Campus Comprehensive Plan

Phase 1 | Interim Analysis Findings

July 11, 2024

WILLIAM & MARY
CHARTERED 1693

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Analysis Findings

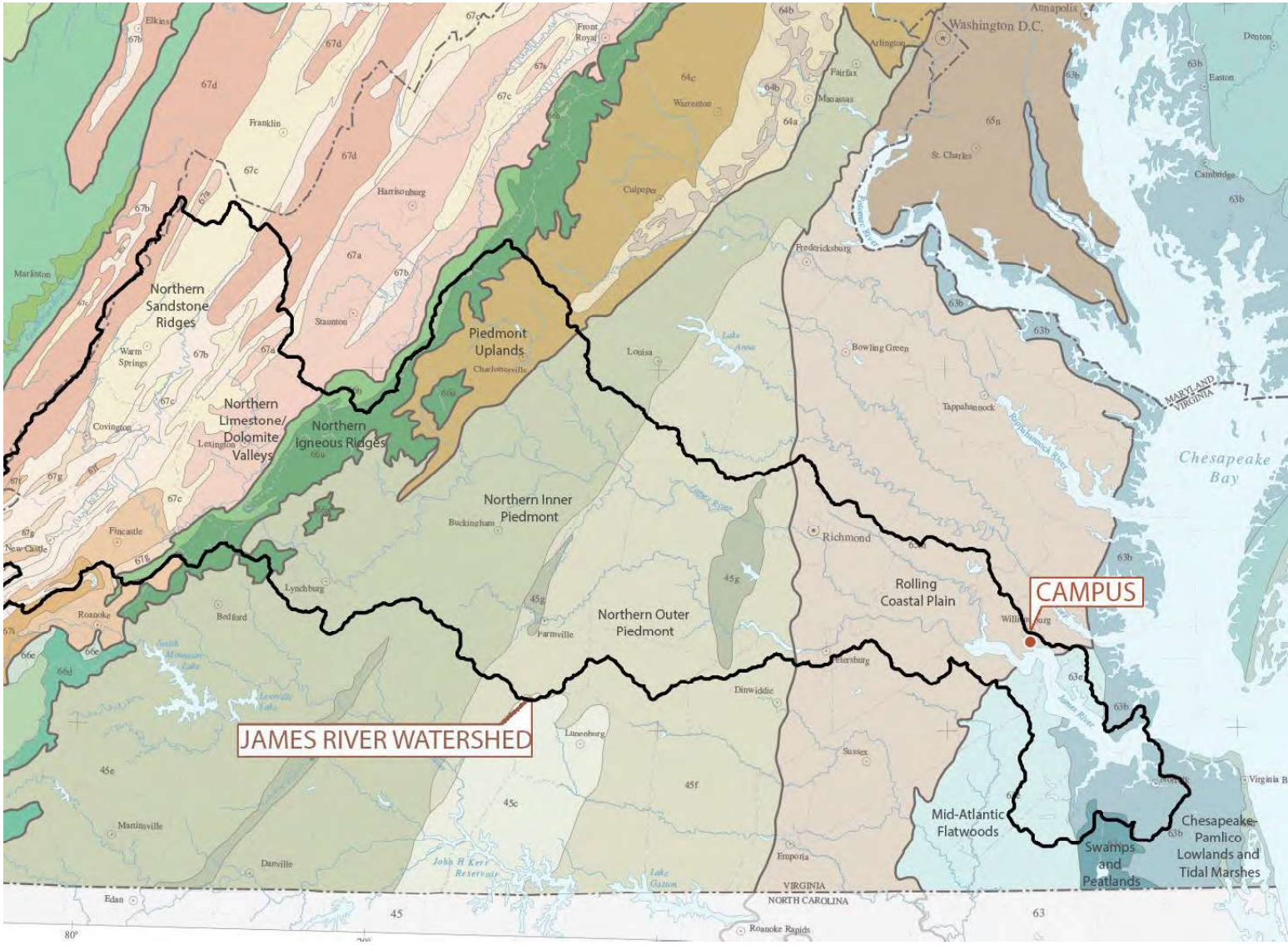
Regional Context & Landscape Analysis

Regional Landscape:

Ecoregion and key species

Key Takeaways

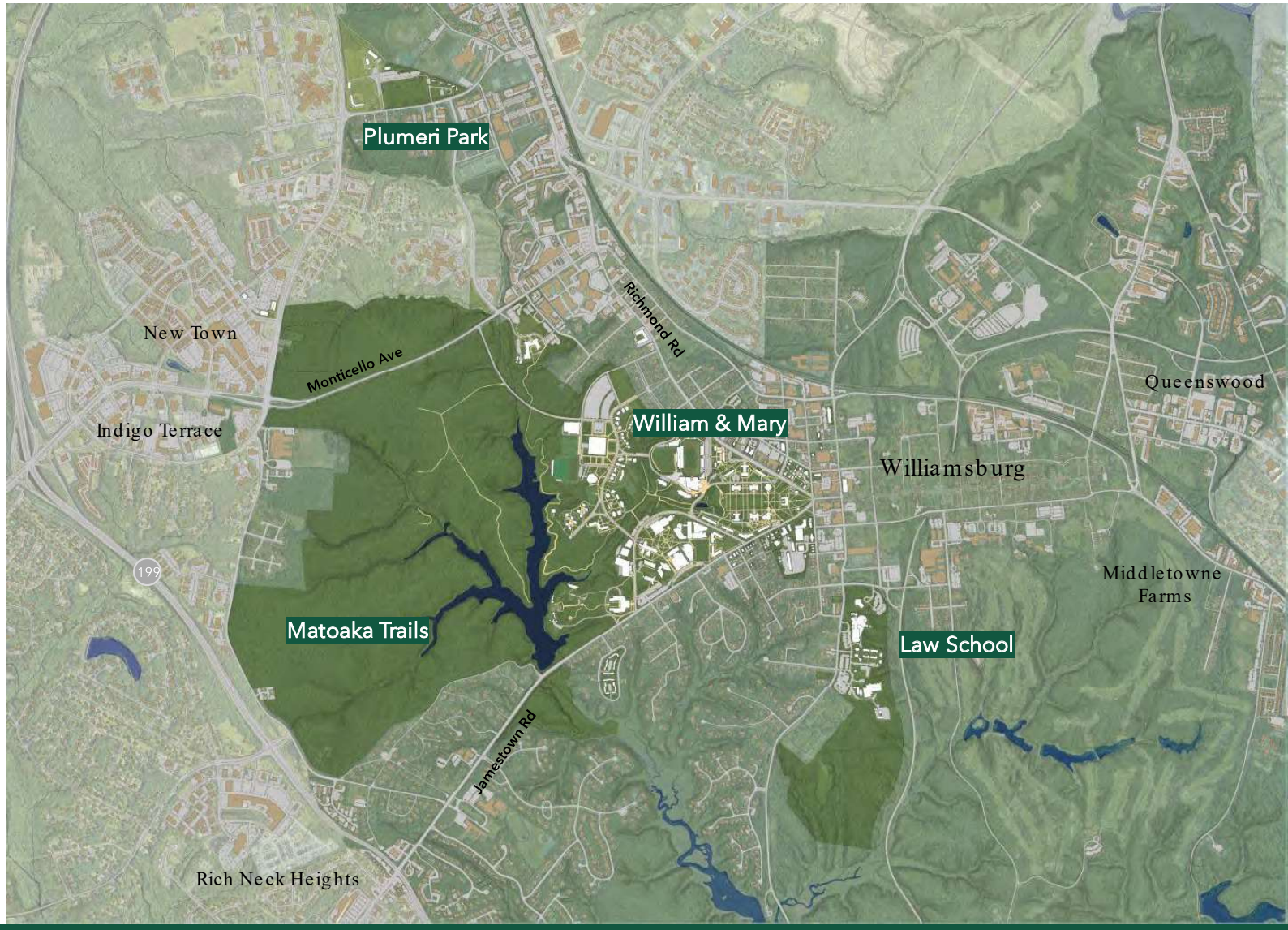
- The Rolling Coastal Plain ecoregion is **a rolling, hilly**, dissected portion of the Inner Coastal Plain that is made up of sedimentary material
- Original forest cover was probably mostly **Oak-Hickory-Pine forests**, with dominant species being **hickory, longleaf pine, shortleaf pine, loblolly pine, white oak, and post oak**.
- Forest cover has been greatly reduced for agriculture. Remaining forest is highly fragmented and interspersed with farmland. Intact forest is more common in riparian areas, like is found on campus.
- Current forests are dominated by **loblolly** and **shortleaf pine** and a mix of hardwoods, with **Oak/Gum/Cypress forest** in bottomlands farther south.



Regional Context

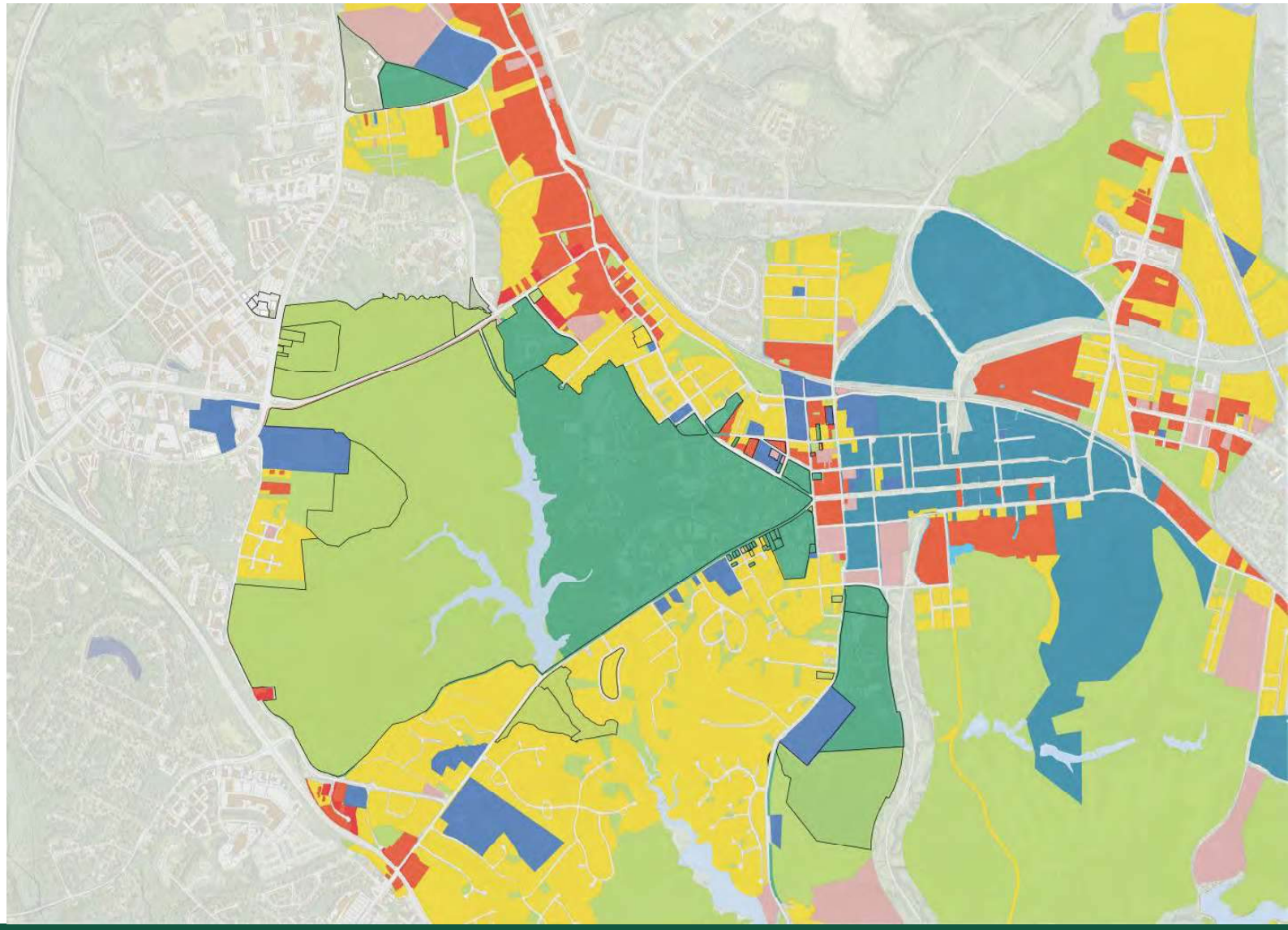
The Town of Williamsburg

- Historic growth has intertwined William & Mary and Williamsburg



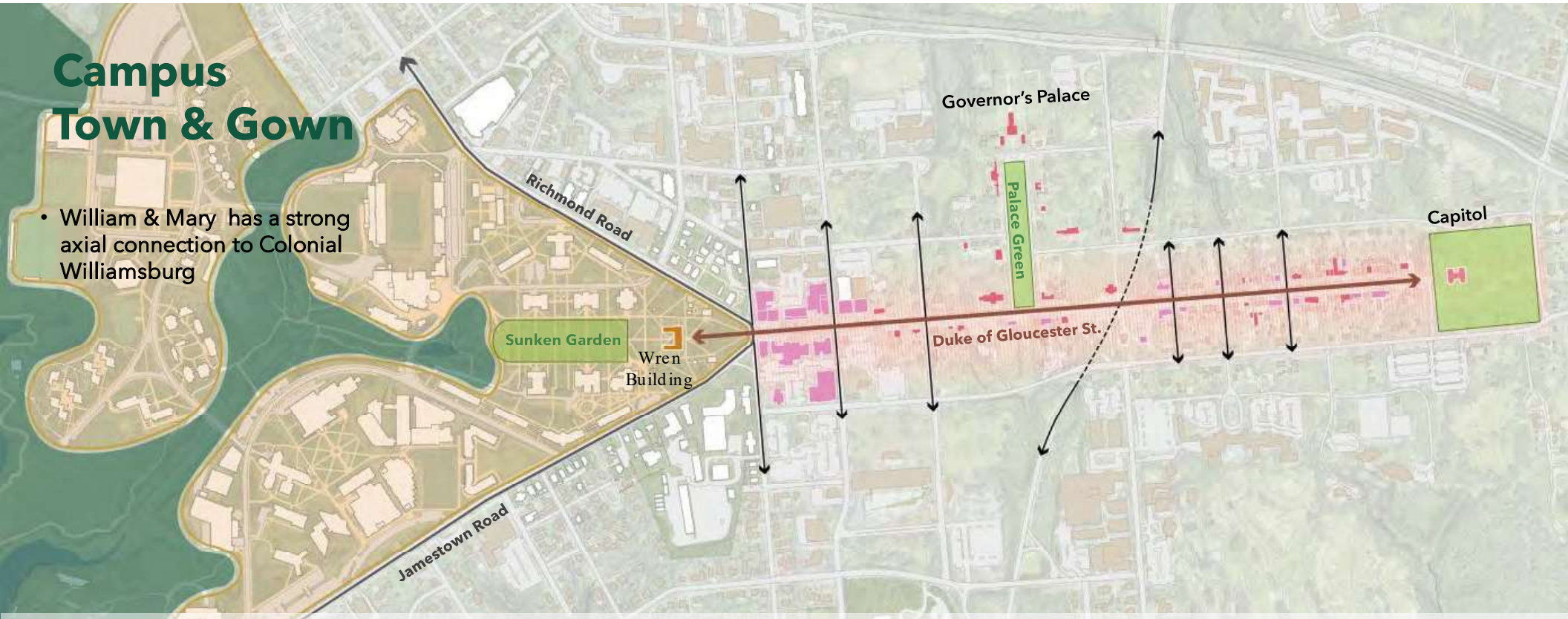
Land Use and Zoning

- William & Mary owns 1,151 acres of land
- 703 Acres (61%) are conservation land
- The campus is surrounded by low density residential and retail creating strong but non-porous campus edges



Campus Town & Gown

- William & Mary has a strong axial connection to Colonial Williamsburg



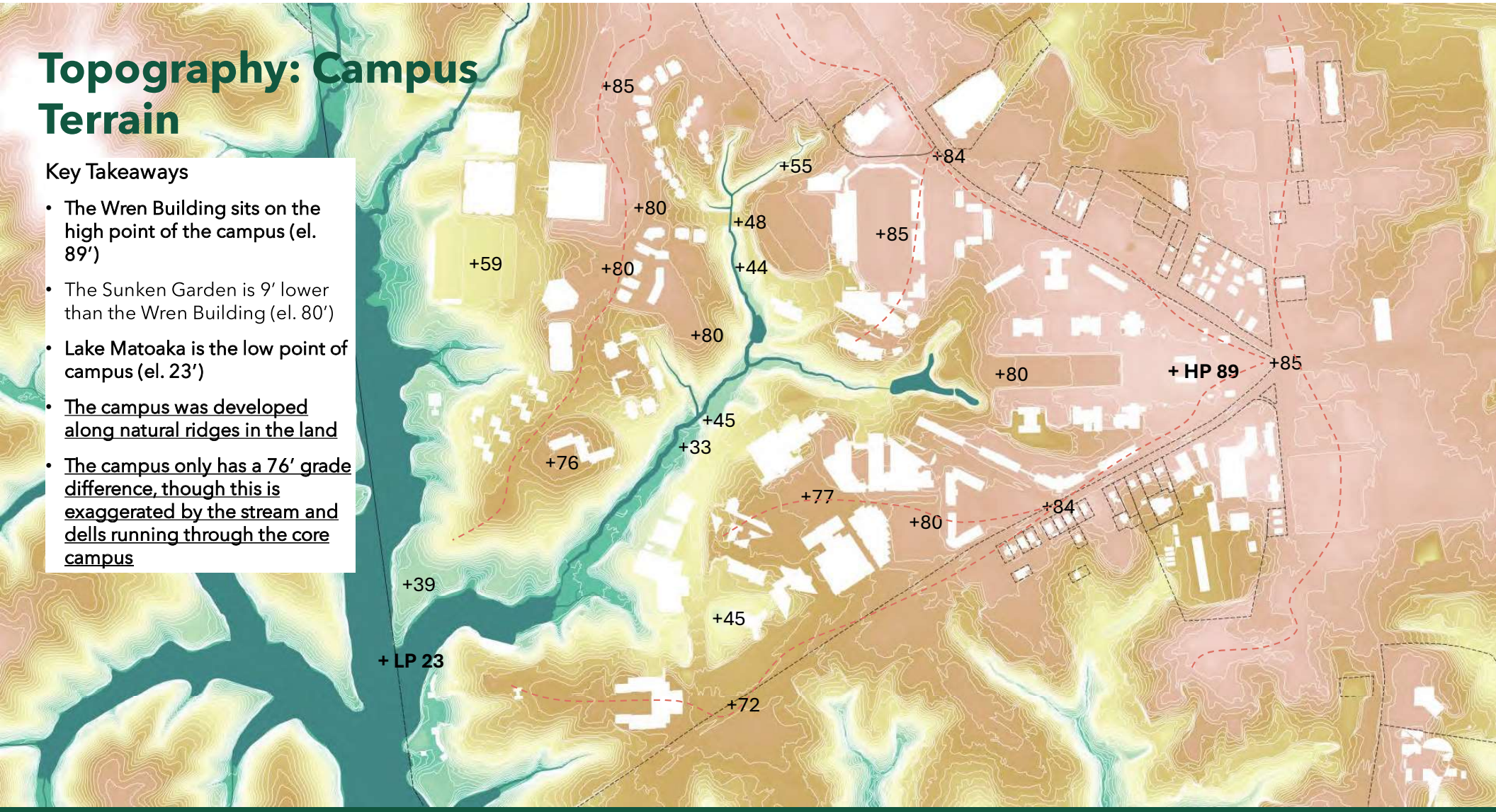
The Campus Today

- Woodlands and geography has influenced clusters of campus development

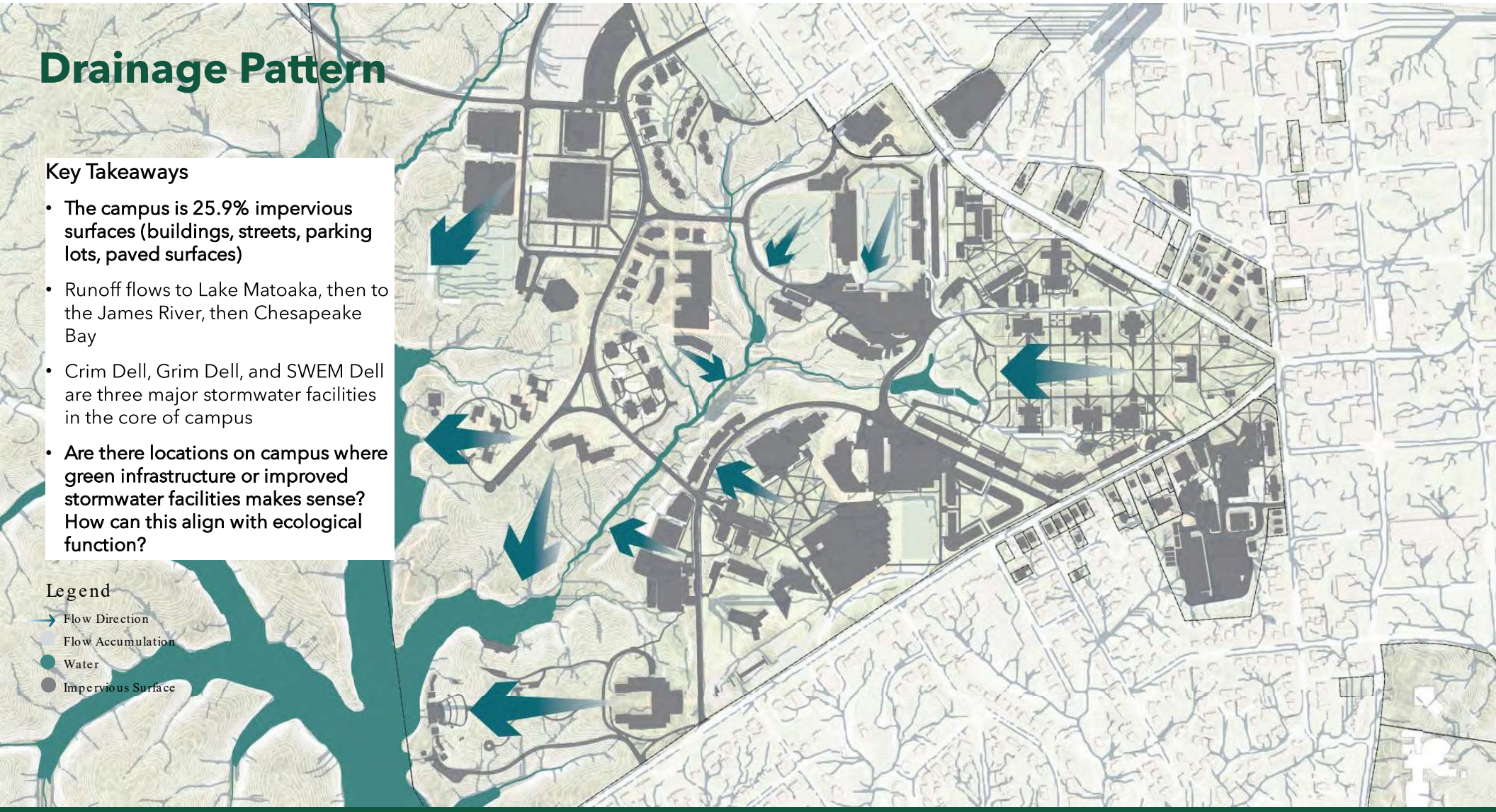
Topography: Campus Terrain

Key Takeaways

- The Wren Building sits on the high point of the campus (el. 89')
- The Sunken Garden is 9' lower than the Wren Building (el. 80')
- Lake Matoaka is the low point of campus (el. 23')
- The campus was developed along natural ridges in the land
- The campus only has a 76' grade difference, though this is exaggerated by the stream and dells running through the core campus



Drainage Pattern



Key Takeaways

- **The campus is 25.9% impervious surfaces (buildings, streets, parking lots, paved surfaces)**
- Runoff flows to Lake Matoaka, then to the James River, then Chesapeake Bay
- Crim Dell, Grim Dell, and SWEM Dell are three major stormwater facilities in the core of campus
- **Are there locations on campus where green infrastructure or improved stormwater facilities makes sense? How can this align with ecological function?**

Legend

- Flow Direction
- Flow Accumulation
- Water
- Impervious Surface

Landscape Surfaces

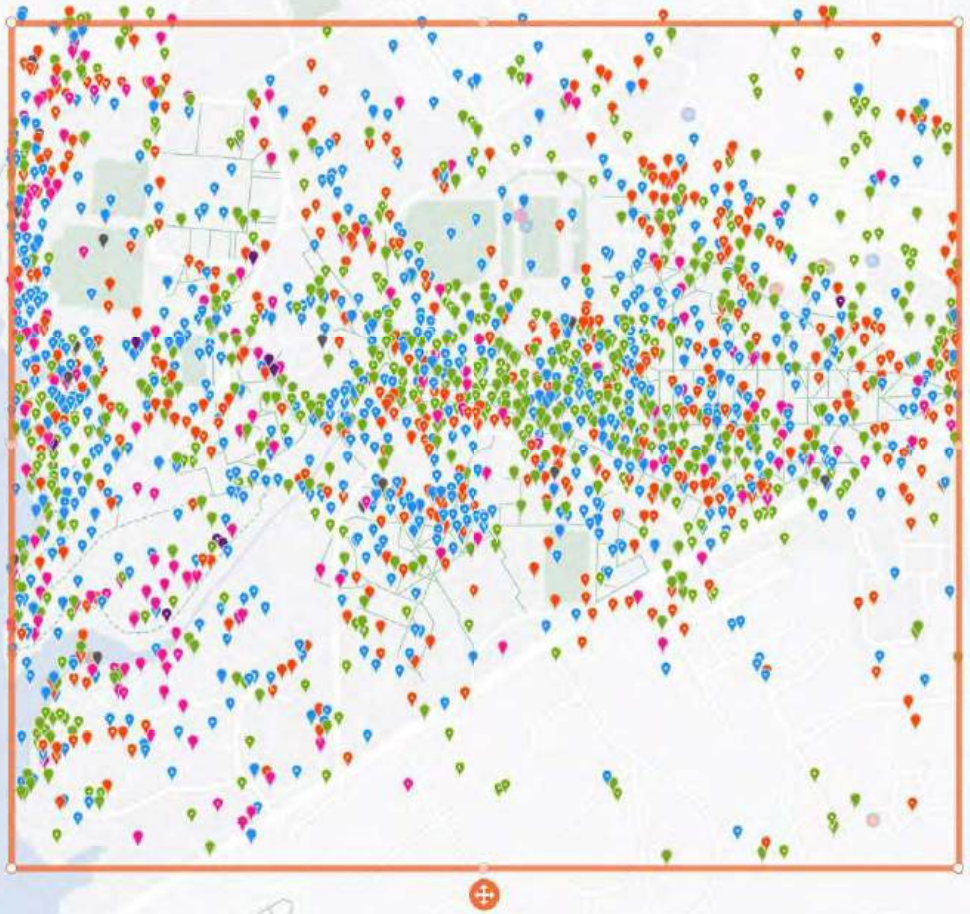
Key Takeaways

- W&M's largest land surface is forest at 42.5%, which serves as the lungs of campus, supports biodiversity, provides shade, houses wellness trails and moments, and contributes to research and the educational environment
- Lawn and parking make up approx. 16% of overall land surface each
- Ornamental plantings are 3.4% and growing
- In some high shade areas, thoughtful pine straw mulching is deployed

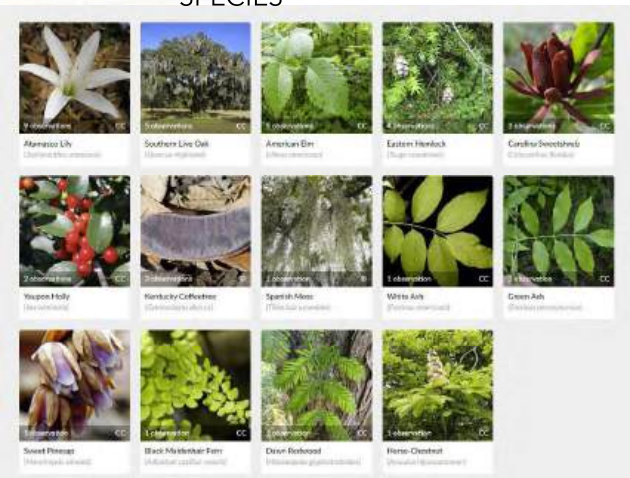
Biodiversity

Key Takeaways

- 524 Plantae Species observed
- 15 Mammal species observed
- 113 Bird species observed
- 14 Threatened Plantae species
- More than **1500** species overall observed



15 MAMMAL SPECIES



14 THREATENED PLANTAE SPECIES

Canopy Coverage

Key Takeaways

<u>Shade is a critical resource on campus and with extreme heat days to increase in the future, aligning with proposed summer courses, its importance grows</u>

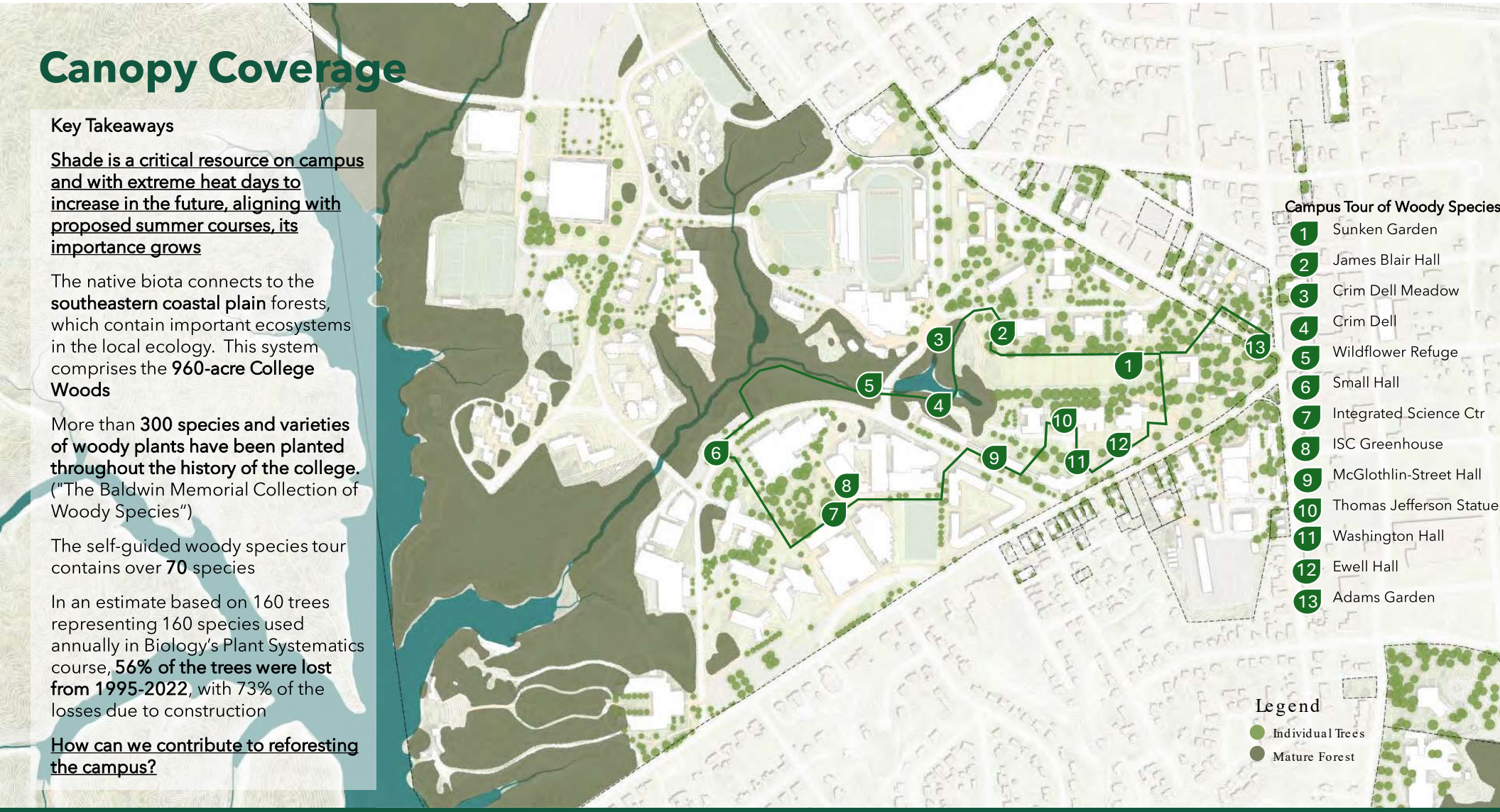
The native biota connects to the **southeastern coastal plain** forests, which contain important ecosystems in the local ecology. This system comprises the **960-acre College Woods**

More than **300 species and varieties of woody plants have been planted throughout the history of the college.** ("The Baldwin Memorial Collection of Woody Species")

The self-guided woody species tour contains over **70** species

In an estimate based on 160 trees representing 160 species used annually in Biology's Plant Systematics course, **56% of the trees were lost from 1995-2022**, with 73% of the losses due to construction

<u>How can we contribute to reforesting the campus?</u>

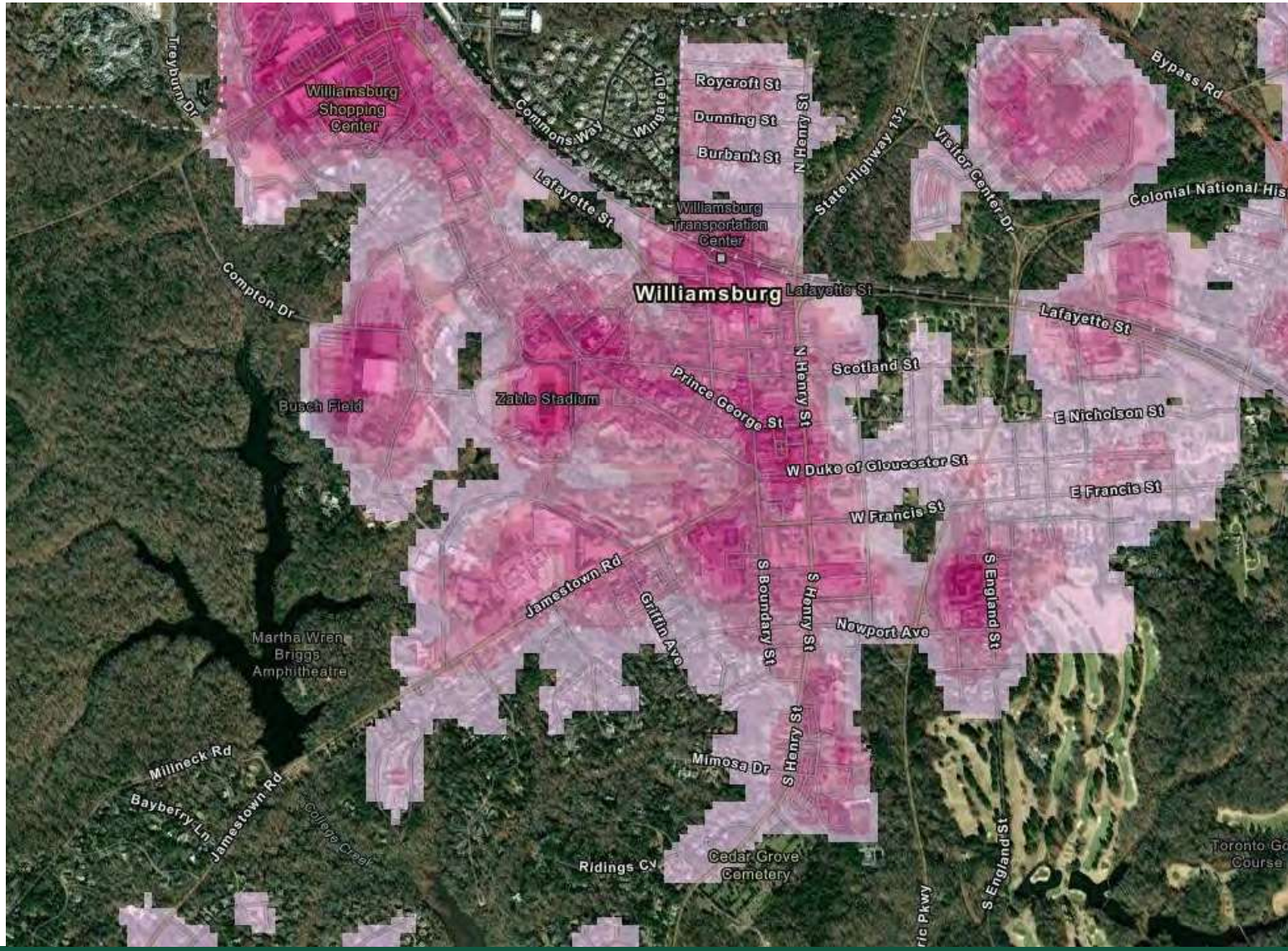


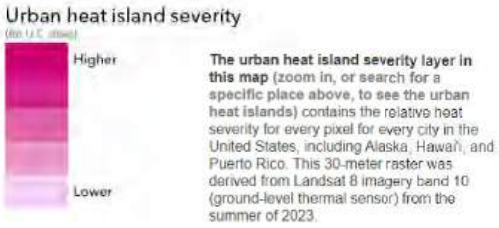
Micro -Climate

Heat Island and Outdoor Thermal Comfort

Key Takeaways

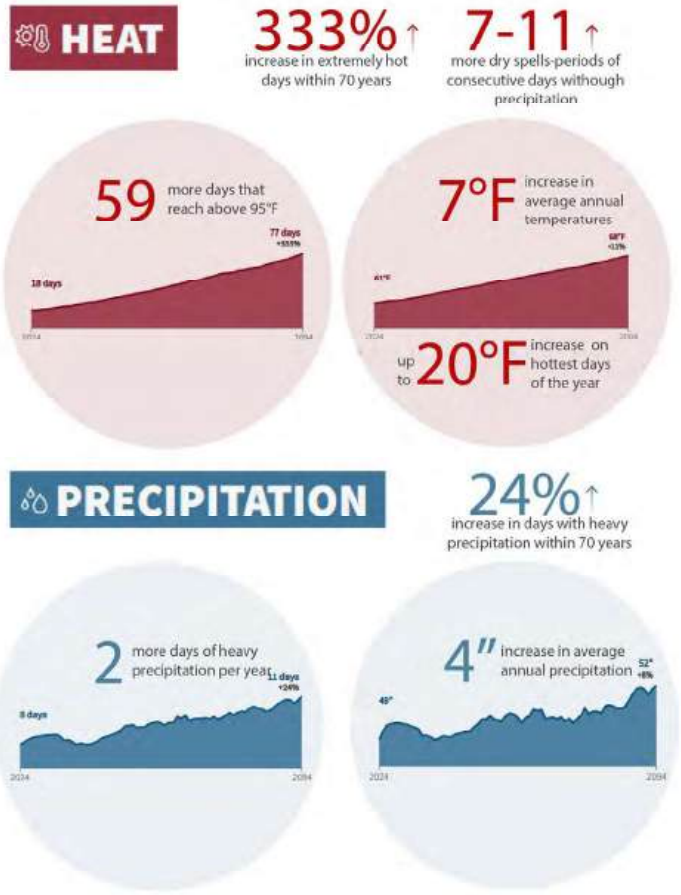
- Zable Stadium + intersection of Stadium Dr. and Richmond Rd. is of the highest UHI severity
- Busch Field also falls within the high UHI category
- The new campus core has elevated UHI levels, mostly around Jamestown Rd.
- Continue studying UHI and thermal comfort in more detail based on based on 3D campus model to understand more nuance

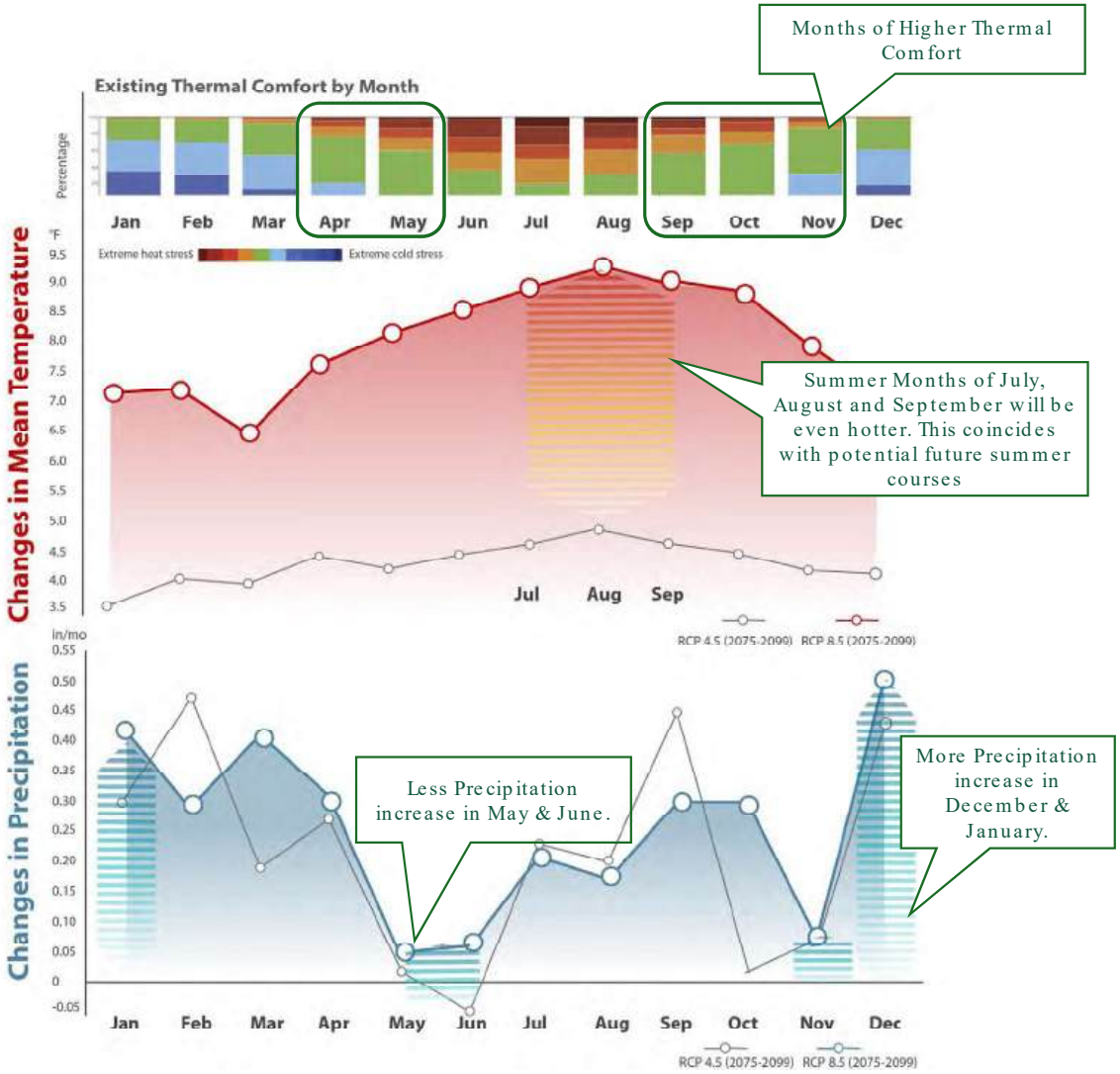




Climate

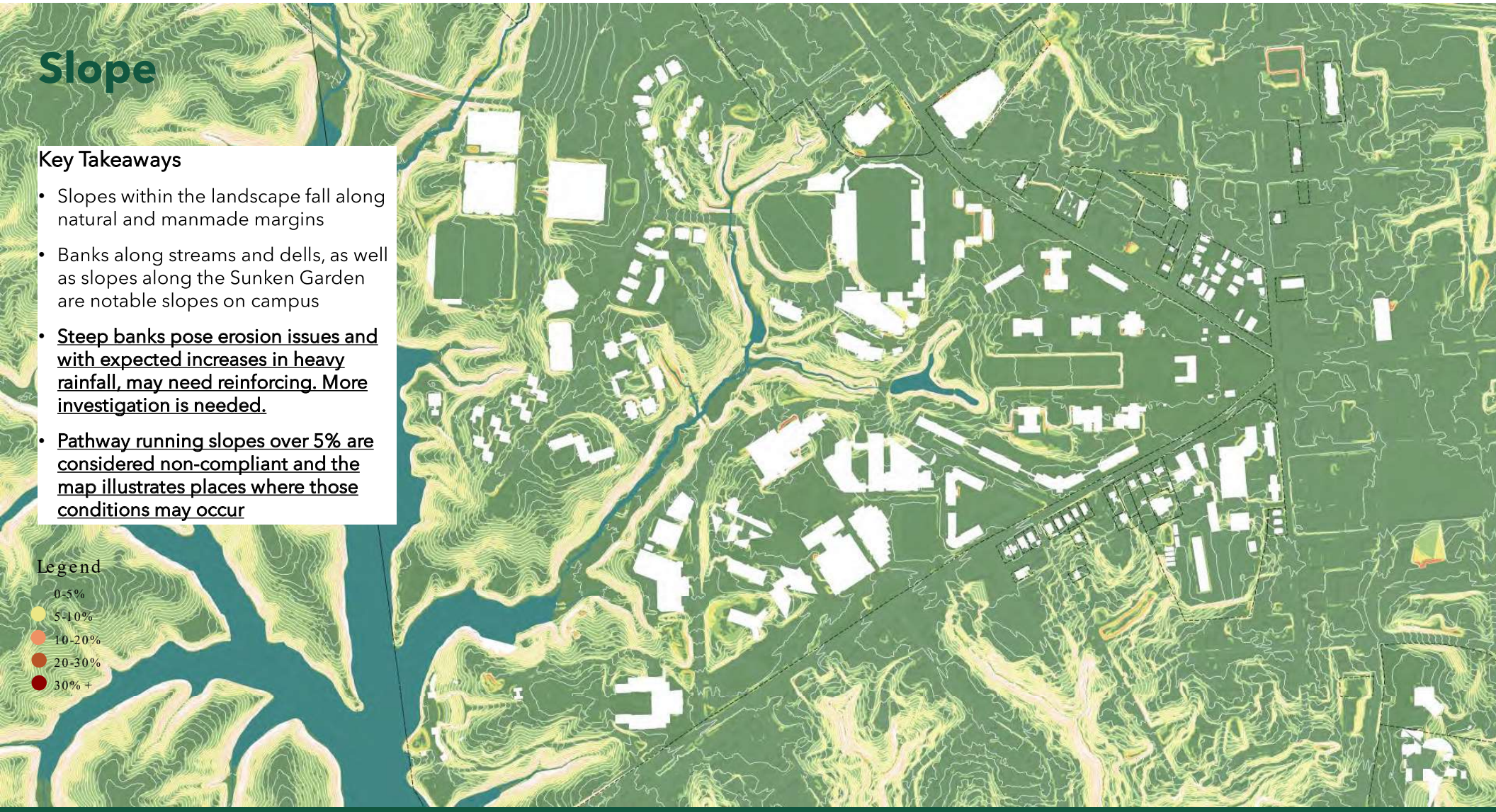
Existing and Projections (in 2094)





Source: https://www.nature.com/articles/sdata2018214/figures/1

Slope



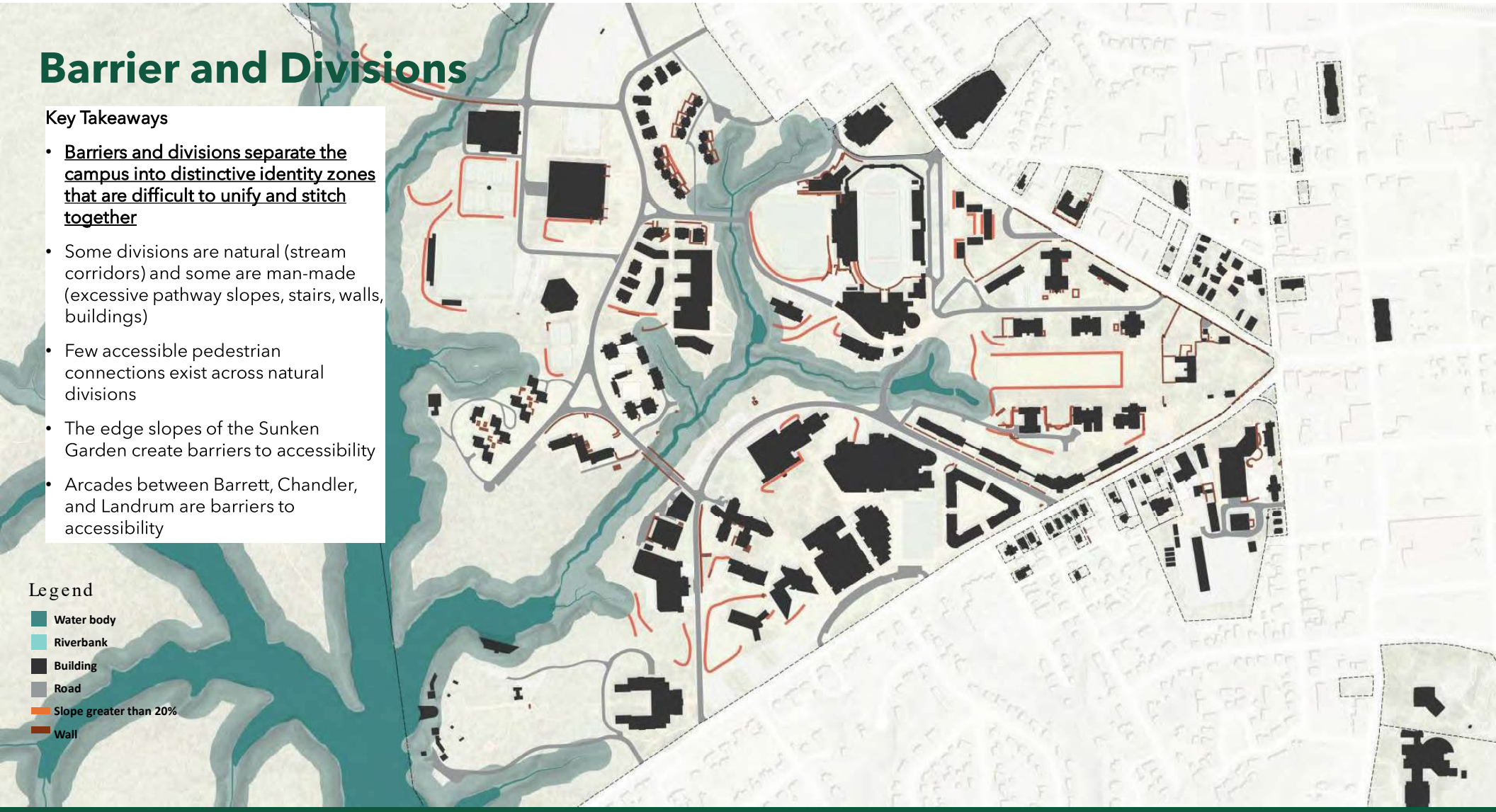
Key Takeaways

- Slopes within the landscape fall along natural and manmade margins
- Banks along streams and dells, as well as slopes along the Sunken Garden are notable slopes on campus
- Steep banks pose erosion issues and with expected increases in heavy rainfall, may need reinforcing. More investigation is needed.
- Pathway running slopes over 5% are considered non-compliant and the map illustrates places where those conditions may occur

Barrier and Divisions

Key Takeaways

- <u>Barriers and divisions separate the campus into distinctive identity zones that are difficult to unify and stitch together</u>
- Some divisions are natural (stream corridors) and some are man-made (excessive pathway slopes, stairs, walls, buildings)
- Few accessible pedestrian connections exist across natural divisions
- The edge slopes of the Sunken Garden create barriers to accessibility
- Arcades between Barrett, Chandler, and Landrum are barriers to accessibility



What is Being Divided?

Key Takeaways

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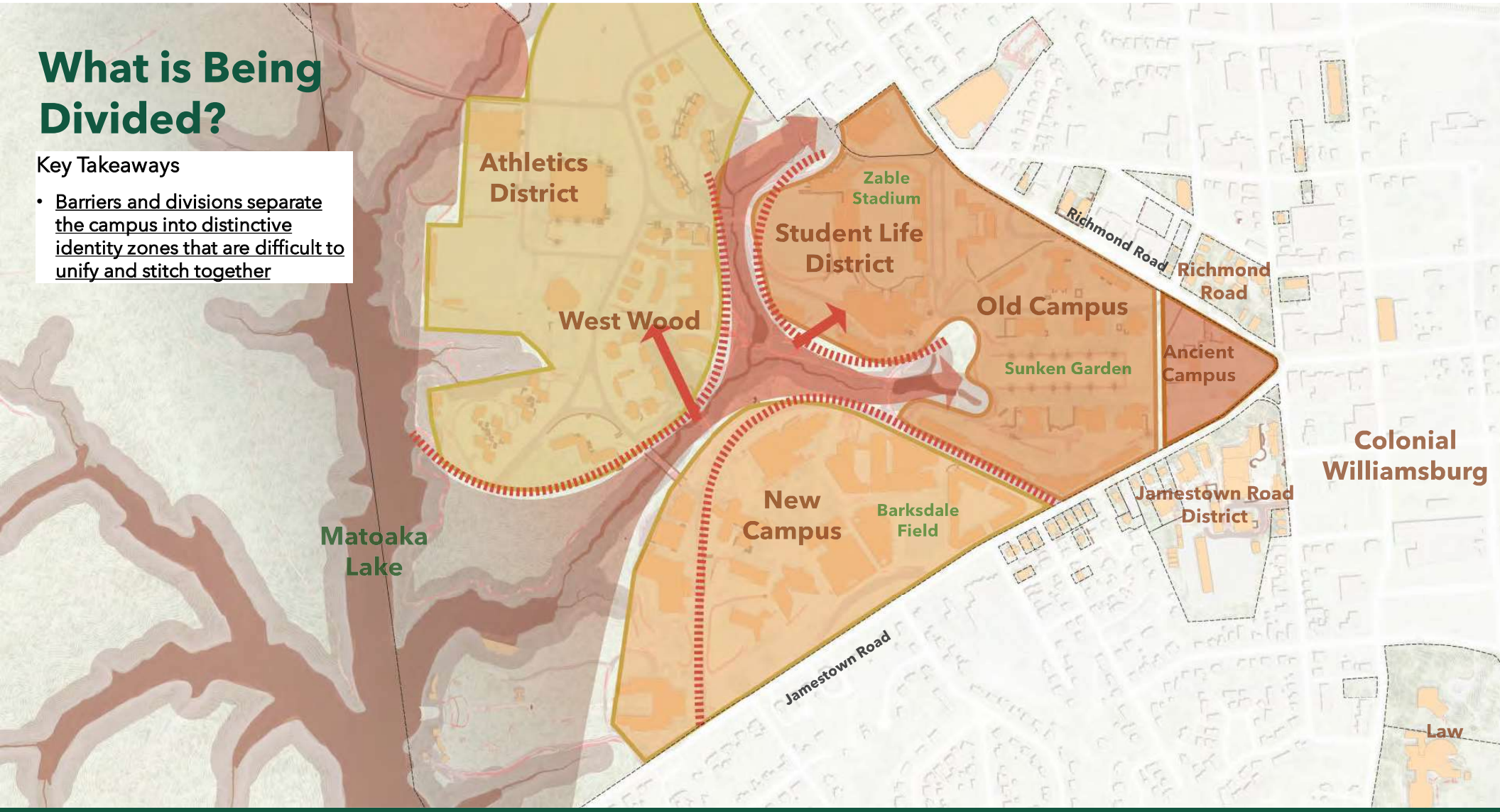
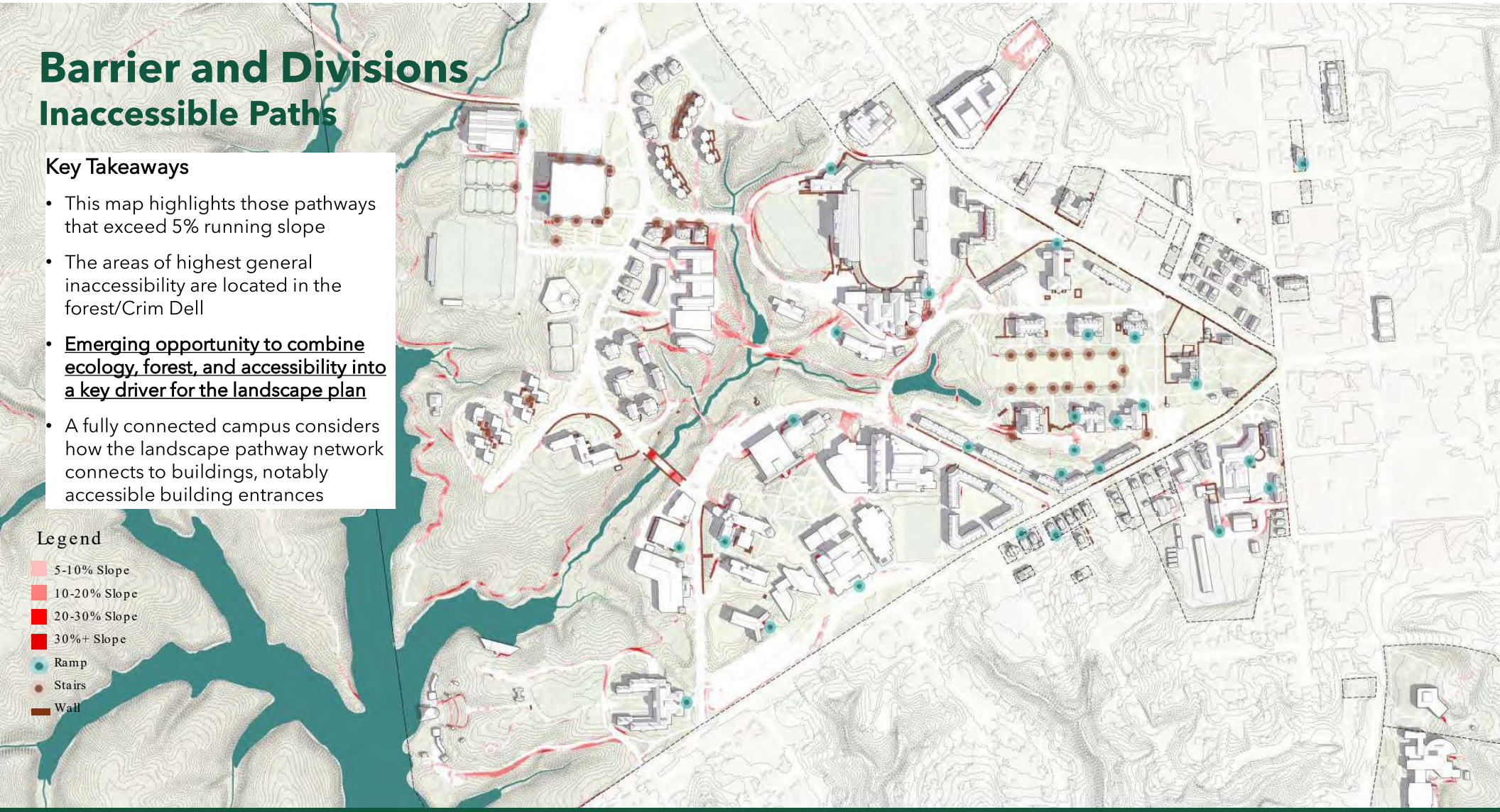


Barrier and Divisions
Inaccessible Paths

Key Takeaways

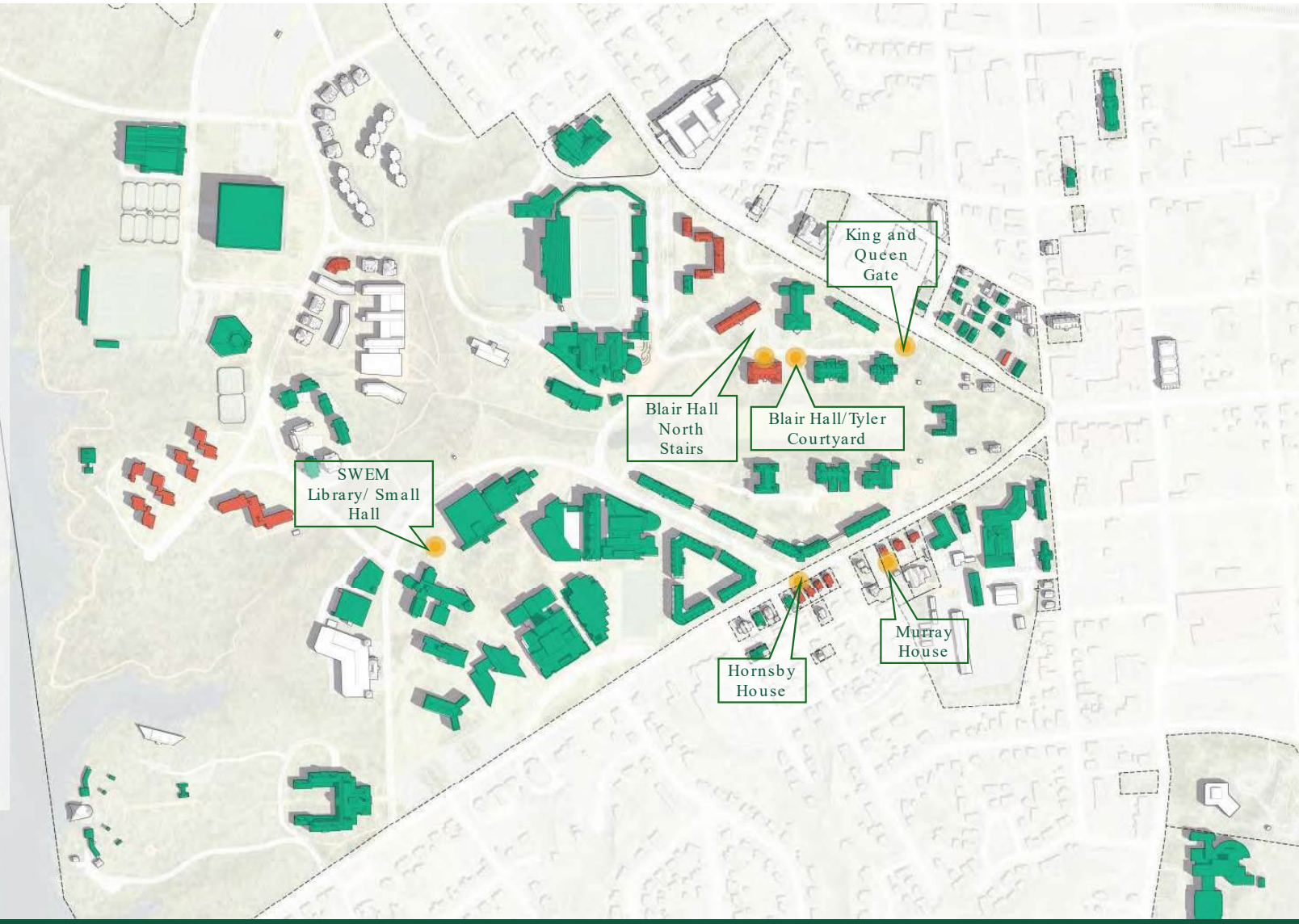
- This map highlights those pathways that exceed 5% running slope
- The areas of highest general inaccessibility are located in the forest/Crim Dell
- <u>Emerging opportunity to combine ecology, forest, and accessibility into a key driver for the landscape plan</u>
- A fully connected campus considers how the landscape pathway network connects to buildings, notably accessible building entrances



Accessibility:
Building Access

Key Takeaways

- Beginning to understand the locations of current accessibility projects underway (VHB)
- <u>Inaccessible buildings (red) and the approach to them are opportunity areas within the landscape plan</u>

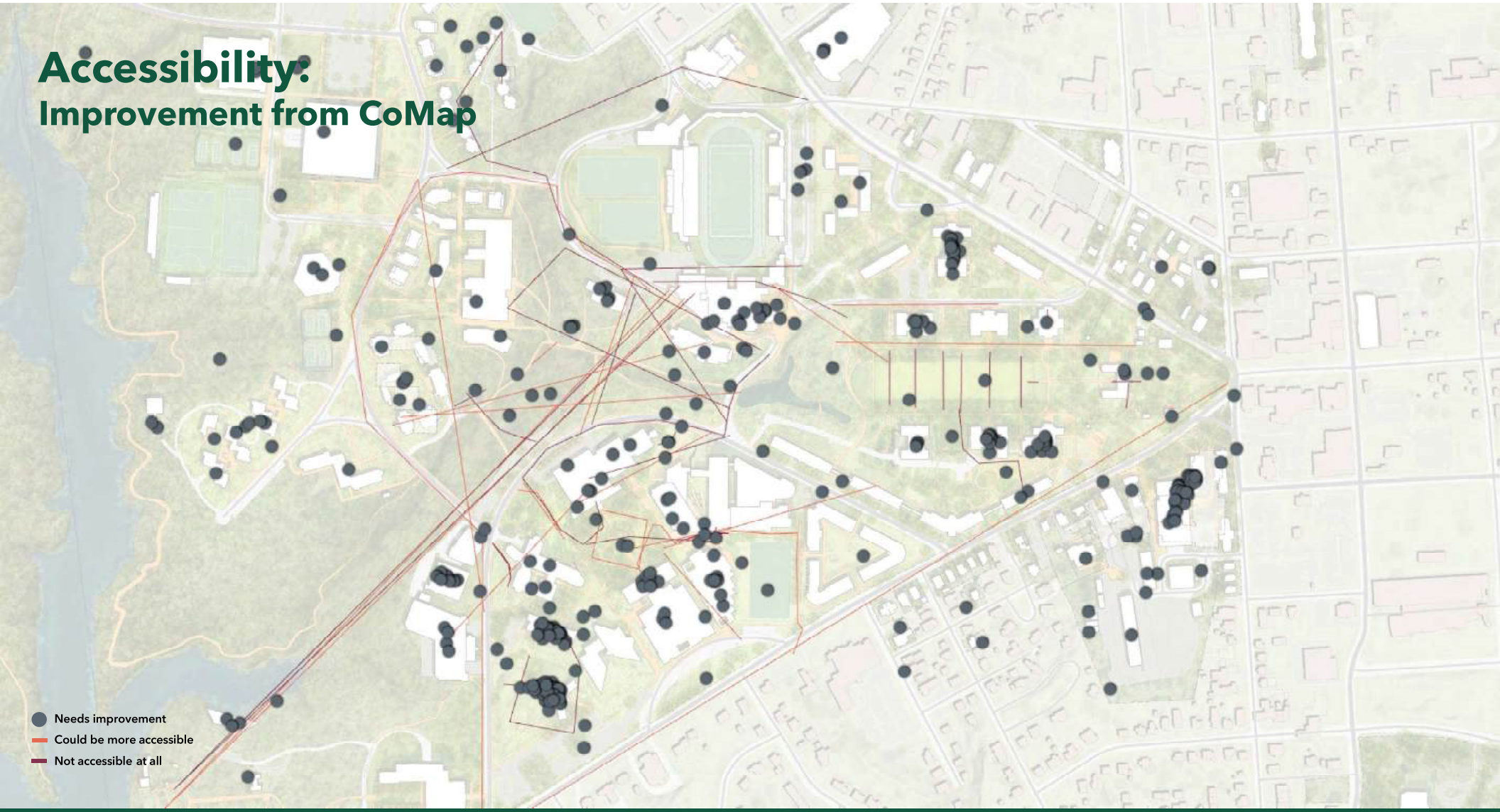


Legend

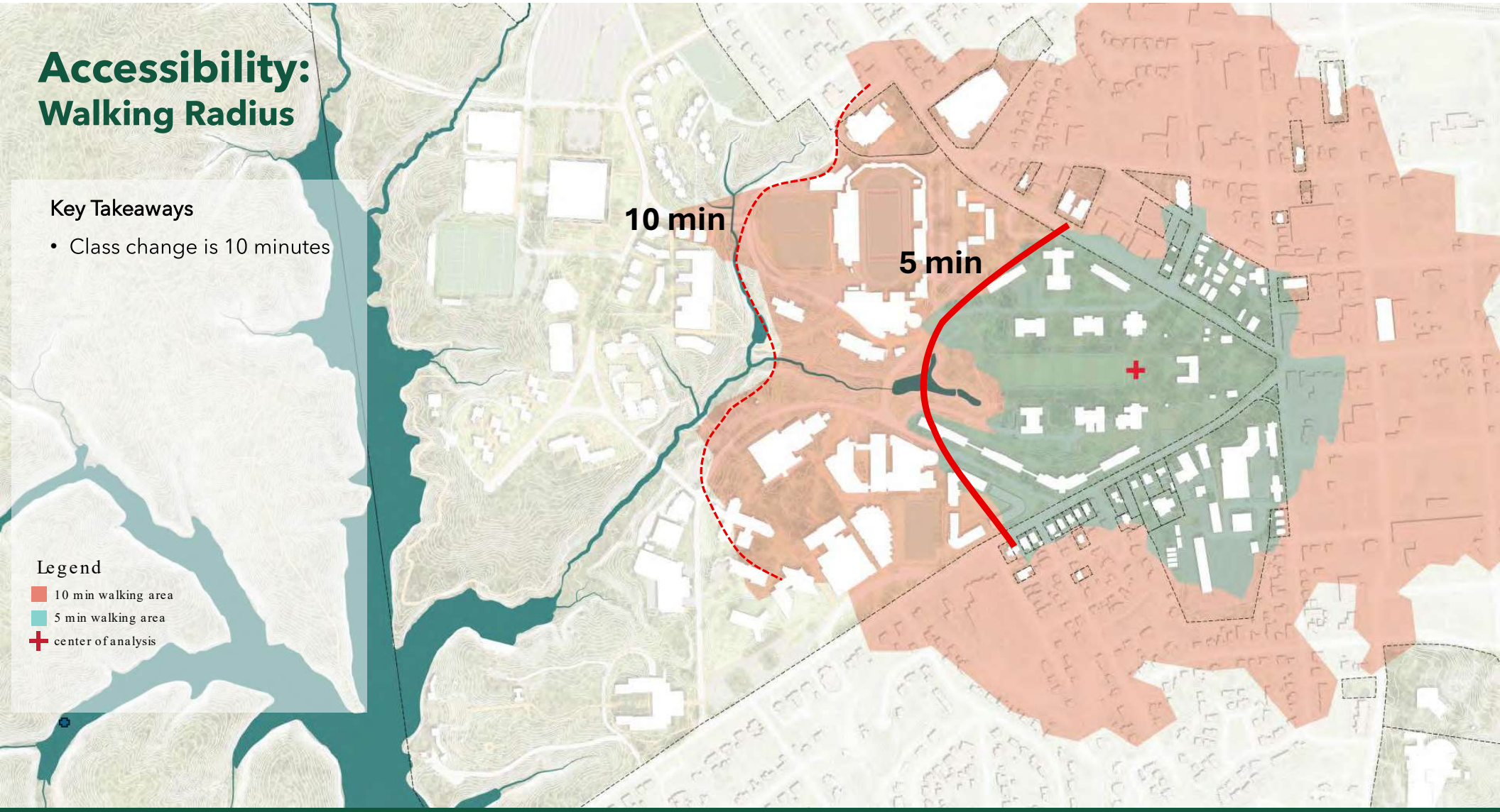
- Inaccessible
- Accessible
- Data not Available
- Ongoing Accessibility Project

*Pedestrian ramps improvement project across campus (not called out on the plan)

Accessibility:
Improvement from CoMap



Accessibility:
Walking Radius



Key Takeaways

- Class change is 10 minutes

Accessibility:
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