COMPREHENSIVE MASTER PLAN 2008

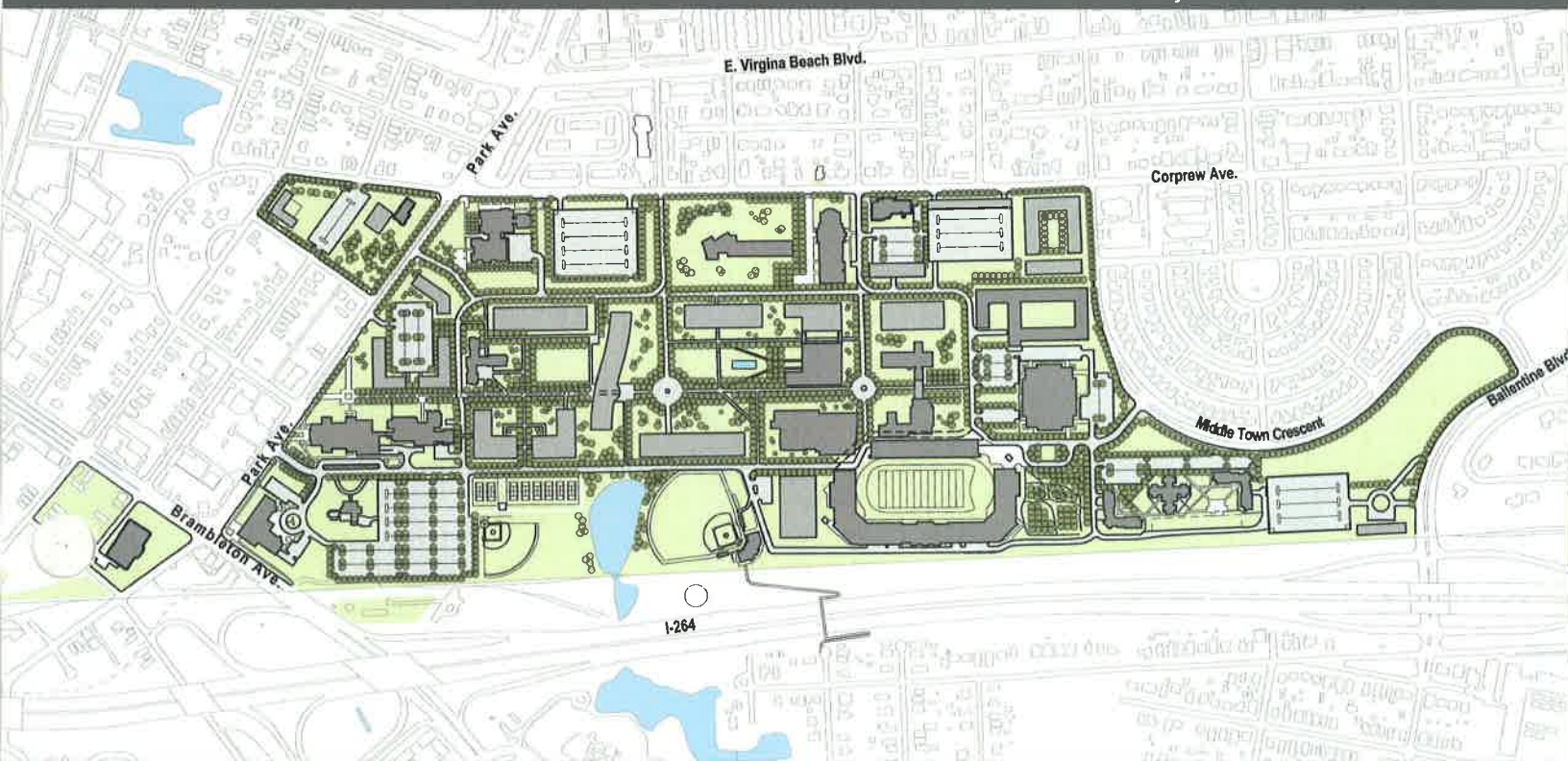
NSU
NORFOLK STATE UNIVERSITY

JOHN PORTMAN & ASSOCIATES

COMPREHENSIVE MASTER PLAN

NSU
NORFOLK STATE UNIVERSITY

JOHN PORTMAN & ASSOCIATES



TEAM

This document has been prepared for Norfolk State University under the leadership of the ad hoc committee appointed by the Norfolk State University Board of Trustees.

The **Client** includes:

- Dr. Carolyn W. Meyers, President
- Dr. Yatish T. Shah, Provost
- Mr. Earlie P. Horsey, Special Assistant to the President for Policy
- Dr. Adebisi Oladipupo, Vice President, Research & Technology and Executive Director, Enterprise and Empowerment Foundation (E2F)
- Mr. Phillip Adams, Interim Vice President, University Advancement
- Mr. Ralph Johnson, Vice President of Finance and Business

The **Master Planning Committee** includes:

- Mr. Anton V. Kashiri (Chair), Associate Vice President, Facilities Management
- Dr. Sandra J. Deloatch, Dean, School of Science and Technology
- Mrs. Davida H. Williams, Director, Auxiliary Enterprises
- Mrs. Margaret G. Massey, Associate Vice President, Information Technology
- Mr. Marty L. Miller, Athletics Director and Executive Director, The Athletics Foundation of NSU, Inc.
- Mrs. Terricita E. Sass, Associate Vice President, Enrollment Management
  Professor Chinedu Okala Faculty Senate President
- Mrs. Sandra Williamson-Ashe, Special Assistant to the Vice President, Student Affairs
- Mr. Dwayne Littlejohn, SGA President
- Mr. Phillip D. Adams, Associate Vice President, Development
- Dr. Harold D. Hubbard, Professor, Political Science
- Dr. Elsie Barnes, Professor, School of Liberal Arts

The **Consulting Team** for the Campus Master Plan project includes:

John Portman & Associates

- Amir Pirani, AIA, Project Manager & Lead Programmer
- Walter E. Miller, AIA, Principal-In-Charge & Lead Planner
- Rolf Stute, MEP Engineer
- Norris Hunt, Technical Coordinator
- Alex Duval, Planner
- Janae Futrell, Asst. Planner
- Pom Itarut, Asst. Planner
- Jeremy Pamplin, Asst. Planner

Arnold Associates

- Henry Arnold, Principle-In-Charge
- Stephen A. Lederach, Project Manager

PEER Consultants

- Lilia A. Aborn, Ph.D., PE, Principal-In-Charge
- Bandar Bassam, P.E., Project Manager (Traffic)
- Nader Bazzazieh, P.E., DEE, Senior Engineer (Civil & Environmental)

Waveguide Consulting

- Keith Portnoy, Project Manager
- Scott Walker, Principal-In-Charge

CONTENTS

CONTENTS

7.0 Appendix

CONTENTS

EXECUTIVE SUMMARY

Project Scope

Norfolk State University commissioned John Portman and Associates (PORTMAN) to develop a Comprehensive Master Plan for the university. The master plan is intended to address some key physical challenges currently faced by the university.

Approach & Methodology

For this project, our approach consists of the following four steps:

1. Defining the VISION
2. Analyzing the FACTS
3. Establishing the NEEDS
4. Developing the PLAN

Portman and its team of consultants met with the master planning committee at the university and with the staff at physical plant in a series of meetings since mid October 2005 to gather key relevant information on space inventory, physical conditions of the campus buildings and grounds, and to define unique and specific space requirements. Based on these meetings and site observations, the following are the key findings of the goals for this master plan.

Goals

Based on the issues identified by the client, following are some of the key program related goals for this master plan:

- Plan facilities and campus for an 8,000 student head count enrollment
- Plan to house 35% of the student population
- Plan for a Faculty/ Student ratio of 1:20 for future years
- Develop a Space Allocation Plan
- Define a strategy for the former hospital
- Establish Priorities for Existing Facilities & Future Facilities
- Define directions of Future Expansion and potential Land Acquisitions

Goals related to the physical improvements to the campus include:

- Create A Sense of Arrival & Gateway
- Create a Focal Point on the Campus
- Define Campus Edges
- Address Traffic Flow In and Around Campus
- Create a Pedestrian Friendly Campus
- Create More "People" Places
- Incorporate Proposed LRT Stations
- Address Directional Signage at Campus Level
- Address Functional Zoning
- Incorporate Widening of Brambleton Road
- Address Site Infrastructure and Storm Water Issues

Summary Of Findings

Based on the space needs assessed, using The Council of Educational Facility Planners, International (CEFPI) guidelines, and the building conditions evaluation, the university has an overall shortfall of 208,000 ASF for a 6,000 HC student population. This shortfall increases to 623,000 ASF for 8,000 HC students. The following discusses the findings in detail.

Key Findings

1. Population

In Fall 2005, the university had 6,096 students. 5,337 were undergraduate and 759 were graduate students. The student FTE of the campus was 5,028. There were a total of 1,220 staff and 386 faculty on campus.

2. Existing Space Inventory

Norfolk State University currently has 33 buildings on the main campus and 3 buildings at separate satellite locations. All together the buildings comprise 1.25 Million Assignable Square Feet (ASF) and over 2 million Gross Square Feet (GSF). The following charts illustrate the percentage of space used categorized by major room use code and by function code respectively:

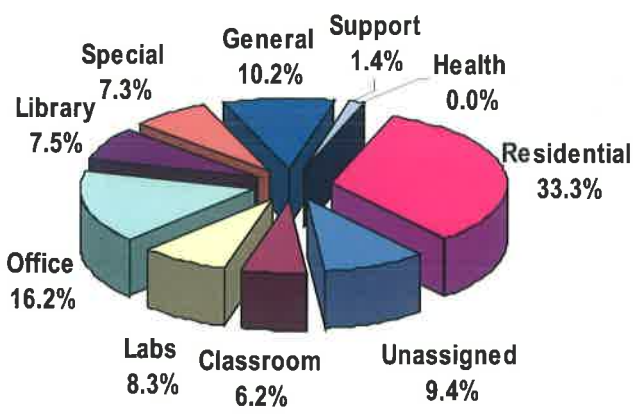


Fig. Use Allocation by Room Use Code

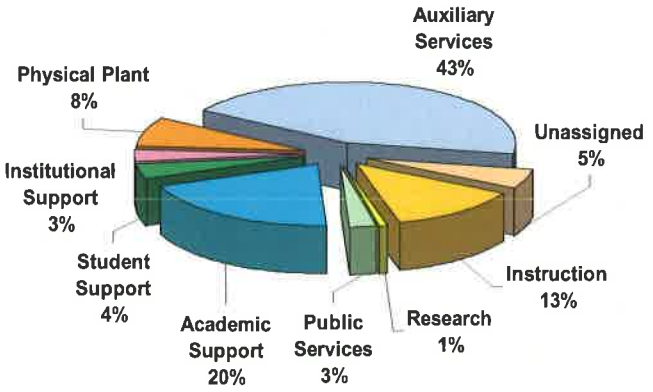


Fig. Room Use Allocation by Function Code

3. Building Age

Over 72% of existing facilities are more than 20 years old. The following chart represents the overall age of facilities by percentage for the campus as well as by academic space.

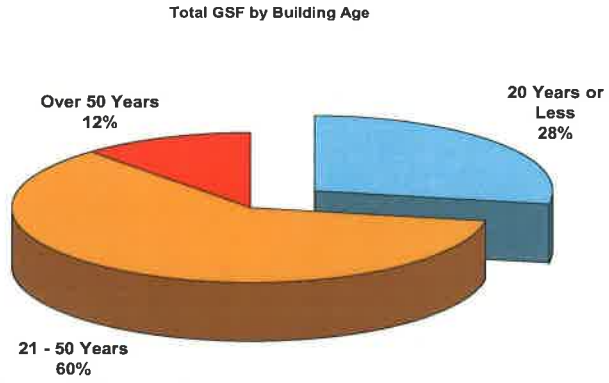


Fig. Total GSF by Building Age

A closer look at the instructional space revealed that only 11% of space is less than 20 years old.

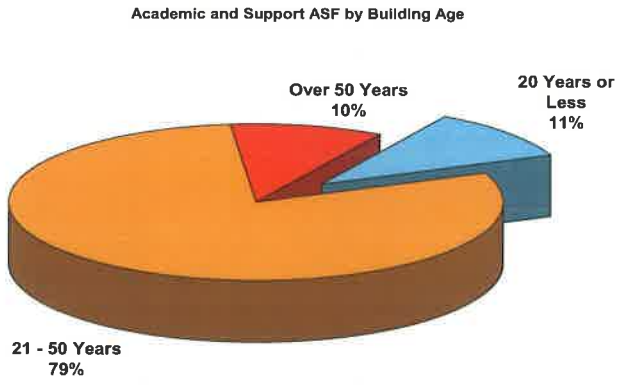


Fig. Academic and Support ASF by Building Age

4. Building Conditions

The master plan utilized the recently completed detailed conditions analysis by EMG for all the facilities as a basis. The master plan team also conducted visual observation of each facility and met with the staff of the university's physical plant to gain first hand understanding of the problems and issues with each facility.

The extent of the issues for the facility conditions was evident by EMG's recommendation of $87 million worth of conditions improvements in the next five years. These improvements only target improving the facility conditions and are not associated with renovations to improve the quality of academic space.

Based on the observations and analysis by the master plan team, the buildings that have been constructed on the campus from the 1900's until the early 1970's, were very likely designed for either no air conditioning or a very different type of control system. For this campus, that's approximately 20 buildings, which constitutes approximately 60% of the buildings on the campus today. Those buildings constructed from the early 1970's to the mid 1980's were perhaps designed with air conditioning systems that had limited controls and may or may not have been able to properly address humidity within the building environment. Additionally, and to a larger extent, many of the problems in the buildings are directly or indirectly related to the buildings inability to handle moisture penetration.

The master plan study concluded that the buildings constructed in the earlier years of the campus have either reached the end of their useful life, or are very near to the end. Some of the most recent upgrades such as roof restorations and the adaptation of modern mechanical systems are an attempt to extend the life of the facilities, as well as address the ever increasing demand for conditioned space to meet the needs of building inhabitants as well as technology. Again, these improvements do not necessarily improve the overall quality of space and its functionality.

5. Functional Quality of Academic Space

Functionally, most of the existing academic facilities on the campus either consists of smaller structural bays (less than 30' in either direction) or with load-bearing wall construction. Such conditions limit the ability of the interior spaces to be re-adapted or modified to meet the changing functional needs of the university,

thus resulting in in-efficient or sub-standard functional spaces for classroom or lab use.

Based on the conditions analysis and the functional quality of academic spaces the master plan categorized the existing facilities in the following three categories and recommendations.

Proposed Demolitions

0005 James A. Bowser
0007 G.W.C Brown Memorial Hall (Partial)
0013 Twin Towers Dormitory
0014 Twin Towers Dormitory
0021 Lyman B Brooks Memorial Library
0024 Cafeteria West (West Campus Cafeteria)
0025 Samuel F. Scott Men's Residence Hall
0037 Spartan Station
0045 Former Norfolk Community Hospital Building
0002 Hugo Madison Hall (Future)
0003 James D. Gill Health & PE Building (Future)
0010 Mills Godwin Student Center
0012 Woods Science Building
0023 Central Storage and Maintenance and Addition
0039 Center For Materials Research
0040 Brambleton Recreation Center

Extensive Repairs

0011 G.W.C Brown Memorial Hall (Remaining)
0020 E. L. Hamm Fine Arts Building
0030 Phyllis Wheatley Dormitory
0038 L. D. Wilder Building

Minor Repairs

0001 Scott Dosier Dining Hall (East Campus Cafeteria)
0027 Joseph G. Echols Hall
0028 Harrison B. Wilson Hall
0029 Rosa Alexander Hall
0036 Marty L. Miller Baseball Stadium
0006 Bozeman Nursing Education Building
0032 Charles H. Smith Men's Residence
0033 Lee Wesley Smith Men's Residence
0035 William "Dick" Price Football Stadium

Future Campus Space Requirements

The following describes the assumptions based on which the space requirements for the campus were developed. The study assessed the needs based on the current population as well as for future enrollment target of 8,000 students.

1. Enrollment

The university intends to achieve a head count (HC) of 8,000 students by the year 2014. This is an increase of almost 2,000 students over the Fall 2005 enrollment of 6,096 HC students.

2. Faculty Ratio

The university intends to increase its student full-time equivalency (FTE) to faculty FTE from 1:16 to 1:20 as enrollment increases.

Space Requirements

1. Space Guidelines

Our study compared the existing space inventory to detailed space needs calculations based on The Council of Educational Facility Planners, International (CEFPI) standards, used by the majority of higher education institutions in the country, and the standards of State Council of Higher Education for Virginia (SCHEV,) the state agency responsible for establishing standards for all state colleges and universities.

CEFPI and SCHEV take two very different approaches to calculating space needs for universities. CEFPI calculates space needs based on 10 major Room Use Codes (RUC.) SCHEV calculates space needs based on Function Codes, originally meant for financial reporting but later adapted for space inventories.

Room Use Codes

100	Classroom
200	Lab
300	Office
400	Study/ Library
500	Special Use
600	General Use
700	Support
800	Health
900	Residential
0	Unclasified

Function Codes

1.0	Instruction
2.0	Research
3.0	Public Service
4.0	Academic Support
5.0	Student Services
6.0	Institution Support
7.0	Physical Plant
9.0	Auxilary Enterprises
10.0	Independent Operations
11.0	Hospitals

Due to the two very different methods of space classification, only total space needs can be compared between the two standards. Where SCHEV guidelines did not offer any standard for calculating need the CEFPI standard was substituted when possible.

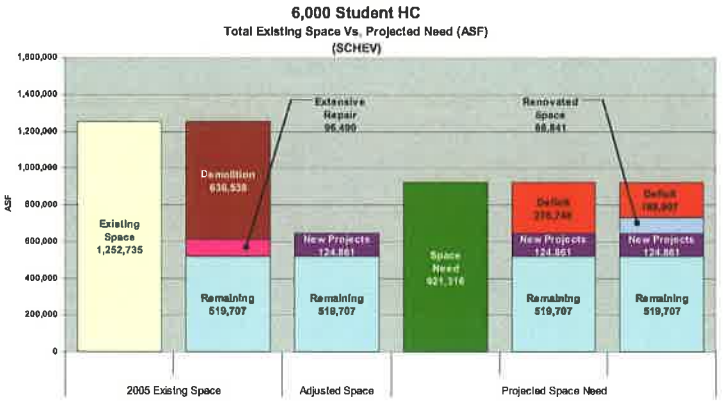
2. Space Projections

Space needs where calculated for both the current 6,000 HC and the proposed 8,000 HC populations. The following summarizes key aspects of the space projections.

- 6,000 HC Campus Space Needs

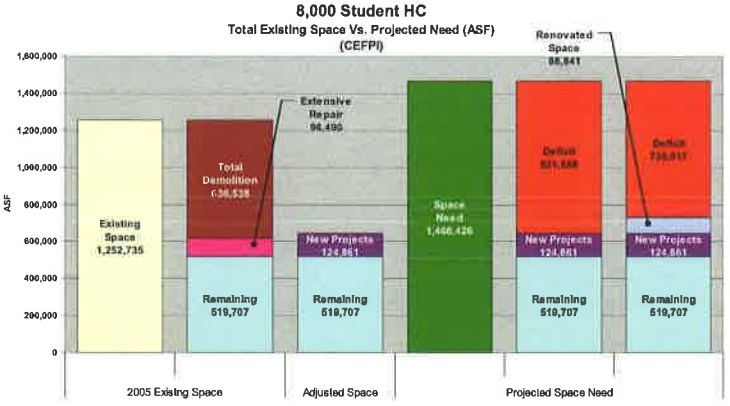
According to the CEFPI standard for calculating space need, the total space need for a 6,000 HC campus is just over 1 million assignable square feet (ASF.) When the existing inventory is taken at face value, the inventory would seem to be more than enough to cover the space need. However after factoring the proposed demolition, discounting space needing extensive repair and upgrades, as identified in the building conditions study above, and including new projects already in various stages of completion, the total suitable ASF of the university is more than 400,000 ASF short of the projected need. Even after completing the proposed renovations the university is still over 300,000 ASF short of its existing space need. This is illustrated by the following chart.

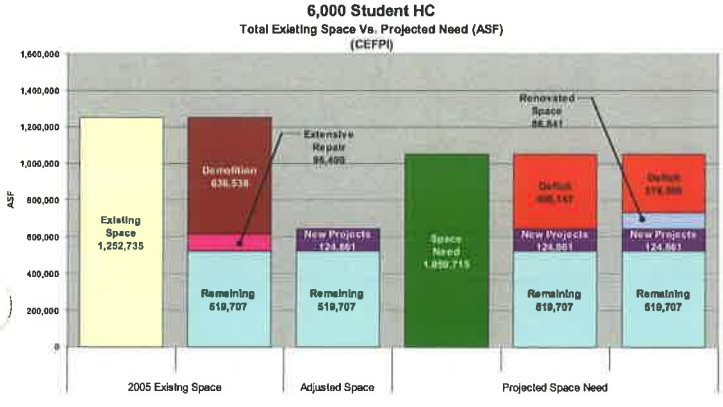
Even though, the SCHEV standards for space needs are more restrictive than the CEFPI guidelines, the SCHEV space standards show a need that is greater than the current available inventory by more than 275,000 ASF after discounting the space that is not currently suitable for use and adding projects currently in progress. There would still be a shortage of approximately 190,000 ASF after recovering space from proposed renovation projects.

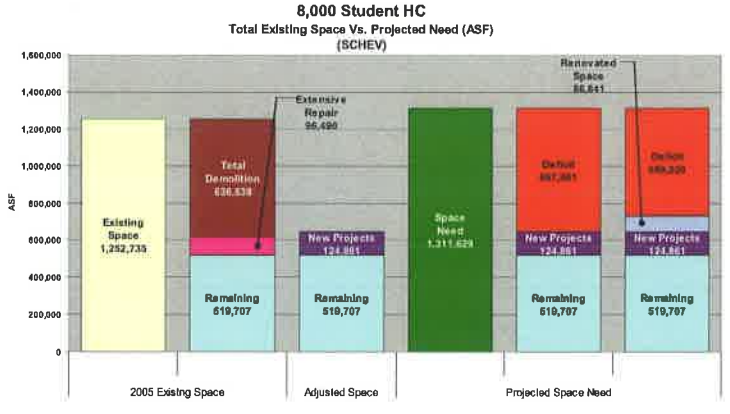


- 8,000 HC Campus Space Needs

These space deficits are only increased when projecting needs for an 8,000 student head count (HC) enrollment. The following charts indicate a deficit of 822,000 ASF and 667,000 ASF using the CEFPI and SCHEV standards respectively.

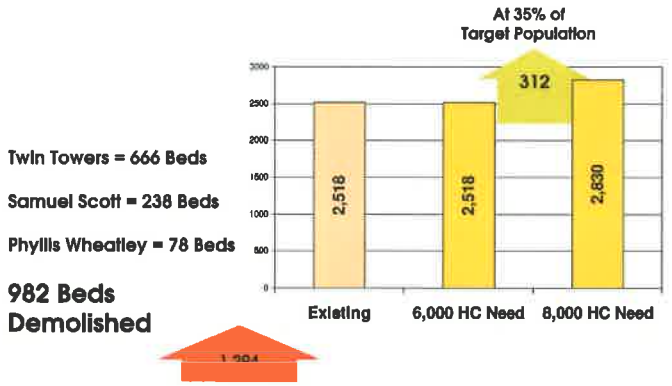






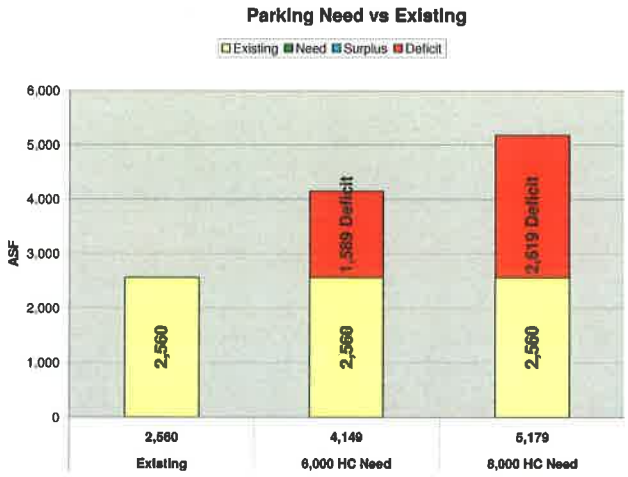
4. Housing Needs

In order to maintain the 35% of enrollment target for on-campus housing, the university will need to add 312 new beds by the time the enrollment reached 8,000 HC. However, since three existing dormitories are proposed for demolition, the beds in those buildings will need to be replaced. This means the university will need to create a total of 1,294 beds in the next few years.



5. Parking Requirements

The university currently has 2,560 parking spaces. However, to reach the target ratio of .50 for students and .80 for faculty, the university will need to add 1,589 spaces immediately and 2,619 spaces total by the time the enrollment reaches 8,000 HC.



Physical Analysis

As a precursor to developing a physical plan, an extensive analysis of the campus physical conditions was undertaken to assess current and potential challenges and opportunities at the campus. This analysis included an examination of the campuses context, circulation in and around campus, land use, topography, capacities and demands on the current utilities and infrastructure, etc. The following summarizes the key findings of this analysis:

1. Context

The university's main campus is located in an urban area of the City of Norfolk, Virginia. The campus is less than half a mile from the Elizabeth River waterfront and is primarily surrounded by residential properties. The 134 acre campus is primarily flat and at its average elevation is approximately 10 feet above sea level.
The campus is bordered to the south by a railroad track that is intended to become a light rail for the city. To the west of the campus are Brambleton Ave and Park Ave. Corprew Avenue forms the northern border, with East Virginia Beach Blvd., a major artery for the region, beyond. Finally, the eastern boundary is formed by the Middletown Arch community.

The campus is in close proximity to the Broad Creek Revitalization Project proposed by the city of Norfolk. Encompassing two square miles and 14 neighborhoods bound by railroad tracks to the north, east and west, and the Norfolk Industrial Park and Elizabeth River to the south, the project will completely surround the University's main campus. When completed, it will be a mixed use development offering a new YMCA, library, walking and biking trails, swimming pool and green open-spaces for community gatherings. In addition, this project incorporates the university's plans for the Rise Campus as a central technology district.

2. Circulation

The university has a mix of controlled and uncontrolled access points into the campus from Park Ave., Corprew Avenue and the Middle Town Crescent. All together the campus has eight vehicular and nine pedestrian access points. Currently there is no loop road for the campus allowing vehicular access to any parking lot from any entrance. Instead, students, faculty, staff and visitors are frequently required to leave the campus and use city roads to re-enter from a different point of entry.

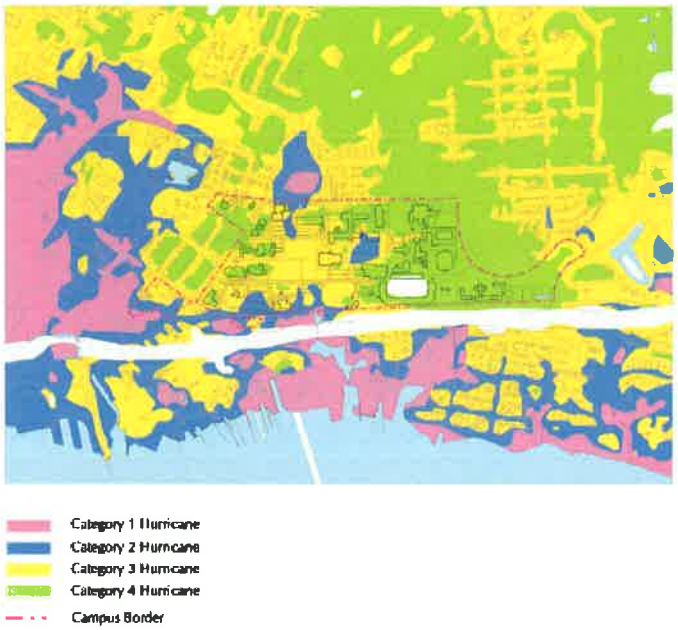
Fig. Vehicular Circulation Diagram

3. Topography & Flood Plains

Upon review of GIS information from the City of Norfolk, it became quite clear that the campus should adopt a sound and workable strategy to deal with storm water management on the campus property. The diagrams illustrate historical and potential flooding under different conditions. The Category 2 estimated flood areas were used to identify areas of high flood risk on the campus. Three areas prone to flooding where identified:

- The proposed site of the new student center
- Areas along Corprew Ave. and the intersection at Park Ave
- Areas around the baseball field / recreation center

In order to best correct this issue it is recommended that the university adopts a centralized storm water management approach rather than creating several smaller retention ponds as development occurs.



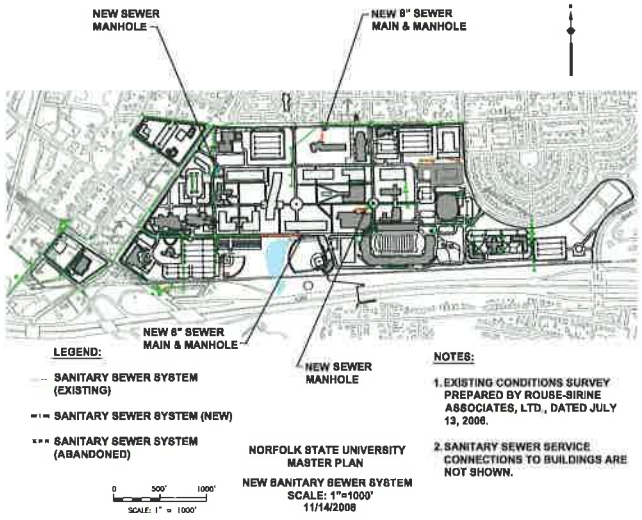


Fig. Sanitary Sewer Collection System

4. Utilities and Infrastructure

The utilities conditions study revealed no capacity issues for meeting the demand of the current population or the projected demand of the proposed population. However the study did reveal the following issues which need to be addressed in the final master plan:

- Three new fire hydrants are proposed along Corprew Avenue to meet current protection needs.
- The campus currently has a higher than standard ratio of impervious surfaces to pervious surfaces for urban areas, causing additional storm water run-off.
- The campus does not currently have dedicated meters for determining electrical demand. The three primary feeders to the campus also serve other accounts around the periphery of the campus.
- Frequent power outages are experienced on circuit #304, west of Maple Avenue, during high demand and inclement weather related situations.
- Several buildings on campus have "dead-end" gas service and would benefit from a "looping" gas main.

PLANNING

Three preliminary schemes, all based on the concept of defining a central academic core on the campus (illustrated in light green.) were developed for the university. Each option shared the following planning principles:

- Create a loop road around the campus core that minimizes the need for vehicular traffic to use the city streets to get from one part of the campus to the next.
- The academic core is intended to be pedestrian friendly by removing all parking and vehicular traffic to the outside edges of the campus.
- As a "Back-of-house" function, Physical plant needs to be relocated off of the existing campus to make room for other academic functions.
- In order to meet the increasing parking requirements at least one Parking deck will be necessary in order to keep parking adjacent to both academic and housing functions. This will also help reduce the overall impervious surface area of the campus, creating more opportunities for landscaping and open space.

- The president's house is located in an area that is ideally suited for parking to serve the administration building and adjacent academic buildings; therefore it should be relocated.

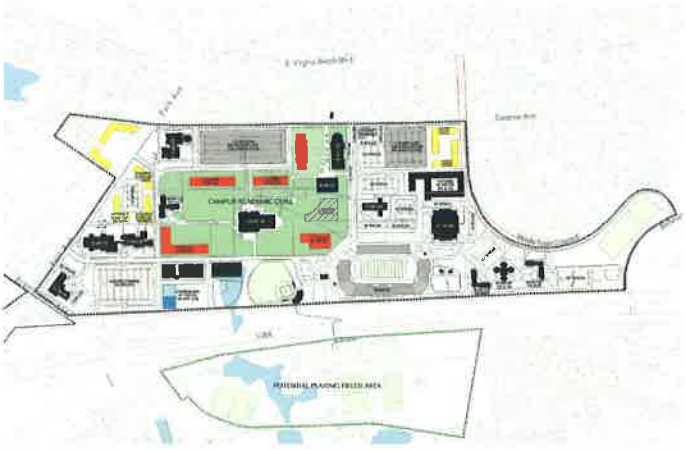
- In order to better manage storm water run-off and avoid flooding the university needs to adopt a centralized storm water management solution.

- Recreational and intramural requirements for an 8,000 HC students could not be accommodated within the current boundaries of the campus.

Each of the following options is presented in conjunction with the RISE Campus plan as developed by another consultant to the university in 2000. The following is a brief summary of each option:

Option 1 - Compact Core

This option attempts to keep as much of the proposed programmatic needs of the university within its current property. This scheme proposes a simple water retention area where the physical plant building currently resides.



Option2 - Intermediate Core

This scheme expands the academic core further to the west. In addition, it proposes to relocate the new student center to the west of the current student center. The original site for the new student center is then free to become an attractive water feature that ties into another retention area where the current softball field resides. These two areas are currently in the low points of the campus and are therefore naturally suited for this purpose. This option leaves some room for future academic expansion should the university ever grow beyond its projected size.

Option 3 - Expanded Core

This scheme recommends that the university focuses on acquiring the property immediately north of the campus, on the other side of Corprew Avenue from Park Avenue to Majestic Avenue. This allows the core to extend to Virginia Beach Boulevard, creating a new main entrance off of this major vehicular artery. This also creates opportunities for mixed use housing / commercial areas on the North East and North West corners creating a relationship to the existing commercial property on the opposite side of Virginia Beach as well as the Broad Creek Renovation Project proposed by the city. This option leaves some room for the expansion of academic programs as well as housing, should the university ever grow beyond its projected size. Lastly, this scheme provides some much needed land for additional surface parking reducing the need for parking structures.

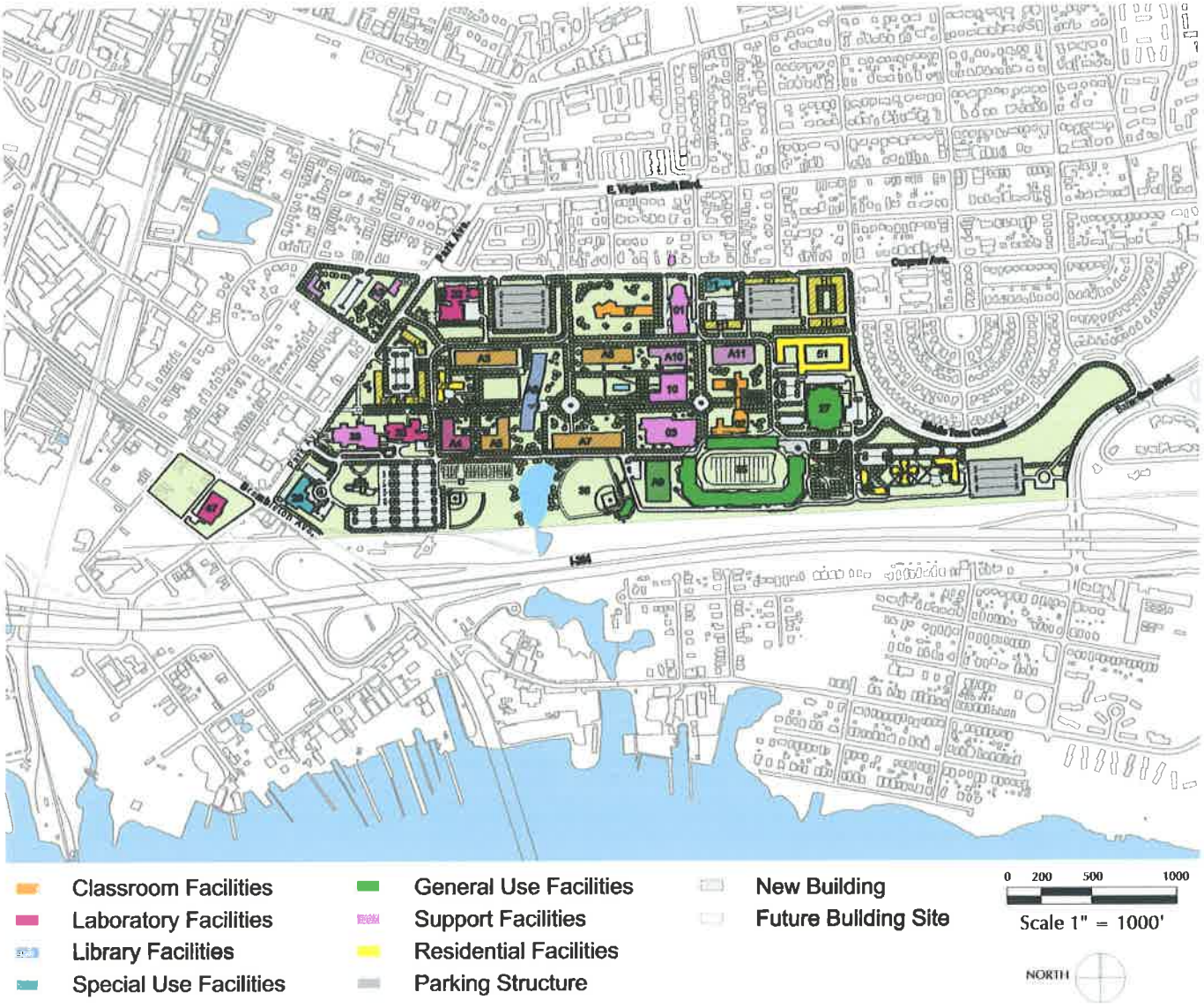


Fig. Campus Master Plan

Proposed Master Plan

The Proposed Master Plan incorporates the best aspects of the three alternative options. Based on the review and evaluations, refinements were made to arrive at the proposed solution. Important recurring issues were the consolidation of and allocation of parking, the management of storm water and the location of future buildings, and the creation of a framework that will accommodate the possibility of future growth beyond areas presently owned by the University.

The idea of the academic core is a compact cluster of classroom and laboratory buildings that face onto a series of formal and informal landscape quadrangles. It is easily accessible to pedestrians and provides a naturalistic and contemplative space typically associated with the American university campus.

The plan also proposes open space strategies as a measure to safeguard against the storm water related issues. The southern edge of the campus between the stadium and Wilson Hall is set aside as 'no-build' zone to protect against potential storm surge damage and reinforce the natural passage for the storm water passage through the campus.

The vehicular and pedestrian circulation is governed by a loop road as proposed around the academic core. This road provides ease of automobile entering the campus while moving them along the periphery of the quadrangle core. It allows to consolidate parking along the outer edge of the loop road and keeps the inner portion of the loop as a pedestrian friendly environment for students, faculty and staff. The plan also recommends a slow speed shuttle system to allow easy movement between classrooms. This is primarily to discourage use of private vehicles for transportation between different parts of the campus.

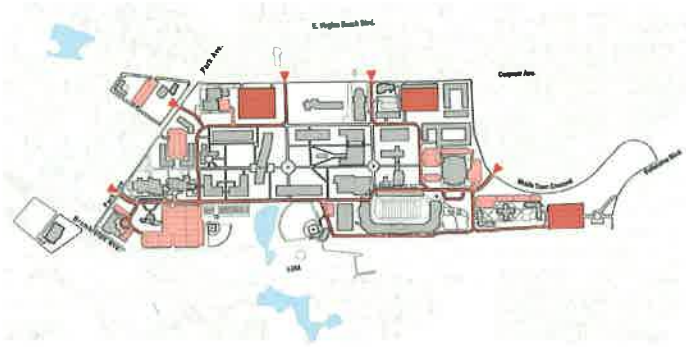


Fig. Vehicular Circulation & Parking

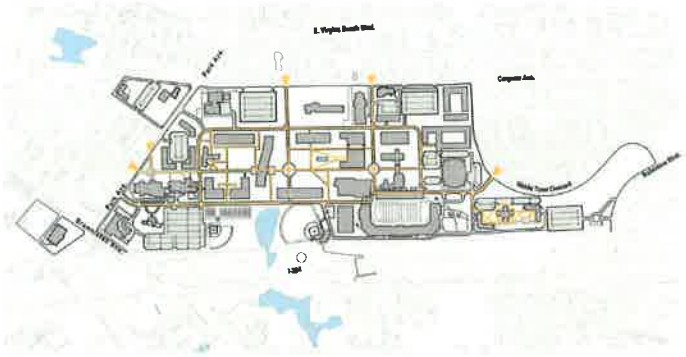


Fig. Pedestrian Circulation

The plan recommends improvements and enhancements to the various entries into the campus. The entry sequence to the campus establishes the character of the place and provides an immediate identity and a threshold to welcome the visitors and the community. The entry gates proposed are organized into either vehicular or pedestrian entries.

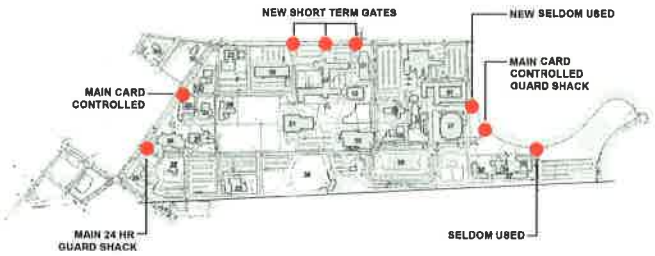
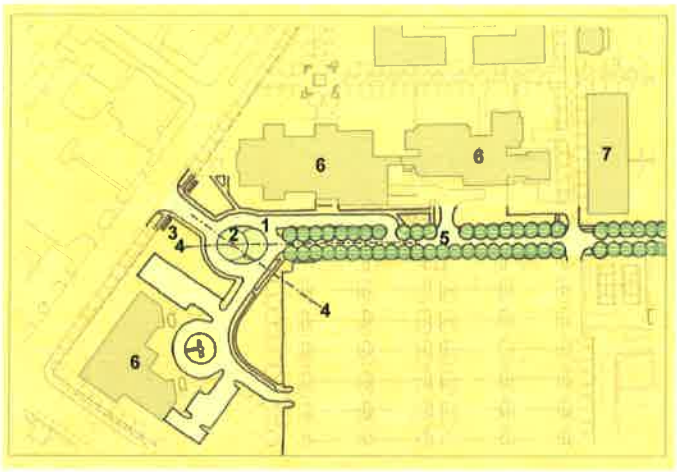
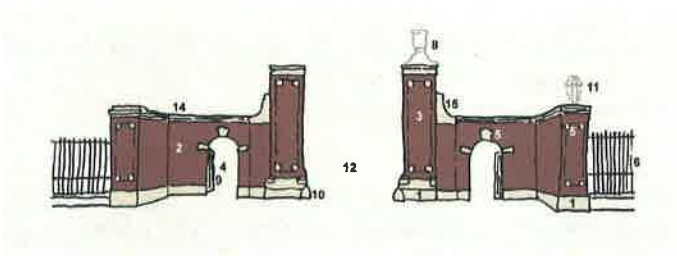


Fig. Gate Type Location Plan



Ellipse Scheme



Type VP - Vehicular Primary

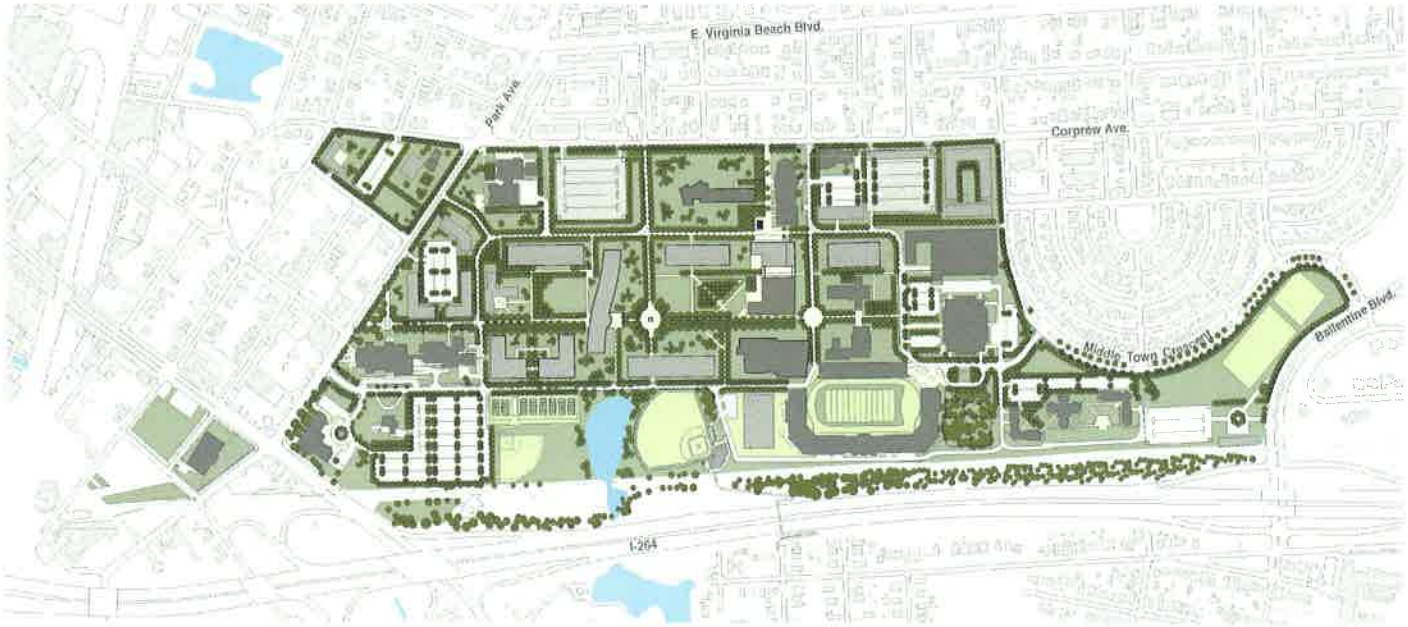
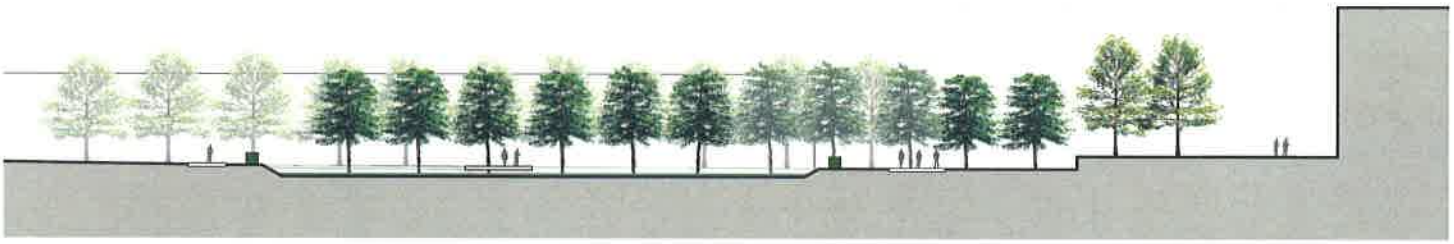


Fig. Landscape Concept Plan

Existing Building



Stormwater detention with wetland shrubs and Bald Cypress

Student Center Plaza

The plan also proposes a location for a new focal point for the campus which could be in the form of a clock tower or an obelisk, a light tower or a statuary. The area west of the library and east of the new student center is an appropriate location for this focal point.

Landscape Concept

Landscape materials such as trees, hedges, ground forms and pavement are employed in a way that creates and reinforces new and existing campus spaces. This design principle of forming attractive outdoor spaces contributes to making the campus welcoming to students, faculty and staff, and visitors. The proposed planting design preserves the transparency of the outdoor space and allows views of the campus from many different perspectives. Use of high –branched trees and discrete use of shrubs and small trees will keep the views open.

The concept suggests all main and secondary walks to be shaded to encourage walking during warm weather. Spaces designed to walking, sitting and outdoor activities are shaded by deciduous trees. It is also proposed that appropriately large scale plantings be used at campus entrances in a way that reflects hierarchy and function.

A unique landscape design solution is proposed to counter the present weakness of the low area between the Student Center and the Library. This involves a series of depressed vegetated panels acting as detention basins and linked to intercept storm water run-off. Plantings of Baldcypress trees within these area would enhance both function and visual appeal of the system.

Outdoor sitting spaces are encouraged by creation of a small amphitheater that can be simply grass forms carved out of the terrain or more formal stepped seats with stone risers. These could be located near academic buildings. The plan also encourages use of decorative arts, especially sculpture and fountains in strategic locations. This could be permanent or temporary displays comprising of student work.

Fig. University Sidewalk with Trees

Fig. Landscape Defining Campus Open Space

Athletics & Recreation Fields

The university will have to acquire additional land to accommodate its current and future athletic and recreation needs. Within the confines of the existing boundaries, the plan recommends utilizing the southern edge of the campus, between the stadium and the Wilson Hall as area reserved for fields and parking.

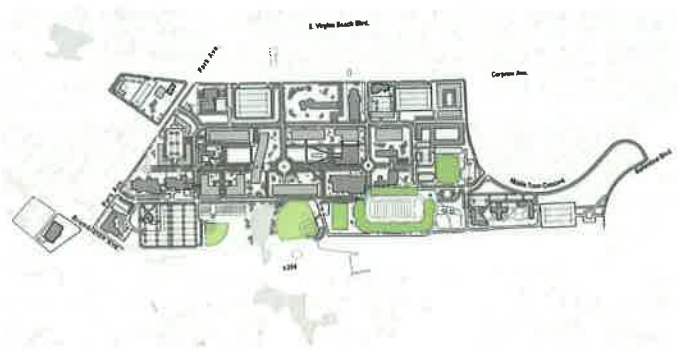


Fig. Athletics Diagram

Some of the options explore for future location of the recreation fields are illustrated below.

In addition to its existing fields, the university requires the following for the future:

- 1 Soccer Field
- 1 Football Practice Field
- I Multipurpose Field
- 2 Tennis Courts
- 1 Field House and Dugout for Softball Field
- Locker facility for Football Stadium

Fig. Possible future location of playing fields at reclaimed post-industrial riverfront site A

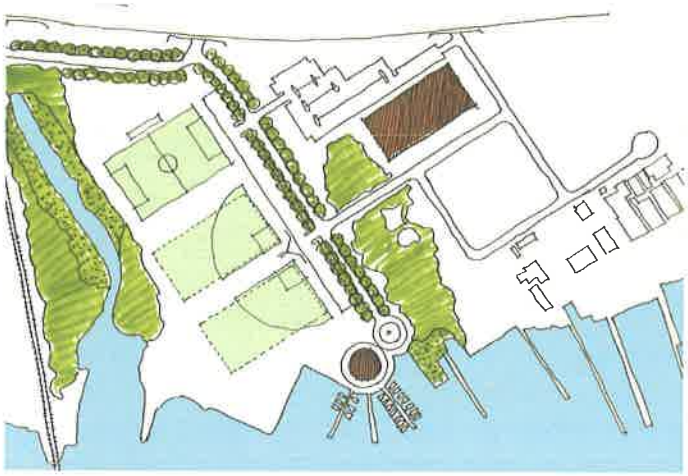


Fig. Possible future location of playing fields at reclaimed post-industrial riverfront site B

Site Utilities & Infrastructure

The master plan evaluated all existing site utilities and has recommended improvements and enhancements to the existing system to meet the future population and facilities demand.

Water Distribution: The plan recommends to create a looped water service and additional fire hydrants to improve the fire protection system

Sanitary Sewer: No major changes except what will be needed to accommodate new activities recommended by the master plan.

Storm Water Collection:

New 6'x6' underground storm water storage tanks with flow restrictors are recommended along Corprew Avenue where flooding occurs during heavy rains. An extended detention pond is recommended on the southern edge of the campus where water will be directed through new discharge points. The plan also recommends new 12"x24" storm water mains at the locations of new roadways and at areas impacted by future facilities.

Gas Distribution:

A new 4" gas main is recommended to loop the existing system - allowing better service for facilities with a high demand for gas.

Electrical Distribution:

The master plan recommends upgrading the existing power distribution system to provide a redundant campus wide power supply. This will require each existing radial service conductor to be modified to establish a primary network or optionally combine/ replace existing circuits 304, 309, and 311 as one looped system. This loop should utilize the existing underground duct bank to the fullest extent possible and install new duct banks as necessary.

Telecommunication & Fiber:

The master plan proposes that all new campus buildings be connected to the existing campus infrastructure via fiber. The telecommunications duct bank system should be extended as each new building is constructed. Minimally, 12 to 24 strands of single mode fiber per building, depending upon the building function, should be installed from the campus network hub to each building.

Future Expansion Options

The master plan could not be complete without exploring future expansion opportunities for the university. Even though there is no eminent need to expand the physical boundaries to accommodate academic facilities, it is important that this study examines some options for consideration in case it becomes necessary in the near future.

Should the university grow beyond its current population projection of 8,000 students, additional land will be required to accommodate housing, parking and associated athletic and recreational facilities. It is recommended that acquired land, as much as possible, should be contiguous with or adjacent to the main campus to facilitate an efficient growth pattern for all campus facilities. Owing to the distinct existing borders established by I-264 to the south as well as Majestic Avenue with its new residential development to its east, the expansion of the campus is thus limited to the west and north. Within these constraints and opportunities, the plan looks into the following expansion opportunities in small sectors. These are hypothetical in nature - subject to land availability and the university's ability to acquire these lands.

The following diagrams illustrates some possibilities in different areas surrounding the north and northwest boundaries of the campus.

Fig. Possible development around RISE Campus.

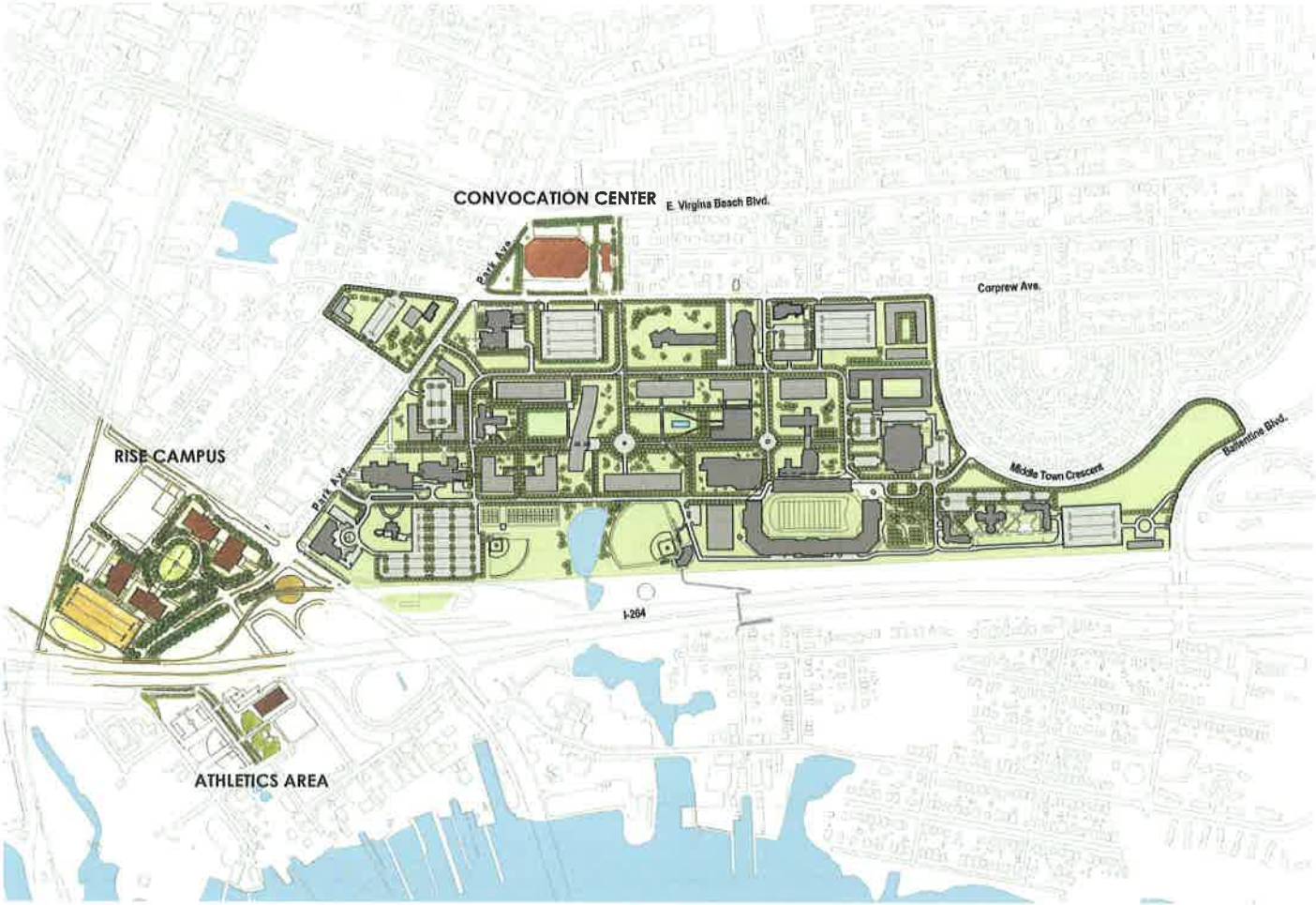


Fig. Future Expansion Plan

Existing Building Proposed Building Parking

0 200 500 1000

Scale 1" = 1000'

NORTH

Fig. View at the Main Entrance from Park Avenue

Fig. View from Virginia Beach Boulevard

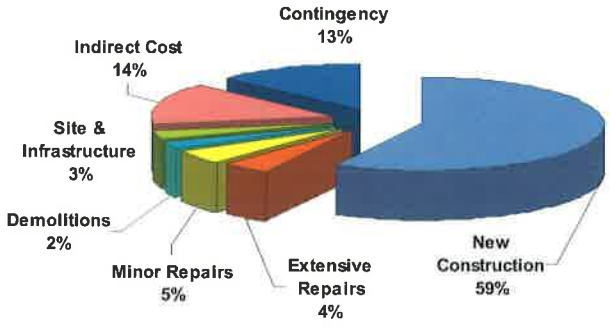
Implementation Plan

The implementation plan includes an order of magnitude cost estimate to implement the master plan and its timeline. It establishes, in order of priority, project sequence that is consistent with the priorities established by the university. Based on this implementation plan, the total cost estimate for the master plan is approximately $575 million for projects over a 10-15 year time frame. A two phased approach is recommended for implementation with about $416 million for phase one and $159 million for phase two.

The estimate includes costs for new facilities, major and minor upgrades, demolitions, site, landscape and infrastructure improvements. It also includes a factor for architectural and engineering fees, and an overall contingency.

Total Master Plan	$574,679,000
New Construction	$332,013,000
Extensive Repairs	$23,294,000
Minor Repairs	$29,818,000
Demolitions	$14,223,000
Site & Infrastructure	$17,087,000
Indirect Costs	$83,285,000
Contingency	$74,962,100

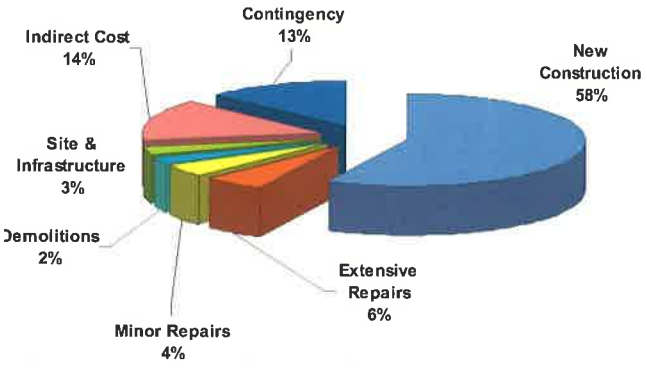
Master Plan Estimate



The breakdown for each phase is as follows. This is also supported by a detail timeline by projects and costs, to illustrate an order of magnitude of funding that will be needed on a yearly basis through the implementation of the Master Plan.

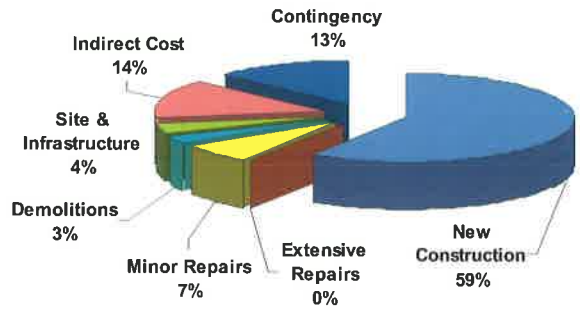
Phase One	$415,870,000
New Construction	$238,053,000
Extensive Repairs	$23,294,000
Minor Repairs	$18,697,000
Demolitions	$9,869,000
Site & Infrastructure	$11,443,000
Indirect Costs	$60,270,000
Contingency	$54,247,100

Phase One



Phase Two	$158,809,000
New Construction	$93,960,000
Extensive Repairs	$0
Minor Repairs	$11,121,000
Demolitions	$4,354,000
Site & Infrastructure	$5,644,000
Indirect Costs	$23,015,000
Contingency	$20,715,000

Phase Two



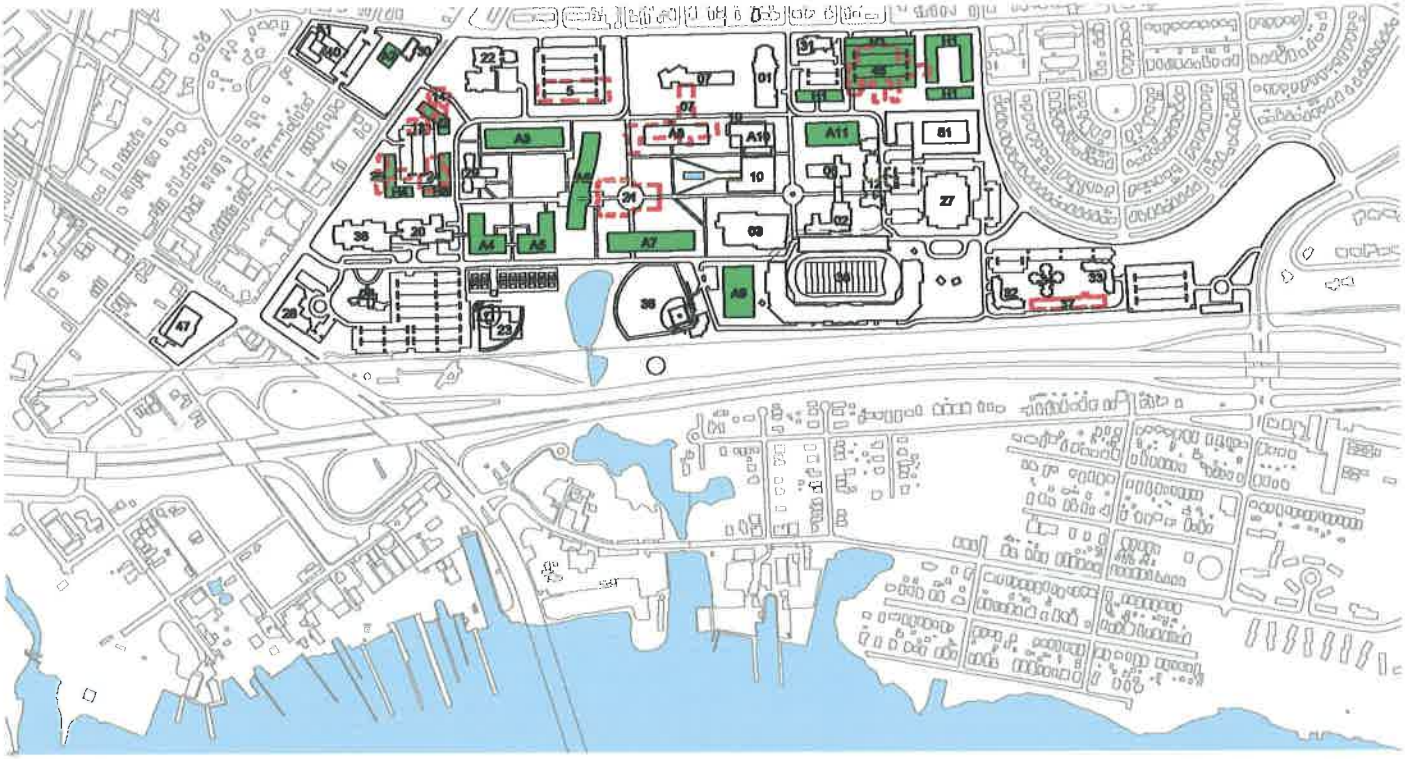
The following lists illustrate projects as defined in the wo phase approach.

Phase 1	
New Construction	
H1	Phase 2 Living & Learning Center
	New Parking Deck (at Phase 2 Living & Learning Center)
A9	New Field House (with Offices on 2nd Floor)
H2	New West Living & Learning Center with Dining (Block #1)
H3	New West Living & Learning Center (Block #2)
H4	New West Living & Learning Center (Block #3)
A6	New Library Building
A7	New Classroom & Nursing Building
A10	New Student Success Center
A5	New College of Business
A3	New Science Building
	New Brambleton Pedestrian Bridge
Demolition	
Bldg #	**Bldg Name**
0005	James A. Bowser
0007	G.W.C Brown Memorial Hall (Partial Demolition)
0013	Twin Towers Dormitory
0014	Twin Towers Dormitory
0021	Lyman B Brooks Memorial Library
0024	Cafeteria West (West Campus Cafeteria)
0025	Samuel F. Scott Men's Residence Hall
0037	Spartan Station
0045	Former Norfolk Community Hospital Building
Extensive Repairs	
0011	G.W.C Brown Memorial Hall (Remaining)
0020	E. L. Hamm Fine Arts Building
0030	Phyllis Wheatley Dormitory
0038	L. D. Wilder Building
Minor Repairs	
0001	Scott Dosier Dining Hall (East Campus Cafeteria)
0027	Joseph G. Echols Hall
0028	Harrison B. Wilson Hall
0029	Rosa Alexander Hall
0036	Marty L. Miller Baseball Stadium
Site & Infrastructure	
	Utility Infrastructure Improvements
	Roads, Sidewalks & Surface Parking
	Landscape and Street Scapes

Fig. Phase 1

Phase 2	
New Construction	
H1	Phase 4 West Living & Learning Center (Block #4)
	New Parking deck (Adjacent to Robinson Tech)
A1	New Brambleton Recreation Center
	New Softball Field
A8	New Math & Communications Building
	New Convocation/ Recreation Center
	New Physical Plant
	New Storage for Physical Plant
Demolition	
Bldg #	
0002	Hugo Madison Hall (Future Demolition)
0003	James D. Gill Health & PE Building (Future Demolition)
0010	Mills Godwin Student Center
0012	Woods Science Building
0023	Central Storage and Maintenance and Addition
0039	Center For Materials Research
0040	Brambleton Recreation Center
Extensive Repairs	
	(None)
Minor Repairs	
0006	Bozeman Nursing Education Building
0032	Charles H. Smith Men's Residence
0033	Lee Wesley Smith Men's Residence
0035	William "Dick" Price Football Stadium
Site & Infrastructure	
	Utility Infrastructure Improvements
	Roads, Sidewalks & Surface Parking
	Landscape and Street Scapes

Fig. Phase 2



Phase One

Fig. Diagram illustrates Phase One of the major projects

New Construction

Demolition

0 200 500 1000

Scale 1" = 1000'

NORTH

Phase Two

Fig. Diagram illustrates Phase Two of the major projects.

New Construction

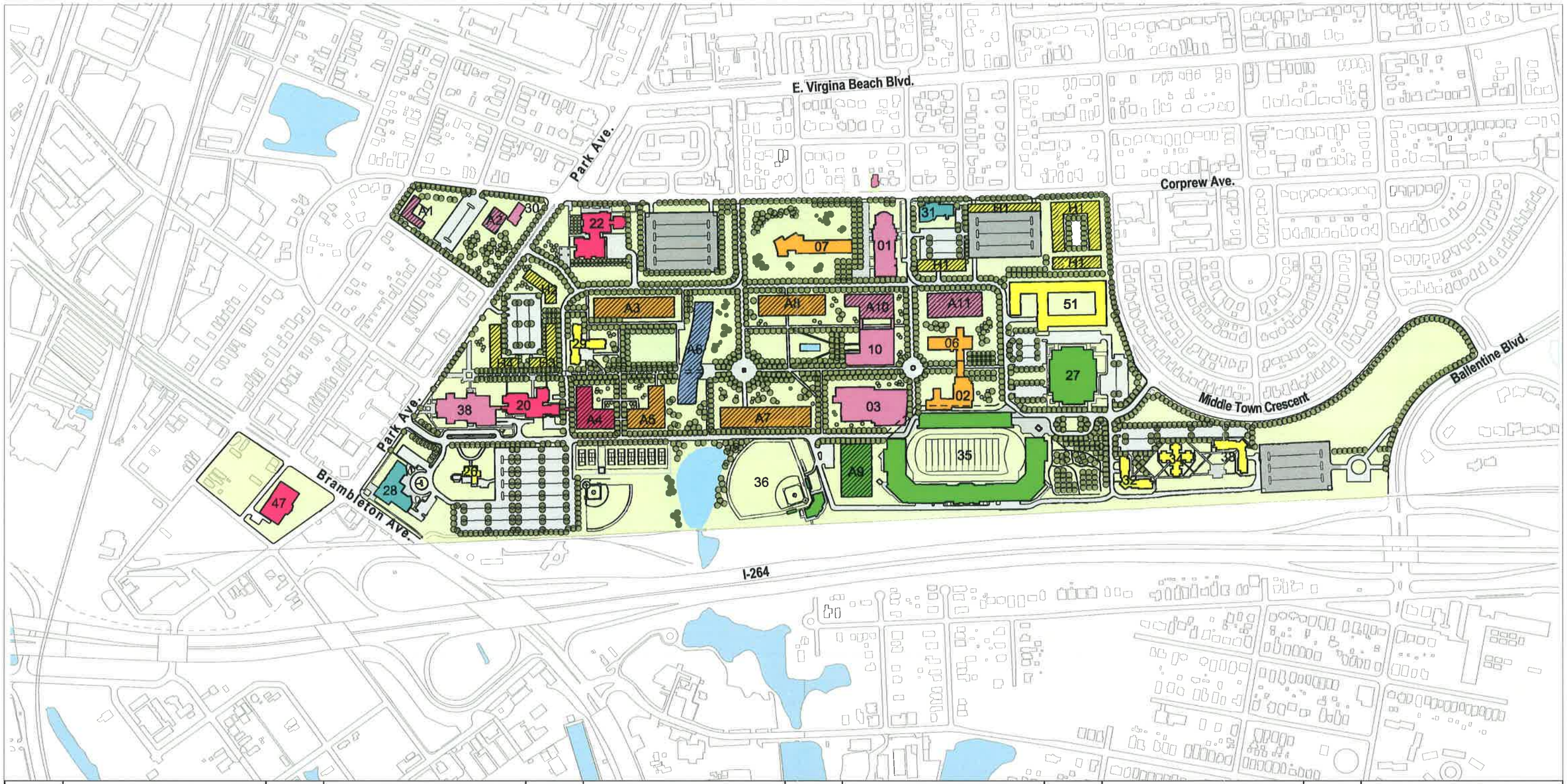
Demolition

Possible Demolition

0 200 500 1000

Scale 1" = 1000'

NORTH



Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name
01	Scott Dosier Dining Hall (East Campus Cafeteria)	20	E. L. Hamm Fine Arts Building	26	President's House	29	Rosa Alexander Hall	33	Lee Wesley Smith Men's Residence	36	Marty L. Miller Baseball Stadium
06	Bozeman Nursing Education Building	21	Lyman B Brooks Memorial Library	27	Joseph G. Echols Hall	31	Police Station	34	Mid-rise Dorm	38	L. D. Wilder Building
10	Mills Godwin Student Center	22	William P. Robinson, SR Technolgy Center	28	Harrison B. Wilson Hall	32	Charles H. Smith Men's Residence	35	William "Dick" Price Football Stadium (Athletic Facility)	51	Spartan Suites
A1	Brambleton Center Addition	A2	Wheatly Addition	A3	New Science Building	A4	Hamm Fine Arts Addition	A5	New School of Business	A6	New Library
A7	New Classroom/Nursing Building	A8	New Math/Communications Building	A9	Fieldhouse	A10	New Godwin Student Center	A11	Student Success Center	H1	New Living and Learning Center - East
H2	New Living and Learning Center - West										

- Classroom Facilities
- Laboratory Facilities
- Library Facilities
- Special Use Facilities
- General Use Facilities
- Support Facilities
- Residential Facilities
- Parking Structure
- New Building
- Future Building Site

NORFOLK STATE UNIVERSITY MASTER PLAN

0 100 250 500

Scale 1" = 500'

MASTER PLAN

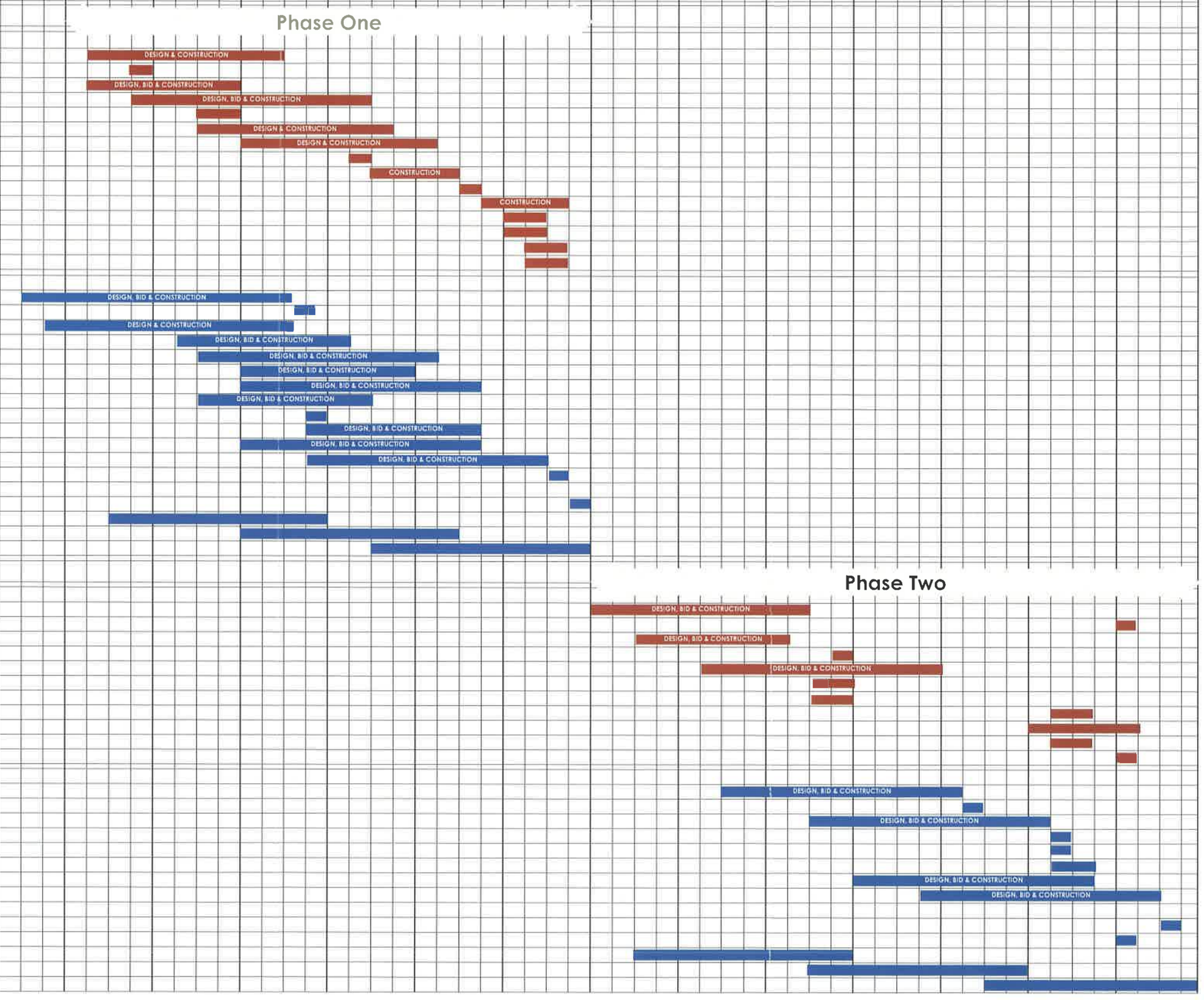
NORTH

JOHN PORTMAN & ASSOCIATES, INC.

2008

Master Plan Capital Projects & Improvements - Phasing and Implementation Plan

	Projects	Total Project Cost
WORK IN PROGRESS		
0.1	New Student Center	
0.2	New Library	
0.3	New Classroom / Nursing Building	
RECENTLY COMPLETED		
0.1	Renovate Robinson Tech	
0.2	RISE Building #1	
0.3	New Police Station	
PHASE ONE		**$415,870,000**
AUXILLIARY PROJECTS		**$145,782,000**
0.1	New Phase 2 Living & Learning Center	$45,540,000
0.2	Demolish Former Norfolk Community Hospital	$2,795,000
0.3	New Parking Deck (at Phase 2 Living & Learing Center)	$24,840,000
0.4	New Field House (with offices on 2nd floor)	$16,560,000
0.5	Demolish Twin Towers	$3,138,000
0.6	New West Living & Learning Center with Dining (Block #1)	$8,798,000
0.7	Renovate Phyllis Wheatley Hall	$7,702,000
0.8	Demolish Cafetria West	$392,000
0.9	New West Living & Learning Center (Block #2)	$8,798,000
1.10	Demolish Samuel F. Scott Men's Residence Hall	$841,000
1.11	New West Living & Learning Center (Block #3)	$6,728,000
1.12	Renovate Scott Dozier Dining Hall	$4,901,000
1.13	Renovate Rosa Alexander Hall	$4,417,000
1.14	Renovate Joseph G. Echols Hall	$10,123,000
1.15	Renovate Marty L. Miller Baseball Stadium	$209,000
E&G PROJECTS		**$270,091,100**
0.1	New Library Building	$50,133,100
0.2	Demolish Lyman B Brooks Memorial Library	$3,013,000
0.3	New Classroom & Nursing Building	$46,575,000
0.4	Renovate L. D. Wilder Building	$8,538,000
0.5	Expansion to E. L. Hamm Fine Arts Building	$22,425,000
0.6	Renovate E. L. Hamm Fine Arts Building	$9,867,000
0.7	New Student Success Center	$39,468,000
0.8	Brambleton Pedestrian Bridge	$3,450,000
0.9	Demolish James A. Bowser	$1,024,000
1.10	Renovate Harrison B. Wilson Hall	$6,149,000
1.11	New College of Business	$27,600,000
1.12	New Science Building	$27,600,000
1.13	Demolish G.W.C Brown Memorial Hall (Partial Demolition)	$1,677,000
1.14	Renovate G.W.C Brown Memorial Hall (Remaining))	$6,039,000
1.15	Demolish Spartan Station	$741,000
1.16	Utility Infrastructure Improvements	$7,829,000
1.17	Roads, Sidewalks & Surface Parking	$2,036,000
1.18	Landscape & Street Scapes	$5,927,000
PHASE TWO		**$158,809,000**
AUXILLIARY PROJECTS		**$61,418,000**
0.1	Phase 4 West Learning & Living Center Block #4	$17,388,000
0.2	Demolish James D. Gill Health & PE Building (Future)	$1,600,000
0.3	New Parking Deck (Adjacent to Robinson Tech)	$24,840,000
0.4	Demolish Brambleton Recreation Center	$214,000
0.5	New Brambleton Recreation Center	$4,140,000
0.6	Renovate Charles H. Smith Men's Residence	$4,017,000
0.7	Renovate Lee Wesley Smith Men's Residence	$4,017,000
0.8	Renovate William "Dick" Price Football Stadium	$4,705,000
0.9	New Softball Field	$276,000
1.10	New Tennis Courts	$221,000
E&G PROJECTS		**$97,391,000**
0.1	New Math & Communications Building	$27,600,000
0.2	Demolish Mills Godwin Student Center	$892,000
0.4	New Godwin Student Center	$16,560,000
0.5	Demolish Woods Science Building	$1,481,000
0.6	Demolish Materials Research Building	$220,000
0.7	Renovate Bozeman Education Building	$2,608,000
0.8	New Convocation/ Recreation Center	$22,080,000
0.9	New Physical Plant	$12,420,000
0.10	New Storage for Physical Plant	$4,140,000
0.11	Demolish Central Storage and Maintenance and Addition	$710,000
0.12	Demolish Hugo Madison Hall (Future)	$892,000
0.13	Utility Infrastructure Improvements	$1,050,000
0.14	Roads, Sidewalks & Surface Parking	$3,266,000
0.15	Landscape & Street Scapes	$3,472,000
Total Auxilliary Funding		**$207,200,000**
Total E&G Funding		**$367,480,000**
TOTAL FUNDING		**$574,680,000**



PROJECT GOALS

CONTENTS

1.0 Project Goals

1.0 PROJECT GOALS

This section identifies the Goals and Objectives that were established at the beginning of the master planning process. This section takes a brief overview of Norfolk State University's Mission and Values. In addition, this section also identifies issues that were identified by the Master Plan Committee that led to the development of the Master Plan goals.

University's Mission Statement

To provide an affordable, high-quality education for an ethnically and culturally diverse student population, equipping them with the capability to become productive citizens who continuously contribute to a global and rapidly changing society.

Strategic Imperatives

Enhance students' success by providing high-quality academic instruction and support to ensure an improved graduation rate.

Develop an efficient management structure to increase organizational efficiency and improve performance across all areas.

Increase total funding by identifying multiple funding sources and new initiatives to form a solid fiscal foundation and provide ongoing services for NSU's constituents.

Core assets

- Talented student body
- Motivated faculty and staff
- Public support
- Tradition of service

Issues

The master plan committee and consultant team identified the following issues to be addressed by this master plan:

- Building / Landscape characteristics are not well defined.
- Parking is spread all over Campus
- There is nothing in the green space
- Student Services based in Wilson Hall are not located conveniently to the rest of the Campus
- There are storm water drainage issues near the student center and at Park Avenue & Corprew Avenue
- Address electrical / HVAC capacities at a building level
- Campus & building signage need addressing
- Address building numbering / identification
- A Campus directory does not exist on Campus
- Address Campus / pedestrian lighting (for safety)
- Improve pedestrian circulation (Sidewalks)
- Vehicular circulation (no loop circulation)
- Lack of well defined entrances (Gates and gatehouses)
- Street Crossings at Brambleton Road and other streets around Campus
- Determine a strategy for the former hospital
- Lack of appropriate academic space (facilities do not match academic program)

Master Plan Goals

This section identifies key targets to be achieved and / or maintained during the implementation of the master plan as well as physical goals to be achieved in the design of the physical master plan.

Key Academic Targets

The University intends to achieve a head count of 8,000 students as indicated in the University's Strategic

Enrollment Management Plan (Rev. September 2005.) At that time the University intends to be able to house 35% of the student population. In addition, the University plans to achieve a ratio of 20 students to each faculty member (1:20)

Strategic Goals for the Master Plan

The master plan is intended to provide a framework for how to implement the university's strategic goals in relation to facility needs. In addition to the strategic goals indicated in the 2004-2009 Strategic Plan, the following goals are to be addressed in the University master plan:

- Plan facilities and campus for an 8,000 student head count enrollment
- Plan to house 35% of the student population
- Plan for a Faculty/ Student ratio of 1:20 for future years
- Develop a Space Allocation Plan
- Define a strategy for the former hospital
- Establish Priorities for Existing Facilities & Future Facilities
- Define directions of Future Expansion and potential Land Acquisitions

Physical Goals

The following is a list of physical goals which are to be achieved in the design of the physical master plan.

- Create A Sense of Arrival & Gateway
- Create a Focal Point on the Campus
- Define Campus Edges
- Address Traffic Flow In and Around Campus
- Create a Pedestrian Friendly Campus
- Create More People Places
- Incorporate Proposed LRT Stations
- Address Directional Signage at Campus Level
- Address Functional Zoning
- Incorporate Widening of Brambleton Road
- Address Site Infrastructure and Storm Water Issues

Instructional Technology

The information below discusses the goals of the instructional technology master plan for Norfolk State University (NSU).

Asynchronous Learning

Further development of Blackboard™ courses will increase the reach of the college to non-traditional students. Utilizing technologies such as streaming video and web conferencing would allow web based courses to be offered both synchronously (two way interactive sessions) and asynchronously providing the most flexibility for students.

Training should be continued to educate faculty about creating course material for Blackboard. NSU should add to the 47 classes available on-line and 248 class supplemented with on-line material.

On-line classes should be added toward the stated goal of having the interdisciplinary studies degree offered completely on-line as soon as possible. This will serve as a pilot program that will enable additional degree tracks to be offered completely on-line in the future.

Any implementation of Classroom Technology should be coordinated with any findings and reports from the learning planning process.

Classroom Technology

Presently, there are many disparate types of presentation systems in Campus classrooms. The sophistication of these systems range from the computer labs in Brown Hall with a control touch panel for source selection and control to the basic system utilizing a mobile source cart and the projector remote control installed in twelve rooms. These projector remote controls are under the responsibility of the Academic Technology Support Services. Each school has its own standard systems and support resources.

One goal of the instructional technology master plan is to standardize the way these systems are designed and installed that creates a technology standard for all Campus classrooms. The systems should be ubiquitous so that faculty can instruct in any room without having to learn different systems or waiting for portable equipment to be delivered.

The standard configuration for the classroom systems can be created in a "levels" approach. Based on the functionality and size of the room, a certain level of technology would be installed.

One configuration is as follows: Level 1 would be a conference room that is used for small groups and would have only a laptop or PC as a source device to a ceiling mounted projector. Level 2 would be for a classroom that would have a number of source devices (PC/laptop, digital presenter, VCR, etc) and a

program audio playback system. Level 3 would be a larger classroom or lecture hall and would have similar source devices as the standard classroom but have a larger audio system with voice reinforcement and assistive listening as required. Level 4 would define a room used for video-conferencing / distance learning would require all of the equipment of a large classroom and additional equipment unique to the conferencing application.

As audiovisual equipment becomes network aware, it is beneficial to have network connections for all of the equipment. This provides the capability to monitor equipment allows control and monitoring from a central location where technicians can have access to all of the systems for maintenance and troubleshooting purposes.

Each classroom should have a telephone that rings at a centralized Help Desk to assist the instructor with trouble shooting the system. Co-located with the help desk should be a Campus master control room. The control room would receive presentation feeds from each classroom and record them for asynchronous viewing.

Overall responsibility for classroom support should be given to one group on Campus. This will ensure the standardization of classroom technology and ensure the most effective use of support resources for classroom technology

The lighting and acoustics of the classrooms should be designed with AV presentation in mind. The lighting should be zoned to allow multiple levels of lighting that is conducive to an AV presentation. The acoustics should be designed to maximize speech intelligibility and provide an environment that will be conducive to audio recordings of classes. These steps will result in a positive experience with the systems and an overall enhancement of the learning experience provided to NSU's students.

As the technology is incorporated into the standard room on Campus, training must increase for the instructors and professors to feel comfortable using the technology in their coursework. The recommendations that were proposed by the VP of Academic Affairs' consultant should be coordinated with any plan for classroom instructional technology.

Consideration should be given to adding new instructional technologies to the Campus. This may include recording classroom sessions and posting these to a server accessible by the students or adding systems to provide instantaneous feedback to an instructor to fine-tune lectures based on audience responses.

Providing the ability to review exactly what was said in class alleviates the dependence on note taking. Students can actively participate in discussions without worrying that they will miss important information because they can review exactly what was said at a later time. An audience response system can help a professor gauge the comprehension of a concept and tailor lectures based on the response of the students.

Wireless

Wireless coverage on Campus is extensive. Most of the buildings as well as the green spaces on Campus are covered by wireless access. A plan should be developed to allow migration to future wireless technologies as these become economically feasible without disruption to the wireless access on Campus.

Library

The Library has created a strategic technology plan dated June 2005. This plan illustrates the Library's goals and the resources required to achieve these goals. This plan should be incorporated into the overall NSU master plan. The key to realizing the goals for the library's plan is aligning the stated goals with the overall NSU technology plan.

The library should continue to invest resources in on-line endeavors. In concert with providing instruction on-line, the University must also provide library resources to the distant student. This requires an emphasis on electronic catalogs and resources. The library must balance the shift from a physical library to a virtual library.

Conclusion

NSU should strive to provide an instructional technology organization that is ubiquitous across all of the classrooms on Campus where each classroom is equipped with the level of technology required for the functionality of the room. One group should be responsible for supporting all of the technology to take advantage of

economies of scale and standardization. This group should also be responsible for keeping informed of new instructional technologies as they are developed. Additional technology should be implemented in each classroom system as these technologies become more economical and useful to the pedagogy.

Standardization of technology systems across the Campus will increase economies of scale for replacement parts and provide a synergy in human resources required to support these systems. These enhancements will allow NSU to stay current with peer institutions and provide first class instruction to the students.

CONTENTS

2.0 PHYSICAL ANALYSIS & EXISTING CONDITIONS

This section documents the analysis of the existing conditions of the Campus and its context. Also included in this section is the analysis of needs for the current Campus condition as well as projected needs based on the University's goals.

This section is organized as follows:

2.1 Background

2.2 Existing Campus Analysis

2.3 Academic Program Analysis and Projections

2.1 History

This section introduces the Campus by describing its current layout, its history and physical setting.

Introduction to Campus

Norfolk State University is located in an urban area of Norfolk, Virginia within two miles of the central business district. The Campus is comprised of approximately 134 acres oriented east to west along the Interstate 264 corridor which follows the edge of the Eastern Branch Elizabeth River. The Campus is less than ½ mile from the water front. The University has 34 buildings and structures on the main Campus that total to almost 2 Million gross square feet (GSF).

Campus Background

At its founding in 1935, the Campus was named the Norfolk Unit of Virginia Union University. Brought to life in the midst of the Great Depression, the college provided a setting in which the youth of the region could give expressions to their hopes and aspirations.

In 1942, the College became the independent Norfolk Polytechnic College, and two years later an Act of the Virginia Legislature mandated that it become a part of Virginia State College.

The Campus was able to pursue an expanded mission with even greater emphasis in 1956 when another Act of the Legislature enabled the Institution to offer its first Bachelor's degree. The Campus was separated from Virginia State College and became fully independent in 1969, becoming Norfolk State College.

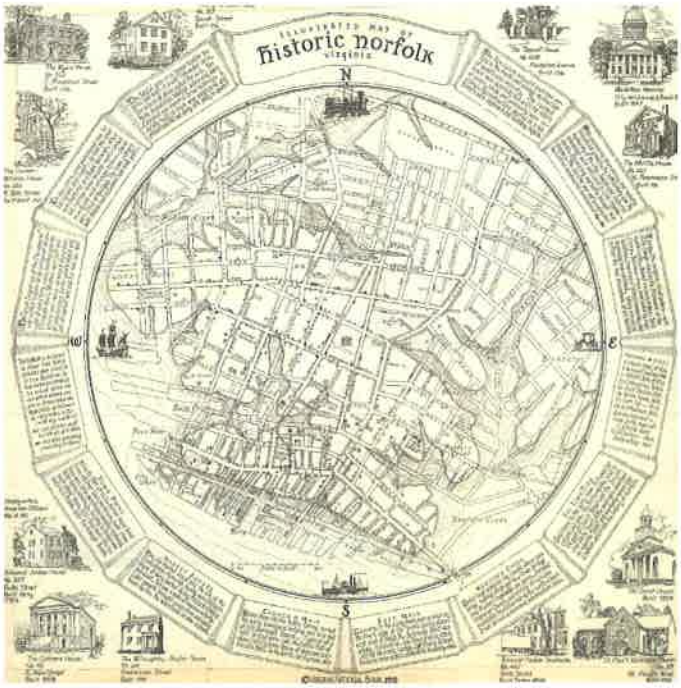
The College was granted University status in 1979, and subsequent legislative acts authorized the granting of the University's first graduate degrees.

Campus Location and Regional Context

Hampton Roads & The City of Norfolk

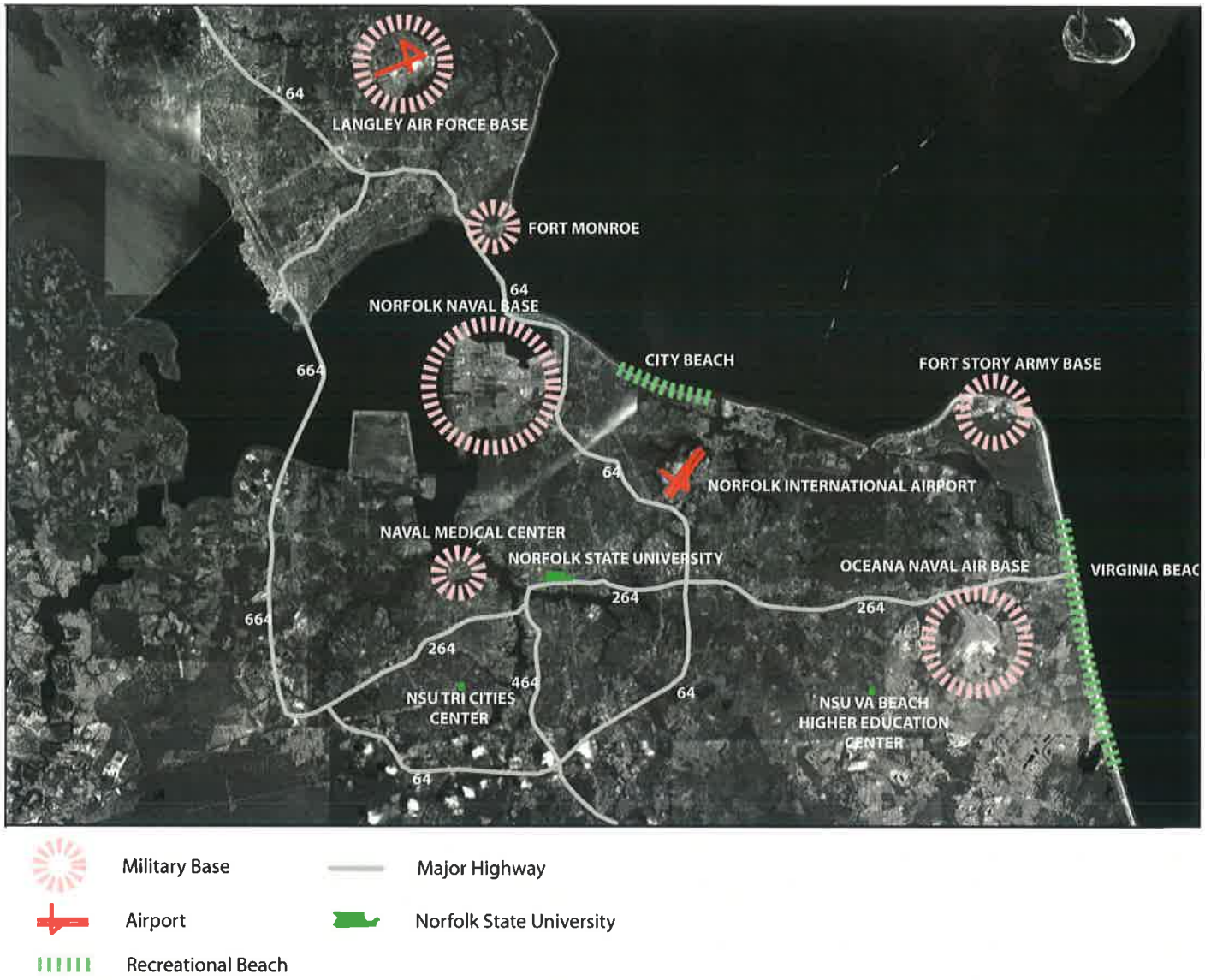
Norfolk State University is located in the heart of the southeastern region of Virginia known as Hampton Roads. This region includes the cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg; as well as the counties of Gloucester, Isle of Wight, James City, Mathews, Southampton, Surry and York; and Currituck in North Carolina. The term "Hampton Roads" is a reference to one of the founders of the Virginia Company, Henry Wriothesley the third Earl of Southampton, who was a supporter of the colonization of Virginia. "Roads" is a nautical term that means "a place less sheltered than a harbor where ships may ride at anchor."

Hampton Roads is known as the birthplace of Colonial America, originally home to Jamestown, the first permanent English settlement, and to Colonial Williamsburg. The region has been home to a strong military presence for centuries due to its geographical characteristics such as its proximity to the Atlantic Ocean, which serves as the eastern border of the region. As such, two of the major industries of the area are importing/exporting and ship building.



Figs. Regional key map and historical plan of Norfolk

Known as the world's largest natural harbor, Hampton Roads is formed by the merging of the James, Nanesmond and Elizabeth rivers into the mouth of the Chesapeake Bay. Populated by over 1.6 million people, Hampton Roads is one of the top forty Metropolitan Statistical Areas (MSA) in the United States and is regarded by some as the nation's most diverse region.



Regional Program Logic

NSU is situated in a region characterized chiefly by maritime oriented industry. The US military has numerous Naval and Air bases aggregated within a few short miles of NSU.

In addition to the presence of the military and its allied industries, leisure and recreation play a siginifcant role in the region. Virginia beach is a popular destination for tourists.

NSU enjoys a natural locational advantage due to its proximity to Highway Insterstate 264. Commuters can access any number of military bases, business districts or leisure destinations within thirty minutes. This makes the University an excellent option for individuals participating in the regional military / tourism economy.

Norfolk International Airport is also a twenty minute drive from the University. This provides ease of access for visiting scholars, lecturers and administrators conducting University affairs.

The City of Norfolk

The City of Norfolk is about eighteen miles from the Atlantic Ocean and is bordered by the Chesapeake Bay and Hampton Roads Harbor. Norfolk serves as the nucleus for a metropolitan area of more than a million people, with approximately one quarter of that population living within the city limits.

During 1917, the Norfolk Naval Base was constructed, thereby making Norfolk a major military center. The city now houses the Atlantic Fleet, the Supreme Allied Command and the 5th Naval District.

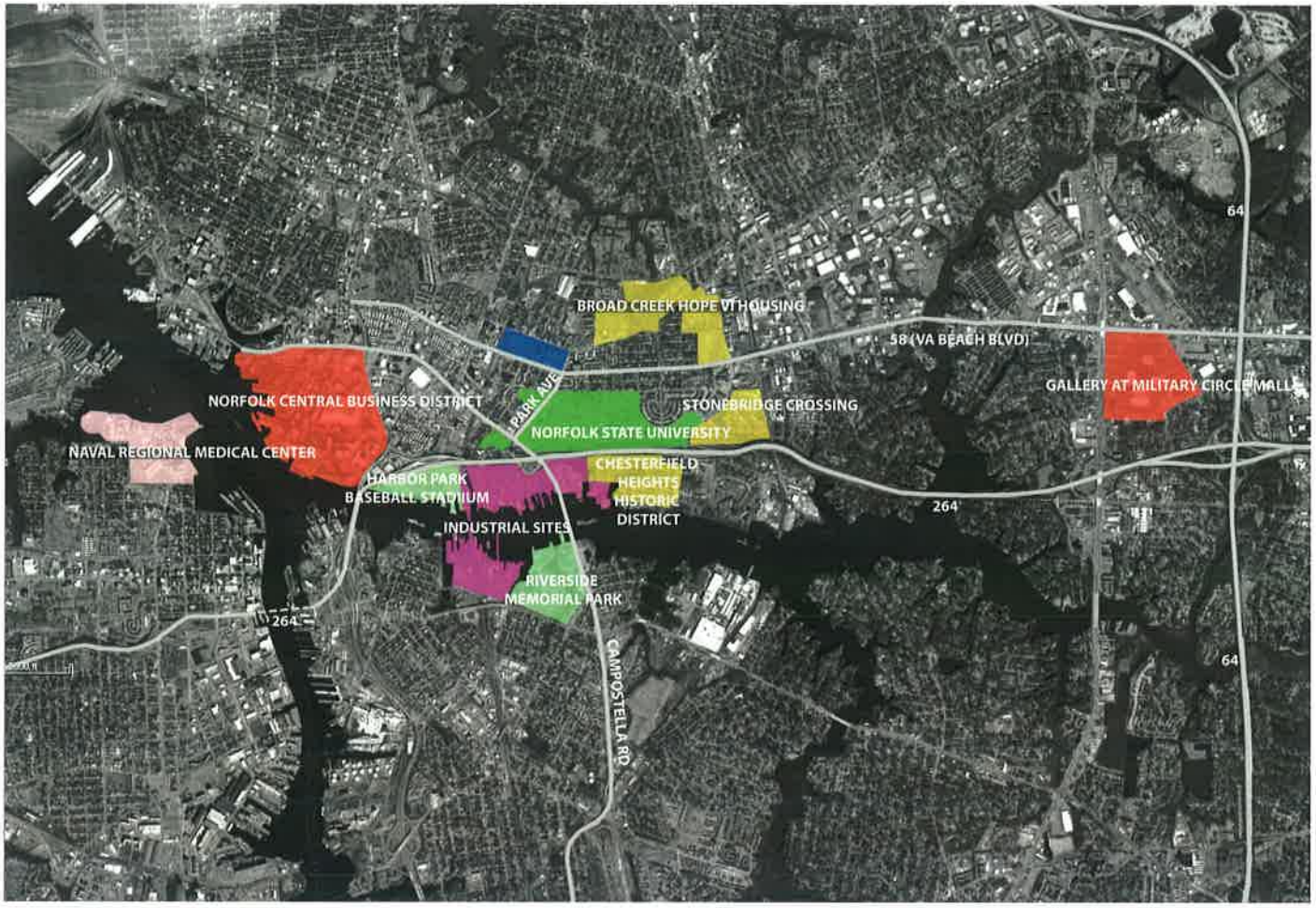
In December 2000, the USS Wisconsin became a permanent part of Norfolk's downtown waterfront. The battleship is moored at the quay of Nauticus, The National Maritime Center.

City Context

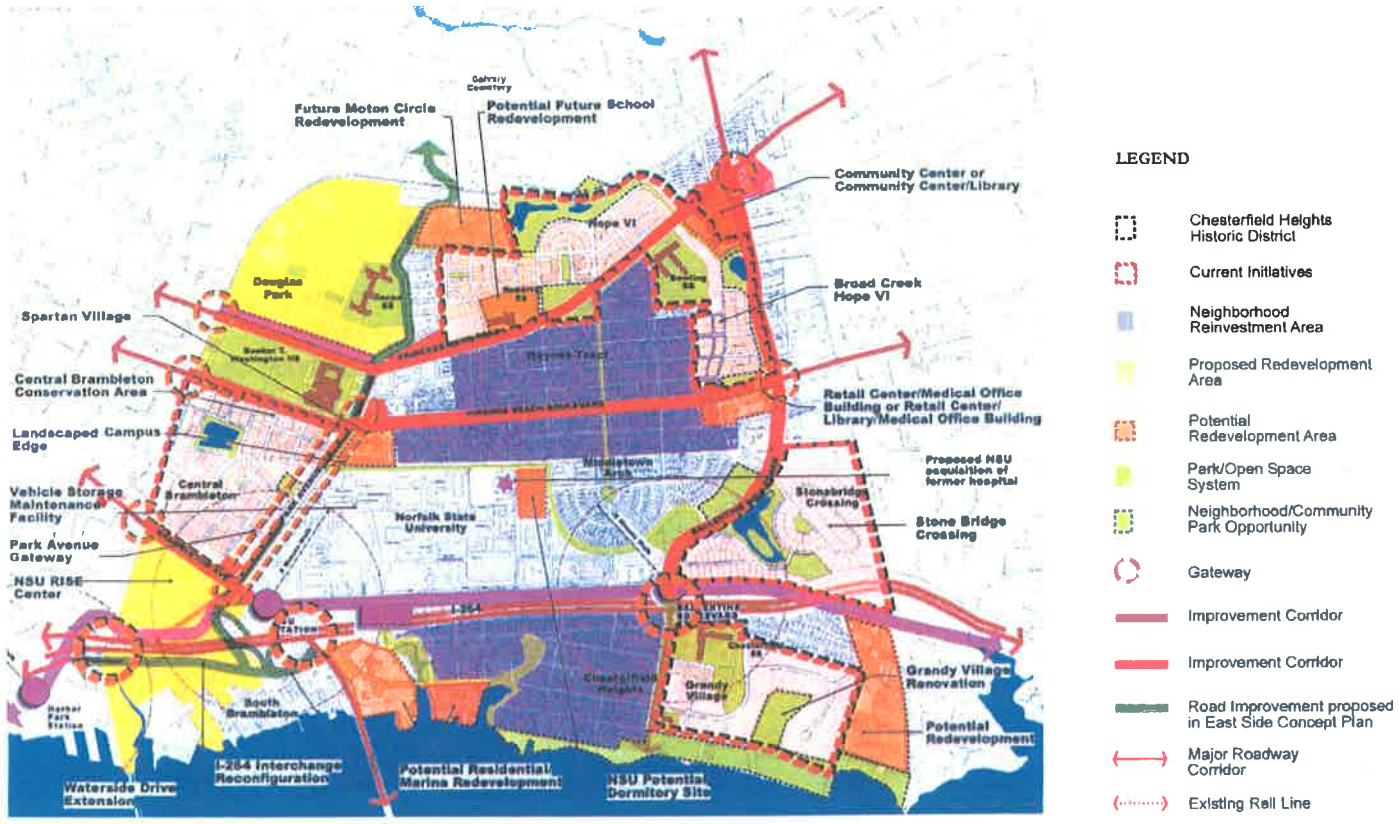
NSU is located approximately one mile east of the Central Business District (CBD). I-264 runs immediately to the south of the Campus boundary providing connectivity to the CBD to the east and the airport, Military Circle Mall and Virginia Beach to the west. Presently the riverfront shares a mix of industrial and residential programs along Broad Creek as can been seen in the corresponding figure.

A new baseball stdium has been built along the riverfront underscoring efforts by the city to reposition the riverfront from a post industrial working waterfront to a more mature leisure and residential sector. NSU has the opportunity to participate in this larger urban planning effort as part of the current master plan and will be discussed in subsequent sections.

Also of note in this analysis drawing is the location and scale of Old Dominion University. It also shares similar programmatic, demographic and location similarities with NSU. Namely, Campus size and proximity to waterfront.



Residential Area
Industrial Area
Military Area
Major Road
Commercial Area
Institutional Area
Recreational Area
Norfolk State University



Broad Creek Revitalization Project

An initiative of the City of Norfolk and the NRHA, the Broad Creek Renaissance represents an almost $200 million project reflecting a mix of public and private funding including a $35 million Hope VI grant from the Department of Housing and Urban Development.

Broad Creek Renaissance encompasses two square miles and 14 neighborhoods bound by railroad tracks to the north, east and west, and the Norfolk Industrial Park and Elizabeth River to the south thus completely surrounding the University's main Campus. When completed, it will offer a well-designed, well-constructed community with amenities including a new YMCA, a library, walking and biking trails, a swimming pool and green open-spaces for community gatherings. In addition, this project incorporates the University's plans for the RISE Campus as a central high-technology district.

Broad Creek will offer close proximity to schools, shops, restaurants as well as arts and cultural institutions. The centerpiece of the project includes the revitalization of the Roberts Village and Bowling Green communities. Today, these neighborhoods are being rebuilt and replaced with mixed-income housing.

2.2 Physical Setting

This section will examine the current Campus condition, in terms of its physical setting, circulation, existing building, utilities and infrastructure.

Campus Analysis

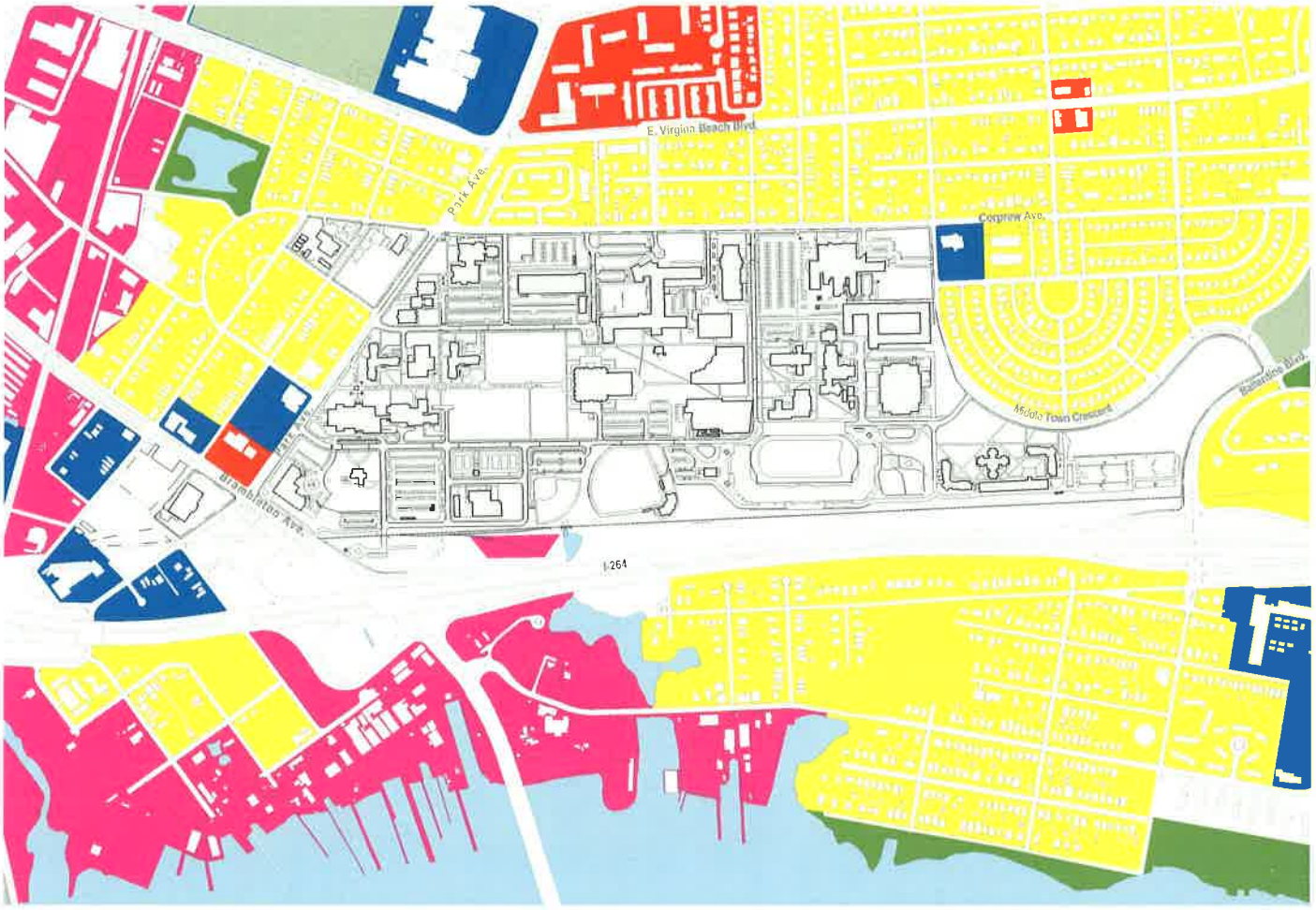
The University's main Campus is located in an urban area of the City of Norfolk, Virginia, less than half a mile from the Elizabeth River waterfront. The 120 acres Campus is primarily flat and at its average elevation is approximately 10 feet above sea level.

Campus Boundaries

The main Campus is bordered to the south by a railroad track that is intended to become a light rail line for the City of Norfolk, the Interstate 264 corridor, and beyond that by the Elizabeth River waterfront. To the west of the Campus are Brambleton Avenue and Park Avenue. Corprew Avenue forms the northern border, with East Virginia Beach Boulevard (a major artery for the region) slightly beyond. Finally, the eastern boundary is formed by the Middle Towne Arch community that is an approximately ten-year old neighborhood.

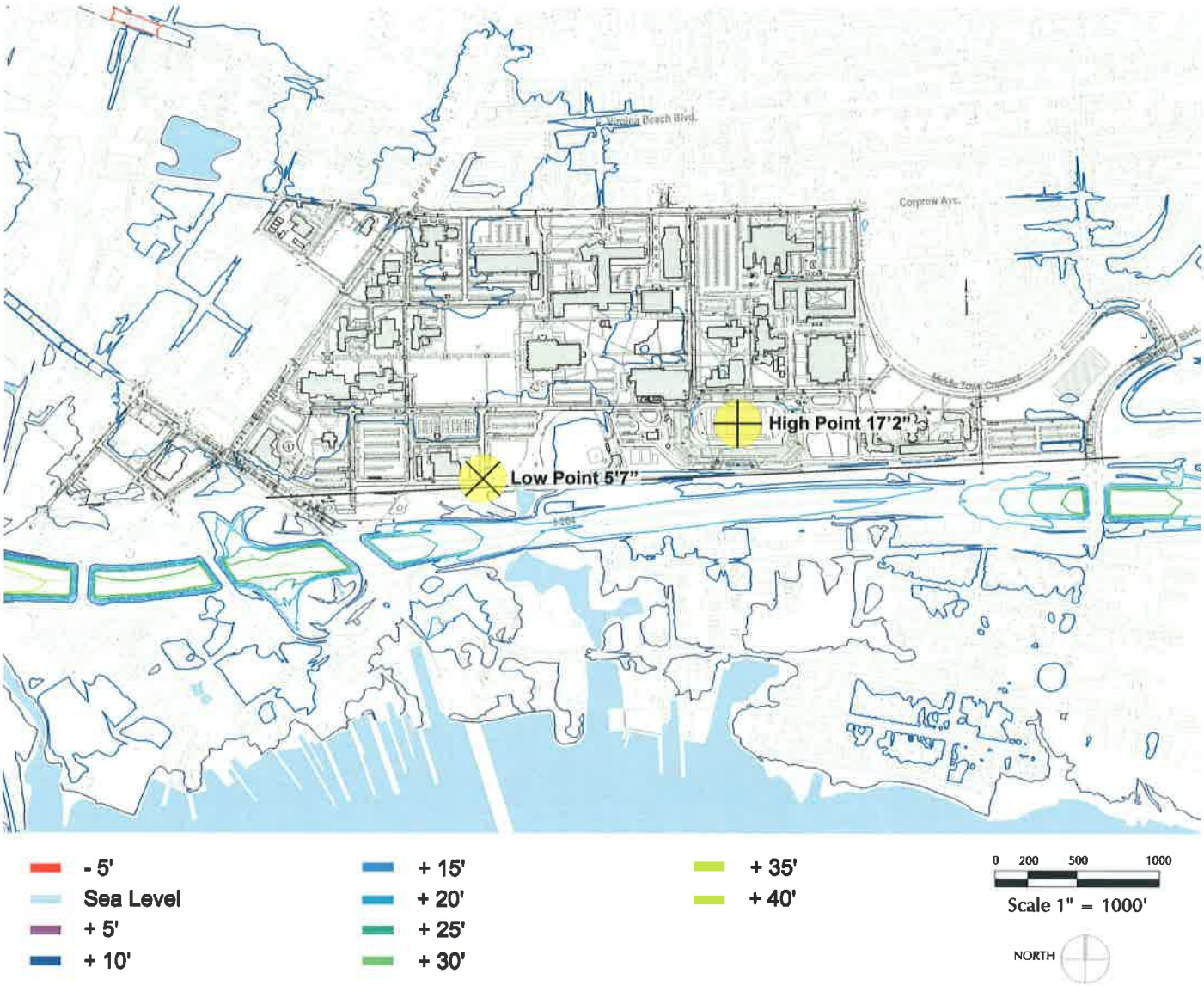
The RISE Campus, which is presently being assembled, will be across the intersection of Brambleton Avenue and Park Avenue diagonally from the main Campus. The first research building on the RISE Campus, the Marie V. McDemmond Center for Applies Research was opened in April 2007.

The University currently has no loop road around the Campus, and therefore, vehicles are forced the leave the Campus and use the city streets to access other portions of the Campus. As such, the Campus has several gateways off of Park Avenue, Corprew Avenue, Majestic Avenue, and Middle Towne Crescent.



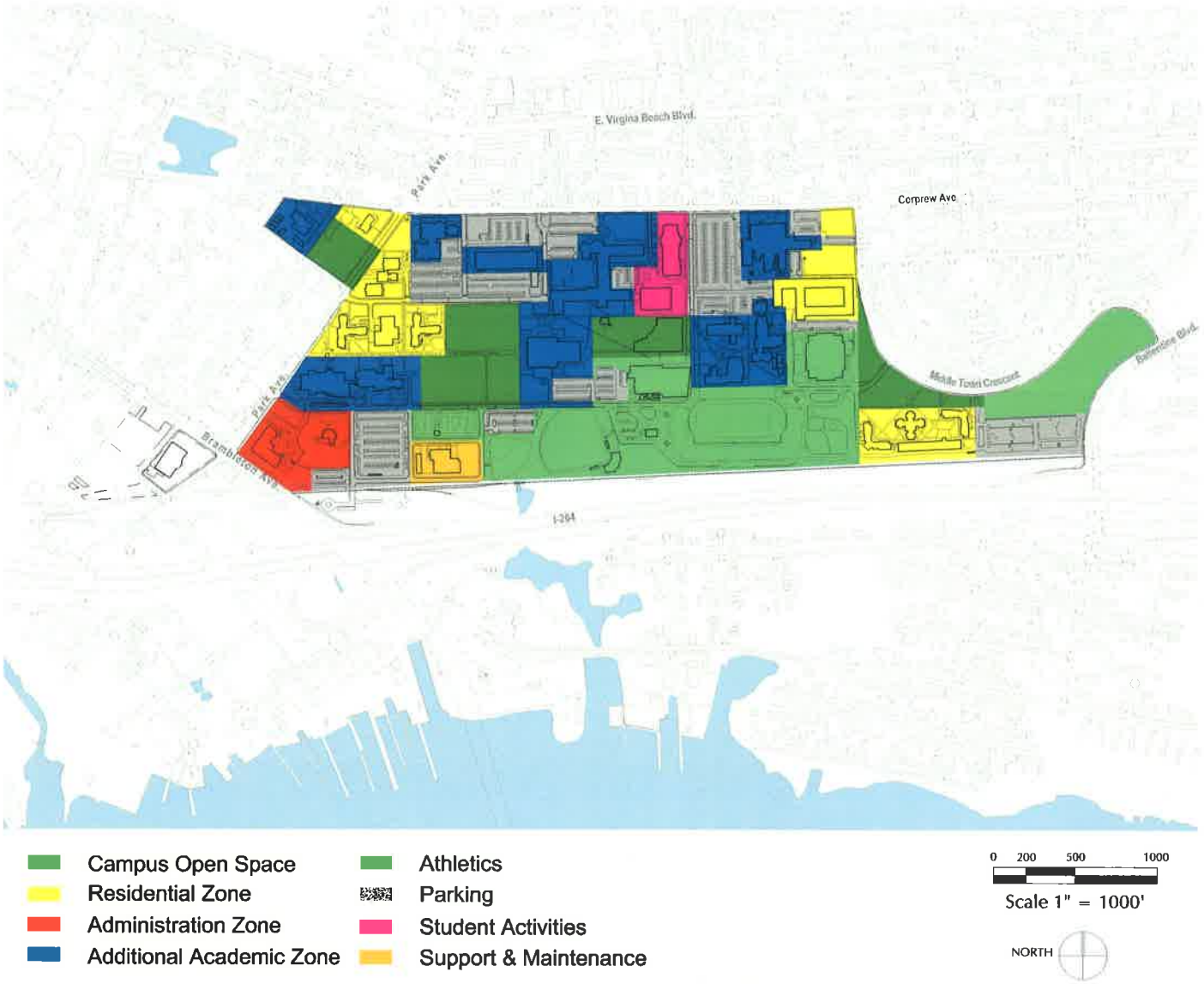
Surrounding Land Use - Existing Conditions

The main Campus is primarily surrounded by residential fabric, with some commercial buildings on Brambleton Avenue and to the north across Virginia Beach Boulevard. There are some industrial facilities south of the Campus along the Elizabeth River waterfront and to the west along the railroad lines. An existing high school is north of the Campus diagonally across Virginia Beach Boulevard. Downtown Norfolk is less than 2 miles due west of the main Campus.



Topography - Existing Conditions

The city of Norfolk and the Norfolk State University Campus are relatively flat. The topography consists of shallow sloped mounds and depressions that cause intermittent pooling of water during and immediately after storms. The majority of the Campus is at or higher than 10 feet above sea level. The highest point on Campus is in the middle of the football stadium at 17.2 feet above sea level and the lowest point, measured at 5.7' above sea level, is in the parking lot between the physical plant building and the administration building on the southern border of the Campus.



Campus Zones - Existing Conditions

The Campus currently has several zones organized throughout the Campus. The Administrative zone is in the extreme southwestern corner of the Campus off of the Brambleton-Park Avenue intersection. The residential areas are divided into an eastern and a western zone. The recent addition of the Spartan Suites adjacent to the former hospital off of the Middle Towne Crescent has created a new third residential zone. Two academic zones are located on the northern-side of the Campus, off of Corprew Avenue and a third zone is located on the western-side of the Campus, between the Administration Zone and the western Housing Zone. The library is centrally located in the Campus and is surrounded by a significant amount of open space.

The Main Athletics Zone is stretched across the southern border of the Campus, while the football practice field is isolated on the opposite side of the eastern residential zone. The Student Services Zone is centrally located between the two academic zones and the former hospital. Finally two community areas are located off of Park Avenue; one near the Administration and Fine Arts areas, the other on the opposite side of Park Avenue next to the Phyllis Wheatley Dormitory.

RISE Campus

The Research and Innovations to Support Empowerment (RISE) Campus™ will be a strategic hub for applied research and the generation of technological innovations that will position Norfolk State University, the City of Norfolk, and the entire Hampton Roads Region to become a key high-technology gateway for the southeastern United States.

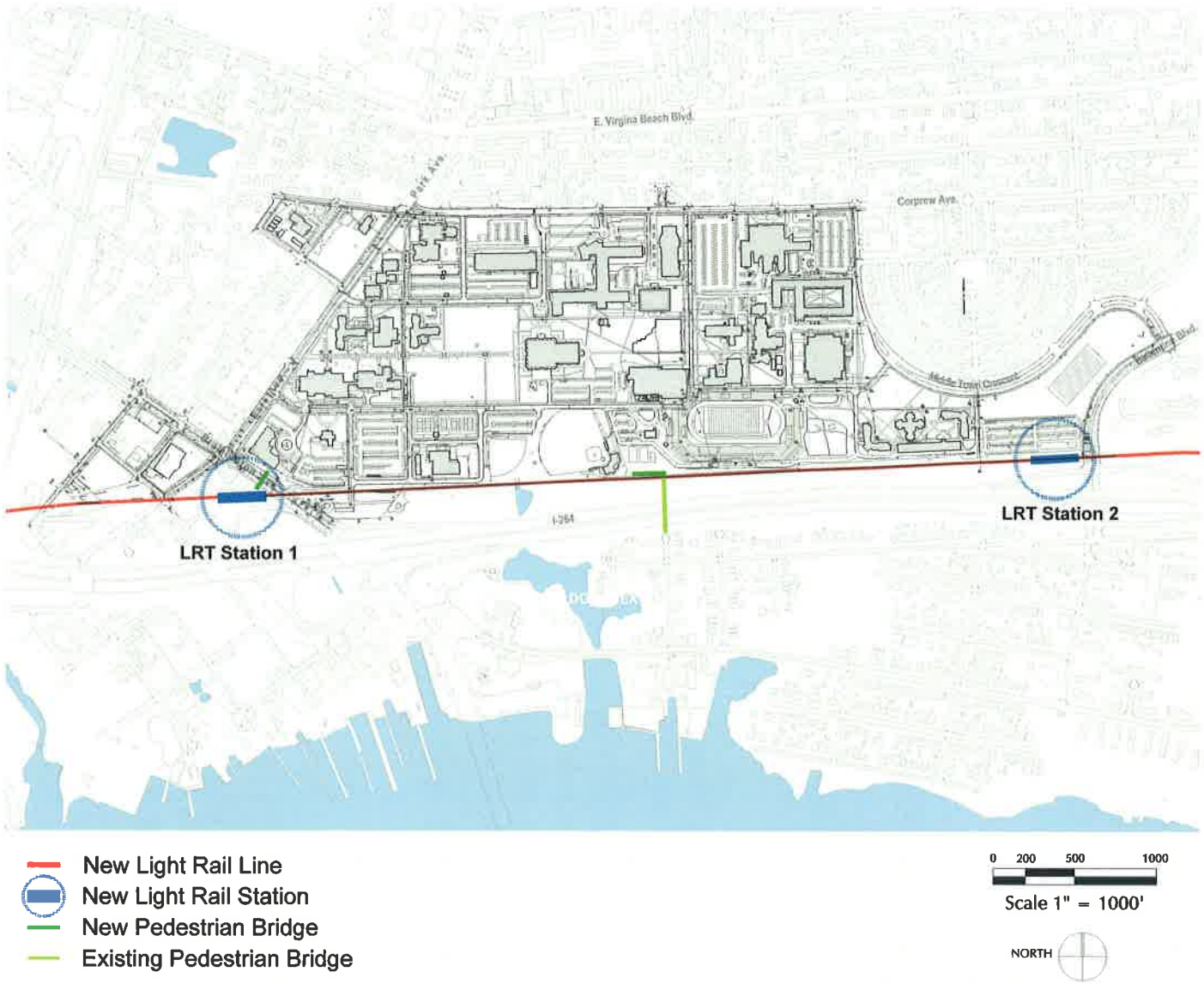
The Campus will be developed in phases, managed by the Enterprise and Empowerment Foundation of Norfolk State University (E^2F). Phase I involved the construction of the Marie V. McDemmond Center for Applied Research and the establishment of the RISE SuperNode℠, a hardened facility provideing ultrahigh bandwidth capacity, redundant paths, and reliable backup power.

The RISE Campus' first research facility, the Marie V. McDemmond Center for Applied Research (shown above) opened in April 2007 and is a state-owned, approximately 128,000 square-feet, six-story structure, and the home to applied research, graduate-level education, and training for the workforce of the future in science and technology.

Phase 2 and beyond will complete the full build-out of this 25 acres applied research and technological innovations park. It will be realized as a result of highly-strategic private/public partnerships.

The Mission of the RISE Campus is:

- Build an applied research environment that stimulates and encourages innovation and technology commercialization
- Increase the number of entrepreneurs undertaking technology ventures
- Develop human capital from under utilized resources and latent potential
- Create digital opportunities
- Provide life long learning opportunities



Proposed Light Rail - Existing Conditions

Hampton Roads Transit has a proposal in place to create a Light Rail Line to connect the Norfolk CBD with Virginia Beach. The proposal includes the creation of two stations that would serve the NSU Campus.

The first station would be located in the south western corner of the Campus at the intersection of Park Avenue and Brambleton Avenue. The second would be located in the southeastern corner of the Campus at Ballentine Boulevard. These two stations would provide coverage for the entire Campus pedestrian system with users having to walk less than 20 minutes to get to any point on Campus from either Light Rail station. This potential benefit should be actively pursued by the University as it would lesson the University's current automobile dependence. The light rail also promotes an active pedestrian friendly environment by creating the opportunity for students, faculty and staff to move on foot from the Campus core and explore the region at large in a seamless, automobile-free experience.

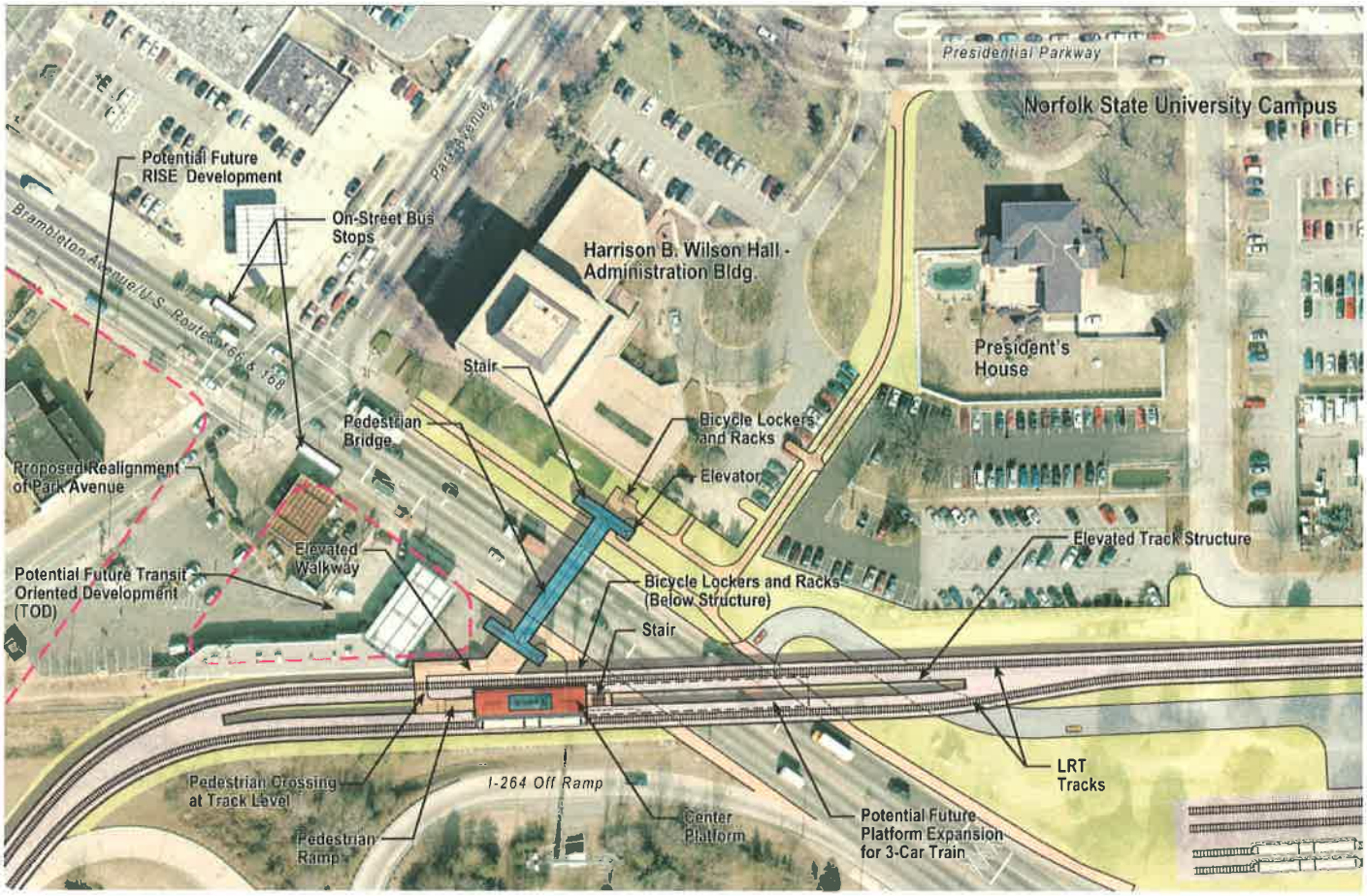


Fig. Proposed Light Rail Station at Park Avenue conceptual plan by HRT

Fig. Proposed Light Rail connects Norfolk CBD to Virginia Beach

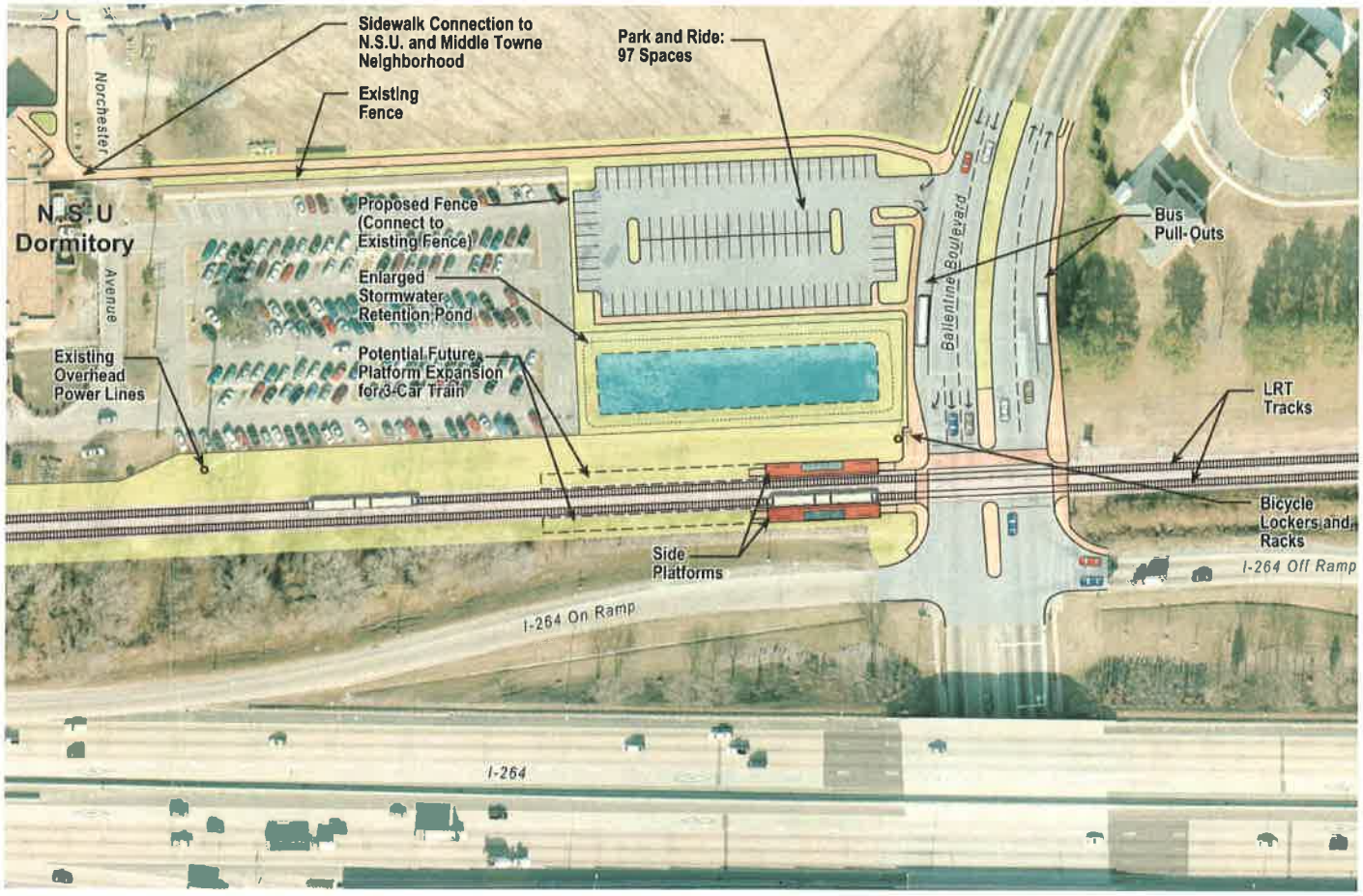
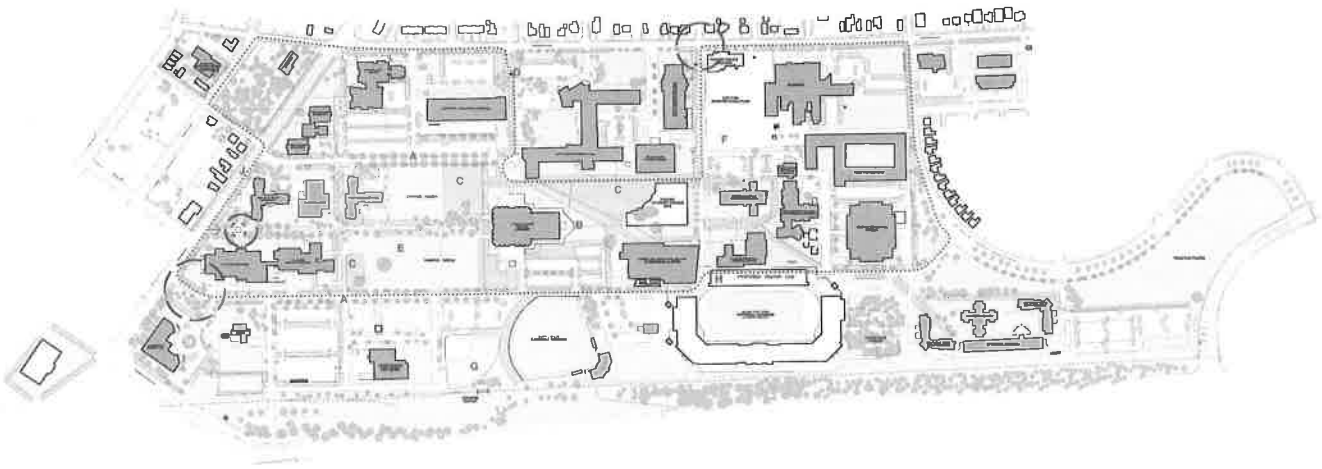


Fig. Proposed Light Rail Station at Ballentine Boulevard conceptual plan by HRT



2.3 Campus Landscape - Existing Conditions

General

Our initial impressions on visiting the Campus relate to size and scale. The distances between buildings and the long views reveal a sprawling Campus extending nearly a mile along the east / west axis. At the west end, identified as a Campus entrance by the presence of the Administration Building, there are groups of various size trees. These introduce what promises to be a green shady Campus.

The size of the Campus is emphasized by the long axis, and the reliance on internal roads and cars for movement between different parts of the University. In the warm weather the absence of shaded pedestrian routes can be a daunting experience for students on foot. One attractive feature of the NSU Campus is the strong aisle of Willow Oak trees running from Park Avenue to the Campus main library. The eastern end of the Campus has a less appealing landscape with little continuity from one area to the other.

At the Master Planning scale, we are concerned most with the open space system and how it affects the experience of moving through and enjoying the Campus. The critical elements of importance in developing and linking the open spaces are trees, intermediate level plantings, pedestrian circulation (ground surface treatments), and grading & drainage. These are important at this planning stage because they need to be closely related to the location and placement of buildings.

Employing large, high-branched deciduous trees to create a shaded walk system linking buildings and open spaces is a high priority for dramatically improving the Campus both visually and for user comfort. Such tree shading would allow people to walk from one end of the Campus to the other, protected from heat and glare.

Secondary to establishing new links with shade trees, is the need to repair or improve the existing tree stand to make it more effective. Two examples are the gaps in the east west Oak Tree line and weak plantings along both sides of Park Avenue. For the most part this would require some infill tree planting.

A

B

C

D

E

F

G

Another important use of shade trees is in reinforcing the overall spatial system of the Campus, creating more intimate courtyards with tree groves and defining larger open spaces with lines of trees.

It is not always clear to the visitor of this Campus where the main entrance to a building is located. Well-conceived plantings can be used to clearly demark the principle entrance. A particularly relevant example is the main entrance to the Campus library. The east-end of the building is easily mistaken for the main entrance portal. Properly scaled plantings of large trees could clarify this architectural weakness giving the visitor a better sense of orientation.

A more significant orientation need is the location of the main ceremonial entrance to the Campus along Park Avenue just north of the Administration Building. This problem is worthy of a larger study that might include additional property to the west. Here again, trees could play a significant role in the design.

The location of the new Student Center along one of the main north / south roads through the Campus suggests the need to visually address a secondary entry off Corprew Avenue. This entry would also be adjacent to the proposed location for a parking structure and near the proposed transit line, identifying it as an important functional entry.

Circulation and Parking

If we accept ten minutes as a reasonable maximum walking time, then trips from or to the library within the Campus are accessible on foot. For persons traveling the full length of the Campus, some form of transportation is desirable. The bicycle could fulfill this need if appropriate facilities were established to make cycling easy. A high-speed bicycle lane and bicycle racks might be part of such accommodations. This could fit in with removing parking along the east / west roads to create separate bike lanes.

H

I

J

K

L

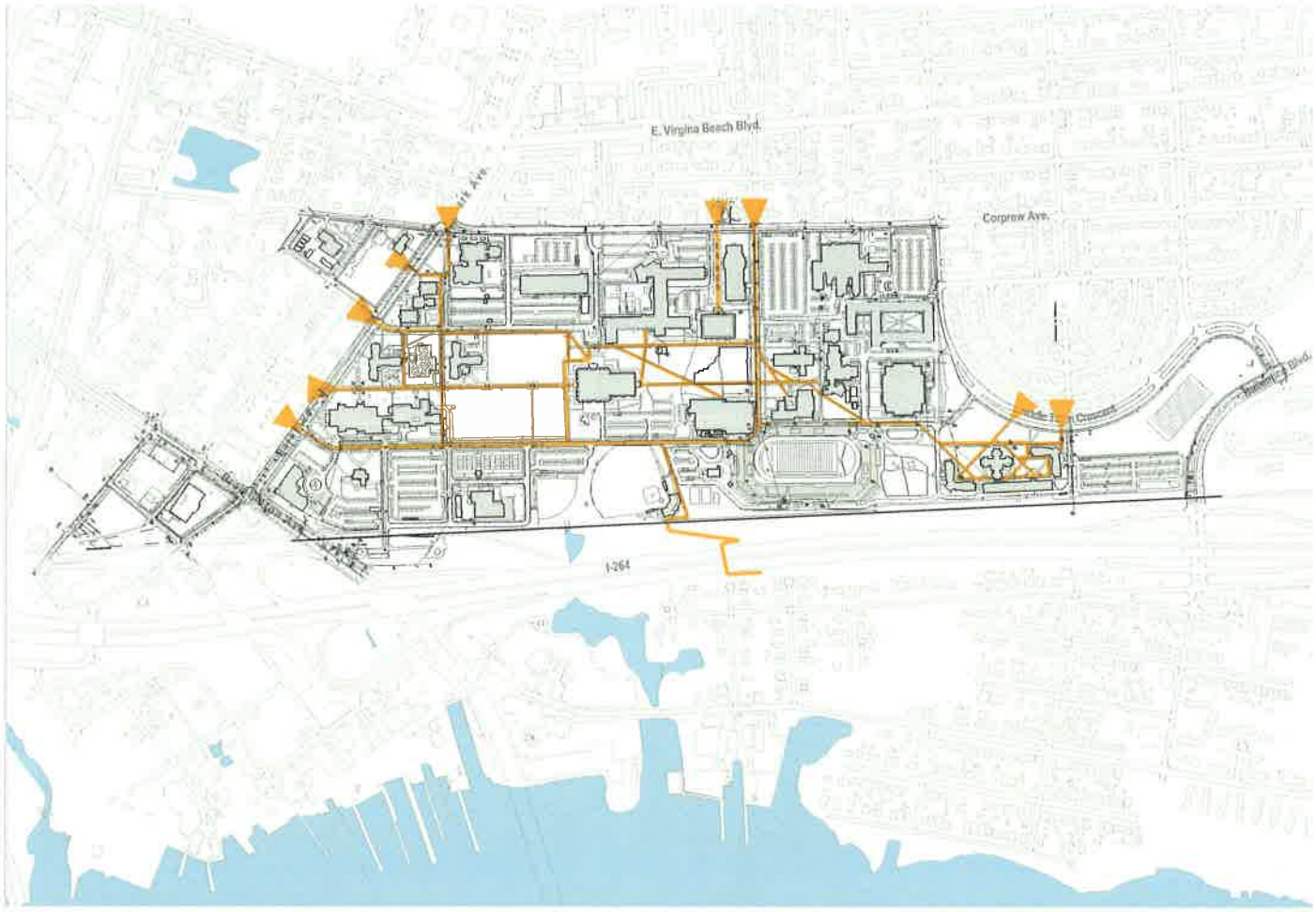
The existing shuttle bus program might be improved by a system that provided smaller scale high capacity vehicles operating on a more frequent basis. Such a system would be adapted to internal roads in a way that is completely compatible with, and indeed complementary to the pedestrian. Students could hop on or off the vehicle at frequent locations with short waiting times. The trailer buses used at the Norfolk Botanical Garden are an example of the prototype that might be adapted to such a Campus use.

Handling of automobile parking can be thought of not only in terms of convenience to drivers, but also as a way of making the spaces more attractive and convenient to all the inhabitants of the Campus. A desirable approach would be to house most of the parked cars in strategically located structures and limit at-grade parking to small lots that are completely shaded and appropriately screened with plantings. These lots would serve special purposes such as handicapped access and use by staff requiring greater mobility.

Grading and Ground Surfaces

The consideration of storm water on the master plan level must address current flooding in parts of the Campus as well as assess the potential increase in runoff associated with the master plan full build out. The high water table (normally 3-4' below grade, and sometimes as shallow as12 inches below grade during late winter and early spring) limits the use of subsurface infiltration systems. However, creative solutions can be developed to slow and temporarily contain rainwater that employ both limited subsurface detention and surface treatment while considering the visual consequences of these features.

While grass is the appropriate pervious material for most of the larger open spaces of the Campus, pervious pavement is a class of material that would be usefully employed in some shaded areas, especially those intended for gathering. The general types of surface materials deserve some consideration in the overall Campus planning.



Pedestrian Circulation - Existing Conditions

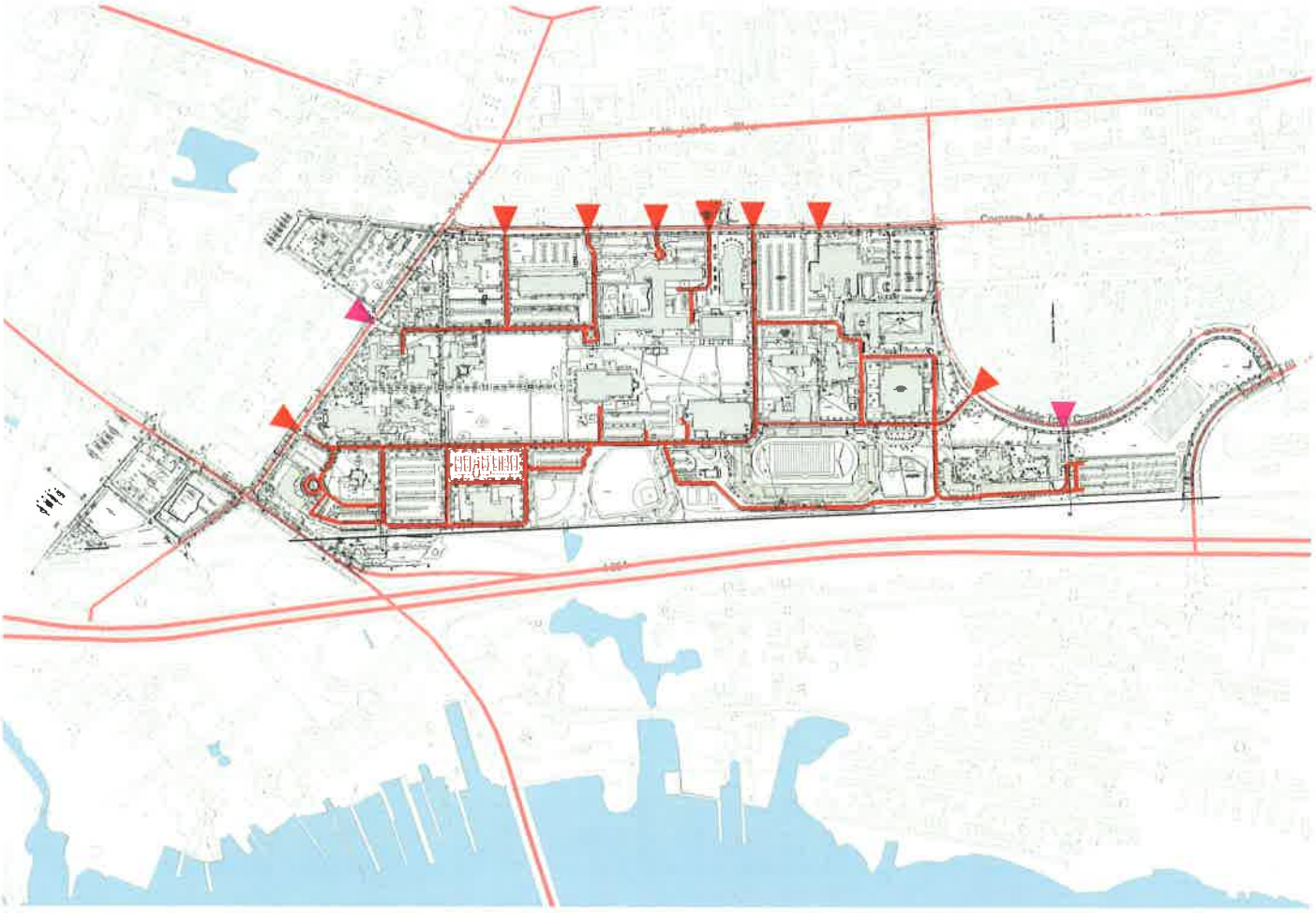
The existing pedestrian circulation system on the Campus is defined by a network of informal paths that converge at the library.

The dominant circulation spine is an east west axis on the western side of the library. This axis links the library with the student residential housing along Park Avenue. The path is one of the symbolic centers of the University and is decorated zone by zone by fraternities and sororoties on Campus.

The sidewalks and paths on Campus are pragmatic in terms of their design and materiality. They are either constructed of concrete or asphalt and are modest in terms of dimension, the typical cross sectional dimension being six feet.

The pedestrian network is for the most part continuous, providing ease of access among all Campus buildings: residential, academic, athletic, administration and support.

The predominant issue with the pedestrian circulation network is the expansive and undifferentiated character of its linkages. There is an oportunity to provide shade trees, and informal gathering spaces by reinforcing the existing pedestrian system with new plantings and outdoor furniture and lighting.



Vehicular Circulation - Existing Conditions

The Campus is well situated within the municipal road network. NSU has locational advantage due to its proximity to I-264 which runs along the southern border of the property.

An I-264 off ramp is located 500 feet from the intersection of Park Avenue and Brambleton Avenue, which is just 375 feet to the south of the Campus main entrance.

Eight active vehicle access points occur along the Campus perimeter providing student, visitor, faculty, staff and service vehicles with ease of entry to the Campus. Two inactive entrances exist and can be reutilized.

The existing vehicular circulation system is characterized by a series of interior Campus roads that service particular building zones. These roads are not connected and therefore vehicles must exit the Campus, utilize the public road system and re-enter the Campus in order to get from the northwest corner of Campus to other locations.

Surface Parking

* *Numbers indicate number of parking spaces.*

0 200 500 1000

Scale 1" = 1000'

NORTH

PARKING

The University currently reports 2,560 parking spaces on Campus. For the Campuses existing population that represents 1 parking space for approximately 35% of the population at one time or a parking factor of .35. The University does not have recent parking data to analyze usage, but a periodic visual observation of parking by the University has shown that parking in peripheral areas tends to available.

The University provides parking spaces at almost every building. This strategy is not conducive to a pedestrian -friendly Campus, because bringing vehicles to the core portions of the Campus involves creating conflicts between vehicles and pedestrians. In addition, placing parking in core areas of the Campus causes higher demand on certain spaces while others go unused. The proposed strategy for this master plan would be to distribute the parking on the periphery of the Campus and remove most of the parking from the Campus core.

The existing parking allocation is as follows:

Currently, the University has a large amount of undesignated parking, partially due to the recent

	# of spaces	Percent of Total	Parking Factor
Total Existing Faculty/Staff Parking	608	23.8%	0.54
Total Existing Student Parking	651	25.4%	0.11
Existing Undesignated/Visitors/HC Parking	1,301	50.8%	
	2,560		0.35

acquisition of the former community hospital in the Northeastern corner of the Campus.

The following chart shows the proposed parking factors and projected number of spaces for each of the major parking designation types:

Parking	6,000 HC	8,000 HC
Total Faculty/Staff Head Count*	1,117	1,093
Head Count / Car Ratio	0.80	0.80
Faculty Subtotal	**894**	**874**
Student Head Count	6,096	8,091
Head Count / Car Ratio	0.50	0.50
Student Subtotal	**3,048**	**4,046**
Visitors/Undesignated Percentage of Total	5.0%	5.0%
Student Subtotal	**207**	**259**
Total Projected HC / Car Ratio	**0.58**	**0.56**
Total Projected Need	**4,149**	**5,179**
% Growth		24.8%
Existing Parking Ratio	0.35	
Existing Parking Spaces	2,560	2,560
Surplus / Deficit (-)	**-1,589**	**-2,619**

* Not Including Student Staff

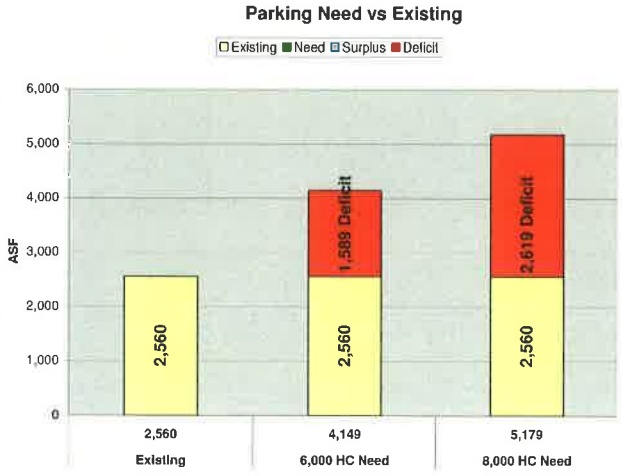


Fig. Table of current parking supply and demand

This master plan proposes providing a parking space for 80% of faculty and staff at one time, based on the parking plans of other universities similar in size.

The plan also proposes providing parking for 50% of the projected 8,000 student population in order to accommodate the 35% of students housed at the Campus and the remaining commuter students.

These numbers combined with an additional 5% of the total spaces for Visitors and Accessible parking projects a current need for 1,589 additional parking spaces.

In addition, the master plan projects a total need of 5,179 spaces when the University enrollment reaches 8,000 students HC. This represents a total deficit of 2,619 spaces for the 8,000 student HC goal.

Fig. Existing surface parking lot at former hospital site

2.4 Buildings

This section includes how buildings are currently used, the overall quality of the buildings, how much space is available versus how much space is currently being used, as well as new buildings that are already in the planning process.

Existing Buildings

Norfolk State University currently has 33 buildings on the main Campus and leases or owns portions of 3 buildings at separate satellite locations.

All together the buildings comprise 1.25 Million Assignable Square Feet (ASF) and over 2 million Gross Square Feet (GSF).

2.5 Building Use

For the purposes of this master plan the building use has been divided into four Major Categories, with some categories further divided into sub-categories as listed below *(*For enlarged view of existing buildings survey form see appendix)*:

1. Academic

General Academic: Buildings in which the primary function is instructional or instructional administration.

Library: Buildings in which the primary function involves the storage of or access to media for research and/or entertainment purposes

2. General Administration

Buildings in which the primary function is to support the administration of the University as a whole.

3. Student Housing

Buildings in which the primary function is to provide living quarters for students.

4. General Use

Student Services: Buildings in which the primary function is the support of the student living or academic environment that is not covered under the Academic categories.

Athletics: Buildings in which the primary function is for athletic related activities

Community: Buildings in which the primary function is to promote community use or relationships.

Maintenance: Buildings in which the primary function is to maintain the facilities of the University.

1. Academic

The General Academic Buildings are located primarily on the North and Northeast side of the Campus. The buildings are separated into four areas. The Northern buildings consist of Brown Memorial, Bowser Hall, and Robinson Technology Center. The Northeastern group is organized in a cluster and consists of Woods Science Building, Madison Hall and Bozeman. The former Community Hospital is in the extreme Northeastern corner of the Campus. Only recently acquired, the building is only 32% occupied and is currently being used to support teacher education. Lastly, the E.L. Hamm Fine Arts Building is located on the west-side of the Campus near the Administration Buildings and the L. Douglas Wider Center. The library is centrally located within the Campus.

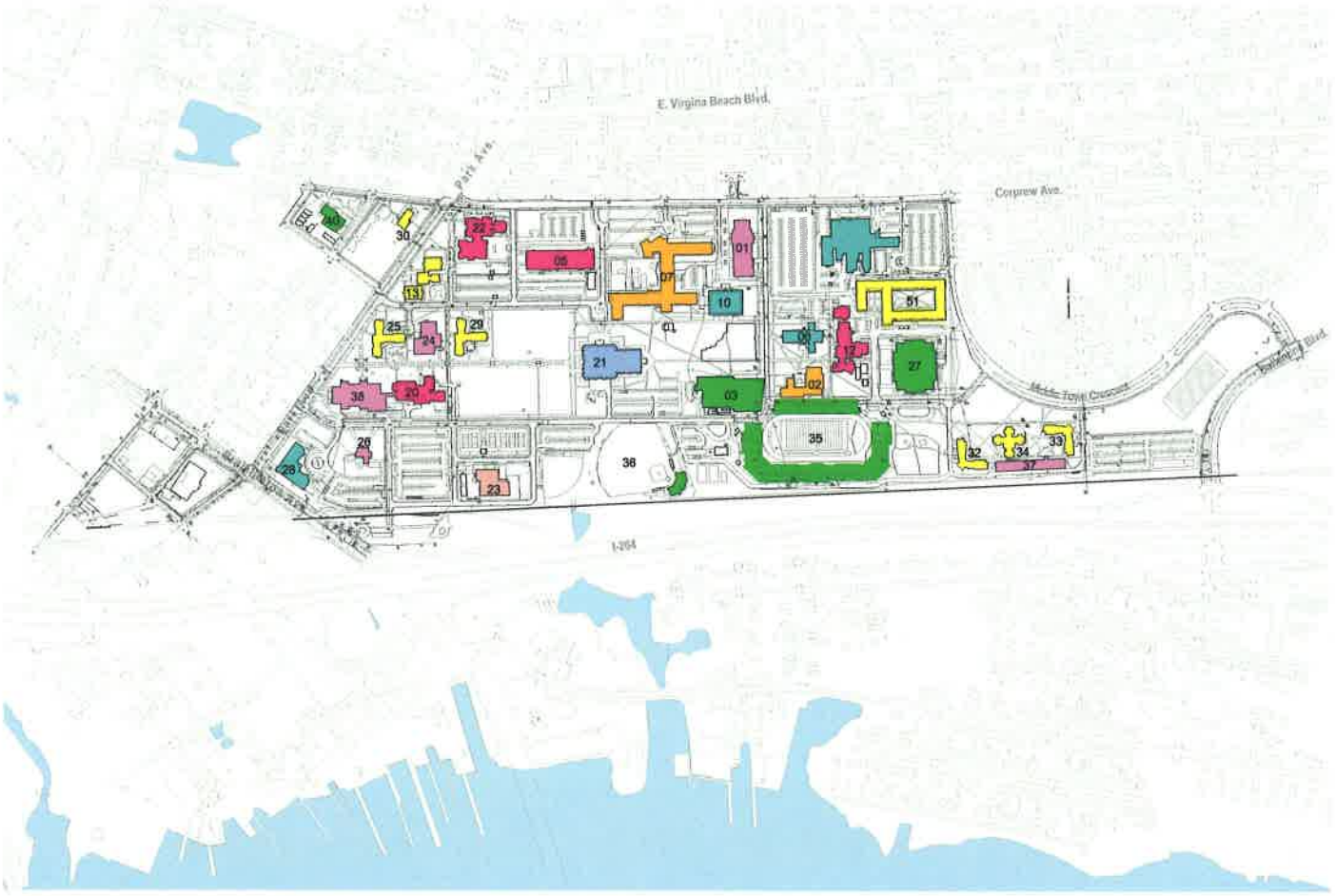
2. General Administration

The General Administration buildings are located in the extreme Southwestern corner of the Campus. The administration buildings consist of Wilson Hall and the President's house.

3. Student Housing

The Student Housing is currently organized into two clusters plus two individual buildings all located on the far ends of the Campus. The eastern cluster is comprised of the Twin Towers, Rosa Alexander Hall, and the Samuel F. Scott Residence Hall. The far western cluster consists of the Mid-Rise Dorm, Lee Wesley Smith and Charles H. Smith residences.

The largest and newest dormitory is the Spartan Suites building which houses 600 beds in various apartment configurations with meeting rooms, recreation rooms, lounges and administrative offices. The oldest and smallest dormitory is the Phyllis Wheatley Dormitory, located on the western side of the Campus across Park Avenue from the main portion of the Campus. Phyllis Wheatley Residence Hall is presently used to house some of the University's honor students.



- Classroom Facilities
- Laboratory Facilities
- Library Facilities
- Special Use Facilities
- General Use Facilities
- Support Facilities
- Residential Facilities
- Parking Structure
- New Building
- Future Building Site

0 200 500 1000

Scale 1" = 1000'

NORTH

Existing Building Use Plan

This plan indicates building uses by room use code as classified in the CEFPI system. Further analysis of area and date of last renovation are included in the table on the following page. The table corresponds to the above plan.

Norfolk State University Master Plan

Building Inventory

Bldg No.	Building Name	Building Use	Date of Const.	Square Footage		Last Renovated (Date)	Nature of Renovation
				Gross (GSF)	Assignable (ASF)		
0001	Scott Dosier Dining Hall (East Campus Cafeteria)	Food Service	1954	44,404	27,265	Late 1980's	
0002	Hugo Madison Hall (Communications)	Classroom	1966	43,126	21,775	2001/2002	
0003	James D. Gill Health & PE Building (Gymnasium and ROTC)	Gymnasium	1961	77,247	47,143		
0005	James A. Bowser (Industrial/Vocational/Technical)	Classroom/Lab	1959	49,485	32,772	1960	Added small attached building w/ 2nd floor
0006	Bozeman Nursing Education Building	Office	1963	31,492	15,107	2004/2005	
0007	G.W.C Brown Memorial Hall	Classroom/Office	1956	135,522	74,687		
0010	Mills Godwin Student Center	Office/Merchandising	1968	59,480	39,855		
0011	G.W.C Brown Hall Annex	Office	1968	1511			
0012	Woods Science Building (Life Science And Chemistry)	Classroom/Lab	1969	71,526	46,094		
0013	Twin Towers Dormitory	Dorm	1970	151,636	46,229	2000	Replaced HVAC piping throughout
0014	Twin Towers Dormitory	Dorm	1970		46,105		
0020	E. L. Hamm Fine Arts Building	Classroom	1971	63,433	34,083		
0021	Lyman B Brooks Memorial Library	Library	1972	145,550	123,027	1993	Phase II Added (52,500 SF)
0022	William P. Robinson, SR Technology Center	Under Renovation	1975	78,271	43,452	2004	South 1-story wing renovated
0023	Central Storage and Maintenance and Addition	Central Storage	1974	34,298	18,979	2004	Addition (2,979)
0024	Cafeteria West (West Campus Cafeteria)	Food Service	1974	18,915	13,047		
0025	Samuel F. Scott Men's Residence Hall	Dorm	1977	40,582	27,593		
0026	President's House	President's Residence	1979	8,500	5,100		
0027	Joseph G. Echols Hall	Gymnasium	1982	91,701	45,037		
0028	Harrison B. Wilson Hall	Office	1983	55,701	31,556		
0029	Rosa Alexander Hall	Dorm	1982	40,010	28,080		
0030	Phyllis Wheatley Dormitory	Dorm	1903	18,603	9,082		
0031	Police Station	Police Station		2,127	2,087		
0032	Charles H. Smith Men's Residence	Dorm	1990	36,388	22,539		
0033	Lee Wesley Smith Men's Residence	Dorm	1992	36,388	22,437		
0034	Mid-rise Dorm	Dorm	1992	84,703	50,965		
0035	William "Dick" Price Football Stadium (Athletic Facility)	Office/Recreation	1992	42,616	9,146	1997	Expanded
0036	Marty L. Miller Baseball Stadium	Recreation		1,905	1,337		
0037	Spartan Station	Office/Merchandising	Approx. 1930	35,784	10,890	1993	
0038	L. D. Wilder Building	Assembly	1996	56,247	23,130		
0039	Center For Materials Research	Research Labs	1996	10,575	5,967		
0040	Brambleton Recreation Center	Recreation	1973	10,348	7,434		
0041	Ticket Office	Ticket Sales	1989	720	435		
0042	Virginia Beach Graduate Center	Classroom	1999	24,000	19,814		
0043	NSU/ODU Tri Cities Center	Classroom/Office		15,000	12,028		
0044	Norfolk Naval Base Center - leased	Office		500	413		
0045	Former Norfolk Community Hospital Building	Office/Labs	1937	135,000	105,000		
0051	Spartan Suites		2005	261,493	183,045		
Total				**2,013,276**	**1,252,735**		

Existing Building Use Table

4. General Use

The Student Services buildings are separated into three areas. Two buildings, the Western Cafeteria and Spartan Station, are centrally located in the western and eastern residential clusters respectively. The other two buildings, Eastern Cafeteria and the Mills Godwin Student Center are located in the North central area of the Campus serving as a boundary between the Northern and Northeastern academic groups.

The majority of the athletics buildings and fields are stretched along the southern border of the Campus. The two community buildings, the L. Douglas Wilder Center and the Brambleton Community Outreach Center are both on the West side of the Campus. The Wilder Center serves as a large performance theatre primarily for community related events. Finally, the Central Storage and Maintenance Building is located on the Southwestern portion of the Campus near the tennis courts and softball field.

Building Space Allocation by Room Use

The following charts show:

The total 2005 room inventory percentages by room use codes.

The 2005 room use inventory by building and then by room use code.

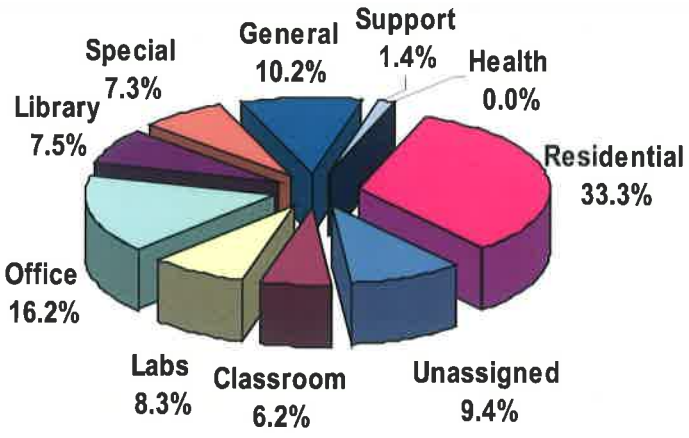


Fig. Inventory by use

Building Space Allocation by Function Code

The chart below shows the total 2005 room inventory percentages by function codes.

The following table summarizes the 2005 room use inventory by building and then by function code:

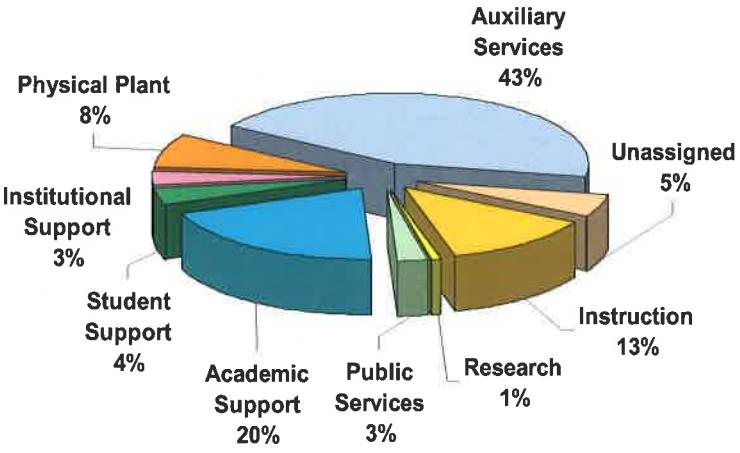


Fig. Inventory by function

Existing Room Use Inventory

Owned Buildings BLDG #	BLDG NAME	TOTAL ASF	Unassigned 000		Classroom 100		Labs 200		Office 300		Library 400		Special 500		General 600		Support 700		Health 800		Residential 900		Total ASF		Unassigned ASF			Net SF	Gross SF	
		Assigned SQ FT	Total		Total		Total		Total		Total		Total		Total		Total		Total		Total		Total Academic	Total Assigned	Unassignable 010 - 040	Vacant 050	Renovation 060	Total ASF Available	Total GSF	Net/Gross Ratio
0001	Scott Dosier Dining Hall (East Campus Cafeteria)	27,265	0		0		0		1,089		0		0		26,176		0		0		0		27,265	27,265	7,470	0	0	27,265	44,496	61.4%
0002	Hugo Madison Hall (Communications)	21,775	0		9,831		3,545		8,399		0		0		0		0		0		0		21,775	21,775	1,438	0	0	21,775	43,126	50.5%
0003	James D. Gill Health & PE Building (Gymnasium and ROTC)	47,143	0		2,882		160		6,206		570		37,325		0		0		0		0		47,143	47,143	5,896	0	0	47,143	77,247	61.0%
0005	James A. Bowser (Industrial/Vocational/Technical)	32,772	10		1,256		11,041		12,950		0		5,398		932		1,481		0		0		32,762	32,762	1,551	10	0	32,772	49,465	66.2%
0006	Bozeman Nursing Education Building	15,107	0		803		657		11,138		1,747		206		281		125		0		0		15,107	15,107	0	0	0	15,107	31,492	48.0%
0007	G.W.C Brown Memorial Hall	74,687	102		28,046		10,761		27,782		265		0		7,729		0		0		0		74,585	74,585	3,993	102	0	74,687	135,522	55.1%
0010	Mills Godwin Student Center	39,855	0		0		0		19,531		0		0		18,953		1,371		0		0		39,855	39,855	5,430	0	0	39,855	59,490	67.0%
0011	G.W.C Brown Hall Annex	8	0		0		0		8		0		0		0		0		0		0		8	8	0	0	0	8	1511	0.0%
0012	Woods Science Building (Life Science And Chemistry)	46,094	0		8,543		29,493		9,881		44		233		0		0		0		0		46,094	46,094	3,169	0	0	46,094	71,526	64.4%
0013	Twin Towers Dormitory	46,229	0		0		255		697		0		0		0		0		0		45,277		952	46,229	8,117	0	0	46,229	151,836	30.5%
0014	Twin Towers Dormitory	46,105	0		0		0		852		0		0		0		0		0		45,253		852	46,105	8,335	0	0	46,105	0	0.0%
0020	E. L. Hamm Fine Arts Building	34,983	0		3,455		21,076		8,803		0		1,549		0		0		0		0		34,983	34,983	1,879	0	0	34,983	63,433	55.1%
0021	Lyman B Brooks Memorial Library	123,027	0		0		4,696		21,679		65,204		0		11,376		69		0		0		123,027	123,027	8,118	0	0	123,027	145,556	84.5%
0022	William P. Robinson, SR Technology Center	43,452	43,452		0		0		0		0		0		0		0		0		0		0	0	0	0	43,452	43,452	78,271	55.5%
0023	Central Storage and Maintenance and Addition	18,979	3,412		0		0		2,885		0		0		0		12,682		0		0		15,567	15,567	527	0	3,412	18,979	34,289	55.3%
0024	Cafeteria West (West Campus Cafeteria)	13,047	0		0		0		213		0		0		12,834		0		0		0		13,047	13,047	506	0	0	13,047	19,915	65.5%
0025	Samuel F. Scott Men's Residence Hall	27,593	0		0		176		514		0		0		89		0		0		26,814		779	27,593	40	0	0	27,593	40,582	68.0%
0026	President's House	5,100	0		0		0		0		0		0		5,100		0		0		0		5,100	5,100	0	0	0	5,100	8,500	60.0%
0027	Joseph G. Echols Hall	45,037	0		1,548		0		5,479		0		37,535		474		0		0		0		45,037	45,037	5,311	0	0	45,037	91,701	49.1%
0028	Harrison B. Wilson Hall	31,556	0		0		0		30,309		0		0		451		796		0		0		31,556	31,556	1,759	0	0	31,556	55,701	56.7%
0029	Rose Alexander Hall	28,080	0		0		172		928		0		0		51		0		0		26,919		1,161	28,080	2,836	0	0	28,080	40,016	70.2%
0030	Phyllis Wheatley Dormitory	9,082	0		0		0		467		0		0		0		0		0		8,615		467	9,082	1,209	0	0	9,082	18,603	48.8%
0031	Police Station	2,067	0		0		0		2,067		0		0		0		0		0		0		2,067	2,067	40	0	0	2,067	2,127	98.1%
0032	Charles H. Smith Men's Residence	22,539	0		0		211		34		0		0		0		0		0		22,294		245	22,539	1,713	0	0	22,539	36,388	61.9%
0033	Lee Wesley Smith Men's Residence	22,437	0		0		280		660		556		0		0		0		0		20,942		1,495	22,437	1,557	0	0	22,437	36,398	61.7%
0034	Mid-rise Dorm	50,965	0		0		122		206		529		0		2,160		0		0		47,955		3,010	50,965	906	0	0	50,965	84,703	60.2%
0035	William "Dick" Price Football Stadium (Athletic Facility)	8,146	0		0		0		747		0		4,836		3,589		254		0		0		8,146	8,146	7,317	0	0	8,146	42,816	21.5%
0036	Marty L. Miller Baseball Stadium	1,337	0		0		0		0		0		1,337		0		0		0		0		1,337	1,337	368	0	0	1,337	1,905	70.2%
0037	Spartan Station	10,890	0		0		386		2,578		0		0		7,525		0		327		0		10,890	10,890	1,264	0	0	10,890	35,764	30.4%
0038	L. D. Wilder Building	23,138	0		0		0		1,832		0		0		21,306		0		0		0		23,138	23,138	7,599	0	0	23,138	56,247	41.1%
0039	Center For Materials Research	5,967	0		0		3,889		1,494		584		0		0		0		0		0		5,967	5,967	756	0	0	5,967	10,575	56.4%
0040	Brambleton Recreation Center	7,434	0		0		372		548		0		5,042		1,472		0		0		0		7,434	7,434	338	0	0	7,434	10,348	71.8%
0041	Ticket Office	435	0		0		0		229		0		0		207		0		0		0		435	435	33	0	0	435	720	60.4%
0045	Former Norfolk Community Hospital Building	105,000	71,001		4,493		14,021		15,219		0		0		0		286		0		0		33,999	33,999	0	71,001	0	105,000	135,000	77.8%
0051	Spartan Suites	183,045	0		0		0		3,500		0		0		5,700		0		0		173,845		9,200	183,045	0	0	0	183,045	261,493	70.0%
		0	0		0		0		0		0		0		0		0		0		0		0	0	0	0	0	0		0.0%
Existing Owned Buildings		1,220,490	117,977		96,961		101,276		190,088		69,009		91,713		127,676		17,044		327		407,614		684,990	1,102,503	91,973	71,113	46,864	1,220,490	1,972,776	61.9%

Off-Campus Buildings BLDG #	BLDG NAME	Assigned SQ FT	Unassigned 000		Classroom 100		Labs 200		Office 300		Library 400		Special 500		General 600		Support 700		Health 800		Residential 900		Total ASF		Unassigned ASF			Net SF	Gross SF	
			Total		Total		Total		Total		Total		Total		Total		Total		Total		Total		Total Academic	Total Assigned	Unassignable 010 - 040	Vacant 050	Renovation 060	Total ASF Available	Total GSF	Net/Gross Ratio
0042	Virginia Beach Graduate Center	19,814	0		11,158		2,587		1,594		4,474		0		0		0		0		0		19,814	19,814	0	0	0	19,814	24,800	82.6%
0043	NSU/ODU Tri Cities Center	12,028	0		7,760		554		2,886		184		0		650		0		0		0		12,028	12,028	111	0	0	12,028	15,000	80.2%
0044	Norfolk Naval Base Center - leased	413	0		0		0		413		0		0		0		0		0		0		413	413	0	0	0	413	500	82.6%
Existing Leased Buildings		32,255	0		18,918		3,141		4,887		4,658		0		634		0		0		0		32,255	32,255	111	0	0	32,255	39,500	81.7%
Existing 2005		1,252,735	117,977		77,881		104,411		202,975		94,467		91,713		128,326		17,044		327		417,614		717,144	1,134,758 #	92,084	71,113	46,864 #	1,252,735	2,013,276	62.2%

** For enlarged view, see appendix.*

Existing Functional Use Inventory

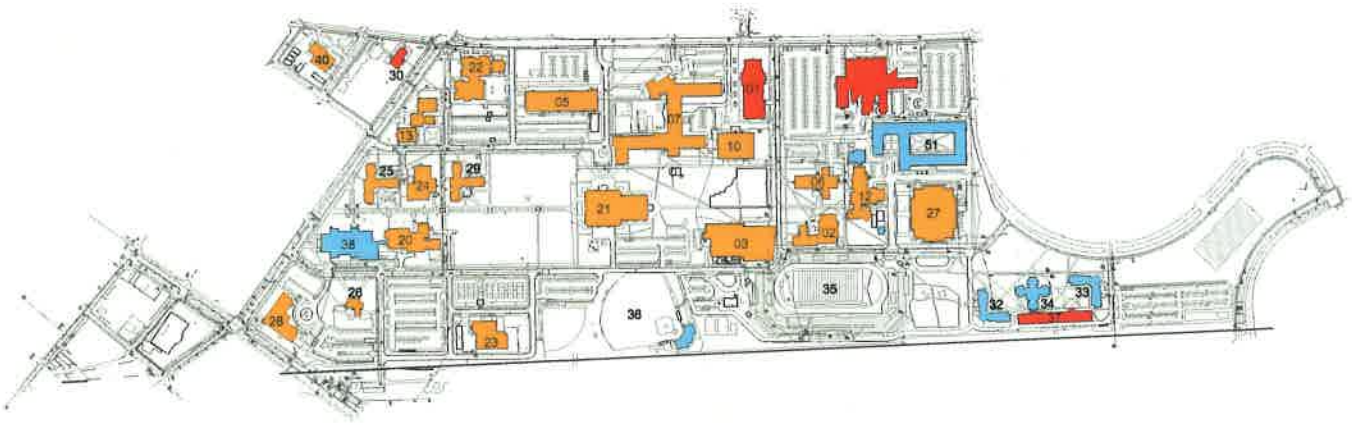
BLDG #	BLDG NAME	Unassigned Total	1.0 Instruction Total	2.0 Research Total	3.0 Public Services Total	4.0 Academic Support Total	5.0 Student Support Total	6.0 Institutional Support Total	7.0 Physical Plant Total	9.0 Auxiliary Services Total
Owned Buildings		Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal
0001	Scott Dosier Dining Hall (East Campus Cafeteria)	0	0	0	0	0	0	0	7,473	27,265
0002	Hugo Madison Hall (Communications)	0	12,192	0	0	9,583	0	0	1,438	0
0003	James D. Gill Health & PE Building (Gymnasium and ROTC)	119	5,632	0	0	4,542	570	0	3,552	36,280
0005	James A. Bowser (Industrial/Vocational/Technical)	10	12,160	140	4,001	9,490	1,183	3,509	1,551	2,279
0006	Bozeman Nursing Education Building	530	4,278	0	0	7,809	450	0	2,040	0
0007	G.W.C Brown Memorial Hall	102	36,201	446	0	29,374	7,894	0	3,993	670
0010	Mills Godwin Student Center	0	0	0	0	0	25,675	1,343	5,458	12,809
0011	G.W.C Brown Hall Annex	0	0	0	0	0	0	0	0	0
0012	Woods Science Building (Life Science And Chemistry)	0	31,144	4,335	0	10,571	44	0	3,189	0
0013	Twin Towers Dormitory	0	0	0	0	255	0	0	8,117	45,974
0014	Twin Towers Dormitory	0	0	0	0	0	0	0	3,338	46,105
0020	E. L. Hamm Fine Arts Building	0	24,446	85	0	9,530	0	0	1,898	0
0021	Lyman B Brooks Memorial Library	0	0	0	0	119,808	0	3,227	8,118	0
0022	William P. Robinson, SR Technology Center	0	24,033	0	0	16,282	707	0	2,430	0
0023	Central Storage and Maintenance and Addition	0	0	0	0	0	0	0	19,706	0
0024	Cafeteria West (West Campus Cafeteria)	0	0	0	0	0	0	0	506	13,047
0025	Samuel F. Scott Men's Residence Hall	0	0	0	0	176	0	0	40	27,417
0026	President's House	0	0	0	0	0	0	5,100	0	0
0027	Joseph G. Echols Hall	0	1,548	0	0	3,220	0	0	4,929	40,651
0028	Harrison B. Wilson Hall	0	0	0	0	0	7,447	24,109	1,759	0
0029	Rosa Alexander Hall	0	0	0	0	172	0	0	2,056	27,908
0030	Phyllis Wheatley Dormitory	0	0	0	0	0	0	0	1,209	9,082
0031	Police Station	0	0	0	0	0	0	2,087	40	0
0032	Charles H. Smith Men's Residence	0	0	0	0	211	0	0	1,712	22,328
0033	Lee Wesley Smith Men's Residence	0	0	0	0	280	555	0	1,657	21,602
0034	Mid-rise Dorm	0	0	0	0	122	820	0	905	50,023
0035	William "Dick" Price Football Stadium (Athletic Facility)	0	0	0	0	0	0	254	7,317	9,892
0036	Marty L. Miller Baseball Stadium	0	0	0	0	0	0	0	568	1,337
0037	Spartan Station	0	350	0	0	482	1,410	1,079	1,264	7,559
0038	L. D. Wilder Building	0	0	0	22,014	1,116	0	0	7,699	0
0039	Center For Materials Research	0	0	5,967	0	0	0	0	756	0
0040	Brambleton Recreation Center	0	0	0	7,434	0	0	0	359	0
0041	Ticket Office	0	0	0	0	0	0	0	33	435
0045	Former Norfolk Community Hospital Building	71,001	0	0	0	33,999	0	0	0	0
0051	Spartan Suites	0	0	0	0	0	0	0	0	183,045
		0	0	0	0	0	0	0	0	0
Existing Owned Buildings		71,762	151,934	10,973	33,449	257,014	48,734	40,708	105,090	584,707

BLDG #	BLDG NAME	ASF Subtotals: Instruction & Academic Support	Library	Research	Public Services	Student Services & Institutional Support	Physical Plant	Auxiliary Services	Unassigned	Gross Factor Items	Net ASF: Total ASF Available	Gross SF: Total GSF	Net/Gross Ratio
0001	Scott Dosier Dining Hall (East Campus Cafeteria)	0	0	0	0	0	7,473	27,265	0	7,473	27,265	44,404	61.4%
0002	Hugo Madison Hall (Communications)	21,775	0	0	0	0	1,438	0	0	1,438	21,775	43,126	50.5%
0003	James D. Gill Health & PE Building (Gymnasium and ROTC)	10,174	0	0	0	570	3,552	36,280	119	3,552	47,143	77,247	61.0%
0005	James A. Bowser (Industrial/Vocational/Technical)	21,850	0	140	4,001	4,882	1,551	2,279	10	1,551	32,773	49,485	66.2%
0006	Bozeman Nursing Education Building	12,087	0	0	0	450	2,040	0	530	0	15,107	31,492	48.0%
0007	G.W.C Brown Memorial Hall	85,573	0	446	0	7,894	3,993	670	102	3,993	74,607	135,522	55.1%
0010	Mills Godwin Student Center	0	0	0	0	27,018	5,458	12,809	0	5,458	28,885	59,480	67.0%
0011	G.W.C Brown Hall Annex	0	0	0	0	0	0	0	0	0	0	1511	0.0%
0012	Woods Science Building (Life Science And Chemistry)	41,715	0	4,335	0	44	3,189	0	0	3,189	46,094	71,526	64.4%
0013	Twin Towers Dormitory	255	0	0	0	0	8,117	45,974	0	8,117	46,229	151,836	30.5%
0014	Twin Towers Dormitory	0	0	0	0	0	3,338	46,105	0	3,338	46,105	0	0.0%
0020	E. L. Hamm Fine Arts Building	32,427	0	85	0	0	1,898	1,548	0	1,898	34,060	63,432	53.7%
0021	Lyman B Brooks Memorial Library	8,362	105,918	0	0	3,227	8,118	12,120	0	8,118	123,027	145,550	84.5%
0022	William P. Robinson, SR Technology Center	40,315	0	0	0	707	2,430	0	0	0	43,453	78,271	55.5%
0023	Central Storage and Maintenance and Addition	0	0	0	0	0	19,706	0	0	727	18,979	34,298	55.3%
0024	Cafeteria West (West Campus Cafeteria)	0	0	0	0	0	506	13,047	0	506	13,047	18,915	69.0%
0025	Samuel F. Scott Men's Residence Hall	176	0	0	0	0	40	27,417	0	40	27,593	40,582	68.0%
0026	President's House	0	0	0	0	5,100	0	0	0	0	5,100	8,500	60.0%
0027	Joseph G. Echols Hall	9,956	812	0	0	0	4,929	40,651	0	9,211	45,037	91,701	49.1%
0028	Harrison B. Wilson Hall	0	0	0	0	31,556	1,759	0	0	1,759	31,556	55,701	56.7%
0029	Rosa Alexander Hall	172	0	0	0	0	2,056	27,908	0	2,056	28,080	40,010	70.2%
0030	Phyllis Wheatley Dormitory	0	0	0	0	0	1,209	9,082	0	1,209	9,082	18,603	48.8%
0031	Police Station	0	0	0	0	2,087	40	0	0	40	2,087	2,127	98.1%
0032	Charles H. Smith Men's Residence	211	0	0	0	0	1,712	22,328	0	1,712	22,528	36,388	61.9%
0033	Lee Wesley Smith Men's Residence	280	0	0	0	555	1,657	21,602	0	1,657	22,437	36,388	61.7%
0034	Mid-rise Dorm	122	0	0	0	820	905	50,023	0	905	51,965	84,703	60.2%
0035	William "Dick" Price Football Stadium (Athletic Facility)	0	0	0	0	254	7,317	9,892	0	7,317	9,146	42,616	21.5%
0036	Marty L. Miller Baseball Stadium	0	0	0	0	0	568	1,337	0	568	1,337	1,337	100.0%
0037	Spartan Station	842	0	0	0	2,489	1,264	7,559	0	1,264	10,894	35,784	30.4%
0038	L. D. Wilder Building	1,116	0	0	22,014	0	7,699	0	0	7,699	23,130	56,247	41.1%
0039	Center For Materials Research	0	0	5,967	0	0	756	0	0	756	5,967	10,575	56.4%
0040	Brambleton Recreation Center	0	0	0	7,434	0	359	0	0	359	7,434	10,346	71.8%
0041	Ticket Office	0	0	0	0	0	33	435	0	33	435	726	60.4%
0045	Former Norfolk Community Hospital Building	33,999	0	0	0	0	0	0	71,001	0	105,000	135,000	77.8%
0051	Spartan Suites	0	0	0	0	0	0	183,045	0	0	183,045	261,493	70.0%
		0	0	0	0	0	0	0	0	0	0		0.0%
Existing Owned Buildings		265,209	106,730	10,973	33,449	87,464	105,090	598,376	71,762	81,973	1,220,480	1,973,206	61.9%

BLDG #	BLDG NAME	Unassigned 000 Total	1.0 Instruction Subtotal	2.0 Research Subtotal	3.0 Public Services Subtotal	4.0 Academic Support Subtotal	5.0 Student Support Subtotal	6.0 Institutional Support Subtotal	7.0 Physical Plant Subtotal	9.0 Auxiliary Services Subtotal
Off-Campus Buildings		Total	Total	Total	Total	Total	Total	Total	Total	Total
0042	Virginia Beach Graduate Center	0	11,159	0	0	4,181	4,474	0	0	0
0043	NSU/ODU Tri Cities Center	0	7,760	0	0	3,434	834	0	111	0
0044	Norfolk Naval Base Center - leased	0	0	0	0	413	0	0	0	0
Existing Leased Buildings		0	18,919	0	0	8,028	5,308	0	111	0
Existing 2005		71,762	170,913	10,973	33,449	265,042	52,064	40,708	105,201	584,707

BLDG #	BLDG NAME	ASF Subtotals: Instruction & Academic Support	Library	Research	Public Services	Student Services & Institutional Support	Physical Plant	Auxiliary Services	Unassigned	Gross Factor Items	Net ASF: Total ASF Available	Gross SF: Total GSF	Net/Gross Ratio
0042	Virginia Beach Graduate Center	15,340	0	0	0	4,474	0	0	0	0	19,814	24,000	82.6%
0043	NSU/ODU Tri Cities Center	11,194	0	0	0	834	111	0	0	111	12,028	15,000	80.2%
0044	Norfolk Naval Base Center - leased	413	0	0	0	0	0	0	0	0	413	500	82.6%
Existing Leased Buildings		26,947	0	0	0	5,308	111	0	0	111	32,255	39,500	81.7%
Existing 2005		316,156	106,730	10,973	33,449	92,772	105,201	598,376	71,762	82,084	1,252,735	2,012,706	62.2%

** For enlarged view, see appendix.*



20 Years or Less 21 - 50 Years Over 50 Years

0 200 500 1000

Scale 1" = 1000'

NORTH

Building Age - Existing Conditions

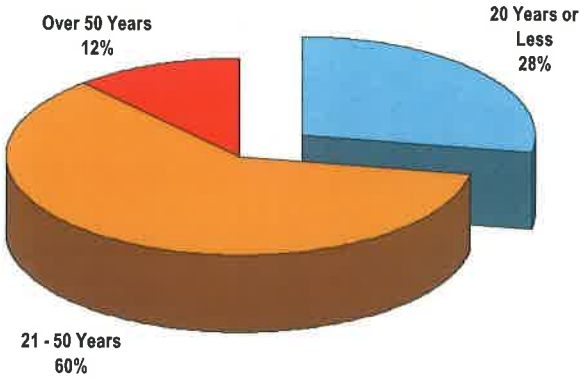
See Section 2.5 for building designation

2.6 Building Conditions

The following provides a general overview of the physical conditions of facilities for the purpose of evaluating its suitability based for their long term intended use.

The facilities located on the main Campus have been constructed over a period of more than 100 years, the earliest being 1903 and the most recent in 2005. The buildings that have been constructed on the Campus from the 1900's until the early 1970's, were very likely designed for either no air conditioning or a very different type of control system.

This condition accounts for approximately 20 buildings, which constitutes approximately 60% of the buildings



on the Campus today. Those buildings constructed from the early 1970's to the mid 1980's were perhaps designed with air conditioning systems that had limited controls and may or may not have been able to properly address humidity within the building environment.

The geographic location of the Campus in the coastal region, has a significant impact on the overall conditions of the facilities.

Due to this factor alone, the facilities should be designed to handle high humidity conditions as well as deal with "rapid freeze and thaw cycle" that is a factor of the geographic location and the climatic conditions in this area.

Our facility conditions evaluation utilized the EMG study as a basis, but augmented this analysis by providing an overall cost/benefit analysis based on the overall condition of the facility, its age, its current and intended functional use.

Based on the cost estimates prepared by EMG, a total of about $87 million is needed to perform necessary improvements and upgrades to facilities in the next five years. This represents about 85% of the total estimated improvement costs for all the Campus facilities by EMG.

These improvements only target improving the facility conditions at specific system level and are not associated with overall renovations to improve the overall quality of space.

The study took into consideration the recently completed building conditions analysis performed by EMG, for the University, and was based on an overall visual evaluation/observation based on building walk-through, and meetings with staff at the University's physical plant.

The EMG conditions evaluation took into account a detailed observation and evaluation of each facility and its system to develop a renovation and improvement plan for each building. The final result of the EMG study was a list of recommended improvements with relevant cost estimates for these improvements, and sequence of priorities for these improvements.

Fig. Water penetration at Brown Hall.

Fig. Mechanical equipment at grade at Godwin.

Fig. Failing brickwork at Bowser.

Fig. Mechanical equipment at grade.

Fig. Improvised site lighting and drainage issues.

Fig. Efflorescence at CMU wall at Spartan Suites.

Fig. Overflow storage at Godwin.

Fig. Demolition at former Hospital building.

Fig. Malfunctioning door closers at Godwin.

Fig. Screening elements at service area.

Fig. Prominent mechanical equipment at Library.

Fig. Water penetration discoloring brick at Bowser.

NORFOLK STATE UNIVERSITY – CAMPUS MASTER PLAN

Building Name: Hugo Madison Hall
Total GSF: 43,126
Assigned SF: 21,775

Building Number: 02
Year Built: 1966
Renovated: 2001/2002

1.1 ARCHITECTURAL

Hugo Madison Hall is a two story building located near the middle eastern edge of the campus. The building is constructed of load bearing concrete masonry units (CMU), as well as the exterior and some interior walls that support the upper floor and roof. The roof is flat with a single-ply roofing membrane over insulation boards. Storefront windows and doors were fairly new and in good condition. The exterior plaza slabs seemed in good to fair condition.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either hot or chilled water to fan coil units.

Hot water for the central heating system is supplied by two flex tube, gas-fired boilers.

Chilled water for the central cooling system is supplied by an air-cooled reciprocating package chiller.

Heated and/or cooled air is distributed through ducts to supply air terminals concealed above the ceilings. The heating and cooling systems are controlled by local thermostats.

The bathrooms, and other areas are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by gas-fired, water heaters.

PORTMAN

Page 1 of 3

Fig. Excerpt from comprehensive building evaluation survey.

Based on the conditions evaluations, it became quite apparent that to a larger extent, many of the problems in the buildings are directly or indirectly related to the buildings inability to handle moisture penetration.

Moreover, the geographic location also provides an environment that requires special attention to the materials, building components as well as building systems. It also has an overall negative impact on the life span of the instructional technology installed in these buildings.

The building conditions assessment is organized and documented in the following format for each facility and is included in the Appendix section of this document.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

The commercial kitchen is equipped with a dry-chemical, fire suppression system

1.2.2 *Electrical*

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,600-Amps, 277/480-Volt, three-phase, four-wire, alternating current(AC). Step down transformers are located in the electric room and electric rooms throughout the building.

A natural gas-powered, 70-Kw, emergency generator is located at the rear of the building. The generator provides back-up power for elements of the fire and life safety systems.

Lighting:
Mulliple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure				There was no evidence of movement or failure.
Exterior Walls		x		
Roof	x			
Windows & Doors	x			
Interior	x			
Accessibility		x		
Fire Alarm				
Fire Suppression				
Air Conditioning	x			
Ventilation	x			
Heating	x			
Plumbing Fixtures	x			
Drainage Pipe System	x			
Utility Incoming Power		x		
Lighting	x			
Building Control	x			

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

To summarize the overall findings it became increasingly evident that the buildings constructed in the earlier years of the Campus have either reached the end of their useful life, or are very near to the end.

Some of the most recent upgrades such as roof restorations and the adaptation of modern mechanical systems are an attempt to extend the life of the facilities, as well as address the ever increasing demand for conditioned space to meet the needs of building inhabitants as well as technology. Again, these improvements do not necessarily improve the overall quality of space and its functionality.

Assesment of Functional Quality

Functionally, most of the existing academic facilities either consist of smaller structural bays (less than 30' in either direction) or with load-bearing wall construction. Such conditions poses tremendous limitation on the overall adaptability of spaces within the building. Such condition limits the ability of the interior spaces to be re-adapted or modified to meet the changing functional needs and to re-adapt to incorporate the changing pedagogy of instructional technology in classroom and lab spaces. Thus resulting in in-efficient or sub-standard quality of instructional space.

Building Efficiency

There are buildings on the Campus that are 1-2 story buildings. In an academic setting, 1-2 story buildings are considered to be highly in-efficient buildings. Some examples of these buildings include:

- Brambleton Community Outreach Center
- James A. Bowser
- Spartan Station
- Physical Plant
- Cafeteria West
- Scott/ Dozier Dining Hall
- Brown Memorial Hall
- Bozeman Education Building
- Woods Science Building
- Hugo Madison Hall

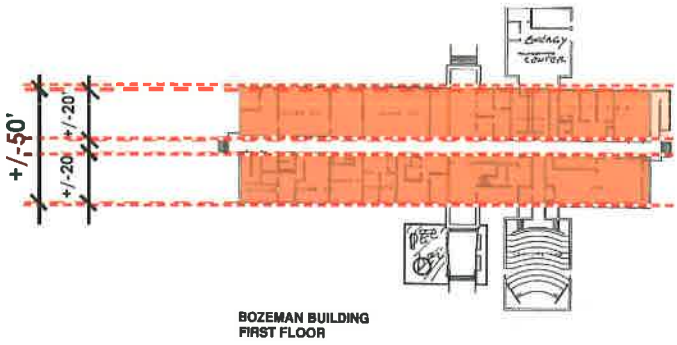


Fig. Load Bearing Concrete Masonry Exterior & Interior Walls Supporting the Upper Floor and Roof.

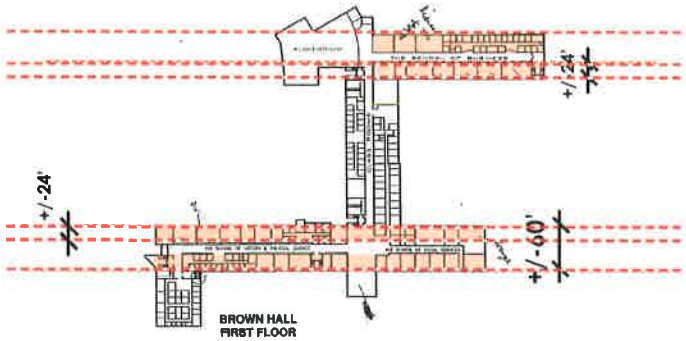


Fig. Load Bearing Concrete Masonry Exterior Walls with Steel Columns.

Fig. Interior view of Bozeman classroom.

Fig. Interior view of Brown Hall classroom.

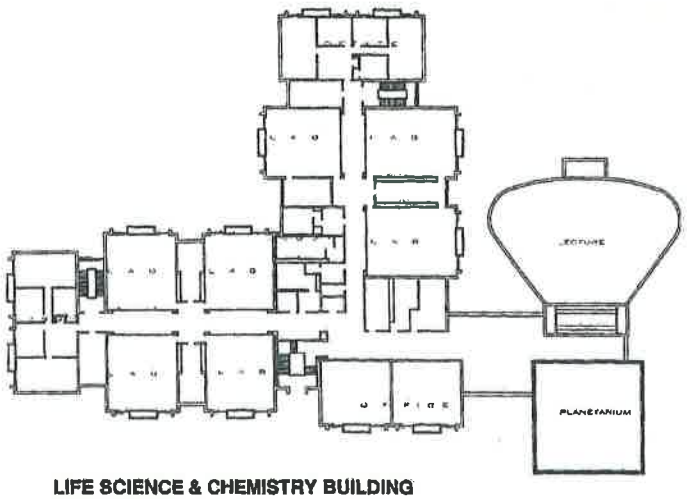


Fig. Steel Frame Construction with 15' – 20' Col. Spacing 8' Ceiling Height.

Fig. Masonry Bearing Walls.

Fig. Restrictive Structural Bay

Fig. Poor Light Control

Fig. CMU Interior Partitioning

Fig. Lack of Flexibility

Fig. Low Floor to Floor Height

Recommendations

Based on the building conditions and the evaluation of the functional quality and re-adaptability of spaces, as per the above analysis, our recommendations are categorized as follows:

1. Building Replacement
2. Extensive Repairs and Upgrades
3. Minor Repairs and Upgrades
4. Scheduled Maintenance

Using these recommendation categories about 42% of the existing space inventory is recommended for replacement, with 22% for extensive repairs, about 21% for minor repairs and 15% for schedule maintenance.

The following are the recommendations by each facility:

Proposed Demolitions

0005 James A. Bowser
0007 G.W.C Brown Memorial Hall (Partial)
0013 Twin Towers Dormitory
0014 Twin Towers Dormitory
0021 Lyman B Brooks Memorial Library
0024 Cafeteria West (West Campus Cafeteria)
0025 Samuel F. Scott Men's Residence Hall
0037 Spartan Station
0045 Former Norfolk Community Hospital Building
0002 Hugo Madison Hall (Future)
0003 James D. Gill Health & PE Building (Future)
0010 Mills Godwin Student Center
0012 Woods Science Building
0023 Central Storage and Maintenance and Addition
0039 Center For Materials Research
0040 Brambleton Recreation Center

Extensive Repairs

0011 G.W.C Brown Memorial Hall (Remaining)
0020 E. L. Hamm Fine Arts Building
0030 Phyllis Wheatley Dormitory
0038 L. D. Wilder Building

Minor Repairs

0001 Scott Dosier Dining Hall (East Campus Cafeteria)
0027 Joseph G. Echols Hall
0028 Harrison B. Wilson Hall
0029 Rosa Alexander Hall
0036 Marty L. Miller Baseball Stadium
0006 Bozeman Nursing Education Building
0032 Charles H. Smith Men's Residence
0033 Lee Wesley Smith Men's Residence
0035 William "Dick" Price Football Stadium

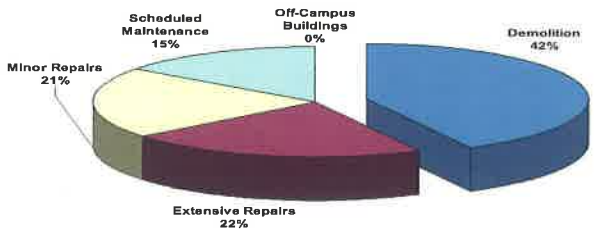


Fig. Building Conditions

Recently Completed and Currently Planned Renovations

The University currently has 6 major building related projects in various stages ranging from planning/ programming to recently completed construction. All but one of these projects are new construction. The remaining project is an extensive renovation to the Robinson Technology Center, which concluded in the fall of 2006. The following is a list of new construction projects:

Marie V. McDemmond Center for Applied Research

The recently completed research/technology building is located diagonally across the Brambleton Avenue/ Park Avenue intersection from the main Campus.

Approximately 66,000 ASF, 128,000 GSF

New Police Station

The new police station has completed construction. It is located along Corprew Avenue between the Eastern Cafeteria and the former Norfolk Community Hospital.

Approximately 13,000 ASF, 20,894 GSF

New Student Center

The new student center is currently under construction. It is located near the library and the current student center.

Approximately 80,250 ASF, 84,450 GSF

New Library

The new library is currently in the design development phase. It is located west of the existing library.

Approximately 99,000 ASF, 132,000 GSF

New Nursing/Classroom Building

The new nursing/classroom building is currently in the schematic design phase. It is located south of the existing library and west of Gill Health and Physical Education Building.

Approximately 101,000 ASF, 135,000 GSF

All together the new projects will represent an addition of approximately 125,000 ASF and 217,000 GSF. The projects will be taken into consideration, almost as if they already existed, when determining the master plan space need and the physical plan.

2.7 Site Utilities & Infrastructure

This section will describe the existing conditions of the utilities and infrastructure of the Campus as well as describe proposed changes and upgrades that are planned or needed to service the projected growth of the University. Sources of information include: record documents, existing utilities review with the facilities department at NSU, on-site visual inspections and direct contact with utility companies providing services to the Campus. This evaluation was performed with limited base data. Unavailable data on underground utilities included flow metering and invert elevations of sewer and storm water piping, Campus gas demand and Campus water demand.

Utility Design Parameters

In order to adequately identify any required utility upgrades, certain assumptions have been made regarding usage requirements at each of the facilities. These are based primarily on engineering experience and standard engineering design practice. The expected peak flow requirements are based on square footages and use categories are as follows:

Water:

Teaching/Research Lab	0.25 gpd/SF
Student Center/Housing	0.40 gpd/SF
Food Services	0.40 gpd/SF
Library	0.25 gpd/SF
Information Technology	0.15 gpd/SF
Recreation/other	0.15 gpd/SF

Sewer:

Teaching/Research Lab	0.15 gpd/SF
Student Center/Housing	0.30 gpd/SF
Library	0.20 gpd/SF
Information Technology	0.15 gpd/SF
Food Services	0.30 gpd/SF
Recreation/Other	0.15 gpd/SF

Storm Drainage:

Standard Runoff Coefficient = 0.45

NSU Runoff Coefficient = 0.53

Rainfall Intensity = 2.7 in/hr - 25-year recurrence

Water

The following section details the current and proposed usage and distribution of both the potable water and fire water used on Campus.

Potable Water

Water is supplied to the Campus by the City of Norfolk municipal water main system. A total of 3 connections to the municipal supply system exist for the contiguous Campus. There are 3 meters, owned and maintained by the City, measuring demand by the central Campus. Buildings 38 and 39 are serviced by the 12" City main on Park Avenue. NSU utility plans show a 3" and 4" diameter service to these two structures, without metering equipment. Please see the table below, which identifies these main line service connections.

Water Service Connections to Municipal System

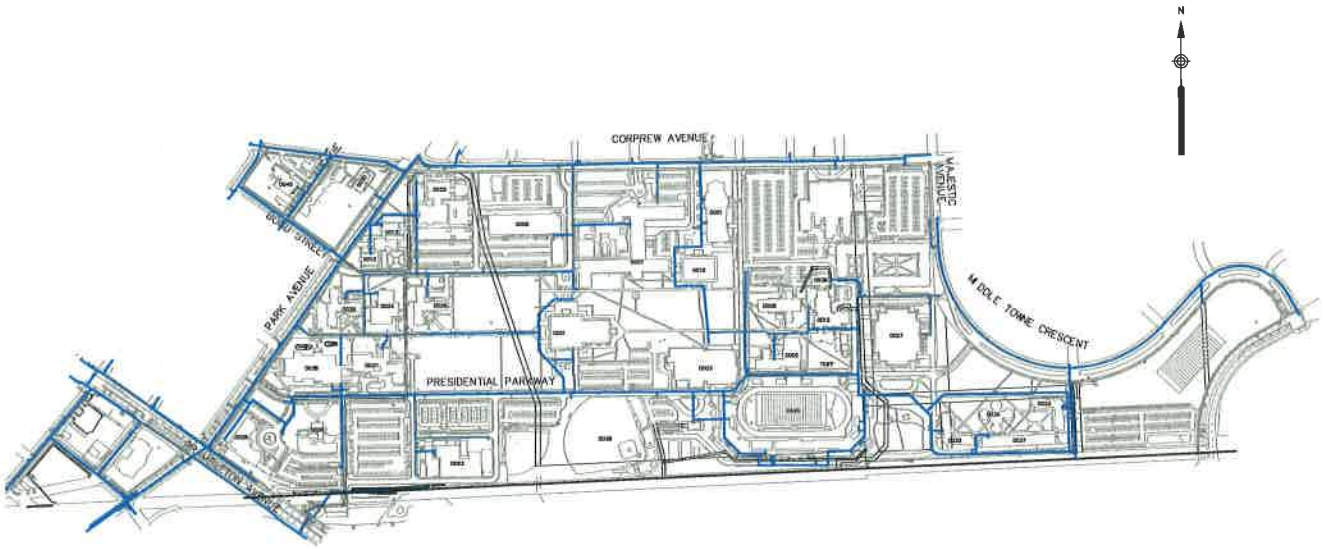
Location	Parts of Campus Serviced	NSU Pipe Dia.	City Pipe Dia.
Park Ave.	West Campus	12"	10"
Corprew Ave.	West/Central Campus	8"	6"
Corprew Ave.	Central/East Campus	8"	6"
Park Ave.	Building #38, 39	12"	3", 4" services

The water system on NSU Campus consists of over 15,000 ft of main distribution pipe from 6" to 10" in diameter. Supply lines to individual structures range from 2" to 6" in diameter with few instances of looping.

Although the City of Norfolk Design Criteria for Water Mains states "Dead-ends are not permitted", an absence of looping is apparent in the Campus water distribution system. Dead-ends 4" diameter or larger should be provided with a flushing hydrant or blow off for flushing purposes.

By applying the Utility Design Parameters discussed above, it is possible to estimate the current water demand at NSU.

Estimated Daily Water Demand	Avg. Daily Water Demand (gpd/sf)	SF	Total Water Demand (gpd)
Teaching/Research/Lab	0.25	815,842	203,961
Housing/Dormitories	0.40	416,810	166,724
Food Services/Caf.	0.40	63,319	25,328
Library	0.25	145,550	36,388
Recreation/Other	0.15	301,173	45,176
Totals:		1,742,694	477,576



LEGEND:

WATER SERVICE

NOTES:

1. EXISTING CONDITIONS SURVEY PREPARED BY ROUSE-SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.

NORFOLK STATE UNIVERSITY
MASTER PLAN
EXISTING WATER SYSTEM
SCALE: 1"=1000'
2/16/2006

Using a peak factor of 2, we conclude the following:

Peak Daily Water Demand = 955,154 gpd or 1,326 gpm

Current water use can also be estimated based on the current City of Norfolk's Design Basis for New Sewer Works. This is done for comparison purposes.

Application of the design values to NSU allows us to estimate the total volume of water use by the Campus as a whole. Please note a factor of 10% has been added to allow for water use that is not discharged directly into the sanitary collection system (aside from outdoor usage).

Facility Discharge Breakdown	Design units	gpd	Duration (hours)
Schools w/shower & cafeteria	Per Person	16	8
Schools w/o shower, w/cafeteria	Per Person	10	8
Community College	Students/Faculty	15	12
Boarding School	Per Person	75	16

NSU's Campus population is in the area of 7,522 students, faculty and staff combined. The table on the following page shows the current estimated water demand at NSU, based on design values from City of Norfolk sewer flow estimates for design purposes. The usage factors are analyzed in terms of the Campus population and additional uses such as irrigation. These additional uses are derived as a percentage of the population use.

Estimated Existing Water Demand

Current NSU Water Use	# of People	Gallons Per Day (gpd) Per Person	Duration (hours)	Water Use (gpd)
Population Usage				
Resident Students	2,300	75	16	172,500
Commuters/off campus housing	3,800	16	8	60,800
Faculty and staff	1,422	15	12	21,330
Subtotal				254,630
Other Usage				
Outdoor water use, i.e.: irrigation	15% of population usage			38,195
Factor to offset other uses	10% Population Usage			25,463
Subtotal				63,658
Totals	7,522			318,288

As shown in the table above, the total estimated water demand volume is 322,107 gallons per day (gpd) or 447.5 gallons per minute (gpm.) Applying a peak factor of 2 to determine peak use indicates the following:

447.5 gpm (peak factor of 2) = Peak Demand Rate of 895 gpm

NSU future projections bring this total projected population to 13,243 in the year 2026, assuming the same ratio of staff to student enrollment, but updating the ratio of faculty to 1:20.

The same process is used to determine the Peak Use Rate for the year 2026 based on NSU's growth projections.

Estimated Future Water Demand

Projected NSU Water Use	# of People	Gallons Per Day (gpd) Per Person	Duration (hours)	Water Use (gpd)
Population Usage				
Resident Students*	4,386	75	16	328,950
Commuters/off campus housing*	7,156	16	8	114,496
Faculty and staff	3,001	15	12	45,015
Subtotal				488,461
Other Usage				
Outdoor water use, i.e.: irrigation	15% of population usage			73,269
Factor to offset other uses	10% Population Usage			48,846
Subtotal				122,115
Totals	14,543			610,576

* Values based on NSU projections

* Based on 8,000 Student Population

Note: Daily use duration of 12 hours was used to determine volume as shown below.

Summary of the projected water demand in the table above gives us 610,575 gpm or 848 gpm. Applying a peak factor of 2 to determine peak use, we determine the following:

848 gpm (peak factor of 2) = Projected Peak Demand Rate of 1,696 gpm

City of Norfolk Design Criteria for water mains specifies minimum water pressure of 20 psi and a maximum water pressure of 80 psi at any taps within the Campus structures. There are currently no reports of low pressure on Campus.

The existing water supply system currently provides the required pressure to Campus facilities without additional demand. It is estimated that the current peak water demand is somewhere below 1,326 gpm, but the year 2026 growth projections bring this volume to as high as 1,696 gpm. Future development should consider additional demand on the existing system.

Fire Water

City of Norfolk public fire protection guidelines specify that the minimum fire flow from any individual fire hydrant shall be 500 gpm at 20 psi and the maximum fire flow shall be 1500 gpm at 40 psi. Although only the Fire Marshall can determine appropriate fire flows for the given structures on Campus, hydrant pressure on Campus should be sufficient to support between 1,000 gpm and 1,500 gpm anywhere on Campus. This should be adequate to maintain fire flow pressure at each of the hydrants and structures on Campus.

NSU reports no deficiencies in the existing fire system. City of Norfolk Public Fire Protection design requirements were referenced in analyzing the existing fire protection system on NSU Campus. Among the most important requirements, the following guidelines were considered when evaluating the existing system and should be considered in any future development:

1. The minimum size water line used for fire protection of single family residential shall be 6 inches in size. The minimum size water line used for domestic water and fire protection to properties zoned multi-family residential or commercial shall be 8 inches in size.

2. Fire hydrant spacing for properties zoned multi-family residential or commercial shall not exceed 350 feet or require a hose lay of over 250 feet from the hydrant to any part of any structure to be protected.

3. No fire hydrant shall be placed closer than 50 feet from the face or overhang of any building to be protected.

4. Minimum fire flow is 4,000 gpm for institutional land use.

Based on the City of Norfolk Design Criteria, the existing fire protection system at NSU should be considered adequate (assuming sufficient pressure is available in The City of Norfolk main supply lines), with the following notable deviations from the City of Norfolk Design Criteria:

NSU master plan details indicate there are 6 individual cases where the existing fire hydrants are closer than 50 feet to the face of the structure it is intended to protect. In some cases, the hydrant is within 10 feet of the structure. Although these hydrants appear to meet the other requirements of the design criteria, their close proximity to the existing structure they are designed to protect, would make the act of fighting fire more challenging in a worst-case scenario.

NSU master plan details indicate an absence of hydrants on the northern border of Campus (although City hydrants exist on Corprew Avenue, many are beyond 300 feet from the Campus structures). Further, some of the internal Campus hydrants are spaced such that numerous structures are left susceptible to fire based on the City of Norfolk hydrant distance to structure and hose-lay design guidelines. Among the susceptible structures are Brown Memorial Hall, Bowser Hall, The Health Center, Spartan Station, Robinson Technology Center and Lee Wesley Smith Dormitory. The south and west face of the Student Center is also susceptible based on the same City Design Criteria.

Recommendations

Based on the fire protection system deficiencies described above, it is recommended that 3 fire hydrants be installed on the existing main line Campus water distribution system to improve the fire protection of the structures indicated. Installation of these proposed hydrants will improve the existing spacing of Campus hydrants and provide better protection for the structures currently at greater risk. Each of the proposed 3 fire hydrant installations would draw from an existing 6" diameter water main.

Consideration should be given to the hydrants within 50 feet of the structures they are designed to protect; particularly, the East and West Campus Cafeterias and the Technology Center.

Steam / Hot Water Heating & Chilled Water

There is no Campus-wide steam, hot water, or chilled water distribution system.

Sanitary Sewer

The geotechnical study performed by Engineering and Testing Services (ETS), dated February 9, 2004 indicates groundwater is between 3 and 4-foot depth in the area of the student center. The presence of clay and silty-sand sub-soils was also revealed in this study. The topographic elevations around the student center are between 8 and 12-feet above mean sea level. These elevations are very typical of the Campus as whole and therefore it is assumed that groundwater elevations are present in the area of 3.5 vertical foot depth, Campus-wide.

Estimated Existing Sewer Demand

Estimated Sanitary Sewer Demand	Avg. Daily Water Demand (gpd/sf)	SF	Total Water Demand (gpd)
Teaching/Research/Lab	0.15	815,842	122,376
Housing/Dormitories	0.30	416,810	125,043
Food Services/Caf.	0.30	63,319	18,996
Library	0.20	145,550	29,110
Recreation/Other	0.15	301,173	45,176
Totals		1,742,694	340,701

Based on standard design flow parameters previously described above, total existing flow volume loading on the NSU sanitary collection system, would be as follows:

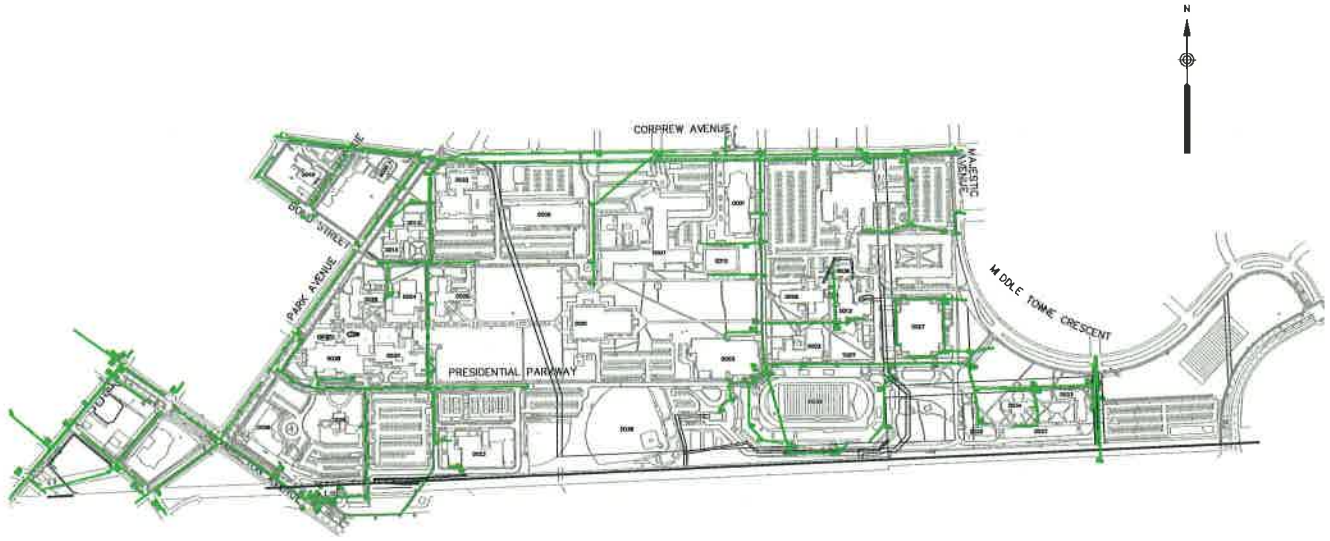
Note: Daily use duration of 12 hours was used to determine volume as shown below.

Using a peak factor = 2.0, we may conclude the following:

Peak Daily Flow = 681,402 gpd or 946 gpm

The above peak daily flow value determination does assume between 15 and 25% of the sewer flows are attributable to a combination of Infiltration and Inflow (I/I). This is to account for the presence of high ground water (infiltration) and any possible cross connections that may exist from roof drains, etc. (Inflow). The Peak Factor of 2 times the design flow volume assures we have not underestimating the flow volume due to the presence of I/I.

The calculated rate of 946 gpm is the current peak loading on the NSU sanitary collection system. This flow volume is collected throughout the system and is dispersed into the City of Norfolk sanitary collection system at various locations as specified in the table below.



LEGEND:

SANITARY SEWER SYSTEM

NOTES:

1. EXISTING CONDITIONS SURVEY PREPARED BY ROUSE-SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.

NORFOLK STATE UNIVERSITY
MASTER PLAN

EXISTING SANITARY SEWER SYSTEM
SCALE: 1"=1000'
2/16/2006

The capacity of 8" diameter sanitary sewer, at minimum grade (0.5" per foot) is approximately 450 gpm. As shown in the table below, there are at least five sanitary collection pipes in the NSU system to carry the peak-loading rate of 946 gpm. Each of these five local collection system pipes are 8" or greater in diameter. A large portion of the west Campus is serviced by a 12" diameter pipe, which conveys flow directly to the existing Hampton Road Sanitation District (HRSD) lift station at Brambleton Avenue.

Location	NSU Pipe Dia.	City Pipe Dia.
Building #30 at Brambleton Ave.	8"	8"
Brambleton Ave., HRSD FM Lift Station	12"	12"
Corprew Ave. at Park Ave. City Flow Enters Campus	8"	8"
Corprew Ave. at Marathon Ave.	8"	10"
Corprew Ave. at Maypole Ave.	8"	10"

All known, existing sanitary pipe tie-ins, where NSU main line sewer pipe discharges flow into The City of Norfolk wastewater collection system, are in the precedin table.

In addition to the NSU collection system main components shown in the table above, there is a 4" service lateral servicing the north wing of brown Hall, which ties directly into the City of Norfolk's 10" main line on Corprew Avenue. Building 18 is serviced independently of the remaining Campus and has two-8" diameter sewer laterals that tie directly into the City of Norfolk collection system piping on Majestic Avenue. Building 38 and 39 are also serviced individually and tie into the City of Norfolk system at Corprew Avenue and Park Avenue.

There is a municipal pipe system, which passes through the NSU Campus. A 12" force main spans the Campus from south to north. A significant portion of the wastewater from the west side of Campus is conveyed to Brambleton Avenue. Flows are collected at the HRSD lift station at Brambleton Avenue, pumped below the Campus, and converge with a 20" force main on Corprew Avenue at the intersection of Madison.

City of Norfolk records indicate there is City owned sanitary pipe that conveys residential flow from Park Avenue, Marshall Avenue and Reservoir Avenue onto the Campus, where it flows by gravity to the HRSD lift station on Brambleton Avenue This pipe is 8" diameter and most likely does not affect the collection system on Campus, as the City pipe system is at low risk of surcharge due to the existing lift station receiving this flow.

Future Considerations

The NSU flows are pretty well distributed to the various points along the perimeter of Campus where the flow merges with the flow from the surrounding City of Norfolk. Aside from the City of Norfolk's collection system reaching a state of surcharge, the existing sanitary piping in the NSU system can easily convey the current peak loading of NSU's daily activities (estimated at 946 gpm), to the various points on the perimeter of NSU Campus. Sporadic surcharge conditions that occur in the area of Park Avenue and Corprew Avenue are most likely the result of The City of Norfolk collection system piping becoming surcharged as a result of high levels of I/I due to flooding, thus limiting flow velocity in the NSU collection system piping in this area. City of Norfolk Utilities Department intends to perform an upgrade of the existing City collection system to alleviate this condition.

However, if conditions worsen prior to The City's upgrade project the University could take some steps to alleviate the problem. This could be accomplished by disconnecting the service laterals that enter the City main line pipe on Park Avenue and re-routing the flow to the existing NSU 8" sewer main which conveys flow in a southerly direction toward the Brambleton Avenue lift station. This action would be intended for all Campus structures on the block(s) west of the intersection of Park Avenue and Corprew Avenue. However, further research into existing elevations would need to be done to ensure this action is a feasible solution.

Sewer pipe at a depth greater than 3.5' will almost certainly be influenced by I/I, particularly high groundwater infiltration. This statement is based on the geo-technical report data. Further analysis is required to determine the rate of infiltration.

It should also be noted that with the land acquisitions slated for the east end of Campus, there will be additional opportunities for tie-ins to the City of Norfolk collection system, minimizing additional pipe installation to the existing main line pipe on Campus.

The municipal pump and force main system owned and operated by HSRD provides a unique opportunity for handling increased flow volume, should the existing Peak Flow Rate of NSU increase dramatically on Campus in the future.

Recommendations

Much of the current system has been identified. However, thorough inspections were not performed on the condition of the system as part of this study. Closed Circuit Television (CCTV) inspections are required to determine the physical condition of the existing pipe. It is recommended that proper maintenance of the existing system be maintained to ensure the system remains in satisfactory condition.

Storm Water

The storm water collection system on Campus provides relief from flooding, by gravity, for the 134 acres Campus. Storm water runoff enters catch basins at low-lying areas on Campus and is conveyed, by gravity, through a network of underground storm water pipes. The vast majority of the storm water is collected by a 6' X 6' culvert, which runs north to south through the central part of the Campus, leaving the Campus grounds at the Norfolk/Southern Railroad Right-of-Way. It begins as a 6' X 4' culvert at Corprew Avenue and transitions into a 6' X 6' culvert as more flow converges from secondary pipes. With the exception of storm water collection system components that service individual structures and tie into The City of Norfolk collection system, all smaller collection system components on Campus eventually tie into this 6' X 6' culvert. Thus, it is the main trunk line of the collection system and will eventually convey 90% of all storm water collected on Campus. We are aware of no indicators that this main trunk line is overburdened at times of heavy rainfall.

This 6' X 6' culvert is fed by smaller diameter storm water drains ranging in size from 8" to 42" in diameter. The major components of the underground storm water collection pipe system are shown in the table below.

Part of Campus Serviced	Destination of Storm Flow	NSU Pipe Diameter
Central Interior, West Campus	South Campus @ RR ROW	6' X 6' Culvert
East Campus, Parts of Central	Ties into 6' X 6' Culvert	36" to 42"
Building 11 @ Corprew	Ties into 24", then 6' X 6'	12"
Building 12 @ Park	Ties into 12" to 24" to 6' X 6'	10"
Building 32 @ Park	Ties into 24" to 30" to 6' X 6'	15"
Building 20 @ Park	City MH at Park Ave.	12"
Buildings 20 and 30	City MH @ Brambleton Ave.	18"
Buildings 38 and 39	Ties into 6' X 4' to 6' X 6'	24"
Central West Campus	Easterly to 6' X 6' Culvert	30"
Northern Campus @ Corprew	Southerly to 6' X 6' Culvert	15" to 18" to 24"
Assumed Drain/Sump Bldg #4	Ties into 6' X 6' Culvert	8" Force Main

Underground Storm Water Collection Pipe System

As can be seen in the above table, there are two locations on Campus where catch basins and underground pipe service areas independent of the remainder of the NSU storm water collection system. In these cases, the collected storm water flows by gravity to points in the City of Norfolk collection system on Park Avenue and Brambleton Avenue. These are isolated cases where Campus flow is conveyed away from the interior Campus storm water collection system piping.

The Atlantic Coast Observer Network (ACON) has recorded Norfolk's maximum monthly precipitation as 12.45" in 2004. For the purposes of this study, the high value of 12.45" of precipitation in one month will be used. Historical mean annual precipitation is recorded as 44.6" of precipitation per year.

ACON reported that in October of 2005, 9.46" of rain fell in Norfolk between October 6 and October 8, 2005, with 7.24" of that total precipitation falling on October 8, 2005 before 4:00 PM. The total daily rainfall of 7.24" will be used as an historical high value for daily precipitation in this study. State of Virginia Hydrologic Report indicates Virginia Beach's 25-year high for rainfall as being 7.0 inches per day. This report does not include such a determination for The City of Norfolk; therefore, the value of 7.24"/day, as deduced from the ACON historical data, will be used as the historical daily high for precipitation.

7.24 in rain/day = 0.3 in/hr (peak factor of 2) = 0.6 in/hr

The contiguous Campus is divided into two (Illustration shows three basins) drainage basins as shown in the illustration below. Basin #1 consists of approximately 4 acres of the southwesterly portion of the central Campus encompassing The Harrison Wilson Hall complex and parking along Brambleton Avenue at the corner of Park Avenue. Basin #2 encompasses the remainder of the central Campus (excluding areas west of Park Avenue) as the vast majority of storm water (approximately 75%) will be collected and run to a single location. This basin excludes the southeast portion of Campus along the Norfolk Southern RR R.O.W. and the Campus facilities west of Park Avenue.

The table below shows the determination of the coefficient of runoff, specific to the NSU Campus. This determination assumes silty sand and clay sub-soils as indicated in the ETS Geotechnical Study, and considers the existing elevation changes on Campus.

Basin 1	Approx. SF
Impervious Surfaces	
Roads/Parking	40,000
Walkways	20,000
Buildings	23,000
Subtotal	**83,000**

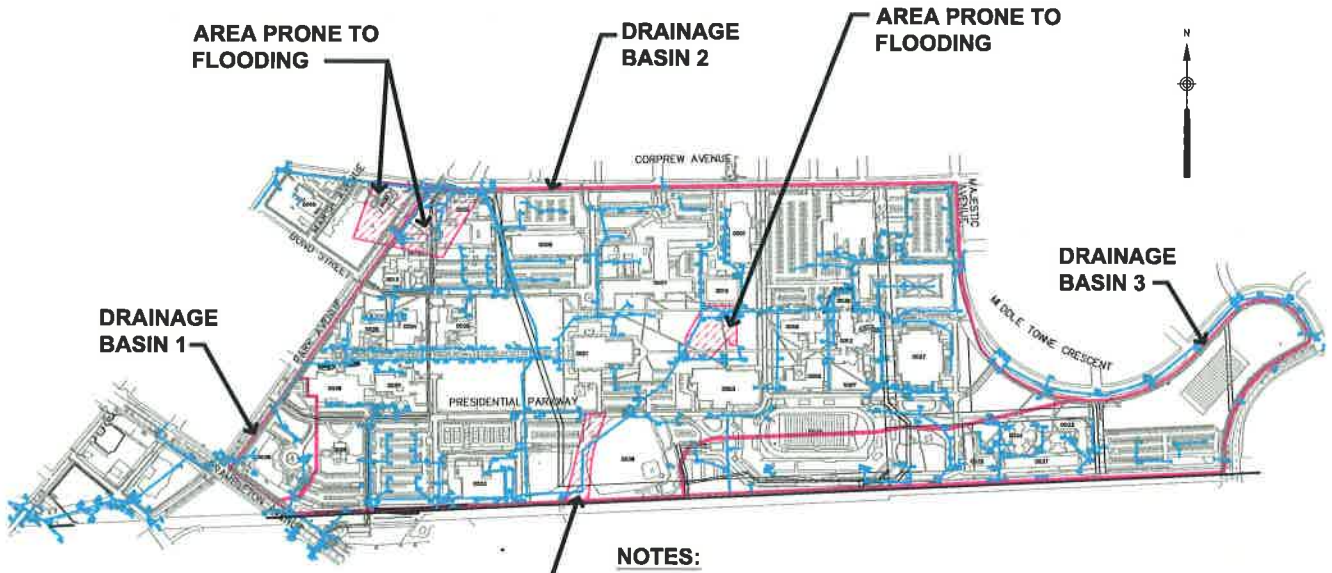
Basin 2	Approx. SF
Impervious Surfaces	
Roads/Parking	1,400,000
Walkways	440,000
Buildings	860,000
Subtotal	**2,700,000**
Plus 25% Permeable Runoff Factor	675,000
Total Impervious	**3,375,000**
Total Area of Basin 2	6,381,306
Runoff Coefficient (Total Impervious / Total Basin)	**0.53**

By using the values for basin #2, as being representative of the entire Campus, we divide the square footage of impervious membranes (with a factor of 25% to include pervious membrane flooding) by the total square footage of basin #2 (6,381,306 SF) to determine the runoff coefficient of (.53).

Using Norfolk's historical high 24-hour rain event = 7.24 inches of rain per day:

7.24 inches/day (.53 runoff coefficient) = 3.84 inches/day or .32 feet/day

This gives us the quantity of 2,184,423.4 cubic feet per day (cfd) or 25.3 cubic feet per second (cfs)



STORM DRAIN SYSTEM

LIMIT OF DRAINAGE BASIN

NORFOLK STATE UNIVERSITY
MASTER PLAN
EXISTING STORMWATER DRAINAGE SYSTEM
SCALE: 1"=1000'
2/16/2006

NOTES:

1. EXISTING CONDITIONS SURVEY PREPARED BY ROUSE-SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.
2. DRAINAGE BASIN 1 CONSISTS OF THE SOUTHWEST CORNER OF CAMPUS. STORMWATER RUNOFF FLOWS TO CITY COLLECTION SYSTEM ON BRAMBLETON AVENUE.
3. DRAINAGE BASIN 2 CONSISTS THE MAJORITY OF CENTRAL CAMPUS. RUNOFF FLOWS TO THE 6'X6' CULVERT, WHICH LEADS TO THE CITY COLLECTION SYSTEM.
4. DRAINAGE BASIN 3 CONSISTS OF THE SOUTHERN EDGE OF CAMPUS ALONG THE NORFOLK & SOUTHERN RAILROAD RIGHT-OF-WAY.
5. AREAS PRONE TO FLOODING ARE INDICATED ABOVE.

This is the flow volume that the existing storm-water collection system must be capable of collecting and conveying to the discharge point off Campus.

The Army Corps of Engineer's Hydraulic flow chart indicates a 39" diameter pipe, at minimum grade, can convey the determined total runoff volume of 25.3 cfs. The existing 6' X 6' storm drain culvert is equivalent to a 72" diameter pipe. Therefore, it is safe to say the current main trunk line (6' X 6' culvert) is capable of conveying the runoff water, from the Campus, for extended periods of heavy rainfall, based on the historical maximum daily precipitation levels. This determination does assume proper maintenance of the 6' X 6' culvert and the absence of blockages in the system. This determination does not account for City of Norfolk storm water flow entering the 4' X 6' culvert off-Campus and then converging with the NSU storm water flow, as this is an unknown value. It is recommended that the volume of flow entering this culvert, from outside the Campus, be evaluated to ensure the 6' X 6' culvert is not overwhelmed by storm water flow from off-Campus. Later in this study, collection points in the system shall be further investigated.

However, to more aptly evaluate the NSU existing storm water collection system's ability to collect and convey a large and sudden volume of water, a storm event of much greater intensity will be used. Virginia State Hydrologic Methods Report indicates the 25-year flood level of rainfall intensity for Norfolk is 2.7 inches of rain per hour. Please refer to the Utility Design Parameters section above.

Culvert Design

The total area draining to the 6' X 6' culvert is 111 Acres. This is determined by taking the overall Campus (134 Acres) and subtracting the estimated land areas, which do not drain to the 6' X 6' culvert collection system. They include: Drainage basin 1, consisting of 4 acres, areas west of Park Avenue, consisting of 6 acres, and the southern edge of Campus on the east side of Campus, consisting of 8 acres.

The topography is estimated to be at minimal slope of 0.5% or .0050 ft/ft. The coefficient of runoff for NSU was determined above to be 0.53. Using the underground storm water collection pipe system chart above, we can determine a flow time estimate, assuming the same minimal grade of above ground flow and minimal grade of underground piping. The estimated flow time is approximately 60 Minutes.

The maximum rate of runoff (Q) can be computed using the Rational Method as shown below:

$Q = C I A$

Where: C = 0.53 (coefficient of runoff)

A = 116 Acres (area of drainage basin)

I = 2.7"/hr (rainfall intensity)

$Q = C I A$ $Q = (.53)(2.7)(116)$ $Q = 166$ cfs

Having determined 166 cfs for the maximum rate of runoff in the specified drainage basin, the next step is to appropriately size the culvert to convey this flow. The volume of 166 cfs can be conveyed by a 60" diameter culvert.

This method does not consider several factors, which would more accurately define the appropriate size culvert, such as: tail water depth, allowable headwater depth, invert loss coefficient, etc. Data for these variables are unknown at the time of this study. This method does give us an idea of the volume of flow in the drainage basin (as defined) and allows us to consider the 6' X 6' culvert appropriately sized based on the limited data available and the 25 year flood levels of precipitation for this drainage basin.

Areas Prone To Flooding

Flooding has occurred in various parts of the Campus. These areas have been identified as listed below, and will be addressed independently of each other.

1. Areas surrounding the student center
2. Areas along Corprew Avenue and at the intersection of Park Avenue
3. Areas around the baseball field/recreation center

Student Center and Surrounding Area

The student center is susceptible to flooding due to a low-lying area between the student center and the gymnasium where storm water from a significant area runs to and collects. It is important to first ensure the storm water pipes are not restricting flow with partial blockages or debris collection within the pipes. There is an existing catch basin at the lowest point in the survey, which ties into a 36" diameter pipe. It is critical that this catch basin remains unobstructed.

Secondly, the pipe diameter needs to be appropriately sized to handle the volume of water collecting in this area. There is roughly a 600 X 600 square foot bowl shaped area where water will run to the low point in question. Although 10 catch basins exist in the given sub-basin, there are 3 catch basins that span the valley at the lowest point in this area. The specified catch basins allow storm water to enter underground piping 12" (assumed), 36" and 42" in diameter.

By applying the same principles of determining rate of flow volume as shown for the entire basin, we conclude the following for the 600' X 600' area south of the student center:

2.7 inches of rain per hour (runoff coefficient of .53) = 1.43 inches of rain per hour

This means the existing storm water collection system, within this area, must be capable of conveying 1.4 inches of rain, spread over 360,000 sf, every 60 minutes during a major storm event. This is equivalent to 43,000 cubic feet per hour (cfh), or 715 cubic feet per minute (cfm).

Converting cubic feet to gallons, with a factor of 7.48, we can obtain the value of .32 mega gallons per hour (mgh) or 7.7 mega gallons per day (mgd). By referencing the Army Corps of Engineers' Hydraulic Flow Chart, we can expect a 30" diameter pipe to convey 7.7 mgd at just above minimal slope.

The NSU Master Plan Drawings indicate a 36" diameter storm pipe leads to a 42" diameter storm pipe in this area. This pipe should be able to convey the volume determined. However, upstream in this sub-basin, the catch basin at the lowest point (7.3 feet) delivers water to a storm pipe assumed to be 12" in diameter (as no diameter is given on the plans) and may be creating surcharge in the system. A 12" diameter pipe at minimum slope moves only .7 mgd and would certainly be undersized for the lowest point in this 360,000 SF sub-basin. The diameter of this pipe should be a minimum of 24". If it is determined this low point is collecting 50% or more of the runoff from the given sub-basin, the pipe should be a minimum of 30" in diameter. Based on the available data, it is recommended that this pipe be investigated to ensure that a proper sized pipe is in place and that it is working to full capacity, as failure to achieve both would create flooding at this location.

Intersection of Corprew Avenue and Park Avenue

The second area on Campus prone to flooding is the northern border of the Campus at Corprew Avenue and Park Avenue. Based on data taken from the topographic survey and records of the existing storm water collection system, it is apparent there are two low areas collecting water without catch basins and storm pipe to relieve the flooding. The elevation of 7.6 feet above mean sea level is shown in the Campus roadway east-northeast of building number 11 – the technology center. Although catch basins exist on Corprew Avenue, it is possible that considerable storm water from Corprew Avenue runs to this low elevation on Campus. A second low point is shown as 7.8 feet, located in the parking lot north-northwest of building #10 - the vocational/technical building. The two low points will be considered one. This area is susceptible to flooding, particularly if the City of Norfolk storm water catch basins on Corprew Avenue are any higher in elevation than 7.6' above sea level.

Because NSU representatives have reported "major flooding" in this area, it will be assumed that the City of Norfolk catch basins are at a higher elevation than the above specified locations on Campus (7.6'). This makes the specified location the lowest point in a 600' X 200' sub-basin, without existing catch basins. Using the same rate of flow volume determination procedure as shown already in this report, we conclude the following:

2.7 inches of rain per hour (runoff coefficient of .53) = 1.43 inches of rain per hour

This means the existing storm water collection system must be capable of conveying 1.4 inches of rain, spread over the 120,000 sf sub-basin, every 60 minutes during a major storm event. This is equivalent to 14,300 cfh, or 238 cfm.

Converting cubic feet to gallons, with a factor of 7.48, we can obtain the value of .1 mgh or 2.6 mgd. By referencing the Army Corps of Engineers' Hydraulic Flow Chart, we can expect a 21" diameter pipe to convey this volume at just above minimal slope. If above assumptions (regarding the elevation of existing City of Norfolk catch basins) can be verified, it is recommended that two catch basins be installed at the given low points, and a 24" diameter pipe be installed to convey storm water to the existing 4' X 6' culvert.

If above assumptions (regarding the elevation of existing City of Norfolk catch basins) are shown to be errant, it is recommended that the City of Norfolk catch basins be cleaned and inspected and the undetermined pipe size be evaluated to ensure it is properly sized to convey the 25-year flood runoff values to the 4' X 6' culvert.

Baseball Field / Recreation Area

The last of the three identified areas where flooding occurs is the area adjacent to the baseball field/ recreation area. Analysis of the topographic survey and existing storm water collection system indicate the absence of catch basins in the proper locations for storm water to be collected and conveyed through the existing 42" diameter pipe, in the area west of the baseball field. A series of catch basins, spanning the low point between the baseball field and the parking lot, conveying flow to the existing 42" diameter storm water pipe, would effectively eliminate the problem of flooding in this area. It is recommended that a 15" minimum diameter pipe be used to convey storm water to the existing 42".

The general purpose parking lot east of the baseball field also lacks any form of storm water collection pipe.

However, topographic survey elevations indicate the storm water runs southerly toward the Norfolk/ Southern RR easement, where it is allowed to escape. This area has not raised flooding concerns with school representatives.

Future Considerations

The existing conditions at NSU indicate a higher than standard ratio of impervious surfaces to pervious surfaces for urban areas. The engineering design standard of 0.45 (for urban areas) is currently exceeded by almost 10%. Future development of areas that are currently pervious surfaces will increase storm water runoff, adding additional storm water volume to the existing collection system. Such a condition is undesirable and further burdening the underground infrastructure systems can be avoided with proper planning. Reduction of the current square footage of asphalted surfaces (parking lots) will reduce the current ratio of pervious to impervious surfaces, reducing the volume of runoff storm water.

In general, the existing storm water collection system is functioning well with the exception of the areas noted. Modifications to the existing system can be made to alleviate the flooding in isolated areas, as indicated above.

Relatively flat topography, low elevation and close proximity to tidal water are factors limiting the ability of the existing trunk line (6' X 6' culvert) to convey greater storm water volume. Consideration should be given to limiting additional burden on this trunk line.

Recommendations

Consolidation of the existing parking lots on Campus can be achieved with the construction of parking garages. The existing impervious square footage dedicated to Campus parking lots could be reduced while increasing the number of parking spaces. This will also improve storm water drainage on Campus by reducing asphalt surface areas that are impervious and decreasing the coefficient of runoff. Strategic placement of these parking garages, along the perimeter of the Campus, will also better serve the pedestrian friendly Campus by encouraging students to walk or take the shuttle bus to various parts of the Campus as well as opening up space for landscaping. Proper implementation of this plan would provide parking garages close to existing gates and Campus facilities hosting large numbers of people on a daily basis. NSU may be able to entirely eliminate some of the existing vehicular roadways in the Campus interior, or limit such roadways to shuttle bus traffic. This would further encourage pedestrian traffic to and from the parking garages.

It is recommended that an evaluation of flow volume be performed to determine the storm water flow entering the 6' X 4' culvert (at Corprew Avenue) from off-Campus. This flow volume is currently an unknown factor and may be contributing to flooding in the Park Avenue / Corprew Avenue area that has previously been identified as a problem area for runoff water.

Gas

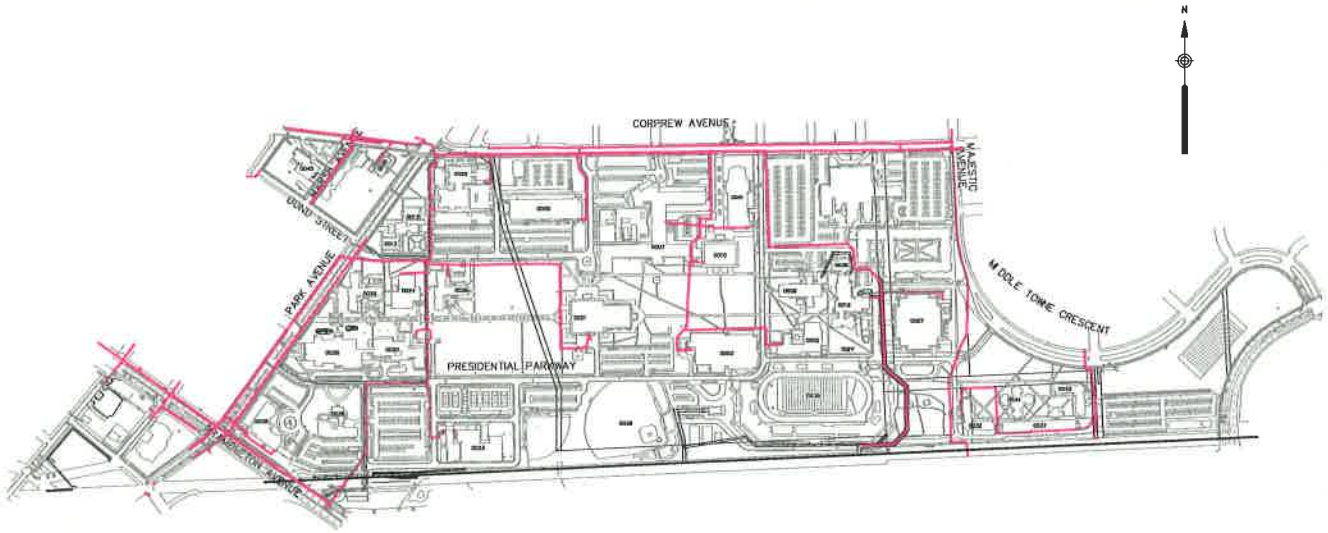
The existing gas service on the NSU Campus is comprised of 4 main lines ranging in size from 2" to 12" in diameter. These mains originate at the intersection of Corprew Avenue and Park Avenue. The main lines distribute gas to various structures on Campus in service laterals ranging from ¾" to 2" diameter. Few instances of looping are apparent.

Origin	Parts of Campus Serviced	NSU Pipe Diameter	Approx. Length
City 6" Main at Corprew/Park	Western and Central Campus	6" Main	2,300 LF
Reduced from 6" at Corprew/Park	Central Campus	4" Main	1,100 LF
Reduced from 6" on Campus	Central Campus Bldg. # 26, 8	2" Main	1,200 LF
City 12" Main on Corprew	East Campus Bldg. # 1, 18	12" Main	2,100 LF
City 12" Main on Corprew	North Wing Building # 7	1 1/4" Service	200 LF

The 12" main, shown in the table above, is branched off the City of Norfolk 12" main on Corprew Avenue, travels in a southerly direction across Campus providing gas to only two structures with 2" diameter services. The 12" main continues across Campus where it continues under the Norfolk/Southern Railway Right-of-Way. This main line would be the immediate option to provide for future gas services on the Eastern Campus should additional development require it.

The 6" main, shown in the table above, provides gas service to 9 structures on Campus including where it is reduced to the 2" main also described in the table above. This main line carries the brunt of the Campus gas distribution and service on Campus.

Given the proposed use of future land acquisitions on the east end of Campus and the existing 12" diameter main distribution line, it is not anticipated that any upgrades to the existing gas system will be required. Gas usage to the individual buildings should be designed and installed as part of the program for each of the facilities. The additional demand will not significantly impact the existing system.



LEGEND:

GAS SERVICE

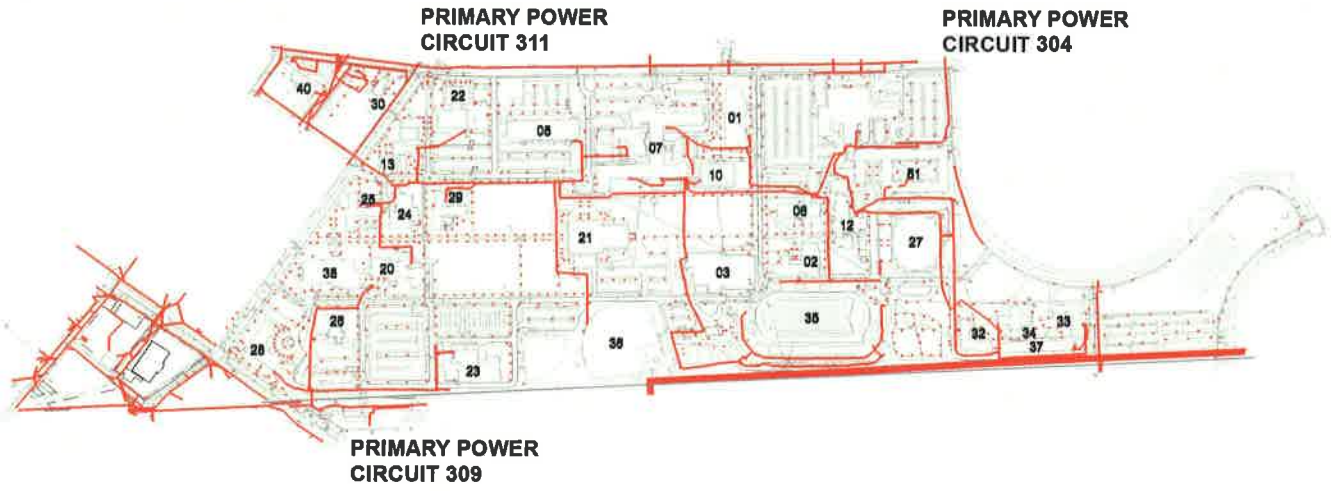
NOTES:

1. **EXISTING CONDITIONS SURVEY PREPARED BY ROUSE-SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.**

NORFOLK STATE UNIVERSITY
MASTER PLAN
EXISTING GAS SYSTEM
SCALE: 1"=1000'
2/16/2006

Recommendations

The absence of looping is the only significant deficiency revealed in this study. The installation of a "looping" gas main would provide better service to the structures with high demand, currently being served by "dead-end" gas services. Gas demand, for individual buildings, should be studied for determining the Campus' high-use structures.



Existing Electrical Distribution system

0 200 500 1000

Scale 1" = 1000'

NORTH

ELECTRICAL

The existing Campus-wide underground 34.5 KV radial distribution system is owned and maintained by Dominion Virginia Power.

The reported utility infrastructure capacity in total is 90 MVA to service the Campus via three high voltage main circuits known as feeder #304, #309, and #311. Each of these high voltage circuits feed a radial network on the Campus as well as outlying neighboring loads centers.

The existing Campus underground duct banks contain 600 kcmil aluminum feeder cables serving individual step down transformers serving individual buildings.

Communications & Data

Telephone

Verizon Virginia Inc. owns, operates and maintains the telephone and related telecommunication services outside multi-pair cable on the University's main Campus.

It has been reported that the main switch has an assigned capacity for 1,400 +/- analog lines and 400 digital line capacity.

Currently the system is adequate and the cabling and capacity can be expanded for future requirements.

Data Network

Norfolk State University (Office of Information Technology) is implementing a Fiber Optic Cable development distribution system using underground telephone duct backs and manholes to provide connectivity Campus-wide.

The main distribution center will be located in the James Bowser Building. Single mode fiber optic for data and coaxial cable for MATV is being provided.

Instructional Technology

This information presents an assessment of the existing state of instructional technology at Norfolk State University (NSU). This information was obtained during a series of interview sessions on November 3, 2005 with the Vice President of Research and Technology, the staff of the Academic Technology Support Services and the Library Systems Administrator and Acting Director of the Library. Telephone interviews were conducted with Mr. Courtney Mitchell of the School of Social Work and Mr. Angelo Malone of the Business School.

Asynchronous Learning

NSU utilizes the Blackboard Learning and Community Portal SystemTM for web based course management. Presently there are 47 completely web based courses and 248 web enhanced courses. The University is working towards offering a completely on-line degree in interdisciplinary studies.

During the information gathering sessions it was indicated that as instructors are beginning to embrace and use the technology additional resources are needed for additional instructor training. Concurrent with the physical master planning process, the Office of eLearning is creating and enhancing the framework for providing support services for the infusion of technology into the overall pedagogy of the NSU community. This report should be used in conjunction with the eLearning framework to create a coherent direction for instructional technology on Campus.

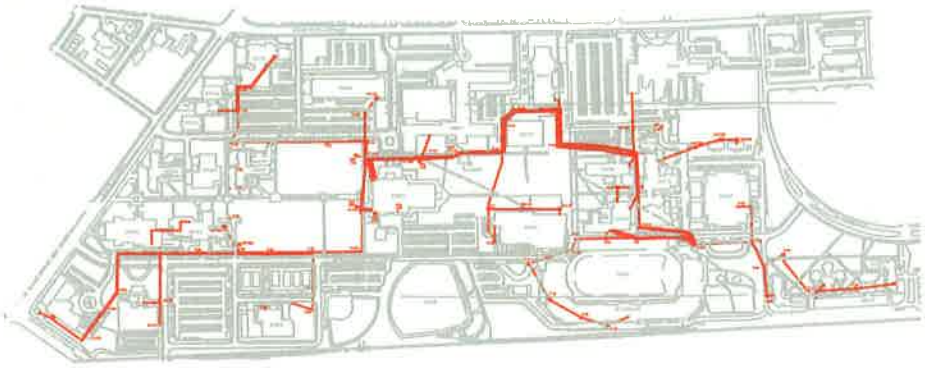
Classroom Technology

Like most peer institutions, NSU is in a state of evolution with regard to instructional technologies. Presently, there is no centralized responsibility for the instructional technology on Campus. The funding vehicles created an environment where silos of responsibility resulted from the procurement of the technology. Presently, Academic Technology Support Services (ATSS) is responsible for some classrooms on Campus, the School of Social work is responsible for their distance learning program and the Business school is responsible for their classrooms.

Fewer than a dozen classrooms under the responsibility of ATSS are equipped with instructional technology. The simplest of these systems consists of a projector and screen with an input plate at the front of the wall for connection to a portable cart. The more complex systems include an audiovisual source equipment rack and a control system touch panel. In most of the technology enhanced rooms, a web camera is mounted to observe the door and the ceiling mounted projector to provide a theft deterrent.

The school of social work offers courses towards an advanced degree to be taken by students at Radford University and the University of the Virgin Islands. The delivery method for these classes is videoconferencing and use of web based BlackboardTM technology. The courses have been offered for the past four semesters.

To support this program, there are several rooms equipped with smart classroom systems that are under the responsibility of the school of Social Work. These rooms include B126, B131, B135 and B133. Room B126 and room B135 are also equipped with distance learning systems supporting 48 people and 12 people respectively. B131 is a computer lab that is equipped with software to allow the image on any of the students' PC monitors to be displayed by the ceiling mounted projector onto the projection screen at the front of the



FIBER OPTIC EXISITING CONDITIONS AS PROVIDED BY NSU

SCALE: 1"=1000'

LEGEND

TELEPHONE MANHOLE T-29
DUCT BANK
UNDERGROUND FIBER OPTIC LINE

room. Room B133 is equipped as an observation room. There is one way mirror with a camera behind to record conflict resolution role playing simulations. Camera video may be recorded or streamed to a classroom for display.

Additionally, several workstations in the school of social work are equipped to create content for a Helix Universal streaming media server that allows professors to utilize multi media files in classroom presentations and BlackboardTM coursework.

The Business School presently has 13 classrooms equipped with Smart SympodiumTM systems. There are 9 flat floor classrooms with moveable tablet arm chairs and 4 tiered classrooms with seating for approximately 30 students in each room. The technology systems include the Smart SympodiumTM, a ceiling mounted projector and a DVD/VCR. The maintenance and support of the rooms is the responsibility of one staff member. Title III funds were used to purchase the equipment in the past. Presently, the Business School is not eligible for this funding source and must look elsewhere to fund future upgrades and equipment for additional rooms.

Wireless

Wireless coverage is provided on the Campus by approximately 100 access points and 5 Vivato phased array antennas. The entire Campus is blanketed in coverage allowing students, faculty and staff to be connected wherever they are on Campus.

Library

The library presently utilizes an on-line database that is available to the NSU community both on and off Campus. The library is home to a computer lab and a videoconferencing system. 10-12 computers are available for database research near the reference department. Presently, there is one person responsible for all of the technology in the library.

A comprehensive strategic technology plan was developed in June of 2005 to address the existing conditions as well as the future goals for each of the key areas of library technology, resources, services, infrastructure, and training. The plan addresses both short and long term goals and what will be required to accomplish the stated goals. The plan provides specific detail regarding the library technology and provides more detail than the scope of this document and the information contained in the plan should be included as an appendix to this report.

Cable Television

The cable television is provided by Cox Communications. The Campus has a head station in Brooks Library. Four channels (UTV and MBC which are received via satellite and two channels for student content or announcements) are modulated onto the cable distribution plant. The Campus also has a television production studio. This studio is used primarily for program instruction to support the mass communication and journalism degree program. The University employs a full time broadcast engineer.

Internet

The main internet connection for the Campus is supplied by E2F Broadband. The connection speed can be increased as bandwidth is required from DS-1 to OC-3. The Virginia Beach Campus is connected to the main Campus in Norfolk via a T-1 connection.

Conclusion

The existing conditions of the instructional technology as outlined above provide a baseline from which to build on the NSU Campus. There are several places where NSU excels in utilizing technology effectively. For instance, the ability to connect to the computer network wirelessly across the Campus provides convenience and flexibility for faculty, staff and students. This will lead to high utilization rates and the ability to create ad hoc learning environments in non-traditional settings. The goals section of the master plan will address some areas that can be further improved to assist NSU realize its institutional goals.

CONTENTS

3.0 FUTURE CAMPUS REQUIREMENTS

This section will analyze the needs of the Campus in terms of space. It will compare the current space inventory to applicable space standards for universities in order to assess the current space surplus or deficit as well as determine how much space the University will need to efficiently support a student population of 8,000 HC students as well as the faculty and staff population needed to serve and instruct those students.

3.1 Master Plan Program

3.11 Methodology:

Information Gathering

John Portman & Associates (JPA) conducted several extensive interviews with various department heads over the course of one extensive weeklong work session. This was followed by several follow-up meetings over the course of a few months. During this time an extensive amount of academic data was collected from the University to include:

- Course schedule and enrollment
- Weekly student contact hours
- Faculty and staff populations
- Academic programs offered and planned

Standards and Guidelines

JPA adapted a combination of guidelines - space recommendations from The Council of Educational Facility Planners, International (CEFPI,) a leader in the college and University planning field for over 50 years. Official CEFPI guidelines were developed in 1985 after reviewing several state higher education coordinating boards including the state of Virginia.

The space recommendations provided using the CEFPI guidelines were then compared to the State Council of Higher Education for Virginia (SCHEV.) SCHEV is the state agency responsible for establishing standards for the state universities.

CEFPI and SCHEV take two very different approaches to calculating space need for universities. CEFPI calculates space needs based on the 10 major and 80 minor Room Use Codes (RUC) established by the Western Interstate Commission for Higher Education in 1972. SCHEV calculates space needs based on Function Codes adapted from the Management Reporting and Accounting for Colleges, Second Edition (1988) by the National Association of College and University Business Officers (NACUBO). Though they were originally meant for financial reporting the function codes were adapted for space inventory reporting by the National Center for Educational Statistics (NCES). While some specifics involved in the space calculations will be covered in the Space Calculations and Assumptions portion of this document below, more detailed information on CEFPI and SCHEV standards can be found in the Space Planning Guidelines For Institutions of Higher Learning published by CEFPI (1985) and the Higher Education Fixed Assets Guidelines for Educational and General Programs published by SCHEV (2001.)

Due to the two very different methods of space classification, only total space needs can be compared between the two standards. In cases where SCHEV guidelines did not offer any standard for calculating need the CEFPI standard was substituted when possible.

3.12 Student Enrollment/Faculty & Staff

Student Enrollment

Campus population is the driving force for determining

Room Use Codes

100	200	300	400	500	600	700	800	900	000
Classroom	Lab	Office	Study/Library	Special Use	General Use	Support	Health	Residential	Unclassified

Function Codes

1.0	2.0	3.0	4.0	5.0	6.0	7.0	9.0*	10.0	11.0
Instruction	Research	Public Service	Academic Support	Student Services	Institutional Support	Physical Plant	Auxiliary Enterprises	Independent Operations	Hospitals

*8.0 Scholarships and Fellowships is not used in facility planning

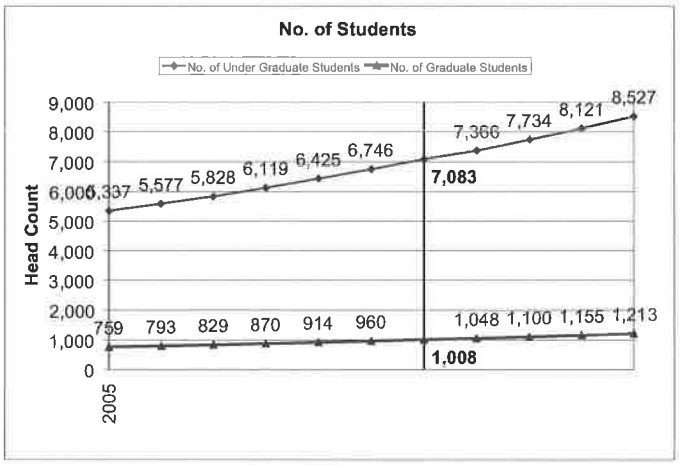


Fig. Student Enrollment projections

Students	2005 Existing	2014 Projected	% Growth
Undergraduate (HC)	5337	7083	32.7%
Undergraduate (FTE)	4586.07	6086	32.7%
Graduate (HC)	759	1008	32.8%
Graduate (FTE)	442	587	32.8%
Total (HC)	**6096**	**8091**	**32.7%**
Total (FTE)	5027.99	6673	32.7%

Fig. Student Enrollment projections

space needs. The following sections establish the target populations for students, faculty and staff.

The projected student enrollment has the largest impact on space needs. The student population has a direct or indirect effect on almost all space types.

The Norfolk State University had a Fall enrollment of 6,096 (HC) students in 2005. The University has established a target enrollment of 8,000 (HC) students as a key enrollment goal in the University's 2005 - 2010 Strategic Enrollment Plan. Since space needs are determined by various facets of the student population, it became necessary to create a projected enrollment trend for graduate and undergraduate students separately to get an approximate allocation of the future student population. The following chart shows the projected enrollment trends assuming the same percentage growth for graduate and undergraduate enrollments starting from the current year of 2005.

For the purposes of this master plan, future space needs will be calculated based on the 8,091 (HC) disaggregated to 7,083 UG and 1008 G. Projected FTE will assume that current graduate and undergraduate levels of approximately 86% and 58% respectively will stay the same.

Faculty & Staff

The following identifies the number of current faculty and staff, and projects their populations at the 8,000 HC student enrollment target. This analysis and projection is necessary to assess and to predict future office space requirements for the entire Campus. In addition to office space, faculty and staff population influences the space requirements for library space as well as other support spaces.

Faculty

Faculty	2005 Existing	2014 2011 Projected	% Growth
Full-Time (HC)	280	349	24.6%
Part-Time (HC)	106	132	24.5%
Total (HC)	**386**	**481**	**24.6%**
Total (FTE)	315.33	393.00	24.6%

Fig. Faculty Enrollment projections

Norfolk State University had 280 full-time and 106 part-time faculty members in Fall 2005 for a total head count of 386 and 315 FTE. Currently, 27% of the faculty head count is part-time faculty. For projection purposes, this percentage is expected to remain the same over the duration of the master plan.

For the purposes of this master plan it has been estimated that three part-time faculty are the equivalent of one full-time faculty member. With a Fall 2005 student full-time equivalent (FTE) of 2,852 students, the faculty FTE to student FTE ratio is calculated to be 1 full-time faculty member for every 15.9 full-time students (1:16). The University has decided to gradually increase their student faculty ratio to 1:20 over the next 10 years. For the purposes of this master plan, it is assumed that the faculty/student ratio will increase to at least 17 students per faculty (1:17) by the time the University reaches the 8,000 HC students enrollment target. The projected numbers for faculty are as follows:

Staff

The University had a total of 1,220 staff in Fall 2005, of which 38% did not need office space. Not including student staff, 3% of the University staff are part-time. As the school grows it is anticipated that the current percentage of part-time staff will remain the same. It was also decided that three part-time staff members would equate to one full-time staff member. The student

to staff ratio is expected to increase to nine students to every staff member by the time the University reaches the target enrollment of 8,000 HC. Using the current data as a benchmark, and using the before mentioned ratios and percentages the projected faculty and staff numbers become a mathematical function of the projected student FTE. In addition, it is assumed that approximately eight percent of the student population will be employed as part-time staff members. Three student workers are assumed to be the equivalent of one full-time staff member. The projected numbers for staff are as follows:

Staff	2005 Existing	2011 Projected	% Growth
Full-Time (HC)	703	520	-26.0%
Part-Time (HC)	28	16	-42.9%
Part-Time Students (HC)	489	647	32.3%
Total (HC)	**1,220**	**1,183**	**-3.0%**
Total (FTE)	875.32	740.98	-15.3%

Fig. Staff projections

For the purposes of projecting future space needs, it is assumed that the existing value of 38% of the total projected staff (HC) will not require office space to perform their jobs.

The following identifies the current academic programs and their projected numbers at the 2008 (HC) Target. This analysis and projection provides the basis for evaluating certain spaces needed, such as library space and special programs requirements.

The following undergraduate programs were available for study in the Fall of 2005.

Undergraduate Programs
School of Science & Technology
Certificates
Funeral Services
Associates
Architectural Drafting
Nursing
Bachelors
Biology
Building Construction Technology
Chemistry
Computer Science
Computer Technology
Design Technology
Electronic Technology
Electronics Engineering
Health Information Management Program
Health Services Management
Mathematics
Medical Technology
Nursing
Optical Engineering
Physics
Vocational/Industrial Education
School of Social Work
Bachelors
Social Work

School of Liberal Arts
Bachelors
English
Fine Arts & Graphic Design
History
Interdisciplinary Studies
Journalism
Mass Communications
Music Education
Political Science
Psychology
Sociology
School of Business & Entrepreneurship
Bachelors
Accounting
Business Education
Tourism & Hospitality Management
General Business (5 Concentrations)
School of Education
Bachelors
Early Childhood Education
Exercise Science/Physical Education

3.13 Academic Program

Undergraduate Programs

The University does not have any specific programs planned in the near future. Most of the schools intend to focus on increased enrollment and not an increase of programs. For planning purposes, a 14% growth (5 programs) in the number of undergraduate programs available to students is projected.

Graduate Programs
Masters
Applied Sociology
Community Psychology
Computer Science
Criminal Justice
Electronics Engineering
Materials Science
Media and Communications
Music
Optical Engineering
Pre-Elementary Education
Severe Disabilities
Social Work
Teaching
Urban Affairs
Urban Education
Visual Studies
Doctoral
Clinical Psychology
Social Work

Academic Programs			
Type	**Existing**	**Projected**	*% growth*
Undergraduate	36	41	*13.9%*
Graduate	18	20	*11.1%*

Fig. Academic projections

Graduate Programs

With the exception of a Masters of Technology & Management program, no other graduate program is planned to be added in the near future. For planning purposes, an 11% growth (2 programs) in the number of graduate programs available to students, including the proposed Masters of Technology & Management is projected.

3.14 Quality of Academic Space

The following were considered in establishing the overall "quality" of space suitable for use as an intended room use type. Given the fact that there is no standard reporting method for documenting the quality of a particular space type, this analysis is organized as follows:

- Building Age
- Physical Conditions
- Functional Quality

This master plan update compares these three aspects of a room's overall quality in order to assess a room's suitability for its current intended use. The overall age and physical conditions assessed in the building conditions section of this master plan were applied to each assignable space within a building. The functional quality of a space was assessed by a visual survey of the majority of spaces in the University's inventory.

Building Age

As buildings get older the standards which governed the design of the building for particular use types become obsolete. Generally a building is considered outdated, in terms of suiting its originally designed purpose, when it is over 20 years old. Due to changing instructional technology, this is particularly true for classrooms and laboratories within these buildings. Currently over 60% of the University's buildings or over 72% of the total GSF are 20 years or older.

The following chart shows the University's existing GSF grouped by three major age categories:

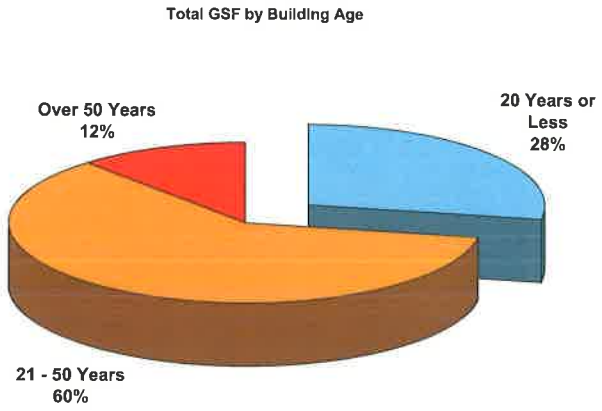


Fig. Campus wide condition analysis

Currently, 86% of the classroom space is housed in buildings that are over 20 years old and as such the majority of classroom space would not meet today's design standards for general instruction. The following table illustrates the percentages of approximate building ages for all classrooms:

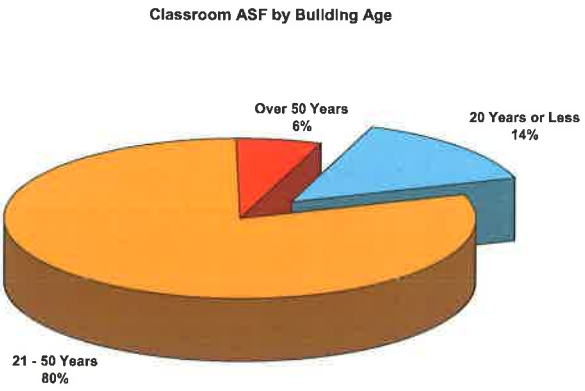


Fig. Classroom condition analysis

Currently there are no class labs in buildings that were originally constructed less than 20 years ago. The following table illustrates the allocation of approximate building ages for all class labs:

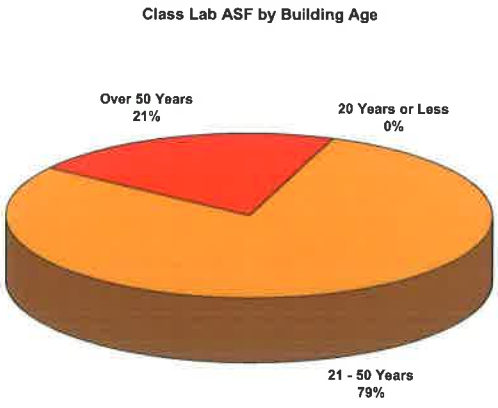


Fig. Lab condition analysis

Physical Conditions

For this master plan, we compared the room inventory to the overall building quality, as assessed in the building conditions section of this master plan, to create an approximate overall quality for specific room uses. For instance, we compared the conditions of all buildings that had instructional space, including classrooms and class labs. All of the space within each building is assumed to be in a condition similar to the overall condition of the building. Therefore, if a building's condition is listed as needing "Extensive Repair" then all of the classroom space in that building would be listed as needing extensive repair. Similarly, if a building is listed as "Beyond Repair" then all of the classroom space within that building would be proposed for demolition. Lastly, it the building is considered to be in a condition of "Regular Maintenance" or "Minor Repairs" then all of the classroom space would be considered currently suitable for use. This analysis only assesses a room's suitability for its assigned type in terms of the physical condition of the building systems that support it. Off Campus buildings were excluded from this analysis.

Based on the building conditions, only 21% of the total academic and support ASF of the University is classified as suitable for use. As illustrated in the chart below, about 46% of the academic space is proposed for demolition while 33% is proposed for extensive repairs. Only 4% of the University's classroom space on the main campus is considered to be adequate for instructional

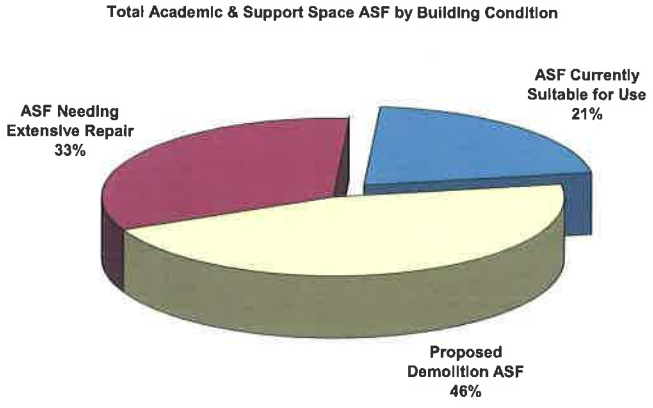


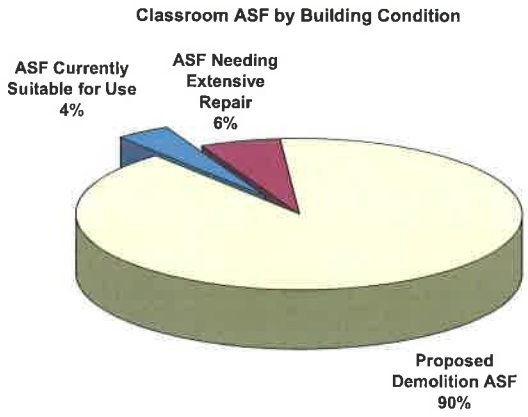
Fig. ASF condition analysis

100 Classrooms & Support					
Building No.	Building Name	Total Classroom ASF	ASF Currently Suitable for Use	ASF Needing Extensive Repair	Proposed Demolition ASF
0002	Hugo Madison Hall (Communications)	9,831			9,831
0003	James D. Gill Health & PE Building (Gymnasium and ROT	2,882			2,882
0005	James A. Bowser (Industrial/Vocational/Technical)	1,259			1,259
0006	Bozeman Nursing Education Building	803	803		
0007	G.W.C Brown Memorial Hall	28,048			28,048
0012	Woods Science Building (Life Science And Chemistry)	6,643			6,643
0020	E. L. Hamm Fine Arts Building	3,455		3,455	
0027	Joseph G. Echols Hall	1,548	1,548		
0045	Former Norfolk Community Hospital Building	4,493			4,493
0051	Spartan Suites				
Totals		**58,962**	**2,351**	**3,455**	**53,156**
			3.99%	5.86%	90.15%

Fig. Classroom condition analysis

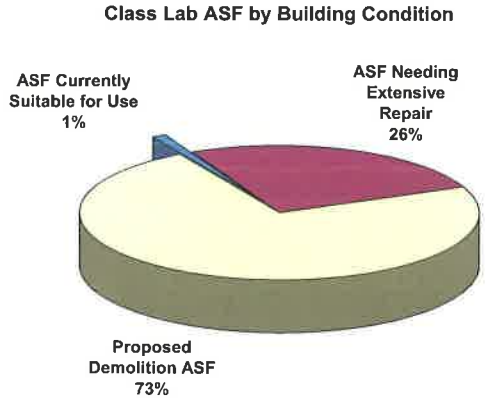
210 Class Laboratories & Support					
Building No.	Building Name	Total Class Lab ASF	ASF Currently Suitable for Use	ASF Needing Extensive Repair	Proposed Demolition ASF
0002	Hugo Madison Hall (Communications)	83			83
0005	James A. Bowser (Industrial/Vocational/Technical)	8,900			8,900
0006	Bozeman Nursing Education Building	657	657		
0007	G.W.C Brown Memorial Hall	3,729			3,729
0012	Woods Science Building (Life Science And Chemistry)	22,408			22,408
0020	E. L. Hamm Fine Arts Building	17,442		17,442	
0045	Former Norfolk Community Hospital Building	14,021			14,021
0051	Spartan Suites				
		67,240	**657**	**17,442**	**49,141**
			0.98%	25.94%	73.08%

Fig. Lab condition analysis



purposes, in terms of physical condition. Currently, over 90% of the classroom ASF on the main Campus is in buildings that are proposed for demolition due to there physical conditions.

The preceding table and following chart illustrate the quality of space within all classrooms when the space type is associated with the overall building condition.



Barely one percent of the University's class laboratory space is considered to be in a condition that is currently suitable for use. Approximately 73% of the current inventory of class lab space is recommended for demolition. The remainder of the space is in need of extensive renovation to maintain the integrity of the building and update the spaces to today's standards.

The preceding table and chart illustrate the quality of space within all class labs when the space type is associated with the overall building condition.

Loss of Building Efficiency

One measure of a building's efficiency is measured by calculating the percentage of ASF verses a building's Gross Square Footage (GSF) or total square footage. This percentage is commonly referred to as a grossing factor. Space not included in ASF would include janitorial, mechanical and circulation space as well as the amount of square feet occupied by the building's structure and envelope. The higher the percentage of usable space, the more efficient a building is considered to be. As buildings are renovated and reconfigured to meet new standards or new use requirements a loss of building efficiency is expected. Actual efficiency loss will vary from building to building depending on current condition, configuration and use. For the purposes of this master plan, any ASF that is in a condition of needing extensive renovation is assumed to lose 10% of its space to the grossing factor after renovation.

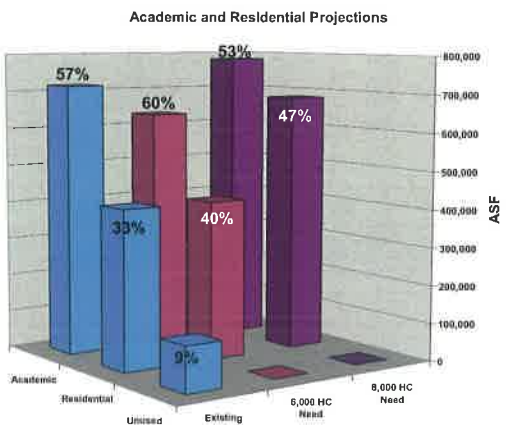
The following section will summarize the projected space needs using both the CEFPI and SCHEV standards.

3.15 Summary of Space Needs

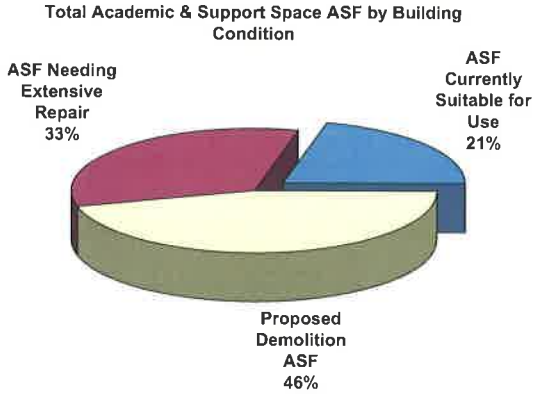
CEFPI Space Projections

According to the CEFPI guidelines, the University has a surplus of approximately 202,000 ASF as of Fall 2005. The majority of which is in lab, office, and library space. These figures include almost 118,000 ASF that is currently under renovation or vacant due to deteriorating building conditions. The University is expected to outgrow its current space inventory before it reaches its target enrollment of 8,000 HC students, at which point the University will have a shortfall of 212,000 ASF. The majority of the University's shortfall will be in residential space, which will need approximately 265,000 ASF more than the current inventory provides.

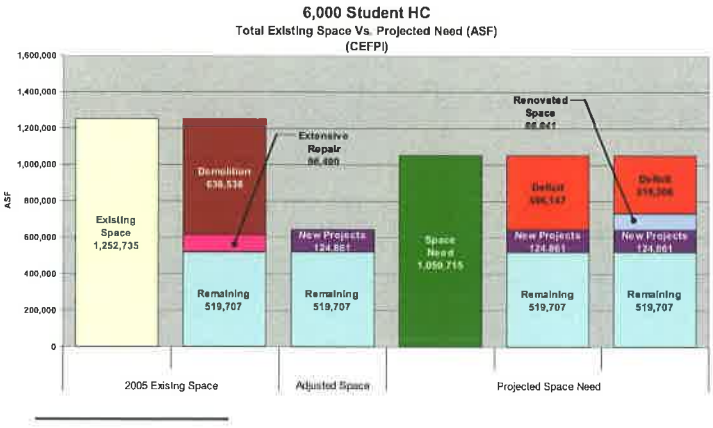
Projected Growth	Existing	6,000 HC Need	8,000 HC Need
Academic Space	717,144	633,101	782,652
Difference	-	*-84,043*	*65,508*
% of Existing	*100%*	*88%*	*109%*
% of Total Space	*57%*	*60%*	*53%*
Residential Space	417,614	417,614	682,516
Difference	-	*0*	*264,902*
% of Existing	*100%*	*100%*	*163%*
% of Total Space	*33%*	*40%*	*47%*
Unused Space	117,977	0	0
Difference	-	*-117,977*	*-117,977*
% of Existing	*100%*	*0%*	*0%*
% of Total Space	*9%*	*0%*	*0%*
Total	1,252,735	1,050,715	1,465,169
Surplus (+) / Deficit (-)	-	202,020	-212,434



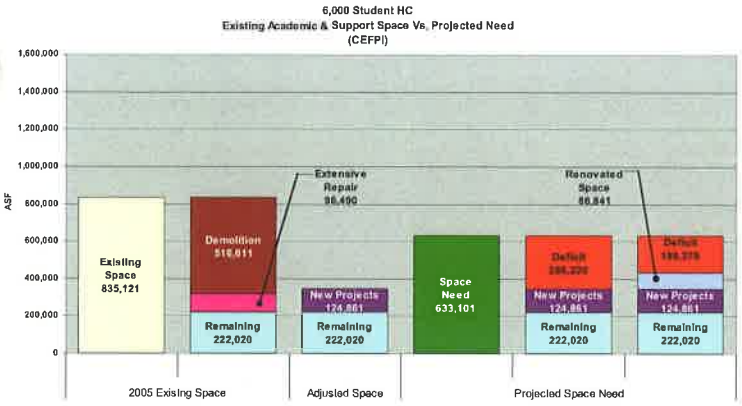
The following charts show an overview of space needs for both the current 6,000 students HC and proposed 8,000 students HC populations:



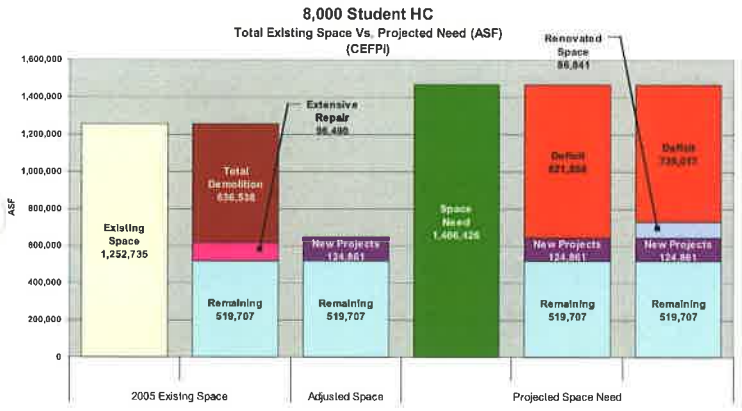
It is important to note that in almost 385,000 ASF of academic space (approximately 46% of the total academic and support space on the main Campus), is currently proposed for demolition. In addition, 33% of the total academic space is in need of extensive repair in terms of its physical condition, leaving only 21% of the remaining academic and support space, 175,000 ASF that is currently suitable for its intended use. The CEFPI calculation for academics and support space shows a need for 633,000 ASF of space. This is almost 411,000 ASF more than what is currently shown as usable space. Even after factoring new construction that is currently in progress and assuming that all recommended repairs and upgrades occurred immediately, the University would still have a deficit of 199,000 ASF of academic and support space.[1]

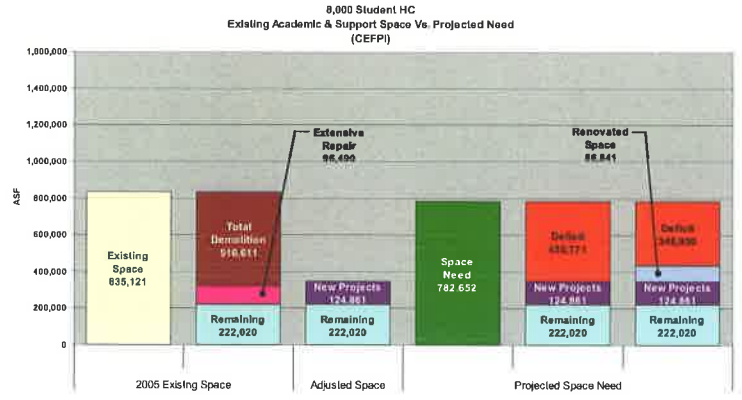


* The Existing Academic & Support Space chart on the following page shows more ASF for Construction in Progress than the chart comparing Total Existing Space because the current renovation of Robinson Tech. is reallocating the currently unused space into academic space. The Total Existing Space vs. Projected Need (ASF) chart above already includes the unused space as part of the existing inventory, so no new space is gained, where as the Existing Academic & Support Space vs. Projected Need (ASF) chart does not include unused space as part of the existing academic & support inventory. This causes the appearance or more new construction space for academic and support than there is for total new construction.



The current shortage of usable space is only increased as the University progresses toward its target enrollment of 8,000 ASF as shown in the charts below.

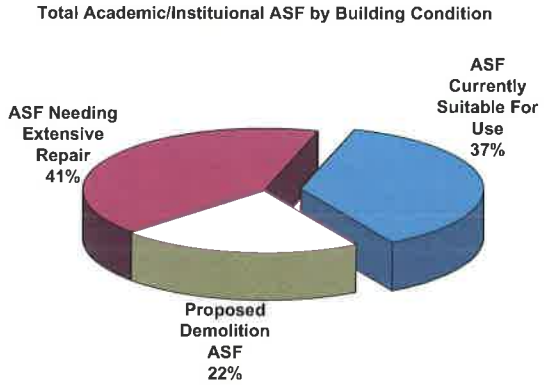




The total projected space need for an 8,000 Student HC is approximately 1,466,000 ASF. After including the proposed demolitions, renovation and new construction projects the University will be short by over 735,000 ASF or almost 50% of the total projected need. This shortfall includes almost 386,000 ASF of residential space and over 349,000 ASF of Academic and Support Space.

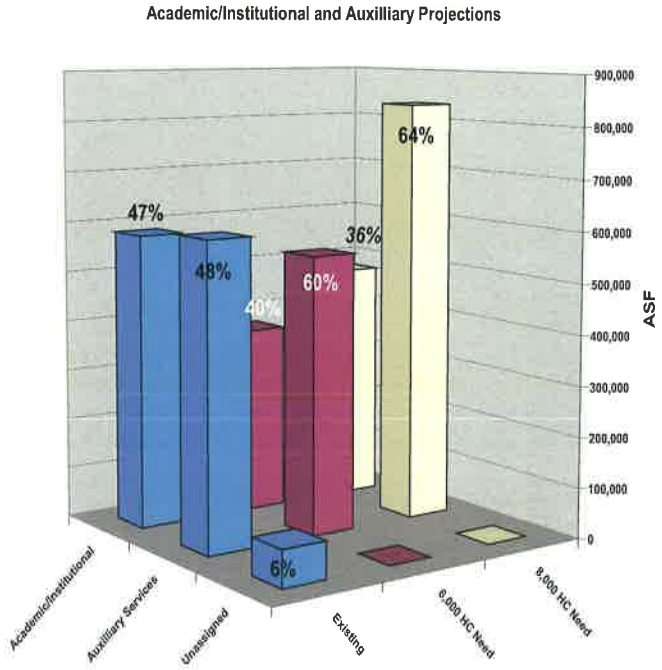
SCHEV Space Projections

According to the SCHEV guidelines the University had a surplus of approximately 331,000 ASF in the Fall 2005. According to the University space inventory, the majority of this space is in Instructional & Academic Support, Student Services & Institutional Support, and in physical plant space. These figures include the 118,000 ASF of space that is under renovation or vacant due to building conditions.



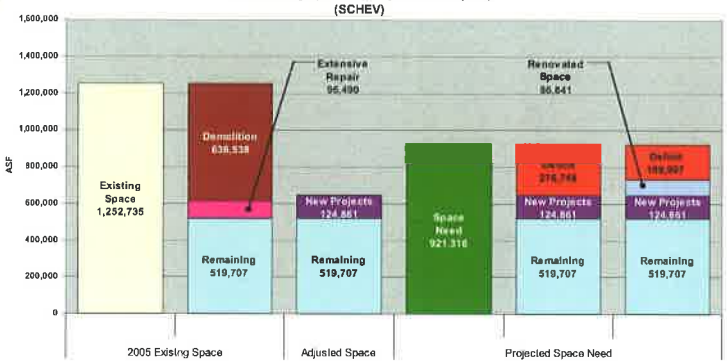
The following charts shows an overview of space needs for both the current 6,000 students HC and projected 8,000 students HC populations:

Projected Growth	Existing	6,000 HC Need	8,000 HC Need
Academic/Institutional		371,587	
Difference	-		
% of Existing	*100%*	*64%*	*82%*
% of Total Space	*47%*	*40%*	*36%*
Auxilliary Services	598,376	549,729	834,636
Difference	-	*-48,647*	*236,260*
% of Existing	*100%*	*92%*	*139%*
% of Total Space	*48%*	*60%*	*64%*
Unassigned	71,762	0	0
Difference	-	*-71,762*	*-71,762*
% of Existing	*100%*	*0%*	*0%*
% of Total Space	*6%*	*0%*	*0%*
Total	1,252,735	921,316	1,311,629
Surplus (+) / Deficit (-)	-	331,419	-58,894

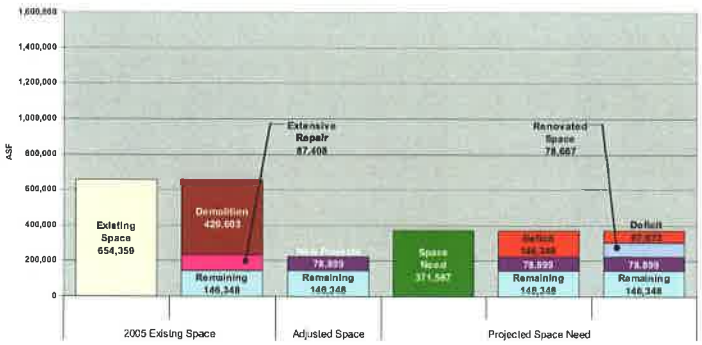


As with the CEFPI projections, it must be noted that only 37% of the current non-auxiliary space is considered to be suitable for its intended use. The SCHEV standard for space calculation shows a current need for 371,000 ASF of non-auxiliary space, which is 267,000 ASF more space than the University currently has in suitable space. As illustrated in the charts below, even after factoring in new construction projects already in progress and all of the recommended renovations, the University will still be 173,079 ASF short of the SCHEV standard for an 8,000 HC student population.

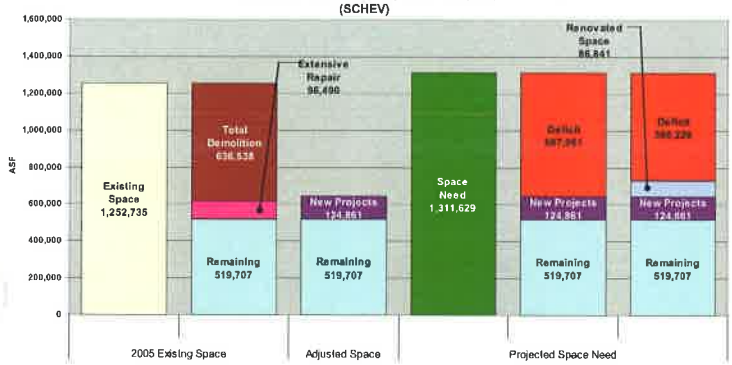
6,000 Student HC
Total Existing Space Vs. Projected Need (ASF)
(SCHEV)



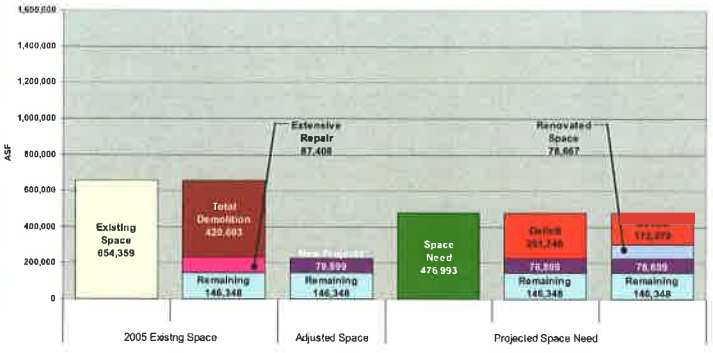
6,000 Student HC
Total Academic/ Institutional Space Vs. Projected Need
(SCHEV)



8,000 Student HC
Total Existing Space Vs. Projected Need (ASF)
(SCHEV)



8,000 Student HC
Total Academic/ Institutional Space Vs. Projected Need
(SCHEV)



The total projected space need for 8,000 Student HC is approximately 1,312,000 ASF. After the proposed demolitions, renovations and new construction the University will be short by 580,000 ASF or almost 44% of the total projected need. This shortfall includes 173,000 ASF of Academic/Institution space and approximately 407,000 ASF of Auxiliary Space.

3.16 DETAILED SPACE PROJECTIONS

This section will show in more detail how the projected space needs were derived for both the CEFPI and SCHEV guidelines.

CEFPI Projections

The following section will explain how the projected need for each major room use categories, and where applicable the logical sub-groups of those categories, where derived.

Reading the Projection Charts

Each subsection ends with a chart or series of charts that explain the calculation for that room use category for each milestone year. The following chart is an example using the total space projection numbers:

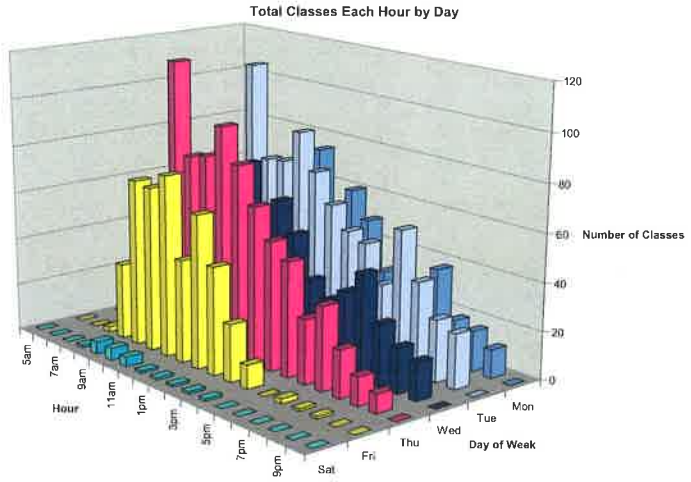
The first column, labeled below as 6,000 HC, shows the total need for that enrollment number under the row heading Guideline ASF. The Surplus / Deficit row for that column compares the projected need to the current room inventory. The next column compares the exact same projected need to the Adjusted Existing ASF which excludes buildings proposed for demolition or which are in need of extensive repair. In other words, this surplus/deficit will show you the difference between the projected need and what space is currently suitable for use. The final column compares the Adjusted Existing ASF to the projected need for 8,000 HC students.

Campus Total	6,000 HC	6,000 HC	8,000 HC
Academic Total	633,101	633,101	782,652
Residential Total	417,614	417,614	682,516
Guideline ASF	1,050,715	1,050,715	1,465,169
% Growth		0.0%	39.4%
Existing ASF	1,252,735		
Adjusted Existing ASF		837,010	837,010
Surplus / Deficit (-)	202,020	-213,706	-628,159

100 General Classrooms

Norfolk State University has peak classroom usage in the mornings with a very steady decline in usage as the day progresses. The bulk of Norfolk State's classes are scheduled from Monday to Friday from 8am to 4pm. The University has the largest number of classes on Tuesdays and Thursdays.

Efficient utilization of classroom space is generally the most common challenge of colleges and universities nationwide. Norfolk State's average class size for Fall 2005 was 20 students, and the largest class had 83 students enrolled. This average indicates a desire to keep smaller sized classes (15-25 students) but the University has no problem with the occasional lecture size course.



Classroom space is projected as a product of Weekly Student Contact Hours (WSCH) and a classroom space factor. The space factor is generated from three variables: the assignable square feet per student station, the average number of hours that the classrooms are in use each week, and the average percentage of student stations actually occupied.

ASF per Student Station

Today's hi-tech teaching techniques require space for A/V equipment and electronic control systems thus requiring additional space in the classroom including the storage needs for this equipment. Also, the use of computers by students has influenced the student station size. Tables and chairs are replacing the standard tablet armchair. The need for more flexible and bigger stations is greater due to the variety of teaching techniques. Other space related trends in education are the increasing emphasis on interactivity among students and priority on good sight lines for presentation. In addition, classrooms are designed to allow for reconfiguration of furniture to allow for small group learning within the classroom. All of these trends are resulting in higher ASF per student station. To reflect these modern needs, we have assumed an average ASF per student station to be 22 ASF for the purposes of this master plan.

Average Hours of Classroom Use (Room Use)

CEFPI recommends a standard of 31.5 hours of use by each classroom on a campus. Actual usage varies from institution to institution. The University reports an average of 26.0 hours for Fall 2005. This average utilization number is impacted by the large number of classrooms that are outdated or in disrepair and as such are under utilized because of their impediment to the learning process. As these classrooms are renovated to other use types or demolished all together, the average room use rate will increase. For the purposes of this master plan, we have assumed an average room use of 31.5 hours per week for projecting future space need.

Student Station Occupancy

CEFPI recommends an average student station occupancy of 65% for classrooms. An existing average station occupancy of 54% for classrooms was provided by the University for fall 2005. For the purposes of this master plan, we assumed station occupancy of 65%.

These three factors produce a space factor of **1.07** SF per WSCH.

In Fall of 2005, the University had a total of 55,545 WSCHs for their classrooms. All future WSCHs are derived by multiplying the existing WSCHs by the projected percentage of growth of student enrollment. Given the proposed demolitions and extensive renovations, as well as the new buildings already in progress, the University will be short of the projected classroom space need for 6,000 students (HC) by almost 30,000 ASF. The following chart shows the projected space requirements for classroom space for 6,000 HC and 8,000 HC student populations respectively.

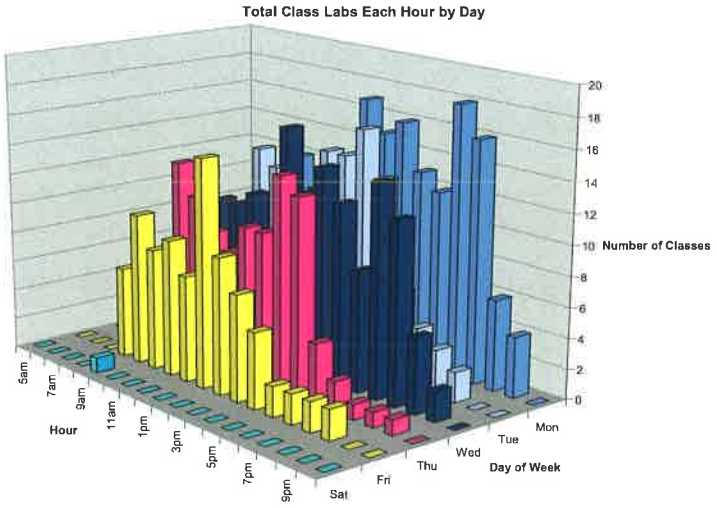
100 Classrooms	6,000 HC	6,000 HC	8,000 HC
Space Factor	1.07	1.07	1.07
Total WSCH	55,545	55,545	73,718
Guideline ASF	59,682	59,682	79,209
% Growth		0.0%	32.7%
Existing ASF	77,881		
Adjusted Existing ASF		29,714	29,714
Surplus / Deficit (-)	18,199	-29,969	-49,495

200 Laboratories

Norfolk State's lab scheduling is opposite from the class schedules and at lower volumes. Lab scheduling peaks in the afternoon and early evening hours. The scheduling peak is on Mondays at 6pm.

Similar to classroom space, teaching laboratory space is calculated as a product of WSCH and a laboratory space factor. The laboratory space factor is derived in the same manner as the classroom space factor.

Universities and colleges with similar programs as NSU are recommended to plan for approximately 65 ASF per student station in laboratories. Norfolk State has a current average of 34.5 ASF per student station. In addition, the existing average room use hours for labs were 16 hours each week in the Fall of 2005. This is due to a large number of labs that are outdated and/or in disrepair and are thus being left unused. CEFPI recommends that laboratory space be used 22.5 hours in a week. Since laboratories are generally used less frequently than classrooms, they are expected to operate with station occupancy close to 80%. Norfolk State's average station occupancy was 69% for their laboratories in 2005. For the purposes of this master plan, we recommend increasing the station size to 65 ASF/station, increasing the room use rate to 20 hours each week, and using station occupancy of 75%. These



utilization and occupancy numbers are slightly lower than the CEFPI recommendations because it has been observed that small and medium sized universities have more trouble achieving these more stringent efficiency factors.

These three factors produce a space factor of 4.33 SF per WSCH.

In Fall of 2005, the University had a total laboratory WSCH of 5,111. The following chart shows the projected class lab space requirements for 6,000 HC and 8,000 HC student populations respectively.

The preceding chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

Teaching Laboratories	6,000 HC	6,000 HC	8,000 HC
Space Factor	4.33	4.33	4.33
Total WSCH	5,411	5,411	7,181
Guideline ASF	23,448	23,448	31,118
% Growth		0.0%	32.7%
Existing ASF	67,240		
Adjusted Existing ASF		32,720	32,720
Surplus / Deficit (-)	43,792	9,272	1,602

Open Laboratories	6,000 HC	6,000 HC	8,000 HC
Total FTE	5,028	5,028	6,673
ASF/FTE for Open Labs	4.60	4.60	4.60
Guideline ASF	23,133	23,133	30,701
% Growth		0.0%	32.7%
Existing ASF	23,133		
Adjusted Existing ASF		14,166	14,166
Surplus / Deficit (-)	0	-8,967	-16,536

The following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

Research Laboratories	6,000 HC	6,000 HC	8,000 HC
Student FTE	5,028	5,028	6,678
ASF/Headcount	3	3	3
Guideline ASF	15,084	15,084	20,034
% Growth		0.0%	32.8%
Existing ASF	14,038		
Adjusted Existing ASF		33,830	33,830
Surplus / Deficit (-)	-1,046	18,746	13,796

Given the proposed demolitions, extensive renovations and new buildings currently in progress, the University will be right in line with the projected laboratory space need for 8,000 students (HC.) In the meantime, the University shows a surplus of 21,000 ASF which is due to the extensive research laboratories currently being constructed on the RISE Campus.

The following chart shows the total projected space requirement for all laboratories for 6,000 HC and 8,000 HC student populations respectively.

200 Laboratories	6,000 HC	6,000 HC	8,000 HC
Teaching Labs SF	23,448	23,448	31,118
Open Labs SF	23,133	23,133	30,701
Research Labs SF	15,084	15,084	20,034
Guideline ASF	61,665	61,665	81,853
% Growth		0.0%	32.7%
Existing ASF	104,411		
Adjusted Existing ASF		80,716	80,716
Surplus / Deficit (-)	42,746	19,051	-1,138

300 Offices

Office space is projected as a product of the projected FTE for faculty and staff requiring office space and an average ASF/FTE faculty and staff as well as additional ASF/FTE for office service space (i.e. storage, work rooms, conference rooms).

300 Offices	6,000 HC	6,000 HC	8,000 HC
Office Faculty and Staff FTE	949	949	975
Standard Office (150 ASF/FTE)	142,399	142,399	146,198
Standard Office Service (20 ASF/FTE)	18,986	18,986	19,493
Guideline ASF	161,385	161,385	165,691
% Growth		0.0%	2.7%
Existing ASF	202,975		
Adjusted Existing ASF		160,863	0
Surplus / Deficit (-)	41,590	-523	-165,691

400 Study & Library

The space requirements indicate that the library space provided is current over the recommend space by almost 30,000 ASF. By the time the University reaches its goal of 8,000 students (HC), the current facility will still have excess space of approximately 5,000 ASF. Therefore, the current facility should be adequate for the universities needs as they progress toward their enrollment goals.

The following chart shows the projected requirements for volumes followed by space requirements for 6,000 HC and 8,000 HC student populations respectively.

Collection Space	6,000 HC	6,000 HC	8,000 HC
Base Volumes	85,000	85,000	85,000
Volumes per Faculty FTE	100	100	100
Faculty FTE	315	315	393
Subtotal	31,533	31,533	39,253
Volumes per Student FTE	15	15	15
Student FTE	5,028	5,028	6,673
Subtotal	75,420	75,420	100,095
Volumes per Undergraduate Program	350	350	350
# of Undergraduate Programs	36	36	41
Subtotal	12,600	12,600	14,350
Volumes per Masters Program	6,000	6,000	6,000
# of Masters Programs	18	18	20
Subtotal	108,000	108,000	120,000
Total # of Volumes	312,553	312,553	358,698
ASF/Volumes	0.08	0.08	0.08
Guideline ASF	25,004	25,004	28,696
% Growth		0.0%	14.8%

Reading Space	6,000 HC	6,000 HC	8,000 HC
Student HC	6,096	6,096	8,091
% Seats/Student	20.0%	20.0%	20.0%
Subtotal (Student Seats)	1220	1220	1619
Student Reading SF (25 ASF/SS)	30,500	30,500	40,475
Faculty HC	386	386	481
% Seats/Faculty	8.0%	8.0%	8.0%
Subtotal (Faculty Seats)	31	31	39
Faculty Reading SF (25 ASF/FS)	775	775	975
Guideline ASF	31,275	31,275	41,450
% Growth		0.0%	32.5%

Service Space	6,000 HC	6,000 HC	8,000 HC
Total Reading & Collection Area	56,279	56,279	70,146
% of Reading & Collection Area	15.0%	15.0%	15.0%
Guideline ASF	8,442	8,442	10,522
% Growth		0.0%	24.6%

400 Library	6,000 HC	6,000 HC	8,000 HC
Collection Space	25,004	25,004	28,696
Reading Space	31,275	31,275	41,450
Service Space	8,442	8,442	10,522
Guideline ASF	64,721	64,721	80,668
% Growth		0.0%	24.6%
Existing ASF	94,467		
Adjusted Existing ASF		85,590	0
Surplus / Deficit (-)	29,746	20,868	-80,668

500 Special Use

This section describes the space needs for special use facilities such as armories, recreation space, space for audio/visual equipment, clinical and demonstration space and miscellaneous special use space.

510 Armory

The following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

510 Armory	6,000 HC	6,000 HC	8,000 HC
Planned Area	3,482	3,482	3,482
Guideline ASF	3,482	3,482	3,482
% Growth		0.0%	0.0%
Existing ASF	3,482		
Adjusted Existing ASF		655	655
Surplus / Deficit (-)	0	-2,827	-2,827

520 Recreation, PE & Athletics

Using the CEFPI guidelines of a basic athletic core, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

520 Recreational/PE/Athletics	6,000 HC	6,000 HC	8,000 HC
Base Area SF	20,000	20,000	20,000
# over 1000 HC/FTE*	4,028	4,028	5,673
# of FTE over 1,000 x 5 ASF	20,140	20,140	28,365
Guideline ASF	40,140	40,140	48,365
% Growth		0.0%	20.5%
Existing ASF	83,698		
Adjusted Existing ASF		60,452	60,452
Surplus / Deficit (-)	43,558	20,312	12,087

* If HC < 2000 then calculation uses # over 1000 HC otherwise the calculation uses # over 1000 FTE

530 Audio Visual Television

Using the CEFPI guidelines, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

530 Audio/Visual/Television	6,000 HC	6,000 HC	8,000 HC
Base Area SF	7,400	7,400	7,400
Undergrad. FTE over 4000 x 1 ASF	586	586	2,086
Graduate FTE over 4000 x 2 ASF	0	0	0
Guideline ASF	7,986	7,986	9,486
% Growth		0.0%	18.8%
Existing ASF	3,282		
Adjusted Existing ASF		0	0
Surplus / Deficit (-)	-4,704	-7,986	-9,486

540/550 Clinical Demostration

Using the CEFPI guidelines, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

540/550 Clinical/Demonstration	6,000 HC	6,000 HC	8,000 HC
Student FTE	5,028	5,028	6,673
% of Students in Special Programs	5.0%	5.0%	5.0%
10 ASF/FTE	2,514	2,514	3,337
Guideline ASF	2,514	2,514	3,337
% Growth		0.0%	32.7%
Existing ASF	812		
Adjusted Existing ASF		2,841	2,029
Surplus / Deficit (-)	-1,702	327	-1,308

560-590 Miscellaneous

This category includes special facilities used for some academic programs including but not limited to animal quarters and greenhouses. The following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

560/570/580/590 Miscellaneous	6,000 HC	6,000 HC	8,000 HC
Student FTE	5,028	5,028	6,673
5 ASF x Total FTE	25,140	25,140	33,365
% of Students in Special Programs	0.0%	0.0%	0.0%
25 ASF x Special Student FTE	0	0	0
% of Faculty in Special Programs	0.0%	0.0%	0.0%
100 ASF x Faculty FTE	0	0	0
Guideline ASF	25,140	25,140	33,365
% Growth		0.0%	32.7%
Existing ASF	439		
Adjusted Existing ASF		206	206
Surplus / Deficit (-)	-24,701	-24,934	-33,159

600 General Use

This section describes the space needs for general use facilities such as assembly and exhibition space, food service space, lounge and merchandising space, and student services space.

610/620 Assembly/Exhibition

Using the CEFPI guidelines, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

610/620 Assembly/Exhibition	6,000 HC	6,000 HC	8,000 HC
Base Area SF	33,050	33,050	33,050
FTE over 5000	28	28	1,673
6 ASF / FTE over 5000	168	168	10,038
Guideline ASF	33,218	33,218	43,088
% Growth		0.0%	29.7%
Existing ASF	35,829		
Adjusted Existing ASF		37,136	37,136
Surplus / Deficit (-)	2,611	3,918	-5,952

630 Food Service

Using the CEFPI guidelines, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

630 Food Service	6,000 HC	6,000 HC	8,000 HC
Percent of HC (Students/Faculty/Staff)	15.0%	15.0%	15.0%
Number of Occupants (Students/Faculty/Staff)	1,155	1,155	1,463
Seating Area (20 ASF/Occupant)	23,100	23,100	29,260
Kitchen/Serving/Back of House (15 ASF/Occupant)	17,325	17,325	21,945
Guideline ASF	40,425	40,425	51,205
% Growth		0.0%	26.7%
Existing ASF	43,396		
Adjusted Existing ASF		33,888	33,888
Surplus / Deficit (-)	2,971	-6,537	-17,317

650-690 Lounge, Merchandising, Non-Athletic Recreation, and Service

Using the CEFPI guidelines, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

Lounge & Merchandising	6,000 HC	6,000 HC	8,000 HC
Total # of Student Stations	5,673	5,673	7,529
Total Staff (Non-Office)	130	130	14
Guideline ASF	5,803	5,803	7,543
% Growth		0.0%	30.0%
Existing ASF	31,631		
Adjusted Existing ASF		26,718	26,718
Surplus / Deficit (-)	25,828	20,915	19,175

Recreation/Student Services	6,000 HC	6,000 HC	8,000 HC
9 ASF x Total FTE	45,252	45,252	60,057
Guideline ASF	45,252	45,252	60,057
% Growth		0.0%	32.7%
Existing ASF	17,470		
Adjusted Existing ASF		21,409	21,409
Surplus / Deficit (-)	-27,782	-23,843	-38,648

650/690 Lounge/Merch/Rec/Services	6,000 HC	6,000 HC	8,000 HC
Total Lounge & Merchandising SF	5,803	5,803	7,543
Total Recreation & Student Services SF	45,252	45,252	60,057
Guideline ASF	51,055	51,055	67,600
% Growth		0.0%	32.4%
Existing ASF	49,101		
Adjusted Existing ASF		48,128	48,128
Surplus / Deficit (-)	-1,954	-2,927	-19,472

700 Support

The section describes the space needs for support facilities such as data processing and computer space, workshop space, storage space and space for housing hazardous materials.

710 Data Processing/Computer

Using the CEFPI guidelines, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

710 Data Processing/Computer	6,000 HC	6,000 HC	8,000 HC
Base Area SF	4,500	4,500	4,500
FTE over 5000	28	28	1,673
1 ASF / FTE over 5000	28	28	1,673
Guideline ASF	4,528	4,528	6,173
% Growth		0.0%	36.3%
Existing ASF	796		
Adjusted Existing ASF		3,001	3,001
Surplus / Deficit (-)	-3,732	-1,527	-3,172

720-750 Workshop & Storage

Using the CEFPI guidelines, the following chart shows the projected space requirements for 6,000 HC and 8,000 HC student populations respectively.

720/730/740/750 Shop & Storage	6,000 HC	6,000 HC	8,000 HC
8% of Total Space (excluding Shop & Storage Space)	76,561	76,561	108,531
Guideline ASF	76,561	76,561	108,531
% Growth		0.0%	41.8%
Existing ASF	16,248		
Adjusted Existing ASF		2,167	2,167
Surplus / Deficit (-)	-60,313	-74,394	-106,364

760 Hazardous Materials

No space is currently needed or projected for housing hazardous materials.

760 Hazardous Materials	6,000 HC	6,000 HC	8,000 HC
Planned Area	0	0	0
Guideline ASF	0	0	0
% Growth		0.0%	0.0%
Existing ASF	0		
Adjusted Existing ASF		0	0
Surplus / Deficit (-)	0	0	0

800 Health	6,000 HC	6,000 HC	8,000 HC
Planned Area	600	600	600
Guideline ASF	600	600	600
% Growth		0.0%	0.0%
Existing ASF	327		
Adjusted Existing ASF		0	0
Surplus / Deficit (-)	-273	-600	-600

800 Health

CEFPI does not provide any guidelines for this category. The need is determined by institutions, based on the demand. The University currently has a small clinic of approximately 327 ASF. It is recommended that the University increase the size of this clinic to 600 ASF in order to better serve the health needs of its population. This would provide enough room for a small waiting room with a desk, two exam rooms, and storage space.

900 Residential

In the Fall of 2005, the University was housing almost 37% of their student population. If all of their 2,518 beds across their 8 dormitories were available for use, the percentage housed would have been 41.3%. As it was, approximately 300 beds were not used at that time. Those beds were not used due to the conditions of the upper floors of the Twin Towers Dormitory. The University has stated a goal of housing 35% of their students as their population grows. The University will need 312 new beds to accommodate their targeted student enrollment of 8,000 students (HC).

The most recent residential building at the University is the Spartan Suites, which has 600 beds allocated between one, two, and four bedroom apartments. The facility also includes meeting and lounge space. This building was a response to the growing demand for apartment style residences. The University intends to build all new beds in this same style with a higher percentage of the apartments consisting of one and two bedrooms to meet both market demands and peer trends.

900 Residential	6,000 HC	6,000 HC	8,000 HC
Student Head Count	6,096	6,096	8,091
Percent Housed	41.3%	41.3%	35.0%
Total # of beds	2,518	2,518	2,830
Average SF/Bed	166	166	241
Guideline ASF	417,614	417,614	682,516
% Growth		0.0%	63.4%
Existing ASF	417,614		
Adjusted Existing ASF		291,655	291,655
Surplus / Deficit (-)	0	-125,959	-390,861

The University intends to demolish the Twin Towers, Scott Hall and Phyllis Wheatley dormitories due to their deteriorated condition. This represents a 982 bed loss to the current residential inventory that will need to be replaced in order to maintain the 35% housing target. The following space projections assume that all new construction will continue to be in an apartment style configuration with an average of 250 ASF per bed.

SCHEV PROJECTIONS

The following will explain how the need for each SCHEV category was derived.

Instruction and Academic Support

This includes all space used for academic instruction, preparation, and administration. SCHEV allows for 42.5 ASF per student FTE for this space category.

1.0 Instruction and 4.0 Academic Support	6,000 HC	6,000 HC	8,000 HC
Projected FTE	5,028	5,028	6,673
ASF per FTE	42.5	42.5	42.5
SCHEV Guideline ASF	213,690	213,690	283,603
% Growth		0.0%	32.7%
Existing ASF	316,156		
Adjusted Existing ASF		121,412	121,412
Surplus / Deficit (-)	102,466	-92,278	-162,191

Library

SCHEV does not have any space standards for library space. Therefore, we have substituted the CEFPI guidelines for this space. Detailed explanations for the space need for collection, reading and service space are available in the detailed CEFPI projections above.

4.1 Library	6,000 HC	6,000 HC	8,000 HC
Collection Space	25,004	25,004	28,696
Reading Space	31,275	31,275	41,450
Service Space	8,442	8,442	10,522
Guideline ASF	64,721	64,721	80,668
% Growth		0.0%	24.6%
Existing ASF	106,130		
Adjusted Existing ASF		95,598	95,598
Surplus / Deficit (-)	41,409	30,877	14,930

Research

SCHEV allows for 10 ASF per graduate FTE on Campus plus.

2.0 Research	6,000 HC	6,000 HC	8,000 HC
Projected On-campus Graduate FTE*	442	442	587
ASF per FTE	10	10	10
Additional On-campus Graduate Subtotal	4,419	4,419	5,870
SCHEV Guideline ASF	4,419	4,419	5,870
% Growth		0.0%	32.8%
Existing ASF	10,973		
Adjusted Existing ASF		62,973	62,973
Surplus / Deficit (-)	6,554	58,553	57,103

* excluding medicine, dentistry, or veterinary medicine.

Public Services

There are no SCHEV guidelines for this space category therefore for the purposes of this master plan we have assumed that no additional public service space will be needed. Existing space proposed for demolition or renovation will need to be replaced.

3.0 Public Services	6,000 HC	6,000 HC	8,000 HC
SCHEV Guideline ASF	NA	33,449	33,449
% Growth		0.0%	0.0%
Existing ASF	33,449		
Adjusted Existing ASF		19,813	19,813
Surplus / Deficit (-)	0	-13,636	-13,636

Student Services and Institutional Support

This category includes space used for the administration of the institution and for providing student assistance, such as counseling, financial aid, and student health. SCHEV allows for a total of 7 ASF per student FTE for this space category.

5.0 Student Services and 6.0 Institutional Support	6,000 HC	6,000 HC	8,000 HC
Projected FTE	5,028	5,028	6,673
ASF per FTE	7.0	7.0	7.0
SCHEV Guideline ASF	35,196	35,196	46,711
% Growth		0.0%	32.7%
Existing ASF	92,772		
Adjusted Existing ASF		98,025	98,025
Surplus / Deficit (-)	57,576	62,829	51,314

Physical Plant

This is space used primarily for the operation and maintenance of the physical plant. It includes all space for operations established to provide services and maintenance related to Campus grounds and facilities. SCHEV allows 4 ASF per Student FTE for this category.

7.0 Physical Plant	6,000 HC	6,000 HC	8,000 HC
Projected FTE	5,028	5,028	6,673
ASF per FTE	4.0	4.0	4.0
SCHEV Guideline ASF	20,112	20,112	26,692
% Growth		0.0%	32.7%
Existing ASF	105,201		
Adjusted Existing ASF		50,338	50,338
Surplus / Deficit (-)	85,089	30,226	23,646

Auxiliary & Miscellaneous

Auxiliary spaces includes anything where the University charges a fee that is directly related to a good or service that is not associated with the normal tuition costs. This would include housing, food service and recreational facilities.

Since SCHEV does not provide any guidelines for this type of space, we substituted the CEFPI standards for the 520, 630, and 900 room use codes. For the purposes of this master plan, it is assumed that museum and gallery space needs as well as lounge and merchandising space will stay the same. It is also assumed that the office space needed to administer the auxiliary functions will stay the same as well. Finally, a factor of .5 ASF per student head count was used to determine the non-athletic recreation space needed.

9.0 Auxiliary & Misc.	6,000 HC	6,000 HC	8,000 HC
520 Recreational/PE/Athletics	40,140	40,140	48,365
630 Food Service	40,425	40,425	51,205
900 Residential	417,614	417,614	682,516
Plus			
4.2 Museums and Galleries	13,669	13,669	13,669
4.5 Ancillary Support	0	0	0
300 Office ASF	13,228	13,228	13,228
650/660 Lounge & Merchandising ASF	21,653	21,653	21,653
670 Recreation	3,000	3,000	4,000
SCHEV Guideline ASF	549,729	549,729	834,636
% Growth		0.0%	51.8%
Existing ASF	598,376		
Adjusted Existing ASF		447,932	447,932
Surplus / Deficit (-)	48,647	-101,797	-386,705

CONTENTS

4.0 PHYSICAL PLANNING

4.1 Physical Plan Options

The three master plan alternatives have been designed to accommodate projected Campus needs in different ways. Each of the three alternatives direct new growth in ways that will enhance the functional and physical relationships that form the basis of Norfolk State University.

All of the Master Plan Alternatives share the following key features:

- A loop road is introduced to clearly define and service the Campus academic core. In order to create the loop, infill roads are constructed to patch discontinuities in the existing road network while simultaneously setting a boundary for the positioning of future academic buildings.

- All master plan alternatives retain the historical Greek walk from the Park Avenue entrance culminating at Brooks Memorial Library. This Greek walk is to be restored and preserved as a historic zone.

- The alternative plans reinforce the growing importance of new entrances to the Campus via Park Avenue and Corprew Avenue by creating place making elements such as iconic gates and similar pedestrian improvements.

- The plans preserve the existing main lawns that surrounds Brooks Memorial Library. The extension and enhancement of these lawns will be accomplished through the removal of fragmented surface parking and obsolete structures which interrupt the flow of this space near Presidential Drive and the reinforcement of the edges with distinct landscaping.

- In all options the new academic buildings will be located first along the length of the Campus core to complete the definition of this central space and to minimize walking times between classes. Buildings will be carefully positioned to create pleasant secondary spaces and quadrangles between buildings.

- All plans seek to consolidate small inefficient parking lots between the core academic buildings

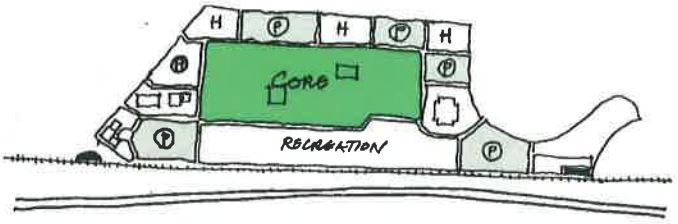


Fig. Concept diagram applied to site

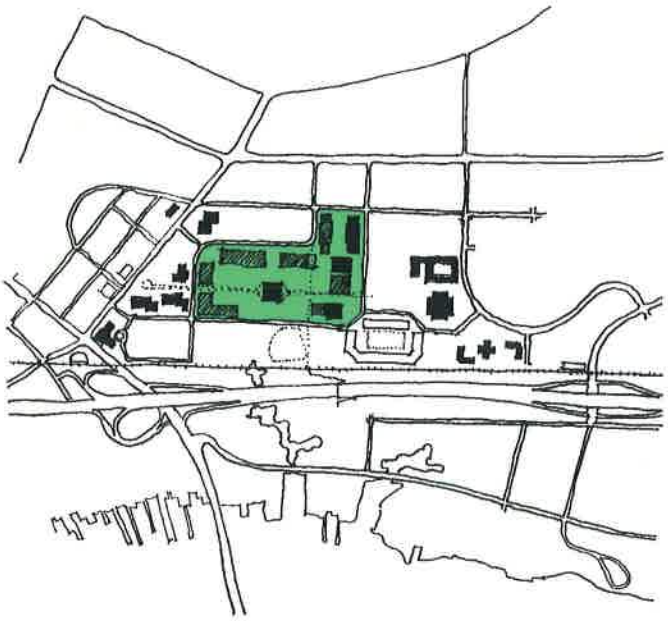


Fig. Core concept development study

Fig. Study options for future student housing

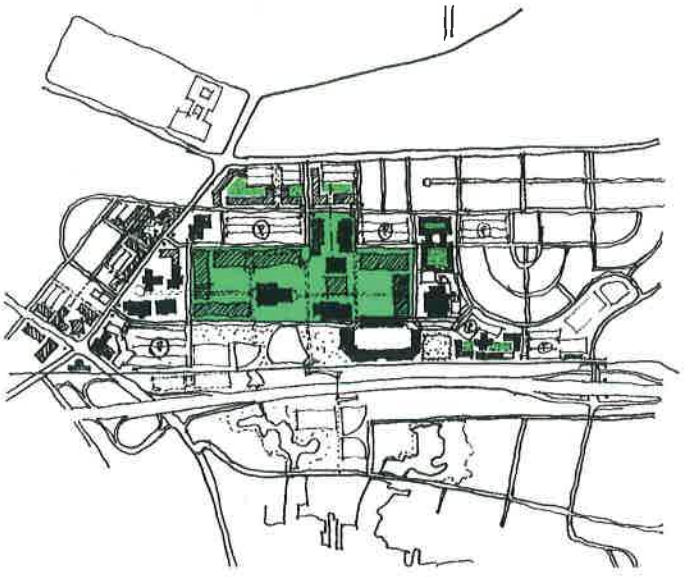


Fig. Quadrangle development study

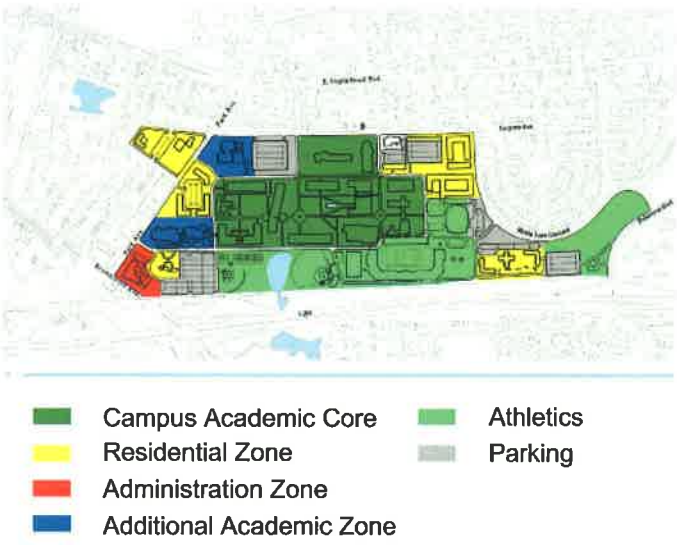


Fig. New Campus Zoning Diagram

by phasing them out as new parking is provided at the perimeter of the academic core. This will consolidate the academic core while providing opportunities for green space.

- The site defined by Corprew Avenue, Park Avenue, Marshall Avenue and Bond Street will accommodate the relocated President's house in the southern portion and new student housing in the northern portion. Surface parking assigned to the residential building will be provided in the block immediately to the west.

- All of the plans provide for the new academic, academic support, and residential facilities as needed to accommodate a Campus of 8,000 students to include: expansion to the Brooks Library, a new more centrally located Student Center, new laboratory buildings, a new convocation hall, and the totally new RISE Information Technology Building.

- All master plan alternatives assume the renovation of the Robinson Technology Center.

- New student apartments will provide additional housing to help satisfy resident student demand. The former hospital site, the site immediately to the east of the hospital site, and the site defined by Bond, Corprew, Marshall and Park with its adjacent property, provides the logical first locations for new student apartment development.

- A new Support Services Complex will consolidate all of the existing Physical Plant, Materials Management, Central Receiving and Stores, Housing Maintenance Operations and Human Resources facilities at one location.

- The Master Plan alternatives assume that all of the temporary, pre-engineered, vacant and obsolete buildings will be removed and replaced with high quality, long term buildings.

- The plans also envisions that the athletic and recreational facilities will be consolidated in distinct locations.

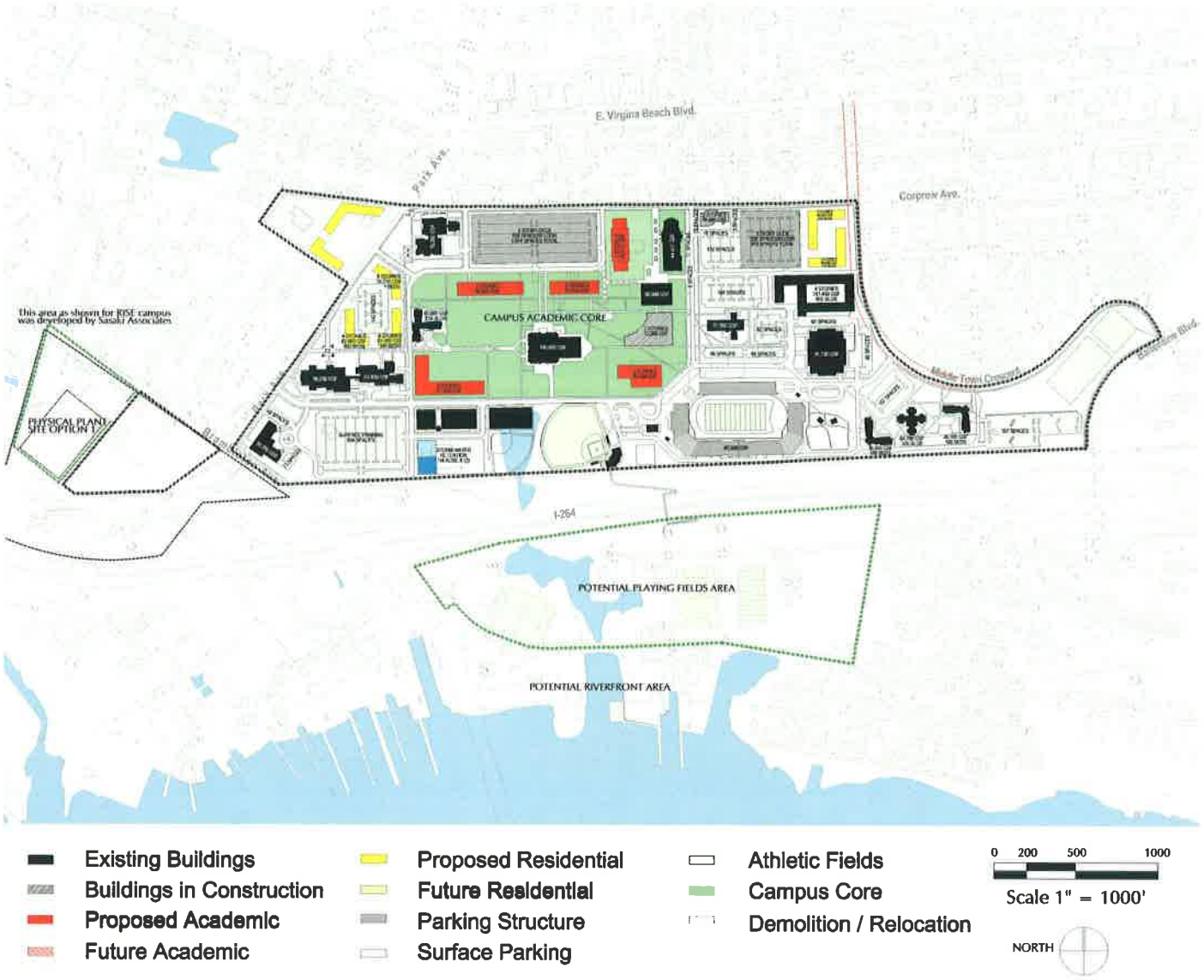


Fig. Campus Master Plan Study Option A

Option A Compact Core

It should be noted that Alternative A adhered strictly to the 8,000 student enrollment program as developed to date. It also maintained all of the required program elements on the existing property owned by Norfolk State University.

The following adjustments are made to the vehicular circulation and parking areas in Alternative A:

- The Compact Core scheme introduces a loop road with two vehicular entrances along Corprew Avenue and two at Park Avenue.
- Two parking structures are built: one is located on the Bowser Hall site, the other is located on the former hospital site.
- Surface parking lots located north of Brown Hall, south of Bowser Hall and South of Brooks Library are removed.
- A new road segment is created on the Brown Hall site in order to complete the loop road figure while utilizing the existing cul-de-sac entrance that was used to enter the Brown Hall surface parking lot.
- A new road segment is created south of the Bowser

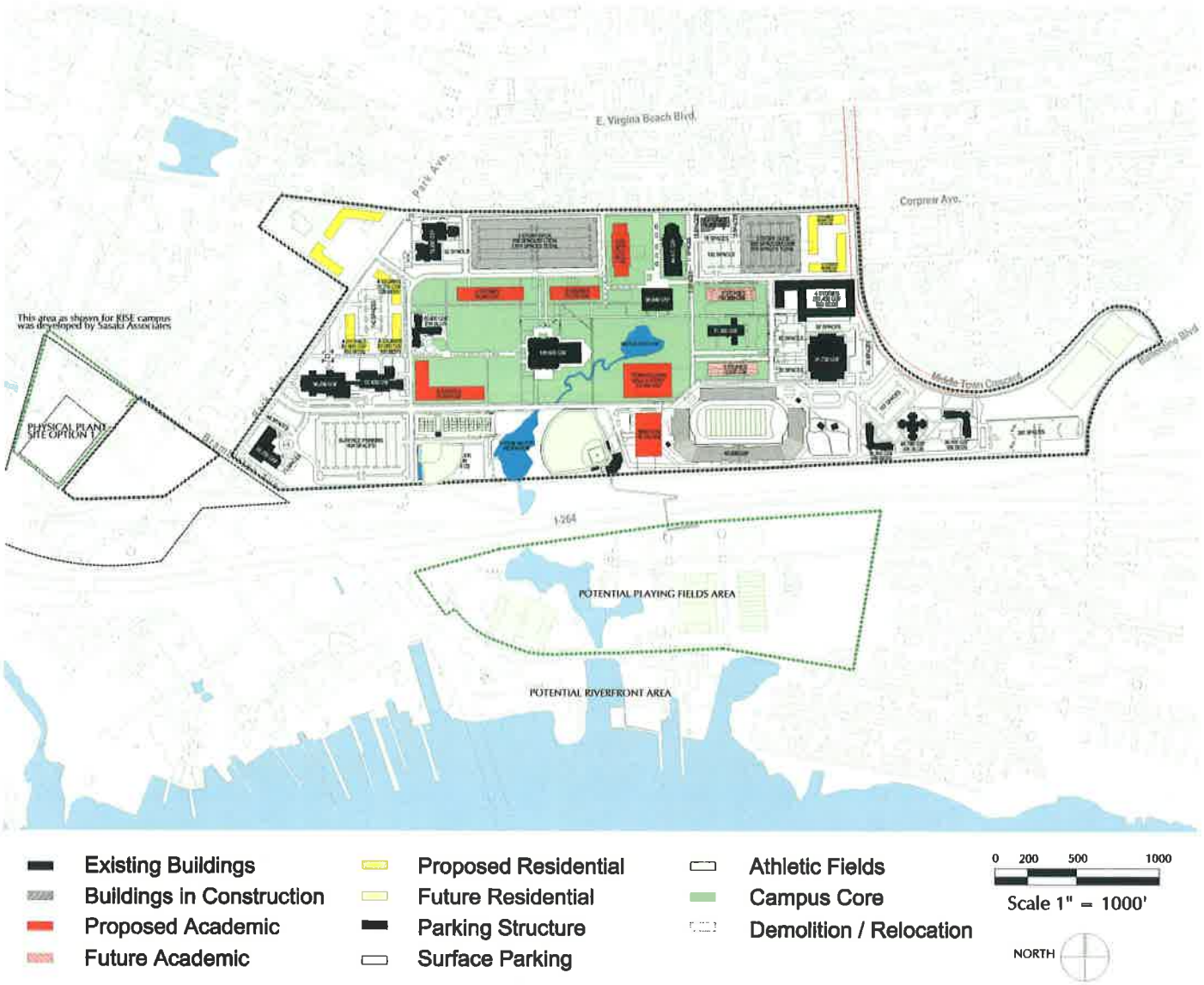


Fig. Campus Master Plan Study Option B

Hall site as part of the loop road.

- The pedestrian walkway between Alexander Dormitory and West Cafeteria is converted to a vehicular road and connects to Presidential Drive.
- The eastern limit of the Campus core is defined by the Gym Road segment that passes between the new Student Center and the Nursing and Education Building.
- Limited surface parking is introduced on the Madison Hall and Woods Hall sites.
- A new gymnasium is built slightly west of the present Gill's Gym site in order to accommodate a new access road which replaces the present access road located underneath the stadium bleachers.

In addition, the following adjustments are made to the pedestrian circulation and open space system:

- An informal network of pedestrian paths connects new lab and class buildings that are within the newly defined Campus core area.
- Two new quadrangles, one between the Brooks Library and Alexander dormitory and another to be

created between the Brooks Library and the new Student Center, are developed.

Option B Expanded Core

Alternative B also adhered to the 8,000 student program but defined a slightly larger area for the academic core. It also, with the allocation of additional properties, sought to expand both the athletic and recreational facilities and the new Support Services Center in an appropriate off-site location.

The following adjustments are made to the vehicular circulation and parking areas in Alternative B:

- The loop road is extended to encircle the Nursing buidling.
- Vehicular circulation is moved from under the stadium bleachers, north to create a loop road segment on the Madison Hall site.
- Surface parking is consolidated and the number of spaces increased immediately adjacent to Echols Hall.
- A new surface parking lot is created northwest of Building 34 Mid-Rise Dormitory.
- The existing surface parking lot to the north of the Nursing Building is demolished to create the possibility of locating new student center, lab or classroom facilities.
- A Convocation Hall is introduced on the Gill's Gym site.

The following adjustments are made to the pedestrian circulation and open space system:

- A major water feature is proposed for the site immediately to the east of the Brooks Library. This site is one of the topographical low points of the Campus and would provide a natural drainage swale to assist in the management and evacuation of ground water from the Campus core.
- More open space and natural landscape plantings are introduced around the nursing building in order to extend the visual character of the Campus core further east.
- Pedestrian paths are likewise extended further east connecting Brooks Library, the proposed central water feature, New Student Center and the Nursing Building.

Option C North Quad

Alternative C expanded on a longer term and tested the capacity of the academic core, together with the allocation of additional properties to expand both the athletic and recreational facilities and the new Support Services Center in an appropriate off-site location.

The following adjustments are made to the vehicular circulation and parking areas in Alternative C:

- The entire area north of Corprew Avenue from Park Avenue to Majestic Avenue is developed as part of the main Campus. The development area stops at East Virginia Beach Boulevard which becomes the new northern limit and public edge of the Campus.
- Gym Road and the new loop road on the Bowser Hall site are extended north to East Virginia Beach using the existing city road alignments at Marathon Avenue and Mapole Avenue; however the character of the surrounding streets are converted from city streets to slower, more campus-like pedestrian friendly streets.
- A new academic quadrangle is introduced between the Marathon Avenue and Mapole Avenue north of Corprew Avenue.
- Parking structures, surrounded by commercial and retail shops at street level are built on the sites to the west and east of the new quadrangle. The new proposed housing allows opportunity for mixed-use programs and retail shops at street level.

The following adjustments are made to the pedestrian circulation and open space system:

- A pedestrian crossing is introduced at Corprew Avenue to link Marathon and Mapole back to the main Campus. The road at the pedestrian crossing location will feature traffic calming surfaces in order to provide safety and aesthetically superior character.

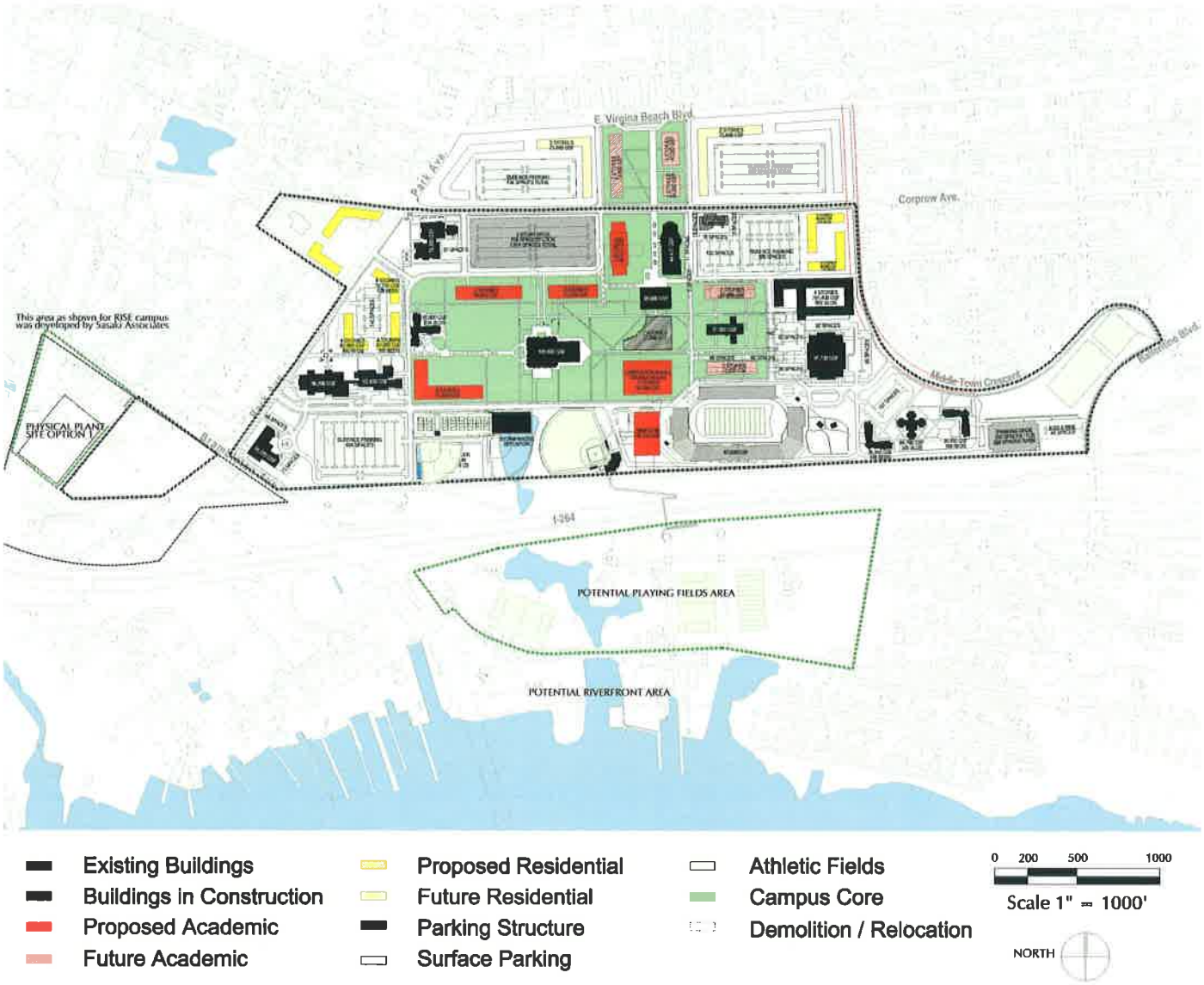


Fig. Campus Master Plan Study Option C

- The public sidewalks along Corprew Avenue will be improved with new tree plantings and street furniture.

- The southern side of East Virginia Beach Boulevard will be augmented with new streetscape improvements that tie into an active retail and commercial edge. This edge will be anchored by residential users in the buildings above the newly defined storefront arcade running the length of the Boulevard.

4.2 Proposed Master Plan

Introduction

The Proposed Master Plan incorporates the best aspects of the three alternative options. The Master Plan committee and Consultant Group evaluated the three alternatives in several working sessions and discussed the pros and cons of each. After careful review, refinements were made to arrive at the proposed master plan. Important recurring issues were the consolidation and allocation of parking, the management of storm water and how the topography of the Campus affected the location of future buildings, and the creation of

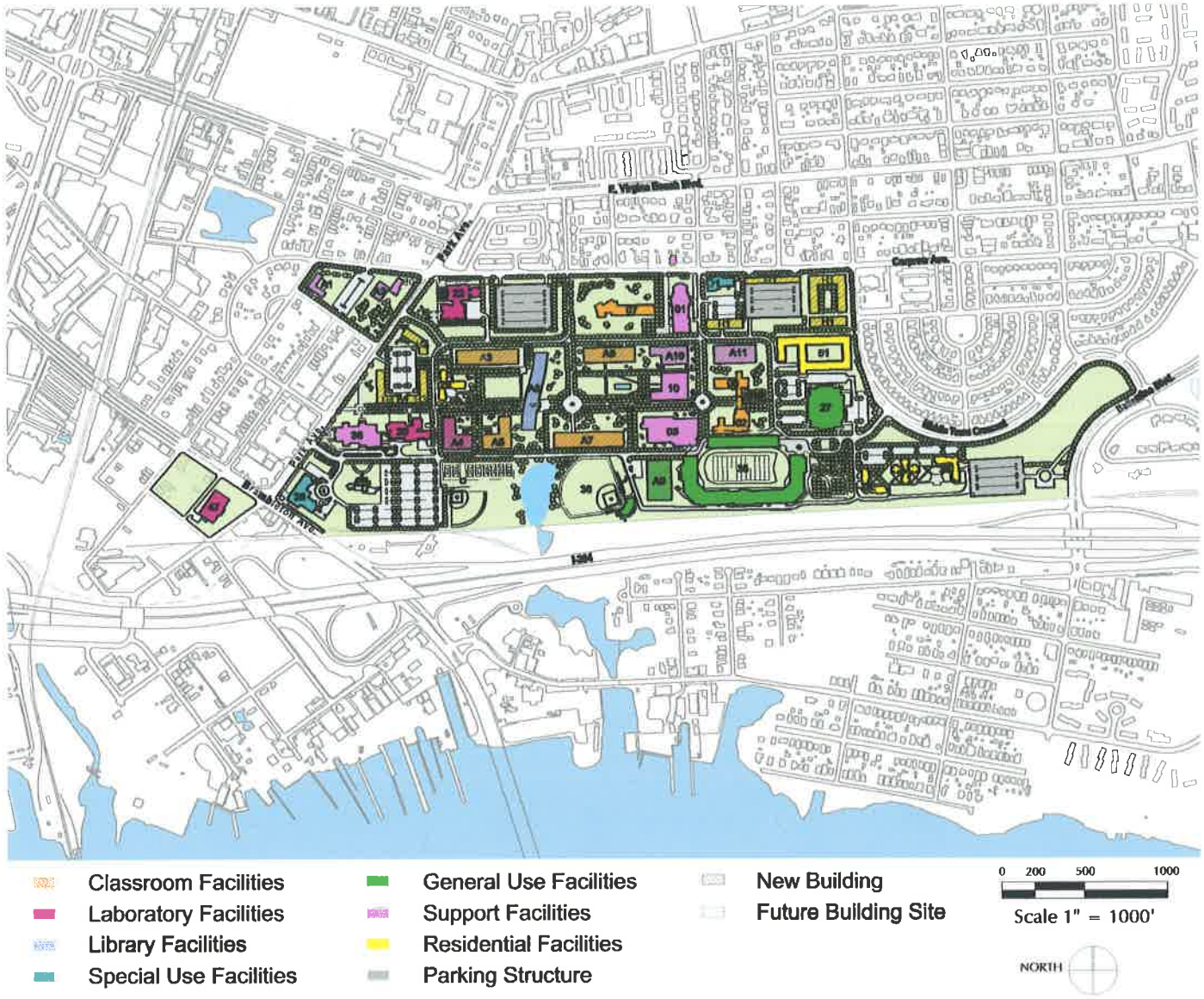


*Fig. Campus Master Plan * see appendix for enlarged plan and building titles*

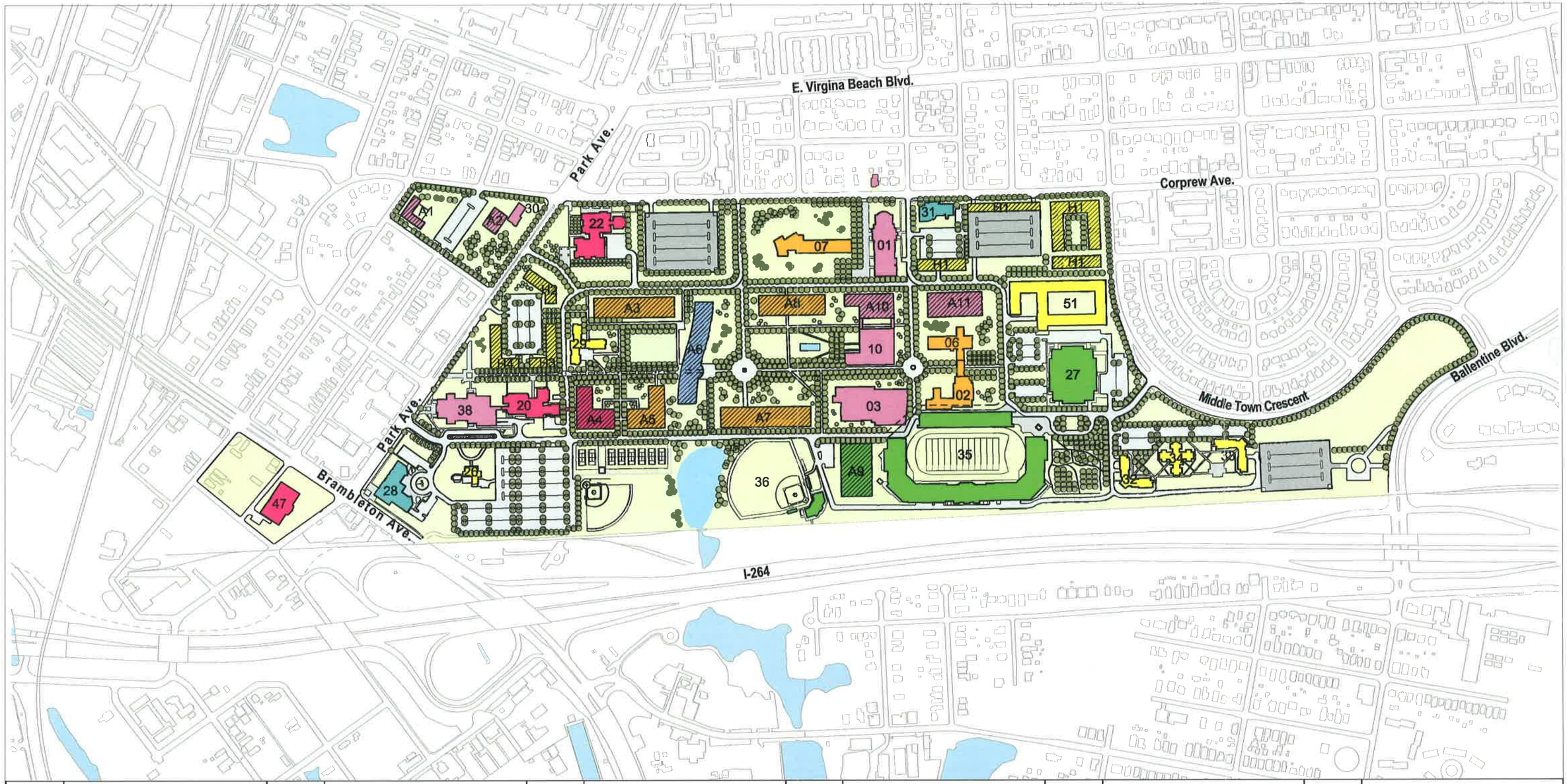
buildings, and the creation of a framework that will accommodate the possibility of future growth beyond the areas presently owned by the University.

4.21 General Concept

The idea of the Campus academic core is the fundamental organizing logic underpinning the proposal. The academic core is a compact cluster of classroom and laboratory buildings that face onto a series of formal and informal landscape quadrangles. This core provides a symbolic center for the University. It is easily accessible to pedestrians and provides a naturalistic and contemplative space typically associated with the American University Campus. It is a respite from the noise and bustle of the city.

4.22 Open Space

In addition to the formal and informal landscaped quadrangles in the core area, other open space strategies are being proposed to safeguard the Campus against storm water related issues. The southern portion of the Campus between Wilson Hall and the football stadium is prone to flooding. As such, the master plan proposes that it be set aside as a "no-build" zone to protect against potential storm surge damage. This area has been organized with programs that will not



Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name
01	Scott Dosier Dining Hall (East Campus Cafeteria)	20	E. L. Hamm Fine Arts Building	26	President's House	29	Rosa Alexander Hall	33	Lee Wesley Smith Men's Residence	36	Marty L. Miller Baseball Stadium
06	Bozeman Nursing Education Building	21	Lyman B Brooks Memorial Library	27	Joseph G. Echols Hall	31	Police Station	34	Mid-rise Dorm	38	L. D. Wilder Building
10	Mills Godwin Student Center	22	William P. Robinson, SR Technology Center	28	Harrison B. Wilson Hall	32	Charles H. Smith Men's Residence	35	William "Dick" Price Football Stadium (Athletic Facility)	51	Spartan Suites
A1	Brambleton Center Addition	A2	Wheatly Addition	A3	New Science Building	A4	Hamm Fine Arts Addition	A5	New School of Business	A6	New Library
A7	New Classroom/Nursing Building	A8	New Math/Communications Building	A9	Fieldhouse	A10	New Godwin Student Center	A11	Student Success Center	H1	New Living and Learning Center - East
H2	New Living and Learning Center - West										

- Classroom Facilities
- Laboratory Facilities
- Library Facilities
- Special Use Facilities
- General Use Facilities
- Support Facilities
- Residential Facilities
- Parking Structure
- New Building
- Future Building Site

NORFOLK STATE UNIVERSITY MASTER PLAN

0 100 250 500

Scale 1" = 500'

MASTER PLAN

JOHN PORTMAN & ASSOCIATES, INC.

NORTH

2008

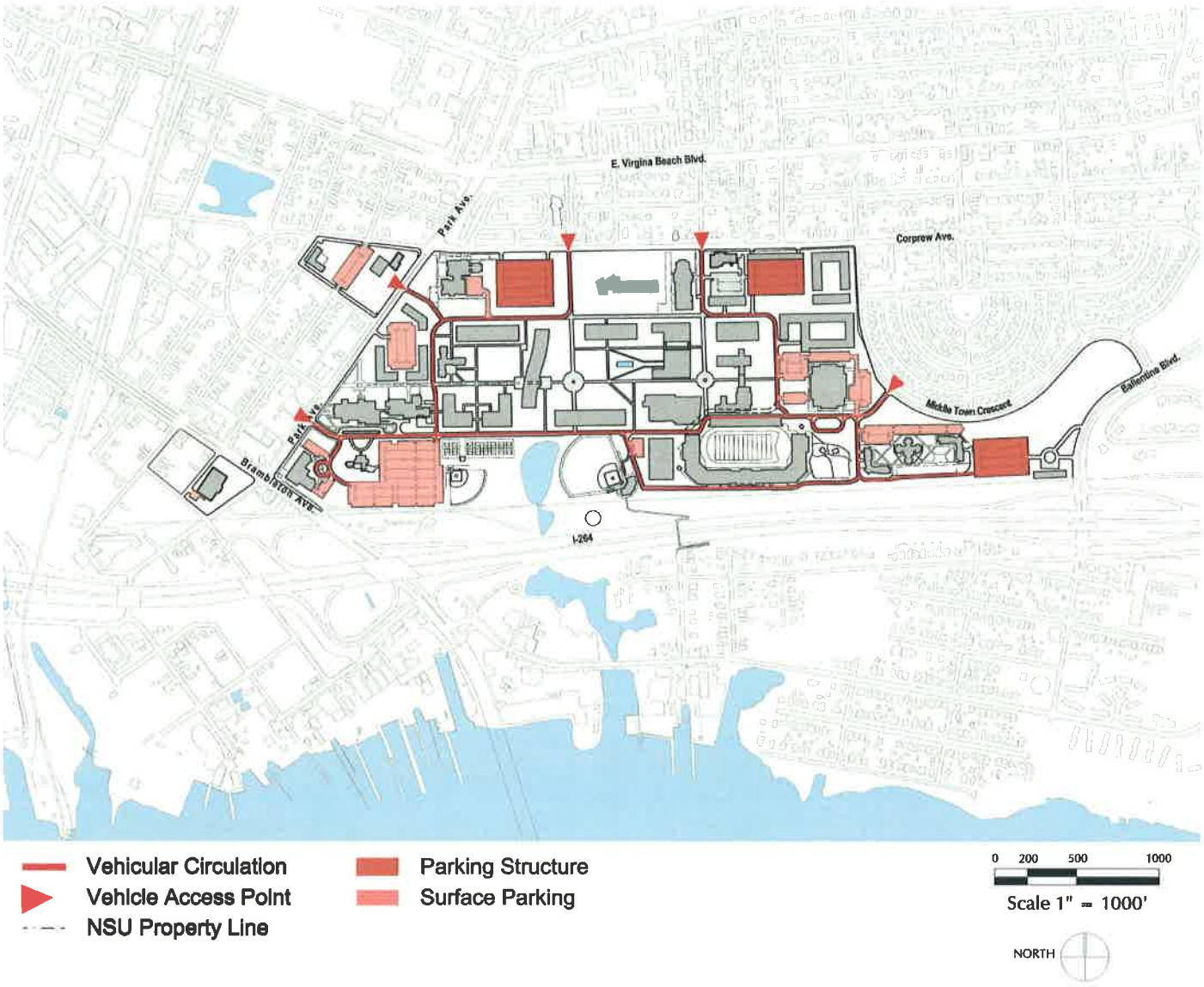


Fig. Vehicular Circulation & Parking

be dramatically affected by excess water infiltration, namely the storm water retention basin, softball field, baseball field, tennis courts and surface parking.

4.23 Vehicular Circulation and Parking

Around the campus core is a loop road. This road provides ease of access for automobiles entering the campus while moving them along the periphery of the quadrangle core. All buildings are therefore plugged into the loop road network. Faculty, staff, student, service, safety and security vehicles have access to the loop road. Major parking structures are located at the primary entrances of the campus to minimize the amount of traffic entering the heart of the Campus, thus creating a pedestrian friendly Campus.

4.24 Entrances

The entry sequence to the Campus establishes the character of the place. The quality of entry gates, thresholds, way finding structures and associated landscaping communicates to current and prospective students, faculty and visitors the ideals held by the NSU community. The entry welcomes and foreshadows. As such the hierarchy and organization of entry types is important. Visitors and those unfamiliar with NSU should be able to immediately recognize the primary Campus

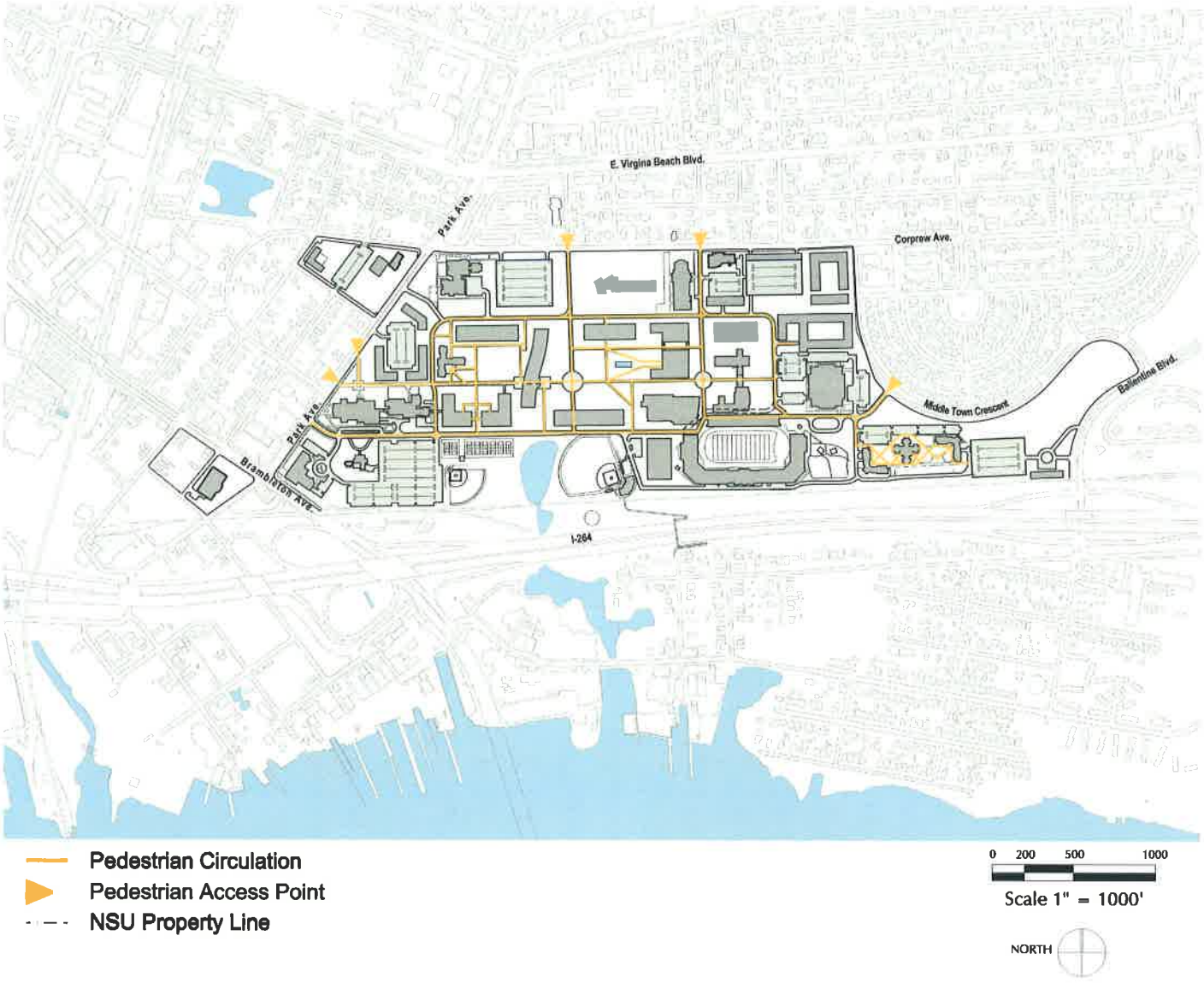
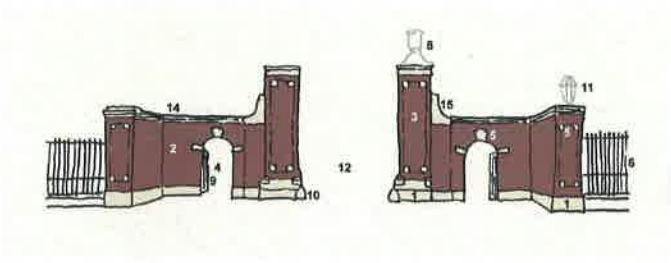


Fig. Pedestrian Circulation

entry. Secondary vehicular and pedestrian entries also serve as way finding and meeting locations for town and university alike.

Gates

The entry gates proposed for the NSU Campus have been organized into either vehicular or pedestrian access and into primary or secondary resulting in a formal vocabulary of four unique gate types, each with common characteristics. These four gate types share a common set of rules for their design but may vary from gate to gate. In this respect, the gates around the Campus share a common global visual character



Type VP - Vehicular Primary

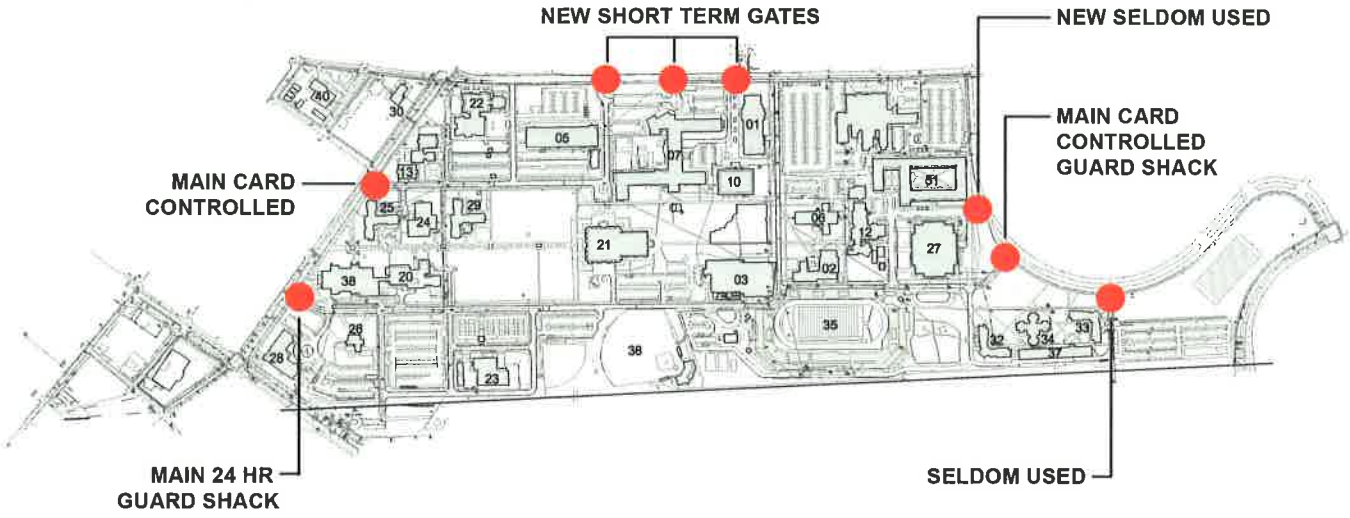
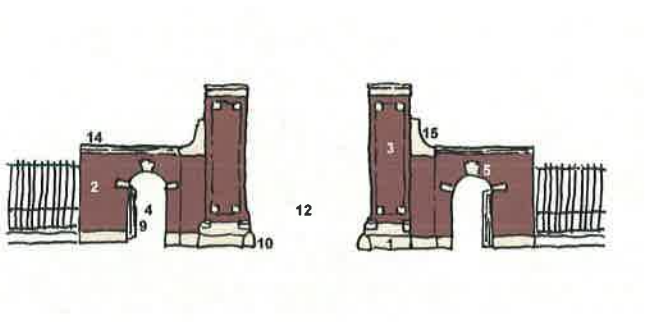


Fig. Gate Type Location Plan

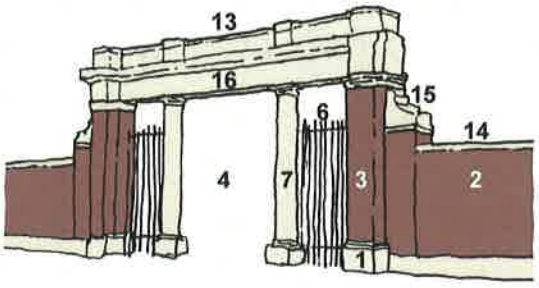


Type VS - Vehicular Secondary

Type PS - Pedestrian Secondary

but have individual idiosyncratic design elements that make each one unique. The master plan proposes those gates that should be constructed within the near future and goes on to illustrate the final complete build out of all possible gate / threshold locations. The figures depict the overall distribution of gates along the main Campus perimeter and the four different gate types.

The various gate types all share some or all of the following elements: 1. concrete / stone base 2. principal wall in NSU brick 3. primary vertical pier in NSU brick 4. pedestrian threshold 5. precast / stone accents 6. fixed ironwork fence 7. precast columns 8. optional decorative cap 9. operable ironwork gate 10. engaged bollard – auto precaution 11.optional lighting element 12. automobile threshold 13. entablature / lintel cross member 14. precast / stone wall cap 15. transition element 16. inscription. These elements may be classical or contemporary in design but should conform to the hierarchy set forth in these guidelines. For example, a pedestrian secondary gate should not have element 13: an entablature.



Type PP - Pedestrian Primary

Main Entry

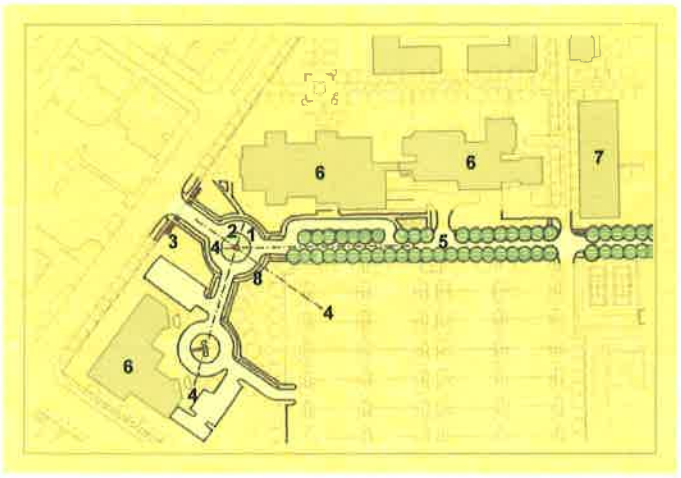
The main Campus entry will continue to be in its present location approximately 375 feet northeast of the intersection of Park Avenue and Brambleton Avenue on Park Avenue. This entry will be augmented to include: 1. traffic calming circle 2. landmark element 3. gate 4. sight line axis 5. allee of trees 6. existing buildings 7. planned buildings 8. welcome structure. The three sketches to the right illustrate possible configurations for the entry at Brambleton.

Landmarks

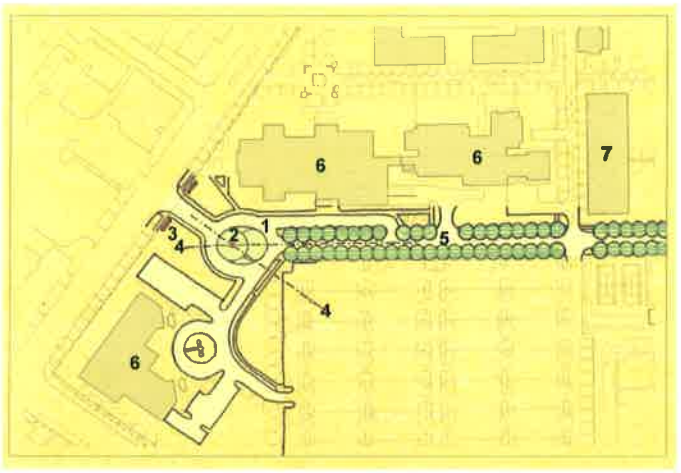
The Campus currently has several landmarks; the Greek walk to the library and the clock in Brown Memorial Hall being the most prominent. As the Campus grows, new elements to mark historical developments taking place today should be introduced. They will serve to add to the already rich traditions embodied by physical structures on the Campus.

Several ideas have been proposed for new landmarks. A new clock tower to replace the one in Brown - that will have to be removed as part to the building replacement schedule - is at the forefront of a list of possible structures. Others include: obelisk, light tower, statuary, and Campus art installations.

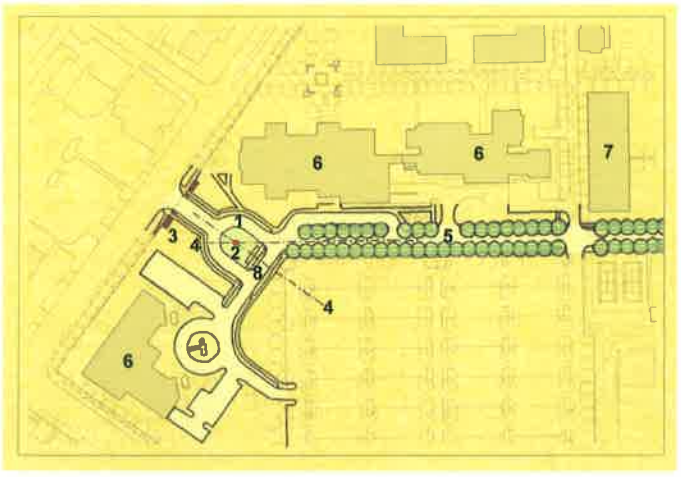
Locations for possible landmarks have been identified. The area immediately to the east of the library will become a new focal point for the Campus core. The Student Center, presently under construction, and the demolition of the library expansion wing will create a new outdoor space that will be well suited for a landmark element.



Circle Scheme



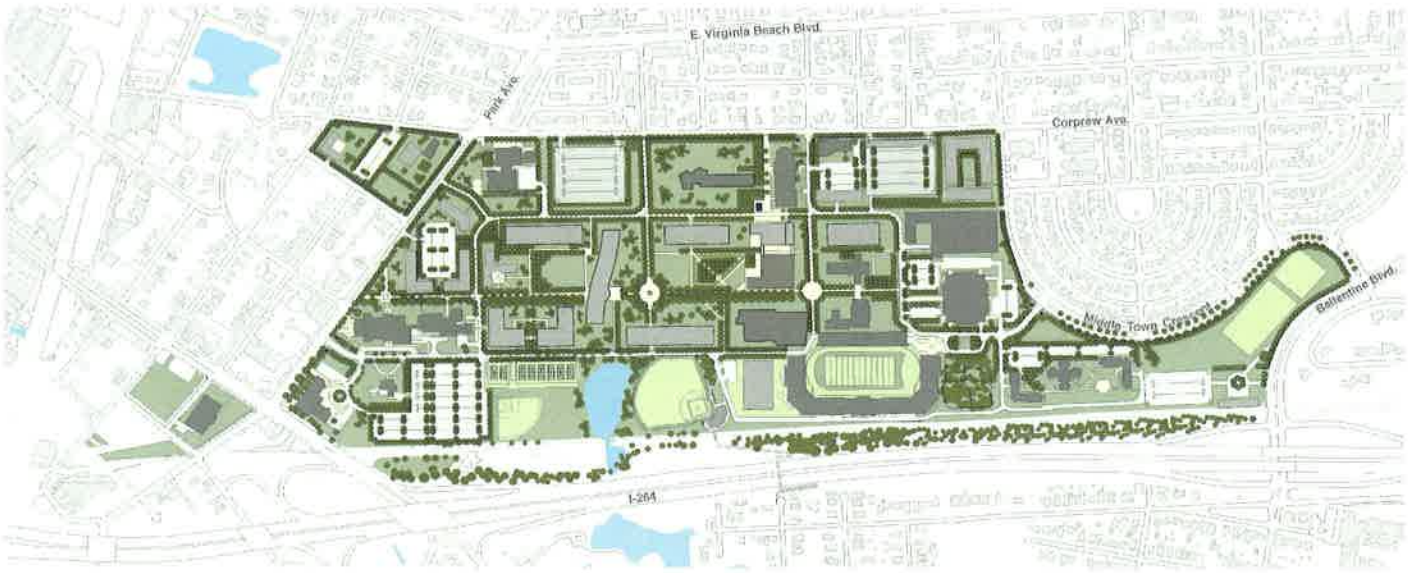
Ellipse Scheme



Stirrup Scheme

Summary

The Master Plan proposes the construction of 5 new academic classroom buildings, a gym, a convocation hall, and an office / administration building in the Campus core area. Two residential quads, consisting of 2 buildings each and one quad consisting of 3 buildings are also proposed for the northwest and northeast corners of the Campus. This build out is necessary to meet the space requirements for 8,000 student population with 35% of these students living in on-Campus housing.



4.25 Landscape Design

Planning Concept

The landscape as well as the arrangement of new buildings must relate to the large-scale footprint of the Campus. Functional relationships of buildings and landscape benefit by locating related uses together. For example, athletic fields are located near the field house and away from the central academic area. The central Campus open spaces are devoted to non-specific informal activity and academic related functions such as outdoor classrooms.

Orientation for visitors is aided by the location and treatment of the main Campus points of entry, and their landscape layout. Lines of trees and mass plantings are arranged to lead the visitor to the most significant spaces and buildings.

Main building entries are marked and reinforced by the arrangement of planting and landscape features. Continuity and repetition of plant species can be used to aid in identifying different areas and functions within the Campus by creating a common visual background for related activities.

Campus night lighting is best kept at the lowest level consistent with the use of the spaces, so that light intensity remains relatively uniform along walks and in pedestrian areas. Broad-spectrum light sources are preferred. Pole heights should relate to the scale of the spaces. Light fixtures should be spaced to avoid the contrast of intense pools of light on the ground, and dark spaces in between.

Fig. Designing Intimate Spaces in the Landscape

Landscape Concept

Landscape materials such as trees, hedges, ground forms and pavement are employed in a way that creates and reinforces new and existing Campus spaces. This landscape design principle of forming attractive outdoor spaces contributes to making the Campus welcoming to students, faculty, staff and visitors.

Planting design should preserve transparency of the outdoor spaces and allow long views of the Campus from many different perspectives. This generally implies the use of high-branched trees and discrete deployment of shrubs and small trees in a way that keeps views open.

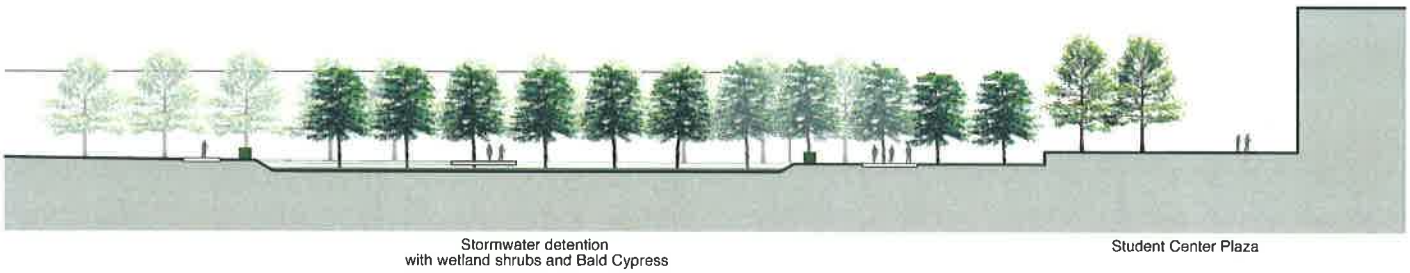


Fig. Scale of Trees for Defining Spaces

Fig. University Sidewalk with Trees

All main and secondary walks need to be shaded to encourage walking during warm weather. Spaces designed for walking, sitting and outdoor (passive) activities are shaded by deciduous trees to make them more pleasant, attractive and useful during all seasons.

Plantings at appropriately large scale enhance Campus spaces in a way that reflects their hierarchy and function. Rather than being purely decorative these plantings consist of trees, hedges and shrubs that define and furnish the spaces to make them more enjoyable and functional.

Shuttle System

The landscape must accommodate movement between classrooms at three levels of speed, namely walking (2 to 3 mph), bicycling (8 to 15 mph) and shuttle service (15 to 20 mph). Use of private automobiles for circulation within the Campus is discouraged by the arrangement and location of parking spaces and roadway layout.

Fig. Landscape Defining Campus Open Space

Fig. Appropriate Scale Vehicle for Campus Shuttle System

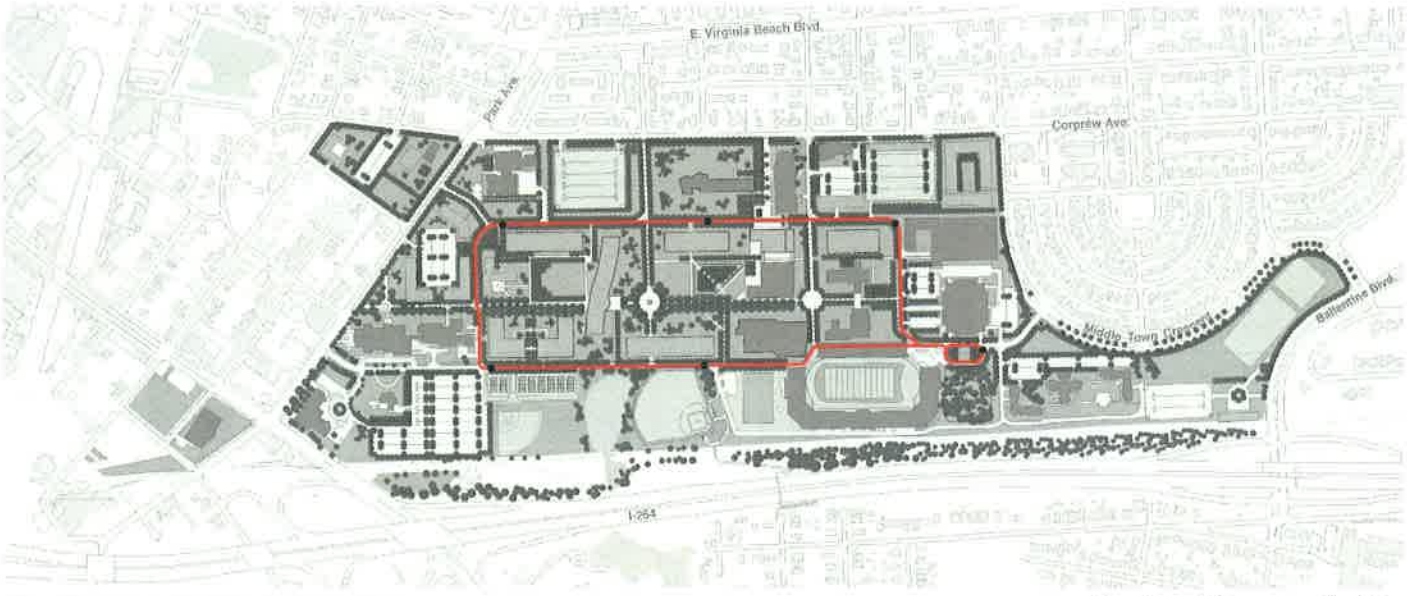


Fig. Campus Shuttle System Plan

——— *Route of Campus Shuttle*

A recommended shuttle system should have these characteristics:

- Short waiting time between vehicles.
- Small enough scale vehicle not to be intimidating or visually disruptive.
- Fast loading and unloading.
- Location and frequency of stops to allow traversing between furthest separated academic buildings within five minutes.

Orientation and linking

Campus gateways should be defined and reinforced with large trees and mass plantings emphasizing the main entry.

Building entries can be made more prominent by the arrangement of the landscape especially where the main entrance is not evident from the building design.

Fig. Main Building Entry Highlighted with Trees and Groundcover

Fig. Public Walkway Enhanced with Row of Continuous Trees

Grading and Storm Drainage

A present weakness in the Campus layout, the low area between the Student Union and the Library, can be treated as a unique design opportunity. A high subsurface water table requires control of water run-off on the surface with a series of depressed vegetated panels. Detention basins are linked to one another either by a visible weir or a subsurface system constructed that can filter and intercept storm water runoff. This could subsequently link to lower areas that would allow some ponding to increase the capacity of the system.

Plantings of Bald Cypress trees within these areas would enhance both the function and visual appeal of the system. A connection to a pond adjacent to the baseball field would complete the system and ensure a positive flow of excessive stormwater out of the central Campus.

This kind of system will require a higher level of landscape design than the typical engineering storm water runoff solution. Emphasis on uniform plantings within each basin as opposed to "naturalistic" plantings would enhance the visual character of the detention system within the central area of the Campus. As discussed further in campus art, this space can further emphasize Campus identity through the integration of sculpture along the walks and within the depressed panels.

Fig. Bald Cypress trees would be appropriate to plant in storm water detention system

Design of outdoor spaces

Sitting areas should occur in both small and large outdoor spaces. They are in places on the Campus conducive to informal gathering or quiet meditation in tree shaded surroundings.

Learning in outdoor spaces is encouraged by the creation of small amphitheaters that can be simply grass forms carved out of the terrain or more formal stepped seats with stone risers. These would be strategically located near academic buildings they might serve and would be shaded at critical times of day.

Eating-places outdoors in addition to the impromptu areas with seats could be formally designed adjacent to a café or student dining facilities. Such opportunities would add to conviviality.

Fig. An informal Campus sitting area

Fig. A formal Amphitheater for outdoor classes

Fig. Campus Edge Café with Outdoors Seating

Ground Surfaces

The quality of the Campus open space depends in part on selection of appropriate ground surface materials for discrete outdoor functions. This is somewhat determined by the intensity of use. Where pedestrian traffic is heavy on a daily basis, hard paving is usually required. The specific choice of paving material becomes mostly an aesthetic and long term cost decision. In general, surface treatments fit one of the following broad categories:

Impervious Paving: these can be types such as asphalt, concrete, or blocks laid on an impervious base. These materials are suitable for vehicular traffic, and are constructed for anticipated vehicular weight loads. These pavement types generally define where vehicles are meant to travel.

Pervious Paving: these are paving types such as stone or concrete paving block with open joints and stabilized with crushed stone, both allowing infiltration of rainwater. These materials are usually more attractive than impervious paving, and have the advantage of allowing some storm water to infiltrate the soil. They are suited to pedestrian and light vehicular traffic.

Pedestrian walks should be a precast concrete paver block of uniform 6 x 6 square such as Village Square as produced by E.P. Henry, mixed grey colors. Walking material should be carried through road intersections as crosswalks emphasizing pedestrian crossings.

Lawn: a material used extensively on campuses because of its appearance, light and rain absorption, softness under foot and low initial cost. It is sometimes used in areas where foot traffic is too intense, resulting in muddy areas, poor drainage and additional maintenance (replacement) cost. Gathering areas with moderate to high intensity use, especially under trees, usually require a pervious pavement material for best results.

Mulch: can be shredded or granular material either organic (eg. pine needles), or inorganic (eg. crushed stone), used extensively on planting beds, and frequently around the base of trees. The latter use is over done to the detriment of the tree root system and visual impact of the lawn areas where it is applied.

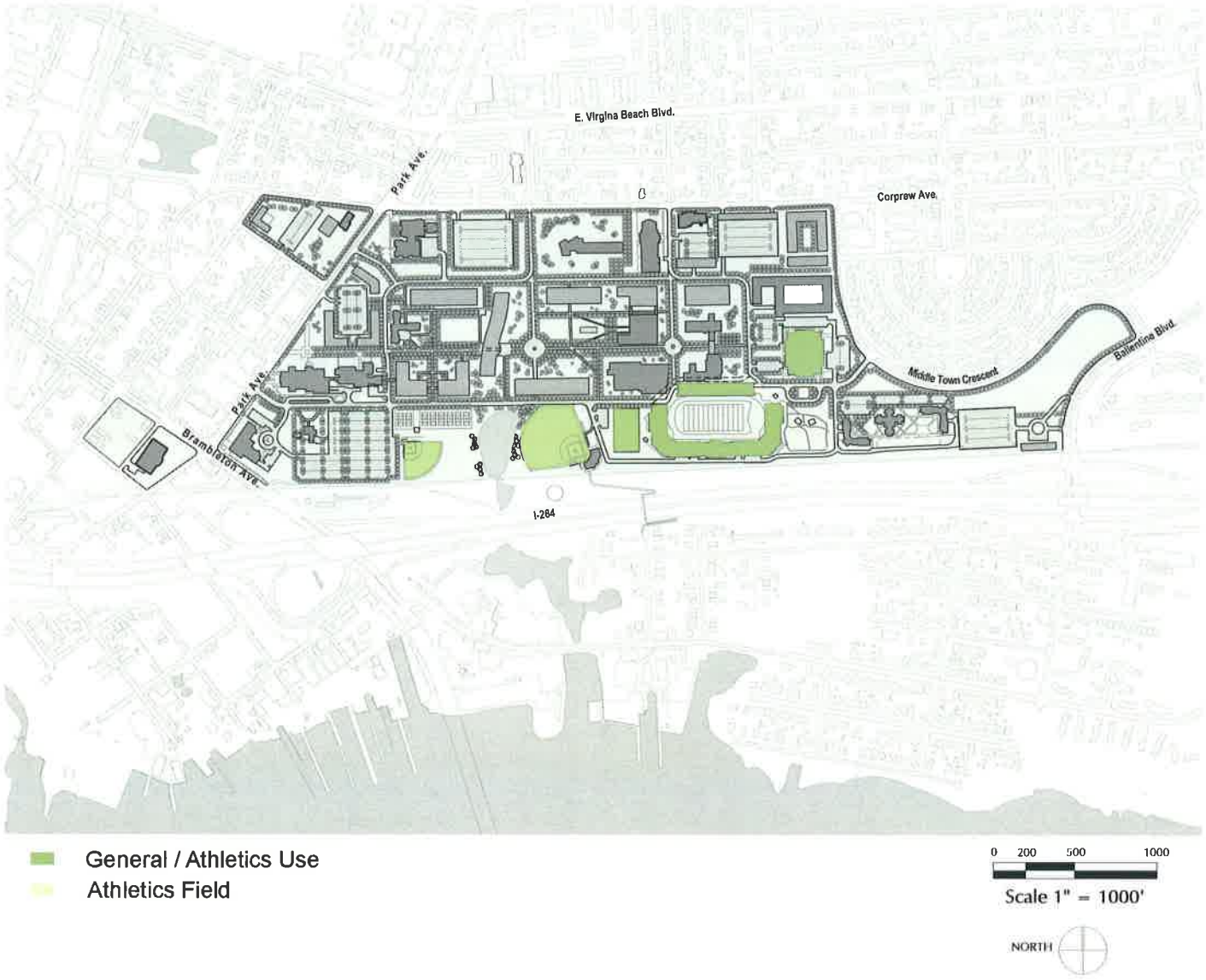
Fig. Hard and Soft Surfaces for Gatherings

Fig. Crushed Stone in a Gathering Area under Trees

4.26 Campus Art

The Campus is a natural display ground for outdoor works of art that can become an extension of the Campus identity. The use of the decorative arts, especially sculpture and fountains, adds visually to the Campus experience and can have a didactic function as well. Works of art can be permanent displays of notable artists' work as well as temporary rotating exhibits of students and faculty art located at building entrances and at path intersections.

Spaces such as the proposed detention facility offer the opportunity to create a sculptural garden integrated within the design near the cultural center of the Campus. Art selection and placement requires a carefully worked out policy so that the Campus does not become cluttered, and the quality of the displayed work is appropriately high.



4.27 Athletics & Recreation Fields

The University's athletic fields are reorganized into a rational band at the southern edge of the Campus. This zone accomplishes several key programmatic and performance functions:

1. The athletics zone acts as a visual and acoustical buffer zone. Interstate 264 and the proposed light rail line run directly along the southern edge of this area, and noise and other pollutants naturally occur in this area.

2. The athletics fields occupy the areas of Campus most prone to flooding. By not locating buildings in this area, future damage from flooding and storm surge will be avoided. In addition to the athletics programs allocated to this area, surface parking has also been planned for this zone for the same reason.

3. By clustering most of the athletic programs into a single zone, students, faculty and staff enjoy ease of use in terms of walking times, utilizing ancillary service areas, for example, change rooms, parking, vending, ticketing and so on.

Future Athletic Field Requirements

The Campus will require additional fields and facilities as the Campus grows. Due to constraints on the currently owned Campus property, these fields will have to be located on newly acquired sites, potentially along the river - see images on following page.

Fig. Possible future location of playing fields at reclaimed post-industrial riverfront site A

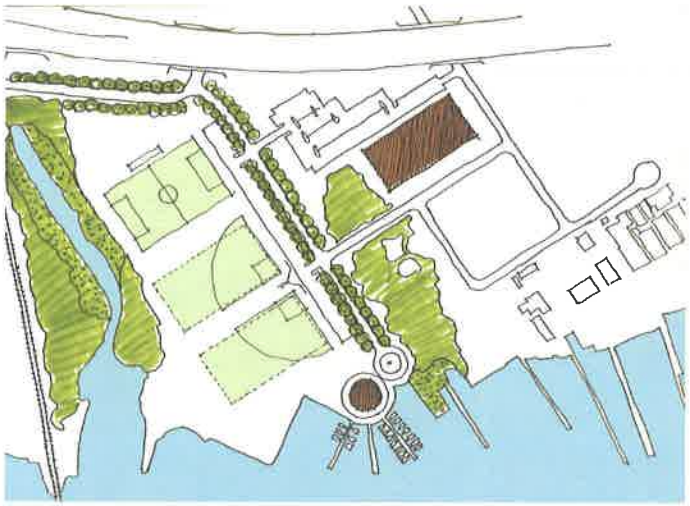


Fig. Possible future location of playing fields at reclaimed post-industrial riverfront site B

Future Fields & Sports Facilities Needed

1 Soccer Field

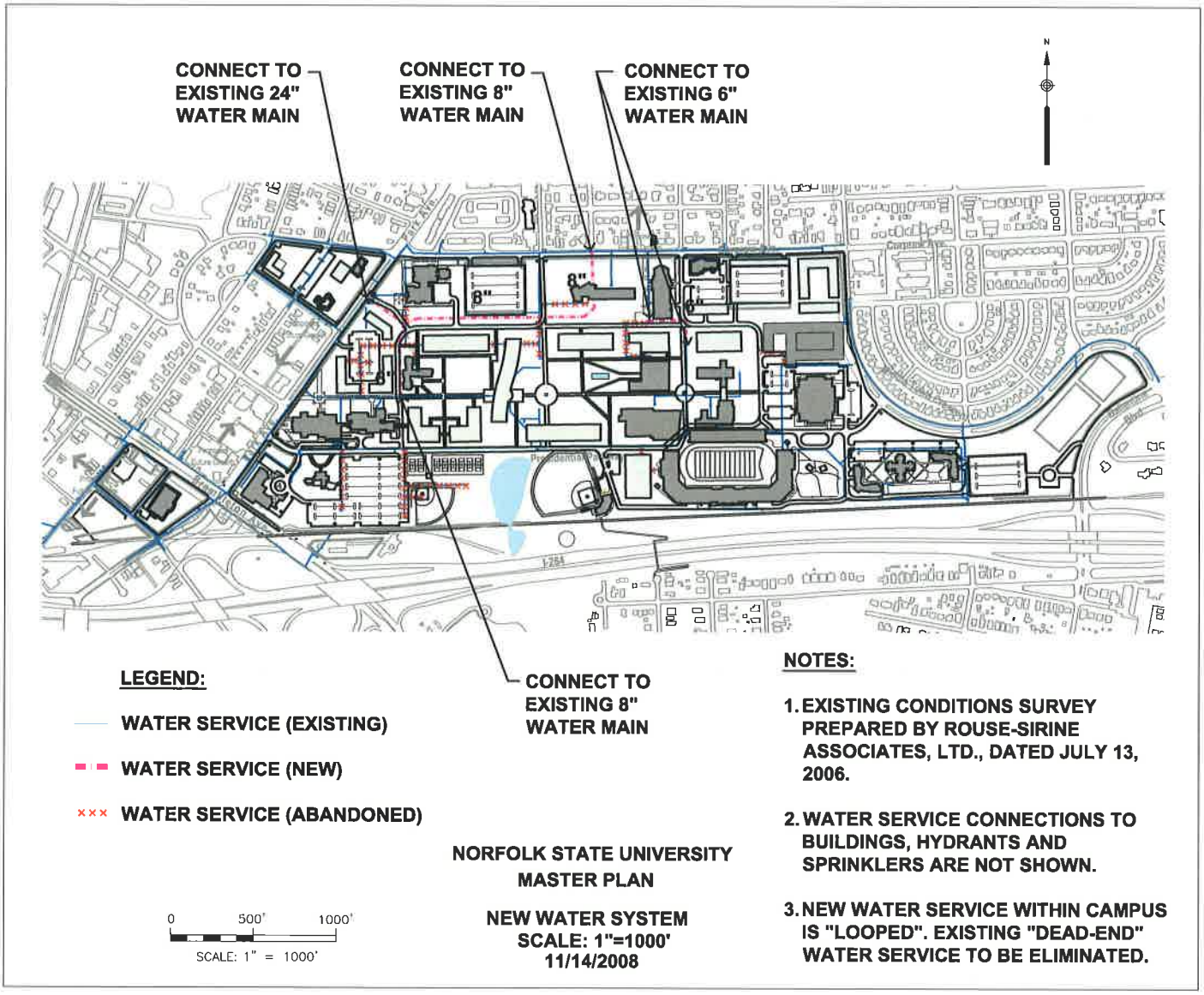
1 Practice Field (Football)

1 Multi-purpose Field

2 Tennis Courts & Facilities

Field House & Dugouts for Softball Field

Locker Facility for Football



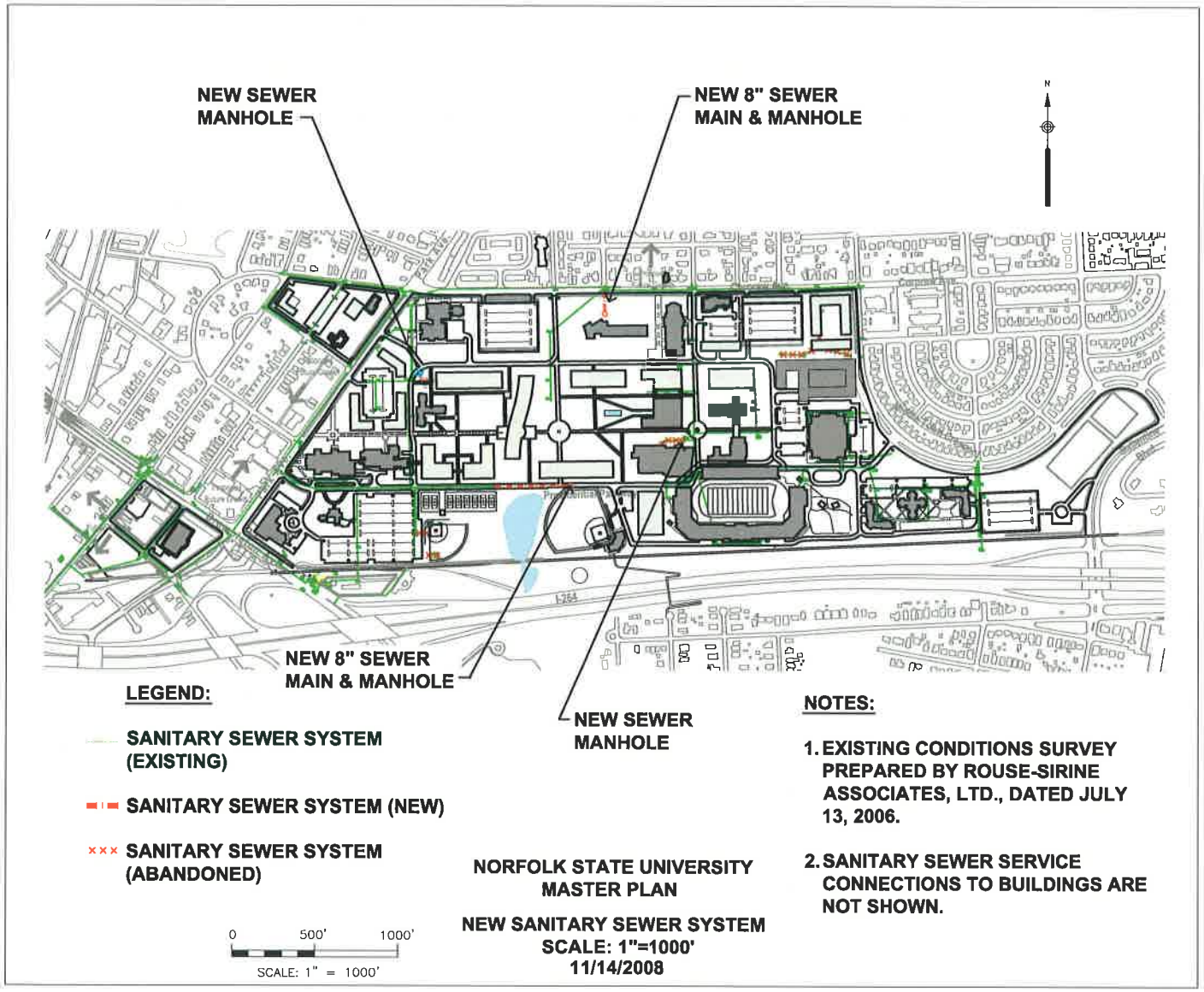
4.28 Site Utilities & Infrastructure

Water Distribution System

The new water mains are provided to create a looped water service to keep the water in motion and thus reducing system-related odors. New 6" D.I. (Ductile Iron) pipes and 8" D.I. pipes are recommended (see drawing).

It is recommended that additional fire hydrants be installed on the existing main line Campus water distribution system to improve the fire protection system.

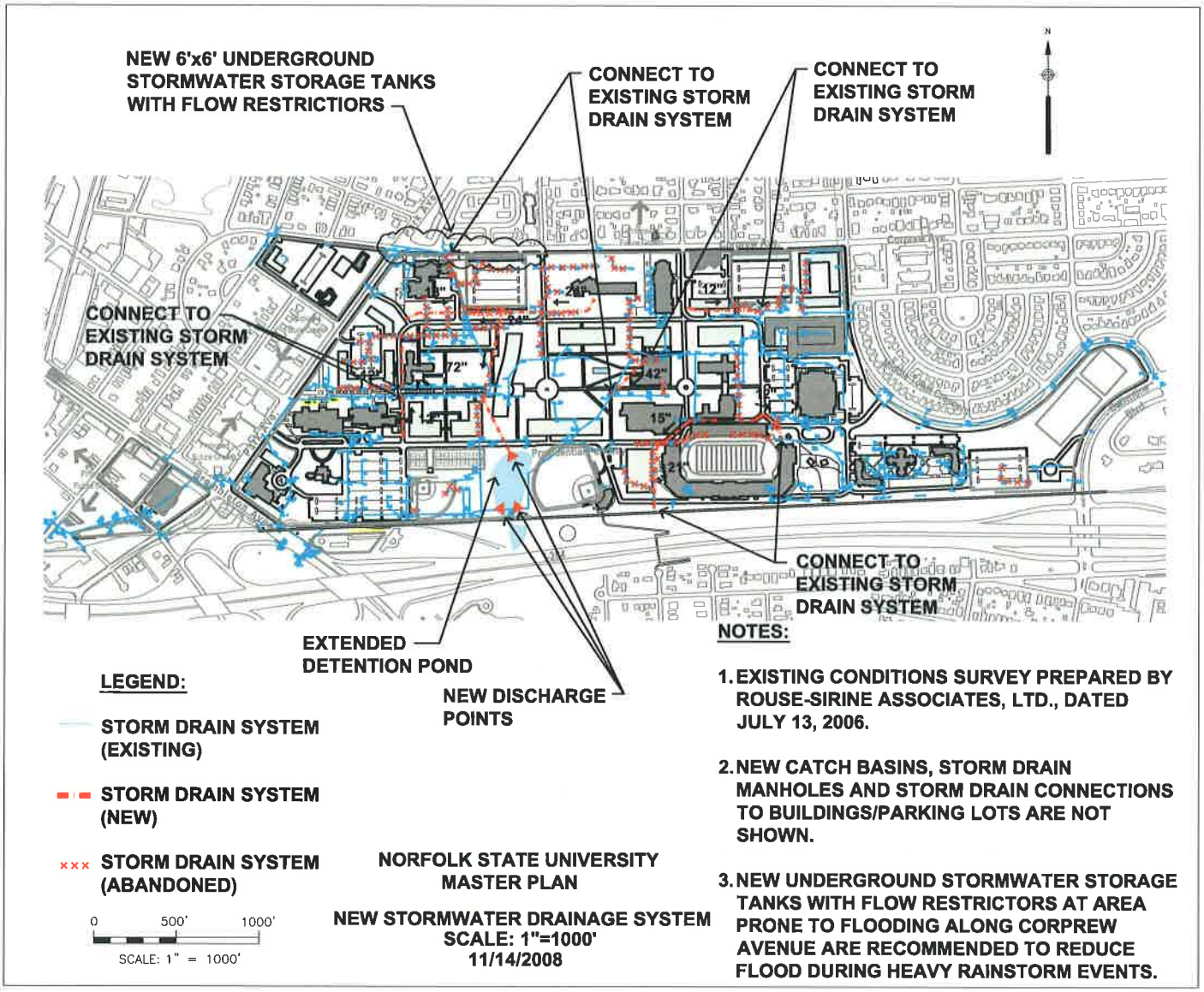
Consideration should be given to the hydrants within 50 feet of the structures they are designed to protect.



Sanitary Sewer Collection System

It is recommended that proper maintenance of the existing sanitary sewer system be maintained to ensure the system remains in satisfactory condition.

New 8" PVC (Poly Vinyl Chloride) sewer mains with new manhole structures are recommended at locations impacted by the future buildings (see drawing).



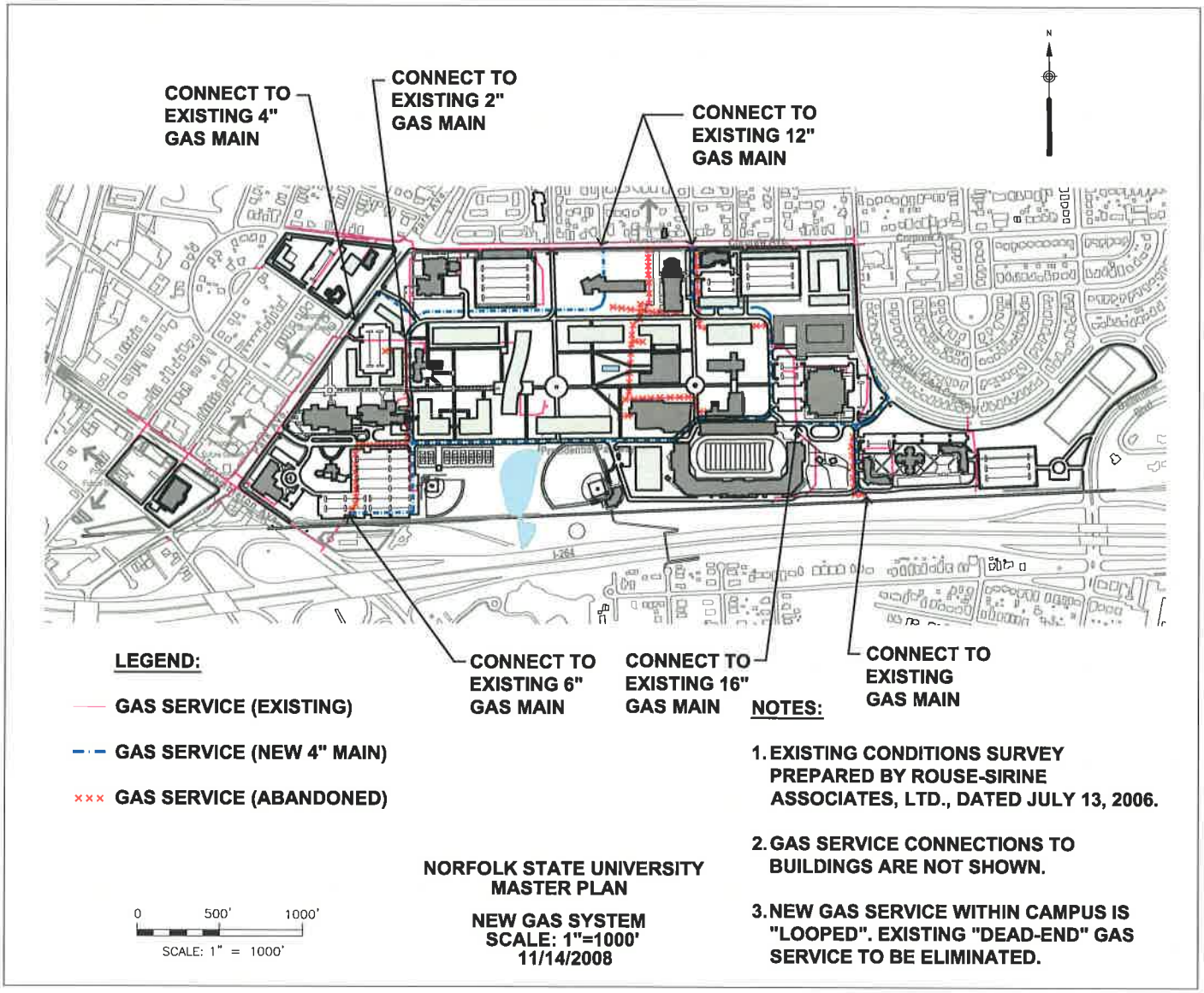
Stormwater Collection System

New 6'x6' underground stormwater storage tanks with flow restrictors are recommended along Corprew Avenue at the area prone to flooding during heavy rainstorm events, northwest corner of Campus.

An extended detention pond is recommended at the location of the existing outfall on the southern side of Campus lot by the railroad. Stormwater drainage will be directed to the extended detention pond through three new discharge points (see drawing).

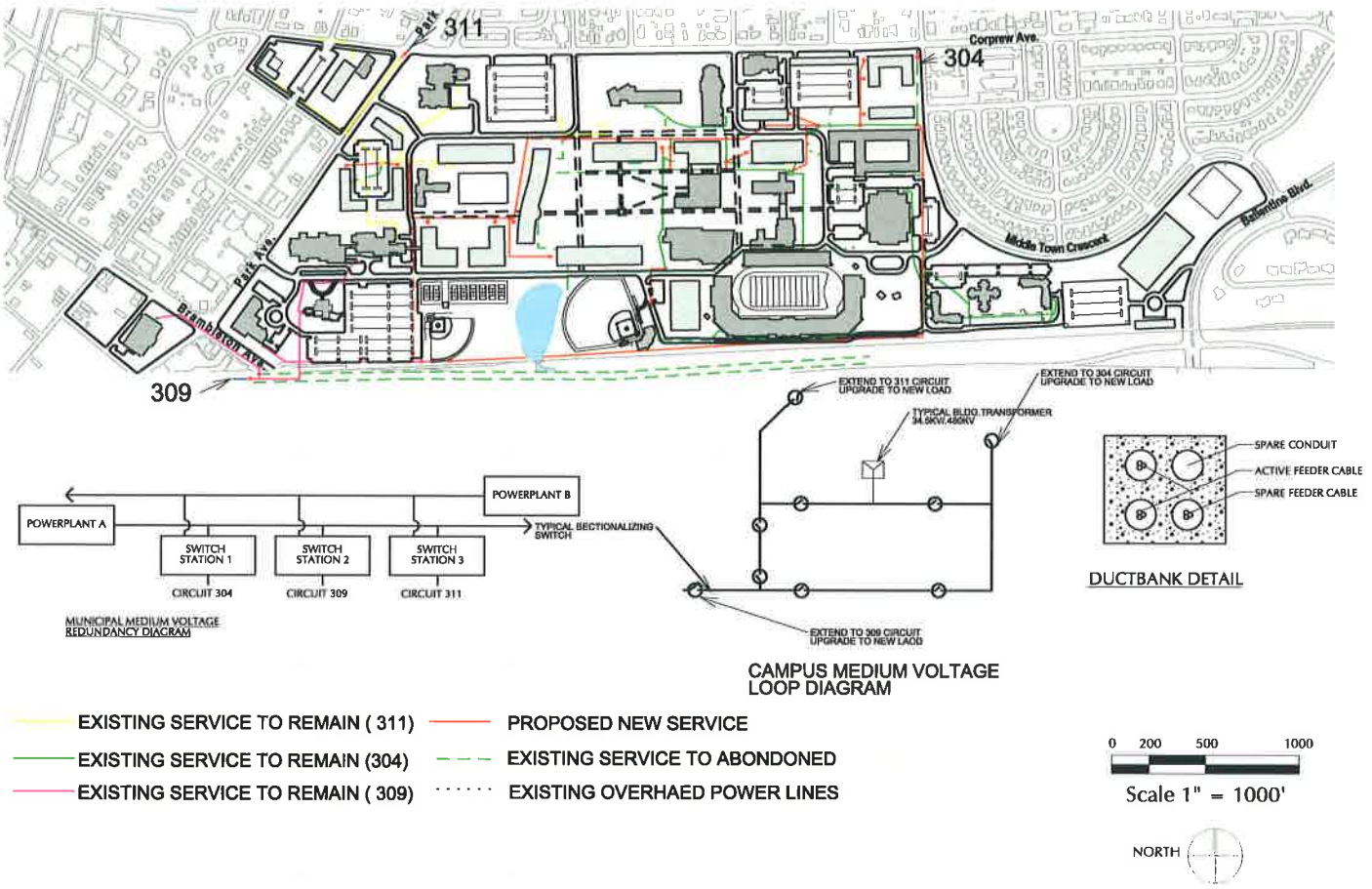
New 12" to 24" RCP (Reinforced Concrete Pipe) storm water mains are recommended at location of new roadways and at areas impacted by future buildings.

New 72" RCP storm water main is recommended along the easement from Corprew Avenue to the new extended detention pond.



Gas Distribution System

The installation of a new 4" gas main to loop the existing gas system is recommended (see drawing). Looping the gas service would provide better service to the structures with high demand, currently being served by "dead-end" gas services.



Electrical Distribution System

The aggregate master plan building area will be approximately 2,418,000 GSF consisting of existing and new buildings. It is anticipated that the additional kilowatt demand can be provided by means of upgrading the existing underground distribution network.

Circuit #304 will serve the Northeast section Campus consisting of 1,218,000 GSF building area.

Circuit #309 will serve the Southwest section Campus consisting of 200,000 GSF building area.

Circuit #311 will serve the Northwest section Campus consisting of 1,000,000 GSF building area.

The existing power distribution has, in general, proven to be a reliable source with the exception of circuit #304.

Recommendations

The provisions under the master plan include upgrading the existing utility power distribution to provide a redundant Campus wide power supply. The load calculation shall be confirmed at a later stage of the engineering phase.

The desire to obtain a Campus wide dedicated high voltage substation has been considered. However, due to limited information available from the utility company, an informed decision cannot be made. Requirements for a Campus wide dedicated high voltage substation installation require close cooperation with the utility company to determine the feasibility of such an undertaking.

In order to provide a Campus wide dedicated substation, confirmation of high voltage transmission service conductors in proximity to the Campus will become a deciding factor for the routing of two independent service feeders to connect to double ended substations.

It is unlikely that the utility company has such distribution in place, and as such, would require that extensive additions to the underground high voltage transmission distribution network be made.

It is for this reason that we recommend the option of upgrading and provide a looped Campus wide network modified somewhat to allow refeeding circuits where possible via strategically placed sectionalizing switches.

Our recommendations include:

To utilize the existing infrastructure, we propose that each radial service conductor circuit be modified to establish primary network or optionally combine (replace) power circuit 304, 309 and 311 as one looped system.

It is assumed and desired that the primary feeder circuits are connected to utility substations that have redundancy and are connected to more than one power plant.

We also propose combining power circuit 304 with a new proposed dedicated circuit for the future phase of the Campus north of Corprew.

The high voltage service conductors to the Campus shall come from utility substations that are connected to a utility network that provides back up redundancy.

The looped Campus wide service conductors will utilize the existing underground duct bank installation were possible.

The adequacy of the existing 600 kcmil lateral service feeder cable shall be confirmed during a later stage of the engineering phase.

Telecommunications & Fiber Optic Network

All new Campus buildings should be connected to the existing Campus infrastructure via fiber. Presently the network infrastructure operates over single mode fiber. Single mode fiber provides greater bandwidth than multi-mode fiber and is a good investment of infrastructure.

A telecommunication duct bank system should be extended as each new building is constructed. The new construction should be designed to accommodate two paths for fiber into each building's main telecommunications room. This duct bank system should be comprised of a series of maintenance holes and concrete encased conduit.

At a minimum four 4" conduits should be routed into each building. Within this duct bank system, a fiber ring should be created across the Campus for various low voltage system interconnections.

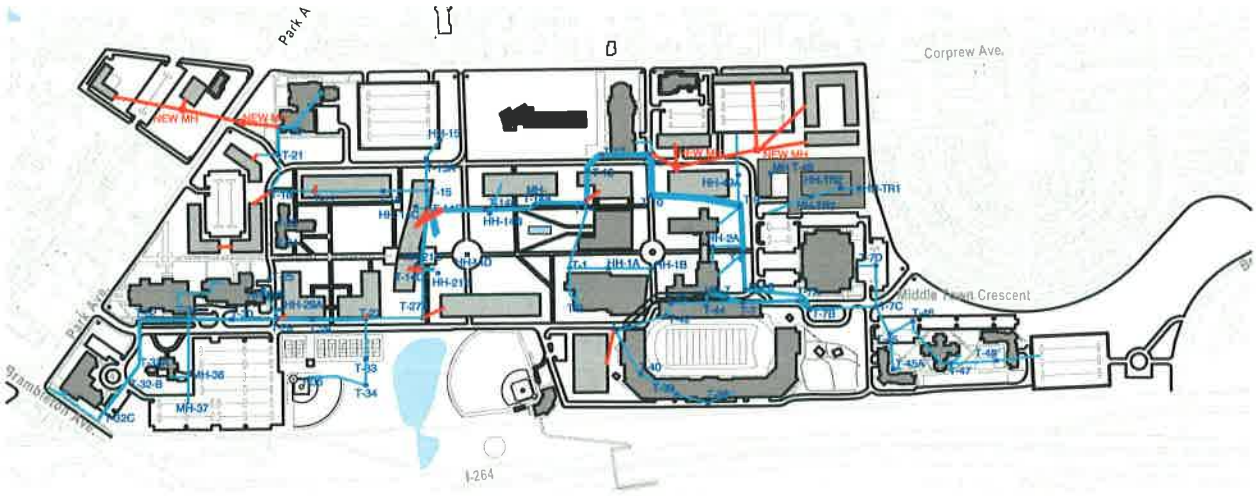
Minimally, 12 to 24 strands of single mode fiber per building, depending upon the building function, should be installed from the Campus network hub to each building.

At each phase of the implementation, special consideration must be given to the demolition of buildings that act a distribution points for the fiber cable to other Campus buildings.

As much of the existing duct bank infrastructure should be re-used to serve new buildings. Where a new building is being built on a new site, the duct bank system will need to be installed.

Within each new building, a horizontal structured cabling system should be installed. This system will handle voice and data connectivity within each building. The cabling should meet the most recent approved cabling system performance standards at the time of installation. Presently, Category 6 cabling should be installed in any new construction. Careful planning should be given to the cabling system as it acts as the central nervous system for the technology in the building.

The cost of gigabit ethernet ports has been reduced significantly to the point that it is economically feasible to provide 1Gbps links to each building.



NORFOLK STATE UNIVERSITY
MASTER PLAN
PROPOSED FIBER OPTIC
EXTENSION PLAN
SCALE: 1' = 1000'

LEGEND

T-29 — TELEPHONE MANHOLE

PROPOSED FIBER OPTIC LINE IN NEW DUCT BANK

EXISTING FIBER OPTIC DUCT BANK

NOTE: FIBER OPTIC LINES UTILIZE TELEPHONE DUCT BANKS AND MANHOLES

As the cost of high speed ports is reduced in the future, an assessment can be made by NSU about how far into the network these ports should be implemented.

As the size of the Campus increases so to will the number of students accessing the network and the Internet. As traffic increases, the bandwidth will need to be monitored for potential bottlenecks and inadequate capacity. As these areas are identified, additional capacity should be added to avoid network capacity issues.

4.3 Future Expansion Options

Should the University grow beyond its current population projection of 8,000 due to increased enrollment over the next decade, additional land will be required to accommodate Norfolk State University's need for additional housing on Campus, together with the associated parking and play fields that are a necessary part of Campus life. Acquired land should be contiguous with or adjacent to the main Campus to facilitate an efficient growth pattern for all Campus facilities.

Owing to the distinct borders established by I-264 to the south and Majestic Avenue - with its associated new residential development - to the west, expansion of the Campus is limited to the east and north. The only clear direction for Campus growth in the future is to the north towards East Virginia Beach Boulevard.

Campus Expansion / In-fill to the West

Norfolk State University has over 120 acres in one contiguous parcel which will be adequate land for its academic needs for several years to come. Future expansion will be necessary to support expansion of sports and recreation facilities as well as new student housing.

The current strategy of the Norfolk State University Foundation to secure strategic parcels west of Park Avenue and south of E. Brambleton Avenue as a means of controlling growth in the immediate vicinity and making way for the construction of the RISE Technology Campus has been a good strategy.

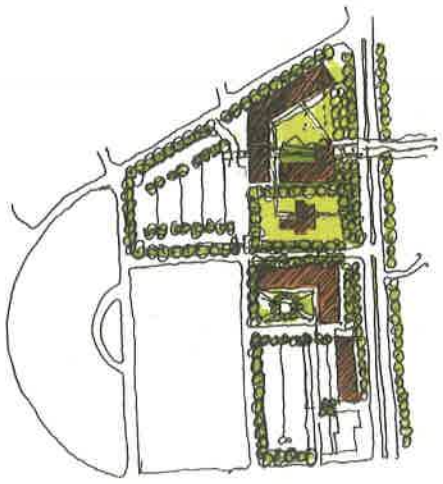


Fig. Option 1 Development of student housing on northwest block off Park Avenue

Fig. Option 2 Development of student housing on northwest block off Park Avenue

Campus Expansion to the North

The foundation now has the opportunity to direct its attention to the development of Corprew Avenue and to use its influence to exercise some control over commercial and Campus development in this area. Expansion to the north along Corprew Avenue will build upon adjacent land that has previously been acquired over time by the University. Currently this area is a mix of low density residential properties, none of which have any large structures or significant site development. A large number of parcels still remain to be acquired before this area can be integrated into the Campus.

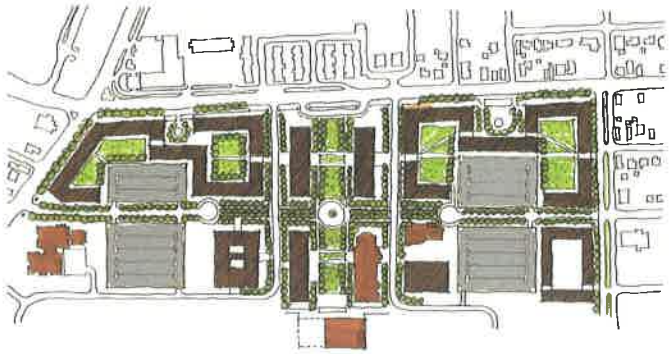


Fig. Possible long term development north of Corprew

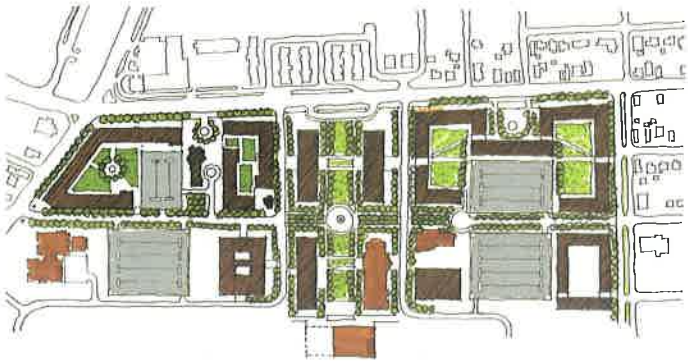


Fig. Possible long term development north of Corprew

Campus Expansion to the Southwest

As the academic core of the University grows over time, the need for additional parking areas will necessitate the relocation of the Physical Plant facilities to a new site. The University now has the opportunity to seek sites beyond the Rise Campus as it naturally expands towards the riverfront. Future development should concentrate on providing a suitable location for the physical plant as well as the addition of recreational fields and facilities. The properties adjacent to the riverfront located to the west and south of E. Brambleton Avenue are a potential site for relocation of the Physical Plant. It is a proximate, yet peripheral site, which could serve the University well. The University should explore all possibilities, including land acquisition and negotiating with the city of Norfolk in pursuing these options. Development of this area by the University will be fully in accordance with the proposed scenarios recommended in the Broad Creek Revitalization & Implementation Plan for the development of the waterfront areas for the City of Norfolk.

Fig. Southwest expansion initial sketch

Fig. Southwest expansion option A

Fig. Southwest expansion option B

Fig. Southwest expansion option C

Expansion Option South of I-264

This option explores opportunity to relocate and expand University's recreational facilities. Although located in close proximity to the Campus, it would require transporting students across I-264 and through the residential neighborhood. The major advantage of this option is the revival of the prime waterfront area from industrial use to a more naturalistic green and recreation use. If realized, this could be a major contribution for revival of the waterfront for the City of Norfolk and in accordance with the Broad Creek Revitalization & Implementation Plan.

Fig. South of I-264 Expansion

Expansion for RISE Campus Area

The master plan also looked into possible scenario for the future development of the RISE Campus. These options take into consideration the issue of flood plain for this area and the road alignment for Park Avenue west of Brambleton Road. Both of these options suggest a central and focal water retention body to address the storm water issue and yet be a central element for the RISE Campus. Parking is both structured and surface, depending on the need. One of the options also takes into consideration an existing congregational facility off of Brambleton Road.

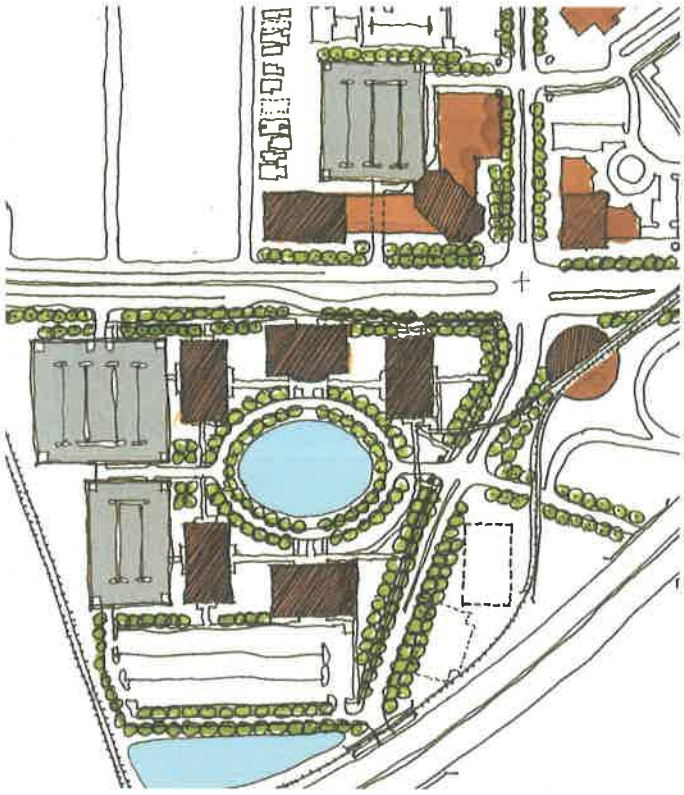


Fig. Expansion for RISE Campus area Option A

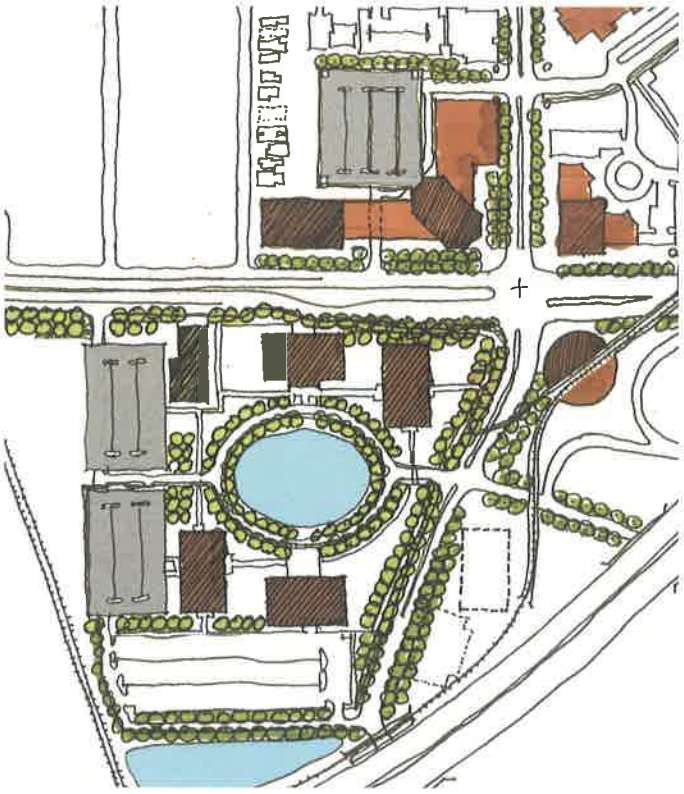


Fig. Expansion for RISE Campus area Option B

Fig. Expansion for RISE Campus area Option C

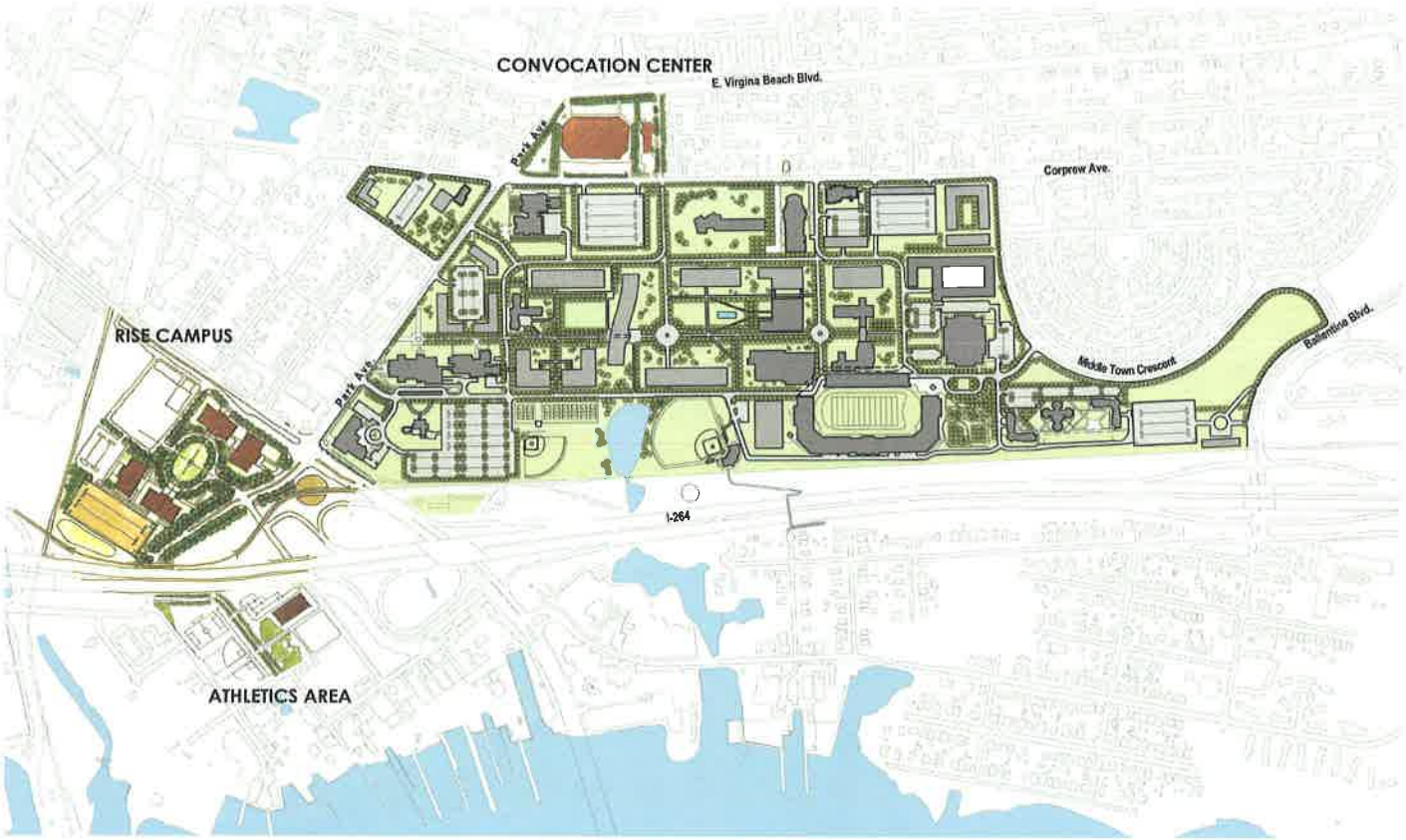


Fig. Future Expansion Plan

Existing Building Proposed Building Parking

0 200 500 1000

Scale 1" = 1000'

NORTH

Fig. View From Above With New Library Building

Fig. View at the Main Entrance from Park Avenue

Fig. View from Virginia Beach Boulevard

Fig. View of RISE Center

Fig. View of New East Entrance

CONTENTS

5.0 MASTER PLAN PHASING AND IMPLEMENTATION

5.1 Implementation

The implementation plan outlines the sequence of projects to be implemented as proposed in the master plan. Projects that are already in planning, design and construction phases at the time master plan study was underway, are shown as existing projects. These projects are targeted to come on line any time from Fall 2006 through Fall 2008. The overall phasing of the master plan is divided into two major phases: Phase One and Phase Two.

Given that the master plan is based on a target population of 8,000 students (HC) over a 10 – 12 year time frame, the Phase One of the master plan is therefore intended to achieve the half way mark in approximately 5-7 years timeframe. The University may consider to implement site and landscape improvements as part of each major building project, thus allowing a degree of efficiency in terms of time and money and to also achieve a speedy visual transformation of its physical plant.

The implementation chart lists these projects and their respective sequencing to provide an overall timeline for each phase. This is a 'big picture' strategy and there are obviously lots of detail and intermediate steps to this strategy. Implementation of the master plan through a series of demolition and construction is a process that should be carefully sequenced and planned.

It is therefore recommended that a more detailed strategy of 'dominos' should be considered as an on-going activity of the implementation strategy that would factor intermediate steps of space relocations, minor and major modifications and renovations of the existing facilities.

It is also recommended that this master plan be reviewed for consistency in goals and enrollment targets by the end of Phase One so as to allow the University to adopt any corrective measures prior to implementing the Phase Two projects.

For the master plan the schedule for implementation is based on the following baseline assumptions for duration of major tasks. The time frame could be shortened for projects such as housing that could be designed during a single phase but implemented in multiple phases to allow for demolition of existing structures.

In addition to the following phases as stated earlier, there will be minor 'dominos' such as relocation of departments, offices, classrooms, etc., thus leading to a major project. Given the interim nature and continuously evolving situation, such steps are not illustrated in this schedule.

1.	New Building Project	33 Months
	a. Design Phase:	12 Months
	b. Bid Phase:	3 Months
	c. Construction Phase:	18 Months
2.	Extensive Renovations	24 Months
	a. Design Phase:	9 Months
	b. Bid Phase:	3 Months
	c. Construction Phase:	12 Months
3.	Minor Renovations	6 Months
4.	Demolition	3 Months

5.11 PHASE ONE

The Phase One of the master plan targets buildings and facilities that are critical to set the stage to provide facilities that are already in the planning stages and/ or based on the priorities established by the University. In order of priority, the Phase Two of the new housing project is targeted as the first project. This will provide enough number of beds to begin the process of replacing the existing beds in the existing Twin Towers Dormitory.

Simultaneous to this step is the replacement of the existing Community Hospital building, thus making room for the new parking deck. The parking deck will provide for the current deficit of approximately 2,500 parking spaces on the Campus. The Phase One of the master plan also includes, to the extent possible, implementation of vehicular and pedestrian circulation , as well as the implementation of the grounds and landscaping improvements within the immediate vicinity of these new projects and as allowed by the demolitions.

Also included are the necessary site utilities and infrastructure improvements. The electrical upgrade as recommended in the master plan, is all targeted to happen during Phase One. The rest of the utilities and site improvements are targeted in both phases.

The following list includes major work during Phase One of the Master Plan:

New Construction

H1 Phase 2 Living & Learning Center
New Parking Deck (at Phase 2 Living & Learning Center)
A9 New Field House (with Offices on 2nd Floor)
H2 New West Living & Learning Center with Dining

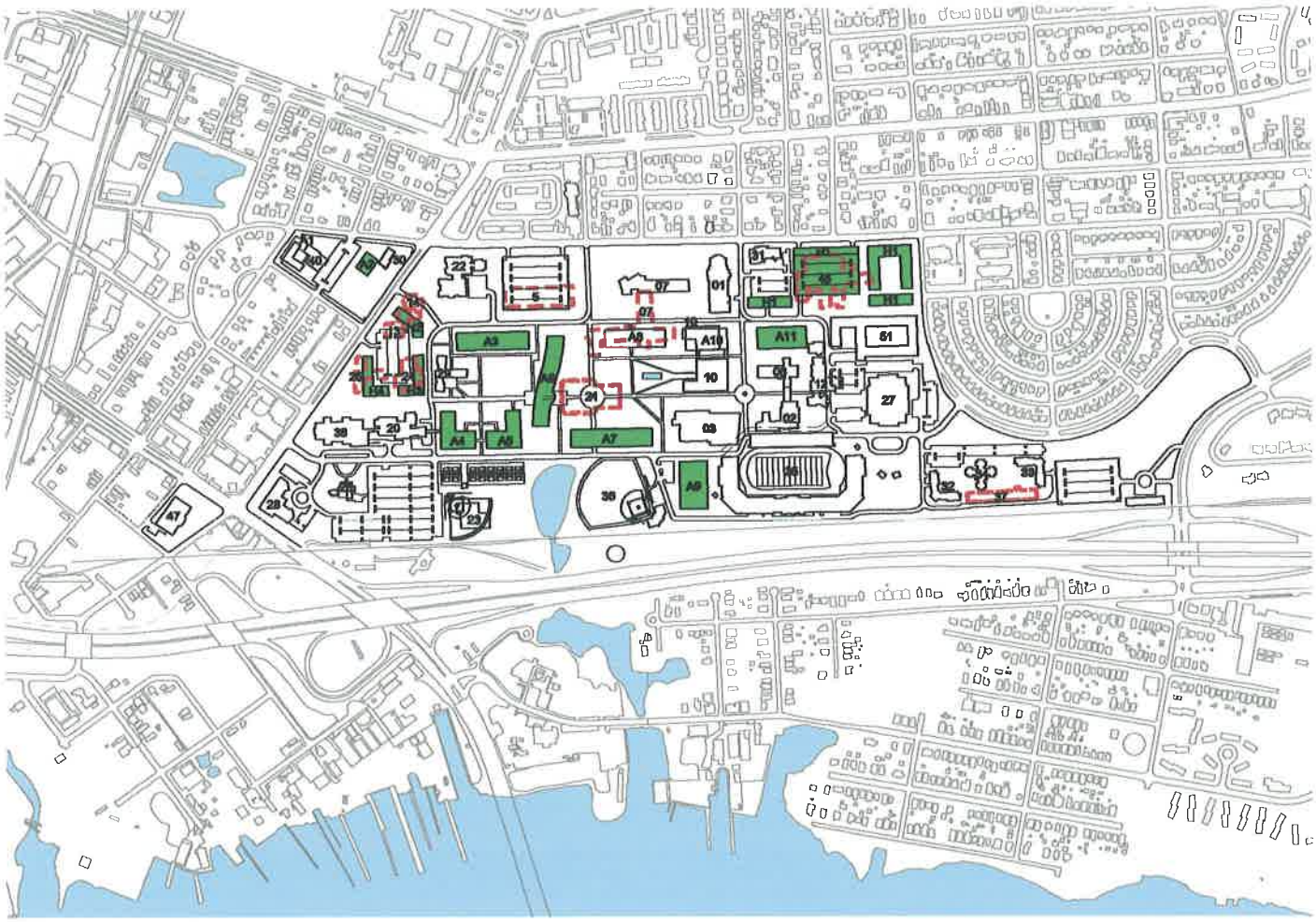


Fig. Diagram illustrates Phase One of the major projects

New Construction

Demolition

0 200 500 1000

Scale 1" = 1000'

NORTH

(Block #1)
H3 New West Living & Learning Center (Block #2)
H4 New West Living & Learning Center (Block #3)
A6 New Library Building
A7 New Classroom & Nursing Building
A10 New Student Success Center
A5 New College of Business
A3 New Science Building
New Brambleton Pedestrian Bridge

Demolition

0005 James A. Bowser
0007 G.W.C Brown Memorial Hall (Partial Demolition)
0013 Twin Towers Dormitory
0014 Twin Towers Dormitory
0021 Lyman B Brooks Memorial Library
0024 Cafeteria West (West Campus Cafeteria)
0025 Samuel F. Scott Men's Residence Hall
0037 Spartan Station
0045 Former Norfolk Community Hospital Building

Extensive Repairs

0011 G.W.C Brown Memorial Hall (Remaining)
0020 E. L. Hamm Fine Arts Building
0030 Phyllis Wheatley Dormitory
0038 L. D. Wilder Building

Minor Repairs

0001 Scott Dosier Dining Hall (East Campus Cafeteria)
0027 Joseph G. Echols Hall
0028 Harrison B. Wilson Hall
0029 Rosa Alexander Hall
0036 Marty L. Miller Baseball Stadium

Site & Infrastructure

Utility Infrastructure Improvements
Roads, Sidewalks & Surface Parking
Landscape and Street Scapes

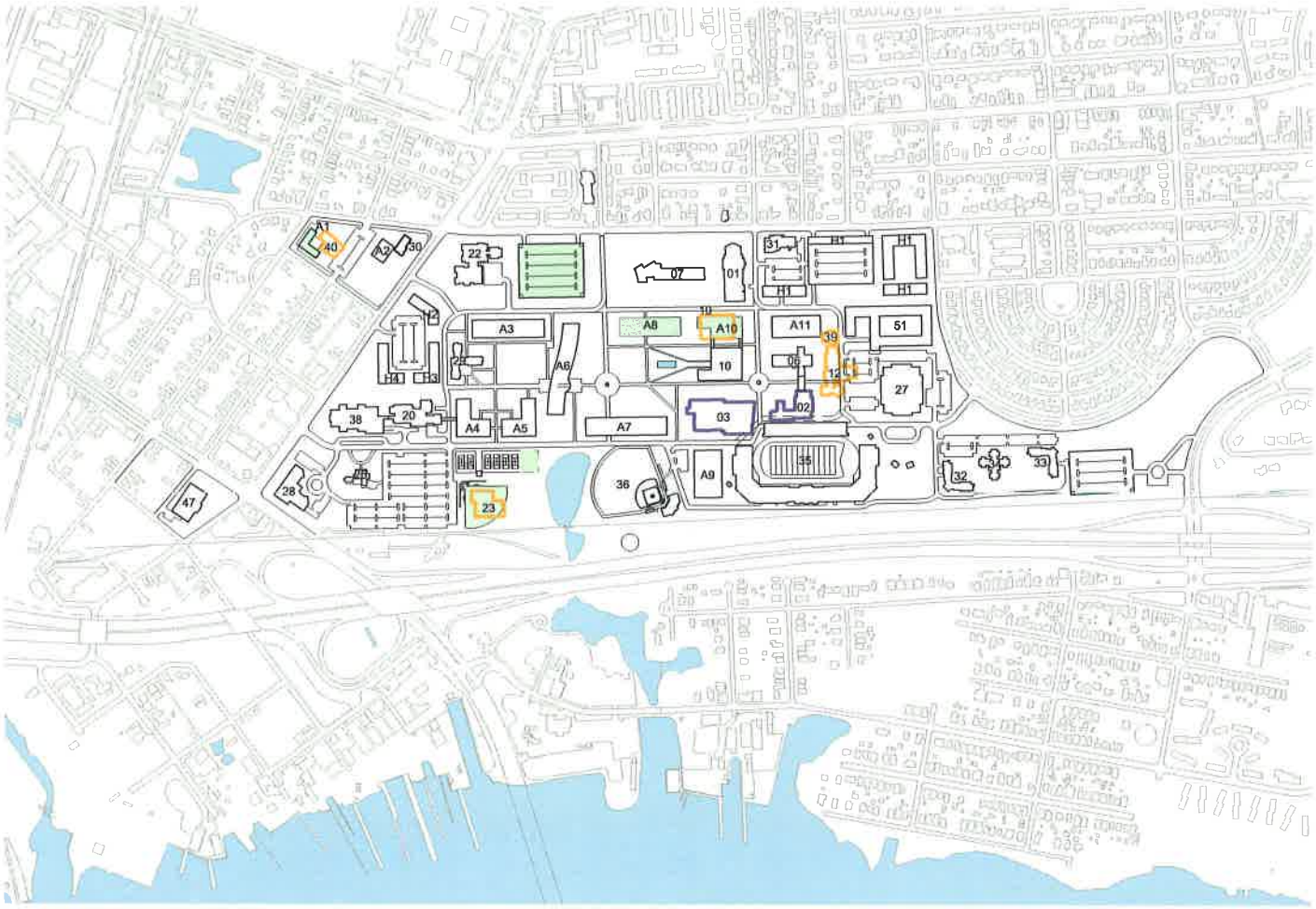


Fig. Diagram illustrates Phase Two of the major projects.

New Construction
Demolition
Possible Demolition

5.12 PHASE TWO

Phase Two, like Phase One, targets projects that are prioritized on a relatively longer term horizon and those that can be realized after some of the Phase One projects are completed. Similar to Phase One, site improvements are also targeted for this phase based on the location of building projects and the demolitions. Phase Two projects include:

New Construction

H1 Phase 4 West Living & Learning Center (Block #4)
New Parking deck (Adjacent to Robinson Tech)

A1 New Brambleton Recreation Center
New Softball Field

A8 New Math & Communications Building
New Convocation/ Recreation Center
New Physical Plant
New Storage for Physical Plant

Demolition

0002 Hugo Madison Hall (Future Demolition)
0003 James D. Gill Health & PE Building (Future Demolition)
0010 Mills Godwin Student Center
0012 Woods Science Building
0023 Central Storage and Maintenance and Addition
0039 Center For Materials Research
0040 Brambleton Recreation Center

Extensive Repairs

(None)

Minor Repairs

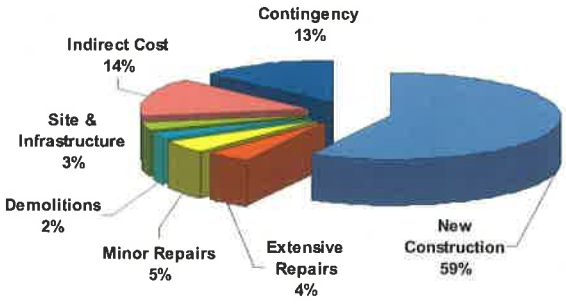
0006 Bozeman Nursing Education Building
0032 Charles H. Smith Men's Residence
0033 Lee Wesley Smith Men's Residence
0035 William "Dick" Price Football Stadium

Site & Infrastructure
Utility Infrastructure Improvements
Roads, Sidewalks & Surface Parking
Landscape and Street Scapes

5.2 Master Plan Cost Estimate

The total estimate for the implementation of the Master Plan is approximately $575 million. This is an 'order of magnitude' cost estimate developed for the implementation of the Master Plan. The estimate takes into account the construction costs for new facilities, demolition of existing structures, site improvements and utility upgrades, renovations and upgrades to existing facilities, indirect costs, and an overall contingency. This estimate is prepared to be used as a guide and is subject to change due to inflation and timeline of construction. The following illustrates cost estimates by major categories of work. *A description of these cost categories and assumptions is included below.

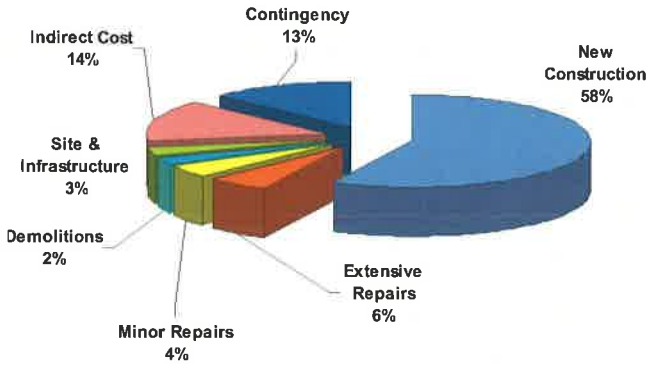
Total Master Plan	**$574,679,000**
New Construction	$332,013,000
Extensive Repairs	$23,294,000
Minor Repairs	$29,818,000
Demolitions	$14,223,000
Site & Infrastructure	$17,087,000
Indirect Costs	$83,285,000
Contingency	$74,962,100



The breakdown for each phase is as follows. This is also supported by a detailed timeline by projects and costs.

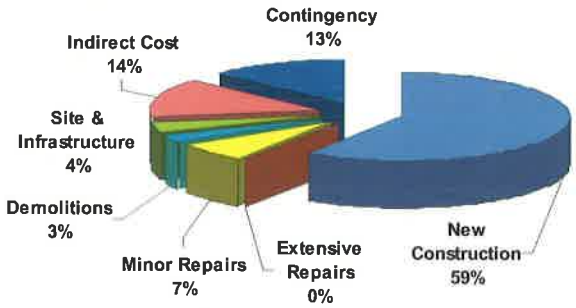
Phase One	**$415,870,000**
New Construction	$238,053,000
Extensive Repairs	$23,294,000
Minor Repairs	$18,697,000
Demolitions	$9,869,000
Site & Infrastructure	$11,443,000
Indirect Costs	$60,270,000
Contingency	$54,247,100

Phase One



Phase Two	**$158,809,000**
New Construction	$93,960,000
Extensive Repairs	$0
Minor Repairs	$11,121,000
Demolitions	$4,354,000
Site & Infrastructure	$5,644,000
Indirect Costs	$23,015,000
Contingency	$20,715,000

Phase Two



5.21 Assumptions for Cost Estimate

The following further defines the assumptions for the estimate:

1. New buildings are assumed to be of institutional quality with exterior wall composed of brick veneer with concrete block back-up and a modest amount of cast stone or pre-cast accents.

2. All new roofs are assumed to be sloped with standing seam metal roofing.

3. For the buildings to be renovated, the budget assumes complete interior renovation and upgrades.

4. The budget for building demolition does not include costs for removal or abatement of hazardous materials or environmental remediation.

5. The budget does not include any traffic or road improvements to the city roads or streets.

6. The New Construction cost includes items such as building structure, foundation, building envelope and interior finishes. It also includes all building systems including heating, air conditioning, plumbing, fire protection, and electrical. Additionally, it also includes items such as built-in casework, lockers, fixed seating, etc., that are installed before the completion of construction.

7. The New Construction cost does not include cost for FF&E. This cost is generally about 10% of the total projected cost. Given that this item significantly varies from project to project, it is not included in this estimate.

8. Indirect cost includes fees for architectural and engineering services. It also includes costs for special consultants, surveying, testing, client's project manager, project administration fees, and legal fees, etc. It is estimated at 20% of the construction cost.

9. Contingency includes reserve funds for accommodating fluctuations in the bid market, unforeseen site conditions prior to or during construction, and minor adjustments in project scope by the owner. It is estimated at 15% of the construction and the indirect costs.

10. The cost estimate is based on construction costs in 2006. An appropriate inflation factor should be added to the specific project cost at the time of implementation.

11. The estimate does not include the following:

a. Out of sequence construction

b. Financial charges

c. Bonds

d. Land acquisition costs

e. Decorative elements such as sculptures, etc.

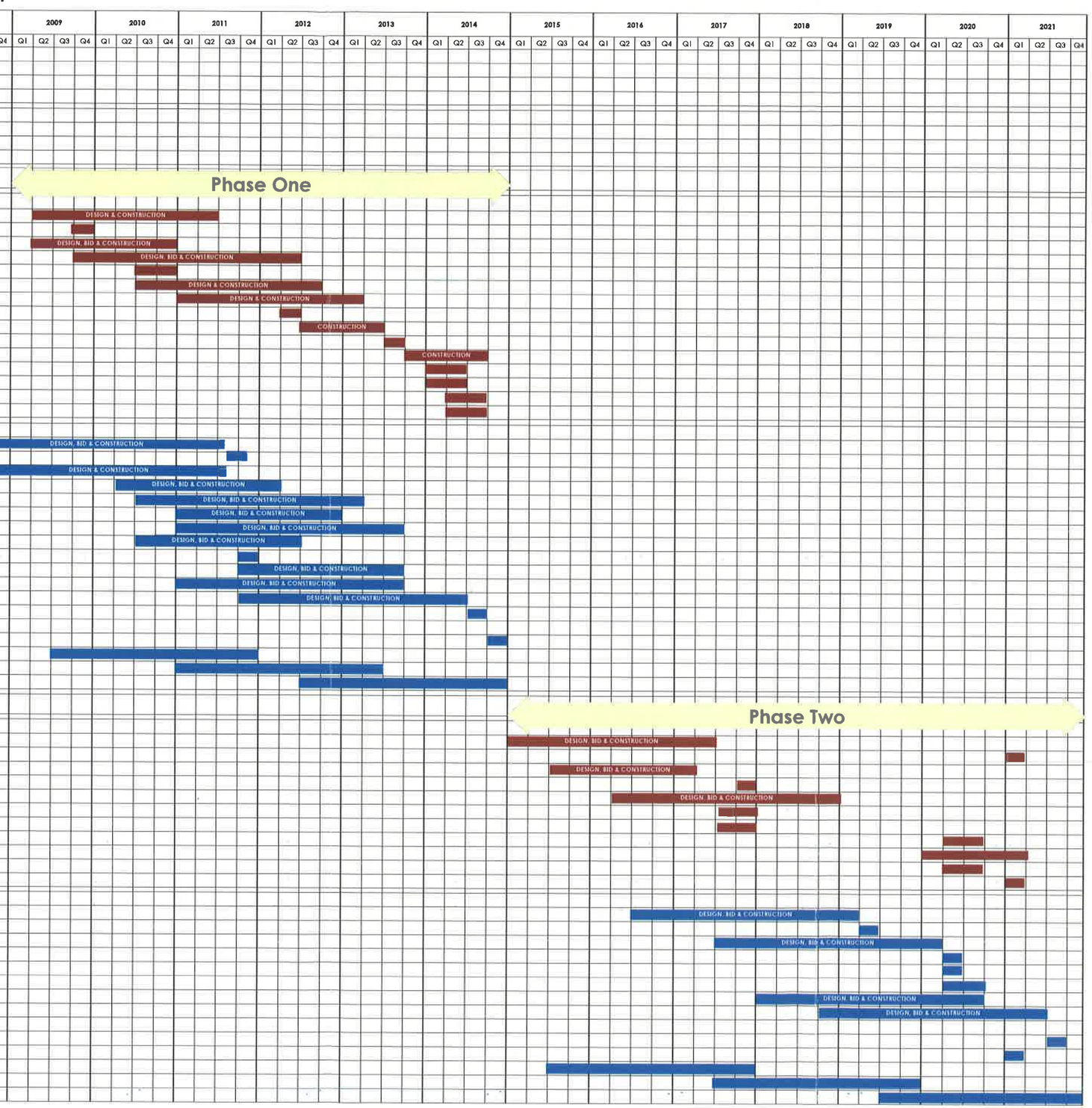
f. Copper lines between buildings

g. Utility connections and connection fees from main lines to buildings.

h. Costs for any interim improvements

Master Plan Capital Projects & Improvements - Phasing and Implementation Plan

	Projects	Total Project Cost
WORK IN PROGRESS		
0.1	New Student Center	
0.2	New Library	
0.3	New Classroom / Nursing Building	
RECENTLY COMPLETED		
0.1	Renovate Robinson Tech	
0.2	RISE Building #1	
0.3	New Police Station	
PHASE ONE		$415,870,000
AUXILLIARY PROJECTS		$145,782,000
0.1	New Phase 2 Living & Learning Center	$45,540,000
0.2	Demolish Former Norfolk Community Hospital	$2,795,000
0.3	New Parking Deck (at Phase 2 Living & Learing Center)	$24,840,000
0.4	New Field House (with offices on 2nd floor)	$16,560,000
0.5	Demolish Twin Towers	$3,138,000
0.6	New West Living & Learning Center with Dining (Block #1)	$8,798,000
0.7	Renovate Phyllis Wheatley Hall	$7,702,000
0.8	Demolish Cafetria West	$392,000
0.9	New West Living & Learning Center (Block #2)	$8,798,000
1.10	Demolish Samuel F. Scott Men's Residence Hall	$841,000
1.11	New West Living & Learning Center (Block #3)	$6,728,000
1.12	Renovate Scott Dozier Dining Hall	$4,901,000
1.13	Renovate Rosa Alexander Hall	$4,417,000
1.14	Renovate Joseph G. Echols Hall	$10,123,000
1.15	Renovate Marty L. Miller Baseball Stadium	$209,000
E&G PROJECTS		$270,091,100
0.1	New Library Building	$50,133,100
0.2	Demolish Lyman B Brooks Memorial Library	$3,013,000
0.3	New Classroom & Nursing Building	$46,575,000
0.4	Renovate L. D. Wilder Building	$9,867,000
0.5	Expansion to E. L. Hamm Fine Arts Building	$30,675,000
0.6	Renovate E. L. Hamm Fine Arts Building	$15,000,000
0.7	New Student Success Center	$39,468,000
0.8	Brambleton Pedestrian Bridge	$3,450,000
0.9	Demolish James A. Bowser	$1,024,000
1.10	Renovate Harrison B. Wilson Hall	$6,149,000
1.11	New College of Business	$27,600,000
1.12	New Science Building	$27,600,000
1.13	Demolish G.W.C Brown Memorial Hall (Partial Demolition)	$1,677,000
1.14	Renovate G.W.C Brown Memorial Hall (Remaining))	$6,039,000
1.15	Demolish Spartan Station	$741,000
1.16	Utility Infrastructure Improvements	$7,829,000
1.17	Roads, Sidewalks & Surface Parking	$2,036,000
1.18	Landscape & Street Scapes	$5,927,000
PHASE TWO		$158,809,000
AUXILLIARY PROJECTS		$61,418,000
0.1	Phase 4 West Learning & Living Center Block #4	$17,388,000
0.2	Demolish James D. Gill Health & PE Building (Future)	$1,600,000
0.3	New Parking Deck (Adjacent to Robinson Tech)	$24,840,000
0.4	Demolish Brambleton Recreation Center	$214,000
0.5	New Brambleton Recreation Center	$4,140,000
0.6	Renovate Charles H. Smith Men's Residence	$4,017,000
0.7	Renovate Lee Wesley Smith Men's Residence	$4,017,000
0.8	Renovate William "Dick" Price Football Stadium	$4,705,000
0.9	New Softball Field	$276,000
1.10	New Tennis Courts	$221,000
E&G PROJECTS		$97,391,000
0.1	New Math & Communications Building	$27,600,000
0.2	Demolish Mills Godwin Student Center	$892,000
0.4	New Godwin Student Center	$16,560,000
0.5	Demolish Woods Science Building	$1,481,000
0.6	Demolish Materials Research Building	$220,000
0.7	Renovate Bozeman Education Building	$2,608,000
0.8	New Convocation/ Recreation Center	$22,080,000
0.9	New Physical Plant	$12,420,000
0.10	New Storage for Physical Plant	$4,140,000
0.11	Demolish Central Storage and Maintenance and Addition	$710,000
0.12	Demolish Hugo Madison Hall (Future)	$892,000
0.13	Utility Infrastructure Improvements	$1,050,000
0.14	Roads, Sidewalks & Surface Parking	$3,266,000
0.15	Landscape & Street Scapes	$3,472,000
Total Auxilliary Funding		$207,200,000
Total E&G Funding		$367,480,000
TOTAL FUNDING		$574,680,000



MASTER PLAN DESIGN GUIDELINES

CONTENTS

6.0 ARCHITECTURAL GUIDELINES

The architectural guidelines for Norfolk State University have been developed as a means of achieving two primary design objectives. First, the guidelines are intended to be restrictive to a degree that insures a coherent building program whereby each structure contributes to an integrated and well organized Master Plan.

The guidelines include exterior architectural characteristics as well as signage, way-finding, street lighting, and furniture recommendations. There is enough flexibility built into the guidelines for each building to have a creative design approach. Limitations are predominantly in the use of building material, setbacks, height, roof pitches, etc to allow for a coherent vocabulary and identity on the campus.

This sense of integration will be attained, in large part, through the definition of masonry types and colors to be used as the primary exterior material on all new buildings. Second, clearly defined standards for building massing will insure that all new buildings participate in the articulation of a coherent character that will symbolize the vital educational community at Norfolk State University.

At the same time, the guidelines are liberal to a degree that will allow each structure to develop an individual identity that is appropriate to its specific program, context and design criteria.

The overall goal of the guidelines is the provision of a framework that will establish a primary order or vision for the Campus at Norfolk State University while simultaneously acknowledging and fostering the traditions of diversity and exploration that have been essential characteristics of academic architecture in the United States.

6.1 Building Image, General Character

The design of each building shall contribute to the development of a coherent Campus image for Norfolk State while simultaneously acknowledging the individuality of its design criteria.

The exterior of new facilities shall be designed to aesthetically recall elements of indigenous architecture of the Mid-Atlantic United States. The exterior architectural design of new facilities should not be based on trendy or fashionable architectural styles, but rather on enduring architectural values. The design emphasis shall be placed on the use of a basic vocabulary of materials and forms that recall the indigenous architectural heritage of the Mid-Atlantic. Each new building shall be contemporary (not a copy of an old building) and creative in its compliance with these guidelines. At the same time, all new buildings shall acknowledge the collegiate nature of the institution and shall present a welcoming character.

Fig. Buildings should be contemporary while adhering to a palette of materials, primarily brick and stone, that evoke a collegiate atmosphere.

6.2 Building Height and Massing

The height and massing of all new buildings at Norfolk State University shall contribute to the development of a clear Campus Master Plan through the expression of order and hierarchy. Generally, the height of building, from ground to the last occupied floor, shall be limited to fifty feet in order to develop a sense of spatial continuity throughout the Campus. The minimum height of any building shall be thirty-five feet. While roof treatments and other architectural elements may exceed the fifty foot height restriction, the design of all roof features shall be of a size that is proportionally related to the scale of the overall building. While buildings of significant programmatic importance may exceed the maximum height limit, any wall surface that exceeds fifty feet in height must be recessed back from

Fig. Buildings may have differing floor level distributions within the overall volume in order to accommodate different functions but all should respect the overall height limit of fifty feet.

the outermost envelope of the building to ensure that the primary volume of all exterior spaces is reinforced.

6.3 Exterior Wall Surface

The vision for the Campus at Norfolk State University will establish a cohesive environment in which buildings and landscape participate in a dynamic and integral relationship, creating a rich and exciting experience for users of the Campus. Consequently, exterior building surfaces shall be developed in a manner that enhances the quality and experience of the exterior spaces while reinforcing the relationship between people and architecture. In order to provide a sense of human scale and texture in the architecture at Norfolk State, the modulation and articulation of exterior wall surfaces is required. Large fields of undifferentiated surfaces will not be permitted. Building façades can be articulated through the manipulation of the building envelope or through the use of varied materials and fenestration.

6.4 Primary Wall Material

The use of a consistent material and color on the exterior walls of new structures will ensure a sense of order and integration among all buildings at the Norfolk State University Campus. The exteriors of new facilities shall consist of red brick that is standard university red brick or a similar red brick of equal quality, covering at least 75% of the exterior, not including window areas and doorways.

Fig. In the image above, the rhythm of the fenestration has been continued onto a wall that would otherwise be a large field of undifferentiated brick by establishing the location of false window openings and then infilling them with brick.

The University red brick standard is:

Lee Brick #201-F

Mortar joints shall be colored with a tint to match, as exemplified in the Hamm Fine Arts Building. Acceptable standard mortar colors are:

Flamingo Brixment Mid-Atlantic Region: colors C-29 Fig, C-31 Terra Cotta, and C-412 Doeskin

6.5 Accent Materials

In addition to the primary brick, the use of a variety of accent materials is encouraged to add diversity and visual interest. It is recommended that accent materials also be used to create articulation and patterning that express texture and develop a sense of scale.

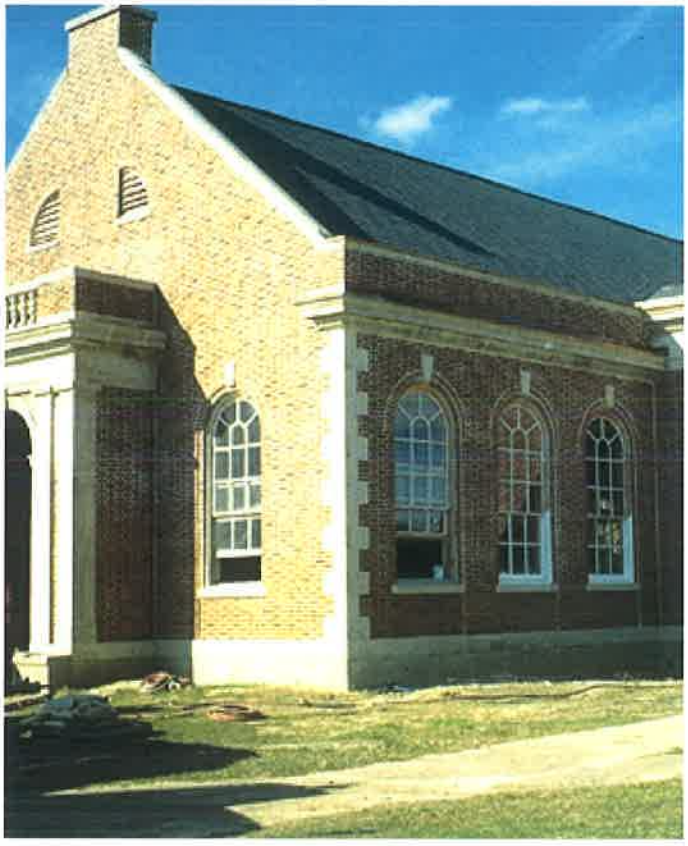


Fig. Stone accents may be used at a variety of locations. Keystones above windows, lintels, pediments, corner supports and base materials provide texture and augment the overall aesthetic quality of buildings. These accents may be classical or contemporary in style.

A minor percentage of the exterior may be built of pre-cast concrete with a smooth texture and sand color similar to limestone, as exemplified by the pre-cast concrete on the Hamm Fine Arts building.

Other brick colors may be used as a supportive design element with the condition that such brick surface, of other than standard red brick, shall not exceed 10% of the exterior excluding window and doorway areas.

6.6 Glass and Fenestration

The climate of Virginia shall be considered as criteria for application and articulation of glass and fenestration on all buildings at Norfolk State University. The use of recessed glass, sun shading devices or appropriate glass type is suggested.

Brightly colored window glass, as well as highly reflective glass, is prohibited. However, the use of a variety of window and glass types is suggested as a means of creating visual interest and distinguishing buildings from one another.

In order to strengthen the relationship between interior and exterior spaces, clear glass is recommended at the entry level of all buildings. Window frame colors shall be determined on an individual project basis to be silver, grey, or charcoal as appropriate to exterior wall materials.

6.7 Building Entrances

Primary building entries shall be designed in such a manner that they are clearly indicated. All primary building entrances shall be located adjacent to major exterior spaces. At major entrances to a building, columns may be used as key architectural elements. The columns may be contemporary or classic in style.

Secondary entrances shall be located adjacent to dedicated parking areas and service drives. Entrances should develop a transition between exterior and interior space while providing an adequate degree of shelter from the elements. This may be accomplished by providing architectural weather protection in the form of a small overhang, canopy or porch.

As a means of integrating buildings and site work elements such as retaining walls, steps and paving, the expression of a building base is recommended at all building entrances. The height of the building base may be determined on an individual project basis.

6.8 Roofs

Roof-tops should be consciously designed to create an interesting effect that expresses the character of each building. New buildings should have roof structures that are complementary to the existing buildings and preserve the character of the Campus.

The predominant roof form shall cover a minimum of 80% of the plan footprint and be a minimum of 4/12 sloped standing seam metal surface in a factory finish slate gray color. If it is not practical, or economically feasible, to have all of the roof area built to a 4/12 slope, a lower slope roof with a minimum slope of 1/2" per foot will be allowed on a maximum of 20% of the total building footprint.

Fig. Primary entrances should have a canopy. This feature can be expressed in a variety of styles, modern in the top image or classical as seen in the bottom image.

Fig. In both cases, the roofing material is a metal standing seam with a grey finish. In the top image the roof pitch is 4:12 and the bottom image is 12:12.

Extremely high roofs or roofs of extreme complexity should be avoided. Any low roof that is visible from adjacent buildings should be covered in a material of finish quality (pavers, colored gravel, etc.).

Bright colors are prohibited on roof-tops. Any roof-top mechanical and exhaust equipment shall be an integral component of the building composition, and shall be of a material and color that is consistent with other building surfaces.

6.9 Exterior Stairs and Handrail

Design and color of exterior stairs and handrails shall be coordinated with the Campus landscape standards for materials, finish and color, as well as the overall building design.

6.10 Exterior Lighting

Norfolk State University will provide general site lighting standards. Additional exterior lighting on buildings is not encouraged except to highlight and illuminate significant building features, such as signage and entrances. Any lighting must be compatible with existing site lighting fixtures in material, finish and color.

6.11 Mechanical Equipment

Air-conditioning compressors, cooling towers and other mechanical equipment shall be screened or fenced so that it is not visible and so that sound transmission is minimized.

6.12 Outdoor Amenities

These include furnishings such as benches, tables, light fixtures, drinking fountains, trash receptacles, kiosks and display boards.

Benches: Shall be a mix of back and backless benches with steel frames and either Types 19 & 106 or Types 39 & 37 as produced by DuMor, Inc. Color shall be dark green, if wood slats are selected wood shall be Redwood heartwood.

Bike Racks: A 2.5-inch diameter ribbon rack, color: black.

Tables and Chairs: Movable seating and tables permits students to adapt seating for outdoor socialization and study. This seating should be located in areas where students frequently gather but also permits the seating to be secured when not in use. Recommended tables and chairs are Firenze and 36" diameter tables as produced by Landscape Forms.

Trash Receptacles and Recycling Bins: Shall have perforated steel sides of dark green color, such as #89 as produced by DuMor, Inc.

Drinking Fountains: Shall be a barrier free design such as #3377 by Haws Drinking Fountains.

Information Kiosks and Display Boards: Should be designed with a uniform character reflecting the image of Norfolk State University campus architecture and program.

Lighting: Pedestrian level walk lights should be 12' high Lumec NW Series, pole type AM6. Parking and road lights should be Hadco Profiler with curved arms and round pole.

Fig. A public walkway with outdoor furniture selected for continuity of design

SIGNAGE

Campus signage should portray the image and identity of the University while efficiently conveying directional information to the user. Thoughtful insight over the tier of graphics, font types, sizes and layout should be codified before implementing the University Masterplan development. To meet these goals a comprehensive sign study undertaken by a qualified sign designer is highly recommended.

The design study should not only consider appearance, sign layout, maintenance, wayfinding and sustainability, but also establish a standard for building and Campus signs reflecting the historic and institutional identity of the University.

At a minimum, University signage should reflect a hierarchy ranging from Campus identification, building identification, direction, and other wayfinding to information. The order of importance is portrayed through size and location of the signs. The hierarchy is: identification, wayfinding and information. All signs are unified through standardized sign layouts recommended by the sign study.

Campus identification signs should be located at the main and secondary entrances. Main entrances should have the highest presence and visibility for vehicular traffic and should include the university logo and name. Main entrances associated with the Preliminary master plan include the entrances by Harrison B. Wilson Hall off Park Avenue and at Corprew Avenue between the proposed security building and the Scott/Dozer Dining Hall.

Entrance sign locations should be reviewed and adjusted as the Masterplan is incorporated, adapting to circulation changes into the Campus. Secondary entrances should have a simpler, low profile presence with University name and logo designed as part of the sign. At each entry point, a simple directional sign should be included to provide building names within the proximity of that entrance.

Other signs are distributed along Campus streets/walks only as necessary for directional purposes. Campus directories should be located at main pedestrian Campus entrances and include an updatable building directory, Campus map with Norfolk State University name and logo integrated onto the directory structure.

Fig. Entry sign illustration

Fig. Campus directory

Fig. Supplemental direction sign

Building and area identification signs should be simple, low profile and pedestrian in scale complimenting the Campus sign style. It is recommended that building identification be incorporated into the building's architectural elements on an individual project basis. Applied plaque type signs on building facades should be discouraged.

Fig. Building identification signs integrated within building architecture

Secondary building entrances should be identified with a standardized system of plaques using one standard typeface, simple text, unobtrusive design and discrete placement. Secondary building entrance signs should be located on the structure, adjacent to entrances just below eye level.

General information signs should be composed of neutral backgrounds with contrasting text color, clear, legible text in one standard font and simple identifiable graphics for users to quickly establish intent. Information signs should be pedestrian in scale and unobtrusive.

Fig. Secondary building entrance signs

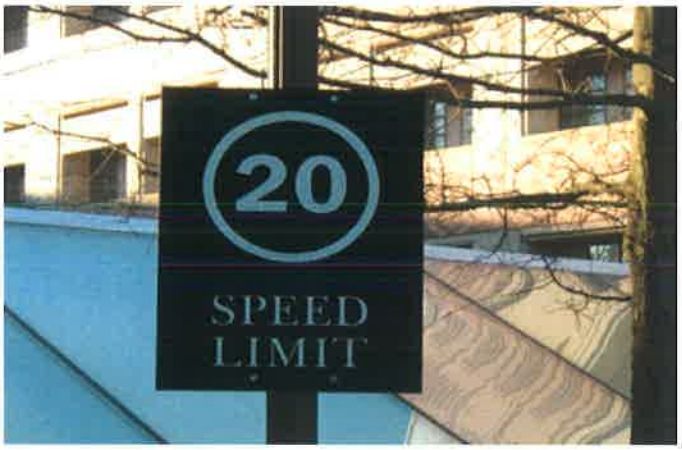


Fig. Simple and effective informational signs

Fig. Simple and effective informational signs

Overall, signage should contain only the minimum necessary information to clearly inform the user while avoiding a cluttered appearance. Backgrounds, text color, font type, size and graphics should be standard throughout the Campus. This not only prevents a chaotic array of signs, but also avoids excessive information leading to confusion and discount. The main entrance and secondary entrance signs are to identify and draw attention to the University while smaller information signs should inform and direct.

APPENDIX

CONTENTS

7.0 Appendix

EXISTING FUNCTIONAL USE INVENTORY

Existing Functional Use Inventory

		Unassigned	1.0 Instruction	2.0 Research	3.0 Public Services	4.0 Academic Support	5.0 Student Support	6.0 Institutional Support	7.0 Physical Plant	9.0 Auxiliary Services
		Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal
Owned Buildings										
BLDG #	BLDG NAME	Total	Total	Total	Total	Total	Total	Total	Total	Total
0001	Scott Dosier Dining Hall (East Campus Cafeteria)	0	0	0	0	0	0	0	7,473	27,265
0002	Hugo Madison Hall (Communications)	0	12,192	0	0	9,583	0	0	1,438	0
0003	James D. Gill Health & PE Building (Gymnasium and ROTC)	119	5,632	0	0	4,542	570	0	3,552	36,280
0005	James A. Bowser (Industrial/Vocational/Technical)	10	12,160	140	4,001	9,490	1,183	3,509	1,551	2,279
0006	Bozeman Nursing Education Building	530	4,278	0	0	7,809	450	0	2,040	0
0007	G.W.C Brown Memorial Hall	102	36,201	446	0	29,374	7,894	0	3,993	670
0010	Mills Godwin Student Center	0	0	0	0	0	25,676	1,343	5,458	12,808
0011	G.W.C Brown Hall Annex	0	0	0	0	0	0	0	0	0
0012	Woods Science Building (Life Science And Chemistry)	0	31,144	4,335	0	10,571	44	0	3,169	0
0013	Twin Towers Dormitory	0	0	0	0	255	0	0	8,117	45,974
0014	Twin Towers Dormitory	0	0	0	0	0	0	0	3,338	46,105
0020	E. L. Hamm Fine Arts Building	0	24,446	85	0	9,530	0	0	1,898	0
0021	Lyman B Brooks Memorial Library	0	0	0	0	119,800	0	3,227	8,118	0
0022	William P. Robinson, SR Technology Center	0	24,033	0	0	16,282	707	0	2,430	0
0023	Central Storage and Maintenance and Addition	0	0	0	0	0	0	0	19,706	0
0024	Cafeteria West (West Campus Cafeteria)	0	0	0	0	0	0	0	506	13,047
0025	Samuel F. Scott Men's Residence Hall	0	0	0	0	176	0	0	40	27,417
0026	President's House	0	0	0	0	0	0	5,100	0	0
0027	Joseph G. Echols Hall	0	1,548	0	0	3,220	0	0	4,929	40,651
0028	Harrison B. Wilson Hall	0	0	0	0	0	7,447	24,109	1,759	0
0029	Rosa Alexander Hall	0	0	0	0	172	0	0	2,056	27,908
0030	Phyllis Wheatley Dormitory	0	0	0	0	0	0	0	1,209	9,082
0031	Police Station	0	0	0	0	0	0	2,087	40	0
0032	Charles H. Smith Men's Residence	0	0	0	0	211	0	0	1,712	22,328
0033	Lee Wesley Smith Men's Residence	0	0	0	0	280	555	0	1,657	21,602
0034	Mid-rise Dorm	0	0	0	0	122	820	0	905	50,023
0035	William "Dick" Price Football Stadium (Athletic Facility)	0	0	0	0	0	0	254	7,317	8,892
0036	Marty L. Miller Baseball Stadium	0	0	0	0	0	0	0	568	1,337
0037	Spartan Station	0	360	0	0	482	1,410	1,079	1,264	7,559
0038	L. D. Wilder Building	0	0	0	22,014	1,116	0	0	7,699	0
0039	Center For Materials Research	0	0	5,967	0	0	0	0	756	0
0040	Brambleton Recreation Center	0	0	0	7,434	0	0	0	359	0
0041	Ticket Office	0	0	0	0	0	0	0	33	435
0045	Former Norfolk Community Hospital Building	71,001	0	0	0	33,999	0	0	0	0
0051	Spartan Suites	0	0	0	0	0	0	0	0	183,045
		0	0	0	0	0	0	0	0	0
Existing Owned Buildings		71,762	151,994	10,973	33,449	257,014	46,756	40,708	105,090	584,707

		ASF Subtotals								Net ASF	Gross SF	
		Instruction & Academic Support	Library	Research	Public Services	Student Services & Institutional Support	Physical Plant	Auxiliary Services	Unassigned	Gross Factor Items	Total ASF Available	Total GSF	Net/Gross Ratio
BLDG #	BLDG NAME												
0001	Scott Dosier Dining Hall (East Campus Cafeteria)	0	0	0	0	0	7,473	27,265	0	7,473	27,265	44,404	61.4%
0002	Hugo Madison Hall (Communications)	21,775	0	0	0	0	1,438	0	0	1,438	21,775	43,126	50.5%
0003	James D. Gill Health & PE Building (Gymnasium and ROTC)	10,174	0	0	0	570	3,552	36,280	119	3,552	47,143	77,247	61.0%
0005	James A. Bowser (Industrial/Vocational/Technical)	21,650	0	140	4,001	4,692	1,551	2,279	10	1,551	32,772	49,485	66.2%
0006	Bozeman Nursing Education Building	12,087	0	0	0	450	2,040	0	530	0	15,107	31,492	48.0%
0007	G.W.C Brown Memorial Hall	65,575	0	446	0	7,894	3,993	670	102	3,993	74,687	135,522	55.1%
0010	Mills Godwin Student Center	0	0	0	0	27,019	5,458	12,808	0	5,430	39,855	59,480	67.0%
0011	G.W.C Brown Hall Annex	0	0	0	0	0	0	0	0	0	0	1511	0.0%
0012	Woods Science Building (Life Science And Chemistry)	41,715	0	4,335	0	44	3,169	0	0	3,169	46,094	71,526	64.4%
0013	Twin Towers Dormitory	255	0	0	0	0	8,117	45,974	0	8,117	46,229	151,636	30.5%
0014	Twin Towers Dormitory	0	0	0	0	0	3,338	46,105	0	3,338	46,105	0	0.0%
0020	E. L. Hamm Fine Arts Building	32,427	0	85	0	0	1,898	1,549	0	1,876	34,063	63,433	53.7%
0021	Lyman B Brooks Memorial Library	2,362	105,318	0	0	3,227	8,118	12,120	0	8,118	123,027	145,550	84.5%
0022	William P. Robinson, SR Technology Center	40,315	0	0	0	707	2,430	0	0	0	43,452	78,271	55.5%
0023	Central Storage and Maintenance and Addition	0	0	0	0	0	19,706	0	0	727	18,979	34,298	55.3%
0024	Cafeteria West (West Campus Cafeteria)	0	0	0	0	0	506	13,047	0	506	13,047	18,915	69.0%
0025	Samuel F. Scott Men's Residence Hall	176	0	0	0	0	40	27,417	0	40	27,593	40,582	68.0%
0026	President's House	0	0	0	0	5,100	0	0	0	0	5,100	8,500	60.0%
0027	Joseph G. Echols Hall	3,956	812	0	0	0	4,929	40,651	0	5,311	45,037	91,701	49.1%
0028	Harrison B. Wilson Hall	0	0	0	0	31,556	1,759	0	0	1,759	31,556	55,701	56.7%
0029	Rosa Alexander Hall	172	0	0	0	0	2,056	27,908	0	2,056	28,080	40,010	70.2%
0030	Phyllis Wheatley Dormitory	0	0	0	0	0	1,209	9,082	0	1,209	9,082	18,603	48.8%
0031	Police Station	0	0	0	0	2,087	40	0	0	40	2,087	2,127	98.1%
0032	Charles H. Smith Men's Residence	211	0	0	0	0	1,712	22,328	0	1,712	22,539	36,388	61.9%
0033	Lee Wesley Smith Men's Residence	280	0	0	0	555	1,657	21,602	0	1,657	22,437	36,388	61.7%
0034	Mid-rise Dorm	122	0	0	0	820	905	50,023	0	905	50,965	84,703	60.2%
0035	William "Dick" Price Football Stadium (Athletic Facility)	0	0	0	0	254	7,317	8,892	0	7,317	9,146	42,616	21.5%
0036	Marty L. Miller Baseball Stadium	0	0	0	0	0	568	1,337	0	568	1,337	1,337	100.0%
0037	Spartan Station	842	0	0	0	2,489	1,264	7,559	0	1,264	10,890	35,784	30.4%
0038	L. D. Wilder Building	1,116	0	0	22,014	0	7,699	0	0	7,699	23,130	56,247	41.1%
0039	Center For Materials Research	0	0	5,967	0	0	756	0	0	756	5,967	10,575	56.4%
0040	Brambleton Recreation Center	0	0	0	7,434	0	359	0	0	359	7,434	10,348	71.8%
0041	Ticket Office	0	0	0	0	0	33	435	0	33	435	720	60.4%
0045	Former Norfolk Community Hospital Building	33,999	0	0	0	0	0	0	71,001	0	105,000	135,000	77.8%
0051	Spartan Suites	0	0	0	0	0	0	183,045	0	0	183,045	261,493	70.0%
		0	0	0	0	0	0	0	0	0	0		0.0%
Existing Owned Buildings		289,209	106,130	10,973	33,449	87,464	105,090	598,376	71,762	81,973	1,220,480	1,973,208	61.9%

		Unassigned	1.0 Instruction	2.0 Research	3.0 Public Services	4.0 Academic Support	5.0 Student Support	6.0 Institutional Support	7.0 Physical Plant	9.0 Auxiliary Services
		000	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal
Off-Campus Buildings										
BLDG #	BLDG NAME	Total	Total	Total	Total	Total	Total	Total	Total	Total
0042	Virginia Beach Graduate Center	0	11,159	0	0	4,181	4,474	0	0	0
0043	NSU/ODU Tri Cities Center	0	7,760	0	0	3,434	834	0	111	0
0044	Norfolk Naval Base Center - leased	0	0	0	0	413	0	0	0	0
Existing Leased Buildings		0	18,919	0	0	8,028	5,308	0	111	0

		ASF Subtotals								Net ASF	Gross SF	
		Instruction & Academic Support	Library	Research	Public Services	Student Services & Institutional Support	Physical Plant	Auxiliary Services	Unassigned	Gross Factor Items	Total ASF Available	Total GSF	Net/Gross Ratio
BLDG #	BLDG NAME												
0042	Virginia Beach Graduate Center	15,340	0	0	0	4,474	0	0	0	0	19,814	24,000	82.6%
0043	NSU/ODU Tri Cities Center	11,194	0	0	0	834	111	0	0	111	12,026	15,000	80.2%
0044	Norfolk Naval Base Center - leased	413	0	0	0	0	0	0	0	0	413	500	82.6%
Existing Leased Buildings		26,947	0	0	0	5,308	111	0	0	111	32,255	39,500	81.7%

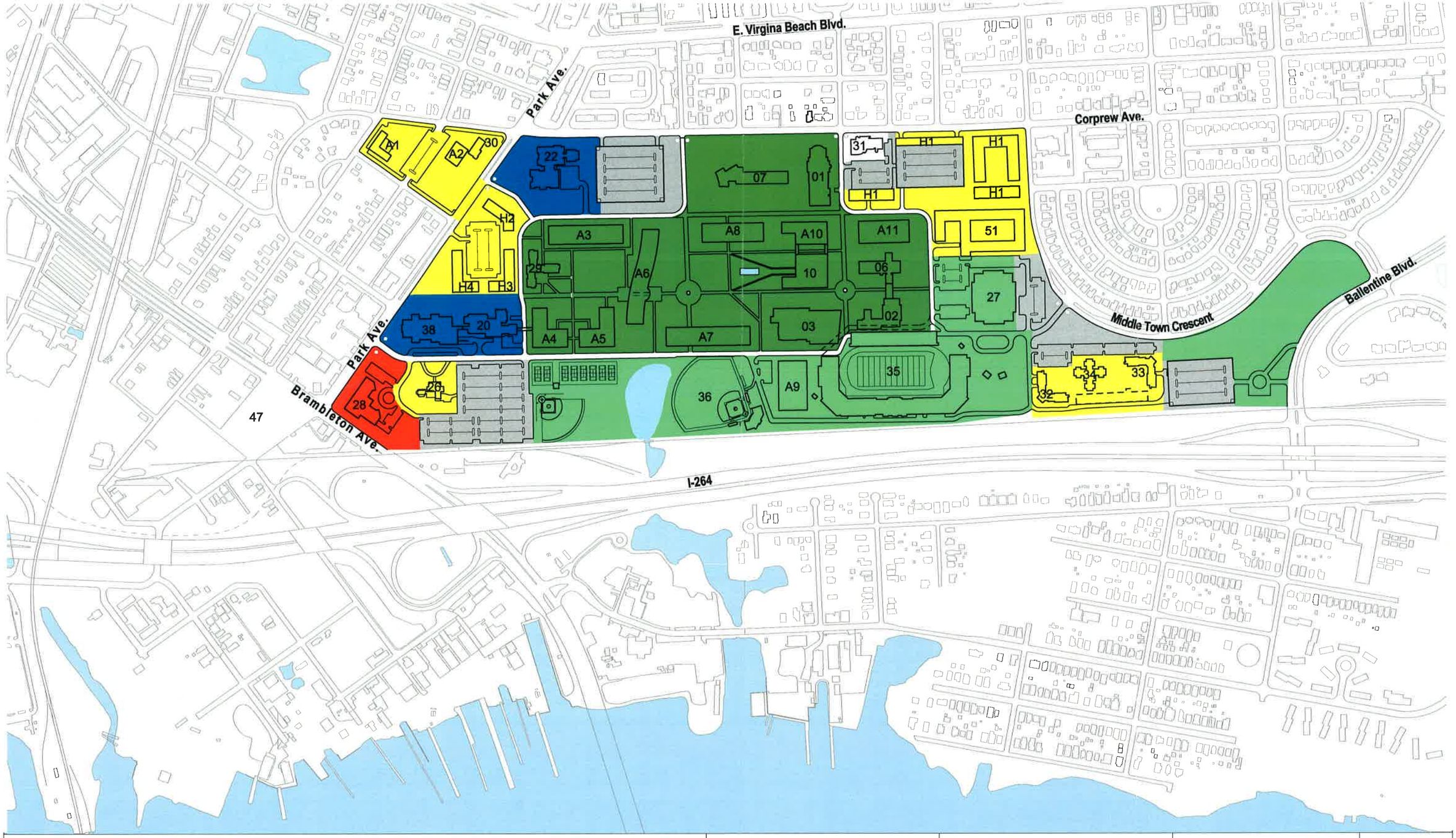
Existing 2005		71,762	170,913	10,973	33,449	265,042	52,064	40,708	105,201	584,707	316,156	106,130	10,973	33,449	92,772	105,201	598,376	71,762	82,084	1,252,735	2,012,708	62.2%

EXISTING ROOM USE
INVENTORY

Existing Room Use Inventory

		TOTAL ASF	Unassigned	Classroom	Labs	Office	Library	Special	General	Support	Health	Residential	Total ASF		Unassigned ASF			Net SF	Gross SF	
			000	100	200	300	400	500	600	700	800	900			Unassignable	Vacant	Renovation			
Owned Buildings																				
BLDG #	BLDG NAME	Assigned SQ FT	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total Academic	Total Assigned	010 - 040	050	060	Total ASF Available	Total GSF	Net/Gross Ratio
0001	Scott Dosier Dining Hall (East Campus Cafeteria)	27,265	0	0	0	1,089	0	0	26,176	0	0	0	27,265	27,265	7,473	0	0	27,265	44,404	61.4%
0002	Hugo Madison Hall (Communications)	21,775	0	9,831	3,545	8,399	0	0	0	0	0	0	21,775	21,775	1,438	0	0	21,775	43,126	50.5%
0003	James D. Gill Health & PE Building (Gymnasium and ROTC)	47,143	0	2,882	160	6,206	570	37,325	0	0	0	0	47,143	47,143	3,552	0	0	47,143	77,247	61.0%
0005	James A. Bowser (Industrial/Vocational/Technical)	32,772	10	1,259	11,041	12,950	0	5,399	632	1,481	0	0	32,762	32,762	1,551	10	0	32,772	49,485	66.2%
0006	Bozeman Nursing Education Building	15,107	0	803	657	11,188	1,747	206	381	125	0	0	15,107	15,107	0	0	0	15,107	31,492	48.0%
0007	G.W.C Brown Memorial Hall	74,687	102	28,048	10,761	27,782	265	0	7,729	0	0	0	74,585	74,585	3,993	102	0	74,687	135,522	55.1%
0010	Mills Godwin Student Center	39,855	0	0	0	19,531	0	0	18,953	1,371	0	0	39,855	39,855	5,430	0	0	39,855	59,480	67.0%
0011	G.W.C Brown Hall Annex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1511	0.0%
0012	Woods Science Building (Life Science And Chemistry)	46,094	0	6,643	29,493	9,681	44	233	0	0	0	0	46,094	46,094	3,169	0	0	46,094	71,526	64.4%
0013	Twin Towers Dormitory	46,229	0	0	255	697	0	0	0	0	0	45,277	952	46,229	8,117	0	0	46,229	151,636	30.5%
0014	Twin Towers Dormitory	46,105	0	0	0	852	0	0	0	0	0	45,253	852	46,105	3,338	0	0	46,105	0	0.0%
0020	E. L. Hamm Fine Arts Building	34,083	0	3,455	21,076	8,003	0	0	1,549	0	0	0	34,083	34,083	1,676	0	0	34,083	63,433	53.7%
0021	Lyman B Brooks Memorial Library	123,027	0	0	4,699	21,679	85,204	0	11,376	69	0	0	123,027	123,027	8,118	0	0	123,027	145,550	84.5%
0022	William P. Robinson, SR Technology Center	43,452	43,452	0	0	0	0	0	0	0	0	0	0	0	0	0	43,452	43,452	78,271	55.5%
0023	Central Storage and Maintenance and Addition	18,979	3,412	0	0	2,885	0	0	0	12,682	0	0	15,567	15,567	727	0	3,412	18,979	34,298	55.3%
0024	Cafeteria West (West Campus Cafeteria)	13,047	0	0	0	213	0	0	12,834	0	0	0	13,047	13,047	506	0	0	13,047	18,915	69.0%
0025	Samuel F. Scott Men's Residence Hall	27,593	0	0	176	514	0	0	89	0	0	26,814	779	27,593	40	0	0	27,593	40,582	68.0%
0026	President's House	5,100	0	0	0	0	0	0	5,100	0	0	0	5,100	5,100	0	0	0	5,100	8,500	60.0%
0027	Joseph G. Echols Hall	45,037	0	1,548	0	5,470	0	37,535	484	0	0	0	45,037	45,037	5,311	0	0	45,037	91,701	49.1%
0028	Harrison B. Wilson Hall	31,556	0	0	0	30,309	0	0	451	796	0	0	31,556	31,556	1,759	0	0	31,556	55,701	56.7%
0029	Rosa Alexander Hall	28,080	0	0	172	938	0	0	51	0	0	26,919	1,161	28,080	2,056	0	0	28,080	40,010	70.2%
0030	Phyllis Wheatley Dormitory	9,082	0	0	0	467	0	0	0	0	0	8,615	467	9,082	1,209	0	0	9,082	18,603	48.8%
0031	Police Station	2,087	0	0	0	2,087	0	0	0	0	0	0	2,087	2,087	40	0	0	2,087	2,127	98.1%
0032	Charles H. Smith Men's Residence	22,539	0	0	211	34	0	0	0	0	0	22,294	245	22,539	1,712	0	0	22,539	36,388	61.9%
0033	Lee Wesley Smith Men's Residence	22,437	0	0	280	660	555	0	0	0	0	20,942	1,495	22,437	1,657	0	0	22,437	36,388	61.7%
0034	Mid-rise Dorm	50,965	0	0	122	208	820	0	2,160	0	0	47,655	3,310	50,965	905	0	0	50,965	84,703	60.2%
0035	William "Dick" Price Football Stadium (Athletic Facility)	9,146	0	0	0	747	0	4,636	3,509	254	0	0	9,146	9,146	7,317	0	0	9,146	42,616	21.5%
0036	Marty L. Miller Baseball Stadium	1,337	0	0	0	0	0	1,337	0	0	0	0	1,337	1,337	568	0	0	1,337	1,905	70.2%
0037	Spartan Station	10,890	0	0	360	2,678	0	0	7,525	0	327	0	10,890	10,890	1,284	0	0	10,890	35,784	30.4%
0038	L. D. Wilder Building	23,130	0	0	0	1,832	0	0	21,298	0	0	0	23,130	23,130	7,699	0	0	23,130	56,247	41.1%
0039	Center For Materials Research	5,967	0	0	3,869	1,494	604	0	0	0	0	0	5,967	5,967	756	0	0	5,967	10,575	56.4%
0040	Brambleton Recreation Center	7,434	0	0	372	548	0	5,042	1,472	0	0	0	7,434	7,434	359	0	0	7,434	10,348	71.8%
0041	Ticket Office	435	0	0	0	228	0	0	207	0	0	0	435	435	33	0	0	435	720	60.4%
0045	Former Norfolk Community Hospital Building	105,000	71,001	4,493	14,021	15,219	0	0	0	266	0	0	33,999	33,999	0	71,001	0	105,000	135,000	77.8%
0051	Spartan Suites	183,045	0	0	0	3,500	0	0	5,700	0	0	173,845	9,200	183,045	0	0	0	183,045	261,493	70.0%
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.0%
Existing Owned Buildings		1,220,480	117,977	58,962	101,270	198,088	89,809	91,713	127,676	17,044	327	417,614	684,889	1,102,503	81,973	71,113	46,864	1,220,480	1,973,776	61.8%

			Unassigned	Classroom	Labs	Office	Library	Special	General	Support	Health	Residential	Total ASF		Unassigned ASF			Net SF	Gross SF	
			000	100	200	300	400	500	600	700	800	900			Unassignable	Vacant	Renovation			
Off-Campus Buildings																				
BLDG #	BLDG NAME	Assigned SQ FT	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total Academic	Total Assigned	010 - 040	050	060	Total ASF Available	Total GSF	Net/Gross Ratio
0042	Virginia Beach Graduate Center	19,814	0	11,159	2,587	1,594	4,474	0	0	0	0	0	19,814	19,814	0	0	0	19,814	24,000	82.6%
0043	NSU/ODU Tri Cities Center	12,028	0	7,760	554	2,880	184	0	650	0	0	0	12,028	12,028	111	0	0	12,028	15,000	80.2%
0044	Norfolk Naval Base Center - leased	413	0	0	0	413	0	0	0	0	0	0	413	413	0	0	0	413	500	82.6%
Existing Leased Buildings		32,255	0	18,919	3,141	4,887	4,658	0	650	0	0	0	32,255	32,255	111	0	0	32,255	39,500	81.7%
Existing 2005		1,252,735	117,977	77,881	104,411	202,975	94,467	91,713	128,326	17,044	327	417,614	717,144	1,134,758 #	82,084	71,113	46,864 #	1,252,735	2,013,276	62.2%



Campus Academic Core
Residential Zone
Administration Zone
Additional Academic Zone
Athletics
Parking

NORFOLK STATE UNIVERSITY
MASTER PLAN

0 100 250 500

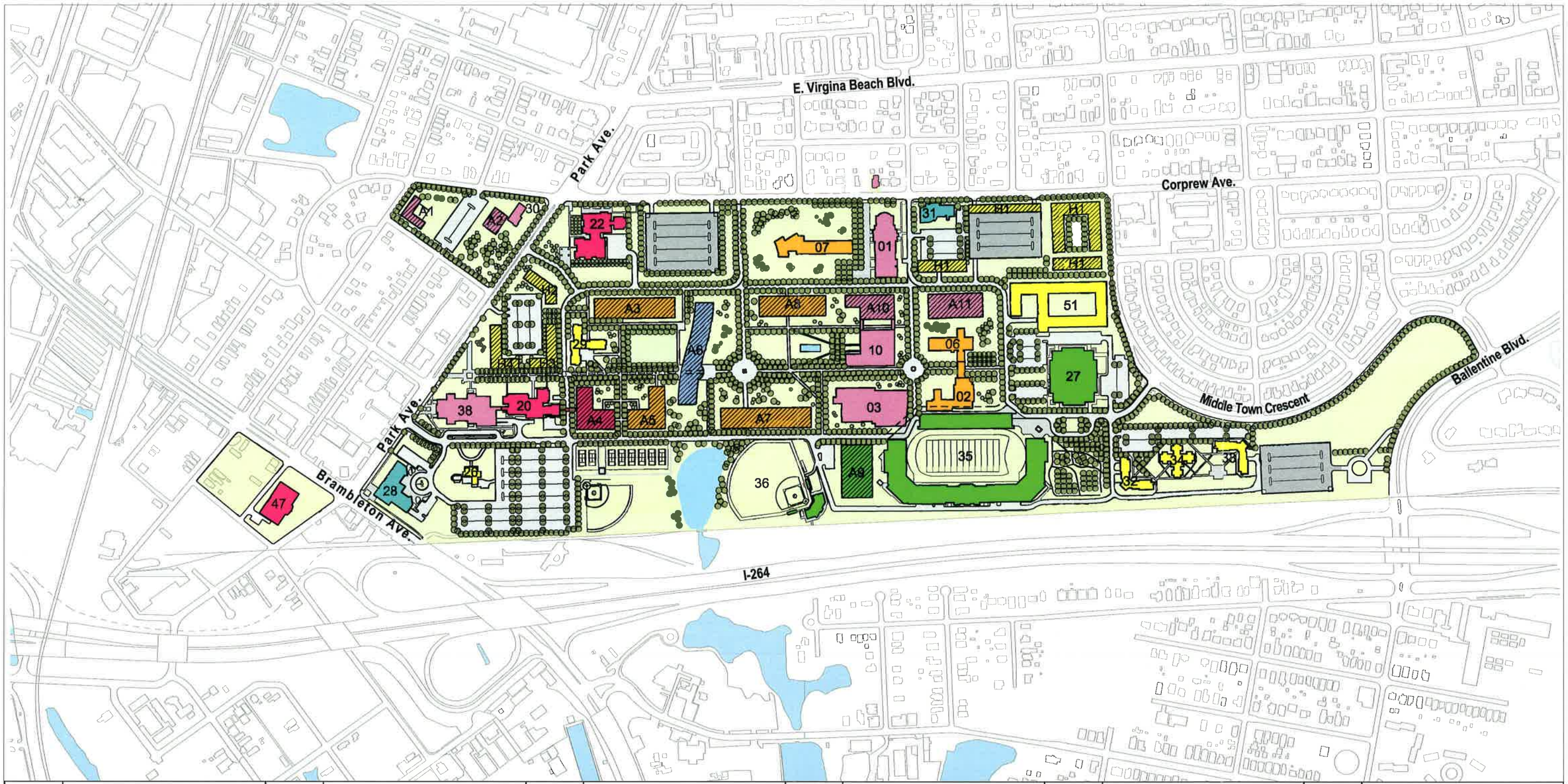
Scale 1" = 500'

CAMPUS ZONES

JOHN PORTMAN & ASSOCIATES, INC.

NORTH

2008



Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name	Building No.	Building Name
01	Scott Dosier Dining Hall (East Campus Cafeteria)	20	E. L. Hamm Fine Arts Building	26	President's House	29	Rosa Alexander Hall	33	Lee Wesley Smith Men's Residence	36	Marty L. Miller Baseball Stadium
06	Bozeman Nursing Education Building	21	Lyman B Brooks Memorial Library	27	Joseph G. Echols Hall	31	Police Station	34	Mid-rise Dorm	38	L. D. Wilder Building
10	Mills Godwin Student Center	22	William P. Robinson, SR Technology Center	28	Harrison B. Wilson Hall	32	Charles H. Smith Men's Residence	35	William "Dick" Price Football Stadium (Athletic Facility)	51	Spartan Suites
A1	Brambleton Center Addition	A2	Wheatly Addition	A3	New Science Building	A4	Hamm Fine Arts Addition	A5	New School of Business	A6	New Library
A7	New Classroom/Nursing Building	A8	New Math/Communications Building	A9	Fieldhouse	A10	New Godwin Student Center	A11	Student Success Center	H1	New Living and Learning Center - East
H2	New Living and Learning Center - West										

- Classroom Facilities
- Laboratory Facilities
- Library Facilities
- Special Use Facilities
- General Use Facilities
- Support Facilities
- Residential Facilities
- Parking Structure
- New Building
- Future Building Site

NORFOLK STATE UNIVERSITY
MASTER PLAN

0 100 250 500

Scale 1" = 500'

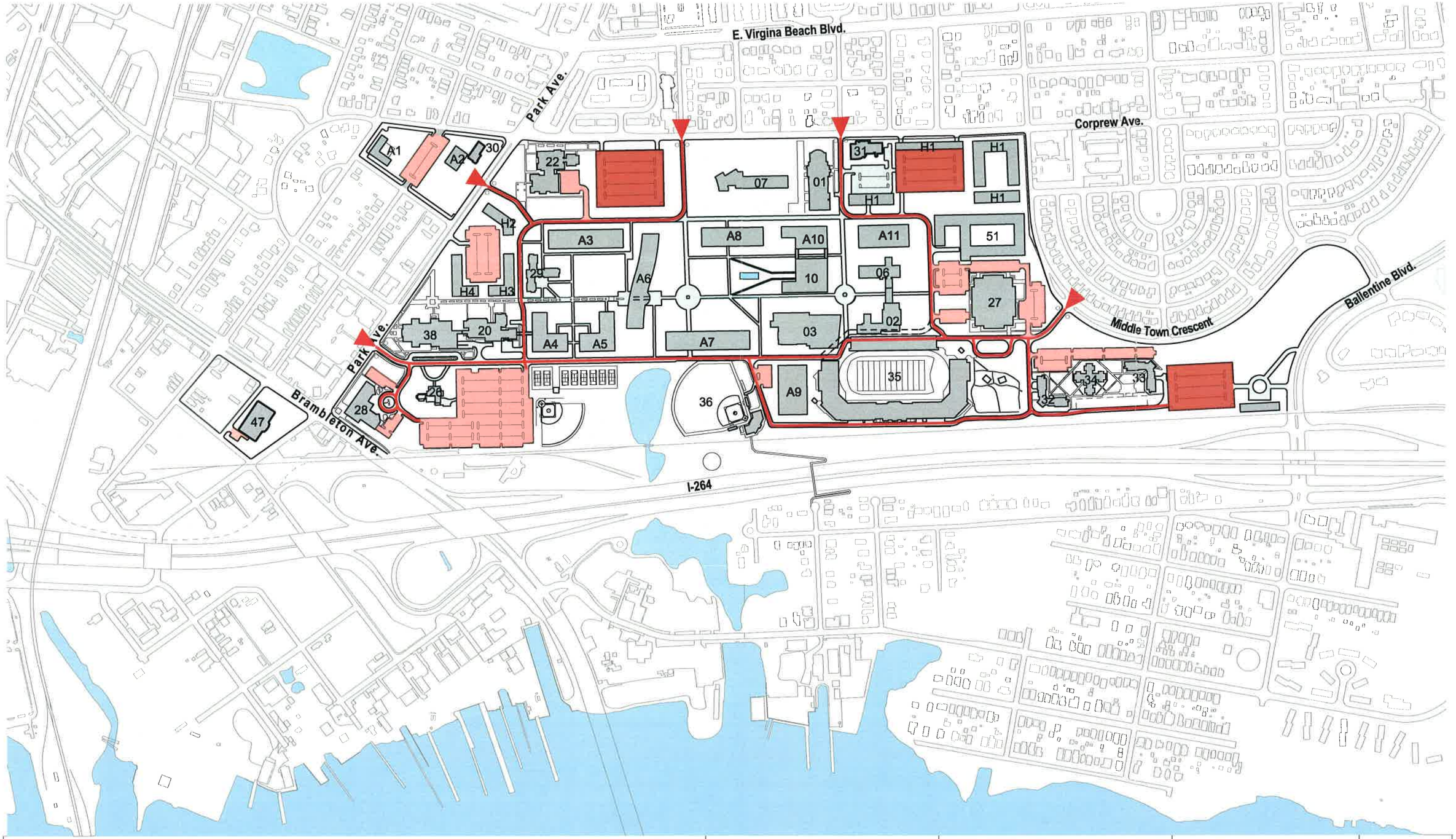
MASTER PLAN

JOHN PORTMAN & ASSOCIATES, INC.

NORTH

2008

VEHICULAR CIRCULATION



Vehicular Circulation
Vehicle Access Point
NSU Property Line

NORFOLK STATE UNIVERSITY
MASTER PLAN

0 100 250 500

Scale 1" = 500'

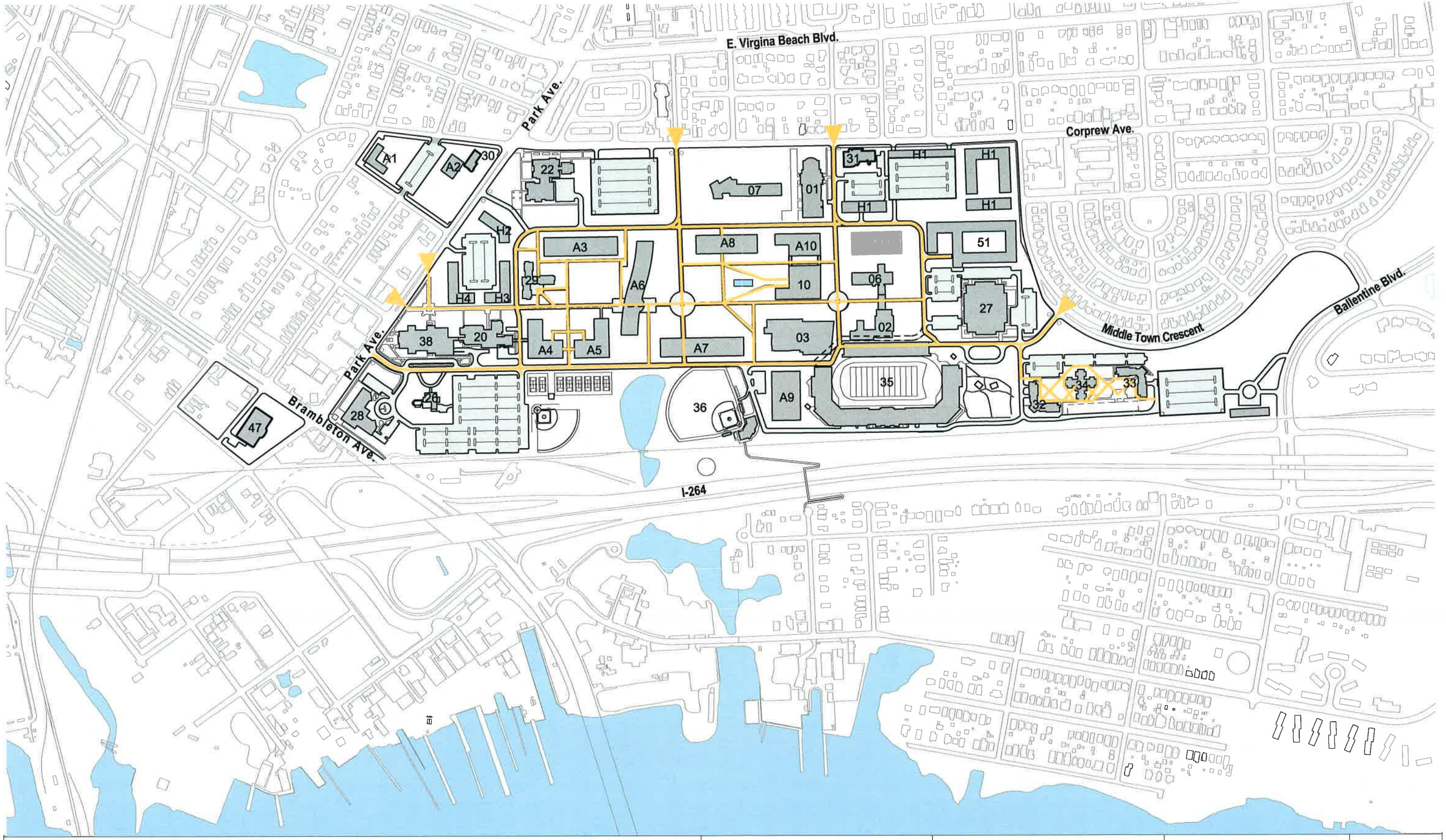
VEHICULAR CIRCULATION

JOHN PORTMAN & ASSOCIATES, INC.

NORTH

2008

PEDESTRIAN CIRCULATION



Pedestrian Circulation
Pedestrian Access Point
NSU Property Line

NORFOLK STATE UNIVERSITY
MASTER PLAN

0 100 250 500

Scale 1" = 500'

PEDESTRIAN CIRCULATION

JOHN PORTMAN & ASSOCIATES, INC.

NORTH

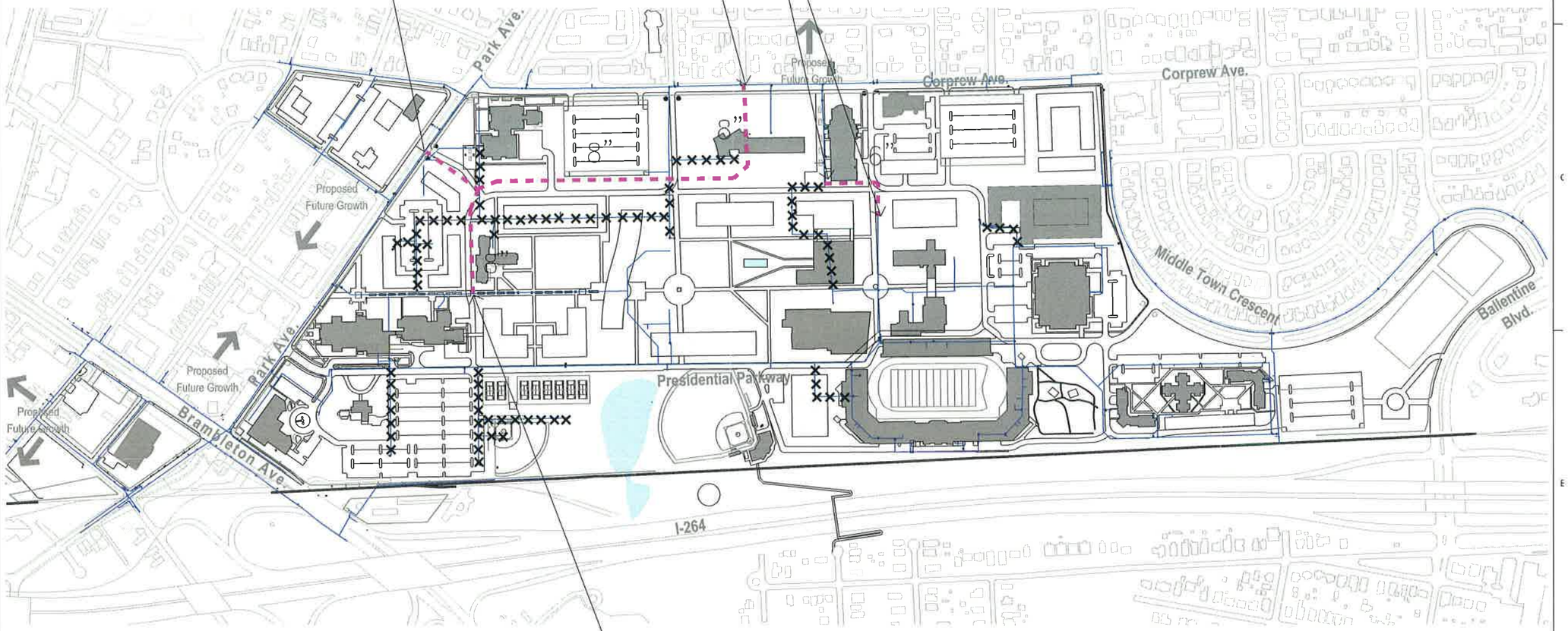
2008

CONNECT TO EXISTING 24" WATER MAIN

CONNECT TO EXISTING 8" WATER MAIN

CONNECT TO EXISTING 6" WATER MAIN

N



LEGEND:

WATER SERVICE (EXISTING)

WATER SERVICE (NEW)

WATER SERVICE (ABANDONED)

CONNECT TO EXISTING 8" WATER MAIN

NOTES:

1. EXISTING CONDITIONS SURVEY PREPARED BY ROUSE–SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.
2. WATER SERVICE CONNECTIONS TO BUILDINGS, HYDRANTS AND SPRINKLERS ARE NOT SHOWN.
3. NEW WATER SERVICE WITHIN CAMPUS IS "LOOPED". EXISTING "DEAD–END" WATER SERVICE TO BE ELIMINATED.

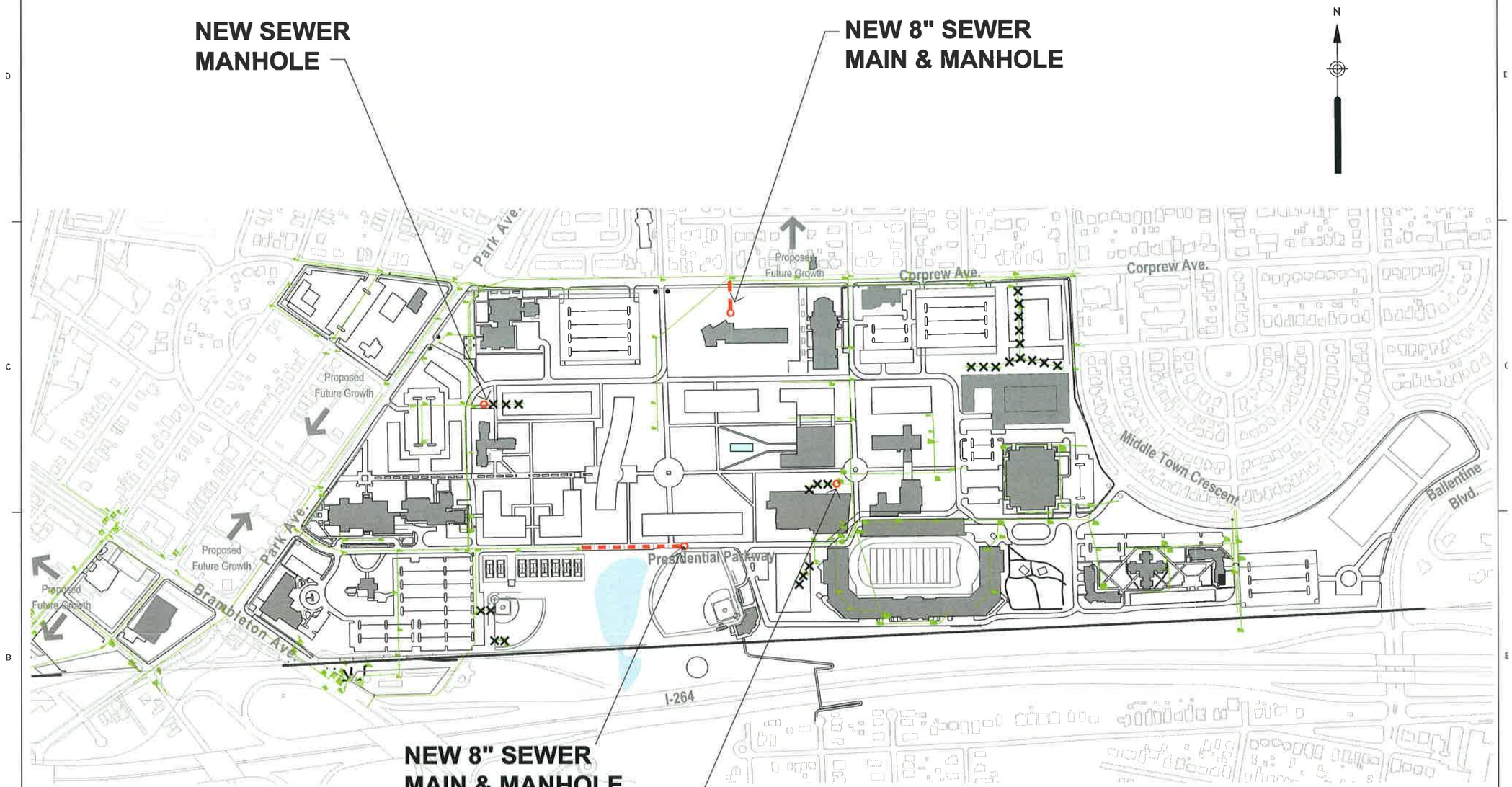
PEER Consultants, P.C.
8 New England Executive Park
Burlington, MA 01803-5001
Ph (781) 238-8880
office@peerne.com
Est. 1978

NORFOLK STATE UNIVERSITY
MASTER PLAN

NEW WATER SYSTEM

NOT TO SCALE
11/14/2006

SANITARY SEWER SYSTEM
PLAN



LEGEND:

- SANITARY SEWER SYSTEM (EXISTING)
- SANITARY SEWER SYSTEM (NEW)
- ××× SANITARY SEWER SYSTEM (ABANDONED)

NOTES:

1. EXISTING CONDITIONS SURVEY PREPARED BY ROUSE–SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.
2. SANITARY SEWER SERVICE CONNECTIONS TO BUILDINGS ARE NOT SHOWN.

PEER Consultants, P.C.
8 New England Executive Park
Burlington, MA 01803-5001
Ph (781) 238-8880
office@peerne.com
Est. 1978

NORFOLK STATE UNIVERSITY
MASTER PLAN

NEW SANITARY SEWER SYSTEM

NOT TO SCALE
11/14/2008

STORMWATER DRAINAGE SYSTEM PLAN

NEW 6'x6' UNDERGROUND STORMWATER STORAGE TANKS WITH FLOW RESTRICTIORS

CONNECT TO EXISTING STORM DRAIN SYSTEM

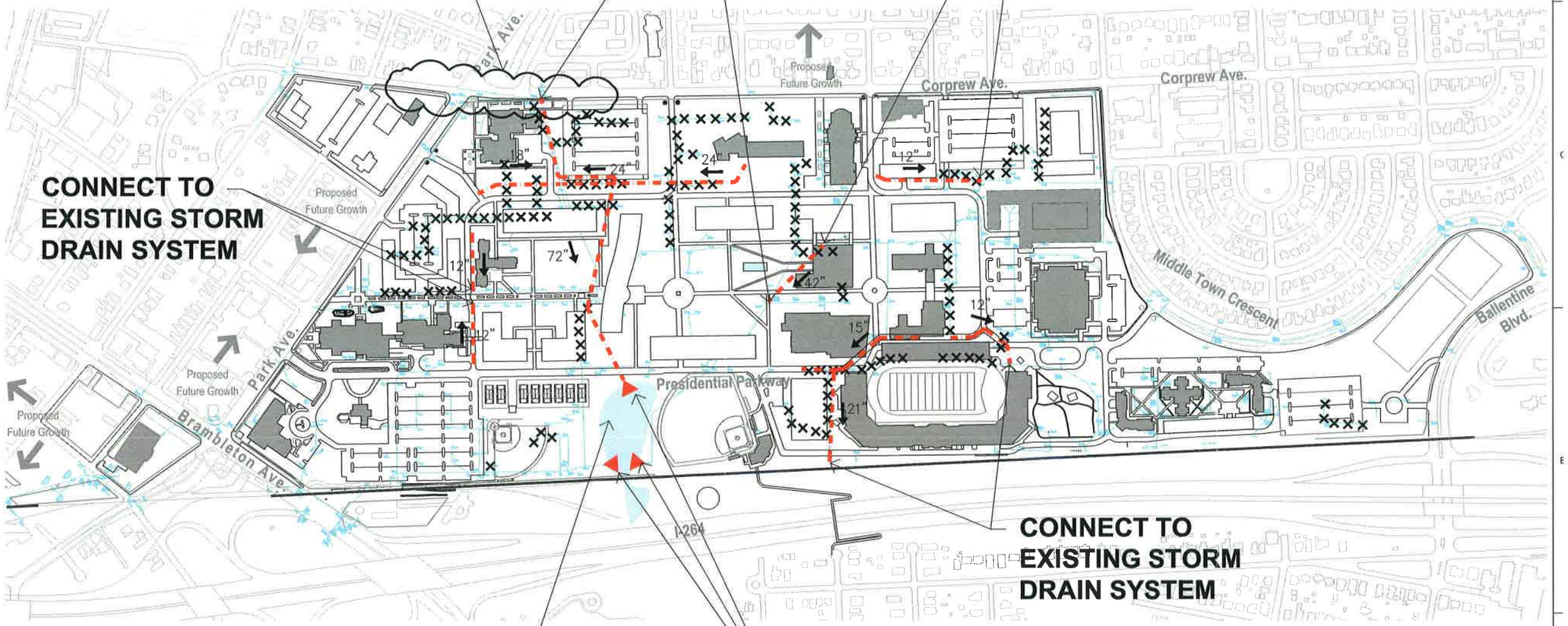
CONNECT TO EXISTING STORM DRAIN SYSTEM

CONNECT TO EXISTING STORM DRAIN SYSTEM

CONNECT TO EXISTING STORM DRAIN SYSTEM

EXTENDED DETENTION POND

NEW DISCHARGE POINTS



LEGEND:

STORM DRAIN SYSTEM (EXISTING)

STORM DRAIN SYSTEM (NEW)

STORM DRAIN SYSTEM (ABANDONED)

NOTES:

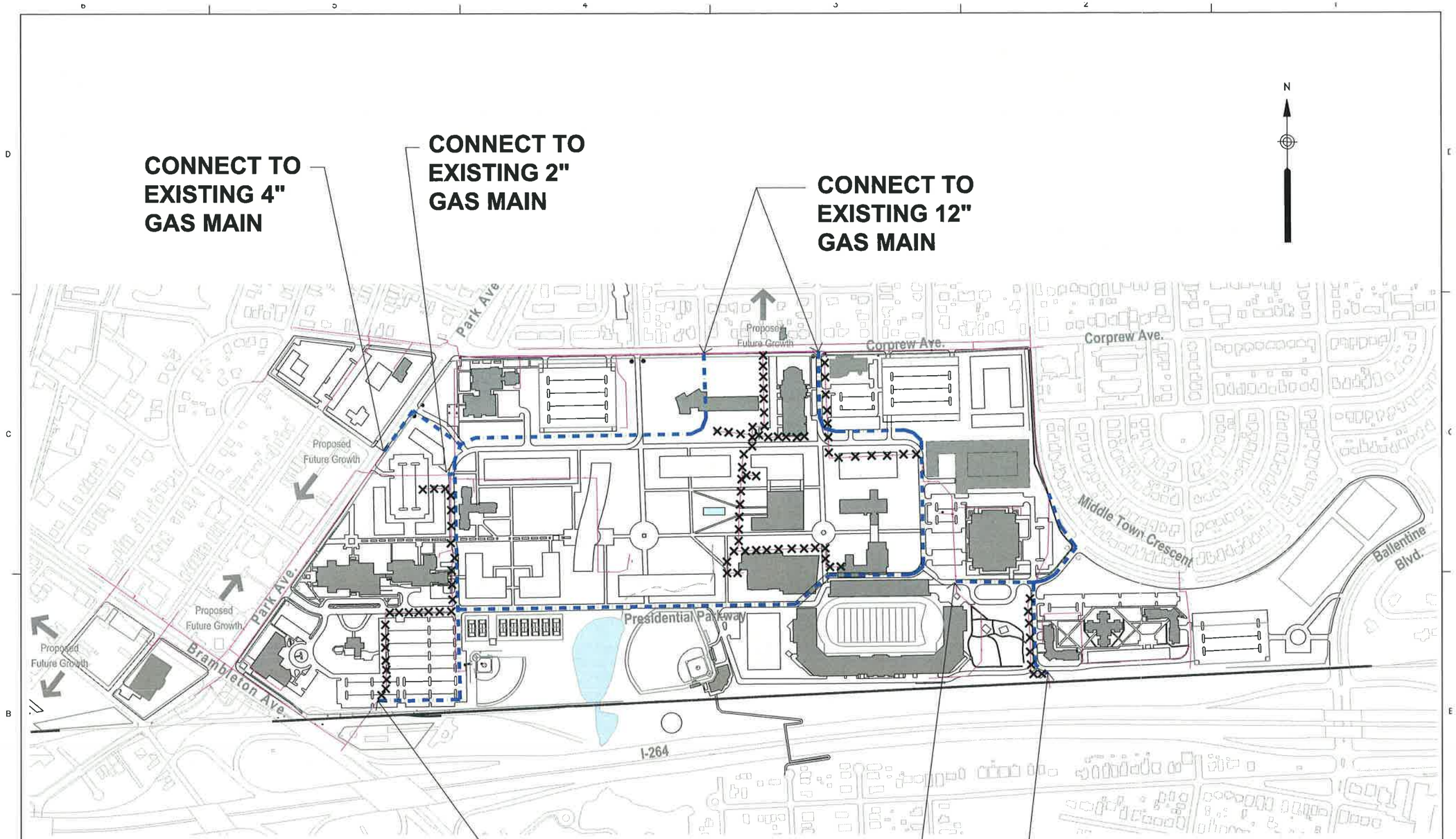
1. EXISTING CONDITIONS SURVEY PREPARED BY ROUSE–SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.
2. NEW CATCH BASINS, STORM DRAIN MANHOLES AND STORM DRAIN CONNECTIONS TO BUILDINGS/PARKING LOTS ARE NOT SHOWN.
3. NEW UNDERGROUND STORMWATER STORAGE TANKS WITH FLOW RESTRICTORS AT AREA PRONE TO FLOODING ALONG CORPREW AVENUE ARE RECOMMENDED TO REDUCE FLOOD DURING HEAVY RAINSTORM EVENTS.

PEER Consultants, P.C.
8 New England Executive Park
Burlington, MA 01803-5001
Ph (781) 238-8880
office@peerne.com
Est. 1978

NORFOLK STATE UNIVERSITY
MASTER PLAN

NEW STORMWATER DRAINAGE SYSTEM

NOT TO SCALE
11/14/2008



LEGEND:

GAS SERVICE (EXISTING)

GAS SERVICE (NEW 4" MAIN)

GAS SERVICE (ABANDONED)

CONNECT TO EXISTING 6" GAS MAIN

CONNECT TO EXISTING 16" GAS MAIN

CONNECT TO EXISTING GAS MAIN

NOTES:

1. EXISTING CONDITIONS SURVEY PREPARED BY ROUSE–SIRINE ASSOCIATES, LTD., DATED JULY 13, 2006.
2. GAS SERVICE CONNECTIONS TO BUILDINGS ARE NOT SHOWN.
3. NEW GAS SERVICE WITHIN CAMPUS IS "LOOPED". EXISTING "DEAD–END" GAS SERVICE TO BE ELIMINATED.

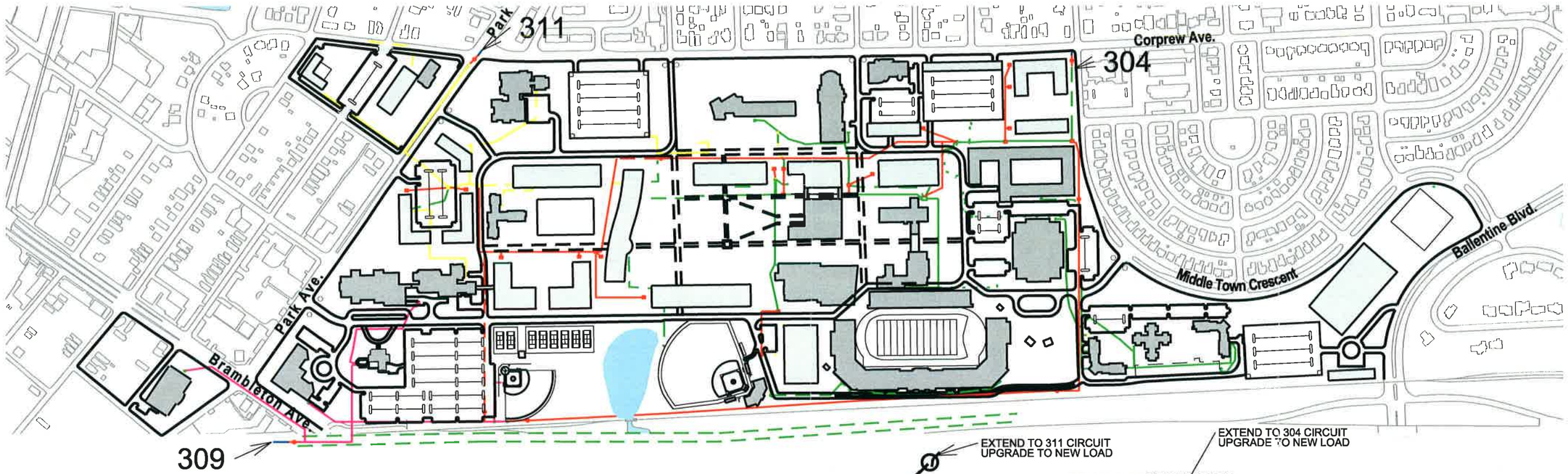
PEER Consultants, P.C.
8 New England Executive Park
Burlington, MA 01803-5001
Ph (781) 238-8880
office@peerne.com
Est. 1978

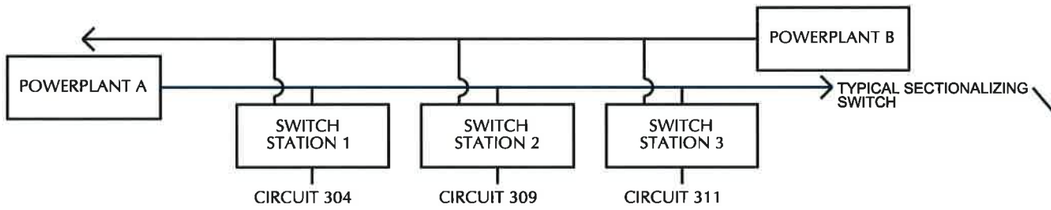
NORFOLK STATE UNIVERSITY
MASTER PLAN

NEW GAS SYSTEM

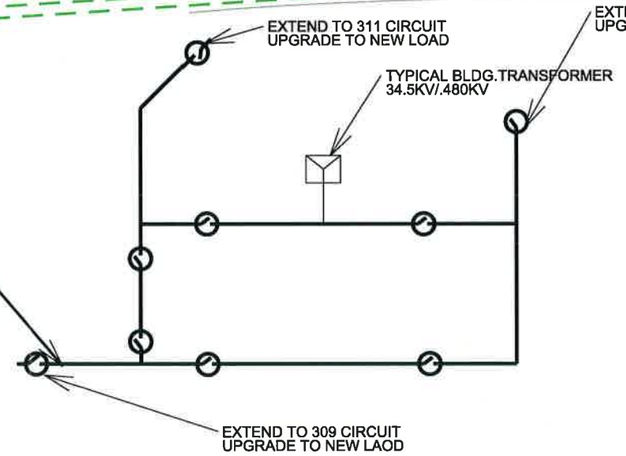
NOT TO SCALE
11/14/2008

ELECTRICAL UTILITY PLAN

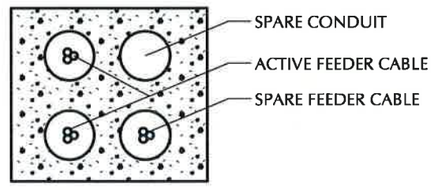




MUNICIPAL MEDIUM VOLTAGE
REDUNDANCY DIAGRAM



CAMPUS MEDIUM VOLTAGE
LOOP DIAGRAM



DUCTBANK DETAIL

EXISTING SERVICE TO REMAIN (311)
EXISTING SERVICE TO REMAIN (304)
EXISTING SERVICE TO REMAIN (309)
PROPOSED NEW SERVICE
EXISTING SERVICE TO ABONDONED
EXISTING OVERHAED POWER LINES

NORFOLK STATE UNIVERSITY
MASTER PLAN

0 100 250 500

Scale 1" = 500'

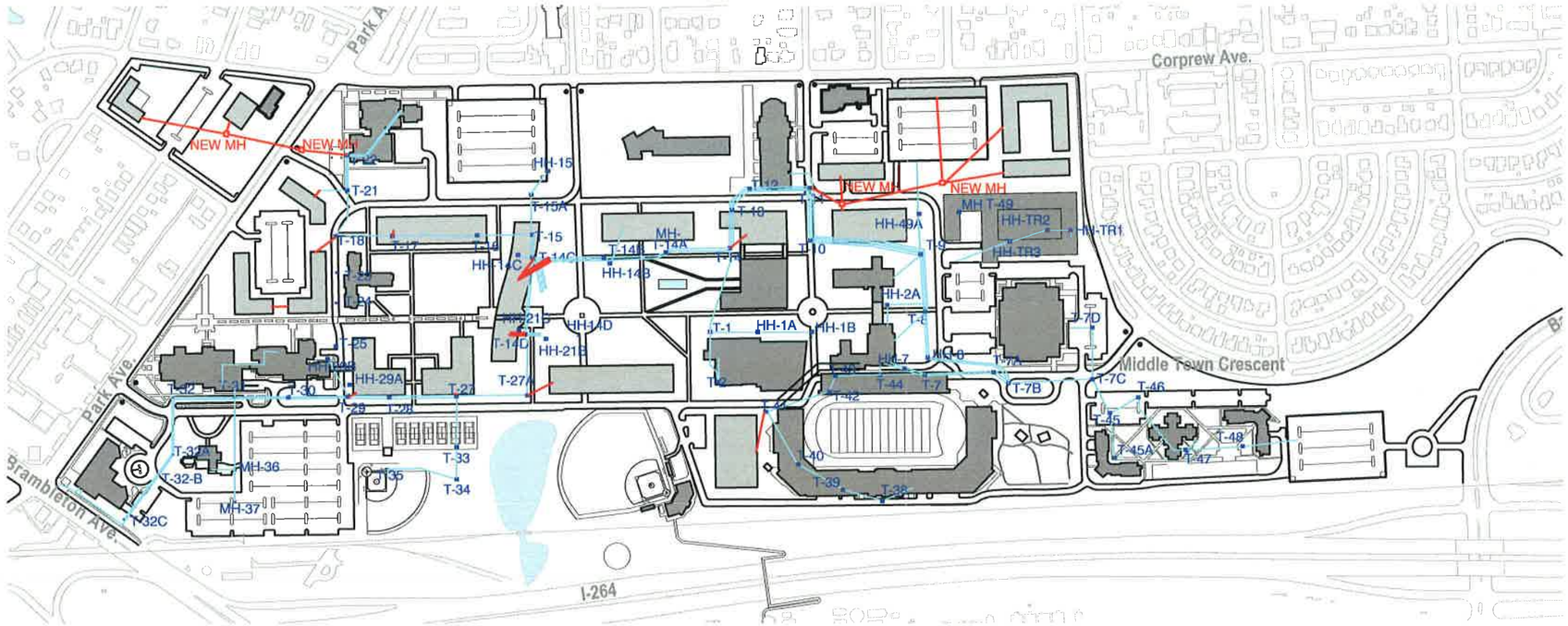
MEDIUM VOLTAGE
ELECTRICAL UTILITY PLAN

JOHN PORTMAN & ASSOCIATES, INC.

NORTH

2008

FIBER OPTIC PLAN



LEGEND

TELEPHONE MANHOLE

PROPOSED FIBER OPTIC LINE IN NEW DUCT BANK

EXISTING FIBER OPTIC DUCT BANK

T-29

NORFOLK STATE UNIVERSITY
MASTER PLAN

0 100 250 500

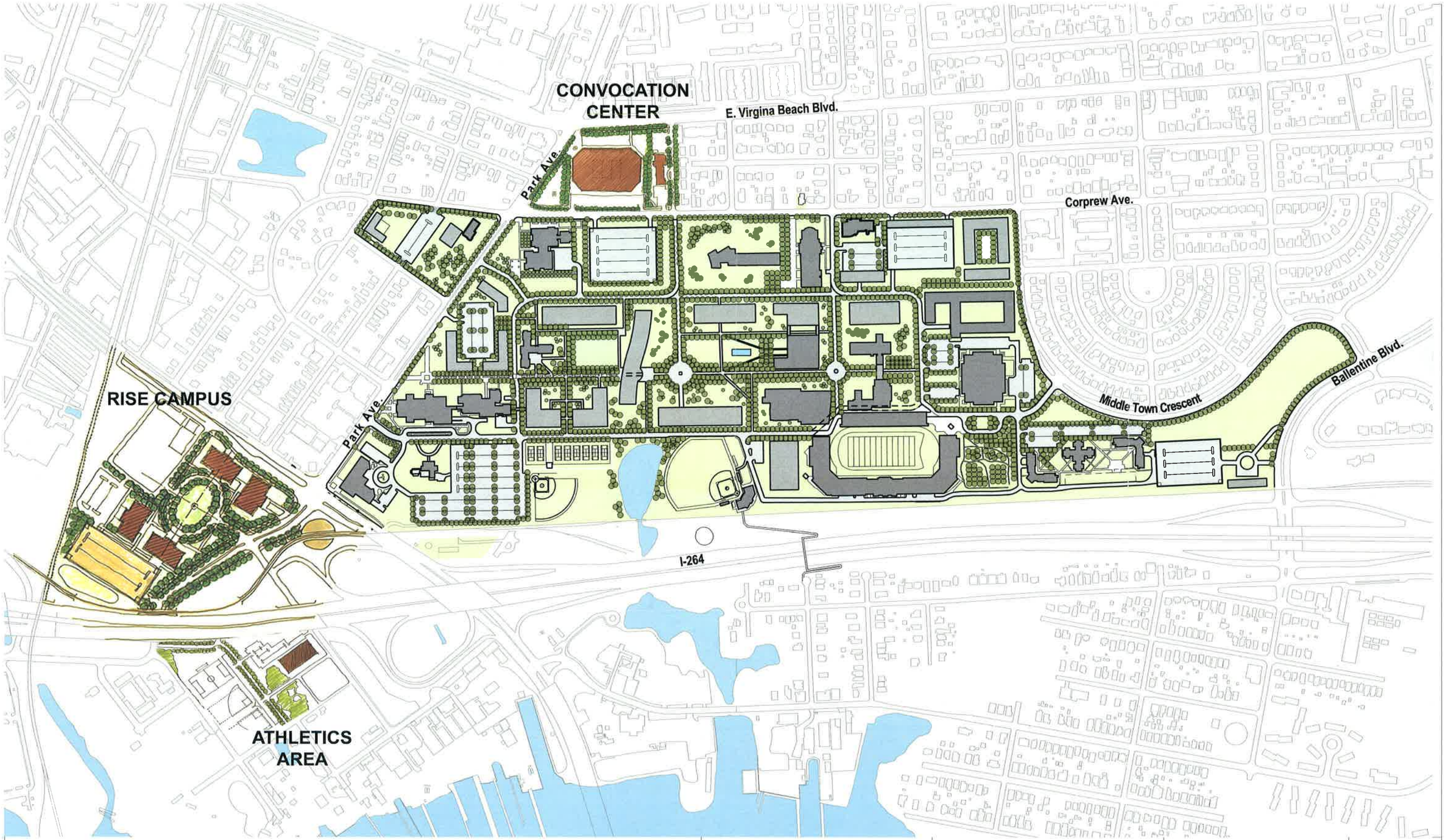
Scale 1" = 500'

FIBER OPTIC PLAN

NORTH

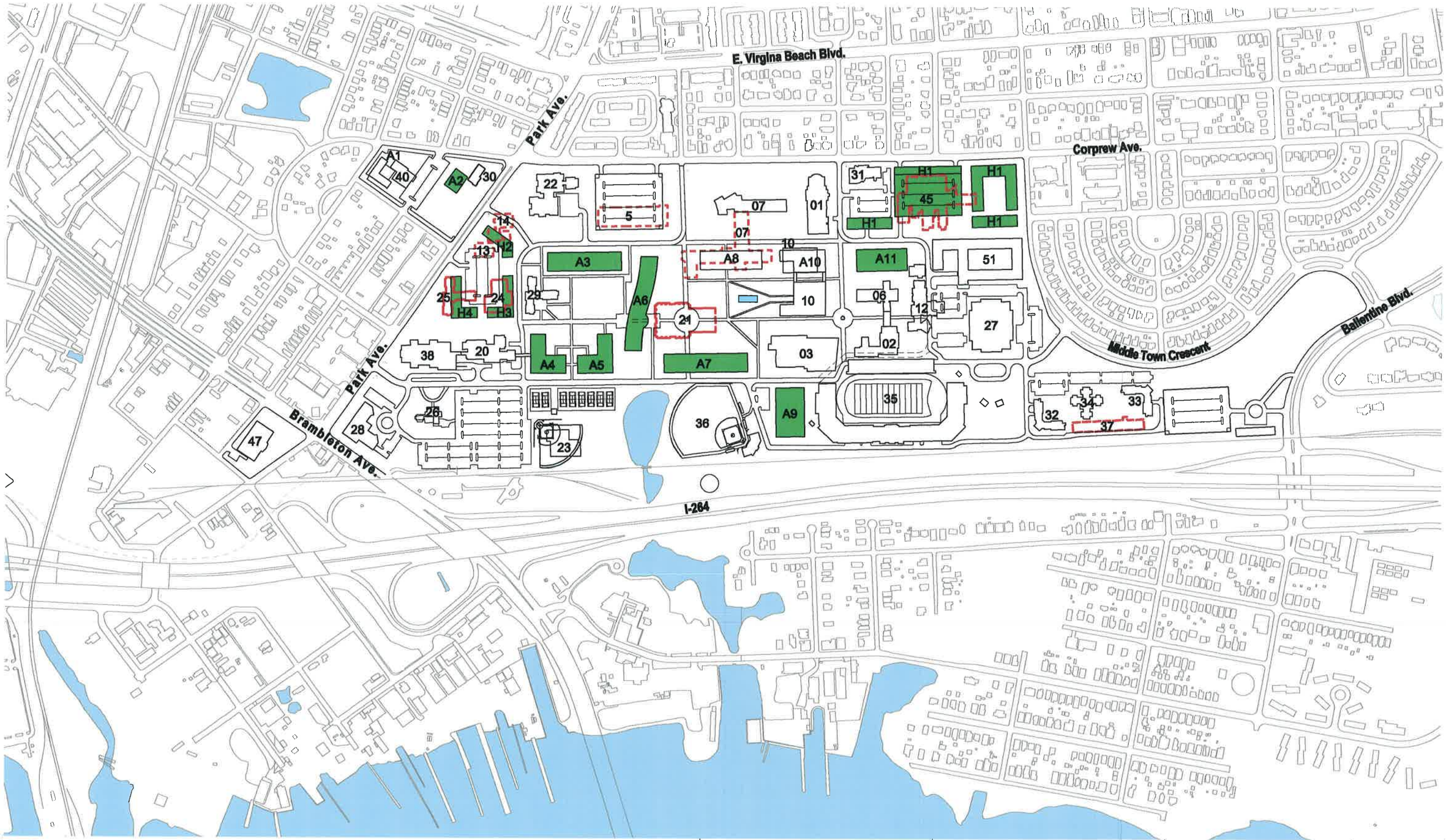
JOHN PORTMAN & ASSOCIATES, INC.

2008



	NORFOLK STATE UNIVERSITY MASTER PLAN	0 100 250 500	FUTURE EXPANSION OPTIONS	NORTH
		Scale 1" = 500'	JOHN PORTMAN & ASSOCIATES, INC.	2008

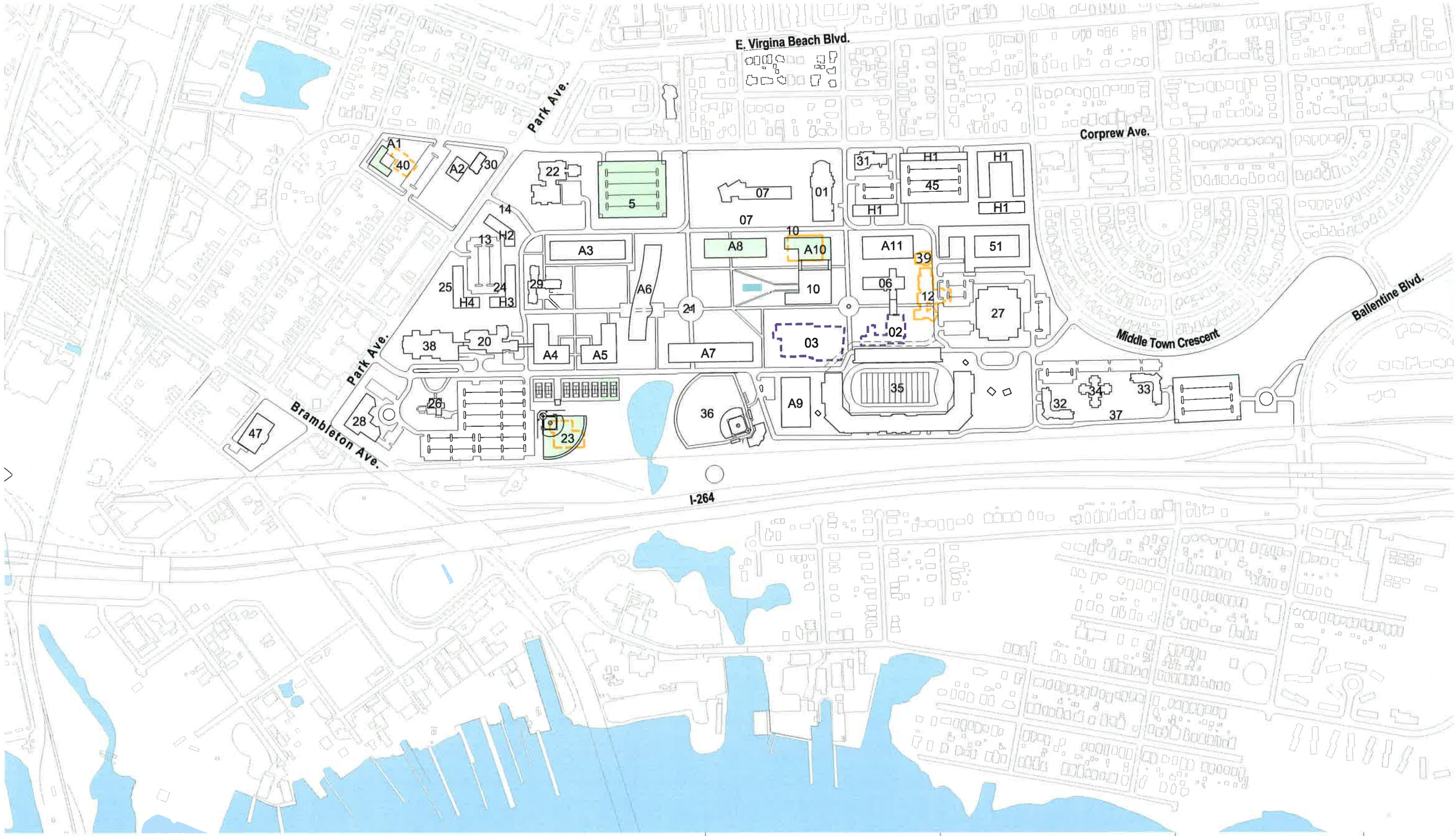
PHASE ONE DEMOLITION/
CONSTRUCTION PLAN



CONSTRUCTION
DEMOLITION

NORFOLK STATE UNIVERSITY MASTER PLAN	0 100 250 500	PHASE ONE DEMOLITION/ CONSTRUCTION PLAN	NORTH
	Scale 1" = 500'	JOHN PORTMAN & ASSOCIATES, INC.	2008

PHASE TWO DEMOLITION/ CONSTRUCTION PLAN



CONSTRUCTION
DEMOLITION
POSSIBLE DEMOLITION TO ACHIEVE LOOP ROAD

NORFOLK STATE UNIVERSITY
MASTER PLAN

0 100 250 500

Scale 1" = 500'

PHASE TWO DEMOLITION/
CONSTRUCTION PLAN

NORTH

JOHN PORTMAN & ASSOCIATES, INC.

2008

Building Name:	Scott Dozier Dining Hall	Building Number:	01
Total GSF:	44,404	Year Built:	1954
Assigned SF:	27,265	Renovated:	Late 1980's

1.1 ARCHITECTURAL

The Scott Dozier Dining Hall is a one story building, with a partial two story section, that houses faculty and student dining. It is located near the northeast corner of the campus.

The building was constructed in several phases: late 1950's, 1982 and 1990 with a full renovation. The Dozier building is constructed with load bearing concrete masonry units (CMU) , exterior and interior walls, with steel columns that support the upper floor and roof. The upper floor has metal decking with concrete slabs, and is supported by steel beams and open-web, steel joist. The roofing assembly is flat with built-up membrane. The exterior wall finish is brick masonry veneer and precast concrete accents. Wall openings have steel lintels and precast sills.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either hot or chilled water to fan coil units.

Hot water for the central heating system is supplied by two flex tube, gas-fired boilers.

Chilled water for the central cooling system is supplied by an air-cooled reciprocating package chiller.

Heated and/or cooled air is distributed through ducts to supply air terminals concealed above the ceilings. The heating and cooling systems are controlled by local thermostats.

The bathrooms, and other areas, are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by gas-fired, water heaters.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns, and strobe light alarms.

The commercial kitchen is equipped with a dry-chemical, fire suppression system.

1.2.2 Electrical

Service and Distribution:
Service and distribution: The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,600-Amps, 277/480-Volt, three-phase, four-wire, alternating current(AC). Step down transformers are located in the electric room and electric rooms throughout the building.

A natural gas-powered, 70-Kw, emergency generator is located at the rear of the building. The generator provides back-up power for elements of the fire and life safety systems.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			No evidence of problems
Exterior Walls		x		
Roof			x	Poor roof drainage
Windows & Doors	x			
Interior	x			
Accessibility	x			
Fire Alarm				
Fire Suppression				
Air Conditioning	x			Recently operated
Ventilation		x		
Heating		x		
Plumbing Fixtures		x		
Drainage Pipe System			x	Plumbing fixtures are in fair condition
Utility Incoming Power		x		Emergency generator is in good condition
Lighting		x		Emergency lighting battery pack
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Hugo Madison Hall	Building Number:	02
Total GSF:	43,126	Year Built:	1966
Assigned SF:	21,775	Renovated:	2001/2002

1.1 ARCHITECTURAL

Hugo Madison Hall is a two story building located near the middle eastern edge of the campus. The building is constructed of load bearing concrete masonry units (CMU), as well as the exterior and some interior walls that support the upper floor and roof. The roof is flat with a single-ply roofing membrane over insulation boards. Storefront windows and doors were fairly new and in good condition. The exterior plaza slabs seemed in good to fair condition.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either hot or chilled water to fan coil units.

Hot water for the central heating system is supplied by two flex tube, gas-fired boilers.

Chilled water for the central cooling system is supplied by an air-cooled reciprocating package chiller.

Heated and/or cooled air is distributed through ducts to supply air terminals concealed above the ceilings. The heating and cooling systems are controlled by local thermostats.

The bathrooms, and other areas are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by gas-fired, water heaters.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

The commercial kitchen is equipped with a dry-chemical, fire suppression system

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,600-Amps, 277/480-Volt, three-phase, four-wire, alternating current(AC). Step down transformers are located in the electric room and electric rooms throughout the building.

A natural gas-powered, 70-Kw, emergency generator is located at the rear of the building. The generator provides back-up power for elements of the fire and life safety systems.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure				There was no evidence of movement or failure.
Exterior Walls		X		
Roof	X			
Windows & Doors	X			
Interior	X			
Accessibility		X		
Fire Alarm				
Fire Suppression				
Air Conditioning	X			
Ventilation	X			
Heating	X			
Plumbing Fixtures	X			
Drainage Pipe System	X			
Utility Incoming Power		X		
Lighting	X			
Building Control	X			

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	James D. Gill Health & Phys Ed Building	Building Number:	03
Total GSF:	77,247	Year Built:	1961
Assigned SF:	47,143	Renovated:	n/a

1.1 ARCHITECTURAL

The James Gill Physical Education Building is located at the south end of Gym Road. It is a one story building with a partial second floor around the gymnasium portion of the building. The western half of the building has a pool. The building also has a partial basement at the swimming pool area. The building has load-bearing concrete columns and concrete masonry exterior walls and steel columns that support the upper floor and roof. The roof is constructed of metal deck supported by steel beams and open-web steel joists. The roof over the gymnasium is a gable roof. The exterior walls are in fair condition.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a four-pipe distribution system that supplies hot or chilled water to air-handling unit coils and hot water to the perimeter fan coil units. Hot water is generated with two gas-fired boilers. A package air-cooled reciprocating chiller provides chilled water.

There are several roof-mounted heat pump units for individual spaces.

Mechanical exhaust fans ventilate the stairwells, bathrooms and other areas.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

The HVAC system's boilers supply domestic hot water. The central hot water system consists of a heat exchanger, circulating pumps and insulated storage tank.

Fire Protection:
The fire protection systems consist of fire extinguishers and smoke detectors. Fire extinguishers are located in the common areas. Hardwired smoke detectors are located throughout the common areas.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,200-Amps, 277/480-Volt, three-phase, four-wire, alternating current(AC). Step down transformers are located throughout the building as needed.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure		x		Some foundation problems in pool area
Exterior Walls		x		Kal-Wall damaged, glass block fair
Roof		x		
Windows & Doors		x		Fair to poor
Interior		x		
Accessibility		x		
Fire Alarm				
Fire Suppression				
Air Conditioning	x	x		Chiller has been recently replaced.
Ventilation		x		
Heating	x			Boiler has been recently replaced
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting		x		Emergency lighting by battery pack
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	James Bowser Building	Building Number:	05
Total GSF:	49,485	Year Built:	1959
Assigned SF:	37,772	Renovated:	1960

1.1 ARCHITECTURAL

The James Bowser Building houses various student services some of which are: offices, daycare, TV studio, labs and classrooms. The building is constructed of steel frame with metal roof decks and has a bay spacing of roughly 20 feet. The roof is built-up and is finished with a mineral-surfaced cap sheet over a bituminous membrane. The exterior walls are brick masonry veneer on load bearing concrete masonry units (CMU).

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Boiler has been deactivated, heating by heat pumps. There is no chiller. Cooling is provided in some areas by a number of split system, air-to-air, heat pumps. Air distribution is provided by air handlers located in the ceilings in the common areas and ductless fan coils in designated areas.

Bathrooms and other areas are ventilated by exhaust fans.

The property is not supplied with natural gas.

Plumbing:
The plumbing systems include the incoming water service the cold water piping system, and the sanitary sewer and vent system.

Domestic hot water is supplied by one, 70-gallon, electric water heater.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system (only in certain office spaces), a wet standpipe with fire department hose valves and connections, portable fire extinguishers, smoke detectors, pull stations, and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strove light alarms in limited locations.

A central fire alarm panel is located near the lobby.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feed the interior-mounted electrical meter.

The main electrical service size is 1,200-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC).

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls		x		
Roof			x	Poor condition
Windows & Doors		x		
Interior		x		
Accessibility		x		
Fire Alarm		x		
Fire Suppression		x		
Air Conditioning		x		
Ventilation		x		
Heating		x		Boiler is deactivated. Heating by heat pump.
Plumbing Fixtures			x	Plumbing need to be replaced.
Drainage Pipe System		x		
Utility Incoming Power		x		Emergency 250KW generator.
Lighting	x			
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Bozeman Nursing Education Building	Building Number:	06
Total GSF:	31,492	Year Built:	1963
Assigned SF:	15,107	Renovated:	2004-2005

1.1 ARCHITECTURAL

The Bozeman Building is located towards the southeastern section of the campus. It is a two story building that houses classrooms and some offices. The building has just undergone a major capital improvement. It is constructed of masonry bearing walls with precast concrete plank floors and a metal roof deck. The roof is flat with a single ply EPDM membrane. The exterior walls are a brick veneer with precast concrete panels. The building's windows have been recently replaced as part of the upgrade and are double-pane insulating units.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
New as identified in the construction documents.

Plumbing:
New as identified in the construction documents.

Fire Protection:
New as identified in the construction documents.

1.2.2 Electrical

Service and Distribution:
New as identified in the construction documents.

Lighting:
New as identified in the construction documents.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof	X			
Windows & Doors	X			
Interior	X			
Accessibility				
Fire Alarm				New as identified in construction documents
Fire Suppression				
Air Conditioning				
Ventilation				
Heating				
Plumbing Fixtures				
Drainage Pipe System				
Utility Incoming Power				
Lighting				
Building Control				

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	G.W.C. Brown Memorial Hall	Building Number:	07
Total GSF:	135,522	Year Built:	1956
Assigned SF:	74,687	Renovated:	n/a

1.1 ARCHITECTURAL

Brown Hall is located in the north central portion of the campus and is a two story classroom building. The building is constructed of masonry load bearing exterior walls with a brick veneer and precast concrete highlight panels. It has some precast concrete lintels and window sills. The outside soffits are stucco. A new roof was applied approximately two years ago. The roofs are flat with multi-ply bituminous built-up membrane and aggregate. The buildings exterior walls are deteriorating due to moisture and air infiltration around windows and through the walls themselves.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a four-pipe distribution system that supplies either hot or chilled water to air-handling units and the perimeter fan coil units. Two gas-fired tube boilers located in the first floor mechanical room generates hot water. Two package air-cooled reciprocating chillers are located at the rear of the building which provide chilled water.

Mechanical exhaust fans ventilate the stairwells, bathrooms and other areas.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Two 100-gallon, gas-fired, water heaters supply domestic hot water.

Fire Protection:
The fire protection systems consist of a dry-pipe sprinkler system for the auditorium and the mechanical equipment room, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations, and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located in the lobby.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 2,000-Amps, 277/480-Volt, three-phase, four-wire, alternating current(AC). Step down transformers are located throughout as needed.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure		x		Good to fair.
Exterior Walls		x		
Roof	x			There are some signs of movement at a section of parapet
Windows & Doors		x		Condensation of windows
Interior		x		
Accessibility		x		
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning	X			New air cooled chiller
Ventilation				
Heating	X			New boiler
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power		X		
Lighting		X		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Mills Godwin Student Center	Building Number:	10
Total GSF:	59,480	Year Built:	1968
Assigned SF:	39,855	Renovated:	n/a

1.1 ARCHITECTURAL

The Mills Godwin Student Center is located west of Gym Road in the east central part of the campus and is a three story steel framed building with a combination of brick and precast at the exterior walls. There is a balcony around the second floor. The exterior columns are clad with marble. There are signs of water damage from apparent roof leaks.

The building houses various student services such as the mailroom, bookstore, sub shop, game room and ballroom.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Hot water for the central heating system is supplied by one, gas-fired boiler.

Chilled water for the central cooling system is supplied by one water-cooled reciprocating chiller and a cooling tower.

Circulating pumps provide heated and chilled water to each temperature-controlled space via a four-pipe distribution system.

Additionally, there are two cooling split systems which service the Student Service Center.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by the HVAC system's boilers. The central hot water system consists of a heat exchanger, circulating pumps. Additionally, hot water is supplied by one electric water heater.

Fire Protection:
The fire protection systems consist of fire extinguishers and smoke detectors. Fire extinguishers are located in the common areas and are mounted on the exterior walls in the vicinity of the guest room.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations and alarm horns.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feed the interior.

The main electrical service size is 1,000-Amps, 120/208-Volt, three-phase, four-wire, alternating current(AC).

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof			X	Signs of water penetration
Windows & Doors		X		
Interior	X			
Accessibility	X			
Fire Alarm				
Fire Suppression				
Air Conditioning				
Ventilation				
Heating				
Plumbing Fixtures				
Drainage Pipe System				
Utility Incoming Power				
Lighting				
Building Control				

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Woods Science Building	Building Number:	12
Total GSF:	71,526	Year Built:	1969
Assigned SF:	46,094	Renovated:	n/a

1.1 ARCHITECTURAL

The Woods Science Building is a science classroom building with labs, lecture hall and a planetarium. It is a three story building located west of Echols Hall and east of Gym Road, in the southeast quadrant of the main campus.

The roof is a built-up bitumen roof on insulation board. Its exterior walls are finished in a brick veneer and cast stone panels. The exterior plaza area on the east of the building has some deteriorating concrete and brick benches; however the exterior of the building itself seems to be in fairly good condition. The exterior windows are double paned fixed units.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a four pipe distribution system that supplies either hot or chilled water to fan coil units. The boilers provide hot water. A third gas-fired boiler delivers low pressure steam for lab use.

Chilled water is provided by three air-cooled chillers.

Heating and cooling are provided in the common areas by fan coil units concealed above the ceilings.

Natural ventilation is provided by operable windows. Mechanical ventilation is provided in each bathroom by ceiling exhaust fans.

Gas service is supplied from the gas main on the campus.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms in designated locations.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feed the interior.

The main electrical service size is 2,400-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC).

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure				No evidence of structural problems.
Exterior Walls		X		
Roof	X			
Windows & Doors	X			
Interior	X			
Accessibility	X			
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning	X			
Ventilation		X		
Heating	X			
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power		X		
Lighting	X			Recently upgraded
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Twin Towers North and South Residence Halls	Building Number:	13
Total GSF:	151,636	Year Built:	1970
Assigned SF:	46,299 + 46,105	Renovated:	2000 (1bldg)

1.1 ARCHITECTURAL

The Twin Towers Residence Halls house women students in the north tower and men in the south. They are located at the northwest corner of the main campus. Both towers are 11 stories in height and are connected at the base by a large common lobby space with a skylight.

The structure is reinforced concrete columns, beams and slabs. It appears based on our visual observation and the EMG Property Condition Assessment, that the exterior wall systems, including windows, doors and roofs are in poor condition. The roof system is a flat built-up multi-ply bituminous membrane over a rigid insulation board. There is indication of interior water damage from leaks through the floors above as well as water leakage from the outside. Having dual entrances provides additional challenges for security as well. There are accessibility issues that need to be addressed in a comprehensive ADA review.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either heated or chilled water to fan coil units. Hot water is generated by four high efficiency gas-fired boilers. Chilled water is provided by water cooled reciprocating chiller.

Outside air intakes located at each dormitory room fan coil unit provide ventilation.

Heating and cooling are provided in the central common lobby area by air handling units.

The bathrooms, and other areas, are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located on the first floor.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 600-Amps, 277/480-Volt, three-phase, four-wire, alternating current (AC) with step down transformers located throughout the buildings.

A natural gas-powered, 75-KVA, emergency generator is provided.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			No visible signs of structural failure.
Exterior Walls		x		
Roof			x	Needs immediate replacement
Windows & Doors			x	Requires replacement along with Hardware.
Interior		x		
Accessibility		x		
Fire Alarm		x		
Fire Suppression		x		
Air Conditioning			x	Fan coils have limited useful life.
Ventilation				
Heating	x		x	Boilers are more than 2 years old.
Plumbing Fixtures				
Drainage Pipe System			x	Many leaks
Utility Incoming Power	x		x	Internal power is not adequate.
Lighting	x			New
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	E.L. Hamm Fine Arts Building	Building Number:	20
Total GSF:	63,433	Year Built:	1971
Assigned SF:	34,083	Renovated:	n/a

1.1 ARCHITECTURAL

The Fine Arts Building has a three story and a 6 story tower, and is located on the western border of the main campus. The building's main entry fronts onto the "Campus Green".

The structure consists of a concrete frame with honey-comb concrete plank floors and roofs. The roof assembly is a multi-ply bituminous built-up membrane topped with aggregate all over rigid insulation board. The exterior walls are finished in a brick masonry veneer with precast panels. The windows and doors at the entry level are part of a aluminum storefront system while the upper floors windows are a fixed metal unit with a operable section below.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a four-pipe system that supplies either hot or chilled water to air-handling unit coils and is augmented for heating by some perimeter fan coil units.

Hot water for the central heating system is supplied by a gas-fired boiler.

A water-cooled centrifugal chiller and a cooling tower provides chilled water.

The chilled and hot water supply the air-handling unit coils and the perimeter fan coil units.

Mechanical exhaust fans ventilate the stairwells, bathrooms and other areas.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

One electric water heater and a hot water storage tank supply domestic hot water.

Fire Protection:
The fire protection systems consist of fire extinguishers and smoke detectors. Fire extinguishers are located in the common areas.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is provided.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,600-Amps, 277/480-Volt, three-phase, four-wire, alternating current (AC). Step down transformers are located throughout the building as needed.

A natural gas-powered, 30-KVA, emergency generator is provided.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls	x			Tuck pointing and pressure washing are required
Roof		x		
Windows & Doors	x			Some doors and hardware are in fair condition
Interior	x			Some ceiling tiles need replacing.
Accessibility		x		
Fire Alarm		x		
Fire Suppression		x		
Air Conditioning			x	Scheduled for replacement
Ventilation		x		
Heating		x		
Plumbing Fixtures			x	Scheduled for replacement
Drainage Pipe System		x		
Utility Incoming Power		x	x	Interior power distribution is inadequate.
Lighting		x		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Lyman B. Brooks Memorial Library	Building Number:	21
Total GSF:	145,550	Year Built:	1972
Assigned SF:	123,027	Renovated:	1993

1.1 ARCHITECTURAL

The Brooks Memorial Library is located approximately in the middle of the campus with its main entry facing north. There is a separate main entry to Phase II which is the archives portion of the library. Although the buildings are constructed as one, there is no inside access to archives from the main library.

The structure is reinforced cast-in-place concrete columns, beams and post tensioned slabs. The roofs on both buildings is a multi-ply bituminous built-up membrane. The exterior walls are finished in precast concrete panels and some cast-in-place concrete panels. The storefront window system at the lower level is in good condition but the windows are in need of repair in some areas. The interior finishes are in good to fair condition.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a four pipe distribution system that supplies hot and chilled water to seven central air handling units. Hot water is generated by a dual fuel York Shipley fire tube boiler located in the first floor mechanical room.

Heating and cooling are provided in the common areas by high-capacity, air handling units equipped with heating and cooling coils.

The stairwells, bathrooms and other areas are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Two domestic electric hot water heaters supply domestic hot water.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smiled detectors, pull stations and alarm horns.

Commons areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located on the first floor.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior. The main electrical service size is 277/480-Volt, three-phase, four-wire, alternating current(AC). Step down transformers are located in the electric rooms.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			Wall tie holes remain, maybe a problem
Roof			X	Third floor shows signs of water leaks.
Windows & Doors	X	X		Lower level good, upper levels windows fair
Interior	X			
Accessibility	X			
Fire Alarm				
Fire Suppression				
Air Conditioning	X			New chiller
Ventilation			X	AHU close to be replaced
Heating			X	Boiler scheduled for replacement
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power	X	X		New interior power distribution
Lighting	X			
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	William P. Robinson, Sr Technology Building	Building Number:	22
Total GSF:	78,271	Year Built:	1975
Assigned SF:	43,452	Renovated:	2004

1.1 ARCHITECTURAL

The William P. Robinson Technology Building was currently under construction at the time of our walk-thru. We are assuming that all of the building deficiencies are being addressed within the extent of the renovation.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Air Conditioning:
Currently under renovation.

Plumbing:
Currently under renovation.

Fire Protection:
Currently under renovation.

1.2.2 Electrical

Service and Distribution:
Currently under renovation.

Lighting:
Currently under renovation.

Table 1: Building Components

Components	G	F	P	Remarks
Structure				
Exterior Walls				
Roof				
Windows & Doors				
Interior				
Accessibility				
Fire Alarm				
Fire Suppression				
Air Conditioning				
Ventilation				
Heating				
Plumbing Fixtures				
Drainage Pipe System				
Utility Incoming Power				
Lighting				
Building Control				

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Central Storage and Maintenance + Addition	Building Number:	23
Total GSF:	34,298	Year Built:	1974
Assigned SF:	18,979	Renovated:	2004

1.1 ARCHITECTURAL

The Central Storage and Maintenance Facility houses the facilities and maintenance personnel and is situated along the southern most border of the campus and slightly towards the west.

It is considered a one and one-half story due to the upper level storage areas. The structure is a conventional steel frame on a concrete slab. It also has some masonry load bearing walls with metal decking and concrete topped slabs. The roofs are flat built-up membranes roofs. There was evidence of active roof leaks, but there was active construction going on at the time of the walk-thru. It is assumed that this problem has already been identified and is in a state of being repaired. The exterior walls are in fairly good condition. The windows that are in the storefront are in good condition, but those in the central storage portion are in fair to poor condition. The overhead doors appear worn and in need of replacement.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided in the common areas and maintenance storage areas by individual, direct-expansion, constant-volume, electric, packaged, rooftop-mounted, HVAC units.

Hot water for the central heating system is supplied by one, gas-fired boiler.

The heated water supplies the steam system ceiling-mounted heater.

The bathrooms, and other areas are ventilated by mechanical exhaust fans.

The garage does not appear to be equipped with a mechanical ventilation system.

Some of the shops are equipped with a mechanical ventilation system.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping

are reported to be copper. The sanitary sewer and vent systems are reported to be polyvinyl chloride (PVC) plastic or cast iron.

Domestic hot water is supplied by one gas-fired, water heater.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, portable fire extinguishers, at least one smoke detector, pull stations, and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns, and strobe light alarms.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feed the exterior.

The main electrical service size is 400-Amps, 250V.AC or DC. Step down transformers are located in the warehouse.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an ongoing process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls	x	x		
Roof		x		Some areas under renovation
Windows & Doors	x	x		
Interior	x	x		Some spaces under renovation
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning		x		
Ventilation		x		
Heating		x		
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting	x			
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Cafeteria West	Building Number:	24
Total GSF:	18,915	Year Built:	1974
Assigned SF:	13,047	Renovated:	n/a

1.1 ARCHITECTURAL

The Cafeteria West is located in the northwest quadrant of the campus and is a single story building that houses dining, billiards and a convenience store for students.

The structure consists of load-bearing concrete masonry exterior walls and interior steel columns, both of which support the roof. The roofs are constructed of metal decks that are supported by steel beams and open-web steel joist. The roofing system is a single-ply elastomeric membrane over rigid insulation board. The exterior walls are made of brick masonry veneer and unfinished precast concrete panels. Exterior windows and doors are of two different types, those that are part of a storefront system and those that are fixed single-pane glazed units that run from floor to almost the ceiling. The interior finishes range from good to fair condition. Some steps at exterior do have hand rails.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided in the common areas by an individual, direct-expansion, constant-volume, electric, packaged, rooftop-mounted, HVAC unit.

Hot water for the central heating system is supplied by two gas-fired boilers.

Two electric hot water storage tanks are in the mechanical room.

Heating and cooling are provided in the common areas by a high-capacity, air handling unit equipped with heating and cooling coils.

The bathrooms, and other areas, are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by one electric water heater.

Fire Protection:
The fire protection systems consist of fire extinguishers and smoke detectors. Fire extinguishers are located in the common areas and are mounted on the exterior walls in the vicinity of the cafeteria.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs and pull stations. No smoke detectors were observed in the common areas.

A central fire alarm panel is located in the mechanical room.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to pad-mounted transformers that feed the interior.

The main electrical service size is 1,200-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC). A step down transformer is located in the mechanical room.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls	x			
Roof		x		Evidence of some active roof leaks.
Windows & Doors		x		
Interior	x	x		
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning			X	Replace DX-Split units
Ventilation		X		
Heating		X		
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power			X	Replace & upgrade primary & secondary
Lighting		X		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Samuel F. Scott Mens Residence Hall	Building Number:	25
Total GSF:	40,582	Year Built:	1977
Assigned SF:	27,593	Renovated:	n/a

1.1 ARCHITECTURAL

The Samuel F. Scott Men's Residence Hall is located in the northwest quadrant of the main campus. It is a three story brick building that houses male students. The building is oriented with its main entrance to the south facing the "Campus Green".

The structural system consists of a concrete slab with load-bearing concrete masonry units for the interior and exterior walls. The roof system is a multi-ply bituminous built-up membrane with gravel ballast. This system is on top of insulated perlite on metal decking supported by open web steel joist that rests on the CMU walls. The windows and the storefront window systems are in poor condition. The interior finishes are in fair condition..

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either heated or chilled water to fan coil units. Hot water is generated by a Cleaver Brooks oil-fired fire tube boiler located in the first floor mechanical room. Chilled water is provided by a Carrier split system air cooled reciprocating chiller located in the first floor mechanical room.

Electric wall heaters provide auxiliary heat in the corridors and bathrooms.

The bathrooms, and other areas, are ventilated by mechanical exhaust fans.

The Samuel F. Scott Residence Hall is not supplied with natural gas.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Fire Protection:
The ire protection systems consist of a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

A central fire alarm panel is located in the Coordinator's office.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,200-Amps, 208/120-Volt, three-phase, four-wire, alternating current (AC). The electrical wiring is reportedly copper, installed in metallic conduit and metallic, sheathed cable. Circuit breaker panels are located throughout the building.

An oil-fueled, 12.5-KW, emergency generator provides back-up power for elements of the fire and life safety systems.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls		X	X	
Roof		X	X	
Windows & Doors			X	
Interior		X		
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning		X		
Ventilation		X		
Heating		X		
Plumbing Fixtures			X	Need upgrade & replacement
Drainage Pipe System		X		
Utility Incoming Power		x	x	Interior power distribution inadequate
Lighting	X			
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	President's House	Building Number:	26
Total GSF:	8,500	Year Built:	1979
Assigned SF:		Renovated:	n/a

1.1 ARCHITECTURAL

The Presidents House is a two story facility that faces the north with its main entrance towards Presidential Drive.

The structure is a conventional wood-framed building with load-bearing walls. There are wood rafters covered with plywood as the roof framing. The primary roof types are hipped and the final finish roofing is asphalt shingles over asphalt-saturated paper with sheet metal flashing in some places. The roofs are drained by sheet metal downspouts that discharge onto paved landscaped areas. The exterior walls are of brick veneer with wood shutters applied as décor. The windows are wood-framed with single-pane glazed, double-hung units. There are storm panels that are removable from the interior. The interior stairs are in good condition; however the exterior stairs are fair to poor.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heat pumps provide heating & cooling.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be polyvinyl chloride (PVC) plastic.

Domestic hot water is supplied by two, 40-gallon, electric, water heaters.

Fire Protection:
The fire protection systems consist of fire extinguishers, carbon monoxide detectors and smoke detectors.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the exterior.

The main electrical service size is 400-Amps fuse box.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls	x	x		Masonry is fair, wood trim good.
Roof	x			
Windows & Doors	x	x		Windows fair, doors good
Interior				
Accessibility				
Fire Alarm		x		
Fire Suppression	/	/	/	
Air Conditioning			x	Old
Ventilation	/	/	/	
Heating			x	Old
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting		x		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Joseph G. Echols Hall	Building Number:	27
Total GSF:	91,701	Year Built:	1982
Assigned SF:	45,037	Renovated:	n/a

1.1 ARCHITECTURAL

Echols Hall is a two story building that houses the gymnasium department, sports events and ROTC. The building's main entrance faces the west.

The structure of the building is load-bearing concrete masonry walls at the exterior and interior concrete and steel columns. The roofs are constructed of metal decks with steel beams and open-web steel joists and are topped with lightweight concrete. The roofing system is a multi-ply bituminous, built-up membrane. The exterior walls are brick masonry veneer on concrete block at the first floor. The upper floor exterior wall is mansard steel framed with ribbed metal wall panels.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a four-pipe system that supplies hot or chilled water to air-handling unit coils.

Two water tube boilers supply hot water for both the main floor and gym heating systems.

Chilled water for the main floor system is provided by a water-cooled centrifugal chiller in the mechanical equipment room equipped with an air-cooled condenser outside. Two-air-cooled chillers located outside provide chilled water for the gym system.

Mechanical exhaust fans ventilate the stairwells, bathrooms and other areas.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

The HVAC system's boilers supply domestic hot water. The central hot water system consists of a heat exchanger, circulating pumps and a large storage tank.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system (excluding in the arena), a wet standpipe with fire department hose valves and connections around the main floor, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 2,000-Amps, 277/480-Volt, three-phase, four-wire, alternating current (AC). Step down transformers are located throughout as needed.

A natural gas-powered, 37.5-KVA, emergency generator is provided.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof	X	X		
Windows & Doors	X			
Interior	X	X		Interior bleachers need replacing
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning			X	Chiller is old, it should be replaced.
Ventilation			X	
Heating			X	Boiler is old, it should be replaced.
Plumbing Fixtures			X	Plumbing fixtures are old, they should be replaced.
Drainage Pipe System		X		
Utility Incoming Power		X	X	Secondary service should be replaced and upgraded.
Lighting		X		
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Harrison B. Wilson Hall	Building Number:	28
Total GSF:	55,701	Year Built:	1983
Assigned SF:	31,556	Renovated:	n/a

1.1 ARCHITECTURAL

Harrison B. Wilson Hall is a five story building that houses the administration offices for the campus. Its front is at the intersection of two streets, Park Avenue and Brambleton Avenue.

The structure is steel columns and beams with metal deck and concrete over open-web steel joists. The primary roofs are flat with multi-ply, bituminous, built-up membrane with gravel aggregate. The exterior walls are brick with masonry veneer and ribbed metal wall panels. There are windows which are a part of the storefront system at level 1 and aluminum-framed insulated paned windows at the upper levels. There are two balconies at level five.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
The heating and cooling system for the building is a air system using central air-handling units with cooling coils and variable air volume (VAV) terminals with reheat coils.

Hot water for the central heating system is supplied by an electric boiler.

A water-cooled (cooling tower) centrifugal chiller and cooling tower are located in the Penthouse and supply the chilled water for the cooling system.

Mechanical exhaust fans ventilate the stairwells, bathrooms and other areas.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Fire Protection:
The fire protection systems consist of a split wet-pipe sprinkler system located in the common areas only, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A simplex central fire alarm panel is located in the fire pump room.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feed the interior-mounted electrical meter.

The main electrical service size is 1,600-Amps, 277/480-Volt, three-phase, four-wire alternating current (AC). Step down transformers are located throughout as needed.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls	x			
Roof			x	Some roof areas were being replaced at the time of this walk-thru.
Windows & Doors		x		
Interior	x			
Accessibility				
Fire Alarm		x		
Fire Suppression		x		
Air Conditioning	x			
Ventilation	x			
Heating	x			
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x	x	Secondary power requires capacity upgrade.
Lighting		x		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Rosa Alexander Hall	Building Number:	29
Total GSF:	40,010	Year Built:	1982
Assigned SF:	28,080	Renovated:	n/a

1.1 ARCHITECTURAL

The Rosa B. Alexander Hall's front is to the "Campus Green" with its main entrance to the south. This three story dormitory provides housing for female students.

The interior and exterior load-bearing concrete masonry walls serve as part of the buildings structural system. The roof system which consists of a multi-ply bituminous built-up membrane over insulated perlite boards above the metal roof deck and is capped with a gravel ballast. The exterior walls finish is brick veneer over CMU. The exterior windows and doors are aluminum-framed, double-pane glazed, sliding units. There is an aluminum-framed storefront at the main entry. Some roofing repair work was in progress at the time of this review.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either heated or chilled water to fan coil units. Hot water is generated by a gas-fired boiler. Chilled water is provided by a split system composed of an air cooled reciprocating compressor.

Electric wall heaters provide auxiliary heat in the corridors and bathrooms.

The bathrooms, and other areas, are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by four gas-fired water heaters.

Fire Protection:
Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

The fire protection systems consist of a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is provided.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 2,200-Amps, 208/120-Volt, three-phase, four-wire, alternating current (AC).

A natural gas fueled, 12.5-KW, emergency generator.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls		X		
Roof		X	X	
Windows & Doors	X			
Interior		X		
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning			X	Chiller scheduled for replacement
Ventilation		X		
Heating	X			New boiler
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power		X		
Lighting		X		
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Phyllis Wheatley Dormitory	Building Number:	30
Total GSF:	18,603	Year Built:	1903
Assigned SF:	9,082	Renovated:	n/a

1.1 ARCHITECTURAL

The Phyllis Wheatley Dormitory is the oldest building on the campus. Built in 1903, it is believed to have been a YMCA at one time and is now a freshmen male dormitory. It sits on the west side of Park Avenue and faces the campus from across the street.

The structural system is a conventional wood-framed structure with load-bearing walls at the exterior and interior that support the upper floors. The primary roofs are gabled and finished with slate shingles and sheet metal flashings in some areas. The exterior walls are finished in a brick masonry veneer and accent masonry around the windows. The exterior stairs are steel with open risers and treads. The interior finishes are good.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Hot water for the central heating system is supplied by one gas-fired boiler.

Chilled water for the central cooling system is supplied by one air-cooled package chiller.

Heating and cooling are provided in the common areas by air handling units equipped with heating and cooling coils.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Fire Protection:
The fire protection systems consist of a wet-pipe/dry-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations, and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located in the lobby.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feed the interior.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure			X	
Exterior Walls	X			The finish is in good condition.
Roof		X	X	There are active roof leaks.
Windows & Doors	X			The windows have been recently replaced.
Interior	X			
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning			X	Scheduled for replacement
Ventilation			X	Scheduled for replacement
Heating			X	Scheduled for replacement
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power		X	X	Secondary power requires upgrade
Lighting	X			
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Ticket Booth	Building Number:	
Total GSF:	720	Year Built:	1989
Assigned SF:	435	Renovated:	n/a

1.1 ARCHITECTURAL

The Ticket Booth is a single story conventional wood frame structure with gabled roofs and asphalt shingles. It is located in the southeast quadrant of the campus and its main entrance faces east.

The building is a conventional wood-framed structure with load-bearing wood-framed exterior and interior walls. The roof is constructed of wood rafters and plywood sheathing. The roof type is hipped and is insulated with fiberglass batts. The exterior walls are brick masonry veneer and wood trim. The windows are wood framed with fixed tinted glazing. Doors at entry are solid wood with wood frames and cylindrical locks. There is a wood planked deck that extends around all four sides of the facility.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating is provided by electric, baseboard heaters. The heaters are individually-controlled by integral thermostats.

Through-the wall, air-conditioning units are located in the office area.

Mechanical ventilation is not provided in the bathroom.

The property is not supplied with natural gas.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system.

Domestic hot water is supplied by one, 20-30-gallon, electric, water heater.

Fire Protection:
The fire protection systems consist of fire extinguishers.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground feed from science transformer.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls	x			
Roof		x	x	Appears to be no roof flashing.
Windows & Doors		x		
Interior				
Accessibility				
Fire Alarm	/	/	/	
Fire Suppression			x	
Air Conditioning	x			New
Ventilation	/	/	/	
Heating		x		
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting		x		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Charles H. Smith Men's Residence Hall	Building Number:	32
Total GSF:	36,388	Year Built:	1990
Assigned SF:	22,539	Renovated:	n/a

1.1 ARCHITECTURAL

The Charles Smith Residence Hall is a thee story brick masonry building that serves as a dormitory for male students.

The structure is concrete slab on grade with concrete masonry units interior and exterior walls supporting concrete plank flooring and roof. The roof is a built-up membrane with insulation on top of the metal deck. The exterior walls are finished in brick masonry veneer over CMU. The windows in the storefront system is in poor condition and the punched opening windows are also in fair to poor condition. Some panic hardware does not work and should be replaced. Hardware to service doors is also in a state of repair.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either hot or chilled water to fan coil units. Hot water is generated by a gas-fired water tube boiler located in the first floor mechanical room. Chilled water is provided by a package air cooled reciprocating chiller located outside of the building.

Outside air intakes located at each fan coil unit provide ventilation.

Electric wall heaters provide auxiliary heat in the corridors and bathrooms.

The bathrooms and other areas are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by a gas-fired boiler.

Fire Protection:
The fire protection systems consist of a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located behind the front desk.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,200-Amps, 208/120-Volt, three-phase, four-wire, alternating current(AC). The electrical wiring is reportedly copper, installed in metallic conduit. Circuit breaker panels are located throughout the building.

A Generac natural gas fueled, 19-KVA, emergency generator is provided.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls	x			
Roof		x	x	
Windows & Doors			x	
Interior	x			
Accessibility				
Fire Alarm		x		
Fire Suppression		x		
Air Conditioning	x			Ongoing replacement of chiller
Ventilation		x		
Heating	x			Ongoing replacement of boiler
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power	x			
Lighting	x			
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Lee Wesley Smith Mens Residence Hall	Building Number:	33
Total GSF:	36,388	Year Built:	1992
Assigned SF:	22,437	Renovated:	n/a

1.1 ARCHITECTURAL

Lee Wesley Smith is a facility used for housing for female students. It is located in the southeast quadrant of the main campus and faces onto a plaza area between itself and Spartan Station. The main entry is oriented in a southwest direction and is located at the vertex of the L-shaped plan.

The building has load-bearing, concrete masonry units at the exterior and interior walls which are used to support the upper floors and the roof. The upper floors are constructed of concrete planks. The primary roofs are constructed of a multi-ply, bituminous, built-up membrane over insulation which is placed above concrete roof planks. The exterior walls are finished with a brick masonry veneer over concrete masonry units. Windows that are in the storefront system are in good condition. The other windows that are located in the punched openings are aluminum-framed, double-paned glazed.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a two pipe system that supplies either heated or chilled water to fan coil units. Hot water is generated by a gas-fired water tube boiler located in the first floor mechanical room. Chilled water is provided by a TRANE package air cooled reciprocating chiller located outside of the building.

Outside air intakes located at each dormitory room fan coil unit provide ventilation.

Electric wall heaters provide auxiliary heat in the corridors and bathrooms.

The bathrooms and other areas are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold and hot water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by five gas-fired, water heaters.

Fire Protection:
The fire protection systems consist of a wet sprinkler and standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located behind the front desk.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 1,200-Amps, 277/480-Volt, three-phase, four-wire, alternating current (AC). Step down transformers are located in the main electric room and in electric closets on each floor. The electrical wiring is reportedly copper, installed in metallic conduit. Circuit breaker panels are located throughout the building.

A natural gas fueled, 18.7-KVA, emergency generator is provided.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof		X		
Windows & Doors	X			
Interior	X			
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning	X			Ongoing replacement of chiller
Ventilation		X		
Heating	X			Ongoing replacement of boiler
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power	X			
Lighting	X			
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	MidRise Dormitory	Building Number:	34
Total GSF:	84,703	Year Built:	1992
Assigned SF:	50,965	Renovated:	n/a

1.1 ARCHITECTURAL

The Mid Dormitory is a six story building and is situated on the southeast quadrant of the campus.

The structural system consist of structural steel columns that support the upper floors and the roof. The roof assembly is a multi-ply, bituminous, built-up membrane over rigid insulation board. The exterior walls are brick masonry veneer. The windows are metal-framed, double pane glazed units, with both fixed and stationary panes in the same unit.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Hot water for the central heating system is supplied by one gas-fired boiler.

Chilled water for the central cooling system is supplied by one water-cooled reciprocating chiller and a cooling tower.

Heating and cooling are provided in the common areas by air handling units equipped with heating and cooling coils.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by the HVAC system's boilers. The central hot water system consists of a heat exchanger, circulating pumps, and insulated storage tank. Additionally, there are four natural gas-fired domestic water heaters.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations, strobe alarms and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located in the lobby.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feed the interior.

The main electrical service size is 3,600-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC). The electrical wiring is reportedly copper, installed in metallic conduit, sheathed cable.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof		X		
Windows & Doors	X			
Interior	X			
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning		X	X	Chiller and vertical fan coil units scheduled for replacement
Ventilation				
Heating		X	X	Boiler scheduled for replacement
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power	X			
Lighting	X			
Building Control				

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	L.D. Wilder Building	Building Number:	38
Total GSF:	56,247	Year Built:	1996
Assigned SF:	23,130	Renovated:	n/a

1.1 ARCHITECTURAL

The L. D. Wilder Building is located on the far western border of the campus facing Park Avenue. It is a one story with a partial second floor.

The building has load-bearing, concrete masonry units, exterior walls, and interior steel columns that support the upper floor and the roof. The roofs are made of metal decks supported by steel beams and open-web, steel joists. The roof is flat, and the roofing system is a multi-ply, bituminous, built-up membrane over insulated rigid boards, with gravel aggregate on top. The exterior walls are brick masonry veneer and limestone or granite wall caps and lintels. The storefront system is aluminum-framed with window and doors incorporated into it. The common areas are in good condition.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by a four-pipe system that supplies either hot or chilled water to air-handling unit coils.

Hot water for the central heating system is supplied by two gas-fired boilers.

Chilled water is provided by a water-cooled centrifugal chiller and cooling tower.

The heated and chilled water supplies the air-handling units and the perimeter fan coil units.

Mechanical exhaust fans ventilate the stairwells, bathrooms and other areas.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

The HVAC system's boilers supply domestic hot water. The central hot water system consists of a heat exchanger, circulating pumps and a storage tank.

Fire Protection:
The fire protection systems consist of a wet standpipe with fire department hose valves and connections in each stair tower, portable fire extinguishers, smoke detectors, pull stations, and alarm horns.

A central fire alarm panel is provided.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to pad-mounted transformers that feed the interior.

The main electrical service size is 4,600-Amps, 277/480-Volt, three-phase, four-wire, alternating current (AC). Step down transformers are located throughout as needed.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof	X	X		
Windows & Doors	X			
Interior	X			
Accessibility				
Fire Alarm		X		
Fire Suppression		X		
Air Conditioning	X			
Ventilation	X			
Heating	X			
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power	X			
Lighting	X			
Building Control				

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Center for Materials Research	Building Number:	39
Total GSF:	10,575	Year Built:	1996
Assigned SF:	5,967	Renovated:	n/a

1.1 ARCHITECTURAL

The Center for Materials Research is a two story building that houses science labs, chemical storage and offices. It is located in the northeast quadrant of the campus.

The building has load-bearing, concrete, masonry unit walls, and interior steel columns that support the upper floors and the roof. The primary roof is flat and made of a single-ply, elastomeric, roofing membrane. The exterior walls are brick masonry veneer and unfinished, precast concrete panels. The windows are part of an aluminum-framed storefront system that also includes the entry doors. The building was built as an annex to the Woods Science Building and is showing signs of differential settlement where the two buildings join together.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Hot water for the central heating system is supplied by one gas-fired boiler.

Chilled water for the central cooling system is supplied by one air-cooled chiller.

Circulating pumps provide heated and chilled water to air handling units via a four-pipe distribution system.

Electric heating coils at each variable air volume (VAV) unit provide auxiliary heat.

The stairwells, bathrooms, and other areas are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and bent systems are reported to be polyvinyl chloride (PVC) plastic or cast iron.

Domestic hot water is supplied by one gas-fired water heater.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, portable fire extinguishers, smoke detectors, pull stations and alarm horns. Siamese connections are located on the exterior of the building. Hardwired smoke detectors are located throughout the common areas. The nearest fire hydrants are located along the property's drive aisles and are approximately 200 feet from the building.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located on the first floor.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the exterior.

The main electrical service size is 1,200 amps, 600-Volt, three-phase, four-wire, alternating current. Step down transformers are located in the electric room.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof	X			
Windows & Doors	X			
Interior	X			
Accessibility				
Fire Alarm	X			
Fire Suppression				
Air Conditioning	X			
Ventilation	X			
Heating	X			
Plumbing Fixtures	X			
Drainage Pipe System	X			
Utility Incoming Power	X			
Lighting	X			
Building Control	X			

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Brambleton Recreation Center	Building Number:	40
Total GSF:	10,348	Year Built:	1973
Assigned SF:	7,434	Renovated:	n/a

1.1 ARCHITECTURAL

The Brambleton Recreation Center is located in the farthest northwest corner of the campus across Park Avenue. The facility is used by the community and houses exercise rooms, a gymnasium, offices and computer labs. It is a one story facility.

The structure is load-bearing concrete masonry unit exterior walls with interior steel columns, both supporting the roof. The roofs are a flat multi-ply, bituminous, built-up membrane. The exterior walls are finished in brick masonry veneer. The windows at the entry, along with the doors, are part of an aluminum storefront. The other windows are metal framed insulated units.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Hot water for the central heating system is supplied by one gas-fired boiler.

Chilled water for the central cooling system is supplied by one air-cooled chiller.

Heating and cooling are provided in the common areas by fan coil units concealed above the ceilings and high-capacity air handling units equipped with heating and cooling coils.

The bathrooms and other areas are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by the HVAC system's boiler. The central hot water system consists of a heat exchanger, circulating pumps and an insulated storage tank.

Fire Protection:
The fire protection systems consist of fire extinguishers. Fire extinguishers are located in the common areas and are mounted on the exterior walls.

Common areas and corridors are equipped with illuminated exit signs, pull stations and alarm horns.

A central fire alarm panel is provided.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a transformer, which does not appear to be on a concrete pad, that feeds the interior and exterior.

The main electrical service size is 600-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC). The electrical wiring is reportedly copper, installed in metallic conduit. No circuit breaker panels were observed.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls		x		
Roof			x	
Windows & Doors		x	x	Storefront good, windows poor
Interior				
Accessibility				
Fire Alarm		x	x	No smoke detectors
Fire Suppression		x		
Air Conditioning		x		
Ventilation		x		
Heating		x		
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting		x		
Building Control		x		Old technology = "Pneumatic"

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Former Norfolk Hospital Building	Building Number:	45
Total GSF:	135,000	Year Built:	1937
Assigned SF:	2,844	Renovated:	n/a

1.1 ARCHITECTURAL

The former Norfolk Hospital is a one to three story building that is located in the northeast quadrant of the campus. The building's main entrance fronts onto Corpew Road.

The building has load-bearing concrete masonry unit exterior walls and interior steel columns that support the upper floors and roof. The roofs are classified as flat roofs with mineral-surfaced cap sheet over a multi-ply bituminous built-up membrane. The exterior walls are made of brick masonry veneer with concrete window sills. The windows are metal-framed units with fixed and/or moveable panes of double glazing. Other windows are the original wood double-hung windows that are single pane glazed. Some space inside of the building has been renovated for use, but most of the space in this building is not being used. Most all of the building components are beyond their estimated useful life and should be considered in need of total replacement.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Hot water for the central heating system is supplied by one steam boiler.

Chilled water for the central cooling system is supplied by one air-cooled reciprocating chiller.

The shell and tube heat exchanger, steam/hot water supplies hot water for the fan coils and air handling units. The hot water or chilled water system is a two pipe changeover system.

The heated and chilled water is supplied to individual fan coil units.

There are a number of electric, air-to-air, split-system, heat pumps, supplying supplemental cooling.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The risers and the horizontal distribution piping appear to be copper. The sanitary sewer and vent systems are assumed to be cast iron.

Domestic hot water is supplied by the HVAC system's boilers. The central hot water system consists of a heat exchanger, circulating pumps and a storage tank.

An additional domestic hot water is supplied by one electric water heater.

Fire Protection:
The fire protection systems consist of a wet standpipe with fire department hose valves and connections, portable fire extinguishers, smoke detectors, pull stations and alarm horns.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms (in some locations).

A central fire alarm panel is provided.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior.

The main electrical service size is 2,000-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC).

A natural gas-powered, 200 KW, emergency generator is provided.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x	x		
Exterior Walls			x	
Roof			x	
Windows & Doors		x	x	Metal-framed are fair, the wood windows are poor
Interior		x		
Accessibility				
Fire Alarm			x	All equipment pass their useful life
Fire Suppression			x	All equipment pass their useful life
Air Conditioning			x	All equipment pass their useful life
Ventilation			x	All equipment pass their useful life
Heating			x	All equipment pass their useful life
Plumbing Fixtures			x	All equipment pass their useful life
Drainage Pipe System			x	All equipment pass their useful life
Utility Incoming Power		x	x	Primary power is good, all other equipment pass their useful life
Lighting			x	All equipment pass their useful life
Building Control			x	All equipment pass their useful life

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Baseball / Softball Complex	Building Number:	
Total GSF:		Year Built:	
Assigned SF:	1,337	Renovated:	

1.1 ARCHITECTURAL

Each building for this complex has load-bearing , concrete masonry unit exterior walls that support the upper floors and roof. The upper floors are concrete-topped metal deck supported by light weight metal channels. The roofs are finished with a mineral-surfaced cap sheet over a multi-ply bituminous built-up membrane. There is evidence of water in some of the ceilings. The exterior wall finish is exposed, sealed CMU. The windows are aluminum-framed, single-pane, glazed, double-hung units.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided by an electric air-to-air split-system.

Natural ventilation is provided by operable windows.

The bathrooms, and other areas, are ventilated by mechanical exhaust fans.

The property is not supplied with natural gas.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system.

Domestic hot water is supplied by one electric water heater.

Fire Protection:
The fire protection systems consist of fire extinguishers and smoke detectors.

Common areas are equipped with battery back-up exit lights and fire extinguishers.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the exterior.

The main electrical service size to each building ranges from a minimum of 500-Amps, 480/277-Volt, three-phase, four-wire, alternating current (AC).

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls		X	X	
Roof		X	X	
Windows & Doors	X	X		Windows good, doors fair
Interior		X		
Accessibility				
Fire Alarm	/	/	/	
Fire Suppression	/	/	/	
Air Conditioning		X		
Ventilation		X		
Heating		X		
Plumbing Fixtures		X		
Drainage Pipe System		X		
Utility Incoming Power		X		
Lighting		X		
Building Control		X		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Description of the Existing Campus Utility Infrastructure
Mechanical & Electrical

1. **Steam / Hot Water Heating**
   There is no campus-wide steam / hot water heating distribution system.

2. **Chilled Water**
   There is no campus-wide chilled water distribution system.

3. **Electrical**
   The campus-wide underground 34.5 KV distribution system is owned and maintained by Dominion Virginia Power. This includes transformers, meters and all other elements of the site system.

   The utility service consists of multiple feeds from three switching stations known as primary feeder 304, 309 and 311. The provided underground duct bank and manholes and switching stations supplies high voltage service to each building step down transformer and metering stations. There are approximately 35 individual accounts throughout the campus.

   The reported capacity is supplied via three distribution circuits is 90 MVA and a demand of 15 MVA.

   The underground high voltage cable size is 600 kcmil Aluminum.

   Information is not available to determine the campus demand load due to the fact central metering for the connected campus load is not possible. The primary three feeders do serve other accounts located around the periphery of the campus.

   Power circuit #304 reportedly has infrequent power outages during high demand and inclement weather related situations. The effected campus area is west of Maypole Avenue.

   More information was requested during a meeting with Mr. Bill Miffin from Dominion Virginia Power who explained that such information must be requested from the account manager in charge of the NSU campus account. Subsequent efforts to obtain such information is on-going.

   Ensuing of such information, a technical solution can be pursued to provide a more reliable power provision as well as a central account metering system to provide a better accountability.

4. **Telephone Provisions**
   Verizon Virginia Inc. owns, operates and maintains the telephone and related telecommunication services outside multi-pair cable on the university's main campus.

It has been reported that the main switch has an assigned capacity for 1,400 +/- analog lines and 400 digital line capacity.

Currently the system is adequate and the cabling and capacity can be expanded for future requirements.

5. **Data Network Provisions**
   Norfolk State University (Office of Information Technology) is implementing a Fiber Optic Cable development distribution system using underground telephone duct backs and manholes to provide connectivity campus-wide.

   The main distribution center will be located in the James Bowser Building. Single mode fiber optic for data and coaxial cable for MATV is being provided.

Building Name:	Price Football Stadium	Building Number:	
Total GSF:	42,616	Year Built:	1992
Assigned SF:	9,146	Renovated:	1997

1.1 ARCHITECTURAL

The Price Football Stadium is located along the southern most border of the campus near the Interstate I-264. The stadium has two entrances: one to the east and another to the west.

The structure of the support buildings are single story support buildings with load-bearing CMU walls that support the flat roofs on metal decking which is supported by open-web steel joists. The sloped roofs are supported by metal or wood framing and standing seam metal panels. The flat roofs are built-up roofs or single ply EPDM. The exterior walls are exposed split face concrete masonry units. The support buildings do not have any windows. The doors are painted metal with hollow metal frames.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating is provided in the public restrooms by electric heaters located in the ceilings.

The public restrooms are ventilated by mechanical exhaust fans.

Buildings observed at the stadium were not supplied with natural gas.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system.

Fire Protection:
The fire protection systems consist of fire extinguishers and smoke detectors.

A central fire alarm panel is provided.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to pad-mounted transformers that feed the exterior.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure	x			
Exterior Walls				
Roof	x	x	x	Multiple buildings have varying conditions for roofs
Windows & Doors	x			No windows in support buildings
Interior	x	x		
Accessibility				
Fire Alarm		x		
Fire Suppression	/	/	/	
Air Conditioning				
Ventilation		x		
Heating		x		
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting		x		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Spartan Station	Building Number:	
Total GSF:	35,784	Year Built:	Approx 1930
Assigned SF:	10,890	Renovated:	1993

1.1 ARCHITECTURAL

Spartan Station is located to the southeast corner of the campus and backs up against I-264 Interstate R.O.W. Spartan Station houses the radio station, doctor's office, leased café and convenience store, vendors and residential services.

The structure is comprised of load-bearing CMU exterior walls and interior steel columns that support the roof. The roof is sheathed with plywood over wood rafters, steel beams and wood joists. The roofing is a built-up bituminous membrane. The exterior wall is exposed CMU and some portions are brick veneer. The window storefront system is aluminum-framed while punched opening windows are glazed with insulated panes set in metal frames.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling are provided in the common areas by individual, direct-expansion, constant-volume, gas-fired, packaged, rooftop-mounted, HVAC units.

Hot water for the central heating system is supplied by one gas-fired boiler.

Chilled water for the central cooling system is supplied by multiple water source heat pumps.

The bathrooms, and other areas, are ventilated by mechanical exhaust fans.

Gas service is supplied from the gas main on the adjacent public street.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system. The horizontal distribution piping are reported to be copper. The sanitary sewer and vent systems are reported to be cast iron.

Domestic hot water is supplied by one gas-fired water heater.

Fire Protection:
The fire protection systems consist of a wet-pipe sprinkler system, portable fire extinguishers, smoke detectors, pull stations and alarm horns. Siamese connections are located on the exterior of the building.

Common areas and corridors are equipped with battery back-up exit lights, illuminated exit signs, pull stations, alarm horns and strobe light alarms.

A central fire alarm panel is located in the Information Room.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the interior-mounted electrical meter.

The main electrical service size is 1,600-Amps, 120/208-Volt, three-phase, four-wire, alternating current (AC). A step down transformer is located in the electrical room to supply dedicated load centers.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure		X		
Exterior Walls		X		
Roof			X	
Windows & Doors		X		
Interior		X		
Accessibility				
Fire Alarm				
Fire Suppression				
Air Conditioning	X			
Ventilation	X			
Heating	X			
Plumbing Fixtures	X			
Drainage Pipe System	X			
Utility Incoming Power	X			
Lighting	X			
Building Control	X			

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name: Trailer Science Lab
Total GSF:
Assigned SF:

Building Number:
Year Built:
Renovated:

1.1 ARCHITECTURAL

All trailers should be removed from the campus.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling is provided by packaged, through-the-wall terminal air-conditioning.

The property is not supplied with natural gas.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system.

Fire Protection:
The fire protection systems consist of fire extinguishers.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted-transformer that feeds the interior.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an on-going process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure				All trailer construction is considered substandard from a construction and functional stand point. Therefore trailers should not be used for a higher education environment.
Exterior Walls				
Roof				
Windows & Doors				
Interior				
Accessibility				
Fire Alarm	/	/	/	
Fire Suppression		x		
Air Conditioning		x		
Ventilation		x		
Heating		x		
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting		x		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name: University Police
Total GSF:
Assigned SF: 2,087

Building Number:
Year Built:
Renovated:

1.1 ARCHITECTURAL

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Heating & Air Conditioning:
Heating and cooling is provided by packaged, through-the-wall terminal air-conditioning.

The bathrooms and other areas are ventilated by mechanical exhaust fans.

The property is not supplied with natural gas.

Plumbing:
The plumbing systems include the incoming water service, the cold water piping system, and the sanitary sewer and vent system.

There are no central hot water systems.

Fire Protection:
The fire protection systems consist of fire extinguishers located in the common areas.

1.2.2 Electrical

Service and Distribution:
The electrical supply lines run underground to a pad-mounted transformer that feeds the exterior.

Lighting:
Multiple light fixture types are installed. Replacement of old fixtures with more efficient type is an ongoing process.

Table 1: Building Components

Components	G	F	P	Remarks
Structure				
Exterior Walls				
Roof				
Windows & Doors				
Interior				
Accessibility				
Fire Alarm	/	/	/	
Fire Suppression	/	/	/	
Air Conditioning		x		
Ventilation		x		
Heating		x		
Plumbing Fixtures		x		
Drainage Pipe System		x		
Utility Incoming Power		x		
Lighting		x		
Building Control		x		

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE

Building Name:	Virginia Beach Higher Education Center	Building Number:	
Total GSF:	80,000	Year Built:	1999
Assigned SF:	19,814	Renovated:	n/a

1.1 ARCHITECTURAL

The Virginia Beach Higher Education Center is located at Virginia Beach and is a two story facility that houses the adult education program.

The facility is constructed of load-bearing CMU exterior walls, and interior steel columns that support the upper floor and the roof. The roofs are flat built-up in nature. The facility was built new in 1999 and appears to be in good condition. The exterior walls are finished with CMU and brick masonry veneer and some precast concrete panels. Some windows are incorporated into the storefront with aluminum doors. Other windows are metal-framed single-pane glazed fixed panes of tinted glazing.

1.2 ELECTRICAL / MECHANICAL

1.2.1 Mechanical

Air Conditioning:

Plumbing:

Fire Protection:

1.2.2 Electrical

Service and Distribution:

Lighting:

Table 1: Building Components

Components	G	F	P	Remarks
Structure	X			
Exterior Walls	X			
Roof	X			
Windows & Doors	X			
Interior	X			
Accessibility	X			
Fire Alarm				
Fire Suppression				
Air Conditioning				
Ventilation				
Heating				
Plumbing Fixtures				
Drainage Pipe System				
Utility Incoming Power				
Building Distribution				
Lighting				
Building Control				

G = GOOD; F = FAIR; P = POOR; N/A = NOT APPLICABLE