



The Temporal and Spatial Connectivity of the Gambles Mill Corridor, Richmond, VA

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The student geographers and professor of the University of Richmond's Geography 221 course studying the Gamble Mills Corridor

Introduction

The City of Richmond and the Virginia Department of Transportation proposed to rehabilitate the Gambles Mill Trail connecting the University of Richmond (UR) to the intersection of Huguenot and River Road. Planners envision this trail as a sustainable model for the reduction of nutrient and sediment flow and as a vital path in a city-wide network of bike and pedestrian trails. Meanwhile, UR also proposes to rehabilitate the corridor in their new Master Plan. Nevertheless, until now, no substantive studies exist on the trail or the corridor linking the trail to the south side of the James River through the hazardous River-Huguenot Road intersection and the Huguenot Bridge currently under construction. The University of Richmond's Geography 221 Course, *Mapping Sustainability: Cartography and Geographic Information in an Environmental Context*, is working with a variety of stakeholders (public, private, and community-based) to map the past, present, and future of the Gambles Mill Corridor and influence local and regional sustainability of transportation, hydrology, and recreation in a floodplain ecosystem. Students produce maps grouped around four scales: local corridor, UR to the River, a city scale sustainable transport network, and a temporal scale tracing previous transportation routes in the area such as the 1930s street car system and the colonial canal system.

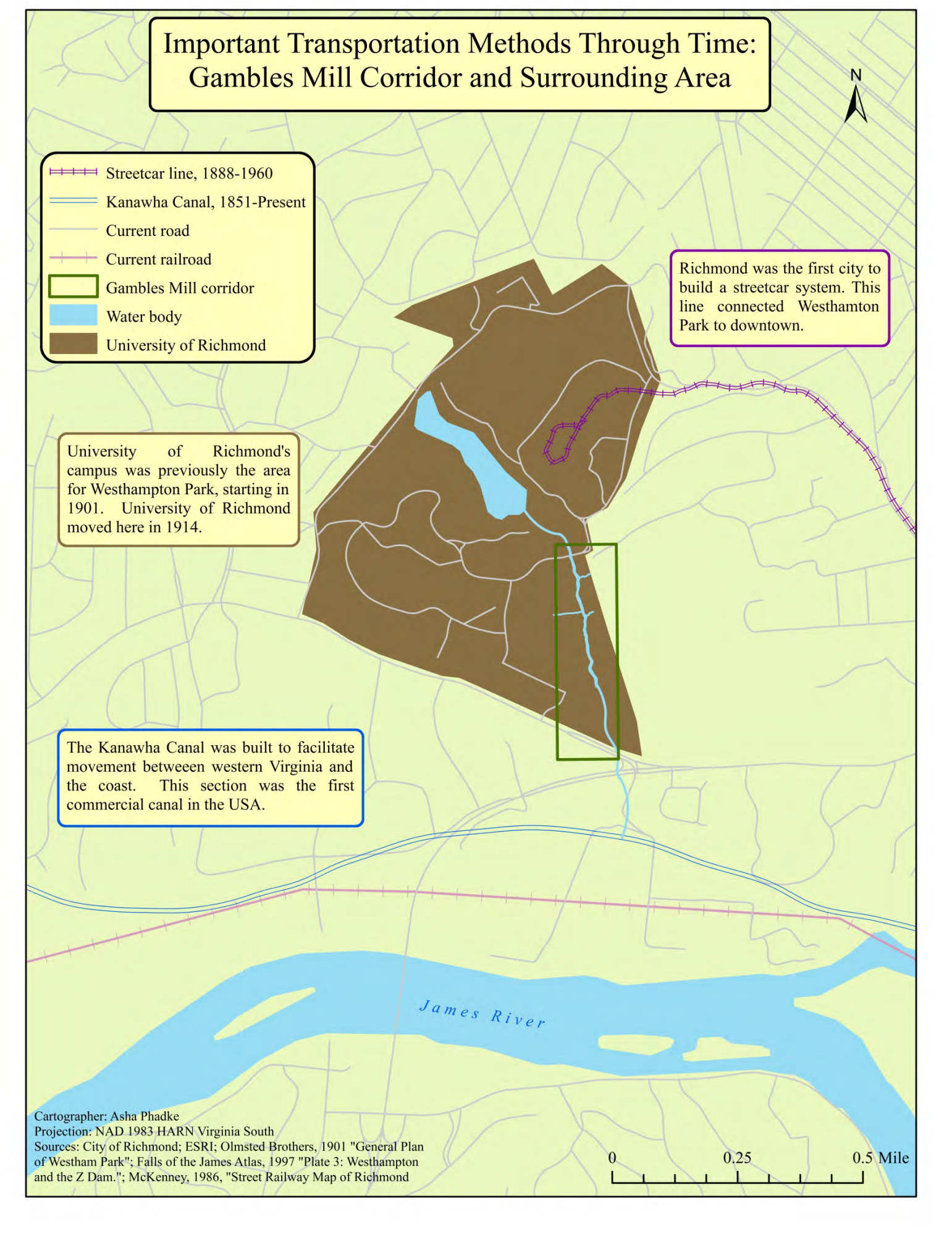


Figure 1. This map, highlighting the history of the Gamble Mills area and the University of Richmond, demonstrates the past sustainable transportation methods with the 1930s street car line and colonial era canal system.

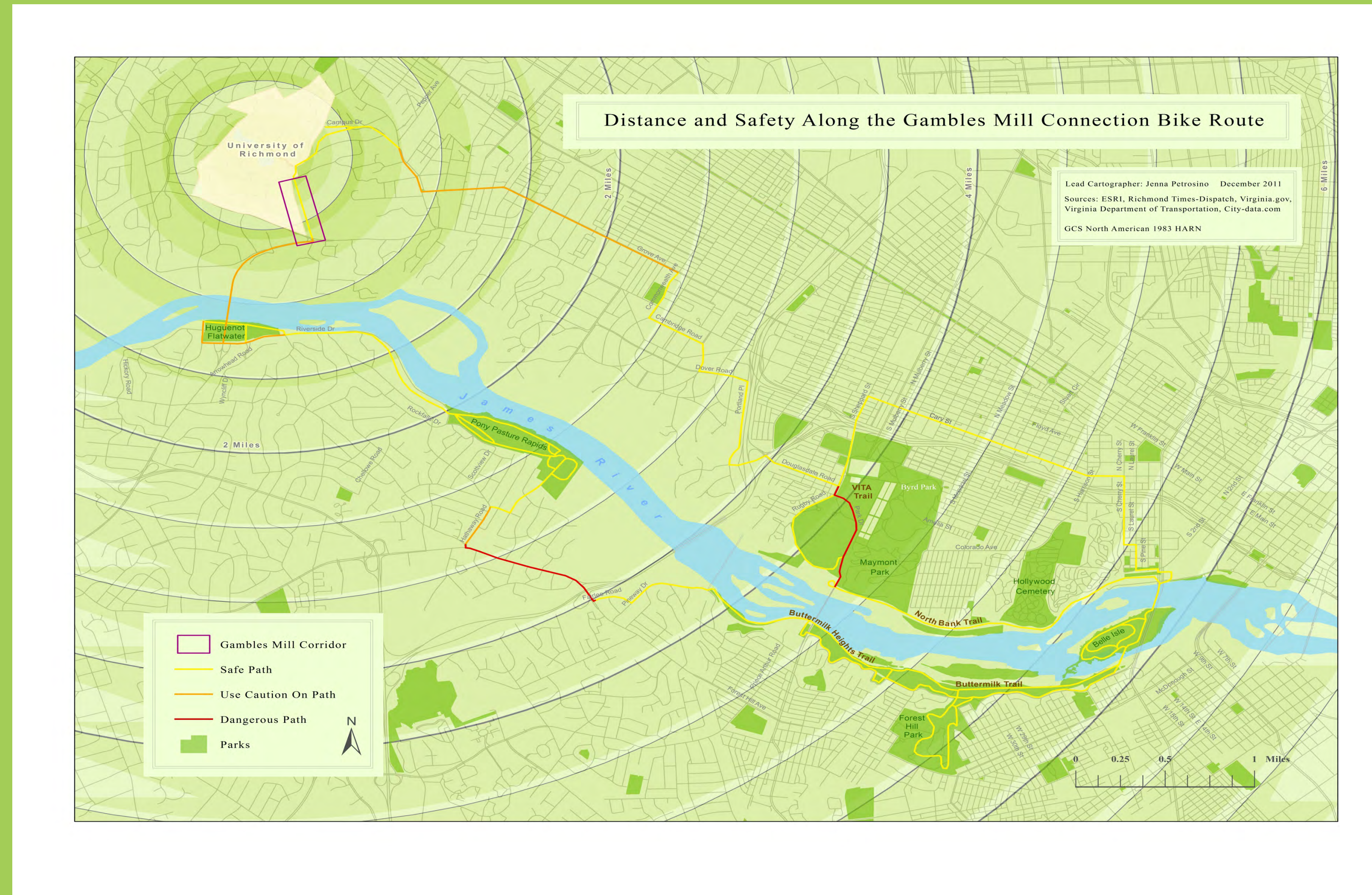


Figure 3. This map shows the connectivity of the Gamble Mills Corridor to the greater Richmond area through bike paths. These are further complemented by which paths are safer or more dangerous. As recreation is a major attraction for users of these paths, the local park regions have been highlighted. Distance is shown through the concentric circles at half-mile intervals.

Small Scale

This map represents the potential bike route between Richmond and the university while highlighting the strategic importance of the Gambles Mill Corridor. The corridor will allow students to access the river and the city via sustainable transport (Fig. 3). This map demonstrates the distance from the University of Richmond campus via the potential routes, allowing students to calculate the time and effort needed to reach their desired destination. Parks on the map show the accessibility of outdoor recreations areas of great interest to Richmond students and community members. Parks such as Pony Pasture and Maymount Park are iconographic landscapes of Richmond city allowing community members and students to connect with the environment and the cultural history of the region. The last feature on this map demonstrates the safety aspects of the route, an important feature for any cyclist or pedestrian. Safety information is based on data such as vehicle accidents, number of lanes, and size of shoulders. This information will help cyclists and pedestrians decide where to travel and by which route. Comprehensively, these maps encourage students at the University of Richmond and other community members in the West End of Richmond to enjoy and explore their city using sustainable transport.

Methods

The students in this introductory computer cartography and community-based learning course used ArcGIS 10 and Adobe Photoshop CS 5 to create maps based on data from GPS receiver point collection in the field, digital files scanned from archival maps, engineering drawings, GIS data from government institutions, Google Earth, and ESRI. To obtain and analyze data, students reached out to engineers, city and county officials, community organizations, archivists in regional and local libraries, and University of Richmond professors. The community-based element of the course, funded by a Community-based learning fellowship from the University of Richmond's Center for Civic Engagement allowed students to do academic research in an applied environment. This learning opportunity allows students to not only develop their critical thinking skills and technical mapping proficiency, but also to understand the interdisciplinary, communication, and personal challenges they will face in the workplace following graduation.

Conclusions

At the creation of this poster, the course continues, but preliminary conclusions include an appreciation for the complexity of human-environment planning across multiple institutions, jurisdictions, and stakeholder interests. We hope feedback for this poster will help us improve on our map making efforts and allow us to more clearly represent the issues at hand in the sustainable development of the Gambles Mill Corridor both for the students of the University of Richmond and the larger Richmond community.

Sources

Institutional: ESRI, Virginia Department of Transportation, City of Richmond GIS, Henrico County GIS, Filterra, User-Generated GIS Data
Academic:
"Street Railway map of Richmond 1930." Source: McKenney, Rails in Richmond
Hendricks, Christopher E. *The Backcountry Towns of Colonial Virginia*. University of Tennessee Press. Knoxville: 2006.

History

The historical mapping group provides historical context to the Gambles Mill Corridor. Fieldwork and community collaboration have given insight into the history of the corridor, and we can now begin to paint a picture of how the corridor has looked throughout history. Maps produced display the evolution of land use and patterns of human mobility over time. This includes past transportation routes, residential neighborhoods, and historic photographs (Figs. 1.1, 1.2). The area was originally targeted for settlement largely because of its proximity to the river; an aspect our historical group hopes to emphasize through maps. Mapping historical transportation networks such as the 18th century canal system and early 20th century streetcar system can inform planners of these more sustainable transportation networks even as we work to once again improve connectivity from the University to Richmond and beyond (Fig. 1).

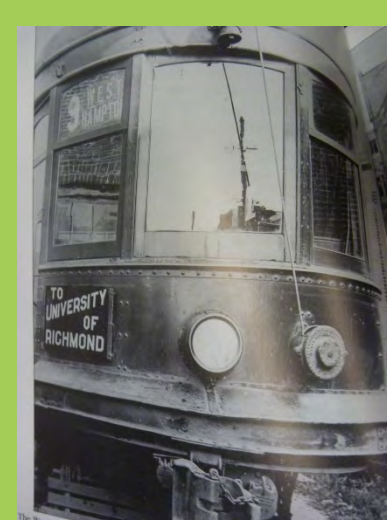


Figure 1.1. The #9 Westhampton streetcar that linked the University of Richmond to the city in the 1920s

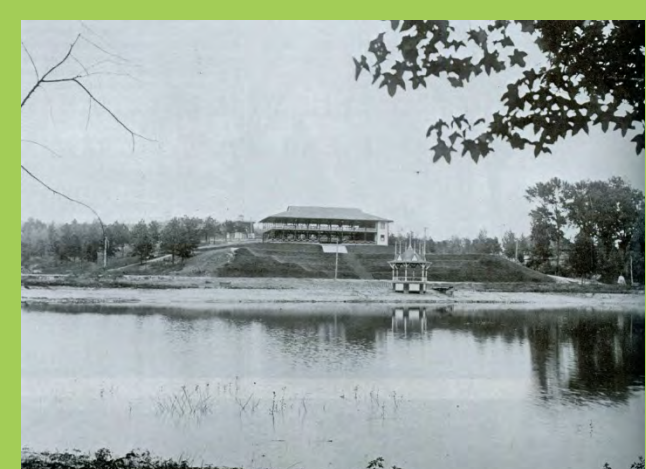


Figure 1.2. An early 20th century photo of the Westhampton Lake, now the focal point of the University of Richmond

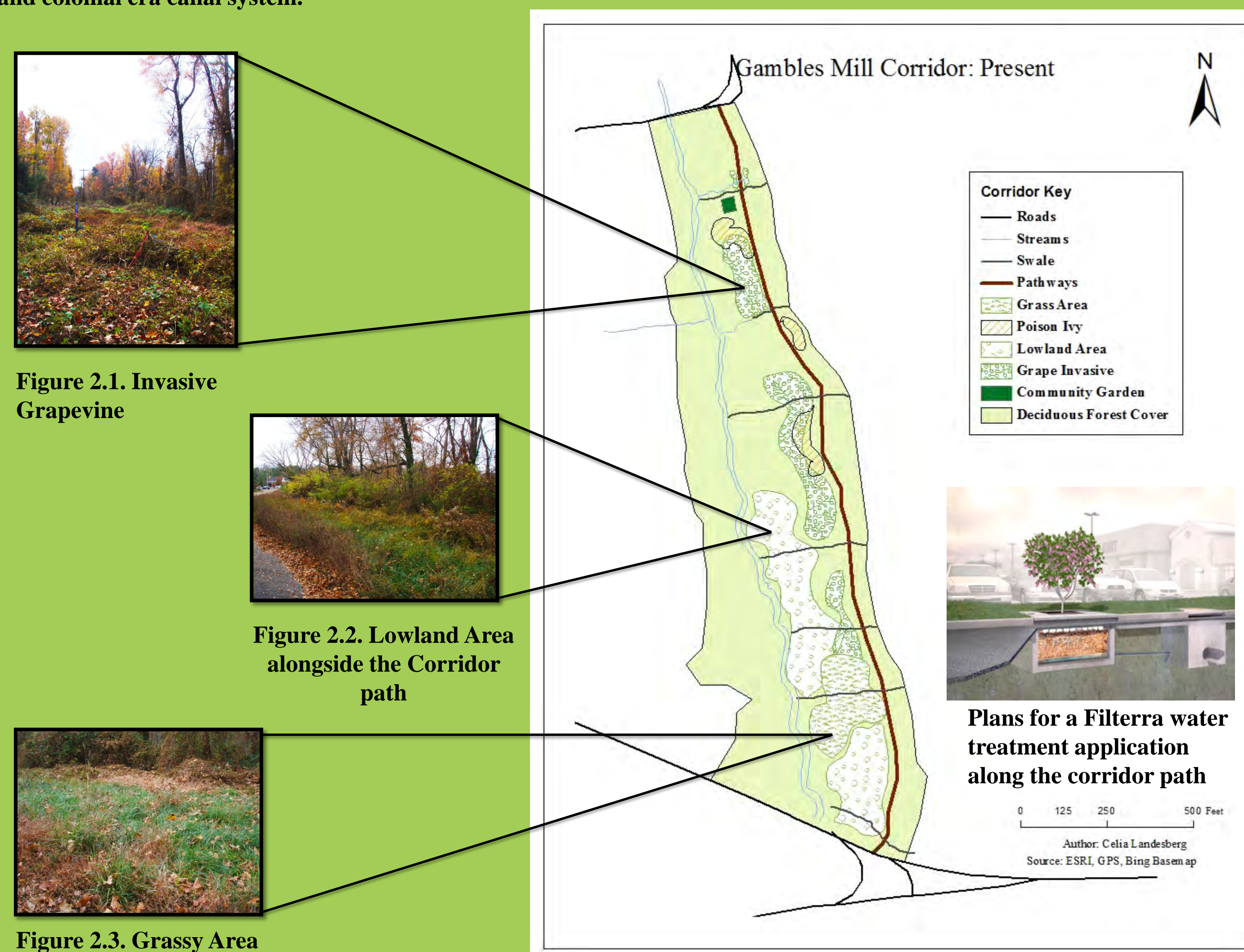


Figure 2.1. Invasive Grapevine

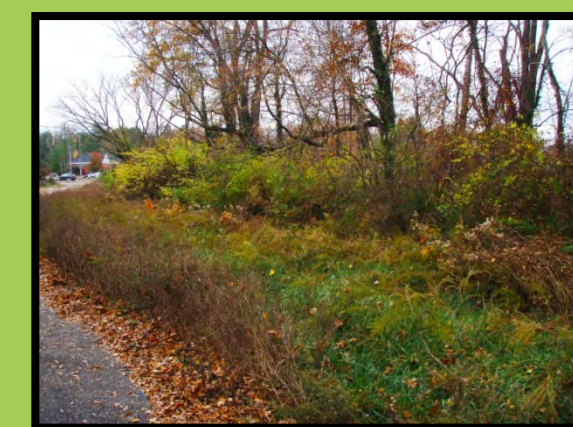


Figure 2.2. Lowland Area alongside the Corridor path



Figure 2.3. Grassy Area

Figure 2. Showing the current layout and features of the Gambles Mill Corridor, this map particularly focuses on the vegetation and environmental phenomena surrounding the path. This information may be useful for the adoption of a nature-themed walk along this corridor.

The Gamble Mills Corridor

Currently, the Gambles Mill Corridor is the most neglected part of the University of Richmond campus. Largely unknown to the student body, the degraded asphalt service road is barred to vehicle traffic on the southern side while the northern side is used only by those accessing UR's community garden, the occasional biology class conducting field observations, along with a trickle of intrepid bikers and runners (Fig. 2). Those individuals who use the trail witness a marginalized wilderness characterized by nutrient run off from the neighboring golf course, incised stream banks, and an open deciduous forest overgrown with invasive wild grapevine and poison ivy (Figs. 2.1, 2.2, 2.3). The UR master plan proposes to transform this neglected landscape into an "ecological" corridor connected to campus by multiple paths, while also providing a pedestrian and bike friendly gateway to the river and city of Richmond. Another proposal recommends transforming not only the purpose of the corridor, but also the nature of the path by replacing asphalt with a permeable natural surface capable of filtering excessive nutrients and chemicals from storm-water runoff.

Future of the Intersection

This map proposes two safe future methods for pedestrians and bikers to cross the Huguenot-River Road intersection (Fig. 4). The intersection is a key zone, linking the Gambles Mill corridor to residential and commercial regions south of the University of Richmond and the James River, including the James River Park System. The development of a safe pedestrian crossing through the Huguenot-River Road intersection will provide connectivity to these adjacent areas while initiating sustainability efforts, greater transportation efficiency, and increased pedestrian and biker safety for the University of Richmond campus and Richmond City residents.

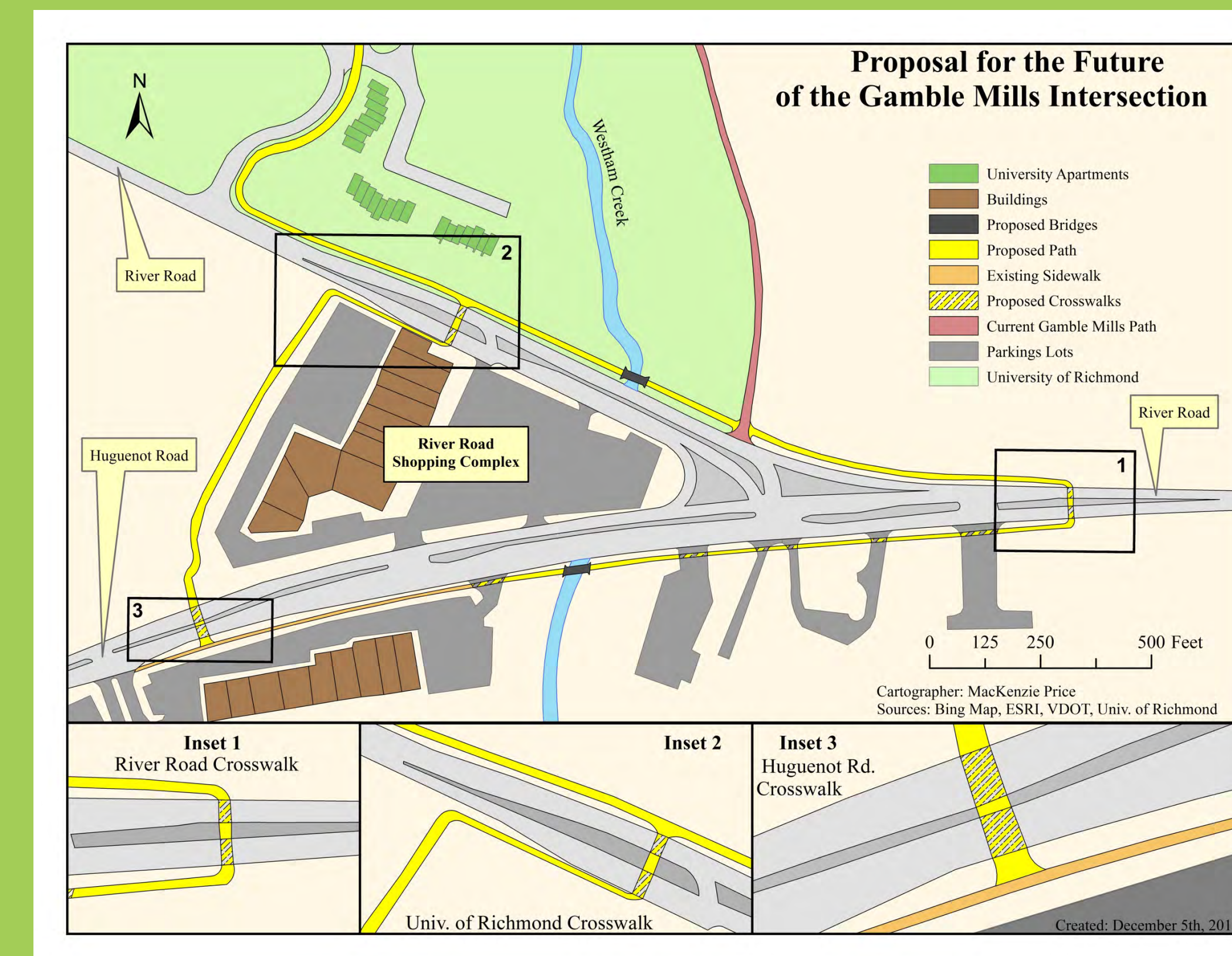


Figure 4. This map proposes new pathways to be constructed to aid pedestrians and bicyclists through the convoluted and dangerous intersection. Providing access to the shopping centers and to the James River from the corridor will promote student and public use of the pathway.