University Sustainability Council

Meeting Summary

August 30, 2011 – Special Meeting to Review the Draft 2011-2030 Facilities Master Plan (FMP)

Council members present:
Rob Specter, Vice President for Administrative Affairs (Chair)
Frank Brewer, Former Vice President for Administrative Affairs
Linda Clement, Vice President for Student Affairs
Michelle Eastman, Assistant President and Chief of Staff
John Farley, Assistant Vice President for Administrative Affairs
Ross Salawitch, Professor, Atmospheric and Oceanic Sciences
Thomas Zeller, Associate Professor, History
Scott Lupin, Associate Director, Environmental Safety and Director, Office of Sustainability
Joan Kowal, Energy Manager, Facilities Management
Jay Elvove, Manager, OIT
Ian Page, Graduate Student, Agriculture and Resource Economics
Matthew Popkin, Undergraduate Student, Government and Politics

Guests:
Brenda Testa, Director, Facilities Planning
Bill Mallari, Coordinator of Campus Development, Facilities Planning

Meeting start time: 1:00pm

Meeting Highlights

Introductions
Frank Brewer, serving for the last time as Chair of the Sustainability Council, introduced Rob Specter, the new Vice President for Administrative Affairs and incoming Council Chair. Frank also introduced new faculty members to the Council, Ross Salawitch and Thomas Zeller, and the new graduate student representative, Ian Page.

Mission of the Council
Scott Lupin reviewed the mission of the Sustainability Council for new and returning members. The mission is available at http://www.sustainability.umd.edu/content/about/sustainability_council.php

Presentation of FMP
Brenda Testa and Bill Mallari gave a presentation about the draft 2011-2030 Facilities Master Plan (FMP). The presentation included the process of developing the plan and components of the plan itself. **See Appendix A.**

Discussion of FMP

Council members discussed various components and implications of the FMP, which fell into the following categories:

- **Parking**:
  - Matthew Popkin raised concern over the number of new parking garages that are sited for potential development in the plan. Brenda Testa said the campus is focusing on removing surface parking lots but there is still a need for parking spaces, especially since the University's student enrollment and faculty/staff numbers are expected to increase over the next decade. A new parking garage may be developed on lot 11b, the parking lot closest to The View. However, if that site were developed, it would require stringent stormwater controls. The roof of the garage could be built into recreation fields or at least partially covered by a green roof.
  - Ross Salawitch asked about putting parking underground. Linda Clement said that underground parking costs around $40,000 per space whereas above ground garage parking is closer to $28,000 per space.
  - Mark Stewart suggested that the University use the money it would spend on building and maintaining a parking garage to create vanpools and further incentivize carpooling. Linda Clement responded that it is very difficult to get faculty and staff out of their cars.
- **Biking:**
  - Linda Clement mentioned that there is a lot of focus in the FMP and from DOTS on improving bicycling on campus but we have little control over improving bike routes off campus, which is where we need to see the biggest improvement to make it easier for people to commute to campus by bike.
  - Ross Salawitch mentioned there are no contiguous bike paths to campus from University Park or Greenbelt, which are communities where a lot of faculty and staff live. He suggested the University work with the mayors of those towns on those issues.
- **Carbon Neutral Buildings:**
  - Matthias Ruth submitted comments about the FMP via email since he was unable to attend the meeting. **See his comments in Appendix B**. His remarks focused on the need to have a "clear policy and procedure to keep the university carbon emissions from rising" considering proposed growth of the building space on campus.
  - Frank Brewer commented that carbon neutrality would be a huge challenge for lab buildings, which often consume four times more energy than classroom buildings. It's not feasible for the university to construct all new buildings to generate all their energy on-site. However, creating a centralized carbon neutral energy supply by using biomass and other clean energy technology could get us there.
  - Joan Kowal said the State is looking for packaged plans: capital projects coupled with carbon reduction projects. She would like to see at least 20 percent of energy demand come from on-site generation (geothermal, solar thermal, photovoltaic, etc.) for all new buildings. We could offset the rest of the building's carbon footprint by centrally generating or purchasing clean energy.
- **Water:**
  - Scott Lupin suggested the University create a Water Master Plan, which would be a comprehensive strategy for reducing potable water use, setting water reuse targets, controlling stormwater, and addressing other water related issues.

- Linda Clement said the Council should see the results of water projects already implemented.
- Thomas Zeller suggested decreasing the amount of manicured lawns that require irrigation and transition some areas to meadow. Bill Mallari said that is recommended in the FMP.

- **Forestation:**
  - Matthew Popkin asked if the Wooded Hillock would be considered for permanent preservation.
  - Rob Specter cautioned against volunteering to put land into permanent conservation easement because of conflicting regulatory issues.
  - Bill Mallari agreed they have run into these issues before – they wanted to restore an eroded stream bank but ran into hurdles since that land was in a conservation area.
- **Early Adopters:**
  - Rob Specter asked (rhetorically), what distinguishes us in this plan from any other municipal/institutional plan? He said Universities should be early adopters of new technologies and seek opportunities to implement innovative solutions our faculty develop. We should be on the cutting edge and demonstrate our leadership on sustainability.
  - Ross Salawitch suggested that a standing committee be established between Facilities management representatives and the faculty to facilitate the transfer of knowledge and technology within the University to implement the FMP.
- **Quantifiable Goals:**
  - The Council had a general discussion about the lack of quantifiable milestones and goals within the draft FMP. Several members suggested that such goals be added so the University can measure the implementation of the FMP.
- **Implementation:**
  - Several members expressed concern that the draft FMP did not include an implementation plan outlining individual unit roles and responsibilities. Brenda Testa stated that the implementation section was under development and would be added.
- **Additional Comments:**
  - Ross Salawitch presented a memo during the Council meeting with additional thoughts on how to improve the FMP. **See his comments in Appendix C**.

<u>Next Steps</u>

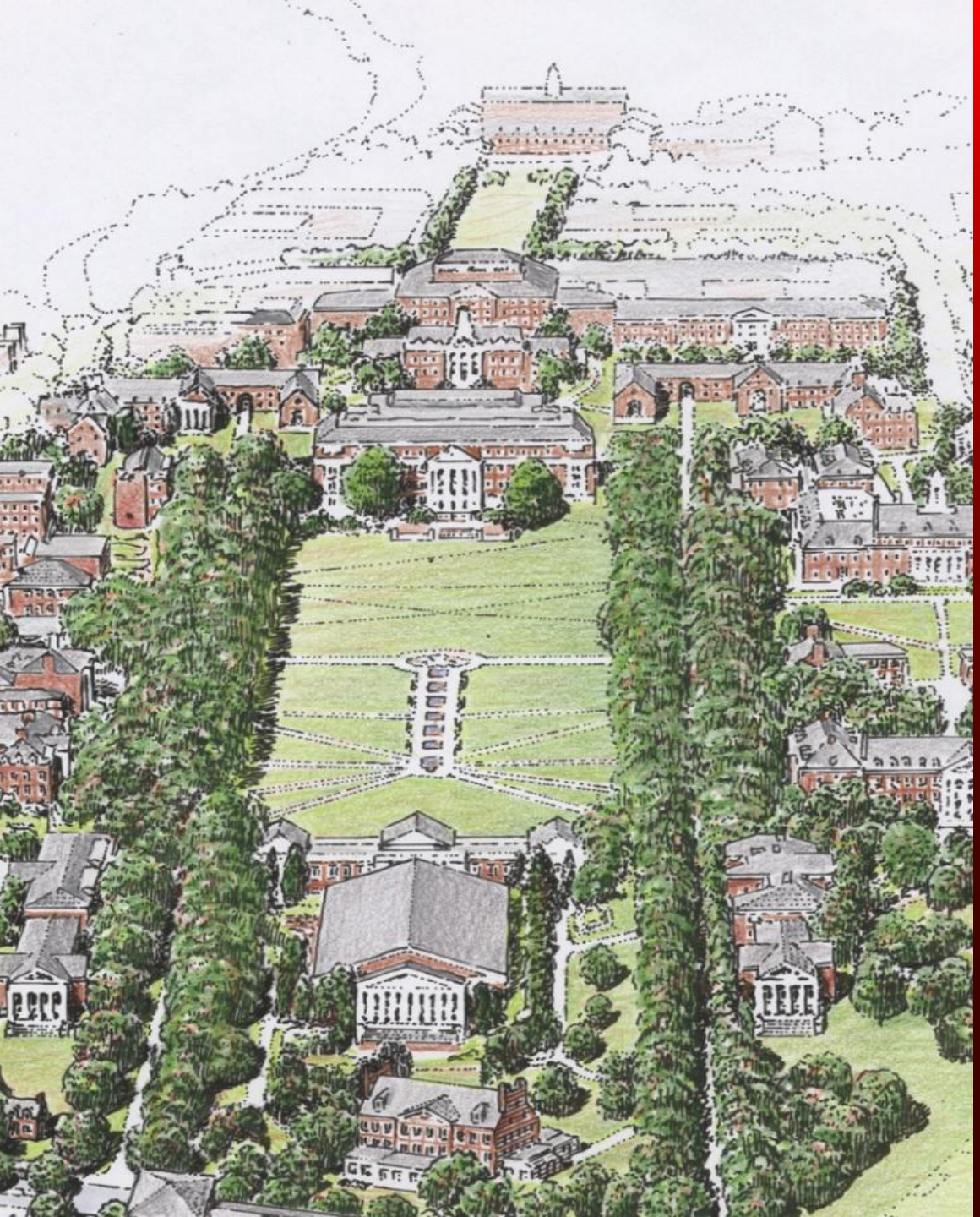
The University Sustainability Council agreed to summarize its comments and provide them to Facilities Management.

Adjourn: 2:50pm

UNIVERSITY OF MARYLAND

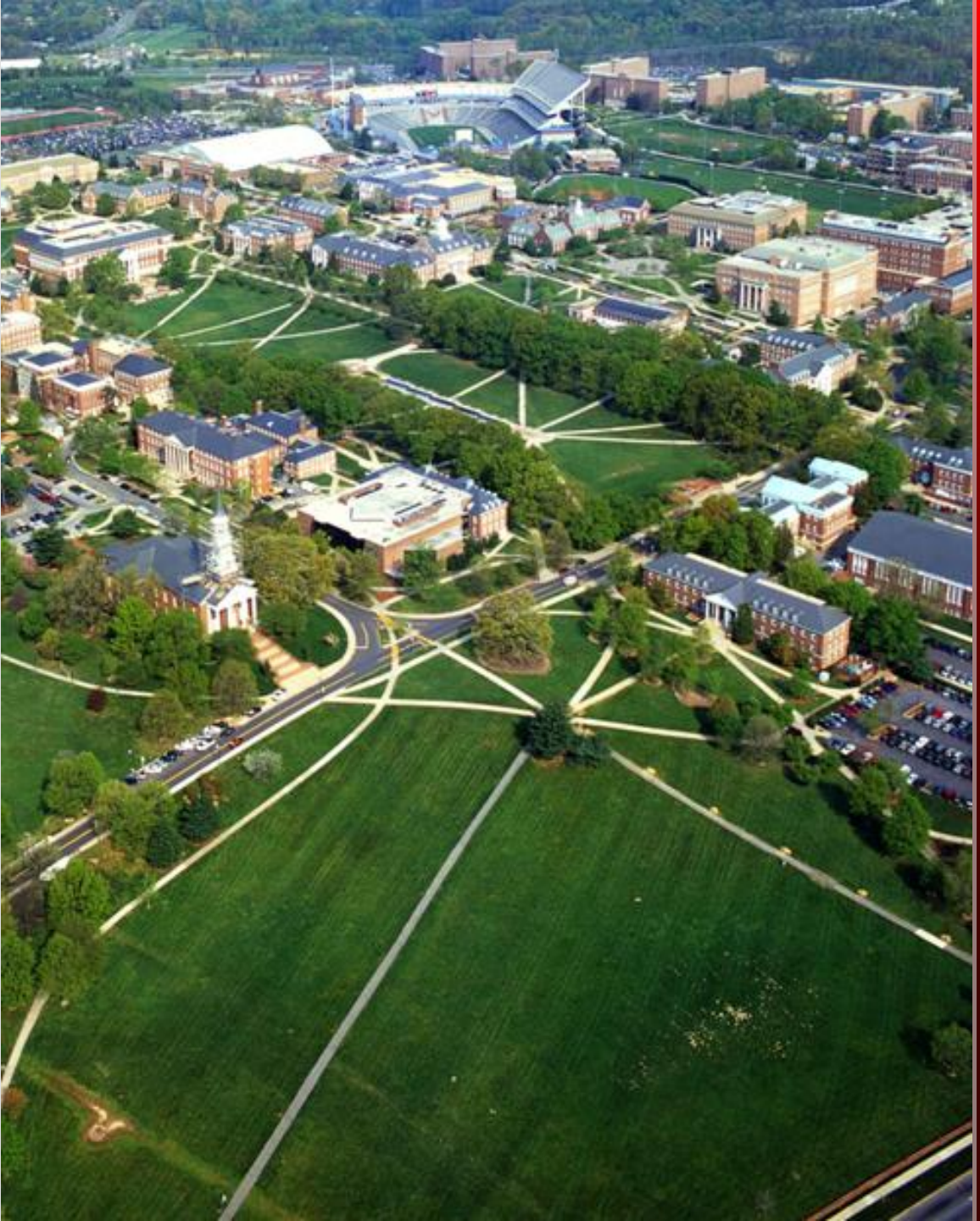
Facilities Master Plan

A First Class Campus, An Academic Park in the City



Scope of Work

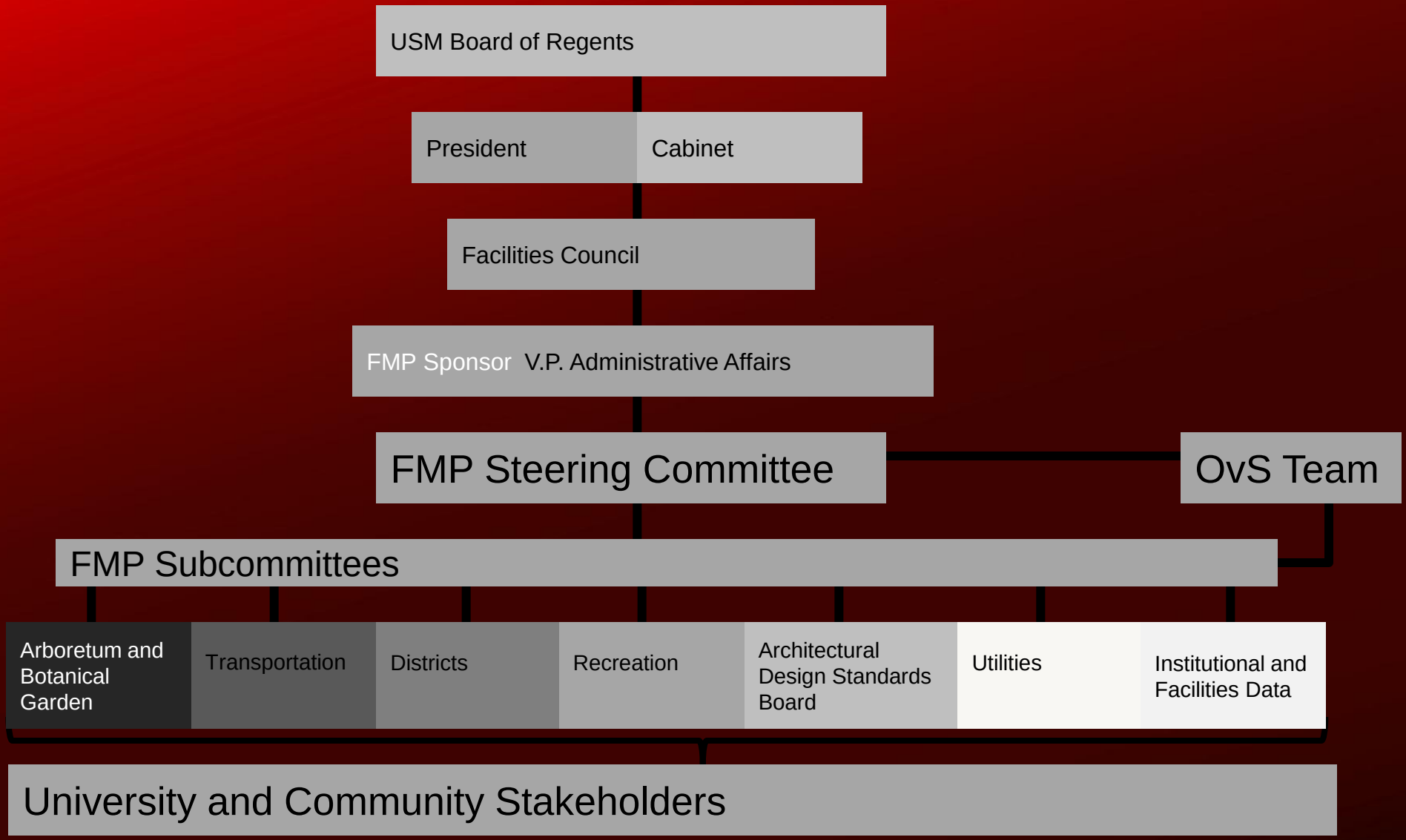
- Objectives
  - update of the FMP
  - primary purpose: framework to guide orderly growth and development
  - integrate with UMD Strategic and Climate Action Plans
- twin focus areas
  - landscape master plan
  - transportation systems



Process

- collaborative process
  - College Park City Council
  - Public Forums
  - Student Groups
  - College Park Senate
  - Website: http://www.facilities.umd.edu/masterPlan
- 18 months to complete

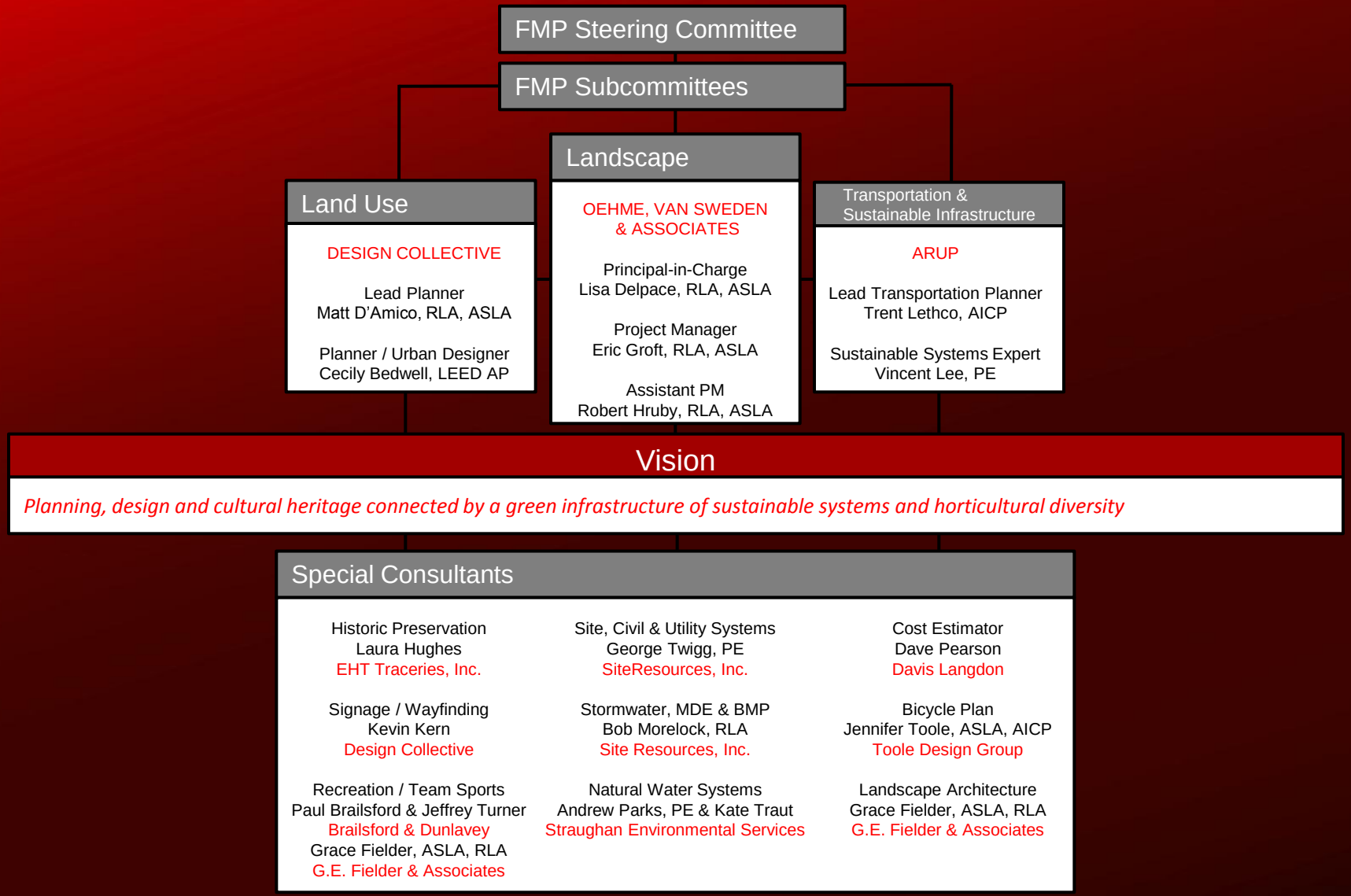
Organization



Consultant team

- expert team led by Oehme, van Sweden & Associates, Inc
  - landscape architecture
  - multi-modal transportation
  - cultural university landscapes
  - environmental ecosystems
  - restorations and sustainability

OvS

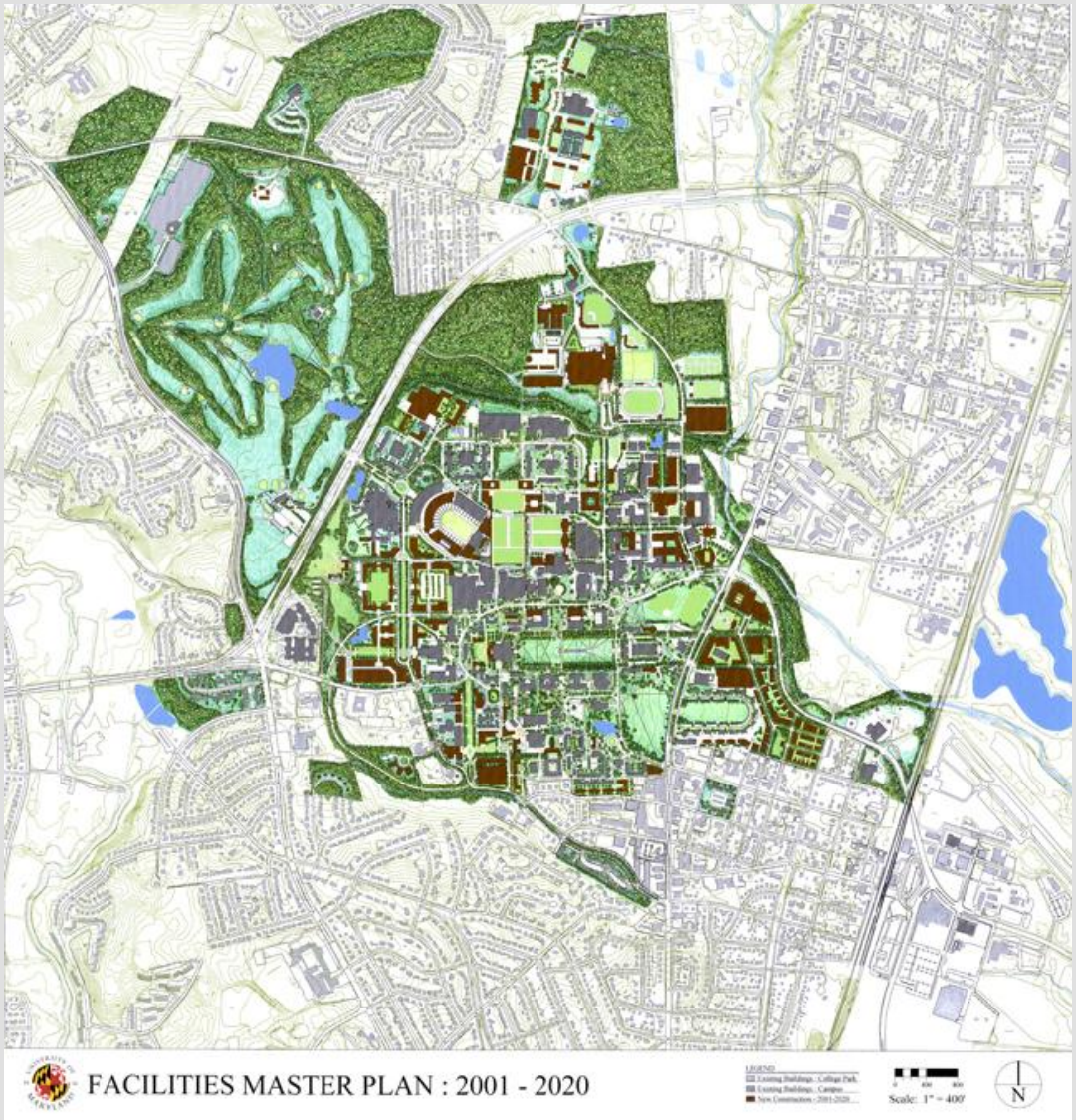

FMP Steering Committee
FMP Subcommittees
Landscape
OEHME, VAN SWEDEN & ASSOCIATES
Principal-in-Charge
Lisa Delpace, RLA, ASLA
Project Manager
Eric Groft, RLA, ASLA
Assistant PM
Robert Hruby, RLA, ASLA
Land Use
DESIGN COLLECTIVE
Lead Planner
Matt D'Amico, RLA, ASLA
Planner / Urban Designer
Cecily Bedwell, LEED AP
Transportation & Sustainable Infrastructure
ARUP
Lead Transportation Planner
Trent Lethco, AICP
Sustainable Systems Expert
Vincent Lee, PE
Vision
Planning, design and cultural heritage connected by a green infrastructure of sustainable systems and horticultural diversity
Special Consultants
Historic Preservation
Laura Hughes
EHT Traceries, Inc.
Signage / Wayfinding
Kevin Kern
Design Collective
Recreation / Team Sports
Paul Brailsford & Jeffrey Turner
Brailsford & Dunlavey
Grace Fielder, ASLA, RLA
G.E. Fielder & Associates
Site, Civil & Utility Systems
George Twigg, PE
SiteResources, Inc.
Stormwater, MDE & BMP
Bob Morelock, RLA
Site Resources, Inc.
Natural Water Systems
Andrew Parks, PE & Kate Traut
Straughan Environmental Services
Cost Estimator
Dave Pearson
Davis Langdon
Bicycle Plan
Jennifer Toole, ASLA, AICP
Toole Design Group
Landscape Architecture
Grace Fielder, ASLA, RLA
G.E. Fielder & Associates

Plan and Framework Overview

- ❖ emphasis on landscape design and land use
  - values urban tree canopy, open spaces and gardens
  - campus that retains a park-like atmosphere
- ❖ a model green campus that leads in sustainability of all natural resources and goes beyond the requirements
- ❖ place buildings and other facilities in ways that follow smart growth, promote collaboration among disciplines, and make the most efficient use of the limited and finite land

Plan and Framework Overview

- develop a rational transportation network that connects to the larger regional network;
  - public transit
  - reduce and limit vehicular congestion on and around campus; and makes the campus more pedestrian and bicycle friendly.



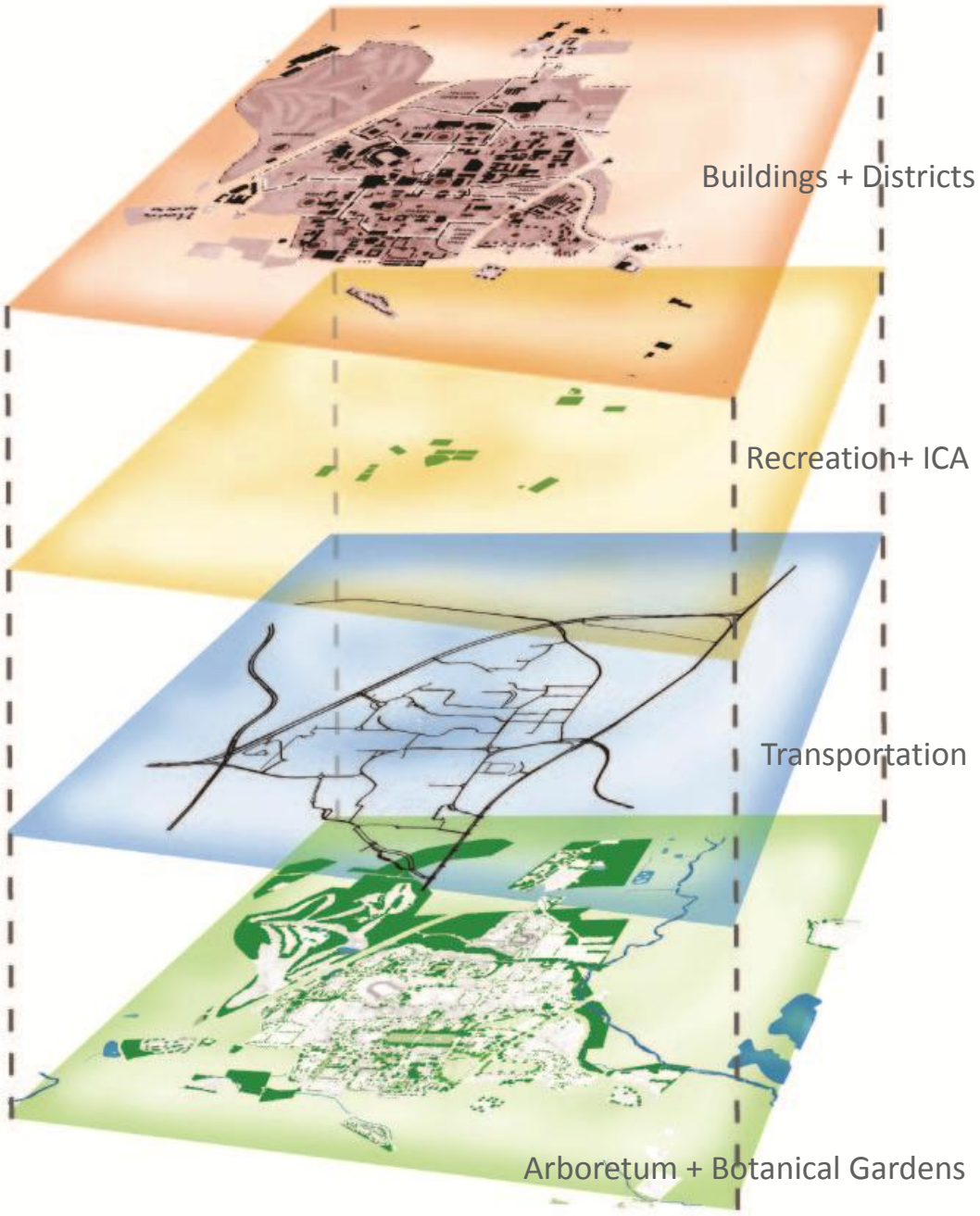
Strategies and Guidelines

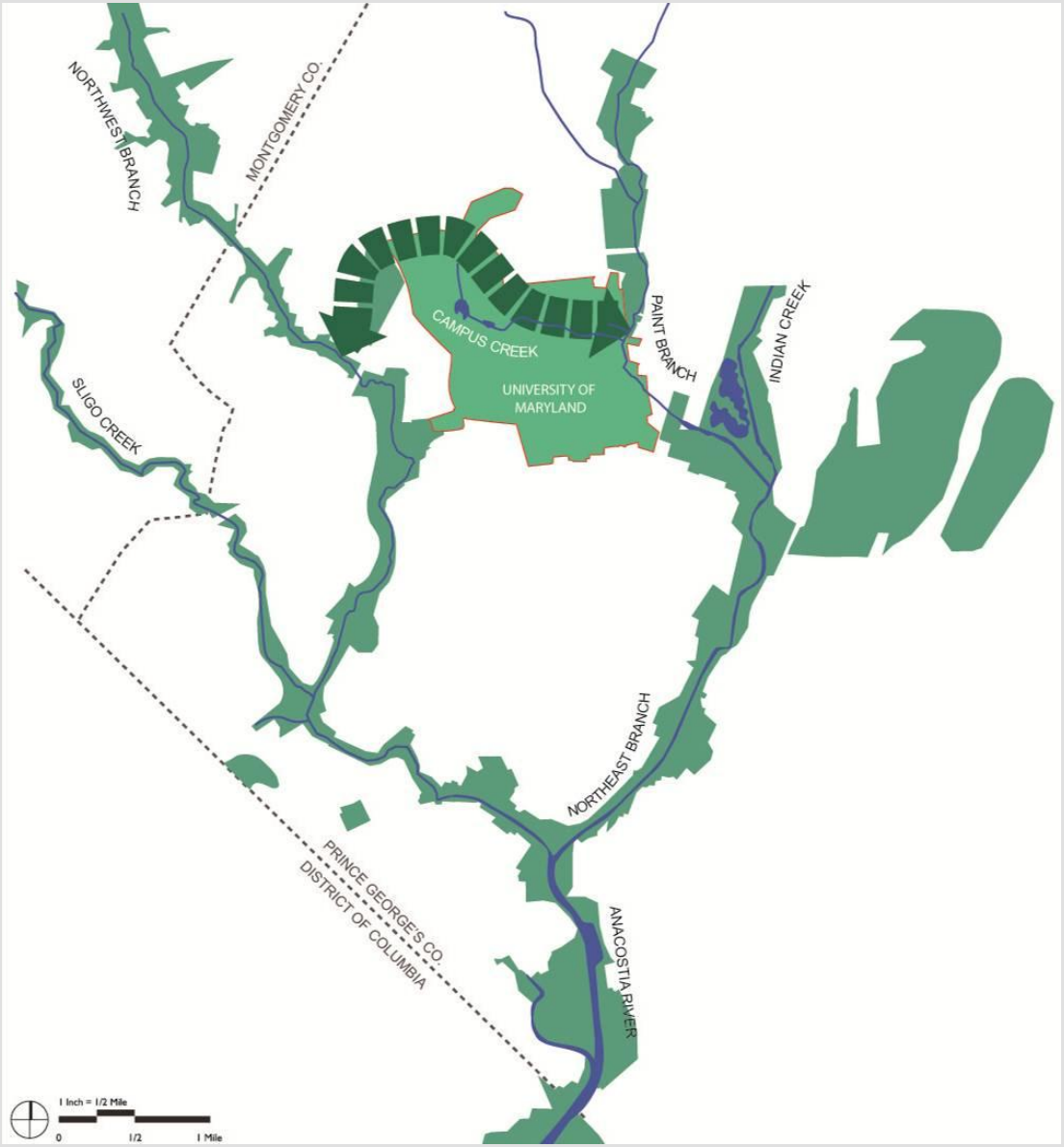
- 2001-2020 Facilities Master Plan (adopted 2002) and the 2007 Update
- Environmental Stewardship Guidelines 2005
- The University Strategic Plan 2008:
  - "create a model Green University that is a leader in environmental stewardship and sustainability"
- The University of Maryland Climate Action Plan 2009

Framework and Vision

- realize institutional excellence
- promote connectivity
- establish the highest standard for sustainability in all systems and oversight of natural and historical resources

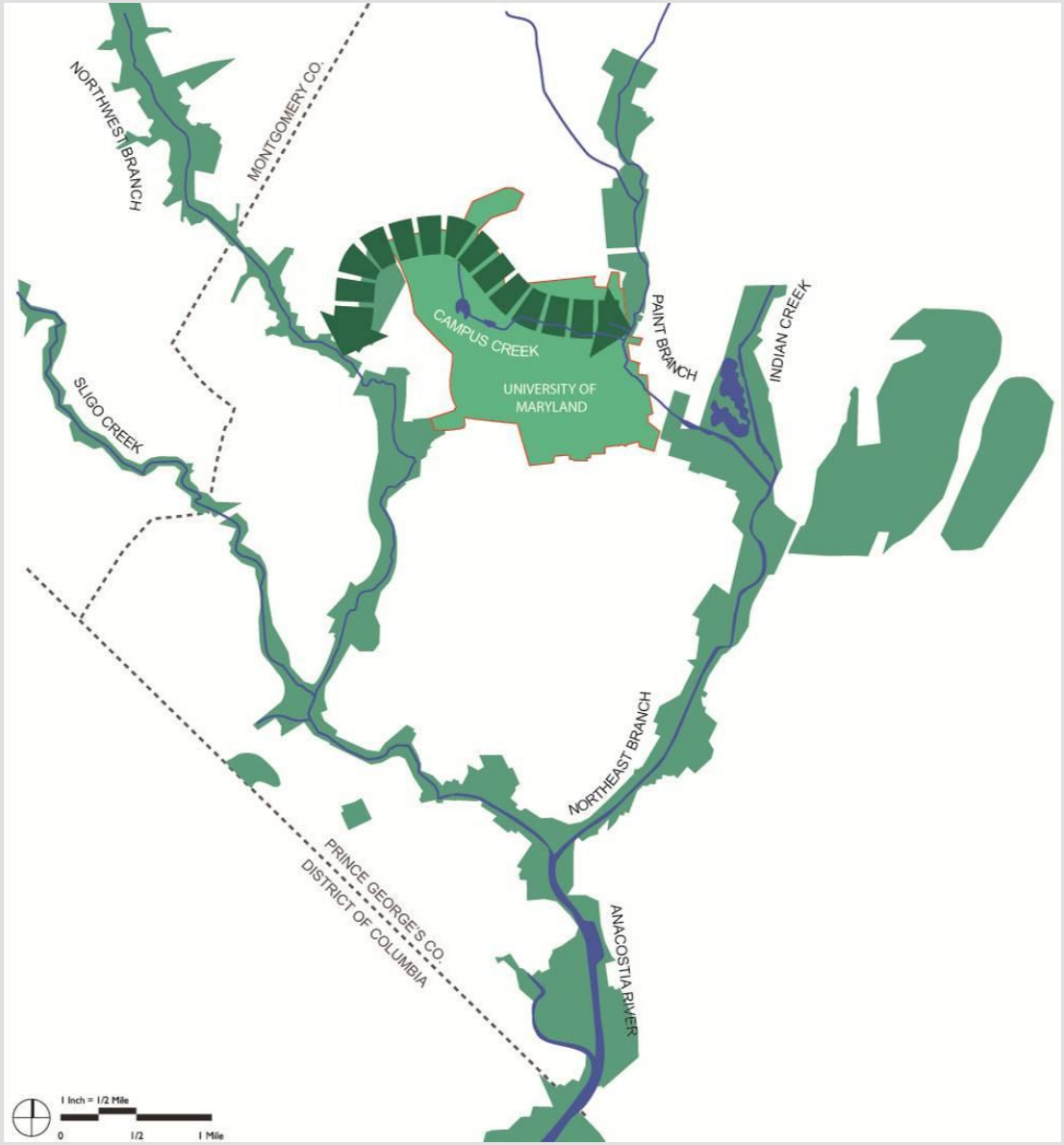
Layering of Uses: Planning for a Holistic Community:





Physical Planning Principles
(Environmental Stewardship Principles Guiding Campus Physical Development)

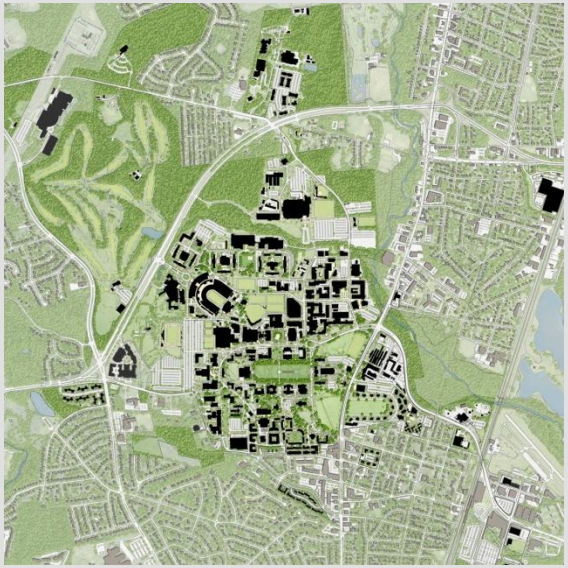
- practice environmental stewardship in landscape design and maintenance
- enhance environmental performance of buildings and utilities on campus:
- encourage the use of transportation other than personal vehicles

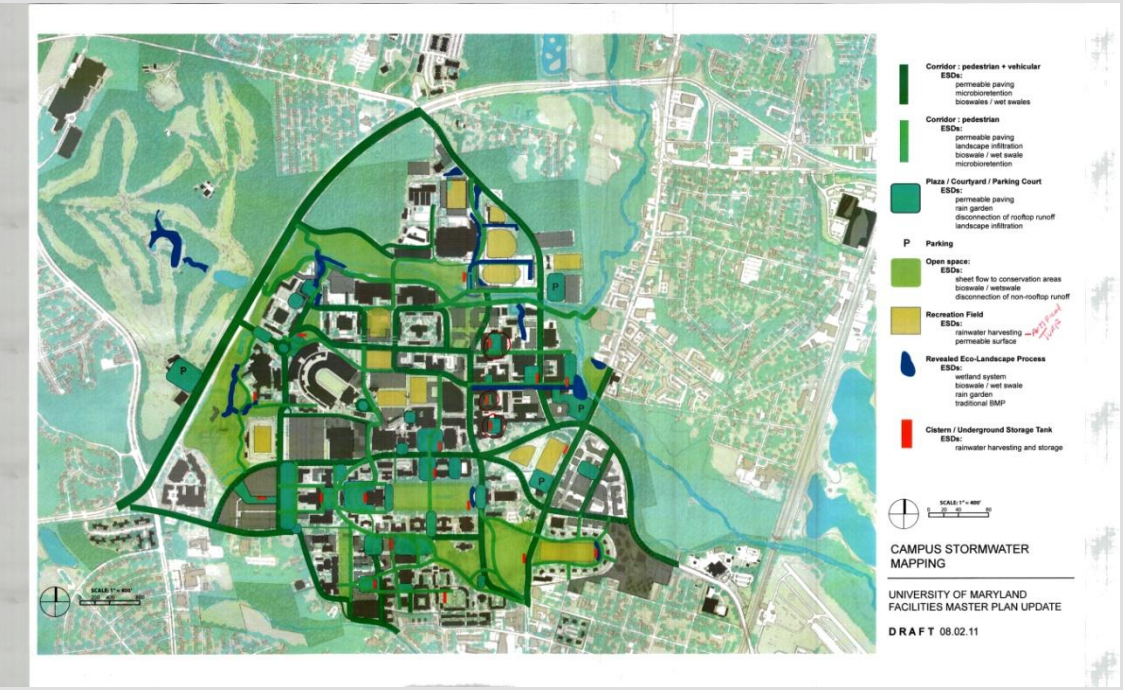


Global Issues

Sustainability and Environmental Stewardship Goals

- transition to a campus of buildings and facilities that support the strategic goal of carbon neutrality
- reduce total and per capita energy demand on campus
- reduce total and per capita water consumption on campus
- incorporate life cycle assessment into decision-making for all construction projects



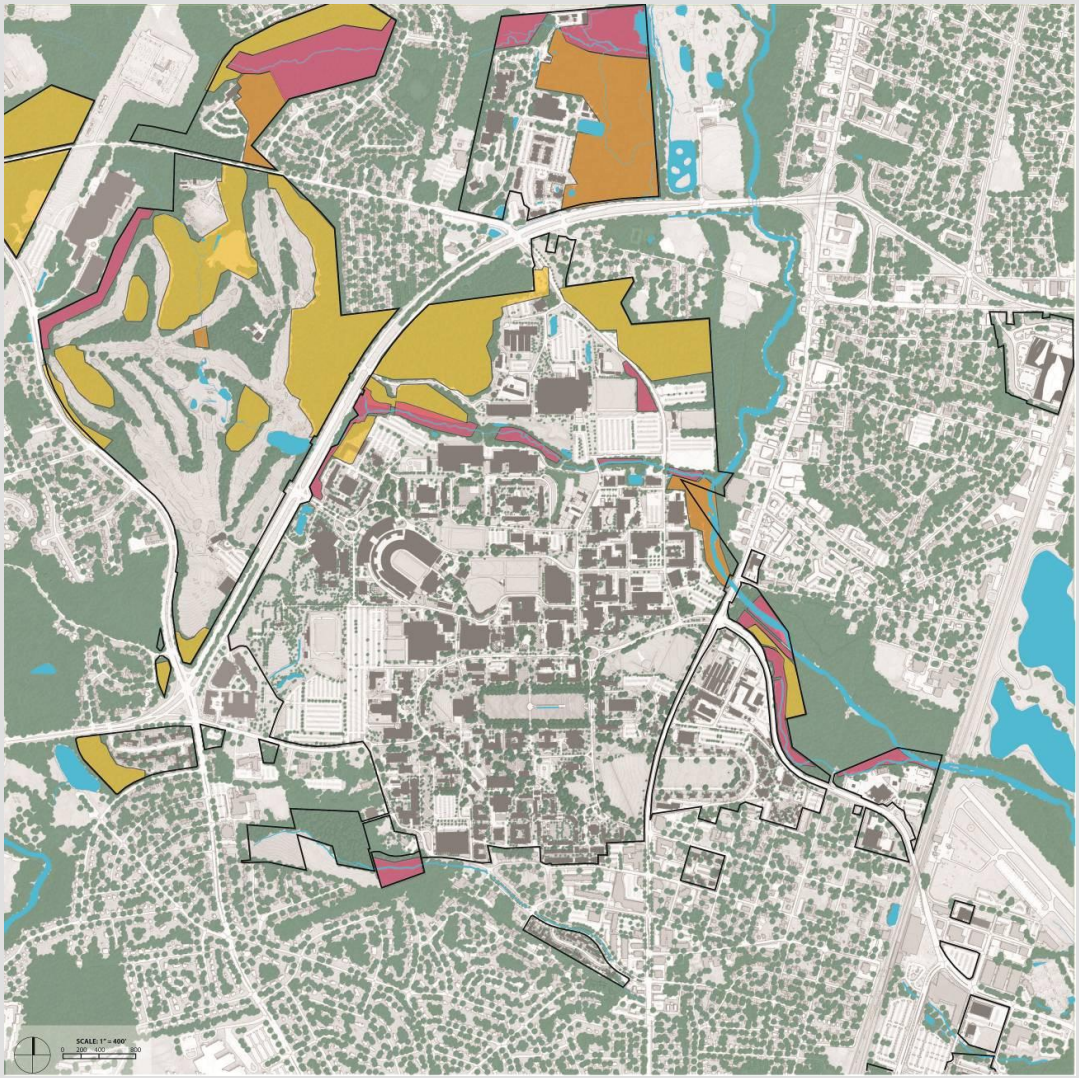


Global Issues

Environmental Site Design

- design with educational opportunities in mind to maximize use of campus as a living laboratory of sustainability best practices and to become a sustainable community

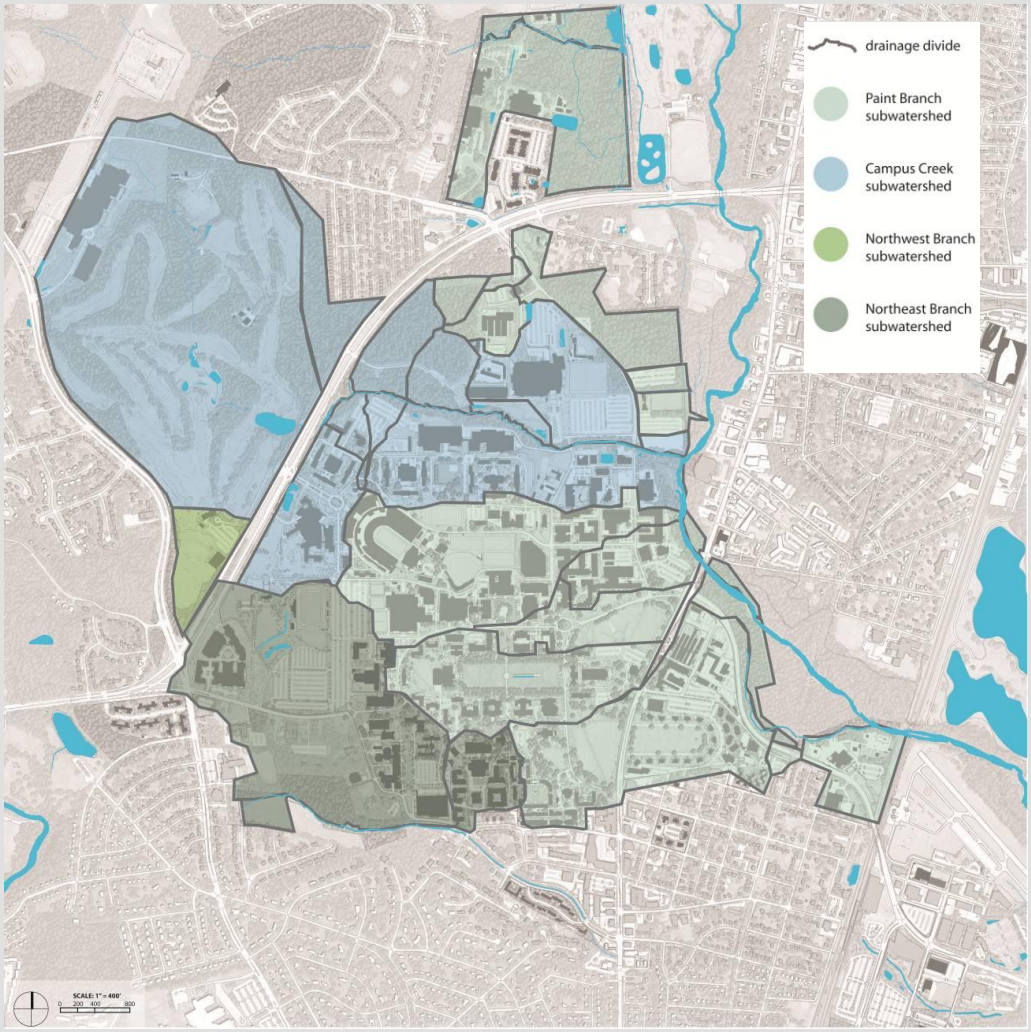
- realize and reveal the ecosystem potential of the campus landscape



Global Issues

Forest: additional conservation opportunities

- ❖ conserve and interpret the campus forest as a key component of the Climate Action Plan



Global Issues

Hydrology

- increase the ability of the campus natural hydrologic cycle to deal appropriately with storm water run-off
- plan and manage utility systems to avoid conflict with landscape and environmental improvements

Consultant Resource Reports

- Sustainability Framework Review : Ohme van Sweden & Associates / ARUP; January 2011
  - Performance Assessment and Enhancement":

" Overall, the university received highest grades in:

- Planning & Administration (Best Practice)
- Operation (Best Practice)"

"Opportunities for improvement include Institutional leadership and Stakeholder Engagement; with Government, industry, and foundations through research, policy formulation and information exchange in the area of sustainability as well as Greater engagement with the campus community in Administrative decision-making."

Consultant Resource Reports

- *Water Systems and Utilities Review and Recommendations*:
  Ohme van Sweden & Associates / ARUP; February 2011

- *Natural Systems Review and Potential Projects*:
  Coastal Resources, Inc ; March 2011

- *Environmental Site Design…..Non-Structural and Micro-Scale Practices*
  Site Resources, Inc.; March 2011


Questions/ Discussion

Email from Matthias Ruth to University Sustainability Council members regarding the FMP

Mon, Aug 29, 2011 at 9:55 PM

Re: Documents for Aug 30 Sustainability Council meeting

Dear Mark,

Thanks for sharing the updated link and apologies that I am out of town during the upcoming special meeting of the Sustainability Council to discuss the draft campus Master Plan.

Let me briefly share with you my excitement about the new Master Plan, especially the extent to which it embraces many of the sustainability goals the university community has discussed and endorsed over the years. I am particularly excited to see the intent expressed on page 12 to "1) retrofit existing buildings to reach the maximum level of energy efficiency and avoid construction of new buildings when possible; 2) construct necessary new buildings that are carbon neutral or as close as possible; 3) maintain all buildings to operate at maximum energy efficiency; 4) manage transportation in a way that minimizes and reduces carbon emissions to the extent possible; and 5) design, install, and maintain campus infrastructure to encourage and support responsible behaviors by the campus community, including recycling, composting, use of alternative modes of transportation, and reduced use of electric lighting and appliances."

On that page (12) we can also read that "Goals and strategies to meet these mandates are established throughout this plan", and indeed, many elements of both the broader sustainability agenda and the much narrower subset of issues surrounding carbon emissions reductions are addressed in vital places of the report. Yet, I do wonder whether those elements sum up to help us achieve carbon neutrality, as the University's Climate Action Plan calls for. Bringing the existing infrastructure and practices up to the required targets will not be impossible, but also not easy to do. Adding a considerable number of new buildings to the portfolio - especially equipment-intensive lab space - will make the carbon neutrality goal even harder to achieve, unless, of course, each new building has associated with it a clearly articulated and funded action plan to not add, on net, to the university's carbon balance.

Ideally, we would have such a detailed plan for each and every space addition, whether newly built, rented, leased or otherwise acquired. Developing such a plan will require a high degree of technical and managerial creativity and commitment. In contrast, without such a plan, the broader sustainability goal of the campus would be compromised and a great opportunity would be lost to really demonstrate our commitment to "realize the institutional vision of excellence" and the ability to be "cohesive, comprehensive, and forward-looking".

I would hope that with the adoption of the Master Plan comes also the adoption of a clear policy and procedure to keep university carbon emissions from rising. I am happy to work with you, the Office of Sustainability, the Sustainability Council and the larger University Community to help us all realize the many improvements promised by this bold plan.

Cheers
Matthias

UNIVERSITY OF MARYLAND
DEPARTMENT OF ATMOSPHERIC & OCEANIC SCIENCE

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30 August 2011

Critique of University of Maryland Facilities Master Plan, 2011 – 2030

First, hats off to Facilities for the wonderful accomplishments under the 2001 – 2020 Master Plan. Since my arrival at UMd in Sept 2007, I have seen significant tangible improvements in classrooms (permanent computers & projectors), offices (efficient lights; motion detector control), automatic reduction of heating/cooling on weekends, etc. The designation of the of the campus as an Arboretum and Botanical Garden is a significant accomplishment and the commitment of the Master Plan to achieving Carbon Neutrality is a remarkably important goal.

I offer the following suggestions for improving the draft FMP:

I. A mechanism for oversight would add "teeth" to the plan

Plan lacks any words on "oversight" of the implementation of the ideas. Unfortunately in academics (I can cite many examples), there is often "burn out" after Strategic Plans are written. Often, bureaucracies tend to "do their thing" rather than adhere to their well articulated plan.

For all its warts, my primary funding agency, NASA, has been extremely successful in carrying out its mission due to a well structured, regular mechanism for oversight and review. Some mechanism for oversight and review would lend confidence that this plan may be followed.

II. Phased milestones and articulation of priorities would be most helpful

Plan lacks any priorities or phasing. As written, it is a "laundry list" of ideas. A laundry list is difficult to evaluate without milestones and priorities.

For instance … once the Purple Line is in place and/or once we have in place SAFE bicycle egress from surrounding neighborhoods, there could be a policy of no new parking as buildings are constructed (the Harvard University policy, due to the nearby Red Line). Until at least one of these two developments occur, the policy could be no new above ground open air parking as new buildings are constructed, but that each new building must include, with its price tag, an appropriate amount of new underground parking spots (the Caltech policy). The practice fields along Stadium Drive are prime candidates for synergistic below ground parking, as was done at Caltech in the past 5 years.

III. A mechanism for feeding "bottom up" ideas into the plan would be most beneficial

This plan, and Facilities in general, is very much "top down". I laud Facilities for the efficient lights and motion detectors recently installed as well as class room upgrades. However … my colleagues and I had no advance knowledge of any of these developments. I happened to be working the evening when the motion detectors were installed, so could request a ceiling sensor rather than a door switch sensor. I am now the envy of all my colleagues, who were stuck with the door sensor (for them, turning their lights off & on now requires a push of a button rather than a flip of a switch, which I retained). For the classroom, the electronic upgrade involved a nearly complete covering of the white board ☹. Would have been better had the white board been moved or if the screen were positioned to one side or the other, rather than right in the middle of the white board.

There are many talented people on campus with wonderful ideas! The FMP would benefit tremendously from a mechanism for these ideas to flow into the actions taken over the next 20 years. Perhaps each department could have a Facilities Representative, who would serve on a College Level Facilities Committee, that would meet every 6 months with Facilities Management to engage in two way discourse on the implementation of the FMP. Hard for people in charge to know, for instance, that many faculty prefer to still have a light switch in their office, or that we still use the white board in an electronic classroom, without this type of exchange. While this is a minor example in the grand scheme of Facilities, it is meant to illustrate the need for a mechanism to allow two way flow of information.

IV. Innovative use of market-mechanisms is lacking

In the present environment, with East Campus as a prime example, the developer has no financial incentive to build energy efficient buildings. For instance, low earth geothermal (which must be done at time of building; this can not be retrofit in an economically viable manner) and controlled air handling drive up the cost of the building.

The University should devise a market mechanism whereby the developer can recoup the cost of innovation. For instance, a "green fee" for tenants, used to pay off a bond purchased by the developer for low earth geothermal, efficient air handling, etc based on Measured and Verified reduced energy costs, would be win/win and put us on the map for innovation. Words to this effect do not appear in the FMP.

Rather than prohibit Freshman and Sophomores from parking on campus, simply charge them more for this privilege.

The market can move people and with a little creativity, can move mountains (i.e., a $630 K grant facilitated private investment of over $3 million (my estimate) in the Severn Building Solar Array that will be tremendously beneficial for the environment AND save UMCP significant expenditure of $$$ for energy over the next two decades. The FMP would benefit from some attention to the nnovative use of market-mechanisms.

V. A plan for Cole Field House and large capacity lecture halls is needed

Will Cole be converted into a station for the Purple Line? I think a great use of this facility would be train station on lower level, and large capacity, perhaps even ~1000 seat lecture halls on upper level, with a competed retail space in the middle. Regardless, **the lack of any mention of the future use of Cole Field House is a striking omission.**

One constant complaint among faculty who teach large survey courses is the lack of large lecture halls. Many colleagues repeat the same lecture twice a day, to accommodate the number of students enrolled in their class. This is strenuous and stands in the way of research excellence. Other classes are broken into "sections", with different people attempting to teach the same material to students supposedly enrolled in the same course.

At present, the fight for large capacity lecture halls is carried by Departments. This is not optimal … if there is a 1000 seat lecture hall built by a particular department, it will be underutilized. The University management should take on this responsibility, which is not discussed in the draft FMP, to address the need for future large lecture halls. I have chosen to link this to Cole Field House because I believe the upper level would be a natural home (sloped floors in place) for such halls.

VI. Measurement and Verification Would be a Giant Step Forward

Would be nice to see effort devoted to a quantification of the energy savings in energy use that result from retrofits focused on improvements in energy efficiency (lights, air handling, insulation, etc). The first step is development of a baseline. Would be great step forward to have an "energy use profile" of campus buildings and to have a quantitative breakdown of the savings realized by various actions.

Students, perhaps guided by the Sustainability Office or Faculty invested in the new Sustainability Minor, are the ideal people to implement a cost benefit analysis of various measures.

VII. I Dream of the Day We Will Have a Univ of Md FMP rather than a UMCP FMP

The use of "flagship" is a bit over the top in the draft document ☺.

I am not a big fan of the use of RECs to obtain carbon neutrality for new buildings. I state this as an Officer of a Solar Energy LLC (University Park Community Solar LLC) that has decided, for now, to not sell our RECs due to low market demand Use of RECs in the near term is fine, but on the long term, to achieve carbon neutrality, **we must have a campus that derives its energy from sources that do not release CO_2 to the atmosphere.**

Unlikely that we can ever be truly carbon neutral on the College Park campus. However, UMES is where wind turbines can be placed! Other campuses in the UM system, such as UMBC where this is much less demand for land, is where concentrated solar PVs (Sterling cycle system) can be placed. **I envision the *Univ of Md system* one day being able to achieve the entirety of its energy needs without releasing CO_2 to the atmosphere.**

Other thoughts:

There are words in the FMP about restricting parking for those who live within 1 or 2 miles of campus. But, *there is no safe way to ride a bike to campus from my neighborhood of University Park to campus*. Once this is in place, perhaps we can have a meaningful dialogue on such restrictions. To make this dream a reality, must engage mayors of Berwyn Heights, Greenbelt, and University Park as well as the mayor of College Park, on the development of a means to bridge particular intersections and limited stretches so that we have a contiguous path for bicycle riders to reach campus without the possibility of a high speed collision with an automobile. Regardless, on an overall carbon intensity basis, we should be encouraging people to live close to where they work. Must think very, very carefully about ever imposing a penalty for those who live close to work, as many folks need a car to carry out their daily tasks.

The FMP (page 25) mentions possible use of energy generation via geothermal. The only geothermal viable for our location is low earth geothermal heat pumps which, rather than generate energy, greatly reduce heating and cooling costs. Rather than "study" low earth geothermal (page 25), I think we should mandate the use of low earth geothermal for all new buildings.

Finally, there is no mention of energy use gains via efficient air handling appears in the document. This is low hanging fruit that almost always provides a very strong return on investment.

Sincerely,

Ross Salawitch