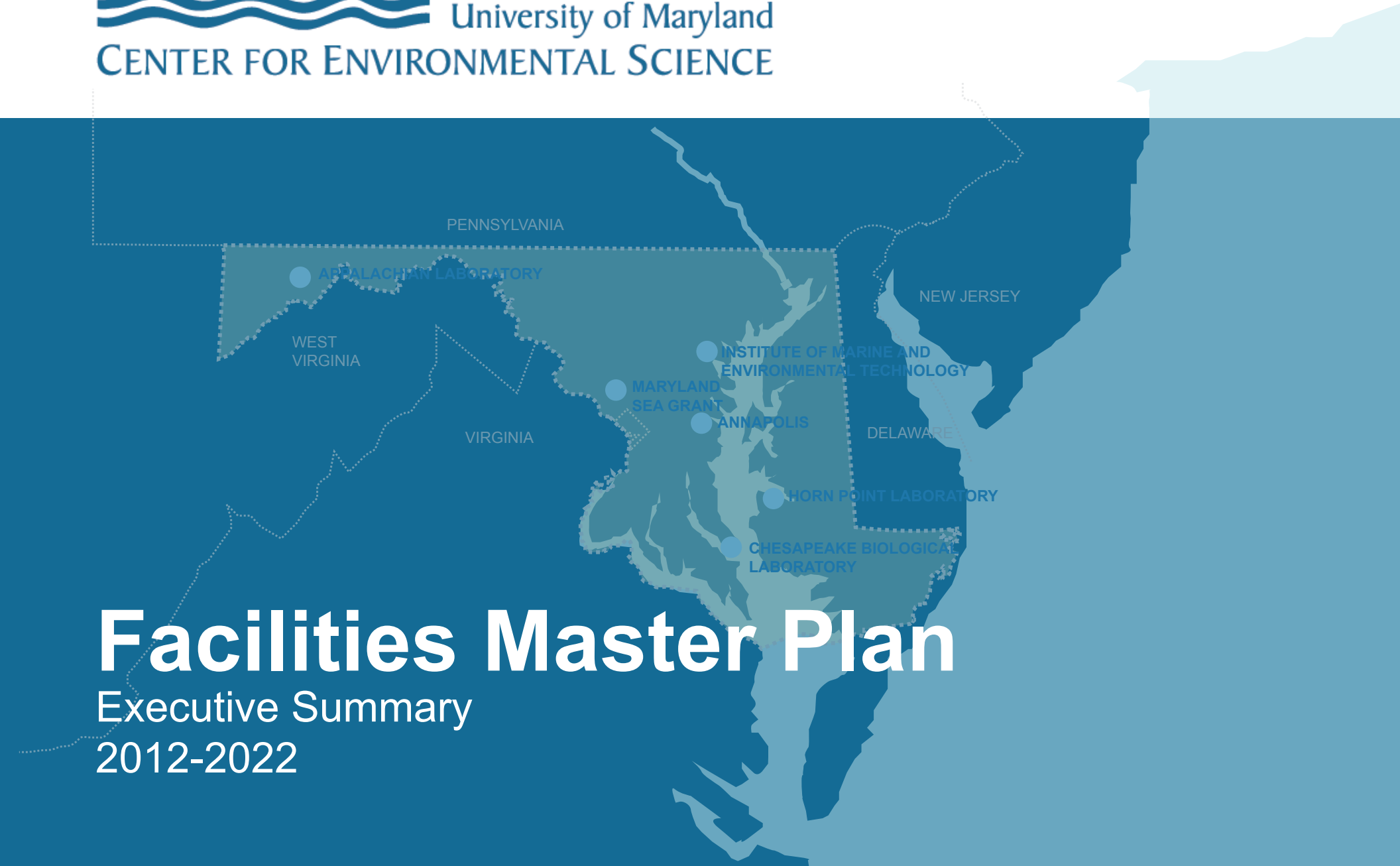
University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE



Facilities Master Plan

Executive Summary

2012-2022

I EXECUTIVE SUMMARY

R.V. Rachel Carson

1. UNIVERSITY OF MARYLAND CENTER FOR ENVIRONMENTAL SCIENCE

Mission Statement

Through its four laboratories across Maryland, the University of Maryland Center for Environmental Science (UMCES) is a research, education, and service institution of the University System of Maryland (USM) and a world leader in the science of coastal environments and their watersheds. The Center's faculty advances knowledge through scientific discovery, integration, application, and teaching, that results in a comprehensive understanding of our environment and natural resources, helping to guide the State and world toward a more sustainable future. Through its role as the responsible institution for administration of the Maryland Sea Grant College and numerous collaborative programs with other institutions, UMCES leads, coordinates, and catalyzes environmental research and graduate education within the University System.

UMCES faculty members advise, teach, and serve as mentors to many graduate students enrolled in USM institutions, particularly through the System-wide graduate programs in Marine Estuarine-Environmental Sciences (MEES), in which UMCES has a leading role. UMCES also delivers its services through environmental science education programs for K-12 students and teachers, pertinent and timely information to the general public and decision makers, technology transfer to industries and the Maryland Sea Grant College.

UMCES contributes to meeting the legislative mandates of the University System of Maryland in numerous ways including: achieving national eminence as one of the world's premier research centers focused on ecosystem science; uniquely integrating research, public service, and education related to the sustainability of environment and natural resources of Maryland and the Chesapeake Bay region; leading the System's nationally ranked graduate program in marine and environmental science; recruiting and retaining a nationally and internationally prominent faculty; attaining research funding and private support far in excess of its state support; promoting economic development; conducting outreach to state and federal agencies; and collaborating with other higher education institutions in Maryland in advanced research and graduate education.

UMCES is among the few institutions in the world to examine a large ecosystem, the Chesapeake Bay and its watershed, in its entirety. UMCES' commitment to integrating environmentally sustainable thinking in all operations including all aspects of future planning is paramount to its mission.

Horn Point Laboratory - Oyster Research

Plan Summary

The University of Maryland Center for Environmental Science, (UMCES), Facilities Master Plan 2012-2022 focuses on a unified vision for an institution that has multiple locations across the state of Maryland. Those locations are unified by the institution's mission in environmental research and public service and its academic vision, that are reflected in its approach to sustainable planning, design and practices.

The Plan uses a common set of planning and sustainable guidelines across the variety of campus histories and locations that make up UMCES. While Center activities are based at six separate locations, not all are on properties under the auspices of UMCES. The Appalachian Laboratory in the mountains of western Maryland, the Chesapeake Biological Laboratory at the mouth of the Patuxent River and the Horn Point Laboratory on the Choptank River on the Eastern Shore are all operated and maintained by UMCES. The Maryland Sea Grant College in College Park and the Annapolis office are both located in privately leased buildings while the Institute of Maryland and Environmental Technology, a three-institution partnership located on Baltimore's Inner Harbor, is housed in the Columbus Center which is operated by University of Maryland Baltimore County.

The Plan essential elements are:

- Planning guidelines for all UMCES locations and campuses
- Sustainability and environmental stewardship guidelines
- Survey of existing facilities and current condition
- Planned capital projects for each major campus
- Planned facility renewal projects for each major campus


CHESAPEAKE
BIOLOGICAL LABORATORY
FOUNDED BY R.V. TRUITT, 1925. SPONSORED BY MARYLAND CONSERVATION DEPARTMENT SINCE 1931, IN COOPERATION WITH CARNEGIE INSTITUTION, JOHNS HOPKINS AND MARYLAND UNIVERSITIES, GOUCHER, ST. JOHN'S, WASHINGTON, AND WESTERN MARYLAND COLLEGES "TO AFFORD A RESEARCH AND STUDY CENTER WHERE FACTS TENDING TOWARD A FULLER APPRECIATION OF NATURE MAY BE GATHERED AND DISSEMINATED."

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2. PLAN VISION

The fundamental vision of this plan rests on an appreciation of the fact that the various sites which comprise UMCES constitute an amazing resource of great value and potential as research and educational tools.

The Plan proposes capital projects that, through their program of spaces and strategic location on campuses, will better connect the people that are doing research and teaching.

The Plan places a premium on developing purpose-built spaces on the major campuses to help foster more collaboration that is critical to the cross-disciplinary research and training that UMCES undertakes.

The Plan is guided by a set of overall sustainable design guidelines that apply to all UMCES locations and which are structured to emphasize critical issues that are central to the UMCES academic mission.

The Plan relies on continued development and expansion of IT infrastructure to allow UMCES to more easily share resources and information across campuses and to expand the distance learning initiatives that are already active at UMCES.

The Plan strengthens the public outreach and educational programs at UMCES by providing enhanced and improved facilities to support those activities.

1. *Chesapeake Biological Laboratory*
2. *Horn Point Laboratory*
3. *R/V Rachel Carson*
4. *Appalachian Laboratory*
5. *UMCES Annapolis Office*
6. *Institute of Marine and Environmental Technology*
7. *Maryland Sea Grant College*
8. *Center Administration at HPL*

3. PLANNING PRINCIPLES

To achieve this vision the following specific planning principles will guide the physical development of the campuses and the individual facilities within them. These planning principles incorporate sustainable design issues within them as this activity is no longer seen as a separate subset of issues but as fully integrated in the planning and design process for UMCES.

- Integrate sustainable/green design as a holistic approach in the development of land, and the design, construction, and maintenance of all campus facilities.

- Promote a campus community environment at each location. Provide this by locating facilities closer together and improving the design of exterior spaces and paths as well as providing spaces within the facilities that encourage collaboration and chance meetings.

- Foster both formal and informal exchange among the researchers, students, faculty, and staff from all disciplines. Program and design space at a campus scale (outdoors), and within individual facilities, (open accessible meeting and collaboration spaces), to that end.

- Utilize engineering and design innovations to improve environmental quality and conserve materials and energy. Include “Sustainable Design” principles that are consistent with the Maryland Green Buildings Council Report dated November 2011 and national sustainable design standards as outlined by the United States Green Building Council, (USGBC) LEED building evaluation system.

- Campus development and operations should be consistent with Maryland’s Smart Growth policies, Greenhouse Gas Reduction Act, EmPOWER Maryland Initiative and Chesapeake Bay Agreements, which include green buildings, renewable energy efficiency, and water conservation requirements.

- Innovative materials and environmentally sound construction should influence physical development as well as the regional characteristics of the site and buildings.

- LEED Sliver should be the minimum requirement for certification level with a target of LEED Gold certification and a minimum of 35% energy savings over the current energy code compliant standard for all new projects and major renovations.
- Design and construct building space with the maximum flexibility feasible so that over the lifespan of a facility, 40-60 years, changing research needs can be accommodated.
- Treat outdoor service, storage, and work compounds as usable and positive outdoor space with attention to functional arrangement, security, and visual appearance.
- Including accessibility by people with disabilities must be an integral component of the planning and design of buildings and site improvements (i.e. parking, roads, walks, landscaping).

Building Condition Code:

1.	**Satisfactory**	Suitable for continued use with normal maintenance.
2.	**Remodeling – A**	Requires restoration to present acceptable standards without major room changes, alterations, or modernization. The approximate cost of remodeling is not greater than 25% of the estimated replacement cost of the building.
3.	**Remodeling - B**	Requires major updating and/or modernization of the building. The approximate cost of remodeling is greater than 25% but not greater that 50% of the estimated cost of the building.
4.	**Remodeling - C**	Requires major remodeling of the building. The approximate cost of remodeling is greater than 50% of the remodeling/replacement cost of the building.
5.	**Demolition**	Should be demolished or abandoned because the building is unsafe or structurally unsound, irrespective of the need for the space or the availability of funds for replacement. This category takes precedence over categories 1, 2, 3, and 4.
6.	**Termination**	Planned termination or relinquishing or occupancy of the building for reasons other than unsafeness or structural unsoundness, such as abandonment of the temporary units or vacating of leased space. This category takes precedence over categories 1, 2, 3, and 4.

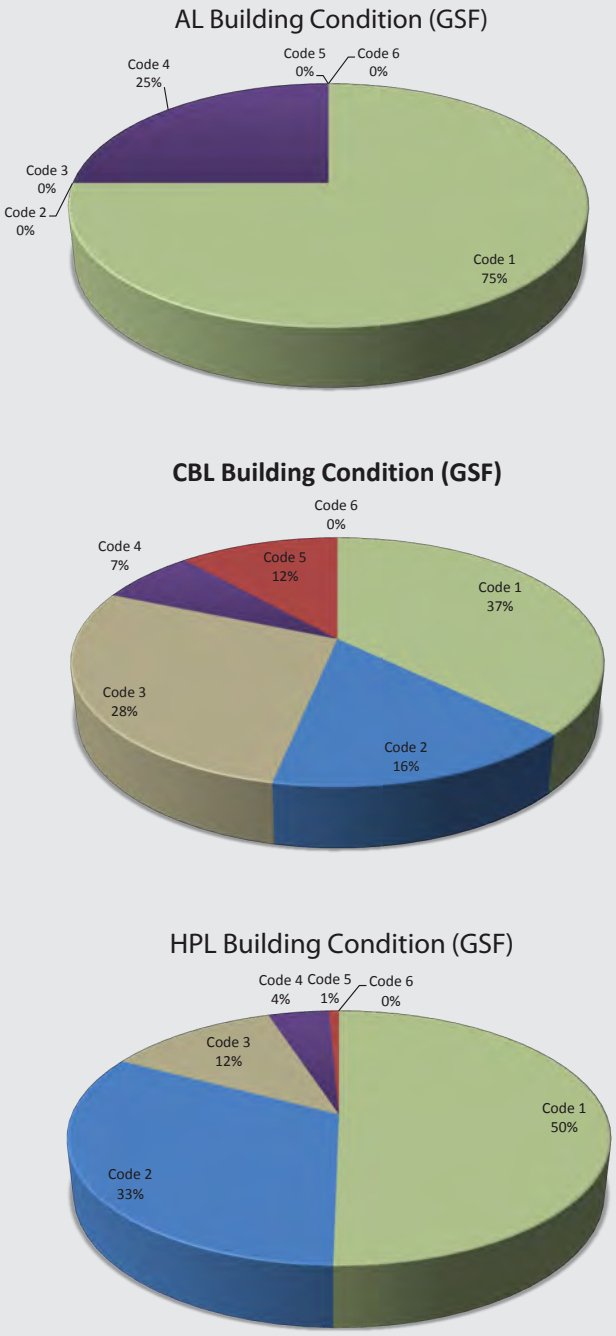


Fig. 1 - Building Condition Codes

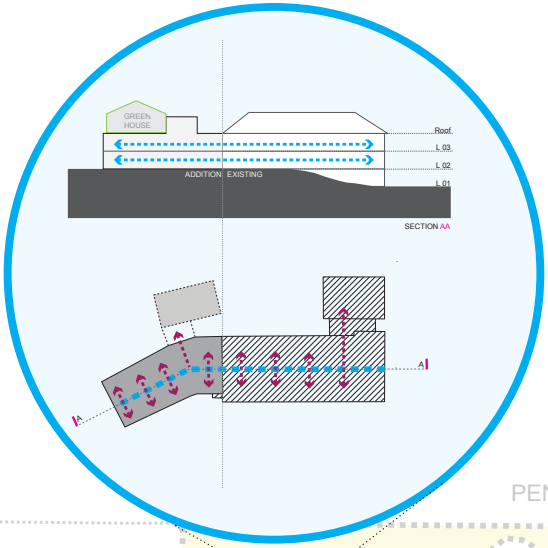
Horn Point Laboratory Campus

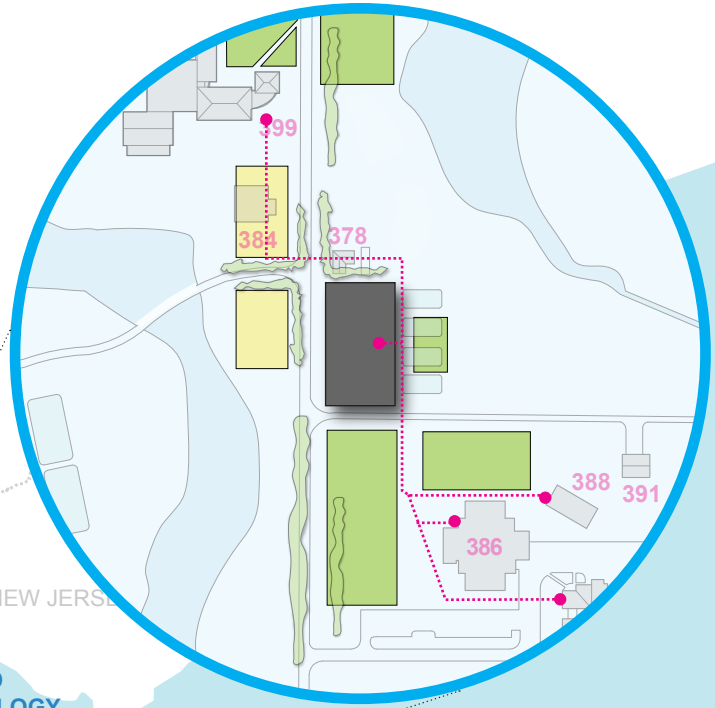
4. SUSTAINABLE DESIGN GOALS AND INITIATIVES

As part of an overall institutional focus on sustainable design practices related to Capital Projects and Facility Renewal Projects, UMCES will focus efforts on sustainable practices in four major sectors.

- Greenhouse gas reductions
- Storm water management and domestic water conservation
- Resource conservation
- Education, civic engagement and communication

These goals and initiatives add up to a comprehensive approach that ties into the American College and University Presidents Climate Commitment, (ACUPCC),signed by President Donald Boesch on December 18, 2007. An important part of that commitment is UMCES institutional Climate Action Plan (CAP) for becoming climate neutral. Related efforts within the Master Plan focus on both retrofitting existing facilities with more energy efficient systems as well as using new projects to raise the bar even further with the more comprehensive opportunities that new projects afford. Campus energy infrastructure projects through utility partnerships also provide a benefit to the institution and the state through reduced operating costs.





PENNSYLVANIA

APPALACHIAN LABORATORY

WEST VIRGINIA

VIRGINIA

INSTITUTE OF MARINE AND ENVIRONMENTAL TECHNOLOGY

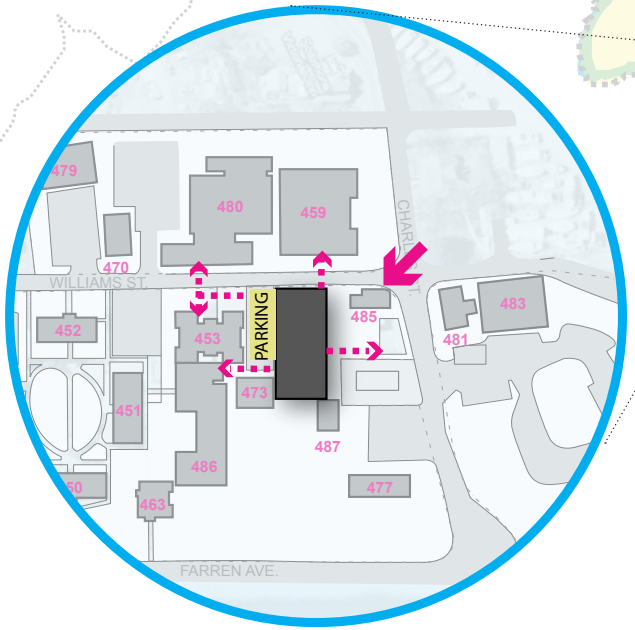
MARYLAND SEA GRANT

ANNAPOLIS

DELAWARE

HORN POINT LABORATORY

CHESAPEAKE BIOLOGICAL LABORATORY

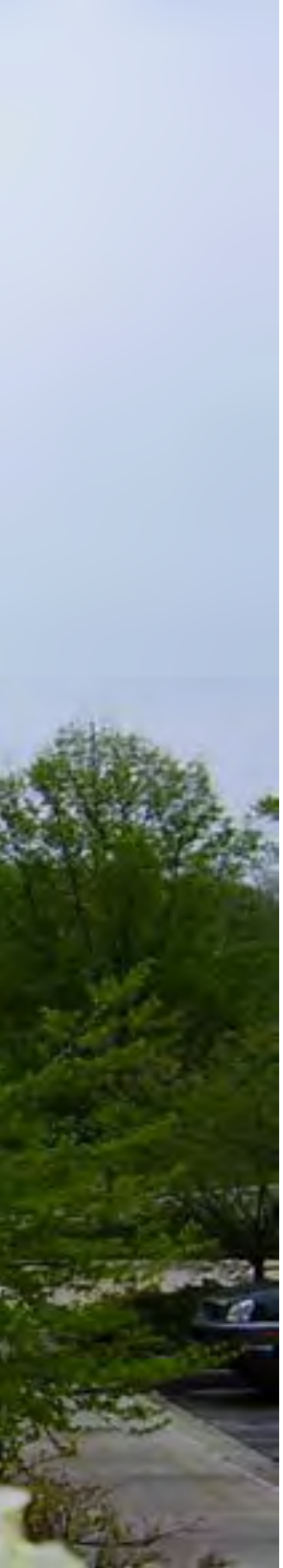


5. MAJOR CAPITAL PROJECTS

The Facilities Master Plan provides a framework for initiating solutions to the multiple physical development issues confronting three of the UMCES' laboratories. The other sites of UMCES activities are located in facilities managed by other parties and therefore are not part of this Plan. The documentation for each location focuses on academic programs and UMCES objectives, existing assets and deficiencies and identifies capital development projects required for the next ten years. Consideration has been given during preparation of the Facilities Master Plan to the history and mission of UMCES; existing and projected research, education and service programs and clientele; administrative organization and staffing; the existing inventory of facilities; and the appropriate measures of projected growth. Capital Projects (over$1,000,000), are the major strategic components in the plan, and are developed in conjunction with and supported by the Facility Renewal Projects.

- Appalachian Laboratory
    - Laboratory Building Addition
    - Field Laboratory
- Chesapeake Biological Laboratory
    - R. V. Truitt Replacement Laboratory
    - New Information & Communications Services Building
    - Mansueti Laboratory Renovation
- Horn Point Laboratory
    - Coastal Dynamics Laboratory
    - Morris Marine Lab Renovation


Appalachian Laboratory



Facility Renewal Projects

This Facilities Master Plan documents a need for increases in maintenance, operating, facilities renewal, and additional funds to maintain the existing physical plant and to provide modern, state-of-the-art research and support facilities through the renovation and upgrading of existing facilities. These required improvement projects, coupled with the associated infrastructure improvements, are essential to strengthen and enhance existing research programs, to provide a renewed identity and focus to each campus, and to help UMCES overall achieve a more integrated sense of institutional purpose and identity.

These projects will contribute substantially to reduced energy use and are inherently supportive of a sustainable design approach in that they re-purpose existing buildings and thereby extend the useful life of existing materials and reduce green house gas emissions that would otherwise go to all new construction projects.

Facilities Master Plan Process

The University of Maryland Center for Environmental Science involved and obtained feedback from all stakeholder groups in our community. A Facilities Master Plan Task Force coordinated the overall process. With the support of the Laboratory Directors, Town Hall meetings were held at each of the three campuses covered within this Plan. These meetings were open to all employees providing a chance to express their vision for our future. The Sustainability Committee members were involved during these meetings and provided invaluable insight. Drafts were reviewed by each of the three campuses in this FMP as well as the Sustainability Committee and all helped mold the final product.

Facilities Master Plan Task Force:
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Barbara Jenkins, AL ORAA Proposal & Facilities Coordinator
Heather Johnson, AL Assistant Director
Stacy Maffei, CBL Associate Director for Administration
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This Facilities Master Plan was created with the assistance of Cannon Design.

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