



# CampusEnergy2021

BRIDGE TO THE FUTURE

Feb. 16-18 | CONNECTING VIRTUALLY

WORKSHOPS | Thermal Distribution: March 2 | Microgrid: March 16



# HOW DISTRICT ENERGY TRANSFORMED A COLLEGE CAMPUS BY ENABLING SOCIAL SPACE FOR INTERACTION AND REFLECTION



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**Perkins&Will**

**rmf** RMF Engineering  
Reliability. Efficiency. Integrity.

**WT**  
WHITING-TURNER

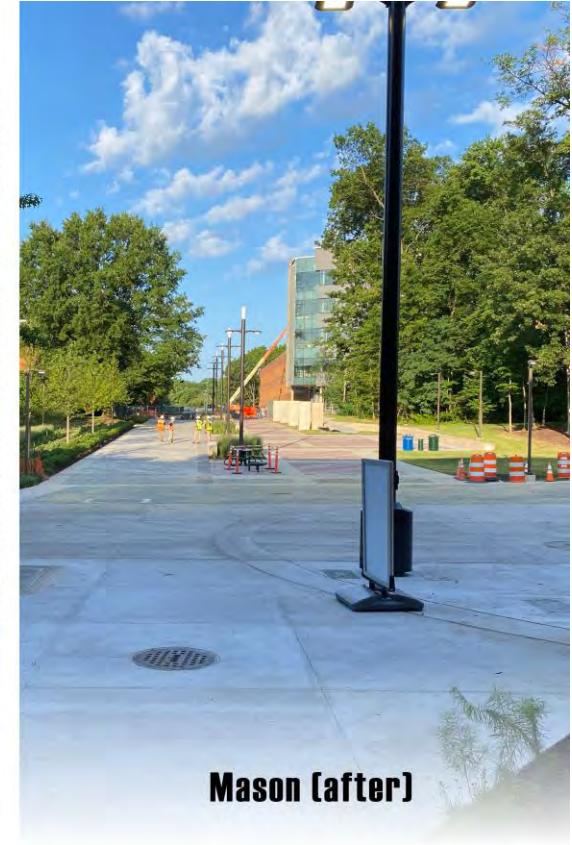
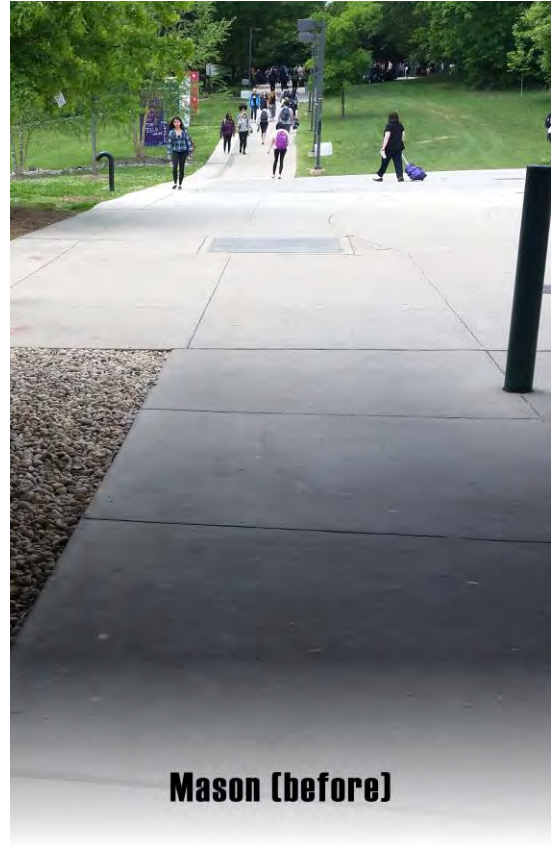


# Q&A Will Not Be Answered Live

**Please submit questions in the Q&A box.  
The presenters will respond to questions off-line.**

# AGENDA

- › **Project Background & Development**
- › **Utility Master Planning & Design**
- › **Wilkins Plaza**
- › **Enslaved Persons Memorial**
- › **Construction**





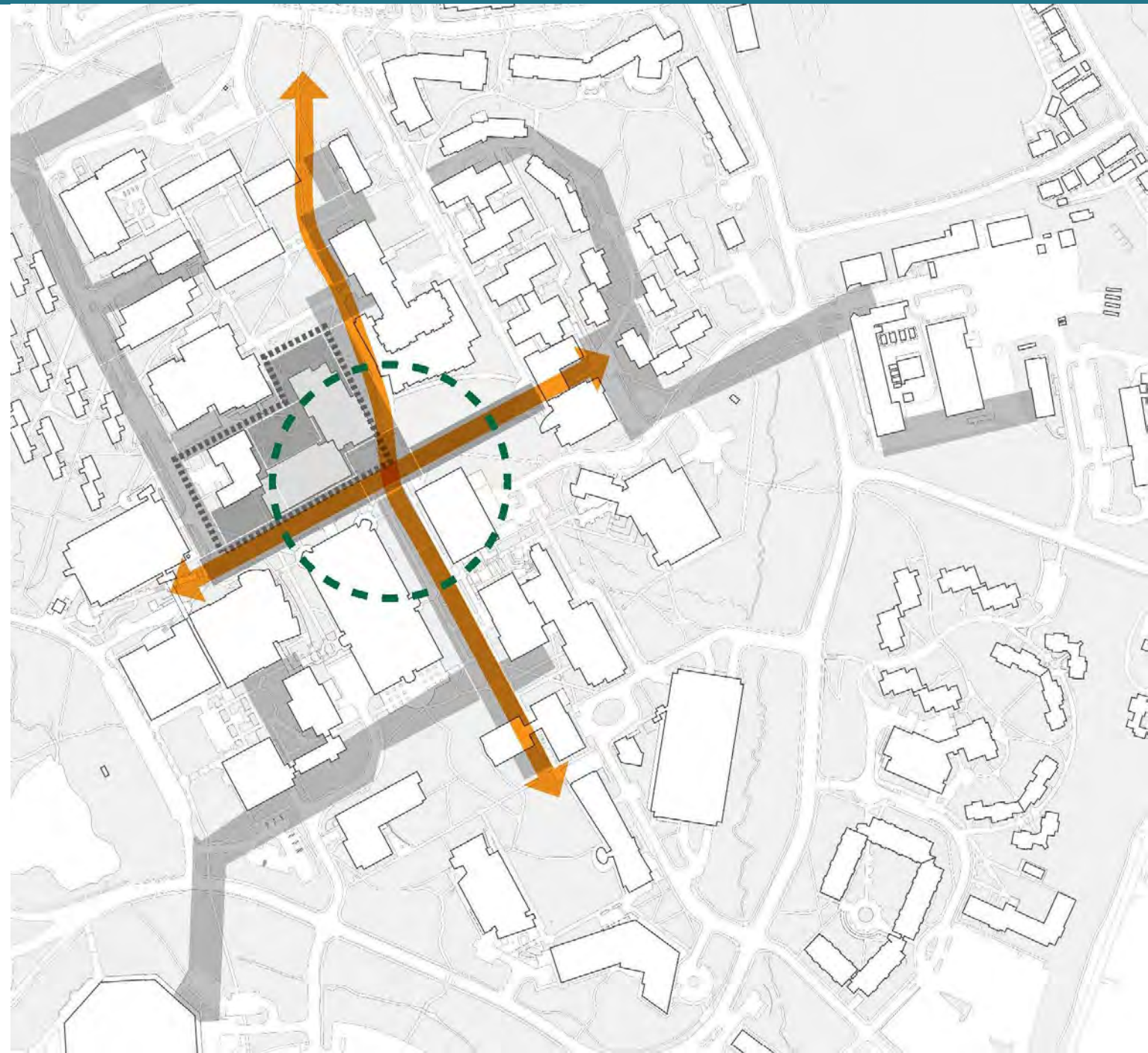
# PROJECT BACKGROUND & DEVELOPMENT





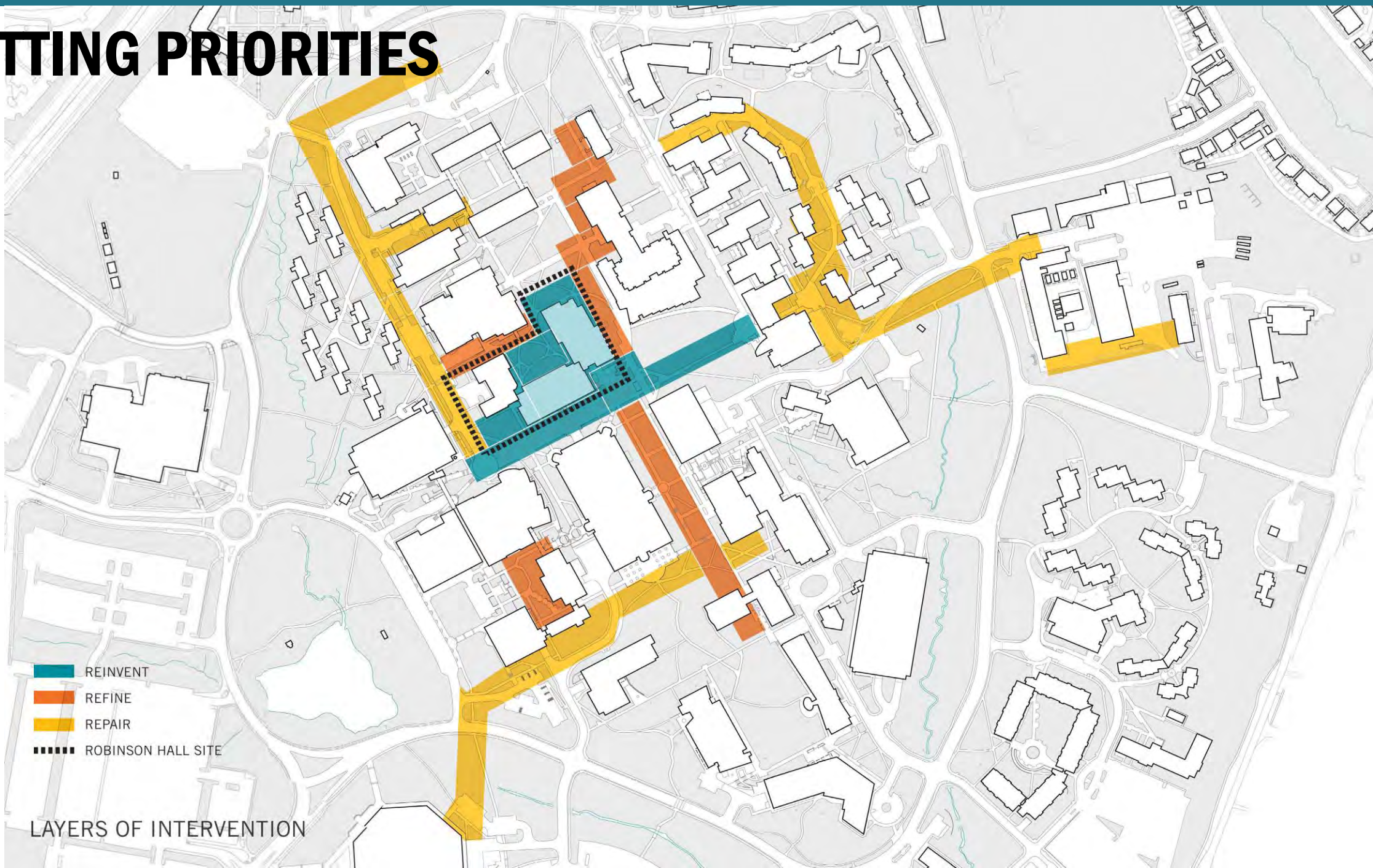
# PROJECT LOCATION AND SCOPE

- › **18,000 LF Chilled Water  
(4"-30" Diameter)**
- › **1,300 LF High Temp Hot  
Water (420°F)**
- › **Plaza Expansion**
- › **Fire Lanes**
- › **Smart Poles**
- › **Enslaved Persons  
Memorial**
- › **≈\$49MM**



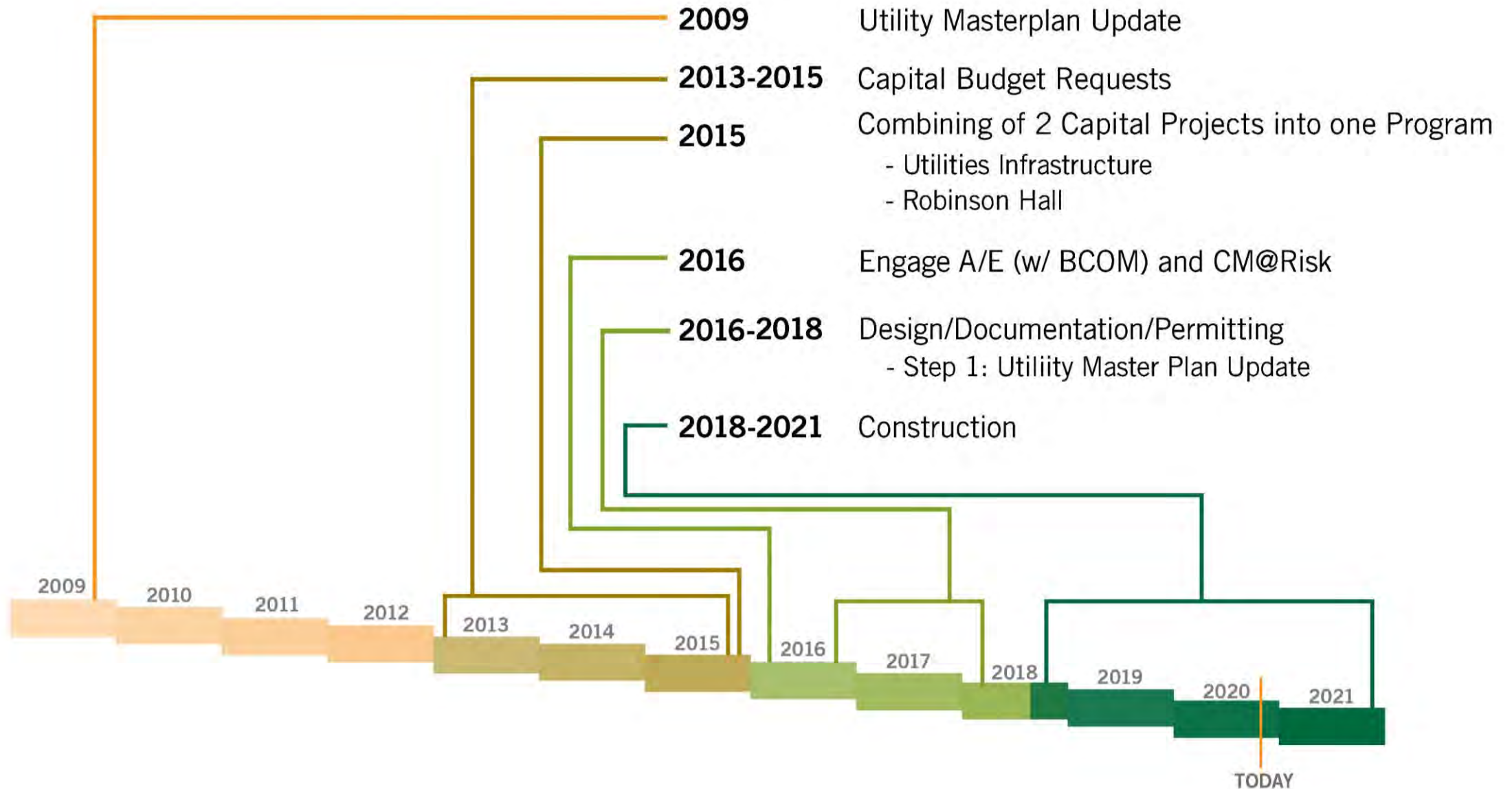


# SETTING PRIORITIES





# MILESTONE TIMELINE RECAP





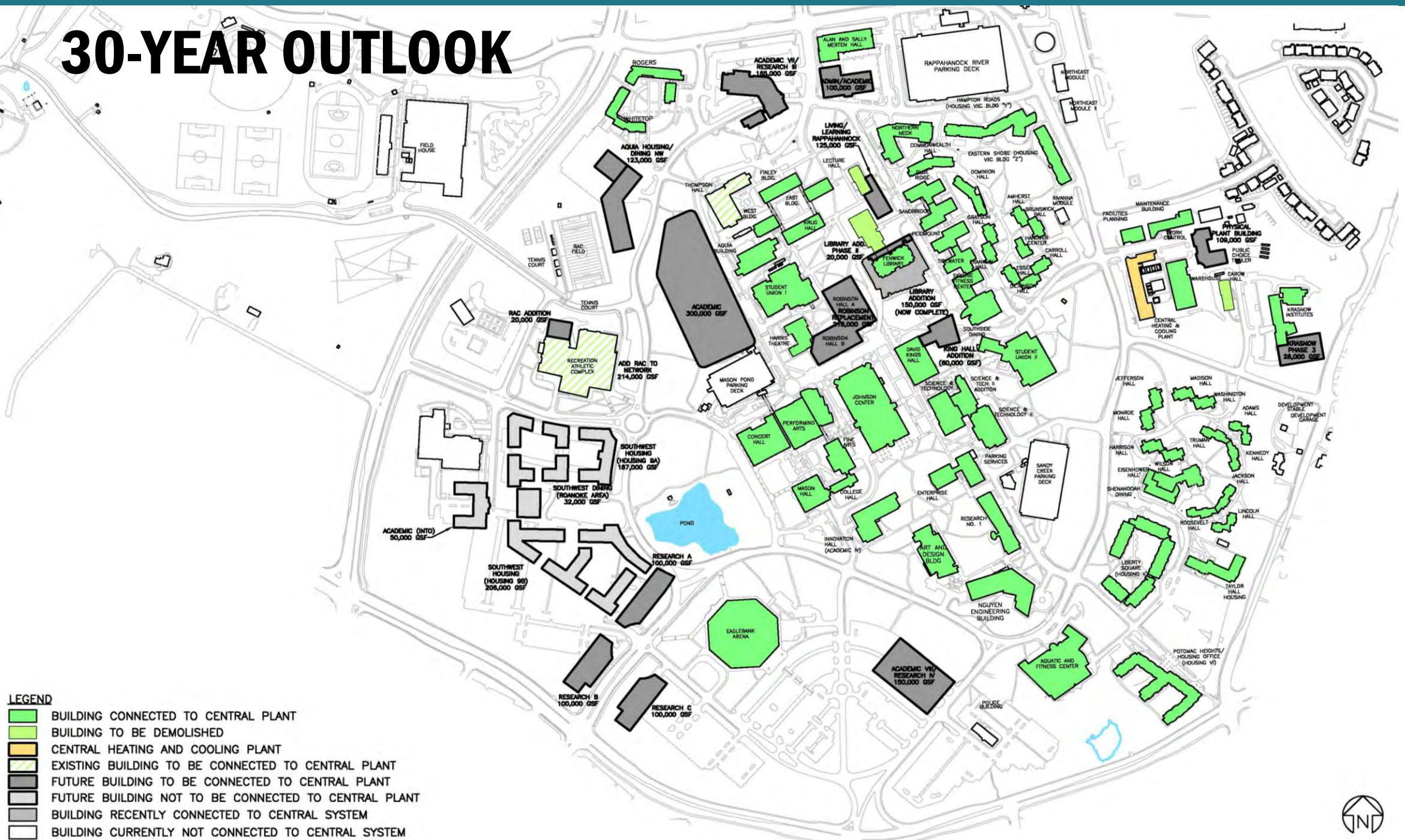


# UTILITY MASTER PLANNING

Plant Capacity  
Building Loads  
30-Year Outlook  
Optimize for Future  
Life Cycle Cost Analysis

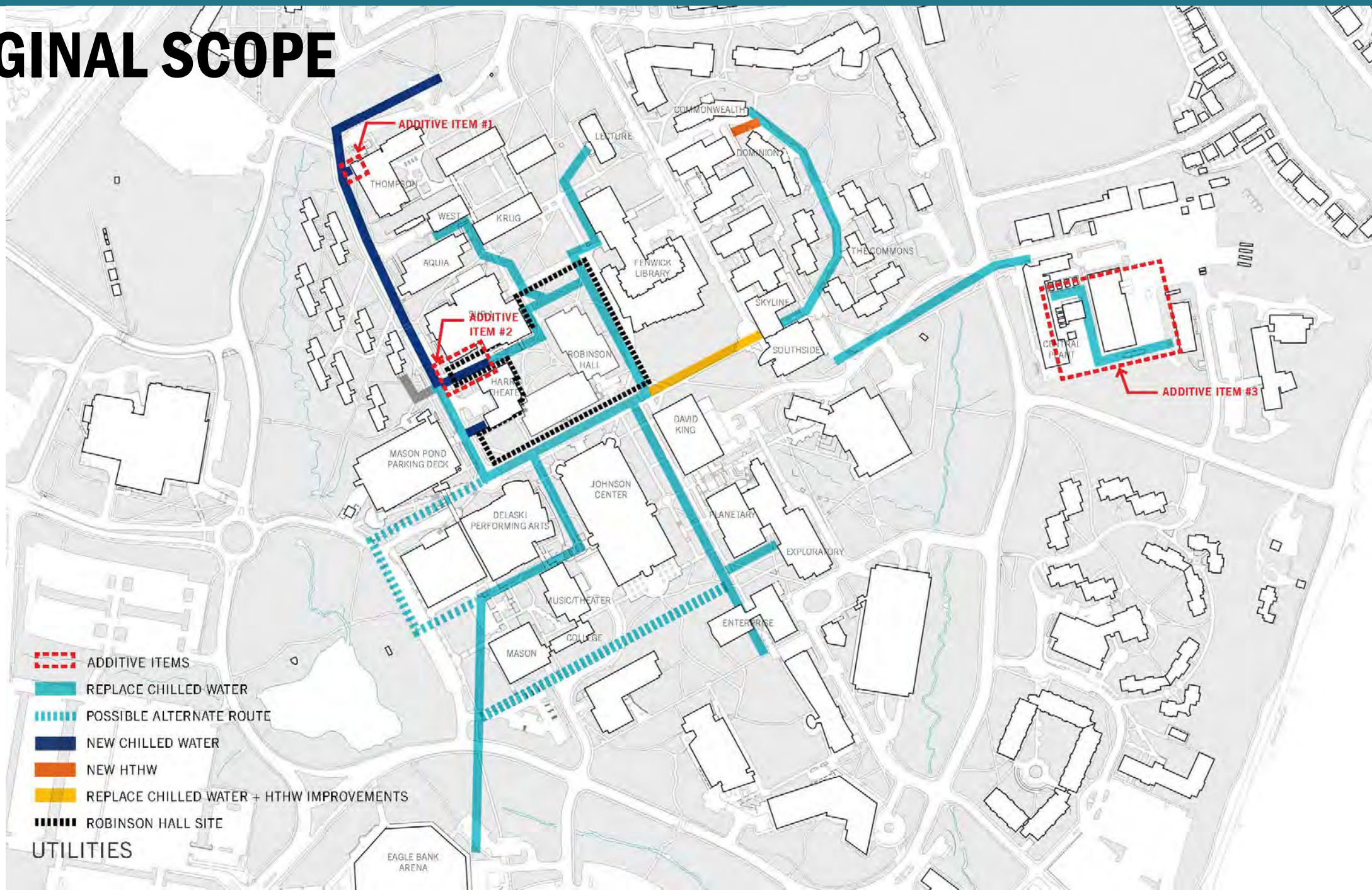


# 30-YEAR OUTLOOK



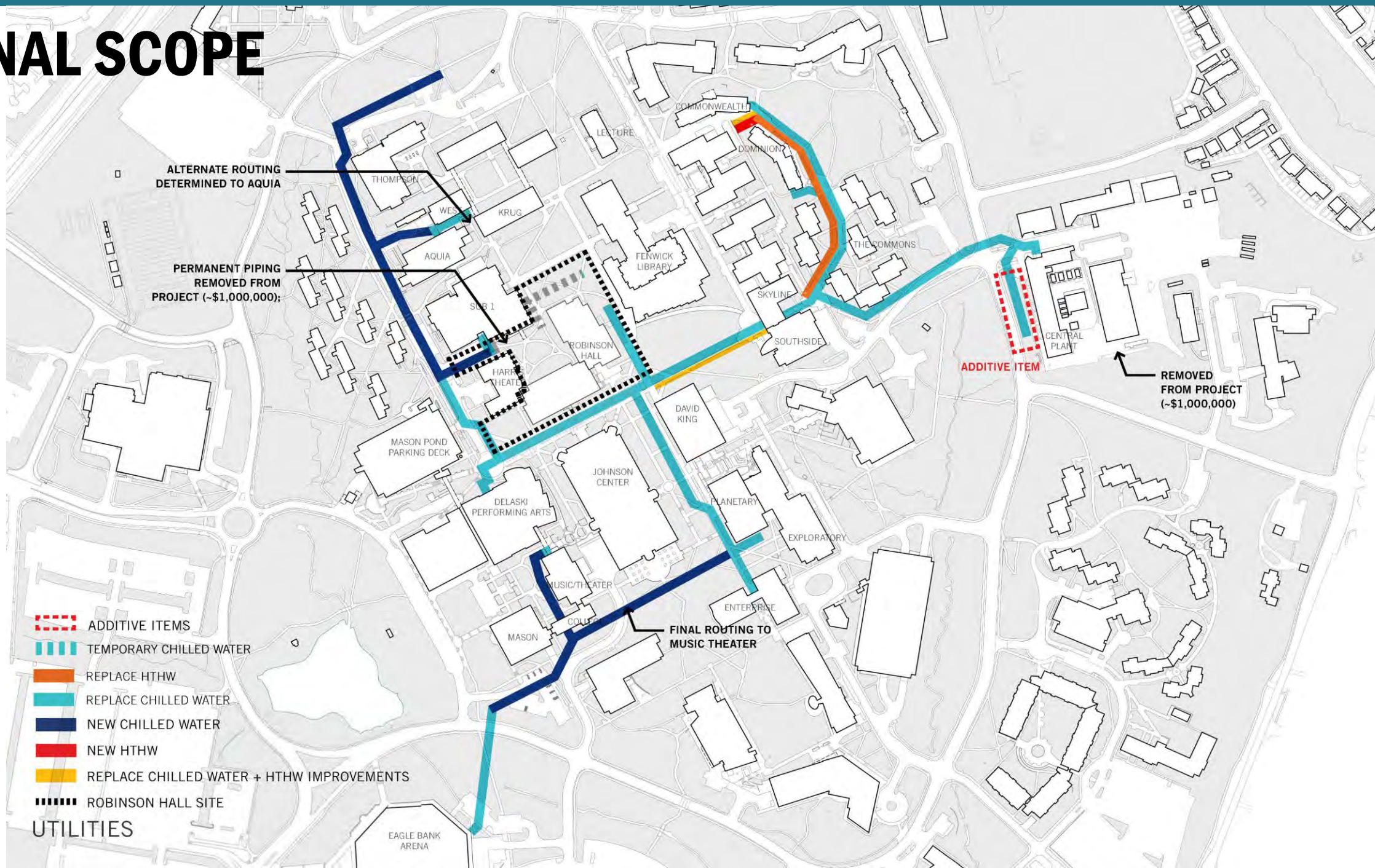


# ORIGINAL SCOPE



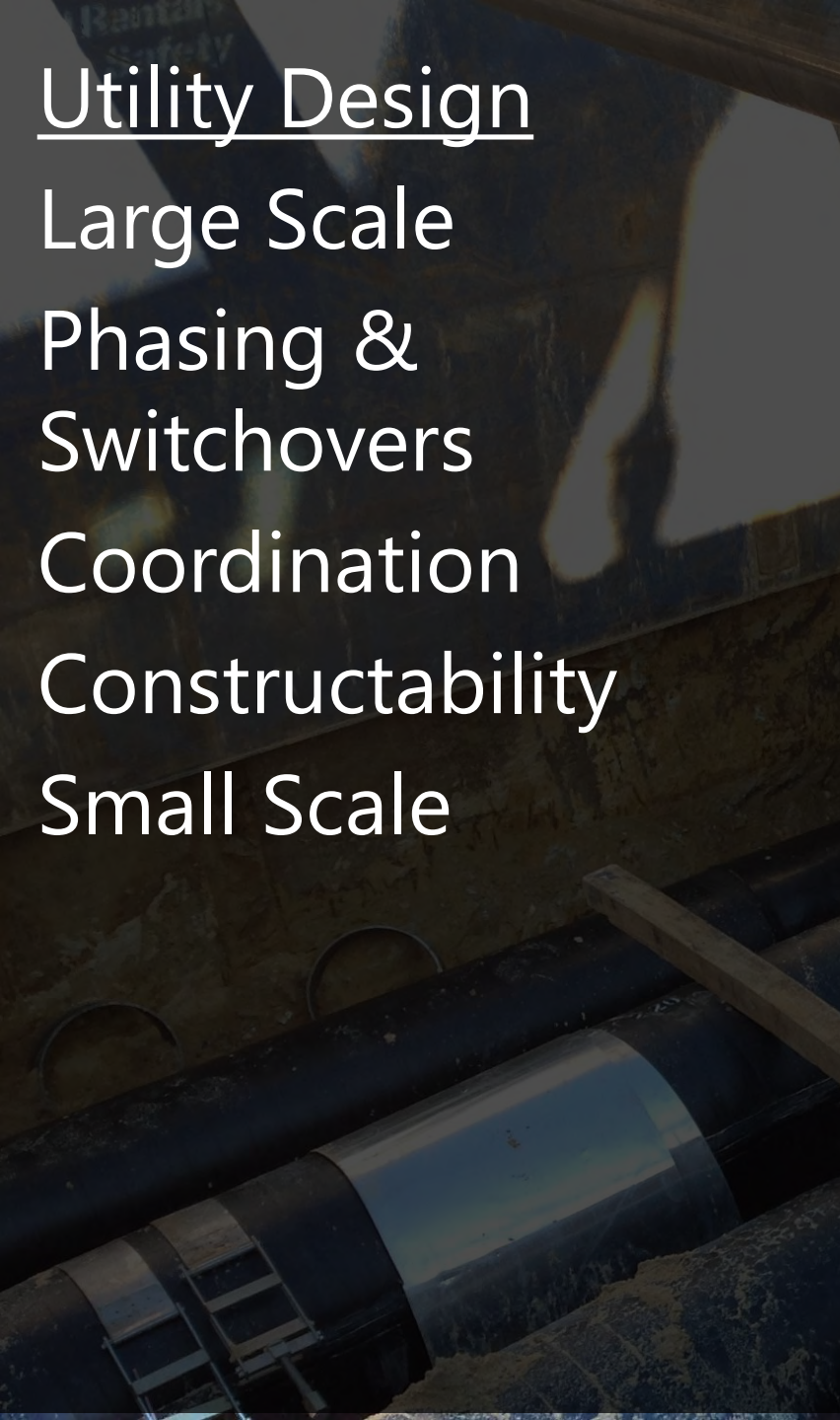


# FINAL SCOPE



UTILITIES





# Utility Design

Large Scale

Phasing &  
Switchovers

Coordination

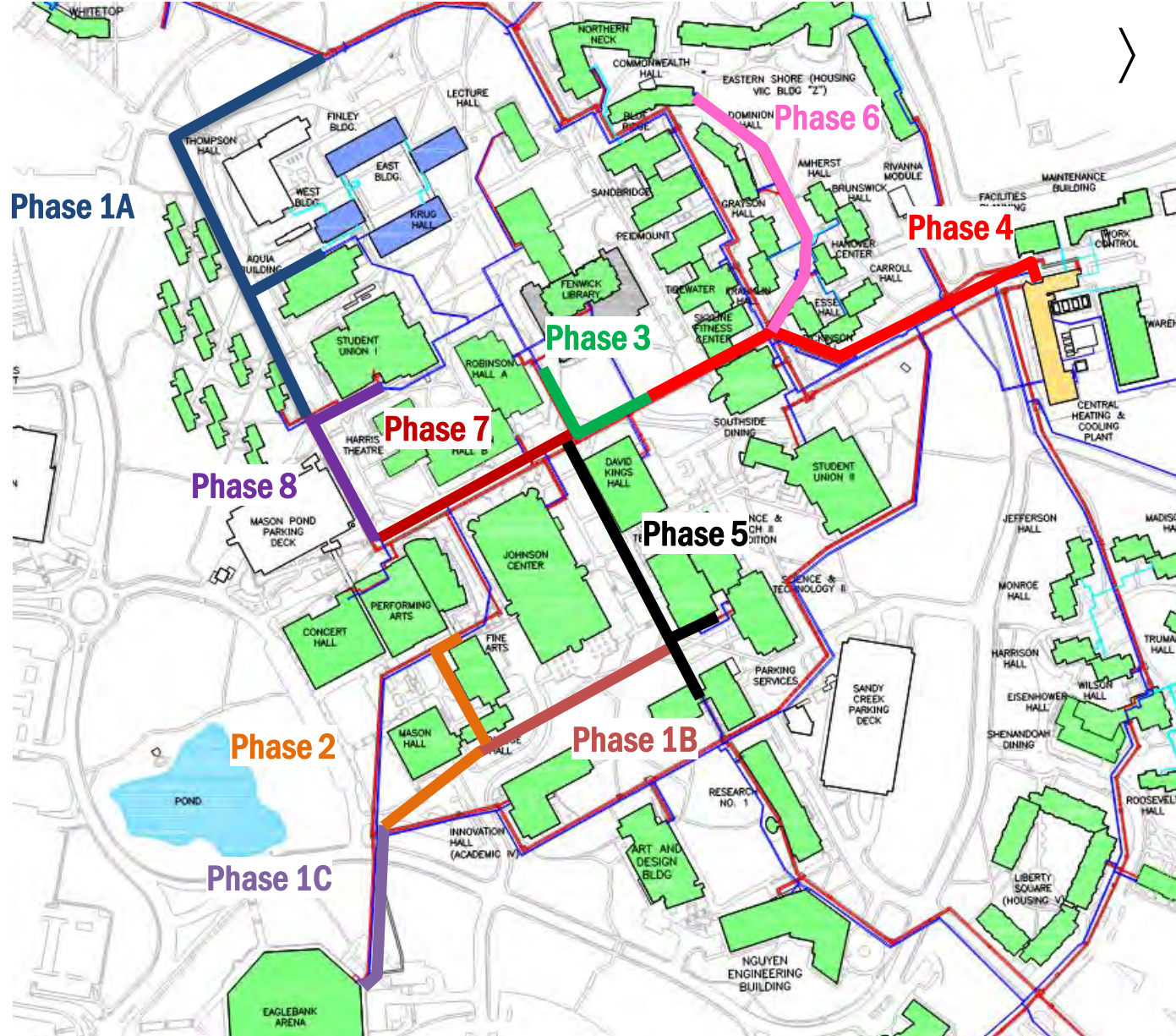
Constructability

Small Scale





# IMPLEMENTATION



## PHASING

- › Minimize Impact
- › Utility Outages & Backfeeds
- › Vehicular & Emergency Access
- › Events & Proximity
- › Schedule

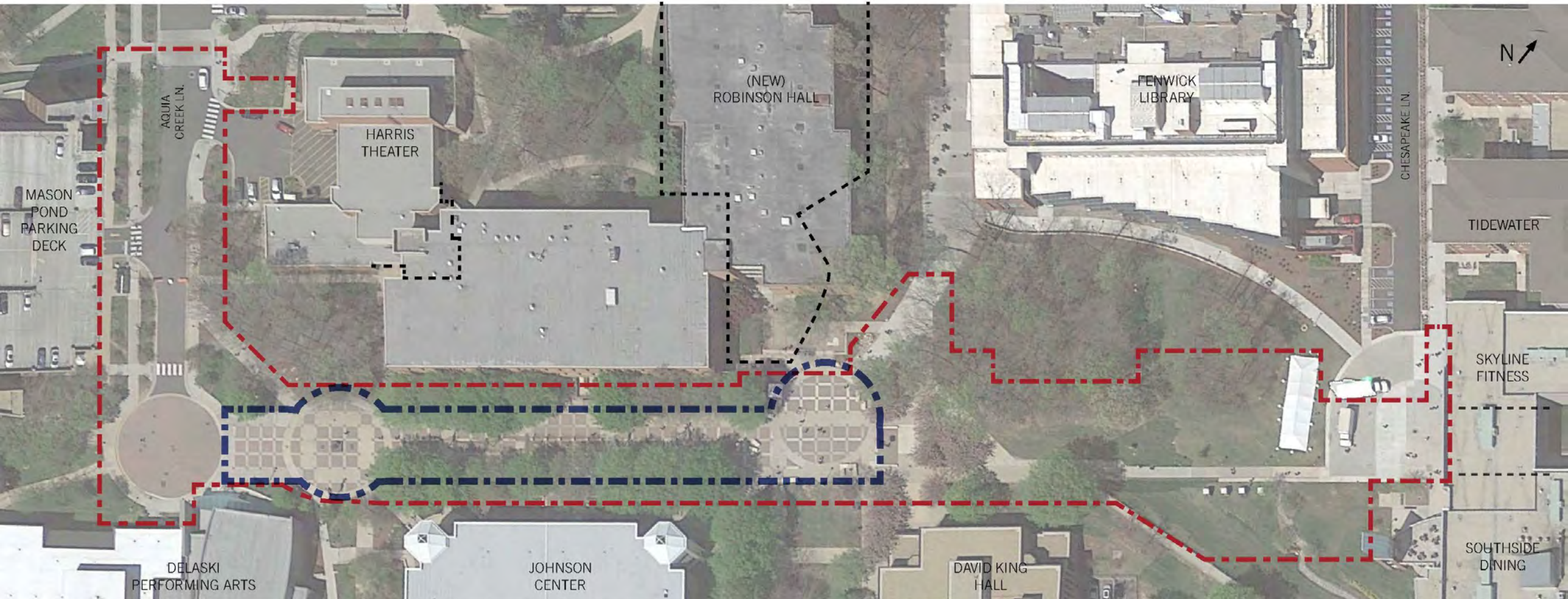


# DETAILS



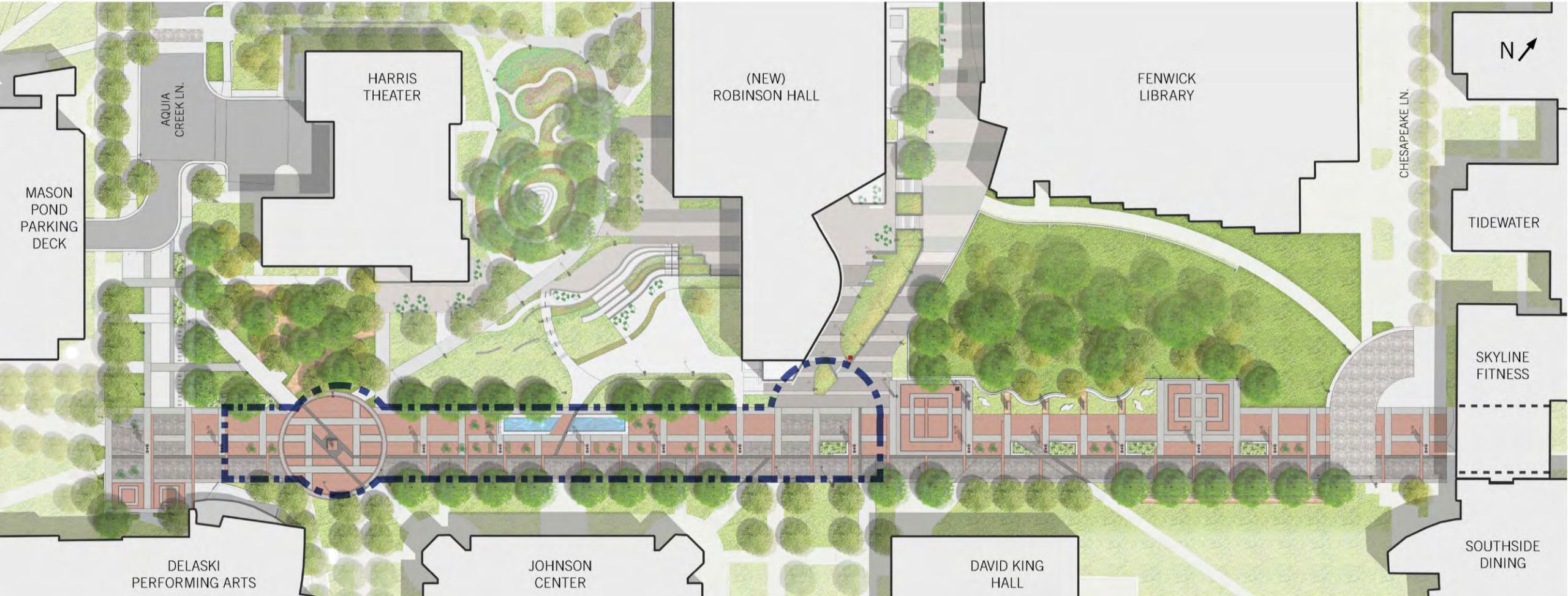


# WILKINS PLAZA



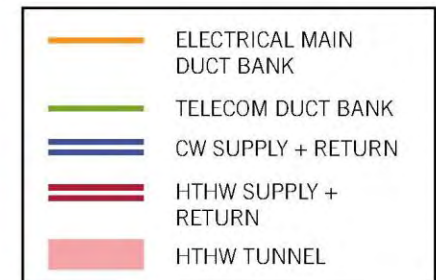
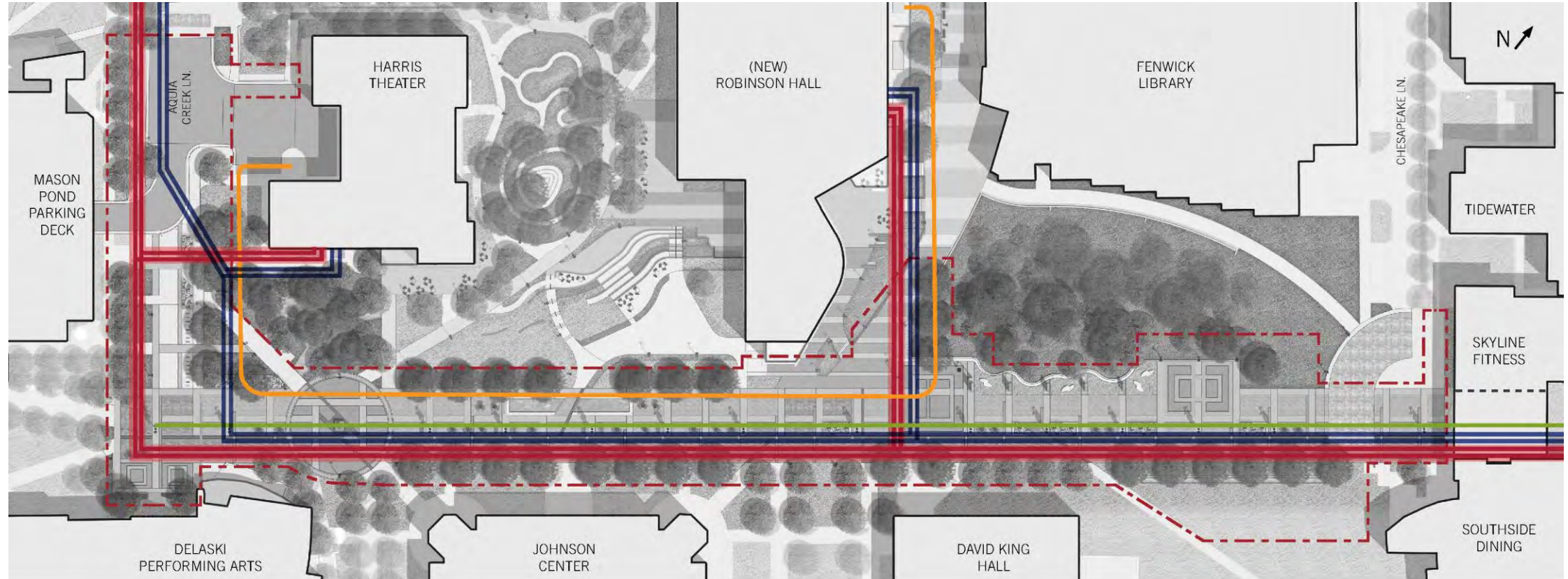


# ROGER WILKINS PLAZA



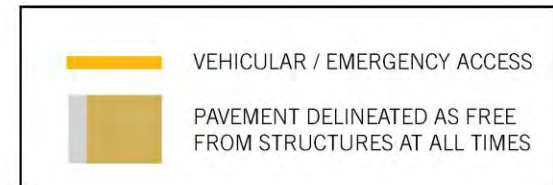
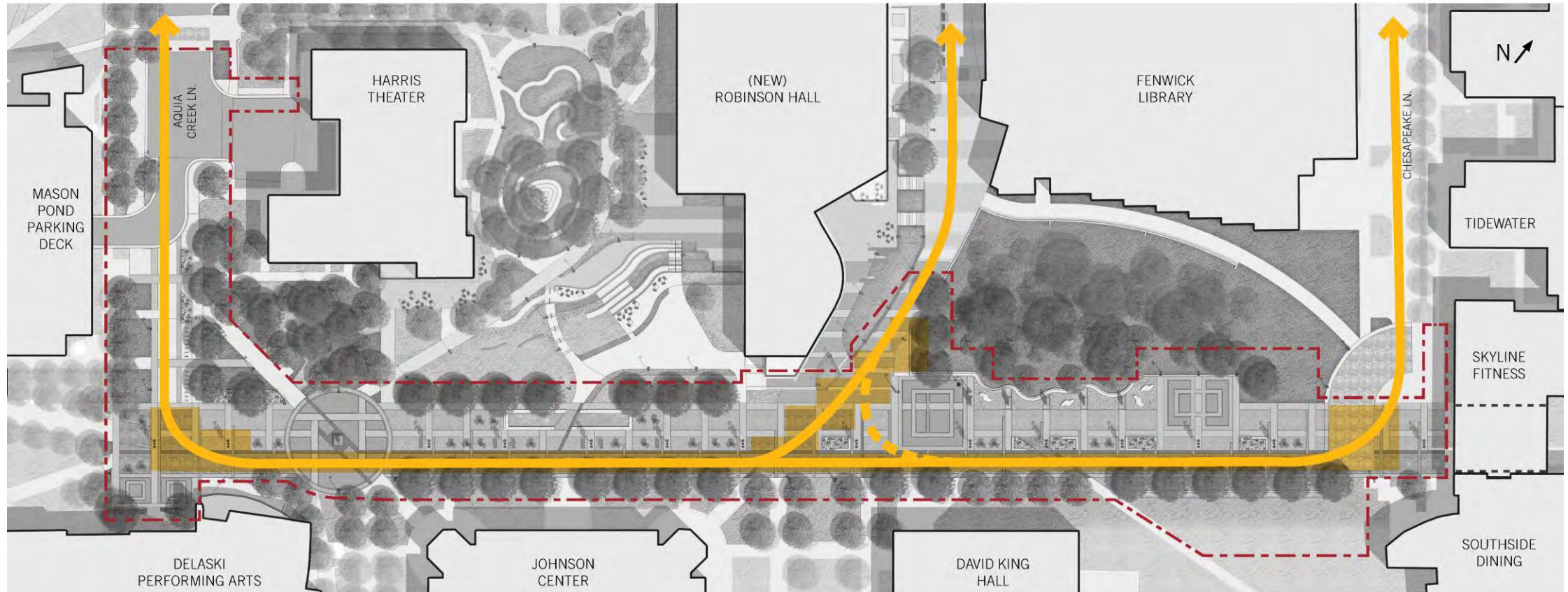


# UTILITY INFRASTRUCTURE





# EMERGENCY INFRASTRUCTURE





















# MEMORIAL





# GEORGE MASON'S LEGACY



Virginia Declaration of Rights - 1776

George Mason IV



b:December 11, 1725  
d:October 7, 1792



Objections to This Constitution of Government - 1787



Bill of Rights - 1791

Gunston Hall





# MEMORIAL TEAM MEMBERS

## Mason Faculty & Administration

Wendi Manuel-Scott

ECGM director: School of Integrative Studies, History and Art History, **African and African American Studies**

Benedict Carton

ECGM director: History and Art History, **African and African American Studies**

George Oberle

ECGM director: History librarian Mason's Fenwick Library; affiliate faculty member **History and Art History**

Julian R. Williams

Vice President of Compliance, Diversity and Ethics, **Compliance, Diversity and Ethics**

Rick Davis

Dean, CVPA/Executive Director, Hylton Performing Arts Center, **College of Visual and Performing Arts**

Donald H. Russell

Director Provisions Research Library/University Curator, **School of Art**

For more info on this process:

[https://www.scup.org/wp-content/uploads/2020/05/PHEV48N3\\_PlanningStory\\_Telling-the-Untold-Stories.Pinskey.Wolfgang.pdf](https://www.scup.org/wp-content/uploads/2020/05/PHEV48N3_PlanningStory_Telling-the-Untold-Stories.Pinskey.Wolfgang.pdf)

## Student Researchers

Alexis Bracey

Ayman Fatima

Kye Farrow

Farhaj Murshed

Elizabeth Perez-Garcia



## Stakeholder Groups

Executive Counsel

President's Counsel

Faculty Senate

Board of Visitors

VA Art and Architectural Review Board

Student Government



# INITIAL ASK

1



2

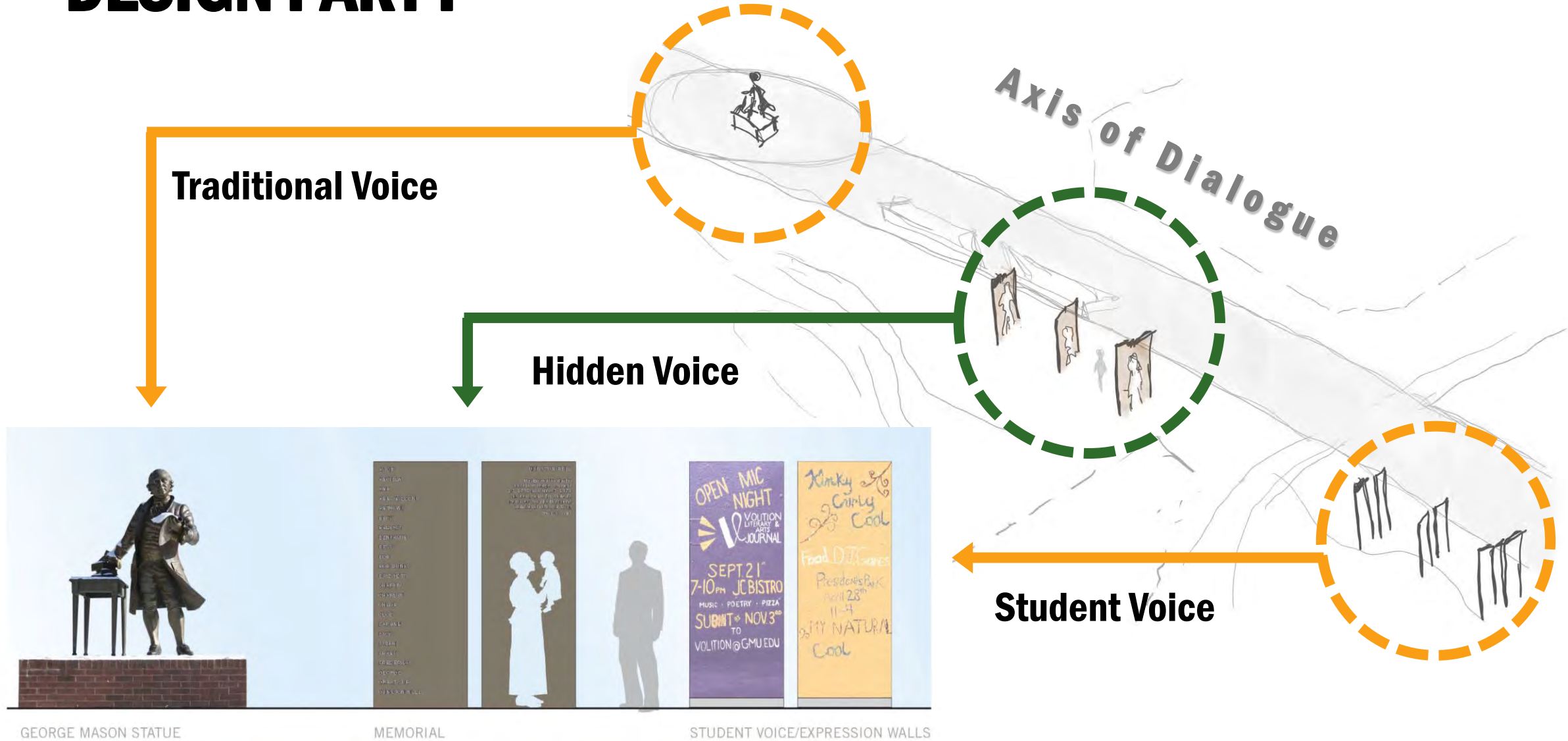
- Alice** - bequeathed to GM in Ann Thomson Mason's will (25 Aug. 1760); listed in GM's will (20 March 1773).
- Ancilla** - bequeathed to GM in Ann Thomson Mason's will (25 Aug. 1760).
- Ann** - listed in GM's will (20 March 1773).
- Ann - Wilson** - listed as a mulatto woman in the inventory of GM III's Prince William Co. estate (21 May 1735).
- Anthony** - bequeathed to GM in Ann Thomson Mason's will (25 Aug. 1760).
- Beck** - referred to in GM's will (20 March 1773).
- Belfast** - carried GM letter to Messrs. McCarty & Barry in Sept. 1770 (Rutland, p.126).
- Benjamin** - listed as negro man, aged 58 years, on GM's estate inventory for his Stump Neck property, Charles Co., Md. (8 Dec. 1792)
- Bess** - listed as daughter of Cloe in GM's will (20 March 1773).
- Bob** - listed as son of Occoquan Nell in GM's will (20 March 1773).

3





# DESIGN PART I



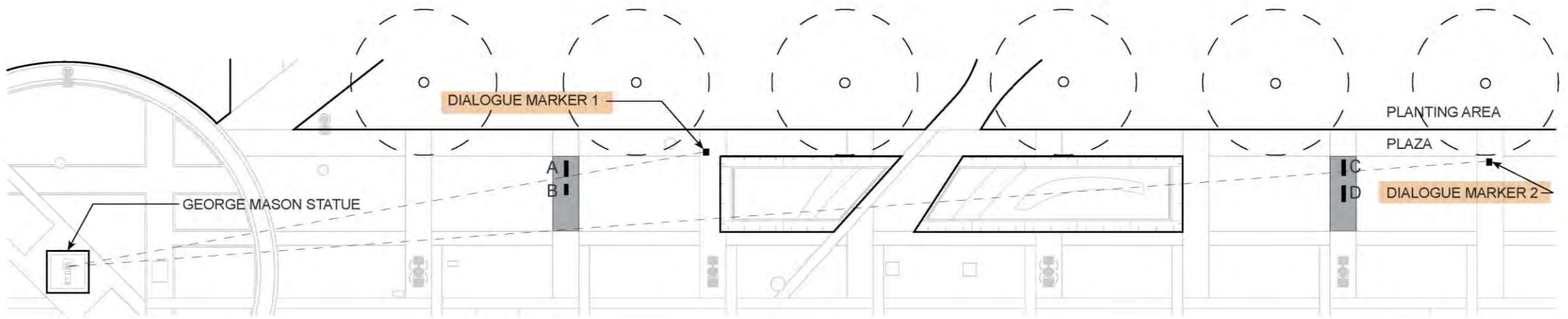


# FIGURE PANELS





# DIALOGUE MARKERS





# TESTING & MOMENTUM GENERATING





Dear George,

I will take the degree / education  
you did not want  
Penny to have!

- Melissa



# CONSTRUCTION





# CONSTRUCTION ACTIVITIES

- › Precon Activities
  - › Test Pit Plans – Design Team Buy In
  - › Phase Coordination Kickoff Meetings
- › Construction Notices
  - › Unforeseen Conditions
    - › Alert Process
    - › Key POC's
- › COVID-19 Impacts
  - › Campus Impacts
  - › Phasing Impacts





A night-time photograph of a trenching operation. In the background, a white Badger trencher truck is parked on a street, with its long, articulated trenching arm extended over a deep, narrow trench. The truck has the 'BADGER' logo and 'CALL CENTER 240-755-7800' on its side. The trench is filled with dark soil and some debris. To the right, another piece of equipment, possibly a backhoe or another trencher, is partially visible. The scene is illuminated by the truck's headlights and other construction lights. A brick building is visible in the background on the left. A semi-transparent circular overlay on the left side of the image contains the text 'Challenges' and a bulleted list.

# Challenges

- Logistics
- Unforeseen Conditions
- Weather
- Robots







# CONCLUSION

- › **Capitalize upon/leverage utility infrastructure projects.**
- › Ensure stakeholder engagement and buyoff.
- › Reflect values of occupants.
- › Plan ahead. Begin with study.
- › COVID - Capitalize on lower campus occupancy.



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