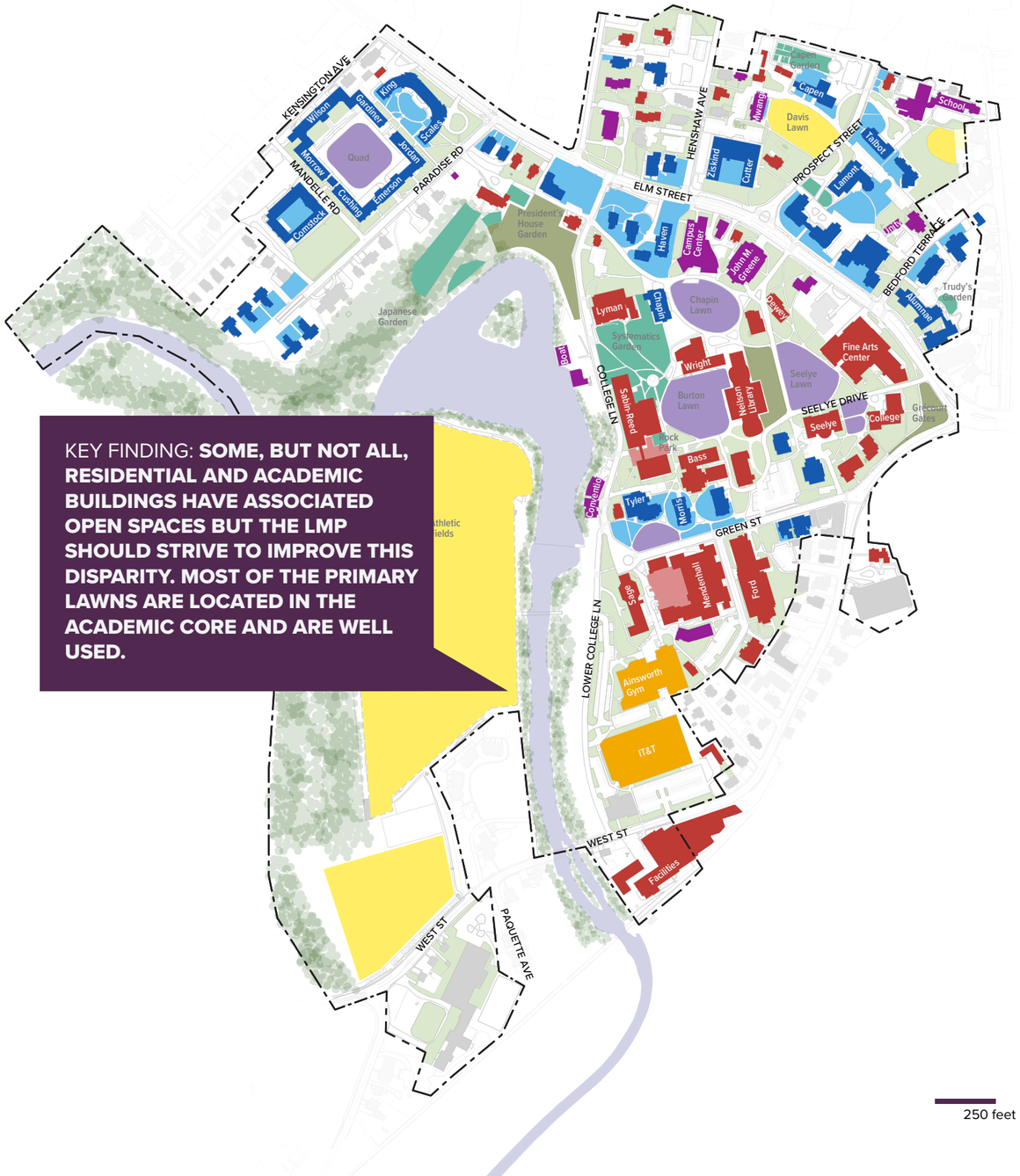
RESIDENTIAL

ATHLETIC FIELDS & COURTS

GARDENS

SCENIC LAWNS

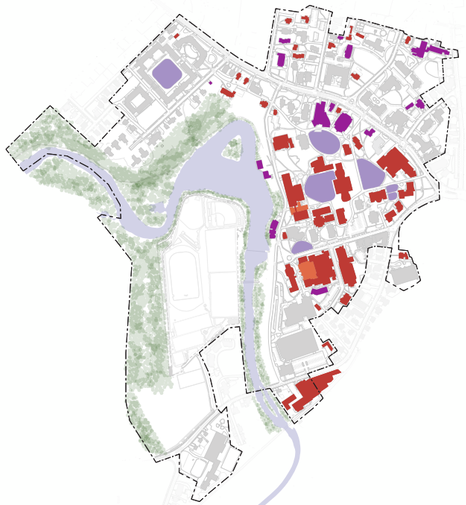
ASSORTED LAWNS



KEY FINDING: **SOME, BUT NOT ALL, RESIDENTIAL AND ACADEMIC BUILDINGS HAVE ASSOCIATED OPEN SPACES BUT THE LMP SHOULD STRIVE TO IMPROVE THIS DISPARITY. MOST OF THE PRIMARY LAWNS ARE LOCATED IN THE ACADEMIC CORE AND ARE WELL USED.**

CAMPUS SPACES & TYPOLOGIES

SITE ANALYSIS



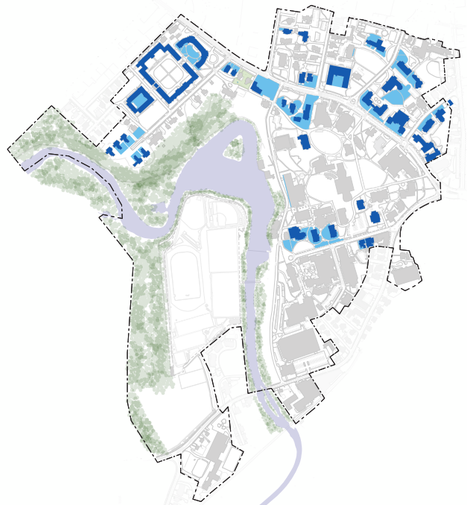
ACADEMIC & ADMINISTRATIVE CORE

ACADEMIC & ADMINISTRATIVE

PLAZAS

CAMPUS LIFE & CENTERS

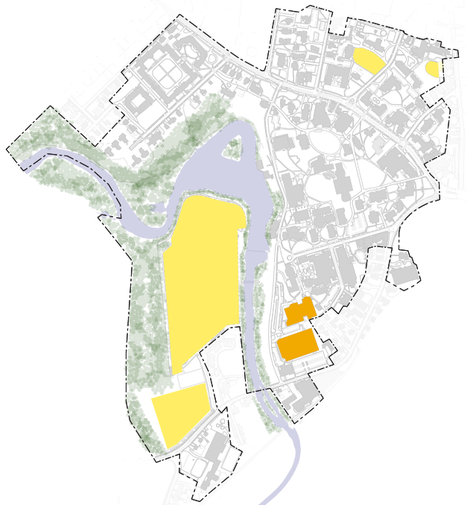
PRIMARY LAWNS



RESIDENTIAL AREAS

RESIDENTIAL BUILDINGS

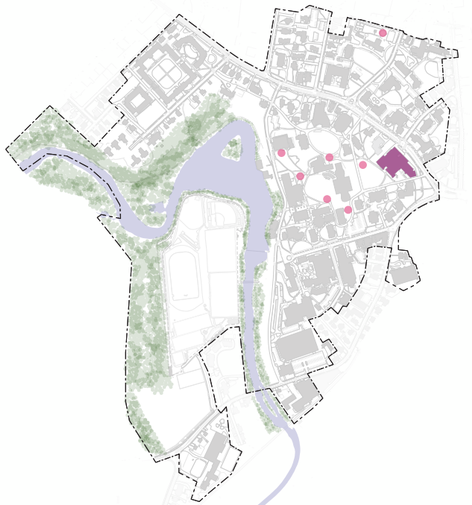
RESIDENTIAL OPEN SPACE



ATHLETICS

ATHLETIC BUILDINGS

ATHLETIC FIELDS & COURTS



ART

ART MUSEUM

ART INSTALLATIONS

WHICH OUTDOOR SPACES ARE FREQUENTLY USED?

COMMUNITY ENGAGEMENT

KEY FINDING: **DAVIS LAWN IS USED REGULARLY BY THE CAMPUS SCHOOL; HOWEVER, IT HAS NOT BEEN IDENTIFIED AS WELL AS USED BY ANY OF 175 RESPONDENTS DURING THE ENGAGEMENT. DAVIS LAWN IS ALSO USED FOR EVENTS AT COMMENCEMENT TIME FOR CLASS MEALS, SENIOR BBQS AND MULTICULTURAL BRUNCHES.**

“I use Chapin lawn, the lawns by the crew/boathouse, and named garden spaces the most. These spaces are each quietly fascinating and engaging in their own way - Chapin for the people, the gardens for the diverse plants, and the water's edge for the wildlife and nature.”
—Submitted via www.groundswellmagazine.com

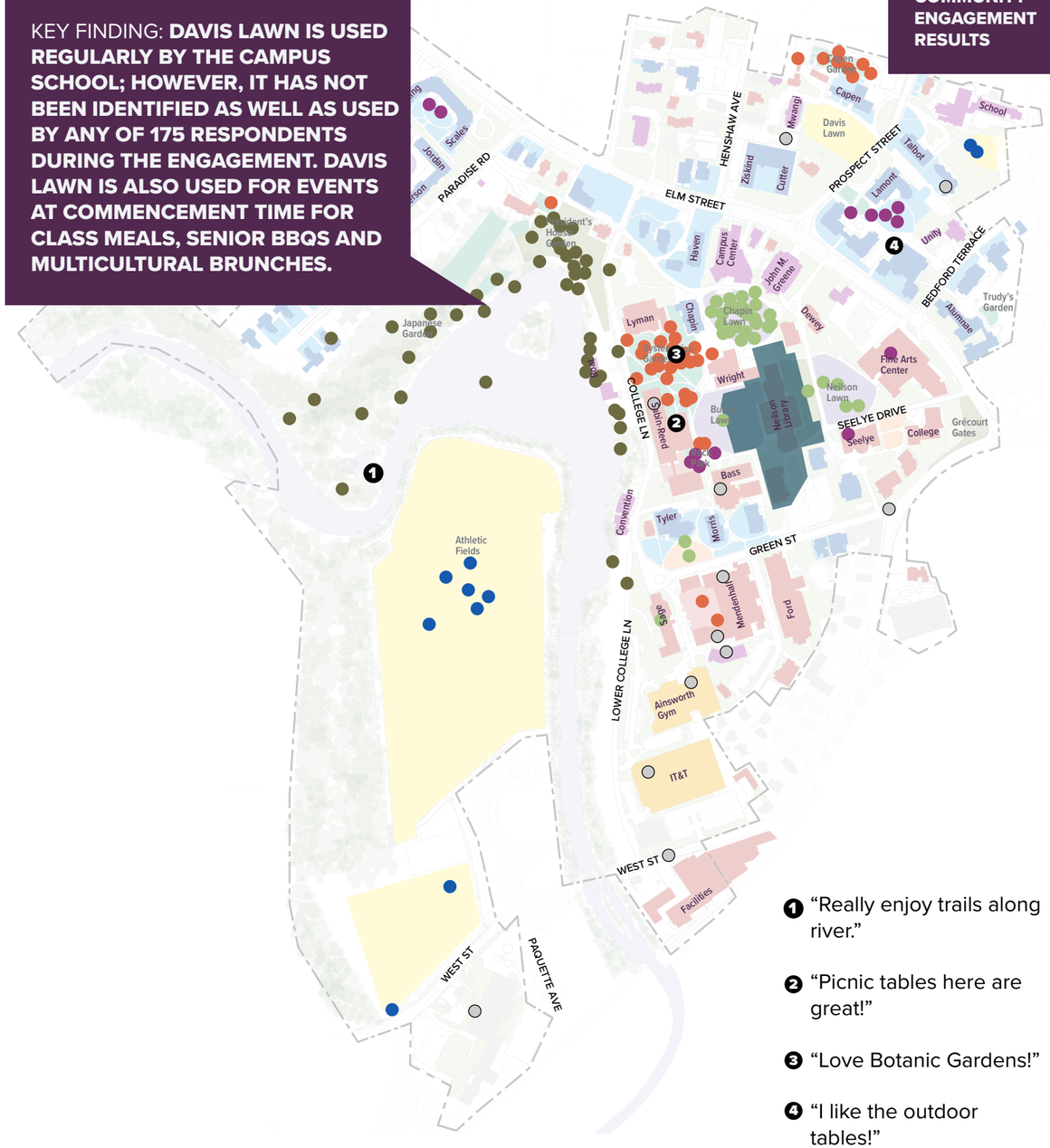
“There has been a tremendous growth in outdoor programming... We need support for these events, including water and power.”
—Events Management Office

“While at Smith, I usually walked from the science buildings up to main campus. Depending on where a class was, I went around either side of the library. Somehow I think I never noticed Capen Garden, which I now regret.”
—Submitted via www.groundswellmagazine.com

→View to campus across the Pond.

- SPORTS FIELD
- GARDEN
- OUTDOOR SEATING
- LAWN
- TRAILS / SCENIC VIEWS
- OTHER

NEILSON LIBRARY CONSTRUCTION SITE



1. “Really enjoy trails along river.”
2. “Picnic tables here are great!”
3. “Love Botanic Gardens!”
4. “I like the outdoor tables!”

250 feet

—Total of 175 responses via on-campus and online engagement.

→ View of benches overlooking the Pond, MNLA, 2019.

OUTDOOR EVENT SPACE

SITE ANALYSIS

↑Involvement Fair taking place at Chapin Lawn, 2019.

EVENT TYPES

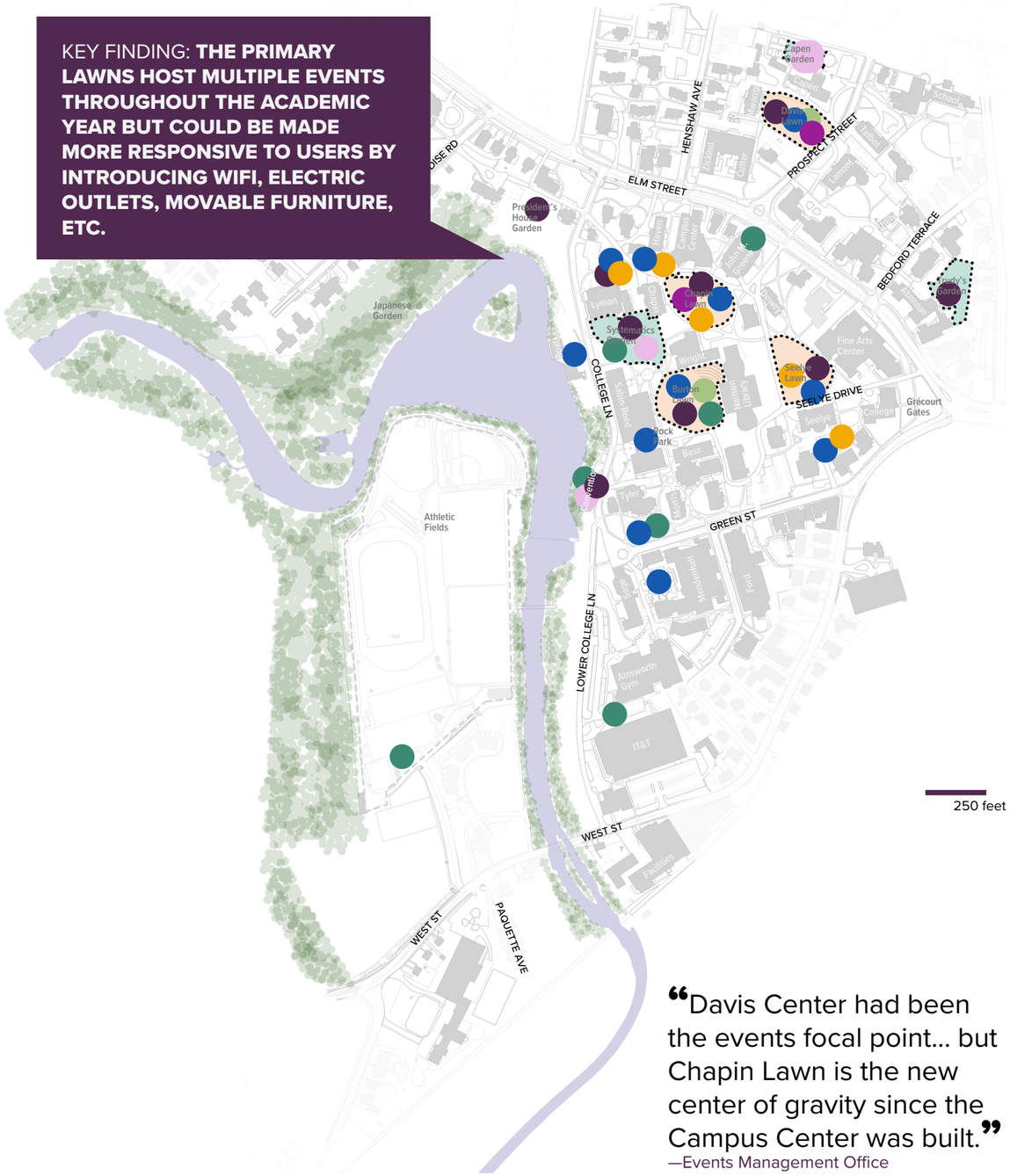
- ALUMNAE EVENTS
- WEDDINGS
- GRADUATION / CONVOCATION
- STUDENT ACTIVITIES
- STAFF EVENTS
- SUMMER CAMPS/ CAMPUS SCHOOL
- PUBLIC EVENTS
- MAJOR INDOOR EVENT SPACE WITHOUT A CORRESPONDING OUTDOOR SPACE

RESERVABLE OPEN SPACE

PRIMARY LAWNS

GARDENS

KEY FINDING: **THE PRIMARY LAWNS HOST MULTIPLE EVENTS THROUGHOUT THE ACADEMIC YEAR BUT COULD BE MADE MORE RESPONSIVE TO USERS BY INTRODUCING WIFI, ELECTRIC OUTLETS, MOVABLE FURNITURE, ETC.**



“Davis Center had been the events focal point... but Chapin Lawn is the new center of gravity since the Campus Center was built.”

—Events Management Office

→ Quad prepared for the graduation ceremony, Signe Nielsen, 2004.

OUTDOOR SEATING

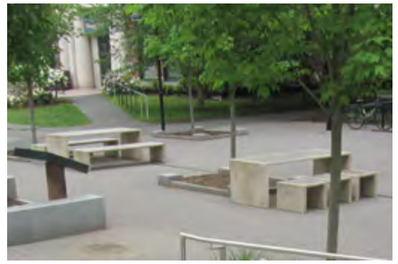
SITE ANALYSIS

“Make the campus more playful!”

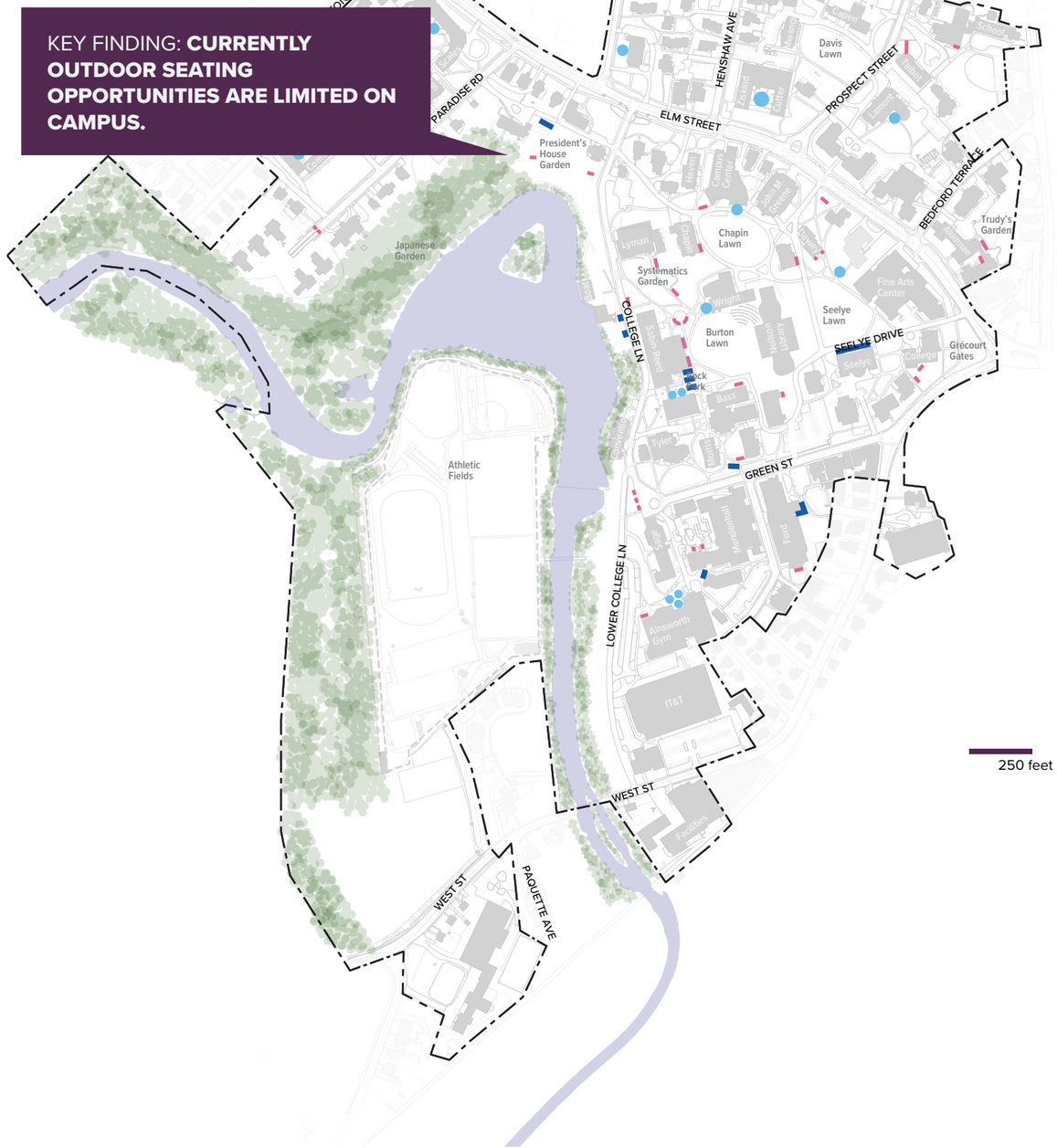
“We need more playful seating, like swings, hammocks or rocking chairs.”

“Consider adult fitness as a de-stressor. Provide more exercise opportunities in a non-structured way.”

—From conversations during on-campus engagement



Outdoor seating on campus.



KEY FINDING: **OVERWHELMING NUMBERS OF STUDENTS MENTIONED LACK OF SEATING AS A PRIMARY DETERRENT TO USE.**

Don't have loud construction projects in the middle of campus while school is happening, wait until the summer or winter break.

Put trees around outdoor benches for shade so we can see our computer screens.

to Scayle Lawn as envisioned by one of the participants.

KEY FINDING: **MOVABLE FURNITURE COULD PROVIDE OPPORTUNITIES FOR INTERACTIVE PLACEMAKING.**

View to Quad Lawn as envisioned by one of the participants.

CAMPUS BARRIERS

SITE ANALYSIS

Overview: The Smith campus has a special challenge: by design it is located very close to the center of Northampton and most of the buildings along Elm Street fall within the Elm Street Historic District. These buildings have a variety of edge treatments, some of which are historic and some not. Within the campus core, fences are perceived to be exclusionary. Athletic and active recreation fields pose another challenge where fencing is necessary for the activities but sends a discomfiting message either aesthetically or socially.

POST AND CHAIN FENCE

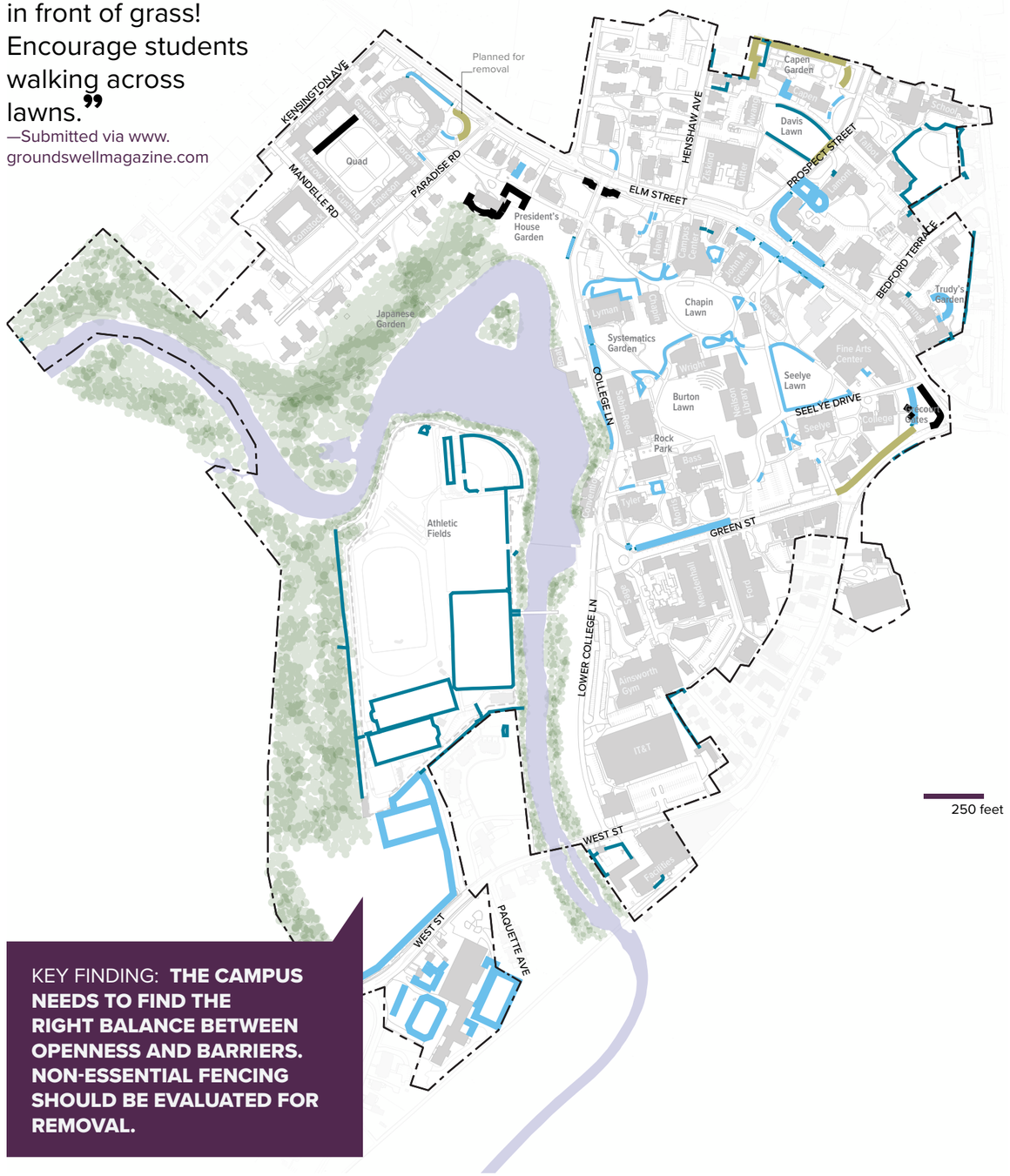
IRON OR WOOD FENCE

CHAIN LINK FENCE

HEDGE

WALL

“No more fences in front of grass! Encourage students walking across lawns.”
—Submitted via www.groundswellmagazine.com



KEY FINDING: **THE CAMPUS NEEDS TO FIND THE RIGHT BALANCE BETWEEN OPENNESS AND BARRIERS. NON-ESSENTIAL FENCING SHOULD BE EVALUATED FOR REMOVAL.**

1 View to Davis Lawn as envisioned by one of the participants.

WHAT PARTS OF THE CAMPUS FEEL WELCOMING OR UNWELCOMING TO YOU?

COMMUNITY ENGAGEMENT

“Many students have social anxieties and have challenges communicating with peers or others. There is a need to provide spaces to be alone while together.”
—Health and Wellness Center

“In some of the Botanic space, it feels like you are in a museum. Introduce pathways to encourage people to move.”
—Student comment during campus engagement

WELCOMING SPACES

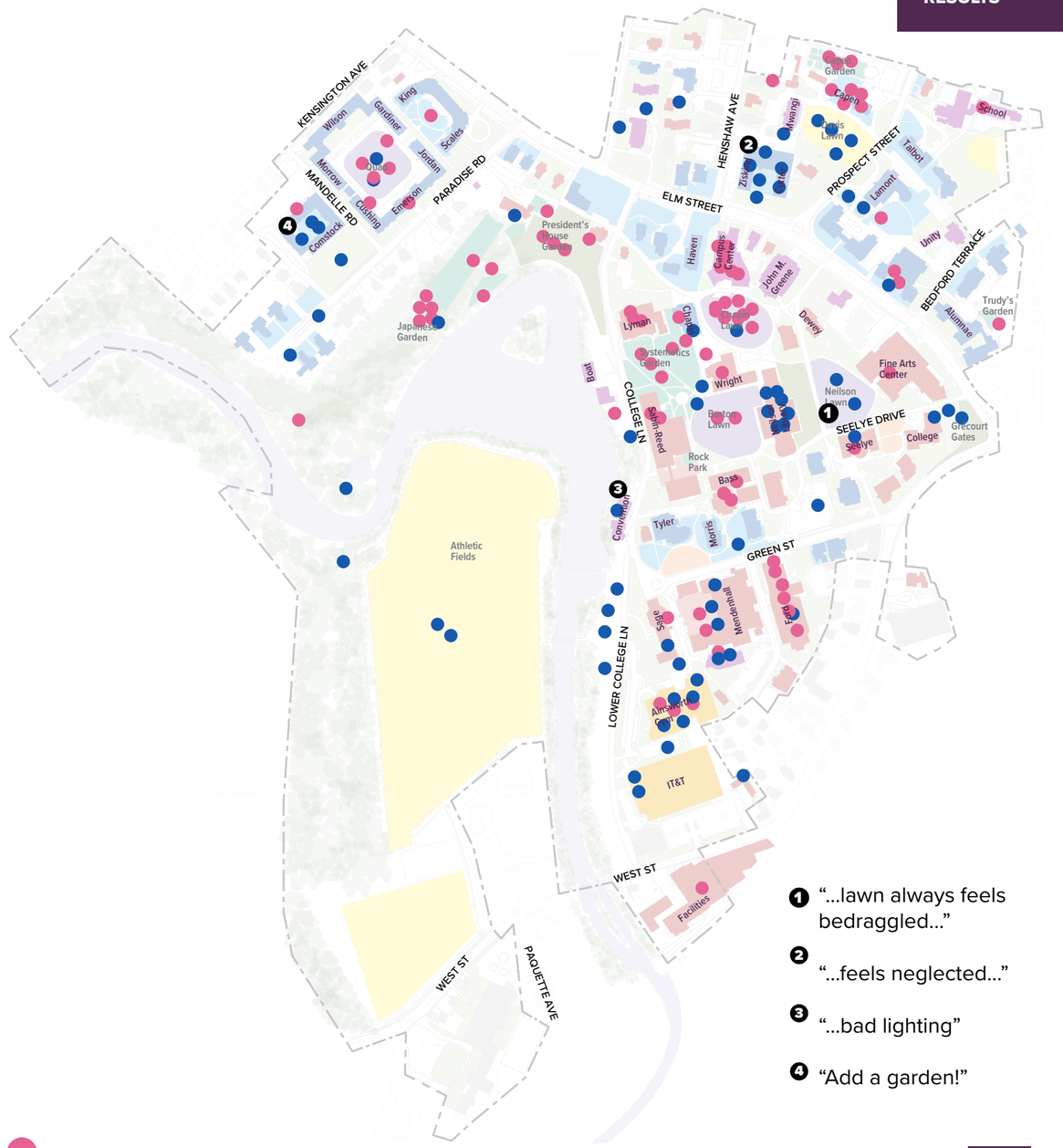
Japanese Garden
Happy Chase Garden
Chapin Lawn
Botanic Garden
Capen Garden
Burton Lawn

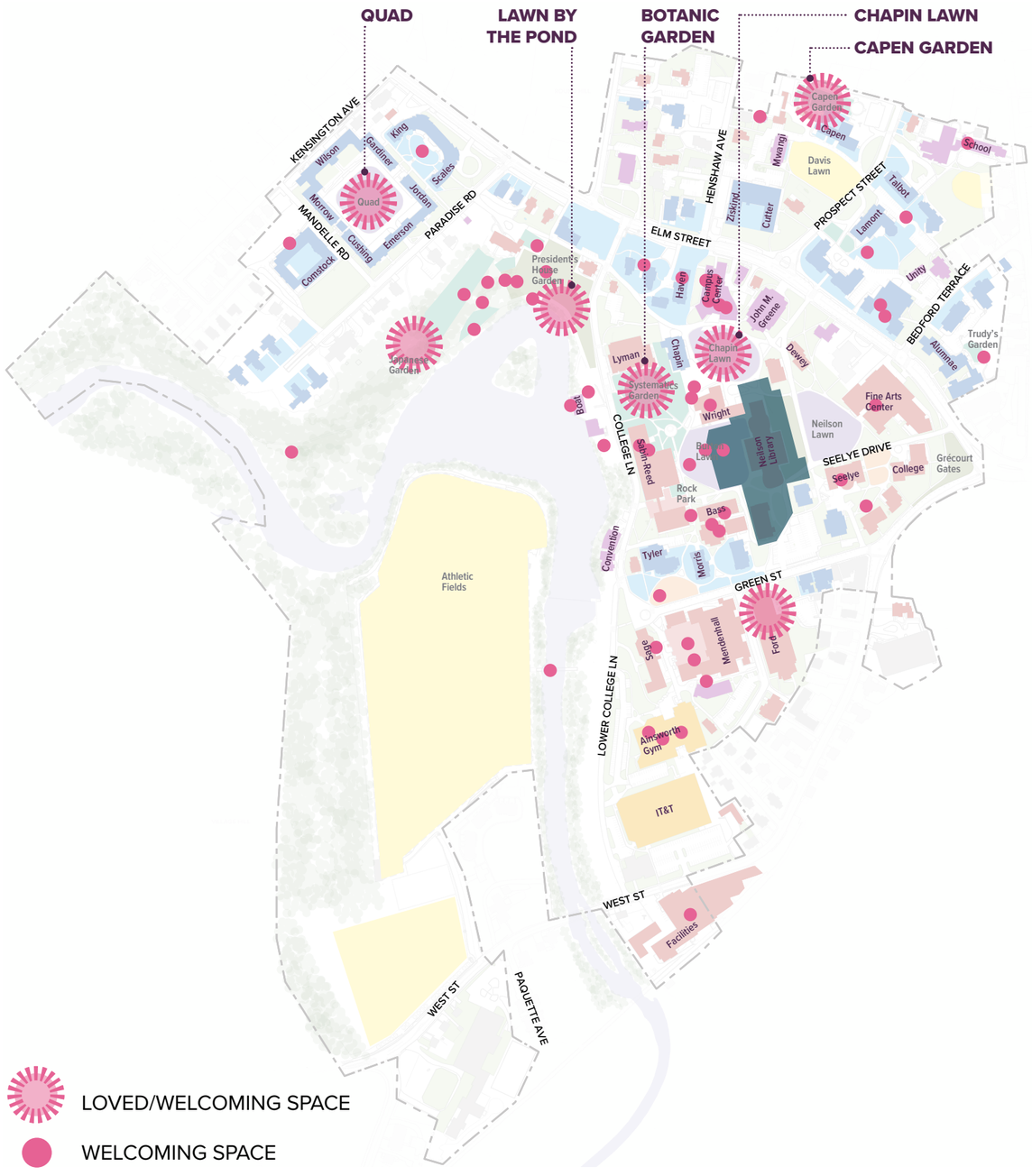
UNWELCOMING SPACES

Comstock Court Yard
Seeyle Lawn
Library Construction Site
Grecourt Gates
Athletic Fields
Davis Lawn
Cutter Ziskind Courtyard
Riverfront along College Lane

MIXED RESPONSES

Mendenhall Plaza
Quad Lawn
Path from Burton Lawn to Chapin Lawn

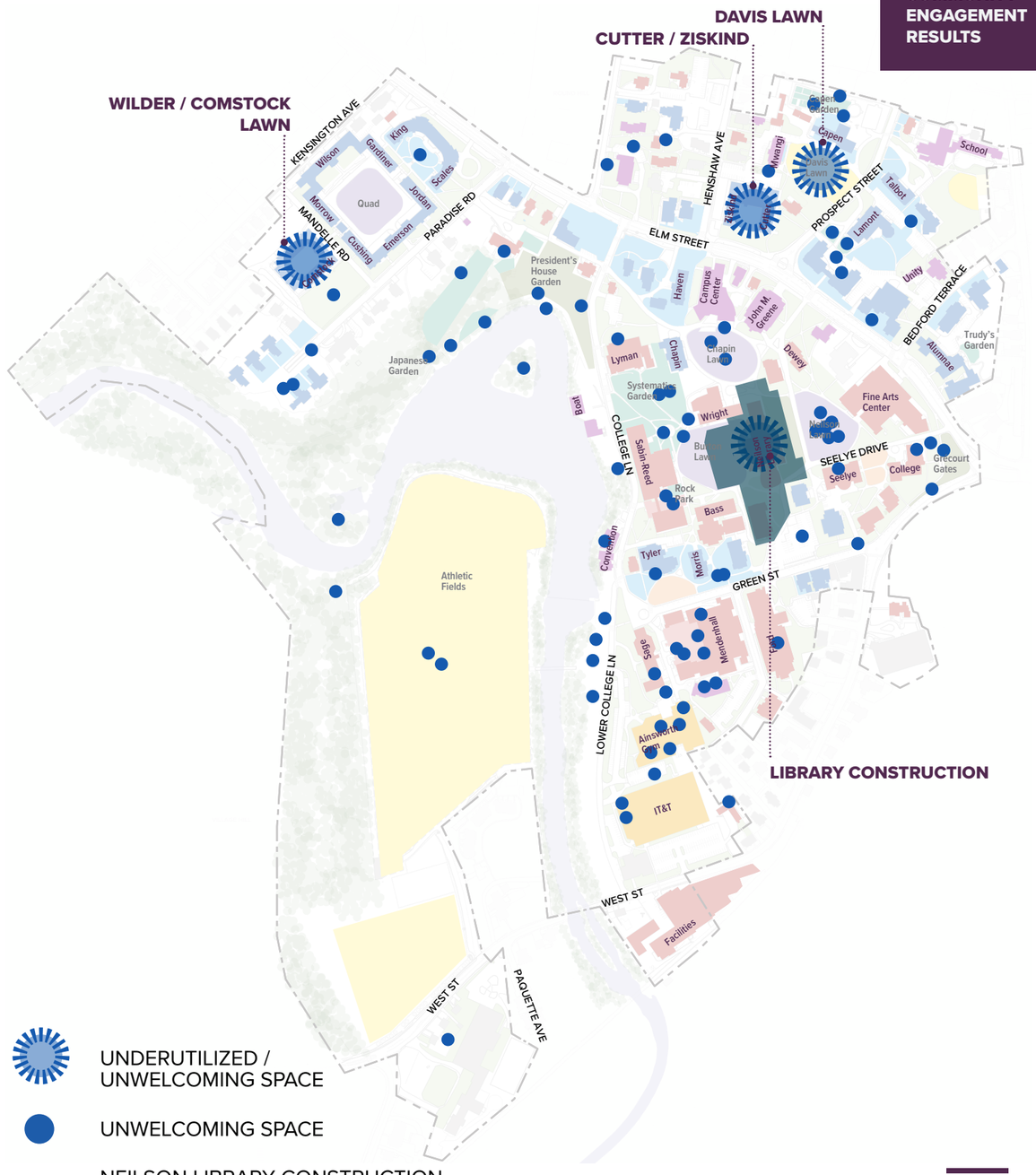




LOVED/WELCOMING SPACE

WELCOMING SPACE

NEILSON LIBRARY CONSTRUCTION SITE



UNDERUTILIZED / UNWELCOMING SPACE

UNWELCOMING SPACE

NEILSON LIBRARY CONSTRUCTION SITE

250 feet

HOW TO BETTER UTILIZE SOME CAMPUS SPACES?

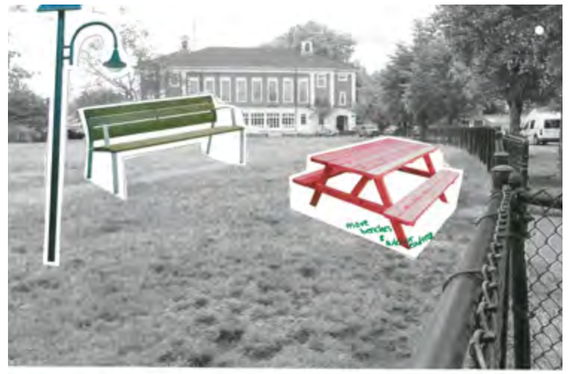
COMMUNITY ENGAGEMENT

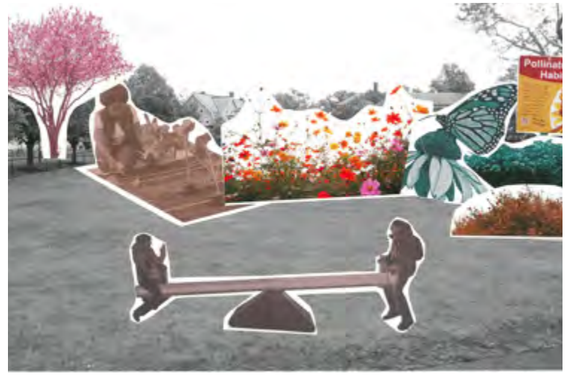
“I would like there to be more spaces designed for one person. As someone who has anxiety, it would be nice to have some kind of nook to be by myself.”

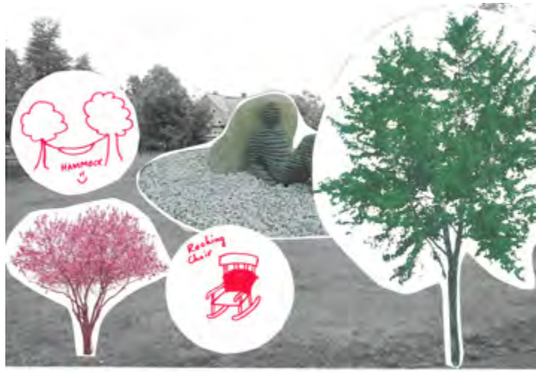
“Students love to sit outside to eat their meals, talk with friends, study etc.”

“People/students want to spill out from dining halls, Northrop/G and Lamont, but not enough seating.”
—Submitted via www.groundswellmagazine.com

picnic tables
places to play, relax, de-stress
native plants
benches
gardens
trees for shade
pollinator garden
no fence
flowers
tables and chairs
art work
solar lighting
benches



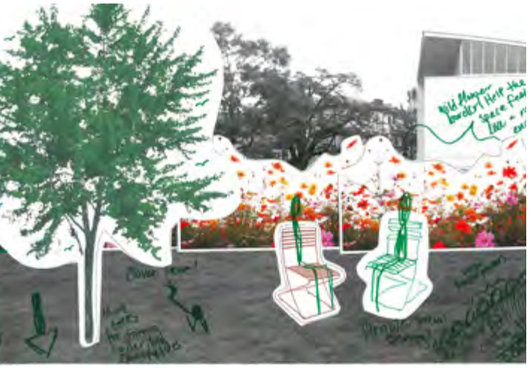
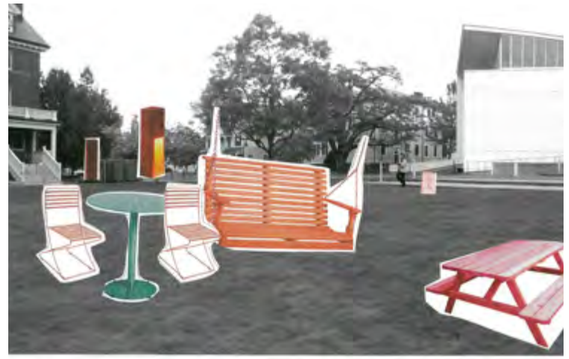




↑Views of Davis Lawn as envisioned by on-campus engagement participants.

HOW TO BETTER UTILIZE SOME CAMPUS SPACES?

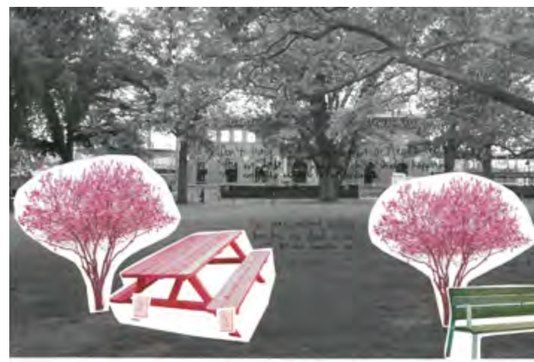
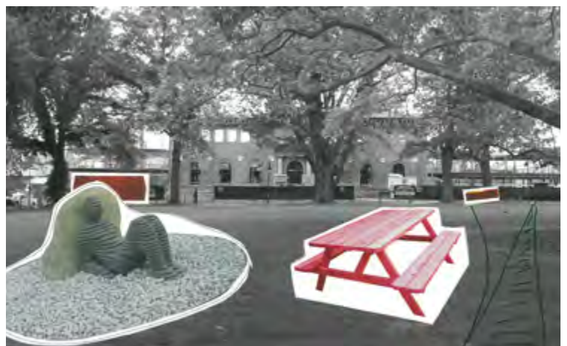
COMMUNITY ENGAGEMENT



↑Views of Chapin Lawn as envisioned by on-campus engagement participants.




↑Views of Seeyle Lawn as envisioned by on-campus engagement participants.

WHICH CAMPUS LANDSCAPES OFFER YOU AN OPPORTUNITY TO LEARN OR TEACH?

COMMUNITY ENGAGEMENT

Overview: A campus is a learning environment in several ways. One way is pedagogical which is directed learning under the guidance of instructors. For this to be more successful on the campus, there needs to be more opportunities for students to gather in learning environments outside of the traditional classroom. The other way to learn is through landscape-based, or experiential learning. The campus as it is presently represents a state of “cognitive dissonance” wherein what the students are being taught about environmentally-conscious landscapes and what the campus landscape represents are discordant.

Experiential learning mandates that the campus as classroom needs to operate at a number of scales from simply living and journeying through the landscape to using the landscape for more in-depth research, hands-on learning and internships.

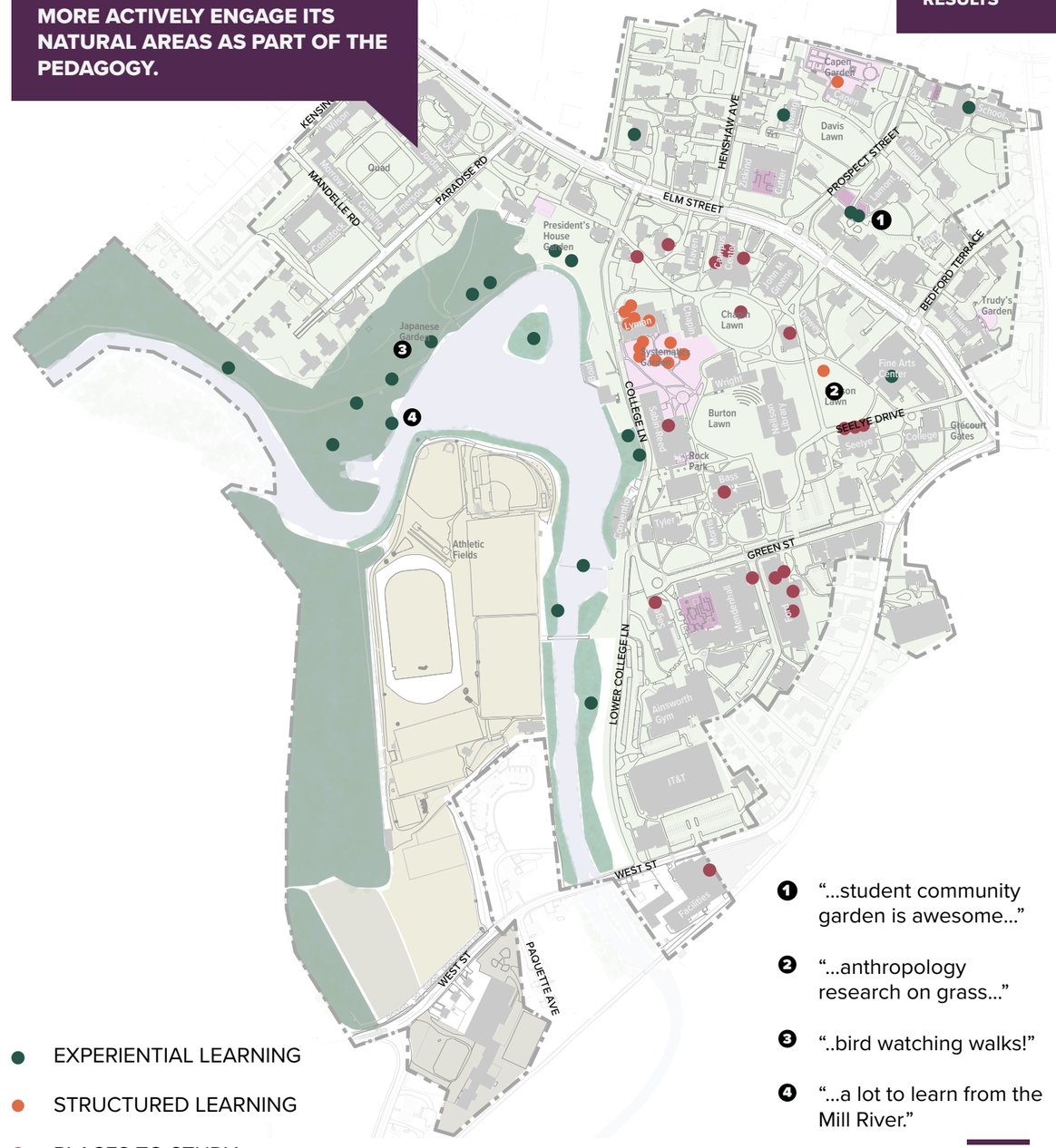
Some of the goals of experiential learning should include understanding of the local ecology, recognizing best practices of design as well as in land management and operations, appreciating how history and culture affect place, and expanding the number of disciplines that allow students to relate their interests and fields of study to the landscape.

“Get your hands dirty with engaged learning.”
—Disability Services

“Make the plant collections more accessible and less fenced off.”
—Landscape Studies Department

“Currently at Smith co-curricular, curricular, and scholarly activities all contribute to educational use of the landscape, however, the majority of students’ interactions with the landscape are through their everyday lived experiences — walking to class, lounging on the lawns, enjoying the shade of marvelous trees, and gazing at Paradise Pond. ...with intention, these interactions could be structured, curated, and guided in ways that enhance both appreciation and learning within the landscape.”
— “Learning in the Smith College Landscape” by Greta Mundt ’21

KEY FINDING: **SMITH NEEDS TO MORE ACTIVELY ENGAGE ITS NATURAL AREAS AS PART OF THE PEDAGOGY.**



Results of on campus engagement, categorization is added by the design team.

↑Community garden as envisioned by an on-campus engagement participant.

CONCLUSION

→ A students sitting by the Boathouse, MNLA, 2019.

KEY FINDINGS

The Discovery Phase has been an in-depth assessment of the region and the campus. We conclude this phase with an understanding that the principles of the Landscape Master Plan provided by Smith at the outset of this endeavor, can be consolidated into a single vision: to recalibrate the relationship between humans and their environment and to embed this foundational philosophy within the campus community. From this overarching philosophy, the guiding principles can be considered as beads on a necklace.

The following two pages provide a comprehensive compilation of each key finding associated with the maps within the chapters. The key findings identify particular challenges and opportunities for the campus that relate to its environment, human history, pedestrian and vehicular experience and campus spaces.

Understanding these issues will help provide specific solutions and, ultimately, advance the three primary goals of the Master Plan: inclusivity, adaptation and education.

INCLUSIVE LANDSCAPE

- The area around the Mill River and Paradise Pond exhibits the greatest diversity of existing and potential **habitat**.
- Smith College is situated on land occupied by **first peoples**. The campus should explore appropriate ways to recognize and celebrate this cultural heritage.
- Though this is a result of campus evolution, the **duality of building frontage** can be confusing and the relationship of buildings to open space could be clarified.
- 20% of all **routes are along College Lane** in spite of a discontinuous sidewalk and significant vehicle traffic.
- Visitors are often **misdirected** to destinations and parking locations need to be clearer.
- Athletic fields feel remote to some users, as does IT&T. This is primarily due to lack of direct and/or multiple **pedestrian connections**.
- Some of the campus routes are for pedestrians and cyclists only, while others are **shared among pedestrians, cyclists, and vehicles**. The distinction is not always clear or safe.
- Multiple Elm Street crosswalks, Green and West Street crossing, Green Street and College Lane crossing are identified by Smith community as locations of **pedestrian/ vehicular conflict.**

ADAPTABLE LANDSCAPE

- Mill River experienced a significant increase in **flooding** in the last 15 years.
- **Climate-related planting zones are shifting** with climate change. Northampton has already shifted from zone 5 to zone 6.
- Smith College needs to proactively protect and manage **sensitive habitat** along the Mill River and around Paradise Pond.
- Campus **topography** can be seen as a series of terraces that cascade towards the river.
- The area around the Mill River and Paradise Pond exhibits the greatest diversity of existing and potential **habitat**.
- **Water quality** has been gradually improving over the last 50 years, and Smith College should continue to aid in the effort though best management practices.
- Comprehensive approach to **riparian zone** stewardship and flood control system maintenance will help maintain infrastructure and enhance ecological value.
- Steep slopes limit accessibility while increasing the **speed of stormwater runoff** and rates of erosion.
- **Sediment accumulation** behind the Paradise Pond dam and the Mill River bank stabilization impacts recreational uses of the Pond and flood storage capacity.

EDUCATIONAL LANDSCAPE

- Comprehensive approach to riparian zone stewardship and flood control system maintenance will help maintain infrastructure and enhance **ecological value**.
- The campus is renown for its trees. Looking forward, the campus needs to monitor their health and consider climate change in **future tree selections**.
- Smith College is situated on land occupied by first peoples. The campus should explore appropriate ways to recognize and celebrate this **cultural heritage**.
- The location of Smith College has been influenced by the industrial history along the Mill River. It is important to acknowledge the economic, environmental and social impacts of the **industrial legacy**.
- Vast majority of Smith students, alumnae, faculty and staff mentioned that **views** towards the pond and the River **inspire** them. These views need special attention to ensure their sustainability.
- There are many **views** on campus that remain iconic through time. Today many of these are compromised and could be restored or enhanced.

KEY FINDINGS

▶Topography of the campus creates a unique landscape but also brings challenges in terms of accessibility. While most buildings on campus are accessible, **landscape accessibility** should be improved.

▶The lack of consistency in **crosswalk design** on perimeter streets generates confusion to both driver and pedestrian, causing safety issues. College Lane has become an internal campus safety problem for multiple reasons.

▶**Shared paths** are also used for ADA parking, deliveries, etc. All shared paths and local streets through campus could be re-evaluated to establish appropriate widths.

▶Edges and gateways could be clarified to provide a **porous boundary between campus and town**.

▶Davis Lawn is used regularly by the Campus School; however, it has not been identified as well as **used** by any of 175 respondents during the engagement. Davis Lawn is also used for events at commencement time for class meals, senior BBQs and multicultural brunches.

▶ The campus needs to find the right **balance between openness and barriers**. Non-essential fencing should be evaluated for removal.

▶Currently **outdoor seating** opportunities are limited on campus.

▶43% of the campus core is comprised of lawn and 29% is **paved with impervious material**, neither of which are environmentally sustainable.

▶In spite of the apparent diversity of vegetation typologies, the vast majority of the campus is comprised of **lawn**.

▶Roughly **67%** of the entire campus acreage is comprised **of lawn**.

▶The campus is renown for its **trees**. Looking forward, the campus needs to monitor their health and consider climate change in future tree selections.

▶The majority of campus is suitable for some type of **stormwater intervention**.

▶The Smith campus has been shaped by multiple plans and ideals. The campus landscape needs to strive for **continuity within change**.

▶Most of pedestrian paths, roads, parking lots and driveways share the **same paving material** (asphalt) resulting in lack of hierarchy among the types of routes.

▶**Parking areas** are **dispersed** throughout the campus compromising the experience of campus landscape.

▶Many of the iconic views are compromised due the **encroachment of vehicles** within the pedestrian realm.

▶Smith College campus has the opportunity to connect to a larger **network of regional trails**.

▶Topography of the campus creates a unique landscape but also brings challenges in terms of accessibility. While most buildings on campus are accessible, **landscape accessibility** should be improved.

▶Some, but not all, residential and academic buildings have **associated open spaces** but the Imp should strive to improve this disparity. Most of the primary lawns are located in the academic core and are well used.

▶The primary lawns host multiple events throughout the academic year but could be made more **responsive to users** by introducing wifi, electric outlets, movable furniture, etc.

▶Overwhelming numbers of students mentioned **lack of seating** as a primary deterrent to use.

▶Movable furniture could provide opportunities for **interactive placemaking**.

▶Smith needs to more actively engage its **natural areas as part of the pedagogy**.

APPENDIX

→ Students practicing archery, MNLA, 2019.

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