



HOWARD TEMIN LAKESHORE PATH PAVING & LIGHTING STUDY: WILLOW CREEK TO LIMNOLOGY BLDG.

DFD PROJECT # 23K1W

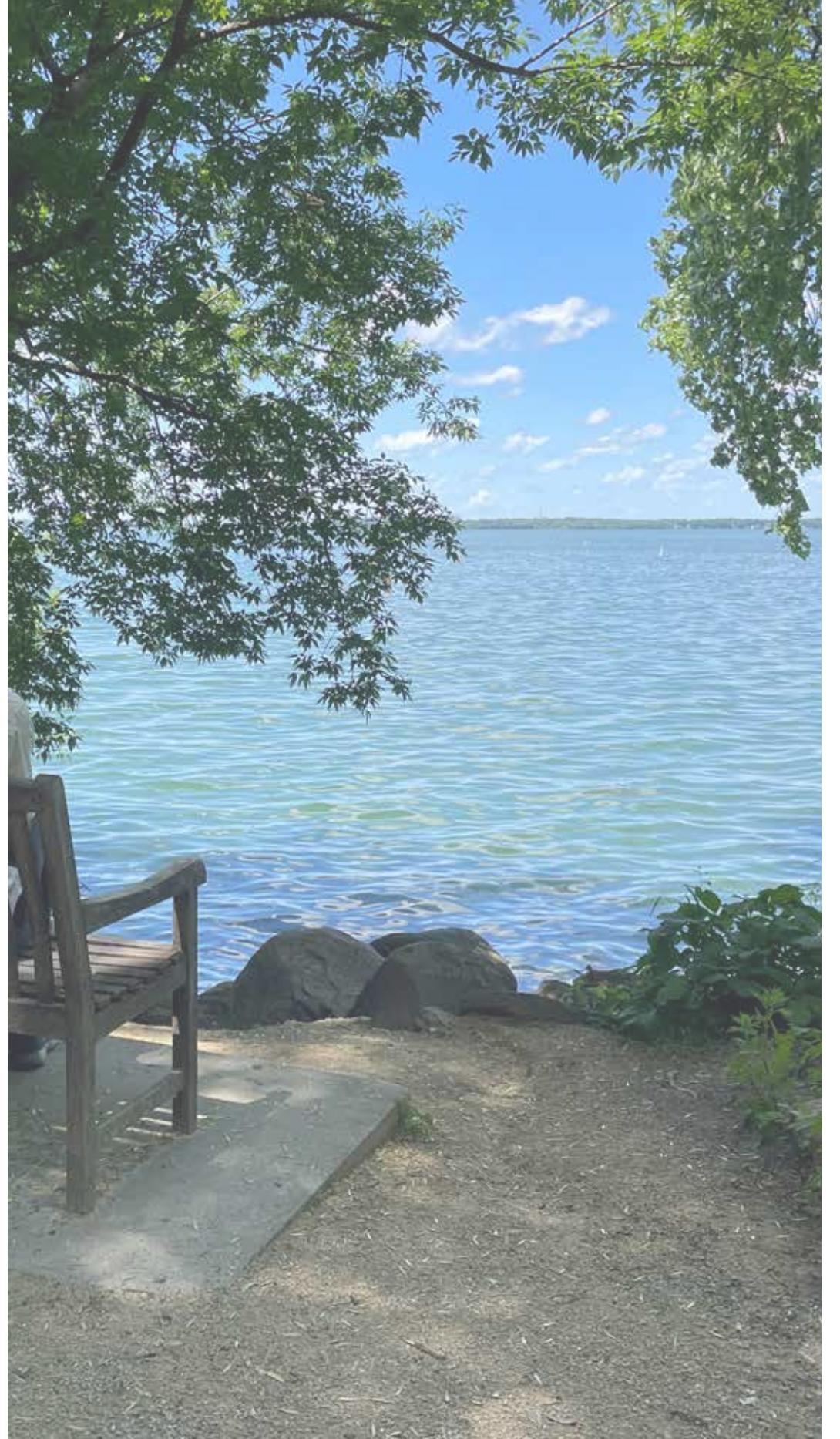
DF/ DAMON FARBER RING & DUCHATEAU

OCTOBER 24, 2024

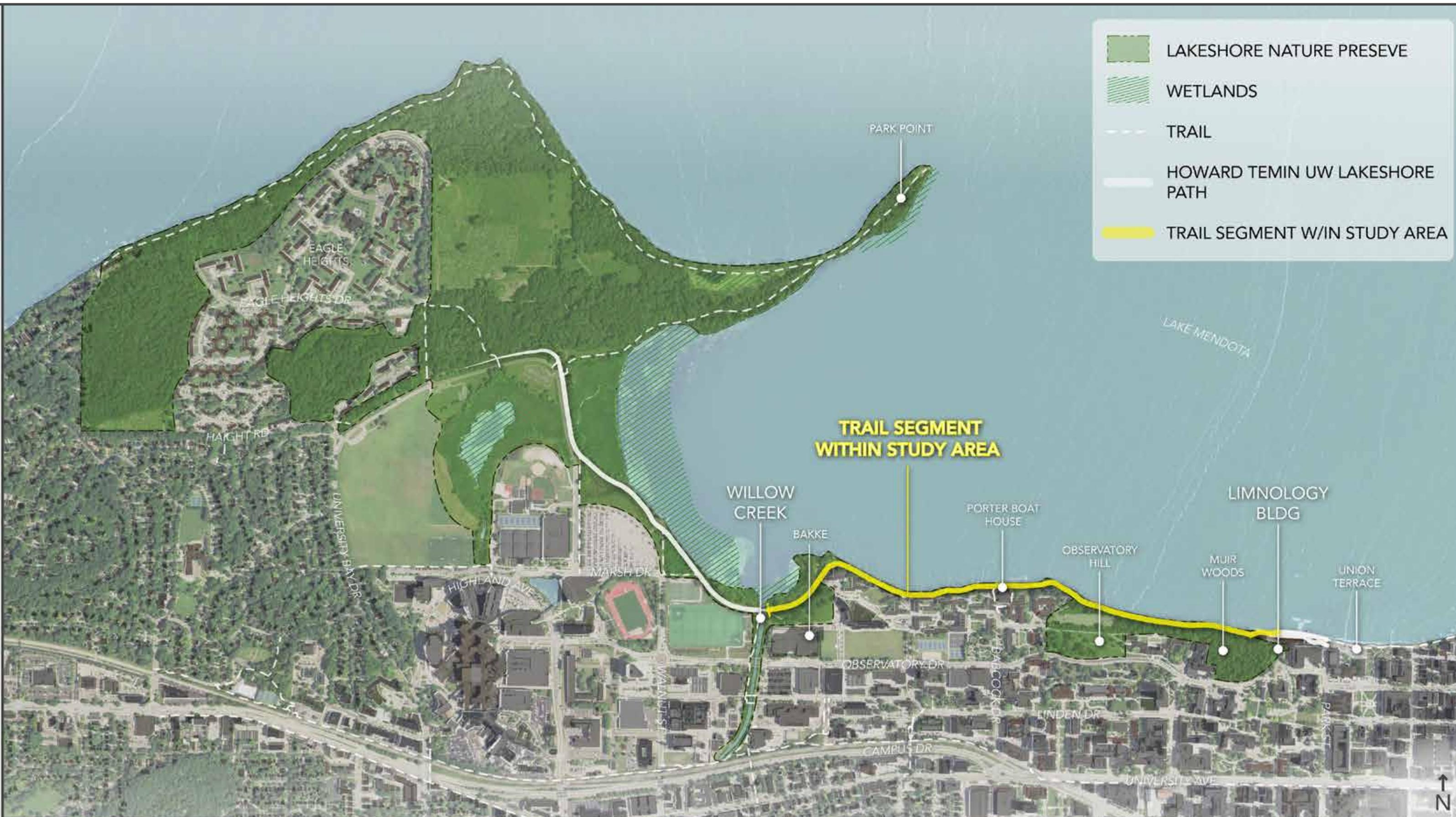
JOINT CAMPUS AREA COMMITTEE

AGENDA

- 1 PROJECT BRIEF AND TEAM INTRODUCTIONS
- 2 PROJECT SCHEDULE
- 3 PROJECT ANALYSIS OVERVIEW
- 4 ENGAGEMENT ROUND 1 SUMMARY
- 5 RESEARCH FINDINGS AND EVALUATION
- 6 SURFACING AND LIGHTING OPTIONS
- 7 NEXT STEPS



SCOPE OF STUDY AREA



CONTACTS & PROJECT TEAM

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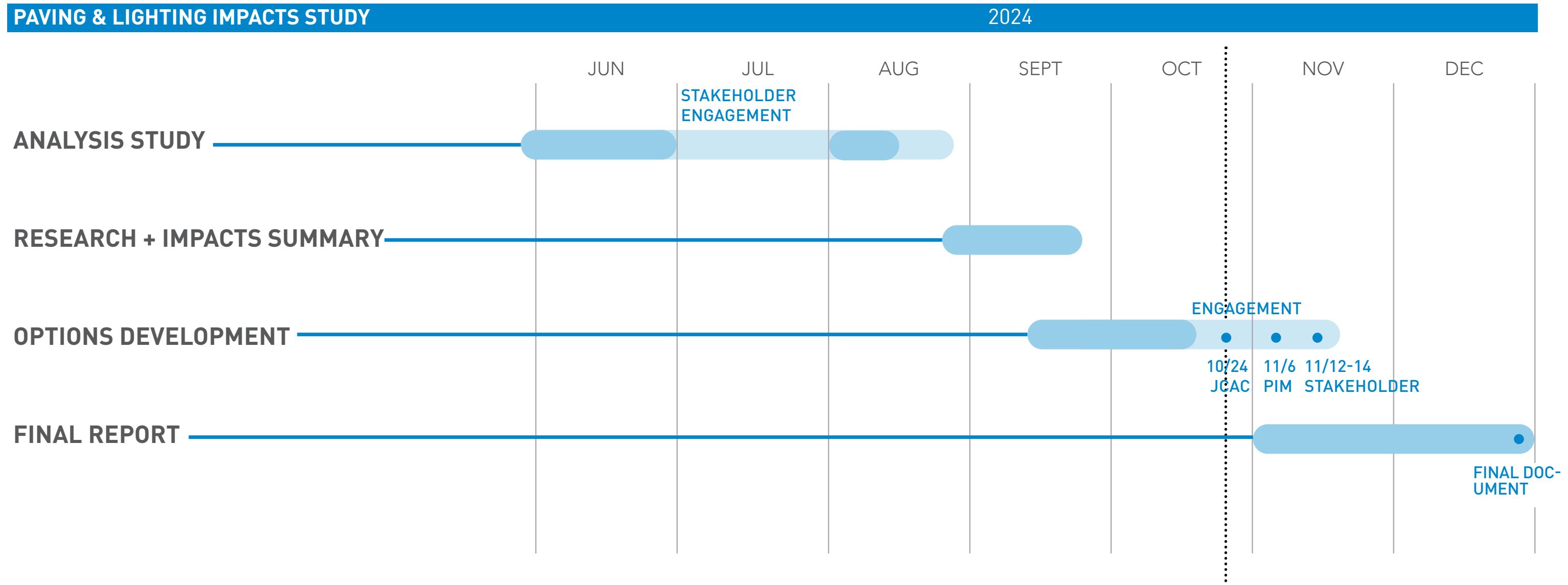
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SCHEDULE OVERVIEW



ANALYSIS

ANALYSIS MAPS

- » CULTURAL RESOURCES
- » PATH CIRCULATION
- » PATH EROSION
- » PATH SURFACING AND WIDTH
- » LIGHTING QUALITY
- » VEGETATIVE QUALITY



ENGAGEMENT SUMMARY - PROCESS

ONLINE SURVEY + PUBLIC INFORMATION MEETING + STAKEHOLDER MEETINGS

1,912 ONLINE SURVEY RESPONSES
1,325 SURVEY COMMENTS

127 GEOLOCATED COMMENTS

~40 ATTENDEES
18 COMMENT CARDS

**COMBINED
11,049
INSIGHTS**

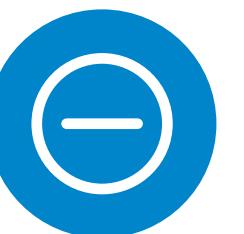
Insights counted as
individual answers and
comments across all
survey responses and
geo-located comments,
and public information
comments



No Concerns/
Keep As-Is



General Safety



Feeling of
Safety



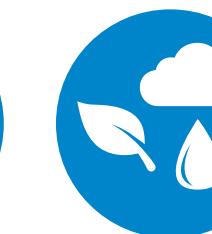
Unsafe Trail
Condition



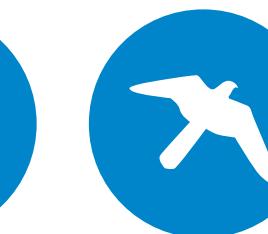
User Conflicts



Inclusivity/
Accessibility



Natural
Resource/
Ecosystem



Wildlife



Natural
Aesthetic/
Experience



Cost/
Maintenance/
Construction

User-ship

Nature and Aesthetic

Maintenance

COMMON THEMES/ KEY TAKEAWAYS

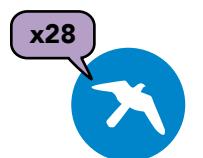
ENGAGEMENT SUMMARY

127
GEO-LOCATED
COMMENTS



Safety Issue or Observation

July 16, 2024 Project Information Meeting + Online Map Survey Comments



Wildlife / Natural Resource Feature

Takeaways: Safety observations concentrated around **eastern** land and water



Other

Takeaways: Misc. observations throughout the trail focus on **land and water**



Lighting Issue / Observation

Takeaways: Comments split between **desire to maintain** and **concerns about safety**



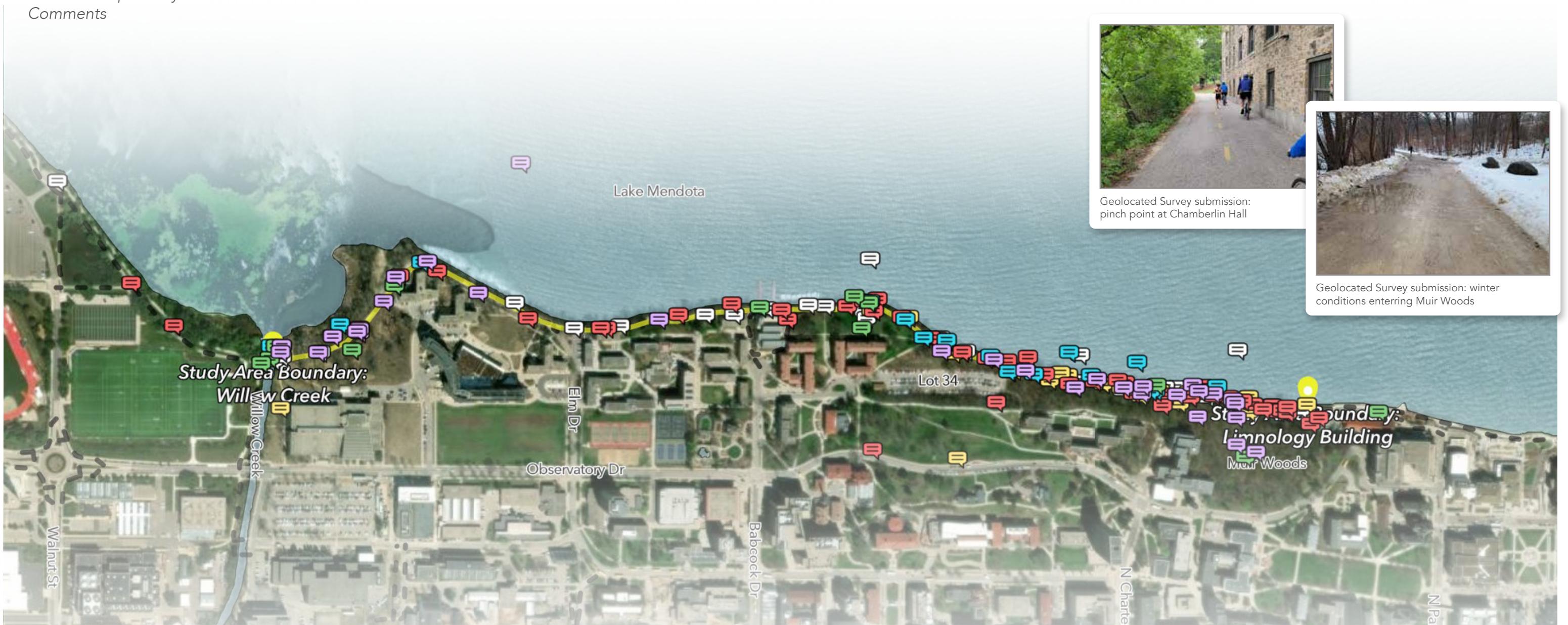
Stormwater / Erosion / Flooding

Takeaways: **Erosion and rutting** issues concentrated on **eastern** land and water

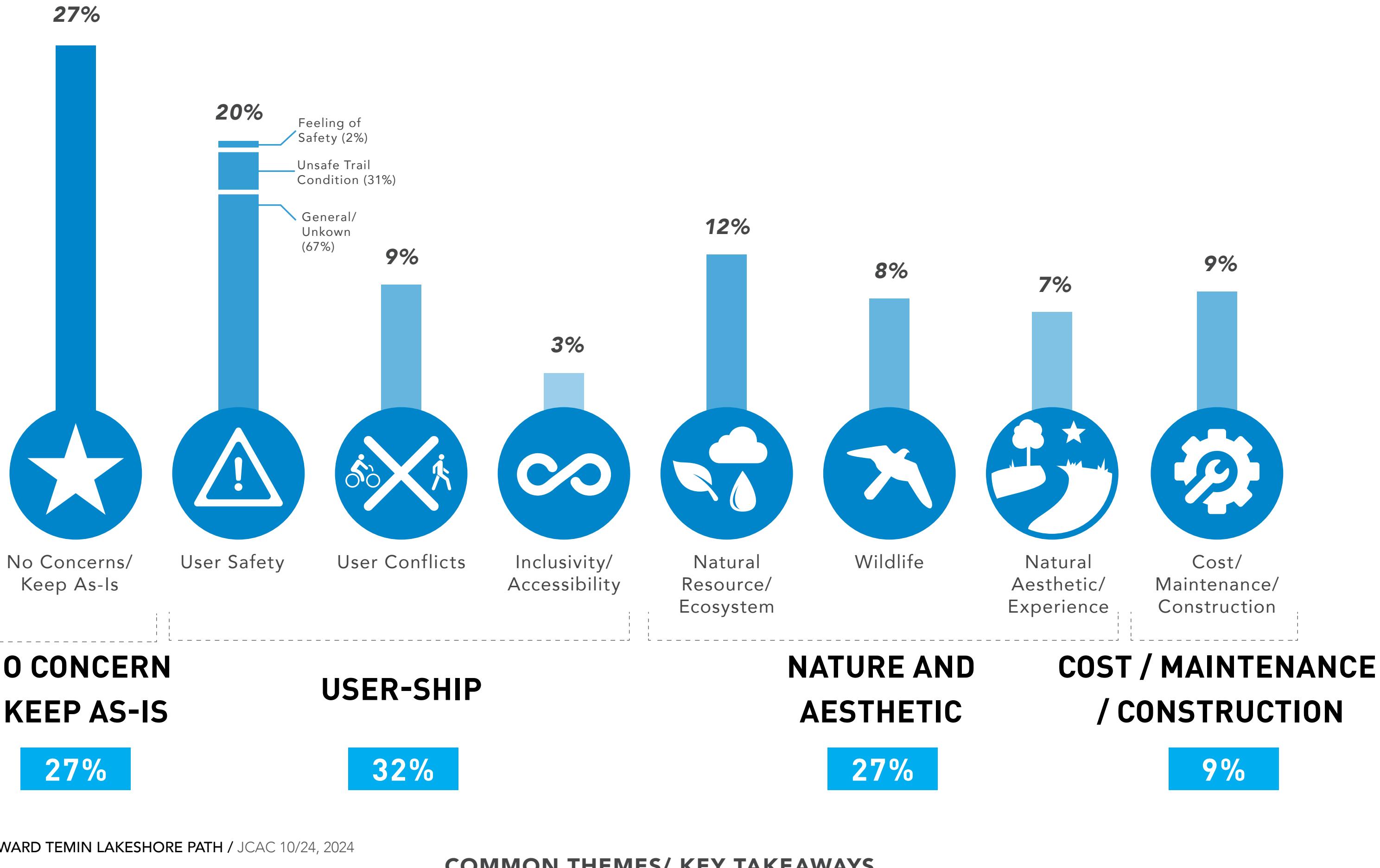


Desirable View / Gathering Spot

Takeaways: Favorite spots at **both designed and non-designed areas and trails**



ENGAGEMENT SUMMARY



RESEARCH

SURFACING / OPTIONS											
ENVIRONMENTAL		SURFACING / OPTIONS									
Meets Surface Type		SURFACING / OPTIONS									
Recommendation for Shared Use Path		SURFACING / OPTIONS									
US Forest Service** (Based on Trail Classes 5 for bike, ped trails)		SURFACING / OPTIONS									
WI DOT Bicycle Facility Design (for shared-use paths)		SURFACING / OPTIONS									
UW Madison Campus Standards (for shared-use paths)		SURFACING / OPTIONS									
Natural Resource Impact		SURFACING / OPTIONS									
Short Term-Construction Impact disturbance and excavation extent		SURFACING / OPTIONS									
Long Term Impact low: minimizes obstacles to growth med: partially impedes growth high: impedes or completely blocks growth		SURFACING / OPTIONS									
Water Quality		SURFACING / OPTIONS									
Runoff Co-efficient CN values for soil groups B&C from WSS/TR-35		SURFACING / OPTIONS									
Contaminants/Leaching / Runoff*** contaminant contribution (chemical leaching, sediment loading from material surface, etc.) low: minimal leaching/sediment loading to surface med: some chemical leaching/sediment loading likely high: high chemical leaching/sediment loading will occur		SURFACING / OPTIONS									
Winter Mgmt Options suitable for use with...		SURFACING / OPTIONS									
Chemical Based De-icers Sand Plowing		SURFACING / OPTIONS									
Reduced Winter Management **Trail Class 5: 72-100' wide with imported surface material, routine plowing, and no protrusions ***Recycled concrete (aggregate base option) risk leaching Pb, though the risk of low due to dilution and rate		SURFACING / OPTIONS									
Operations		SURFACING / OPTIONS									
Install Cost low: \$20-50/sq ft med: \$10-20/sq ft high: \$20/sq ft+		SURFACING / OPTIONS									
Annual Maintenance Effort low: minimal surface repair, low cleaning med: occasional surface repair and cleaning high: regular erosion / surface repair, specialty cleaning		SURFACING / OPTIONS									
Lifespan resurface / replace: low: 10-20 yrs med: 20+ years high: 20+ years		SURFACING / OPTIONS									
Products: Soil-Sement; Organic-Lock; Kafka + With low impact glow (feet or rubber edge)		SURFACING / OPTIONS									
Assumes broom finish		SURFACING / OPTIONS									
Products: Addastone Resin; Bonded Surfacing; Klingstone 400;		SURFACING / OPTIONS									
Products: Tree Parker, SilvaCell		SURFACING / OPTIONS									
*Varies with material selection: Wood/ Metal/Composite available		SURFACING / OPTIONS									

LENSES FOR RESEARCH

SURFACING

- » ENVIRONMENTAL
- » NATURAL RESOURCE IMPACT
- » WATER QUALITY
- » WINTER MANAGEMENT
- » SOCIO-ECONOMIC
- » USER SAFETY
- » AESTHETICS
- » OPERATIONS

LIGHTING

- » ENVIRONMENTAL
- » CULTURAL
- » SOCIAL
- » ECONOMIC

LIGHTING / OPTIONS

LIGHTING STRATEGIES		EXISTING LIGHTING STRATEGIES		EXISTING CONTROL STRATEGIES		BASIC CONTROL STRATEGIES		ADVANCED CONTROL STRATEGIES	
EXISTING LIGHTING STRATEGIES	N/A	LIGHT ZONE 0 STRATEGIES	N/A	LIGHT ZONE 1 STRATEGIES	N/A	EXISTING CONTROL STRATEGIES	N/A	BASIC CONTROL STRATEGIES	N/A
WILDFIRE IMPACT	where lights/poor where no lights: excellent	where lights/poor where no lights: excellent	excellent	good	poor	good	good	EXtinguish lights at a curve	
NATURAL RESOURCES IMPACT (Energy Use)	N/A	NATURAL RESOURCES IMPACT (Energy Use)	N/A	NATURAL RESOURCES IMPACT (Energy Use)	N/A	EXISTING CONTROL STRATEGIES	N/A	good	good
ENVIRONMENTAL NIGHTTIME QUALITY	where lights/poor where no lights: excellent	where lights/poor where no lights: excellent	excellent	good	poor	good	good	good	good
CONSTRUCTION DISTURBANCE	N/A	CONSTRUCTION DISTURBANCE	N/A	CONSTRUCTION DISTURBANCE	N/A	ADVANCED CONTROL STRATEGIES	N/A	low	low
CULTURAL IMPACT	CULTURAL RESOURCE PRESERVATION	CULTURAL RESOURCE PRESERVATION	N/A	PRIVILEGE DARKNESS: EXCELLENT	PRIVILEGE DARKNESS: EXCELLENT	ADVANCED CONTROL STRATEGIES	N/A	good	excellent
SOCIAL IMPACT	TRAIL CONDITIONS	TRAIL CONDITIONS	N/A	PRIVILEGE DARKNESS: EXCELLENT	PRIVILEGE DARKNESS: EXCELLENT	ADVANCED CONTROL STRATEGIES	N/A	good	excellent
ECONOMIC IMPACT	MAINTENANCE / OPERATIONS COST	MAINTENANCE / OPERATIONS COST	N/A	PRIVILEGE DARKNESS: EXCELLENT	PRIVILEGE DARKNESS: EXCELLENT	ADVANCED CONTROL STRATEGIES	N/A	medium	high
	Maintenance Activities / Lifespan	Maintenance Activities / Lifespan	N/A	PRIVILEGE DARKNESS: EXCELLENT	PRIVILEGE DARKNESS: EXCELLENT	ADVANCED CONTROL STRATEGIES	N/A	medium	high

OPTIONS EVALUATION - SURFACING



CASE STUDIES - PATH SURFACING

	PHEASANT BRANCH TRAIL + CONSERVANCY / MIDDLETON, WI	BLOOMINGDALE TRAIL (THE 606) CHICAGO, IL	WELLESLEY OFFICE PARK WALKING PATH / WELLESLEY, MA	GARVER PATH MADISON, WI
SIZE	Avg. 8' wide, 2 miles separate, 8 miles of trail in conservancy	2.5 miles, 14' wide (avg)	1 mile, 6' wide	2800' length, 10' wide
PAVEMENT TYPES	<ul style="list-style-type: none">• Aggregate• Asphalt• Porous Asphalt• Boardwalk	<ul style="list-style-type: none">• Concrete• Rubber Shoulder	<ul style="list-style-type: none">• Bound Aggregate: Combined aggregate rubber• Wood chip/ natural shoulder	<ul style="list-style-type: none">• Asphalt with boardwalks• Curb edge/ natural edge
USERS	2,500 users/day; 30,000 users/year	3,000 users/day; 1.1M users/year	Volume data not available	Volume data not available

CASE STUDIES - PATH SURFACING

SAFETY CONTROLS

- Signage
- Markings/ striping
- Curbs & edges



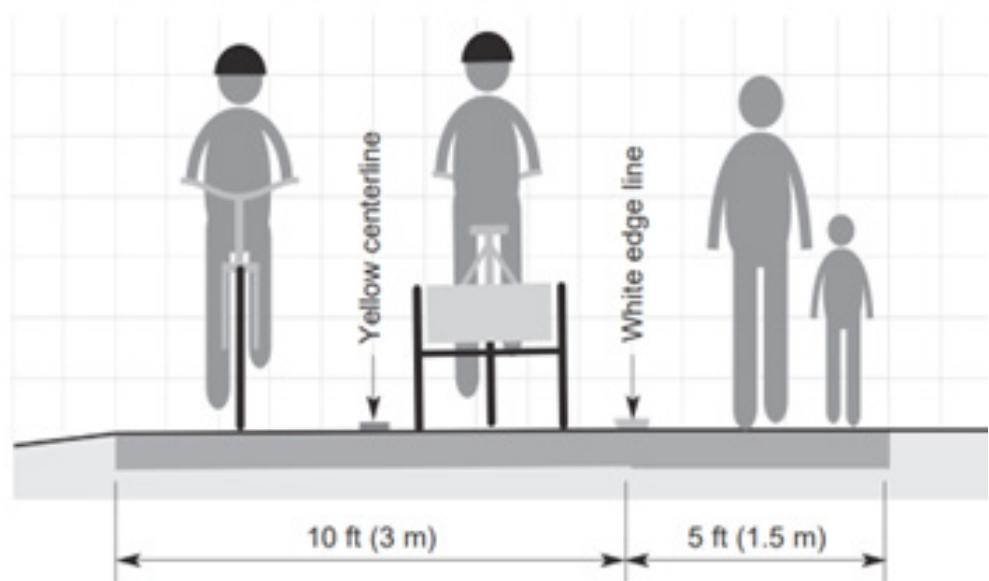
Material change/ integrated infrastructure as striping



Asphalt path with aggregate shoulder, no controls



Asphalt path with concrete shoulder and striping



Path separated from walkway by edge line

WI DOT Bicycle Design Handbook shared path separation methods



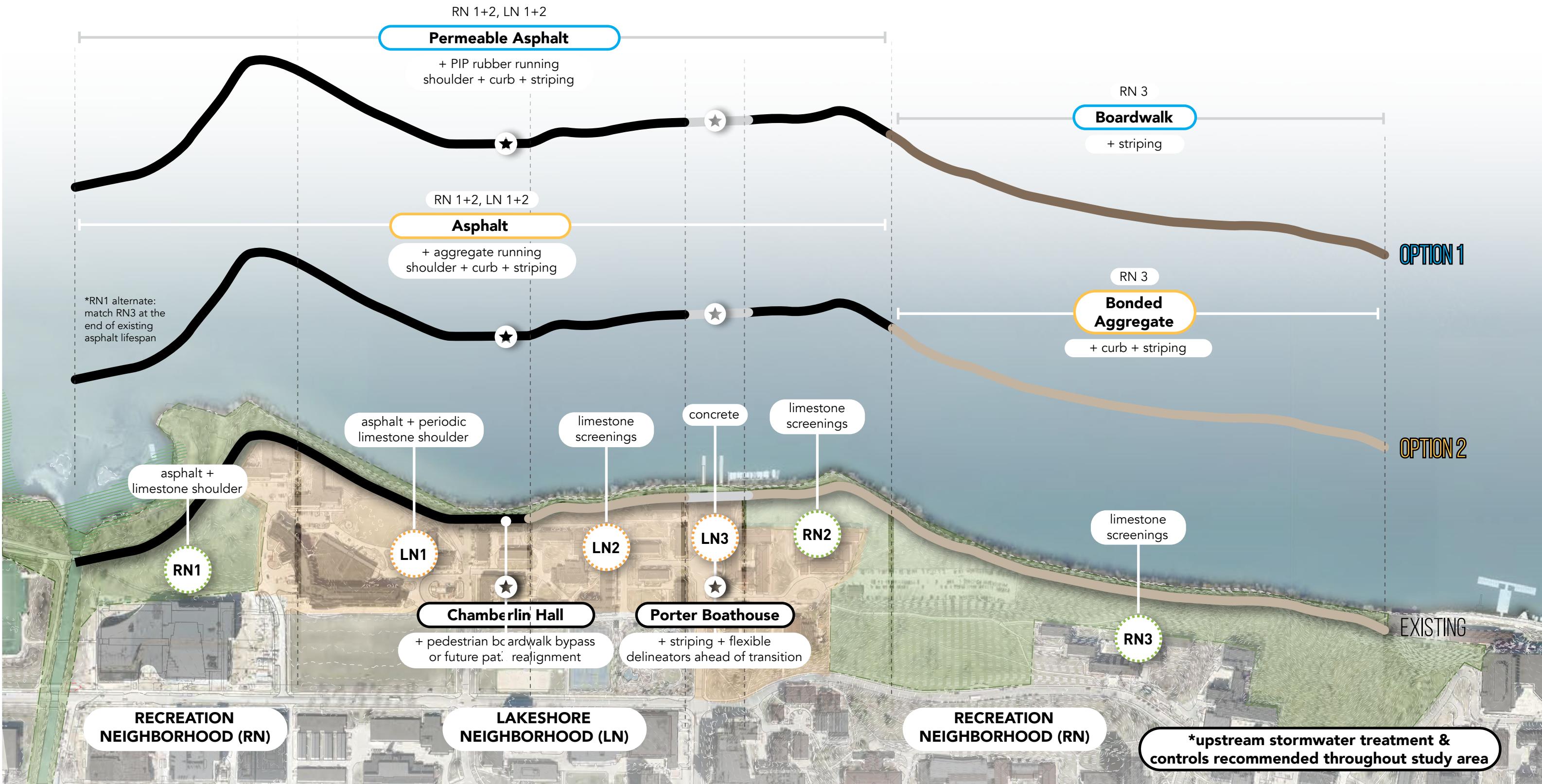
Rumble strips in bike lane before curve



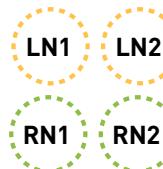
Flexible delineators at surface change/ intersections

SURFACING - OPTIONS

Note: Programming recommendations (i.e. operational rules) are not currently captured in project scope but recommended to be considered in future work.



PAVING - OPTION 1



PAVING

**PERMEABLE ASPHALT W/ PIP
RUBBER SHOULDER + CURB**



CONTROLS

STRIPING



PAVING

BOARDWALK

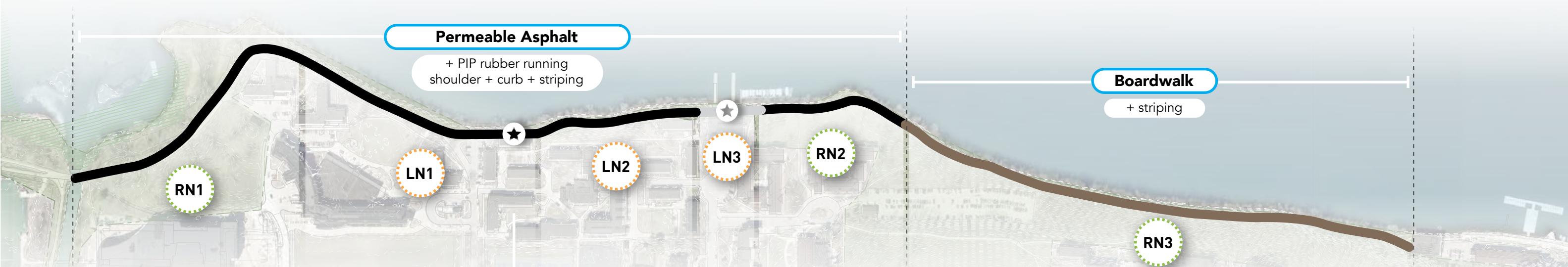
CONTROLS

STRIPING + SIGNAGE



(left) Permeable asphalt, Middleton, WI; (right) Concrete with Rubber Running strip, Chicago, IL

Low boardwalk, Muir Woods National Monument, CA



PAVING - OPTION 2

PAVING
**ASPHALT W/ PIP RUBBER
SHOULDER + CURB**



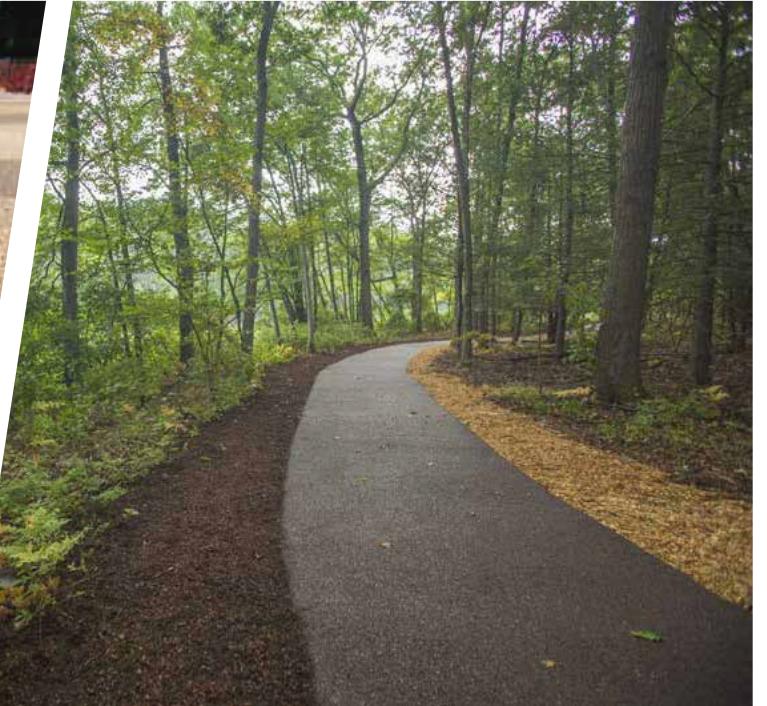
Typical asphalt with aggregate running strip

CONTROLS
STRIPING

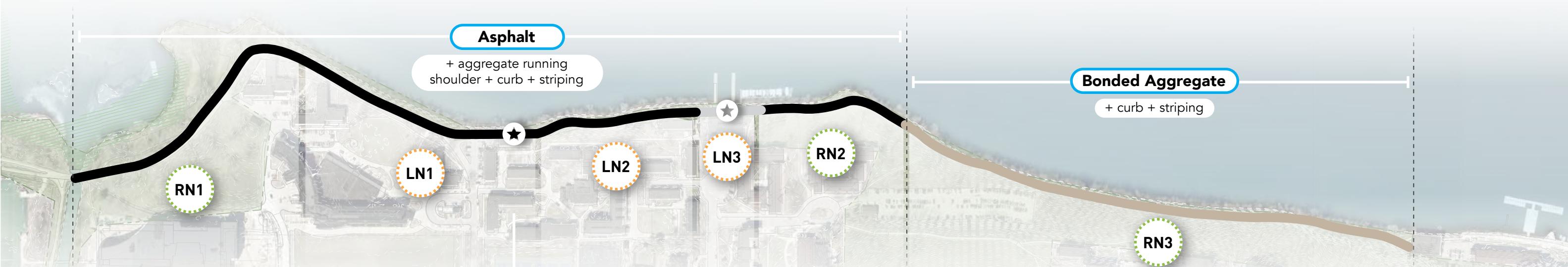
PAVING
**BONDED AGGREGATE
W/ CURB** (COMPOSITE/RESIN/WAX BONDED
AGGREGATE, TBD)



CONTROLS
STRIPING + SIGNAGE



(left) Bonded Aggregate Surface Product; (right) Combined Permeable Aggregate and
Rubber Surface, Wellesley, MA



LIGHTING - OPTION

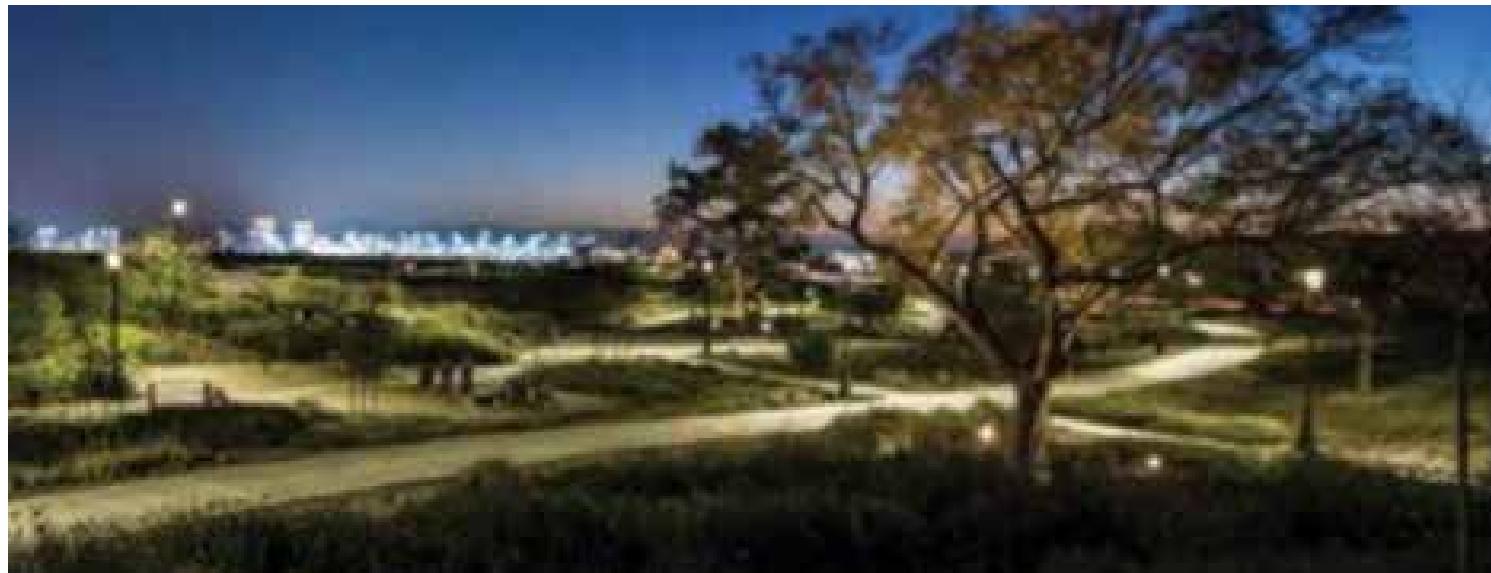


RECOMMENDATION

LIGHT ZONE 1 / WARM WHITE

2400K-3000K OR CORRELATED COLOR TEMPERATURE WHITE LIGHT

- Melanopic Daylight Equivalency Ratio (0.35-0.48)
- Widely available in standard commercial exterior products
- Reassurance Visibility for discerning detail, color of objects

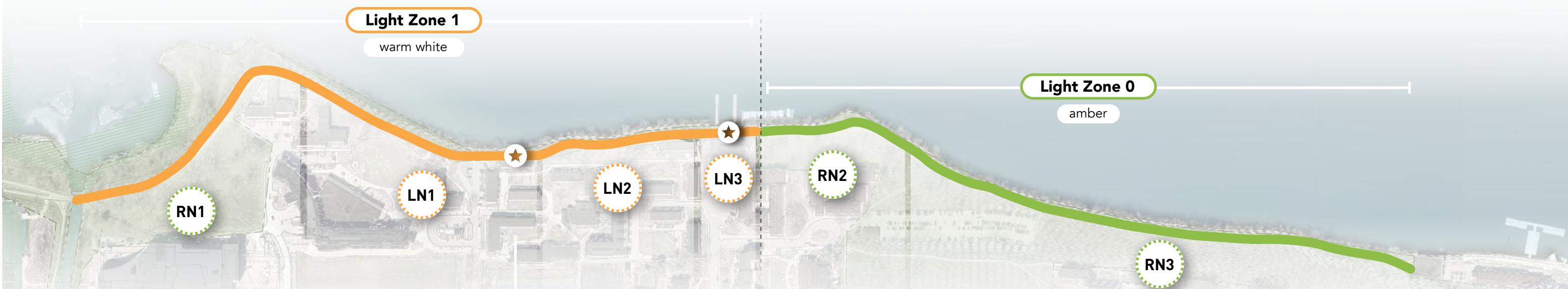


RECOMMENDATION

LIGHT ZONE 0 / AMBER

1800K-2000K OR SINGLE WAVELENGTH AMBER LIGHT

- Melanopic Daylight Equivalency Ratio (0.35-0.48)
- Widely available in standard commercial exterior products
- Lower Reassurance Visibility than white light



NEXT STEPS

- 1** FINALIZE PIM PRESENTATION AND FEEDBACK EXERCISES W/ CLIENT TEAM
- 2** REPORT SELECTED OPTIONS TO ENGAGEMENT GROUPS

PIM #2 [11/6] —————→

STUDENT CENTRIC SESSION,
CAMPUS PARTNERS, LAKESHORE
NATURE PRESERVE [11/12-11/14]

DESIGN REVIEW BOARD - [12/17])

- 3** PREPARE FINAL REPORT

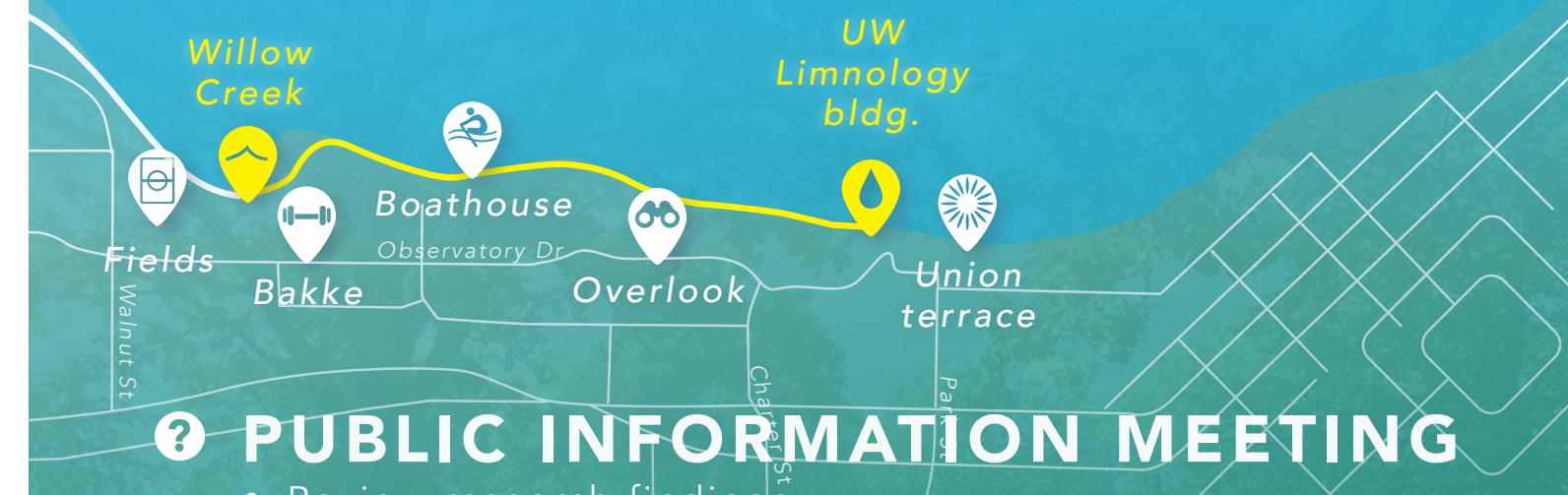
THANK YOU!

WE WANT TO HEAR FROM YOU!

UW HOWARD TEMIN

LAKESHORE PATH

LIGHTING AND PAVING STUDY



?

PUBLIC INFORMATION MEETING

- Review research findings
- Share engagement summary to date
- Review preliminary lighting and paving options
- Gather input and feedback to inform final recommendations

⌚ **WEDNESDAY, NOVEMBER 6**

5:30pm - 7:30pm

Join us for a presentation at 5:30pm with feedback activity and discussion to follow

📍 **HOLT CENTER**
Kronshage Hall, 1650 Kronshage Dr.

HOSTED BY **DF/ DAMON FARBER**



Questions? Contact Damon Farber at jrefsland@damonfarber.com