

SCUP Excellence in Planning Submission for an Established Campus

University of Maine 2008 Master Plan Orono, Maine



Autumn view of Grove Walk and the South Mall with a proposed library expansion in the foreground. The South Mall completes a design concept originally proposed in the Olmsted Brothers 1932 Master Plan.

University of Maine 2008 Master Plan

1) PROBLEM AND SCOPE:

The purpose of the Master Plan is to support the evolving academic and research mission of the University while promoting sustainability at the broadest level, protecting architectural and landscape resources, improving campus life, and providing a comprehensive vision for the future. The plan goals were:

- advance the land grant mission through stewardship, management and local partnerships.
- enhance the cultural legacy of the campus by restoring and extending the quality and character of the core campus landscape.
- create a collegiate environment accommodating strategic academic and research expansion while enhancing the sense of community and fostering collaboration.

The University of Maine has a planning heritage distinguished by Fredrick Law Olmsted, Sr. and the Olmsted Brothers. The University Mall and front lawn overlooking the Stillwater River are assets of the Olmsted legacy along with a range of historically significant buildings.

Several areas are in need of improvement. The south campus, originally intended to become the South Mall, remains incomplete and fragmented. Vehicular traffic and parking lots dominate the campus creating conflicting and confusing circulation patterns. Campus expansion to the east is haphazard and has eroded the surrounding Demeritt Forest, and wetland environments. The

Master Plan vision provides strategies for protecting the historic landscapes, organizing new districts, reutilizing existing historic buildings, utilizing land more efficiently through redevelopment and infill, and a comprehensive sustainability strategy.

2) PLANNING PROCESSES:

The master planning process commenced in June of 2007 with representation from the University and local communities. The process consisted of three-phases of work structured around seven multi-day work sessions with faculty and staff, students, special interest groups, and representatives from Orono and Old Town, the host communities. The Master Plan incorporates the recommendations of these groups as well as the findings of several recent campus wide studies. The University's active participation with the planning and economic development groups of the host communities fosters business partnerships to create local job opportunities and potential revenue generation. The recently completed Innovation Center is promoting these partnerships. As a signatory of the American College and University Presidents Climate Commitment (ACUPCC), the Master Plan also provides strategies to assist the University in reducing carbon emissions. The result is a living document that incorporates strategic recommendations, addresses stakeholder issues, and promotes meaningful and measurable sustainable design.

3) IMPLEMENTATION:

The land use framework creates a growth boundary to concentrate academic, research and campus life facilities in the central campus area, limiting

the impact on the surrounding natural systems and habitats. The concentrated development promotes a collegiate and pedestrian-scale environment while utilizing existing infrastructure more intensely and efficiently. The landscape framework links historic landscapes with the surrounding 'frame' of natural systems, creating new formal spaces as well as a series of east-west circulation corridors that function as windbreaks. The sustainable design strategies address the relationship between the quality of life, the local climate and resource consumption patterns.

The layering of ideas across the framework plans ensures that even small scale projects contribute on multiple levels to the Master Plan vision. The flexible framework plans allow for incremental implementation while addressing long term campus goals and objectives. Since the completion of the Master Plan, the University has constructed the Martin Luther King, Jr. and Coretta Scott King Memorial Plaza, a gathering place adjacent to the Student Union along an east-west corridor. The plaza transforms a major route into the campus and is the first of several improvements intended to establish a new gateway to the campus.

4) RESULTS:

The Master Plan extends the core campus to the south, creating a new academic and research district. The framework recalls the South Mall as illustrated in the Olmsted Brothers plans. The Mall is a new campus gathering space framed by the expansion of the library and a series of future academic and research buildings. Proposed buildings link indoor

University of Maine 2008 Master Plan

and outdoor circulation to create interior “streets” and provide social spaces, group learning areas and pedestrian connectivity in all seasons. For the revised South Mall, future buildings are shifted 90 degrees to adopt an east-west orientation to provide passive solar benefits.

Sustainability performance indicators of the Master Plan will help demonstrate measurable improvements. The stormwater analysis indicates a reduction in peak water run off in core campus watershed areas. This is achieved through the reduction of impervious surfaces, disconnected runoff flow to treat water locally in small-scale retention areas, and the reconnection of wetlands at the edge of the core campus. The analysis of carbon emissions examines existing sources, suggests preliminary reduction targets, and associates future development with the resulting emissions. These strategies and analyses create a living laboratory with cultural, social and environmental elements interwoven in the landscape, public realm and proposed buildings. This approach, and the metrics examined, are transferable to institutions interested in sustainable planning.

5) SIGNIFICANT ISSUES:

a. Sustainability

A commitment to sustainability in the broadest sense—social, economic and environmental sustainability—informed the overall decision-making process. The Master Plan specifically focuses on environmental sustainability and

physical design principles while identifying opportunities for community, local government and business partnerships. It guides the University and encourages a mindset for addressing greenhouse emissions associated with existing and future buildings. The framework calls for east-west building orientations to facilitate passive solar access and block winter winds. The framework also preserves dedicated campus woodlands and fields, reconnect wetlands and restore the riparian environment along the Stillwater River.

b. Historic Resource Issues

The Plan enhances the legacy of the historic Olmsted campus plans, and adopts many of the recommendations set forth in the 2007 Historic Preservation Plan. Landscape interventions maintain an open park-like setting in the historic front lawn area. The consolidation of traffic and removal of redundant roadways enhances the quality of the historic district. Along the riverfront, the Master Plan restores Olmsted’s parade grounds in accordance with the intent of the 1867 master plan. A new river front trail pays homage to the Wabanake people who once fished along the river banks and provides connections to adjacent community trail networks.

c. Open space and pedestrian circulation

The landscape framework provides the overarching structure for the Master Plan. A series of east-west tree lined corridors function as pedestrian routes and windbreaks. The corridors serve to link the formal, historic landscapes of the campus with the surrounding wooded areas. The Master plan creates

a pedestrian priority zone by removing unnecessary roads that bisect the heart of the campus, redirecting vehicular traffic to a periphery loop road. Over the long-term, surface parking is consolidated in garages and peripheral parking areas.

d. Campus Life

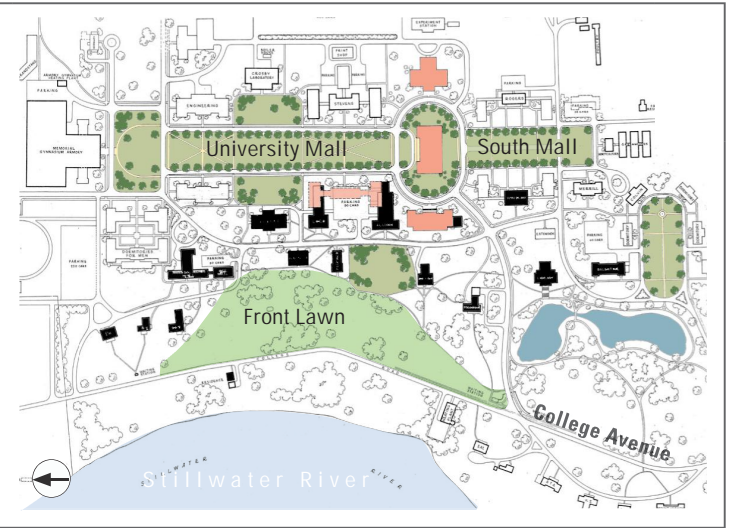
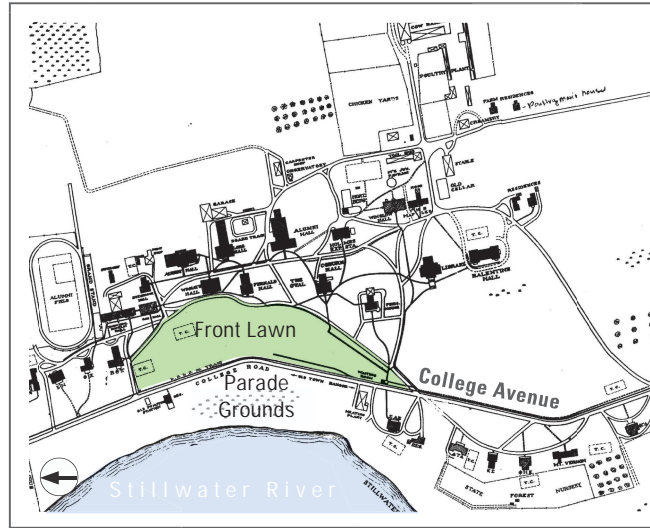
The Master Plan provides strategies for improving the overall sense of community and campus life as follows: 1) new open spaces and landscapes adjacent to existing residence halls extend the outdoor season and provide passive recreation opportunities; 2) the library expansion includes ground floor social and study space adjacent to the South Mall, a major new open space; 3) new social and learning spaces are provided in the South Mall and other locations throughout the campus; and 4) a new housing district in the south campus area meets future residential needs.

e) Community Outreach

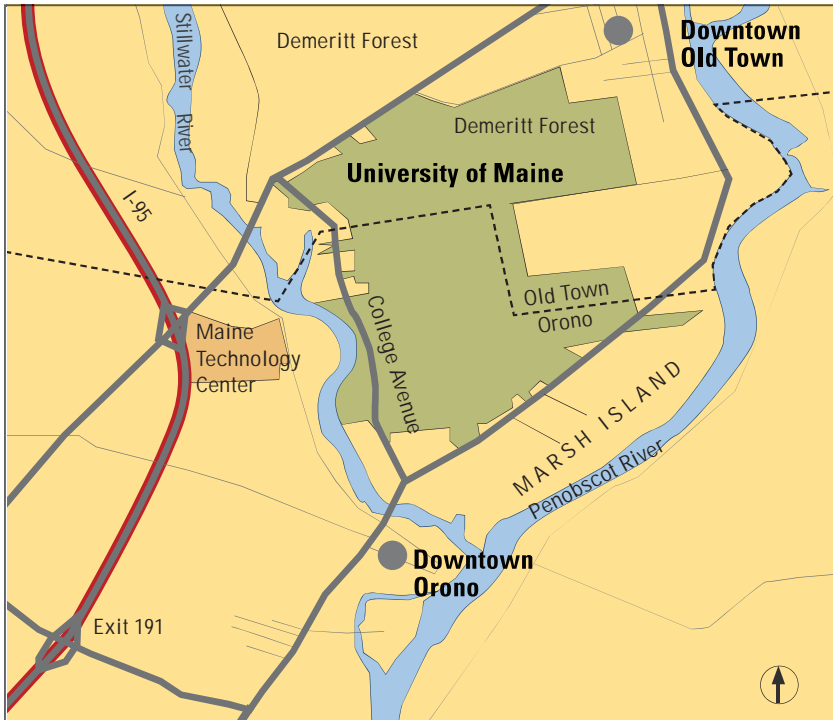
The Master Plan reinforces the University’s desire for community engagement by providing a range of open access amenities and facilities that link the campus with the surrounding neighborhoods. The extensive trail networks of the campus forests, the proposed riverfront trail and other internal routes effectively link the campus with the surrounding community. The Maine Center for the Arts, galleries, meeting facilities and libraries, provide important cultural amenities both locally and statewide. The sporting venues offer a range of entertainment unique to a university community.



Regional Context



Olmsted Senior 1922 Master Plan and Olmsted Brothers 1932 Master Plan showing the University Mall and South Mall



Local Context



A campus for all seasons

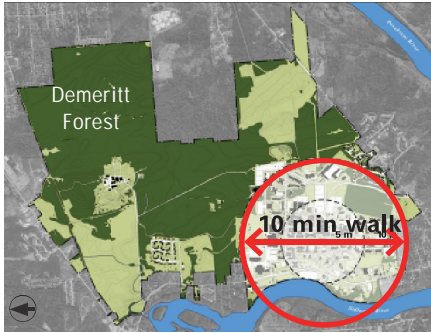


Historically significant buildings at the University of Maine

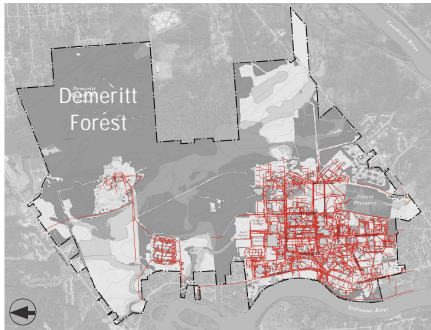
CONTEXT AND CULTURAL RESOURCES



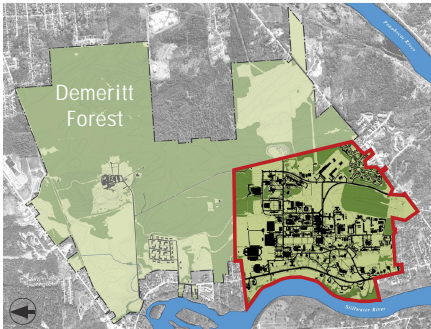
Existing conditions



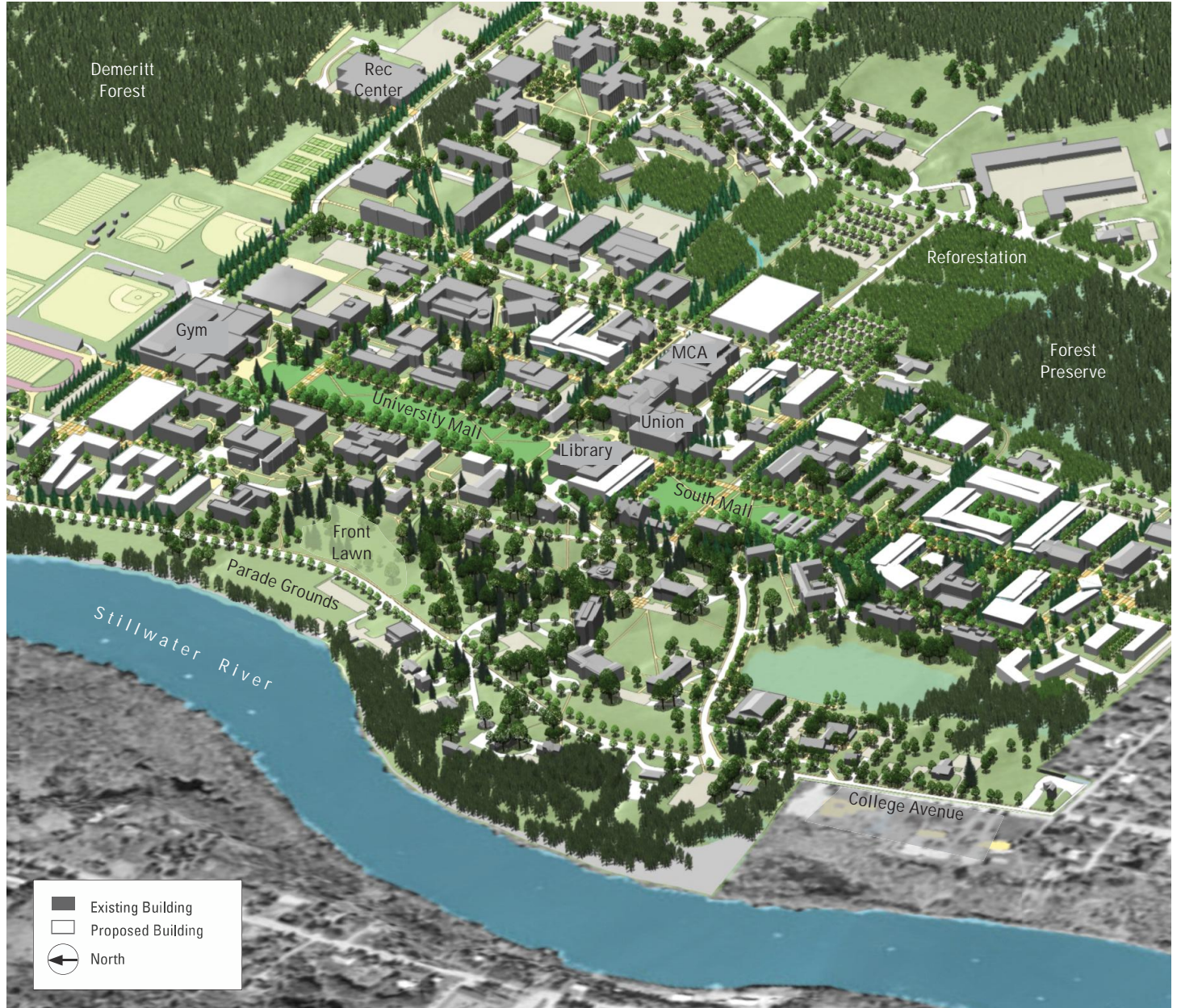
Pedestrian realm



Existing infrastructure



Proposed growth boundary

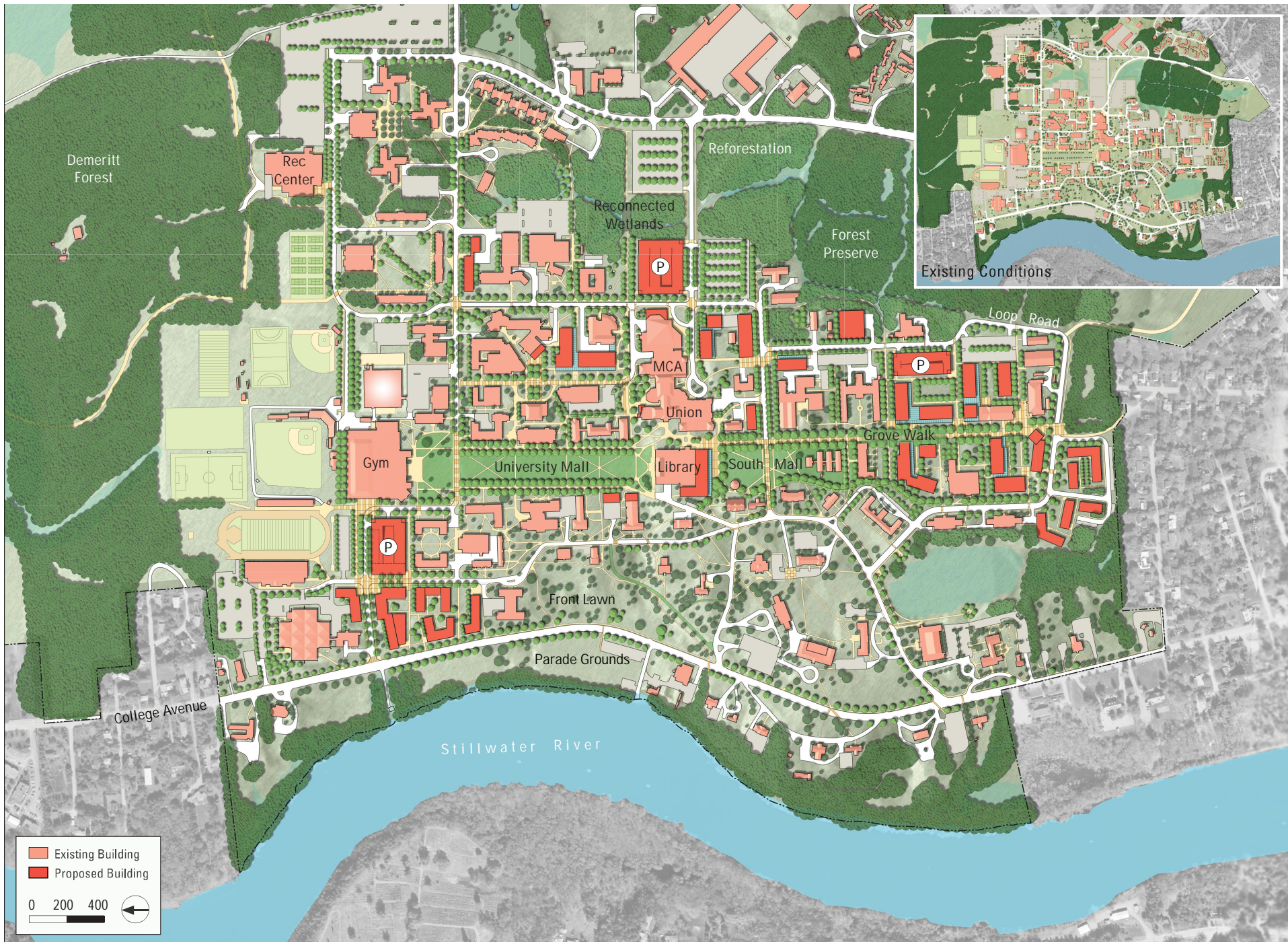


	Existing Building
	Proposed Building
	North

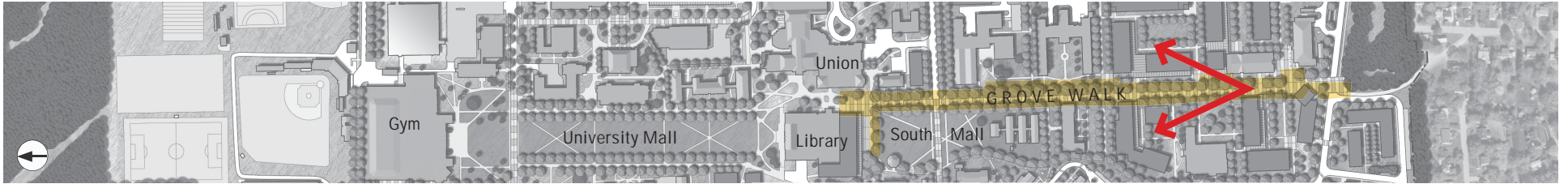
Proposed Core Campus

LAND USE STRATEGY

A Growth Boundary policy encourages infill, contains growth and promotes a compact, pedestrian-scale environment. Future academic research and campus life facilities are concentrated in the core.



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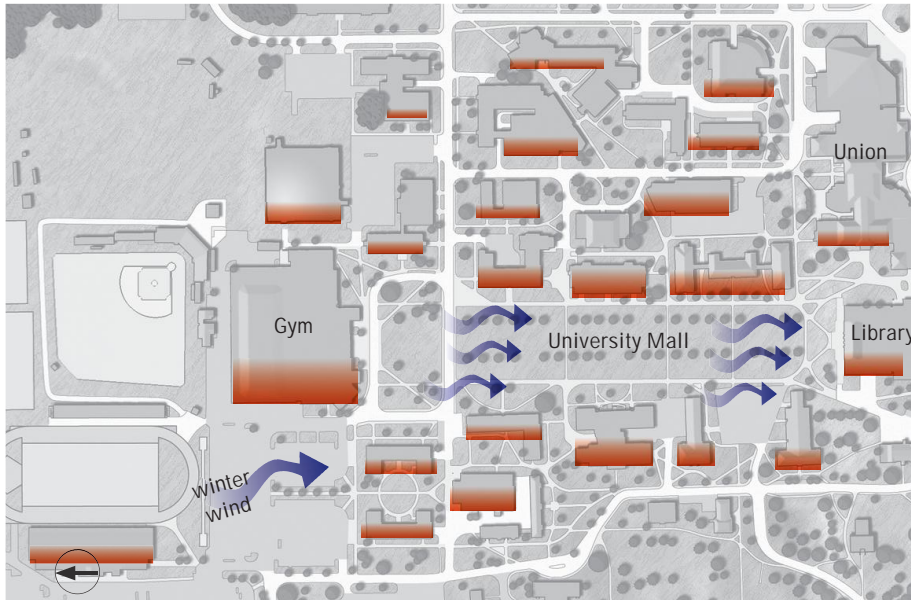


Winter view of Grove Walk, looking north towards the Library

URBAN DESIGN FOR A WINTER CLIMATE

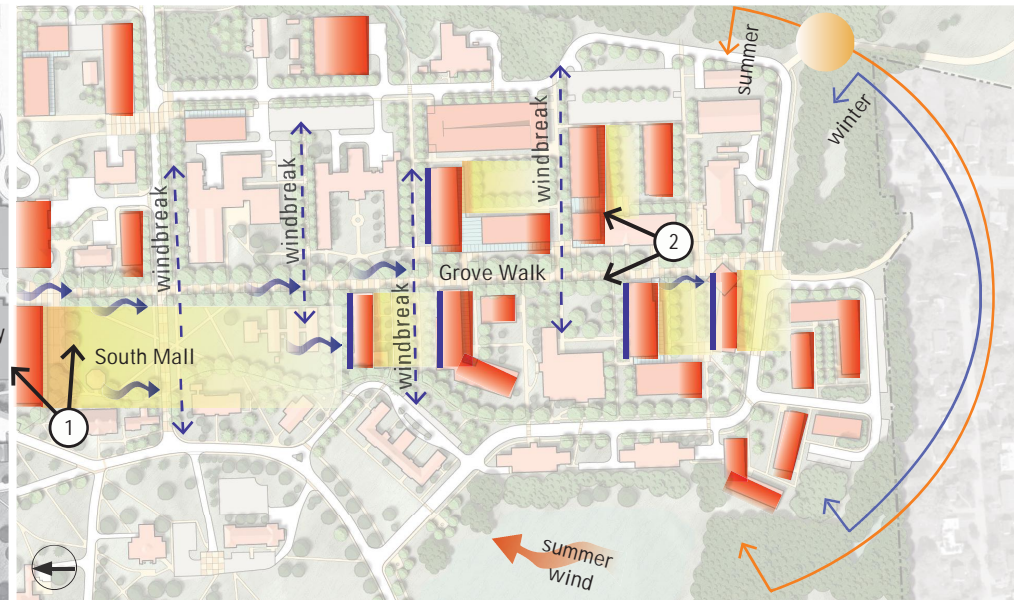
New buildings include social spaces, group learning areas, and interior "streets" for winter circulation.

NORTH CAMPUS

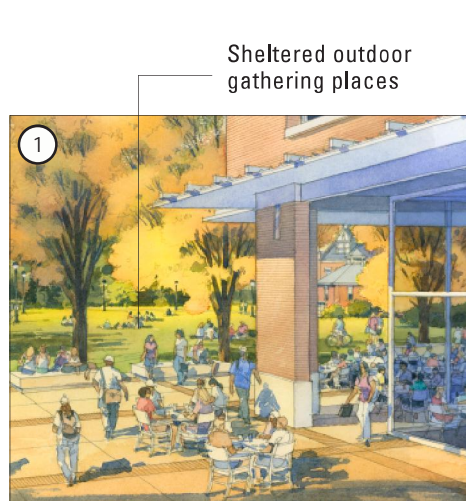


Buildings on the University Mall are sited on the north-south axis. The existing Mall orientation funnels winter winds

SOUTH CAMPUS



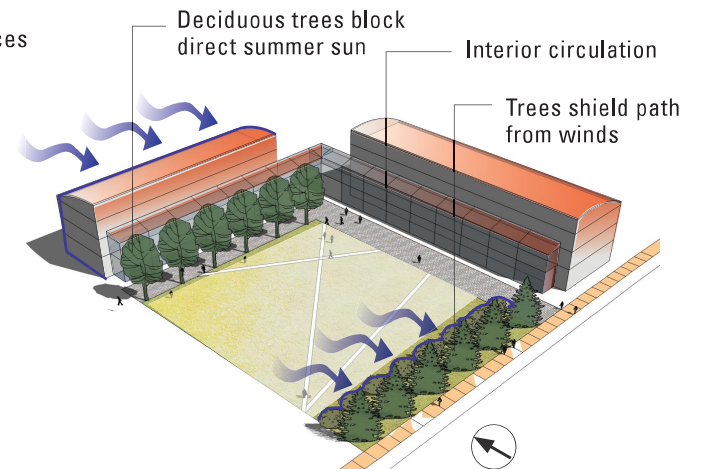
Proposed buildings in the South Mall area maximize passive solar heat gain with southern orientation; windbreaks shelter outdoor spaces



South Mall and Library addition featuring new social and study space on the ground floor



Grove Walk and proposed academic buildings



CLIMATE DESIGN STRATEGIES



Martin Luther King, Jr. and Coretta Scott King Memorial Plaza

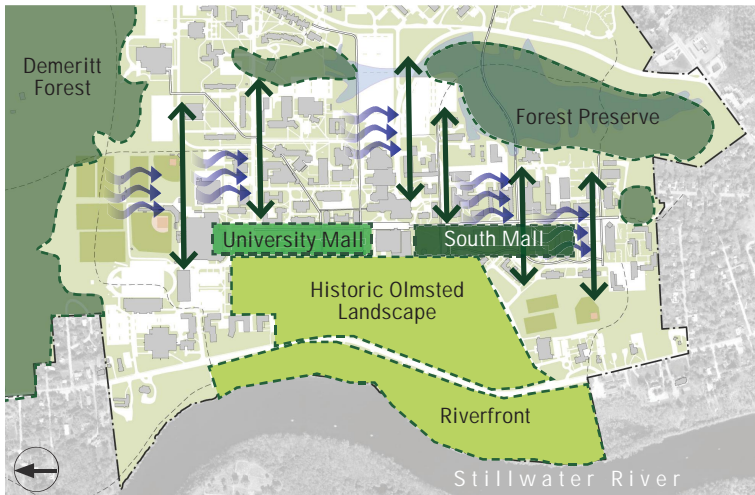


Before

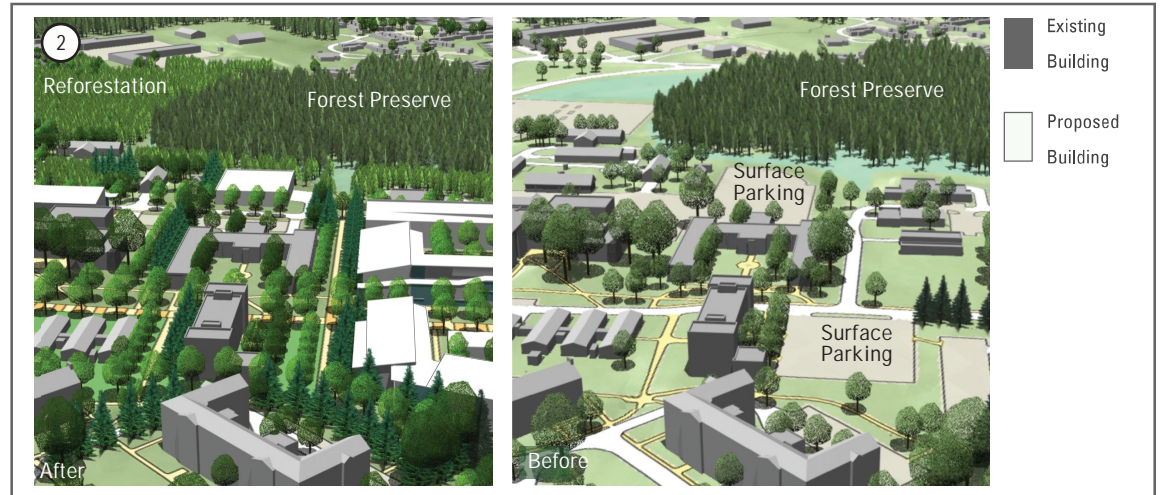
After



Landscape Framework links the campus to surrounding natural areas and creates an armature for future growth









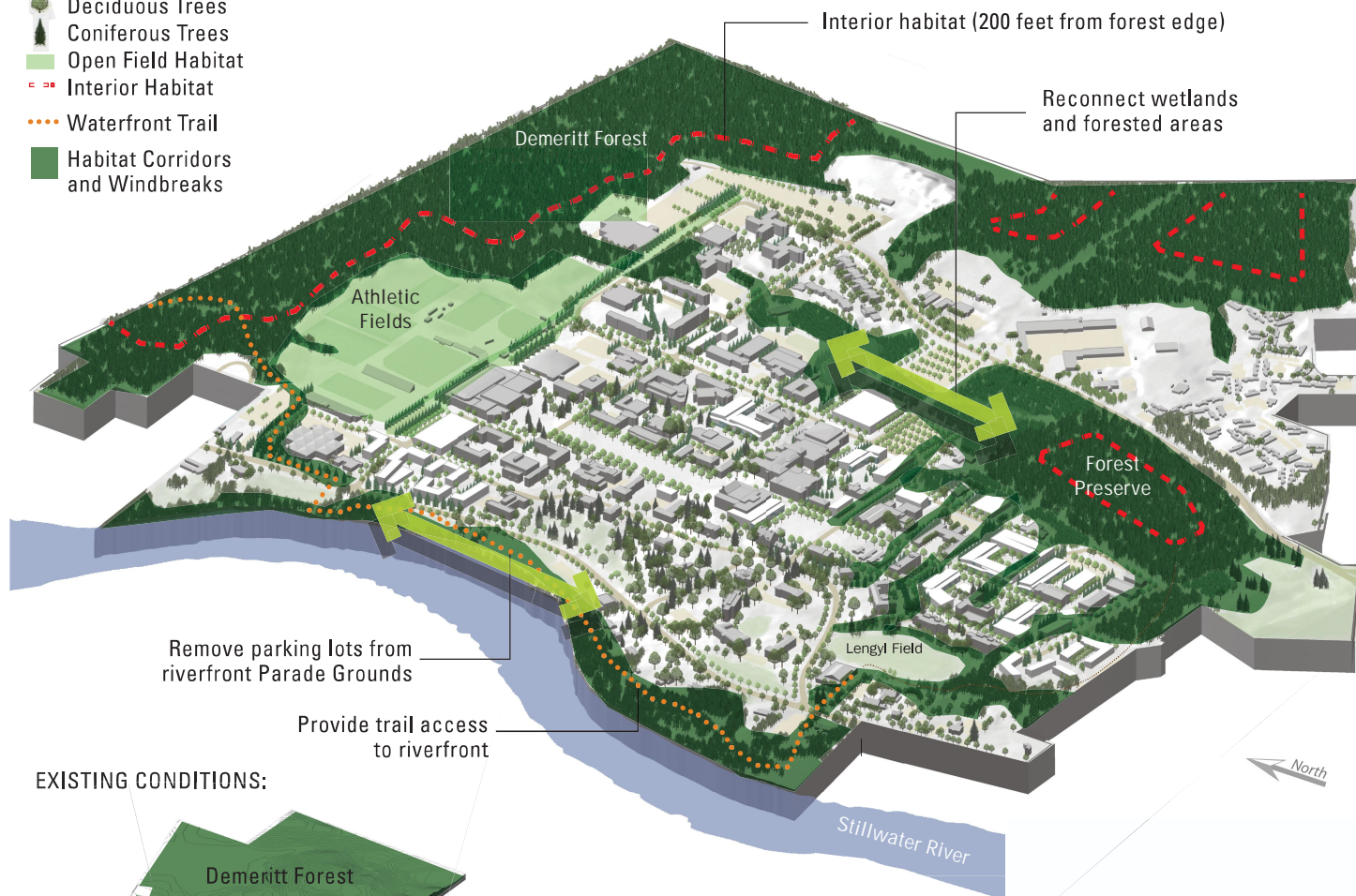
East-west corridors reconnect campus open spaces and forests



Before and After views of east-west corridors showing the removal of surface parking

EAST - WEST CORRIDORS / LANDSCAPE

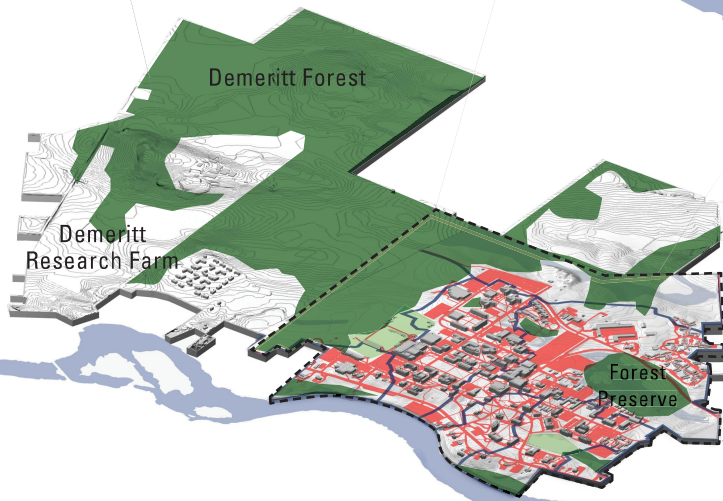
-  Deciduous Trees
-  Coniferous Trees
-  Open Field Habitat
-  Interior Habitat
-  Waterfront Trail
-  Habitat Corridors and Windbreaks



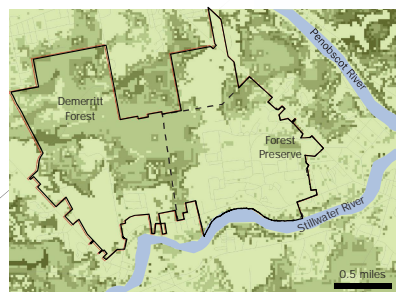
Remove parking lots from riverfront Parade Grounds

Provide trail access to riverfront

EXISTING CONDITIONS:



Habitat Value (Fish and Wildlife Service, 2003)



Low Habitat Value
High Habitat Value

HABITAT GOALS:

1. Preserve existing natural areas
2. Increase habitat connectivity
3. Restore riverfront
4. Provide access to natural areas
5. Create a functional landscape

HABITAT STRATEGIES:

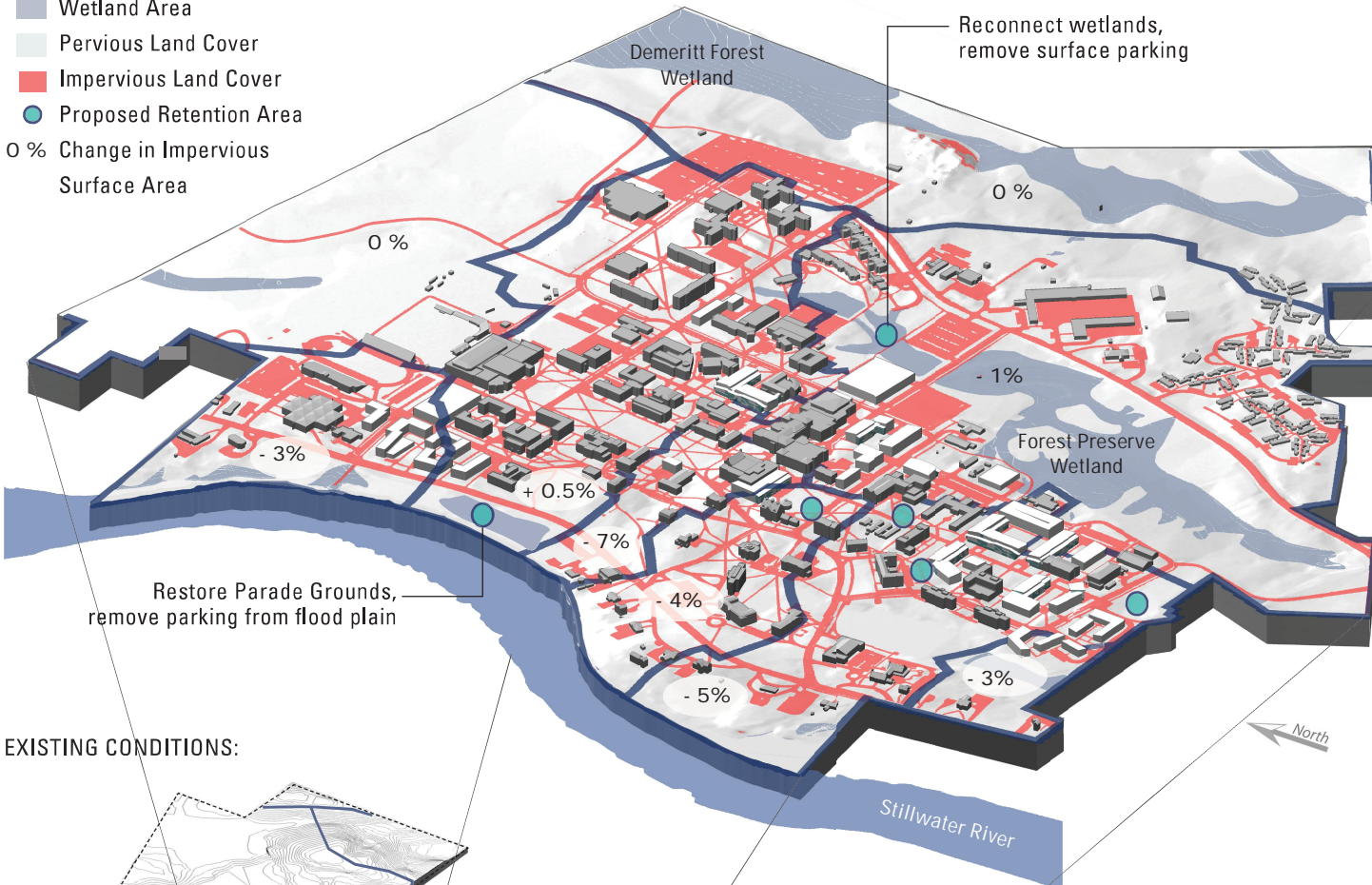
1. Establish Growth Boundary
2. Link wetlands and forested areas
3. Remove parking from riparian environment
4. Create habitat corridors that link campus core to natural framework
5. Employ east-west corridors as windbreaks

HABITAT OUTCOMES:

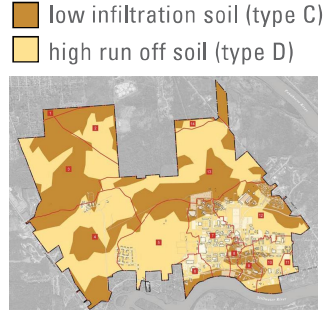
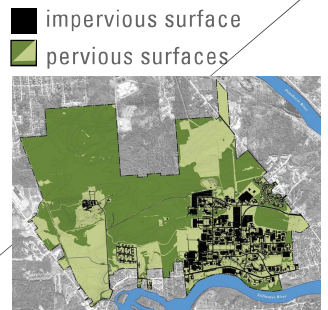
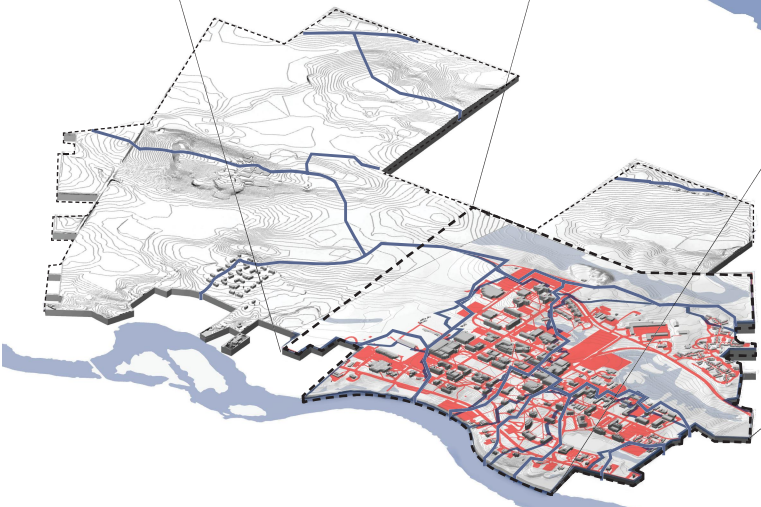
1. Continued forest stewardship
2. Habitat corridors
3. Riverfront restoration
4. Campus linked to forests

HABITAT AND LANDSCAPE CONNECTIVITY

- Watershed Boundaries
- Wetland Area
- Pervious Land Cover
- Impervious Land Cover
- Proposed Retention Area
- % Change in Impervious Surface Area



EXISTING CONDITIONS:



WATER GOALS:

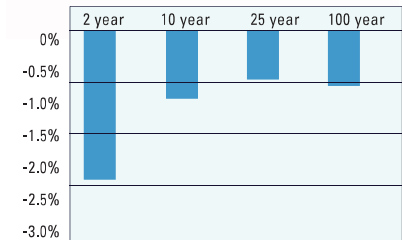
1. Reduce impervious surface area
2. Increase stormwater retention

WATER STRATEGIES:

1. Re-establish wetlands
2. Restore riverfront floodplain
3. Create small detention areas
4. Consolidate surface parking in garages; site buildings on existing parking lots

WATER OUTCOMES:

1. Decreased impervious area
2. Decreased run-off volume (cfs)
3. Decreased run-off rates (cfs/s)



Overall Percent Reduction in Stormwater Runoff (24 hour)

HYDROLOGY

- Roads
- Surface Parking / Driveways
- Pedestrian Routes
- ⋯ Trails
- Pedestrian Priority Zone
- - Shuttle Route
- 1 Main Entrances



CIRCULATION GOALS:

1. Improve pedestrian experience
2. Plan for transportation options
3. Provide connectivity between interior and exterior pedestrian routes

CIRCULATION STRATEGIES:

1. Establish a pedestrian priority zone
2. Relocate parking to the periphery
3. Consolidate parking in garages
4. Create campus shuttle routes
5. Connect to community paths

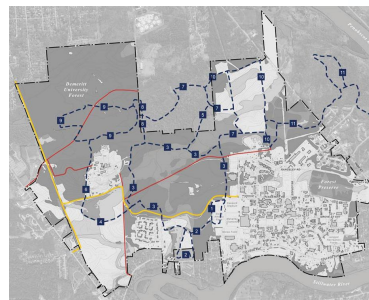
CIRCULATION OUTCOMES:

1. Pedestrianized core
2. New transit options including bikeways and shuttle services
3. Simplified vehicular circulation (Loop Road)

EXISTING CONDITIONS:



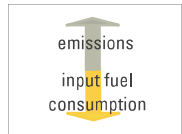
Trail Network (existing)



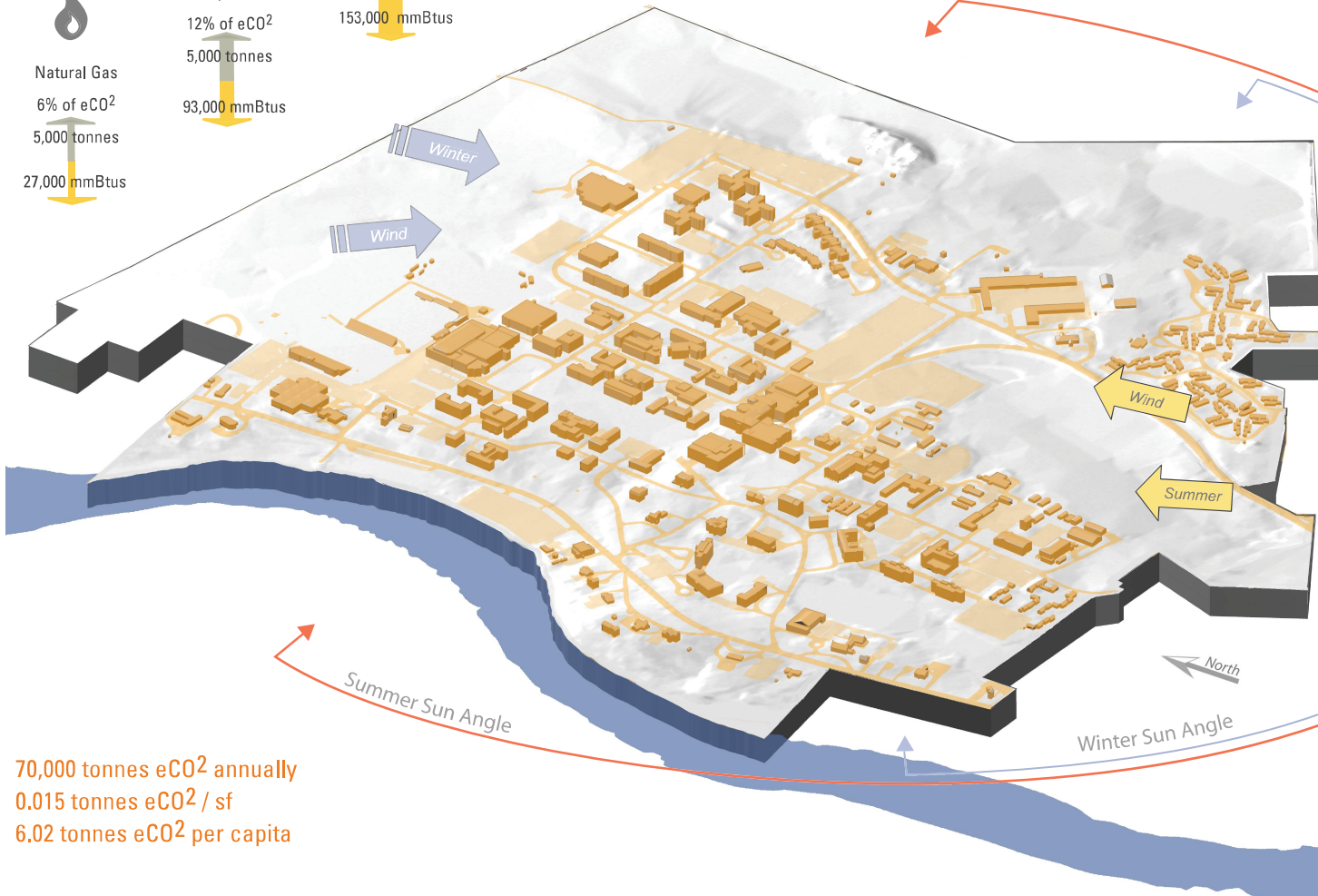
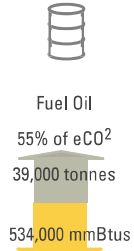
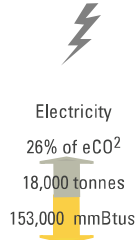
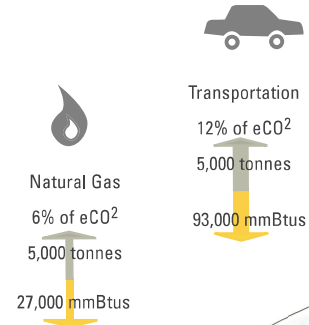
Grove Walk (proposed)



ACCESS AND CIRCULATION



Note: eCO² = carbon dioxide equivalents



70,000 tonnes eCO² annually
0.015 tonnes eCO² / sf
6.02 tonnes eCO² per capita

ENERGY GOALS:

1. Climate Neutrality
2. Reduce eCO² emissions
3. Reduce energy costs

ENERGY STRATEGIES:

1. Identify transitional fuel sources
2. Functional "working" landscape
3. Explore offset options
4. Renovate existing buildings with reduced emissions targets

ENERGY OUTCOMES:

1. Growth Potential: 1.7 million gsf
2. Growth Potential could result in an increase of 25,800 tonnes eCO², assuming current fuel mix / power sources, highlighting the need for high performance buildings and energy delivery strategies
3. Energy Performance consultant has been hired to develop a Climate Action Plan

Note: The forthcoming Climate Action Plan will establish targets for fuel sources and existing / future building performance

ENERGY AND EMISSIONS (Existing Conditions)