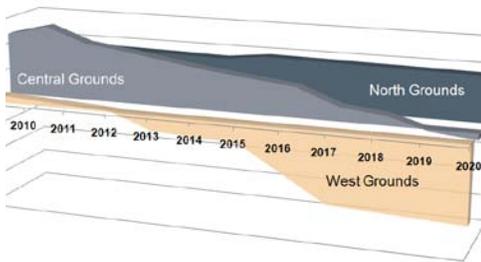


Parking Availability Projection with 10-year TDM



Availability Projections

### MPC Members

David J. Neuman, Chair  
Architect for the University

Arthur Garson, Jr (Richard Minturn attending)  
Executive Vice President and Provost

Nancy Rivers  
Chief Of Staff for The President, Associate Vice President for Administration

Ed Howell (Kevin Fox attending)  
Vice President and CEO, UVA. Health System

Pat Lampkin  
Vice President and Chief Student Affairs Officer

Craig K. Littlepage  
Director of Athletic Programs

Yoke San L. Reynolds  
Vice President and Chief Financial Officer

Colette Sheehy  
Vice President for Management & Budget

Kim Tanzer  
Dean of the School of Architecture

### Ex-officio

Wayne Cilimberg  
Director of Planning, Albemarle County

Ed Smith  
Albemarle County Planning Commission

Genevieve Keller  
Chair, Charlottesville Planning Commission

Judy Maretta  
Director of Space and Real Estate Management

Julia Monteith, AICP, LEED AP  
Sr. Land Use Planner, Office of the Architect

Donald E. Sundgren  
Chief Facilities Officer

Jim Tolbert (Ebony Walden attending)  
Director of NDS, City of Charlottesville

Rebecca White  
Director of Parking & Transportation

Ida Lee Wootten  
Director of Community Relations

### Student Members

Zachary I. Manis  
Graduate Representative

Brandi N. Cox  
Undergraduate Representative

# Master Planning Council (MPC)

## MEETING NOTES - May 19, 2010

Office of the Architect for the University

## Summary: Transportation Demand Management Phase II, UVA Academical Village Restoration Master Plan and 2009-2010 Grounds Improvement Fund Projects

### Meeting Agenda

- Summary of the Transportation Demand Management (TDM) Phase II Program by Julia Monteith, Office of the Architect and Rebecca White, Parking and Transportation
- Overview of Academical Village Restoration Master Plan/Building Information Model (BIM) by David Neuman, Office of the Architect
- Summary of 2009-2010 Grounds Improvement Fund (GIF) projects by David Neuman, Office of the Architect

### Presentation Summaries

#### Summary of the Transportation Demand Management (TDM) Phase II Program by Julia Monteith, Office of the Architect and Rebecca White, Parking and Transportation

Julia Monteith and Rebecca White began the meeting with a presentation on the University's recent Transportation Demand Management (TDM) analysis. TDM planning began at the University in 2007 in conjunction with the Grounds Plan, when Phase I of the TDM program was completed by Vanasse Hangen Brustlin (VHB). The Phase 1 program provided a matrix of TDM program components that were, or could be implemented by the University in order to achieve its TDM goals. The matrix included 24 TDM program measures, developed for the unique needs of UVA. The Phase 1 Steering Committee recommended implementation of the plan, and since 2007, 13 of the 24 TDM measures have implemented.

In 2009 the University initiated Phase II of the TDM program, again using the services of VHB. Phase II was completed in 2010 and expanded on the work done in Phase I by developing a 5-year implementation plan for the University to meet the aggressive TDM strategy that was adopted in 2007. A cost/benefit approach was taken in developing the 5-year implementation plan by analyzing the effects of future growth at UVA with and without TDM. In addition, the carbon savings of implementing TDM were calculated.

Early in the Phase II planning process, it was determined that the focus should be on faculty and staff commuting to Grounds rather than the student population which lives on or adjacent to Grounds. Through analysis, it was estimated that 95% of students come to Grounds by walking, biking or taking the bus. Once on-Grounds, the student, faculty and staff population generally circulate by walking, biking or using the bus. Conversely, the majority of faculty and staff, for both the University and the Health System, commute via single occupancy vehicle (SOV) and park in one of the many parking lots or structures on Grounds. With this understanding of com-

muting patterns, a strategy of focusing on reducing the number of SOVs through car-pooling and ride-sharing was adopted by the Phase II Steering Committee. The graphic below shows the timeline for implementing the recommended TDM strategy and the components.



In order to rationalize the proposed Phase II TDM strategy, considerable effort was made to characterize the current UVA commuting population, project its growth over the next 10 years, and calculate the added cost to the University of absorbing a growing number of commuters. In addition to adding to the carbon footprint of UVA, greater numbers of SOV commuters would generate the need for additional parking structures at a significant cost to the University in addition to impacting land use. For this reason, any effort to reduce the demand for parking at UVA will have the effect of delaying the need for additional parking structures, and encourage the highest and best use of University land.

To figure out the costs associated with future parking demand, it was necessary to characterize the present parking situation. There is currently a surplus of parking on Grounds. Part of this surplus is a buffer that allows for UVA's flexibility to manage parking capacity on Grounds in support of event parking, parking availability, and operations. As such, the surplus buffer is not distributed equally across Grounds. North Grounds has a 1,000 space buffer at JPJ/U-Hall to provide a buffer for event parking and to avoid additional transit costs associated with increased use. Central Grounds, which includes the Health System, operates with a 5% surplus buffer (approximately 276 spaces), so that patrons can find a parking space. Similarly, West Grounds also operates with a 5% surplus buffer (121 spaces). Both population growth and Capital projects impact parking. For this reason, the 10-year capital plan was used to estimate the loss (or gain) of parking due to future construction. It was estimated that North Grounds will see the addition of 41 Spaces, Central Grounds will lose 120 Spaces and West Grounds will lose 467 Spaces.

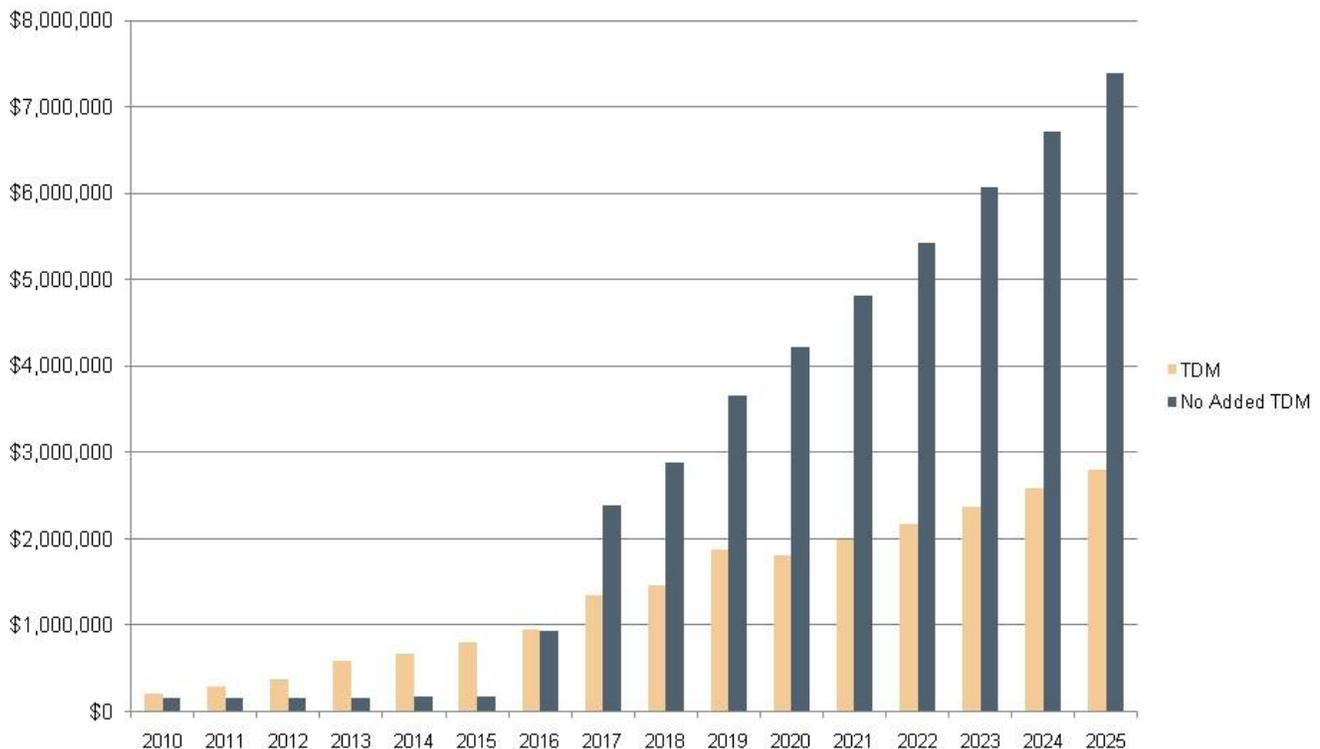
With the baseline calculation of parking established, the next step in the analysis was to estimate the mode-split of commuters to UVA. Using a number of data points that included surveys and employee address geocoding, it was estimated that currently 78.1% drive alone to the University, 10% carpool and 11.9% use an alternative mode of transportation. The Phase II TDM strategy is designed to reduce the percentage of commuters that drive alone to **70.4% in 2015 and to 64% in 2020**. The number commuters that carpool will increase to 17.7% in 2015 and 25% in 2020. These mode-split changes equate to an annual reduction of 1.3% among drive alone commuters and an

increase of 1.3% per year for car poolers.

The final input in the future parking demand analysis is the overall growth rate of the University. The steady state growth rate that the University has agreed upon with the state of 150 students per year was used to determine the additional faculty and staff that would be employed by the University. It was assumed that 70% of these new employees would be SOV commuters.

The analysis showed that a considerable decline in surplus of parking will occur on Grounds if the TDM program is not implemented. The surplus parking currently in West Grounds will be utilized by 2012 and will be at a deficit of approximately 700 spots by 2020. Similarly, the surplus parking currently in the Central Grounds will be utilized by 2015 and will be at a deficit of approximately 600-700 spots by 2020. Finally, the surplus parking currently in North Grounds will continue, though it will drop to approximately 250 in 2020. Implementing the TDM program will lessen the deficit of parking considerably. West Grounds will have a deficit of less than 600 parking spots, Central Grounds will have a slight surplus of parking and North Grounds will continue to have a surplus of greater than 300 spaces. In total, by 2020, there will be a parking deficit on Grounds of nearly 300 parking spaces with the TDM program, but without TDM, the deficit would be nearly 1,100 spaces. The reduction in the parking deficit means that fewer new parking spaces are needed and their need is delayed. This results in considerable cost savings, as shown in the figure below:

Annual Expenditures – 10-Year TDM vs. No Additional TDM



## Financial Projections



To conclude, it was emphasized that the Phase 2 TDM implementation plan is funded for the next five years, but the overall plan is a 10-year process. The projections and analysis show that TDM extends the availability of parking and reduces the amount of inventory shortfalls. Finally, while the TDM implementation is funded for 5 years, the University should be prepared to commit to another 5-years in 2015. In addition to the programs already in place, the next steps for implementation will be a car-pool matching service and the hiring of a full-time UVA transportation (TDM) coordinator.

## Overview of Academical Village Restoration Master Plan/Building Information Model (BIM) by David Neuman, Office of the Architect

The Office of the Architect and Facilities Management are currently working with TEC Inc. to create a Building Information Model (BIM) tool for the Academical Village. The BIM can be based on a wide variety of input information. In this case, the inputs include detailed plans and elevations, as well as photos and field verification. Currently, TEC has modeled the architectural aspects of one building, Pavilion II, in BIM. It is envisioned that a fully functioning system will contain models for each building in the Academical Village, and be linked to University's GIS system and maintenance management system. The BIM of Pavilion II can be made accessible to the average user through a web application that is password protected and contains 4 levels of data access in order to maintain data integrity. The user of the application can access the BIM data, as well as other compiled materials (such as photos, scanned blueprints and historical documents) using a map interface. The BIM model that was created for Pavilion II was created in the program Revit. A realistic 3D model was achieved using the rendering capabilities of Revit. More than just a pretty picture, each component of the Pavilion (doors, windows, walls, moldings, etc) is recognized in the BIM as having unique attributes. Thus, characteristics of the components can be defined and managed within the BIM. Common characteristics could be age, material, and color.



The next step in the development of the BIM is to model the Mechanical, Electrical and Plumbing (MEP) systems of Pavilion II. The long term goals for the system are 1) Create a fully functioning BIM for the Academical Village that incorporates architectural, MEP, landscape and other historic details. 2) Integrate the BIM with other UVA information systems (GIS, Maintenance Management System and Space Management 3) Develop methods for maintaining the BIM, so that the information remains accurate and up-to-date and 4) Utilize the BIM to further Academic Research and Public Outreach as well as careful upkeep of the World Heritage site.

## Summary of 2009-2010 Grounds Improvement Fund (GIF) Projects by David Neuman, Office of the Architect

The Office of the Architect provided an overview of the Ground Improvement Fund (GIF). As background, GIF is financed by a 1.5% assessment to capital projects in the Academic Division, Medical Center and College at Wise not to exceed \$500,000. In the first year GIF apportioned \$1,000,000 for projects including improvements to pedestrian and bicycle facilities, lighting, site furnishing, plantings and public art. Projects are recommended annually by Executive Review Committee for approval by the President. Projects are evaluated according to the following criteria:

- Eliminates or prevents an existing health, environmental or safety hazard
- Satisfies a particular academic or auxiliary program need,
- Reduces operating budget expenses,
- Supports campus planning and sustainability objectives,
- Provides exterior infrastructure improvements; e.g. bicycle/pedestrian facilities, lighting, etc.
- Enhances the landscape and/or aesthetic quality of the public domain, including the addition of public art.

Since 2008, 26 projects have been initiated using GIF. Highlighted projects for 2009-2010 include:

- A plaza and full ADA accessibility at the UVA Chapel
- Vehicle screening between Hospital Drive and the Long Walk
- Fixed bike parking on the lower Lawn in front of New Cabell Hall
- Improvements to McIntire Amphitheater, including the construction of a crushed stone walkway at the base of the seating area and improvements to the alley behind the stage
- Improvements to the McCormick Road Bus Stop in front of Alderman Library
- Construction of a stairway at the Leake Building that improves access to the bus stop on McCormick Road
- Improvements to the Hospital Drive turnaround and the Varsity Hall Landscape
- Various Pedestrian Safety enhancements including reconfiguration of the crosswalk at Newcomb Road and University Avenue and installation of LED in-ground crosswalk lights on Leonard Sandridge Drive
- Lighting replacement in Pavilion Alleys using historically accurate pole and globe light fixture

