

Master Planning Council February 2013

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Office of the Architect for the University

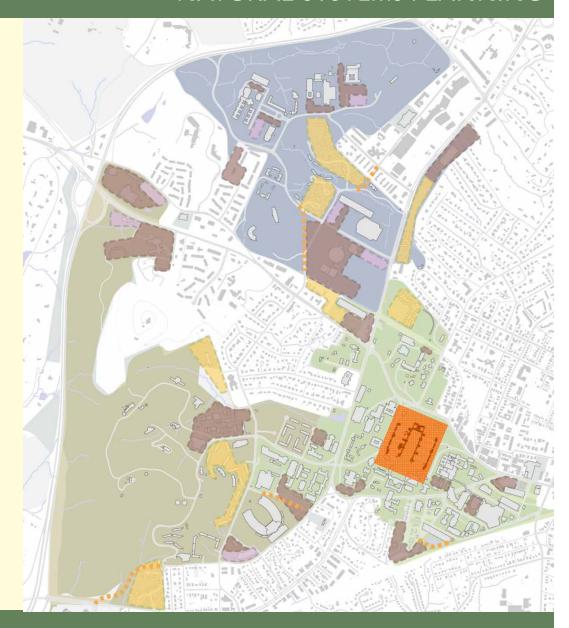


Environmental Health and Safety



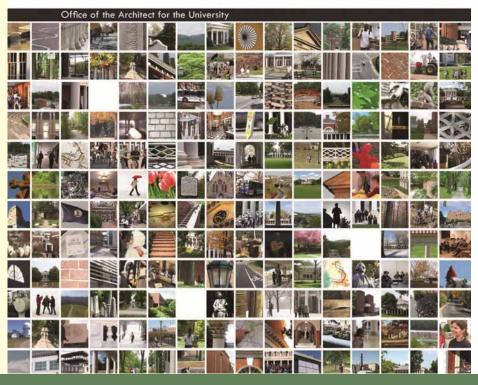
- Environment
- Connectivity
- Multi-Disciplinary Learning
- Context





Grounds Plan Principles







Detailed Studies in Coordination with the Grounds Plan

Carbon Sequestration

(CO2 reduction)

Tree Canopy Expansion

Forest Diversity

Stormwater Quality

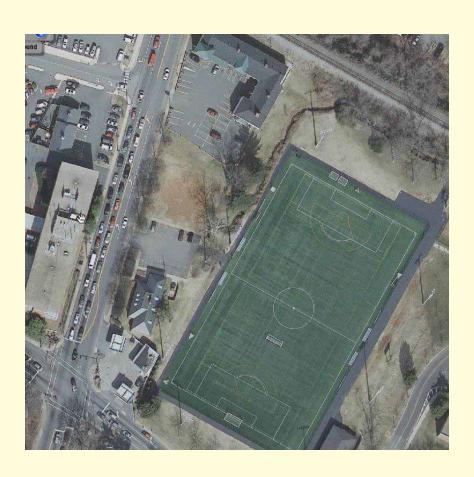
Stormwater Quantity





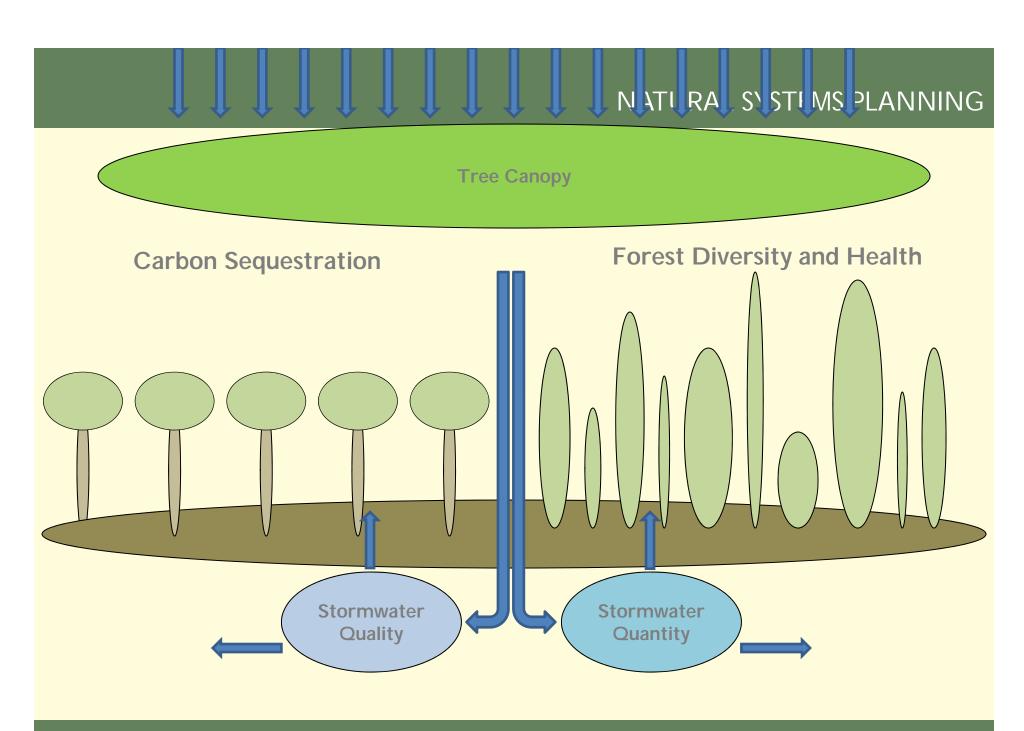
Recent Regulatory Actions are giving us direction

- TMDL's for Chesapeake Bay and local streams
- Enhanced Stormwater regulations for development
- New MS4 Permit –
 Significant new
 requirements (2013)
- Greenhouse Gas reporting is a reality

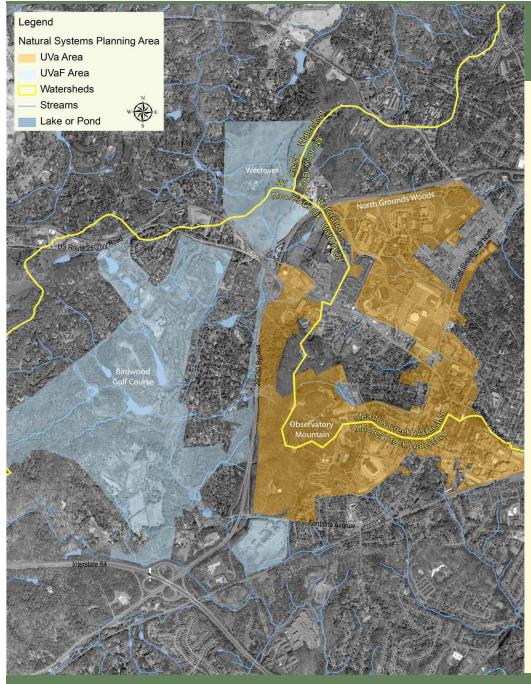


Provides a framework to integrate regulatory and sustainability goals allowing UVA to continue to grow

- Establish resource management direction and goals
- Provides a written framework for cooperative interactions with the local community
- Provides a written plan to document compliance



Interrelationship of Systems



Planning team included multiple entities and disciplines including:

- Office of the Architect
- Facilities Management
- Environmental Health and Safety
- UVa Foundation
- Academics & Research
- TMDL Regional Planning Team

Geographic Scope



Carbon Sequestration



Stormwater Quantity Reduction



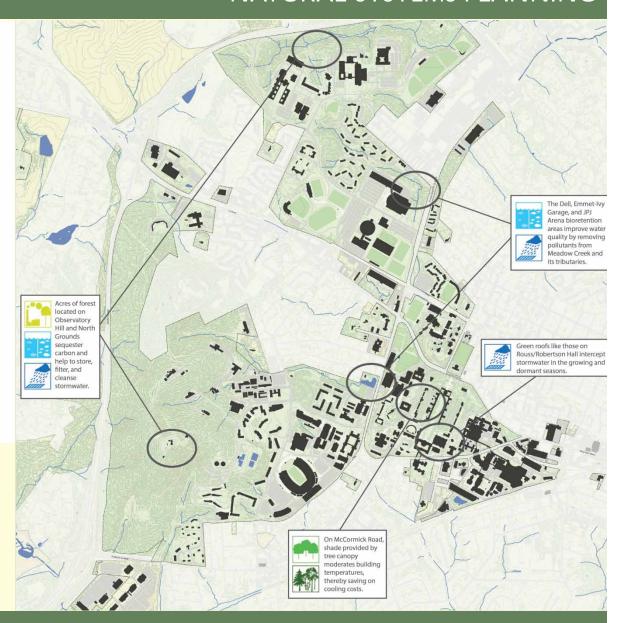
Stormwater Quality Improvement



Tree Canopy Expansion



Tree Diversity Improvement







- UVa is a partner in the program to mitigate the total maximum daily load (TMDL) for the Chesapeake Bay
- UVa has been implementing its Stormwater Master Plan since 2001 across Grounds
- UVa has an active stormwater banking system for its two watersheds Moore's and Meadow creeks
- UVa has been implementing low impact design (LID) installations across Grounds such as stream daylighting & restoration green roofs to improve stormwater quality and quantity
- Cisterns and are used under buildings to conserve water
- Stream bank stabilization and constructed wetlands implementations have improved the stormwater quality in our two watersheds

Stormwater Quality and Quantity





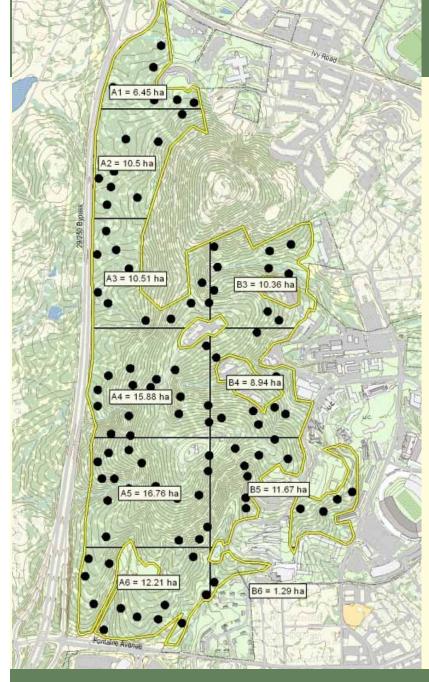
- Water quality monitoring programs are actively used on Grounds to assess beneficial results for LID implementations
- Construction sites are managed with best management practices to reduce stormwater pollution
- Use of fertilizers on Grounds have been minimized to reduce stormwater pollution

Stormwater Quality and Quantity



- Reduce greenhouse gas emissions by 25% from 2009 levels by 2025
- Forested land sequesters metric tons of carbon per year
- Forested lands of Observatory Hill, North Grounds, and Foundation properties support tree diversity and provide habitat
- UVa uses compact development through infill on Grounds to retain green spaces and the systems they support
 - Tree canopy on UVa grounds covers over 50% which reduces heat island, and mitigates stormwater quantity and quality
- UVa has an established tree replacement program that has been in effect over 40 years and trees on Grounds are managed and supported by the UVa arborist

Forest Diversity and Land Management

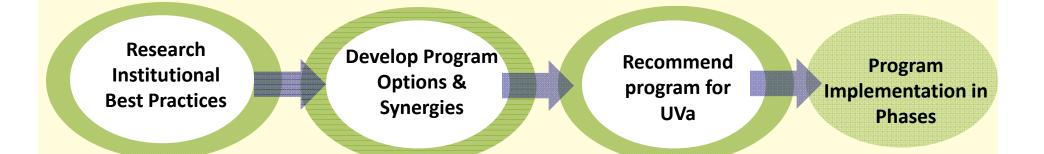


- Tree diversity research sites developed for randomized sample on Observatory Hill, Fall 2011
- Forest Sampling course set up research sites with student teams, Spring 2012
- Analyze tree diversity and advise at to how diversity could be improved, 2013

Tree Diversity







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ŧ							No practice		ţ			
ì	1b Undertake active forest management		L	6	moderate-hard	w	1		1	+		
ł							Passive approach	to No redevelopment as designated in the Grounds	ļ			
	1c Restrict future development		L	- 5	hard	w	l .	Plan + significant designation in the HPEP	+			
ŧ							No UVa practice	No active UVa practice - RTI	ļ		į	
1d Establish O-Hill trail maintenance		N	2	moderate	w	!	Se serious with come	!	+			
Ė	···						No practice	maintenance Services have been offered	ţ·····		·····	÷
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i							l	Practiced on edges of	ļ		į	
	1f Define/Expand invasive removal program		М	3	easy	w		Grounds	<u>ļ</u>	+	į	<u> </u>
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i	2c Identify locations for tree infill/banking		N	4	easy	U		- spot locations only	i			1
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Analysis of future program implementation included multiple factors:

- Time Frame
- Priority Ranking
- Funding
- Ease of Implementation
- Urban/Woodland
- Current Practice
- Policies
- Precursors

Program Development Data Tracking

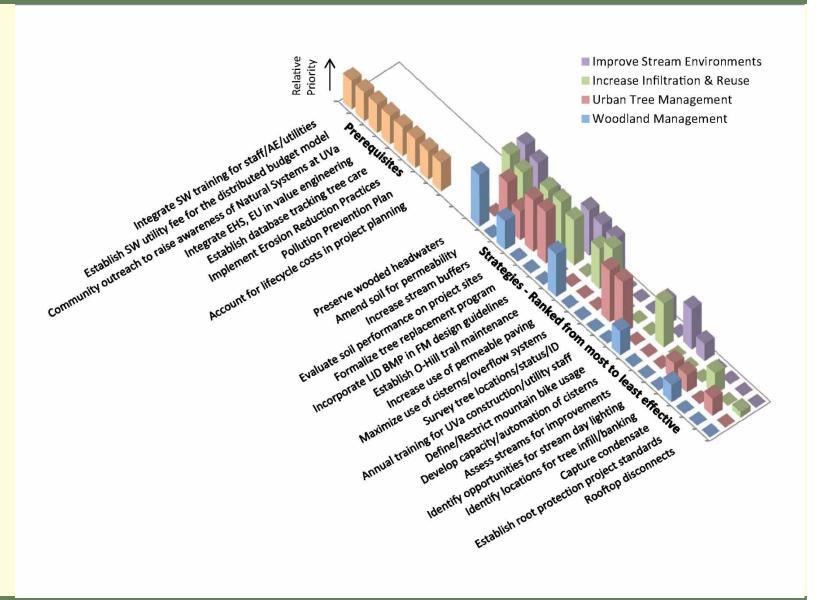


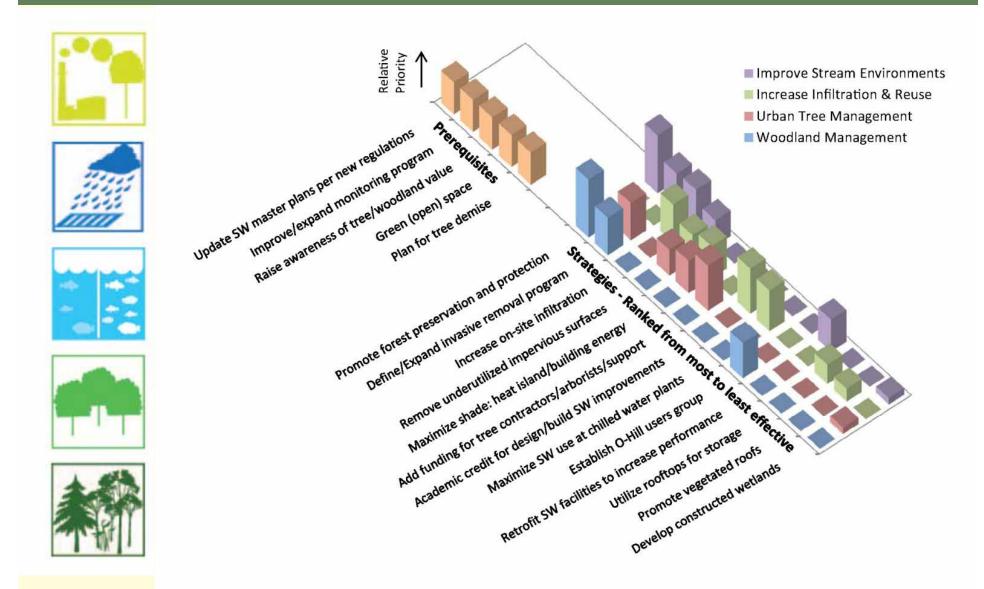














1 acre of woodland sequesters 3.3 metric tons of carbon per year. UVA and neighboring UVAF lands include 1,100 acres of forest - equating to 3,630 metric tons of carbon reduction per year. This benefit comes at no cost to the University and the carbon offset equates to an investment of \$25 million in solar panels.





These same 1,100 acres of forest also help to store, filter and cleanse stormwater. Forest landscapes are estimated to retain 45% more stormwater on-site and infiltrate 15 to 20% stormwater into the ground. UVa and neighboring UVaF forests retain up to 220 tons of sediment per year from impairing areas streams and rivers.





Bioretention areas improve water quality by removing pollutants - 20% nitrogen, 45% phosphorous, 60% sediment per year at UVa. The Dell, Emmet-Ivy Garage and JPJ Arena bioretention basins treat 65 acres of impervious cover and remove pollutants from Meadow Creek and its tributaries.



Green roofs intercept 70-90% of stormwater in the growing season and 25-40% in the dormant season. The University currently has 75,000 square feet of green roofs which intercept 1,375,000 gallons of stormwater per year.





Tree canopy provides valuable shade that saves on cooling costs and lessens the heat island effect that is inherent to development. Tree canopy at UVa moderates temperatures by 5-9°F in the summer.



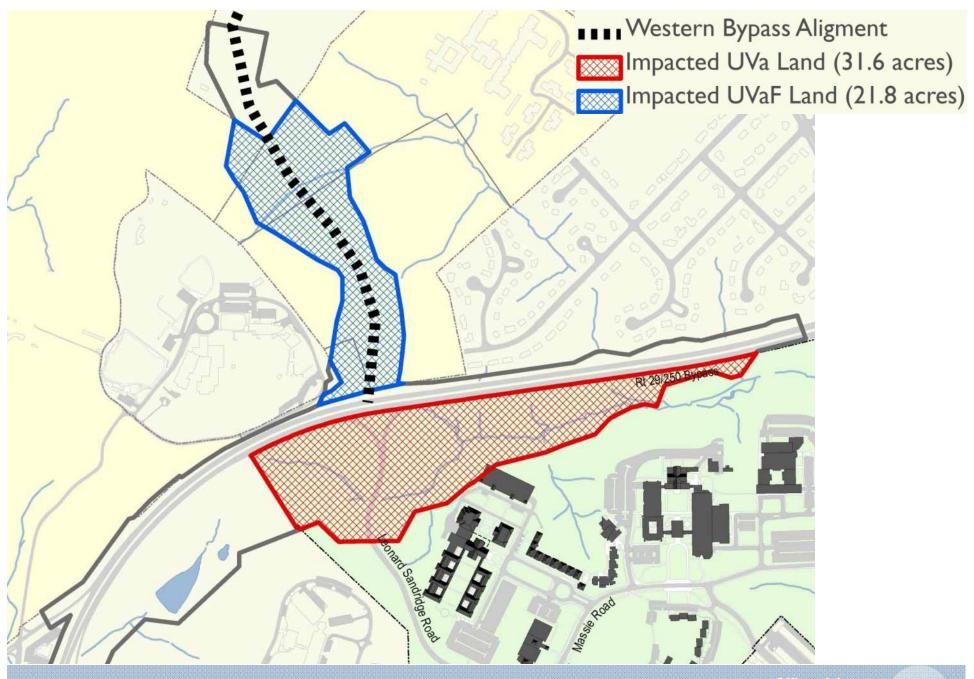




Regardless of their size at maturity, trees provide a net positive benefit for carbon sequestration, stormwater storage, stormwater and air pollution removal, and energy reduction savings. For UVa, the benefit to cost ratio (BCR) of 2.4 means that for every \$1 spent on tree care, \$2.4 in benefits are created.

Proposed State Route 29 Western Bypass Status Report: Feb 2013





Right of Ways: UVA / UVaF Properties

Office of the Architect for the University

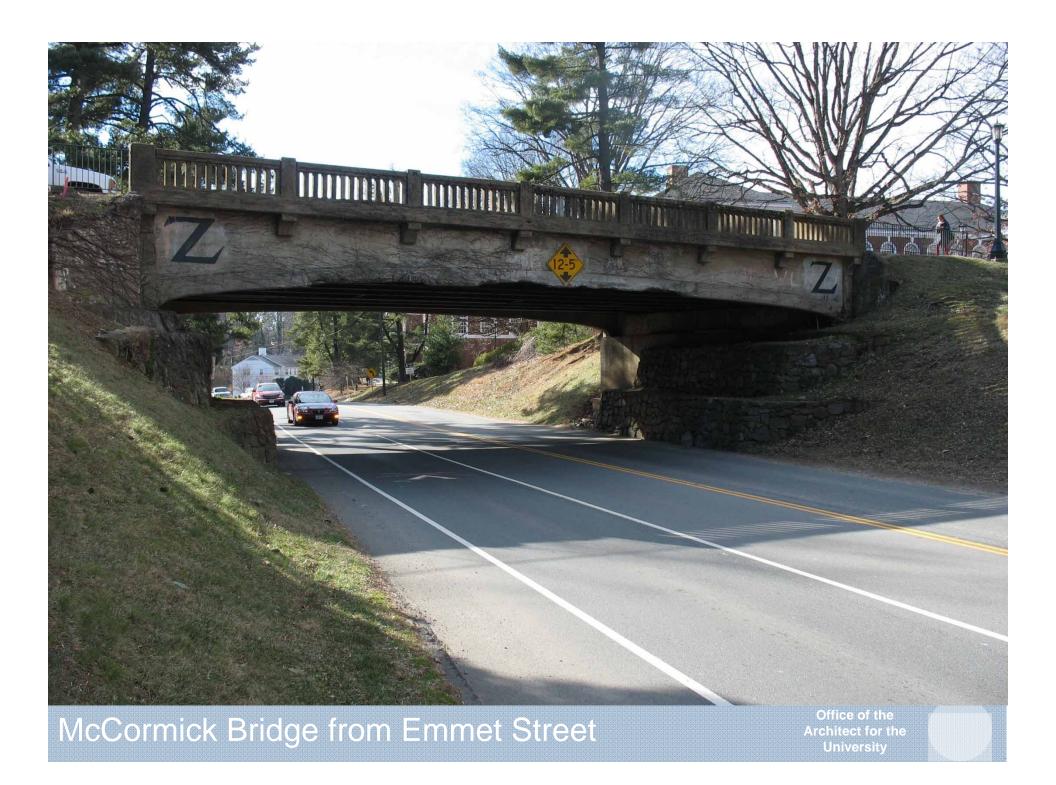
- FHWA environmental evaluation In process
- Completion of project design Mid-2013
- Approval of required permits Oct 2013
- Estimated construction start Nov 2013
- Completion of property acquisition Feb 2014
- Project completion & Widening 29 North 2017

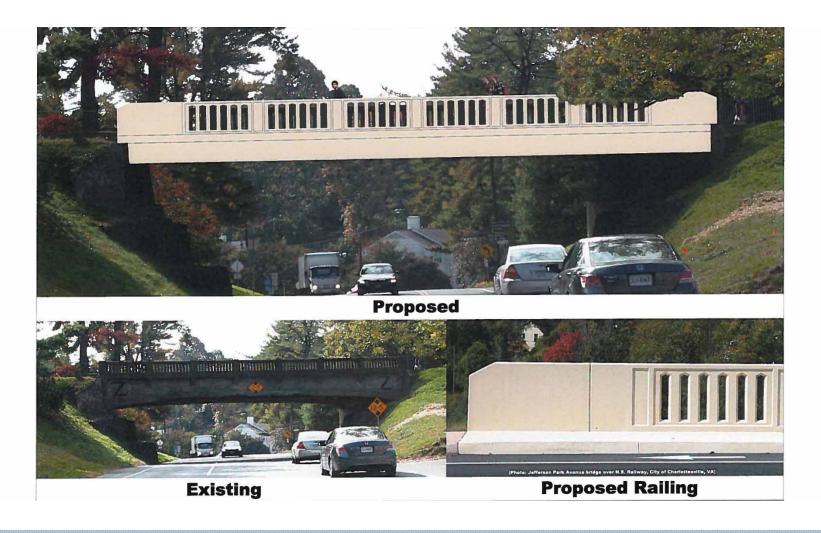
UVa's formal comments sent to VDOT in Oct 2012:

- Transportation: traffic forecasts, impacts to UVa roads and nearby uses
- Noise: impacts to UVa nearby uses
- Air Quality: analysis of impacts
- Stormwater and Water Quality: stream and forest impacts, loss of ecological and stormwater benefits local, regional, and TMDL mitigations

McCormick Bridge Replacement





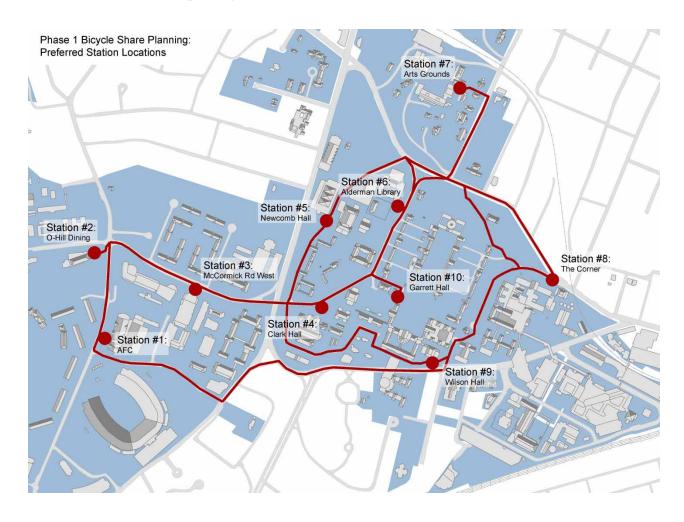


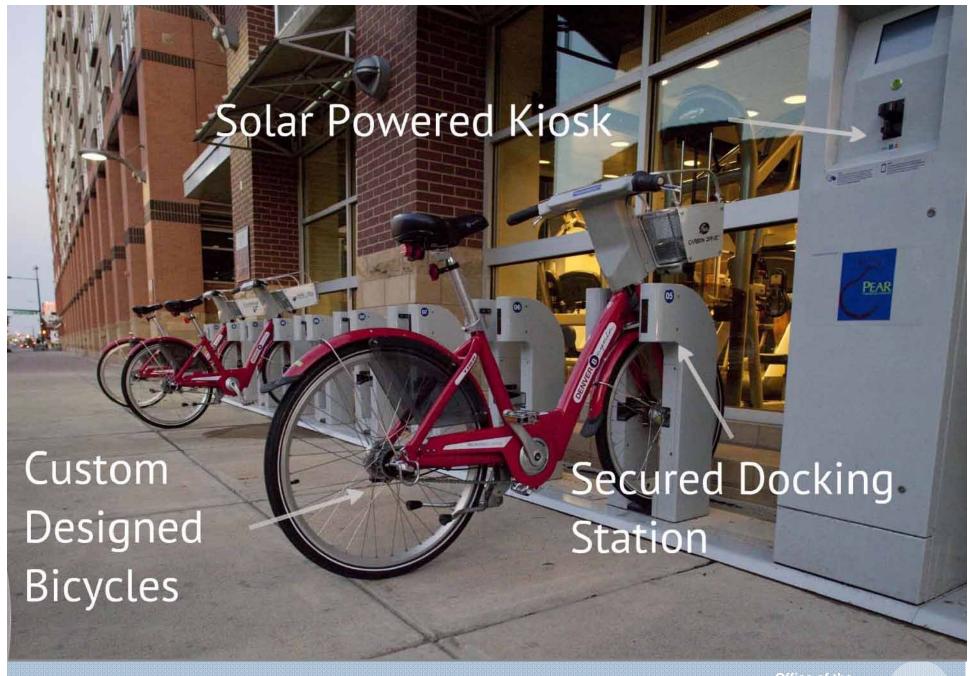


- Project begins May 2013 following graduation
- Project completed August 2013 prior to start of classes

No access on bridge during construction

UVa Bikeshare





Bicycle Sharing Station

Office of the Architect for the University

UVa Bicycle Share RFP Schedule, 2012-2013		SEP		ОСТ		NOV			DEC			JAN			FEB		3	MAR		APR		PR			
VDOT Coordination on project/funding	Sep					+				\perp	+					\dashv		+	+			+			+
SP issues revised goldenrod to VDOT	Sep			\Box		\top		П				\Box		†	П			†		П	\Box	\top			\top
Develop RFP	Sep 15 - Oct 19							П	\top		\top	H			П		\top	\top	1		П			П	\top
Visit DC bikeshare program	Oct						\top	П	\top	\top				\top	П			\top		П		\top			\top
Research other bikeshare programs	Oct - Nov													\top	П			\top				\top			\top
VDOT RFP Review	Nov - Jan			П											П			\top				\top			\top
Committee selection	Nov					\top									П			\top				\top			\Box
RFP revise and revision	Jan 1 - 18																								
Issue Requisition	Week of Jan 21							П					T												
Issue RFP	Week of Feb 11							П							П										
Pre-proposal conference	Week of Mar. 4			П																				П	T
Pre-proposal questions due	Week of Mar 11			П														\top						П	T
Responses to RFP due	Week of March 18			П														\top						П	\Box
Proposal review complete/short list	Week of March 25						T	П										T							\Box
Interviews	Week of April 1						T	П										T							T
Provider selection	Week of April 1							П							П					П					\Box

Selection:

Rebecca White, Director, Parking & Transportation Jonathan Monceaux, TDM, Parking & Transportation Julia Monteith, Land Use Planner, Office of the Architect Andrew Greene, Sustainability Planner, Office of the Architect

Advisory:

Angela Tabler (UPD)

Len Schoppa (Faculty)

Rich Hopkins (Facilities Management, Landscape)

Nina Morris (FM Sustainability)

Amanda Poncy (City of Charlottesville)

Will Andrewes (Student Council)

Brantley Tyndall (VCU)