

East Coast Greenway 2050: Harford County

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Abstract

This paper documents both the process and product of a university studio project that explores the role of the East Coast Greenway (ECG) in the overall 2050 Harford County biking and greenway system plans. Harford County, MD occupies an important geographic area in which the ECG is aligned in the Mid-Atlantic region. The presentation also documents initiatives in the more urbanized counties of the State of Maryland and the District of Columbia. Numerous initiatives that characterize urban jurisdictions are reviewed for their relevance to a more a rural environment, but also a county that is experiencing population growth. The specific objectives of this studio project were to 1) research and document the inventory, programming information, and composite analysis, 2) to inform and create envisioning design and planning products that could be used by the ECG supporters, and 3) to assist in the overall initiatives of the ECG and trail and bike planning in Harford County. The ABC method, utilizing a GIS / ecological design approach, was adopted to document the abiotic, biotic and cultural inventory of the county. The general envisioning approach was to allow each student to develop their own concept ideation process as to produce a variety of scenarios. The proposed ECG plans and designs offer an opportunity to explore the possible roles of the ECG, ECG challenges, and ECG's role in embracing Harford County's social, economic, and environmental diversity.

Introduction

This paper reports a graduate studio case study project that utilizes and requires GIS in providing the inventory and analytical information for the creative production of envisioning alternatives at master planning and site scales for the ECG 2050 in Harford County. The project follows a traditional approach in inventory and analysis documentation and attempts to address the programmatic needs of everyday existing and projected users. It was fortuitously informed by both meetings with experts and a regional conference - the Capital Bike Coalition Symposium. The proposed greenway ideas provide an opportunity to protect and promote cultural and natural resources, to address issues of environmental sustainability, social equity, and green infrastructure, and to unify and celebrate the rich cultural and environmental diversity of Harford County. This paper is organized into three parts. The first part of the paper presents the background history and goals of the project. The second part outlines the most significant components of the methodology. The last part presents examples of the deliverables.

Background

Context

The ECG is a proposed greenway system of multi-use alignments that connects from Maine to Florida. Currently, many of the alignments are on-road with the aspirational goal of achieving all alignments off-road as much as feasibly possible. At this time, about 36 % of the trail is designated as protected, mostly off-road greenway segments in Maryland alignments (ECG 2018).

“The East Coast Greenway connects 15 states, 450 cities and towns, and 3,000 miles of people-powered trails from Maine to Florida —the country’s longest biking and walking route...The dream of a 3,000-mile protected biking and walking route represents a commitment to public health, environmental sustainability, economic development, and civic engagement. Together, we are connecting people to nature and communities via a safe, accessible Greenway.” (ECG 2018)

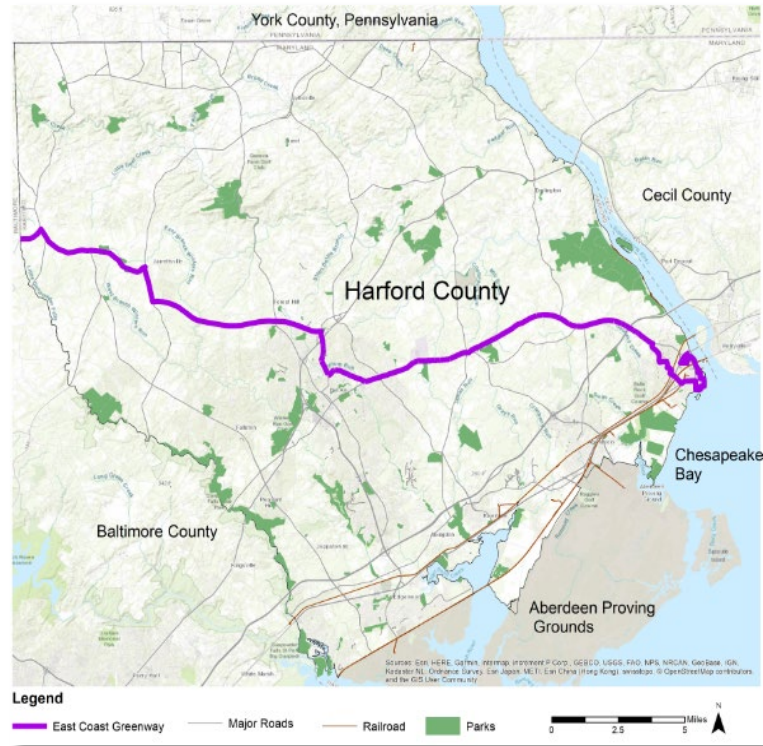


Figure 1. Map showing current alignment of the ECG in Harford County, MD.

The current alignment of the ECG in Harford County is predominately unprotected and non-striped on-road, shared with other vehicles, and designated by small sign-post road markers. Following from north to south leaving Perryville, MD in Cecil County, the alignment follows Route 40 (the Hatem Bridge) over the Susquehanna River and Garrett Island to the historic port city of Havre de Grace, Harford County. The current crossing is a challenging experience.

“Biking between Perryville and Havre de Grace takes careful consideration and planning. Experienced cyclists can cross the Hatem Bridge, but only on weekends, dawn to dusk, and holidays. You must be 18 or older or have a valid driver’s license to cross the bridge on bicycle. The bridge can close to bicycling due to weather and other issues. Note that cyclists are charged an eastbound toll of \$8. Travelers should read through the Maryland Transportation Authority FAQs on the Thomas Hatem Bridge. On weekdays there is also the option of taking the local Harford Link bus that can carry two bicycles on its front rack across the Susquehanna River. The closest detour around

the Hatem is the Conowingo Dam, which adds an extra 11-mile trip to the north and back” (ECG 2018)

“Once across the Susquehanna, Havre de Grace is a jewel on the river’s south shore, offering restaurants and lodging.” (ECG 2018)

The ECG, winding in a circuitous route within Havre de Grace, then heads north and is aligned with the major road Route 155 passing Churchville, Harford Community College and then to Bel Air, the county seat of Harford. Here it can be, in part, co-aligned with the existing and proposed sections of the Ma and Pa Trail. The Ma and Pa is currently planned to be a short 7.5-mile continuous off-road multi-use trail. The ECG continues westward on Route 23 to Jarrettsville and turns southward in rural Harford County on Route 138.

“Continuing west, travelers cross rural Harford County to Monkton and the first designated trail segment – the unpaved and forested Torrey C. Brown Rail Trail (also known as the Northern Central Rail Trail) — to Cockeyville. (ECG, 2018)

The ECG’s western terminus of Harford County boundary is located at the Little Gunpowder river. The alignment continues into Baltimore County and connects to the Torrey C. Brown Rail Trail in Monkton, MD. The Torrey C. Brown Rail Trail follows 19.7 miles of the former Northern Central Railway (NCR) in northern Baltimore County - from Ashland, Maryland north to the Maryland-Pennsylvania line, passing through a variety of historic communities.

Goals: Mission and Objectives

The overall goal of the studio was to explore the cultural and natural resources of the Harford County and to use the ECG to inspire additional responses for the future. When we first started the project, the initial approach was to focus just on the current alignment but as a team, we quickly realized that exploring the entire county provided a greater opportunity for creativity and student ideas. The existing work that the county has done includes a wide variety of programs and it was the intent of this studio to build on their work and support those efforts but also contribute ideas that might not have particular or even practicable application but may serve as a concept idea for exploration. The ECG embraces a strong vision and thus provided an impetus to look at other related and non-related greenway systems that address the past, present, and future. The overarching goal was to explore how the planning and design ideas might contribute to integrating everyday lives and landscapes to create opportunities for revitalization and enhancement of livable environments. The specific objectives of this project were to 1) research and document the inventory, programming information, and composite analysis, 2) to inform and create envisioning design and planning products that can be used by the ECG and others, and 3) to assist in the overall initiative of greenway systems and the ECG. This project supports these ongoing efforts by both Harford County and the ECG community.

Methodology

Ideation and Research

The beginning steps of the project focused on the context of the project through directed and undirected research of available information. The available GIS data was explored, and maps were created showing the different themes and attributes of the files. GIS data was supplied by the Harford County. Additional

GIS data was also obtained via the web. The project was undertaken technically using ARCGIS Version 10.5. Students conducted general research on the ECG, Harford County, and contemporary biking and greenway plans from adjacent counties and local municipalities. Some of the most relevant documents reviewed from Harford County included:

- 2013 Harford County Land Preservation, Parks, and Recreation Plan. Harford County (Harford County 2013a).
- 2013 Bicycle and Pedestrian Master Plan. Harford County (Harford County 2013b).
- 2018 HarfordNEXT A Master Plan for the Next Generation: Appendix I Priority Preservation Area Plan. Harford County (Harford County 2013c).
- 2018 HarfordNEXT A Master Plan for the Next Generation: Appendix II Water Resource Element (Harford County 2013d).

Students also engaged in general research on the web to provide additional context. As a last step after the collection and investigation, the students brainstormed working mission statements, objectives and goals for the project. Some of these ideas were later refined as the project progressed. The class held meetings with representatives from the ECG and a member of a Harford biking association. Due to the limited time and resources of the class, more interaction with members of the community was desirable but not possible.

Inventory Approach: Context and Group Site Visits

The ABC method was adopted to document the abiotic, biotic and cultural inventory at a county-wide scale (Ndubisi, et al., 1995). One of the pedagogical requirements of the studio is for the students to develop GIS skills. The ABC method of organizing map data and information is a helpful model for students who have no prior training in GIS and are learning GIS for the first time. Each student was required to create one board each for the abiotic, biotic, and cultural information. The limitation to one board for each topical area forces the students to select the most important data in each of the categories. The three inventory boards created, abiotic, biotic, and cultural, both inform the process as an implementation of the ABC method for the studio project as well as a demonstration of the students' capabilities in making effective maps for each of these different kinds of phenomenon. It was at this county-wide scale that students conducted inventory, analysis, programming and composite analysis and ultimately envisioning ideas for the greenway systems. The class took two field trips to tour some of the highlights of the county and the current alignment of the ECG. Due to the nature of taking on the entire county, most of the visual understanding of the county came from desktop analysis. While the trips did allow the students to better familiarize themselves with some of the major sites, the limited number of a visit within the semester studio was certainly a limitation of the project.

Composite Analysis

One of the most important steps was the review of the composite analysis. Many questions and uncertainties about the overall trail were addressed during this session. At the end of the session, students had a post-it-note exercise to identify opportunities and constraints in the county by writing the opportunities or constraints on a slip of paper and placing them in the appropriate locations on their maps. These exercises led to the initial production of Composite Analysis boards. These boards were edited in individual critiques in line with the emerging focus of the goal of their project to arrive at the final Composite Analysis boards (Figure 5).

Seminal and Contemporary Influences: Ideation Again

Using the internet students, explored greenways from around the country to compare and contrast ideas about goals users and greenway concepts. Students reviewed the greenway methodology from Smith and Hellman (1993) as explored readings related to the internationalization of the greenway movement (Fabos and Ahern 1995). The students were then asked to develop ideas for their county-wide as well as possible finer scale ideas for designs of studies that demonstrated the county-wide proposals. A regional conference, the 2018 Capital Trails Symposium on November 15, 2018, featured talks on e-assist bikes and trails, trails in regional planning, and other topics. The ideas from this conference had a strong influence on ideas for the student work.

Programming

Students investigated user programming, considering two broad categories of users: local residents and non-local residents including tourists. Students listed potential user groups, e.g., commuter, students, etc. Each student was assigned one specific group, researched their needs, and presented the results to the group. User narratives were explored and documented to assist the design process by role-playing various user experiences. They wrote first-person narratives, required on the focus area boards, about user populations and specific events and were required to provide an annual event for the master plan. Using first-person narratives, students were asked to define frequency, duration, and intensity. Frequency captures weekly and seasonal visits for individuals while intensity refers to the number of people coming to the trail on a time-defined basis.

Master Plans and Focus Area

During the final two weeks before the project was to be formally presented, the students developed planning and focus area solutions / studies boards for their respective projects. Students created master plan and site-scale envisioning documents utilizing the inventory and analysis information. The master plans refined the original alignment of the ECG and also proposed new alternatives that supported master plan proposals. These boards included a master plan, a site scale focus plan, associated sketches and written information to convey the essence of the focus area. The design and program for the focus area sought to satisfy programmatic needs.

Results

Inventory: Abiotic, Biotic, Cultural Information

The abiotic boards (Figure 2) indicated such information as relief and hydrology. The biotic boards (Figure 3) represented existing land cover and green infrastructure. The inventories of cultural features (Figure 4) documented the unique characteristics including existing streets, buildings, schools, and parks. Photographic documentation was included, where appropriate, on the respective inventory boards.

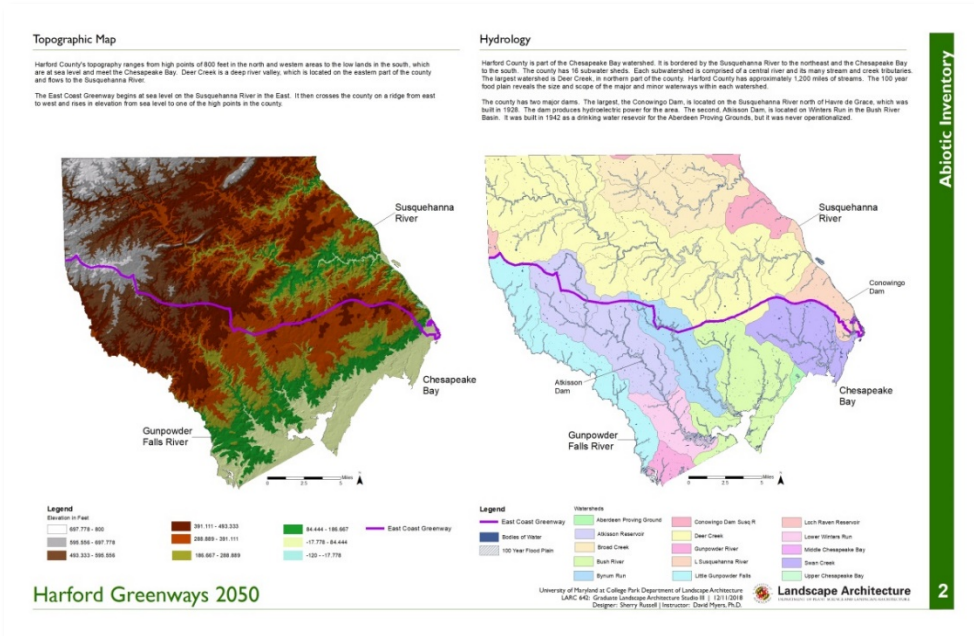


Figure 2. Example of Abiotic Inventory depicting physiographic relief and major subwatersheds with current alignment of the ECG.

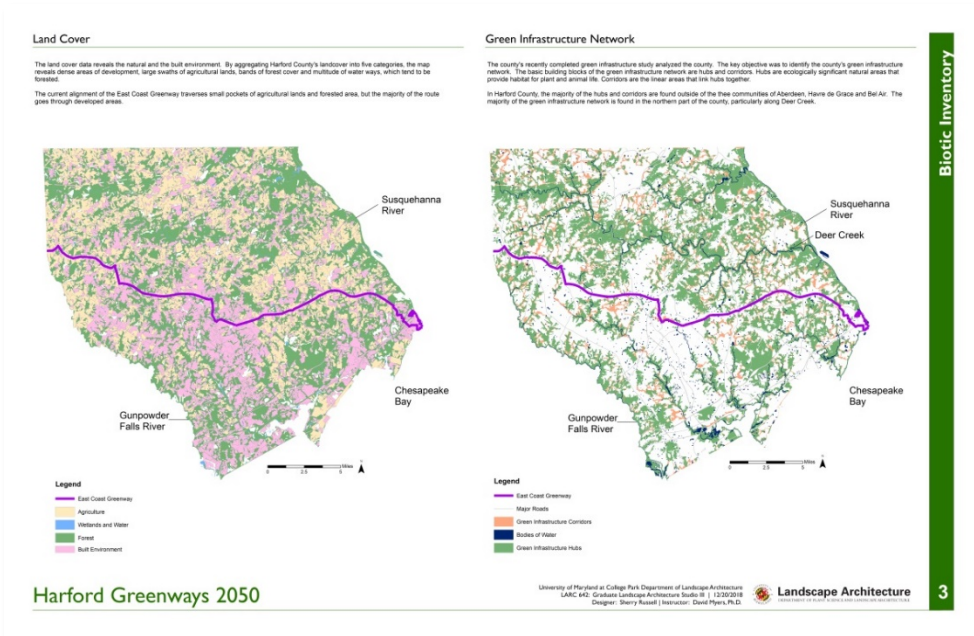


Figure 3. Example of Biotic Inventory depicting land cover and green infrastructure network of the with current alignment of the ECG.

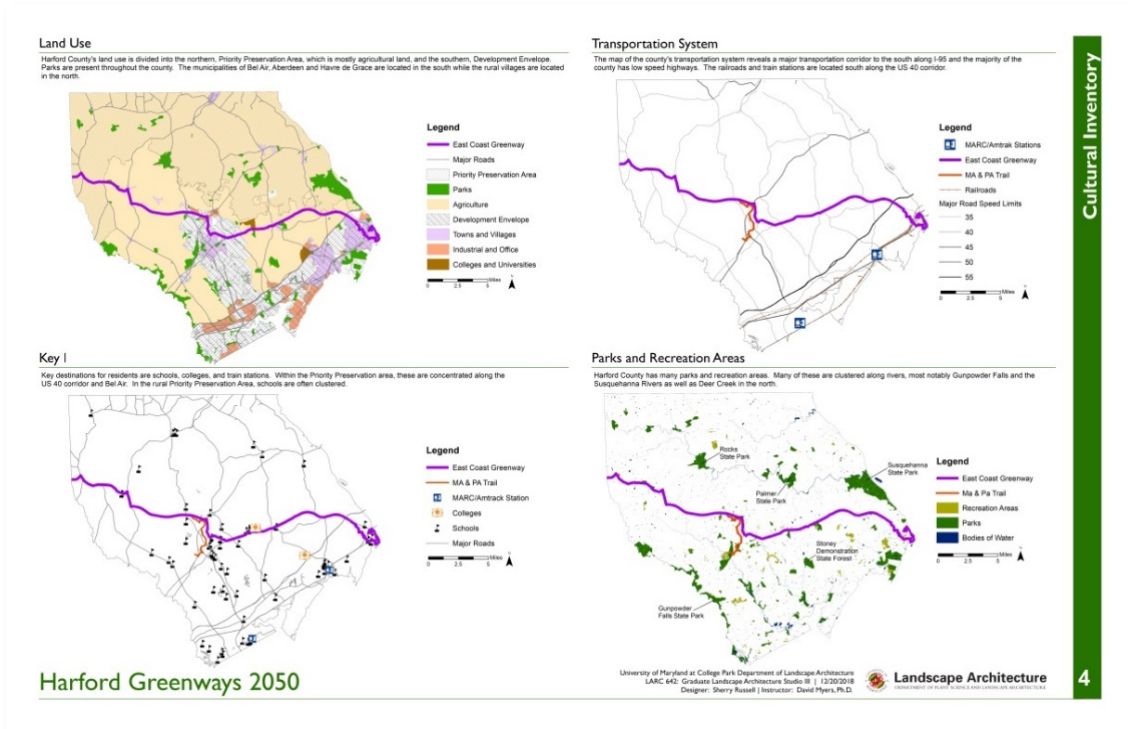


Figure 4. Example of Cultural Inventory depicting land use, parks, transportation systems and schools with the current alignment of the ECG.

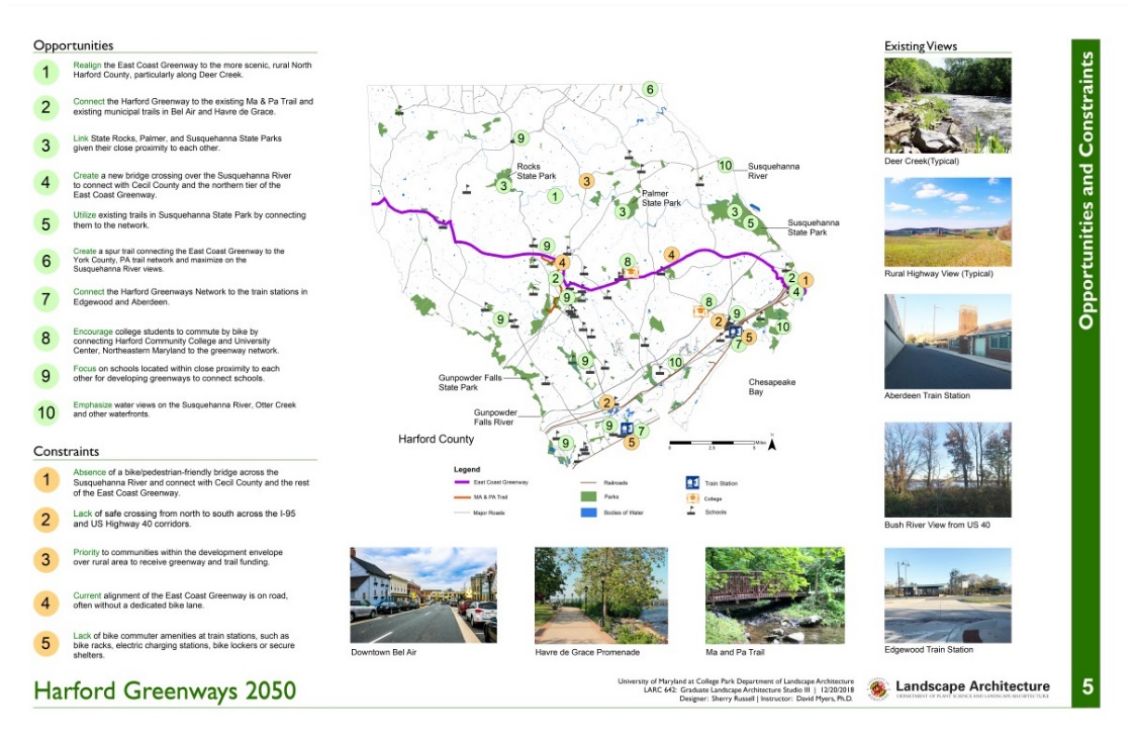


Figure 5. Example of Composite Analysis depicting significant constraints (orange) and opportunities (green) with current alignment of the ECG.

Composite Analysis and Programming

The composite analysis boards (Figure 5) represents the opportunities and constraints for the county as interpreted by each student. This documentation of the major assets and liabilities provided the basis for the master plan and site-scale focus designs. After the completion of the inventory and the analysis of the county data, each student discussed the specific characteristics of the focus area in relation to the ECG and the entire ECG to better envision and understand the ECG as part of a county-wide unified greenway and trail system.

Envisioning Products: Master Plans

Each student was responsible for assessing all the documentation, inventory and analysis and developing a comprehensive vision, a set of proposals and maps noting the alignments of the various ideas proposed. An annual event, as part of the user programming process, was also required to support one the master plan proposals. The requirement of event planning encourages the students to creatively link design and planting interventions, e.g., trails and spaces, with imagined programmatic event planning that would take place to utilize their design interventions. The students are asked to provide an inspirational and community building event narrative that utilizes their proposed physical design. As an example, the “Drink for a Cause” annual event and fund raiser for the Humane Society (Figure 7) uses the Winery and Brewery Trails proposed as trail alignments in the master plan. The master plan was required to refine the original alignment of the ECG and also proposed new alternatives that were part of the vision and master plan proposals. The site-scale proposals sought to integrate abiotic, biotic and cultural neighborhood opportunities and constraints and the programmatic needs of trail users. While the students were asked to provide designs proposals that considered ECG users, the focus was on meeting the needs of local residents to integrate everyday lives and landscapes.

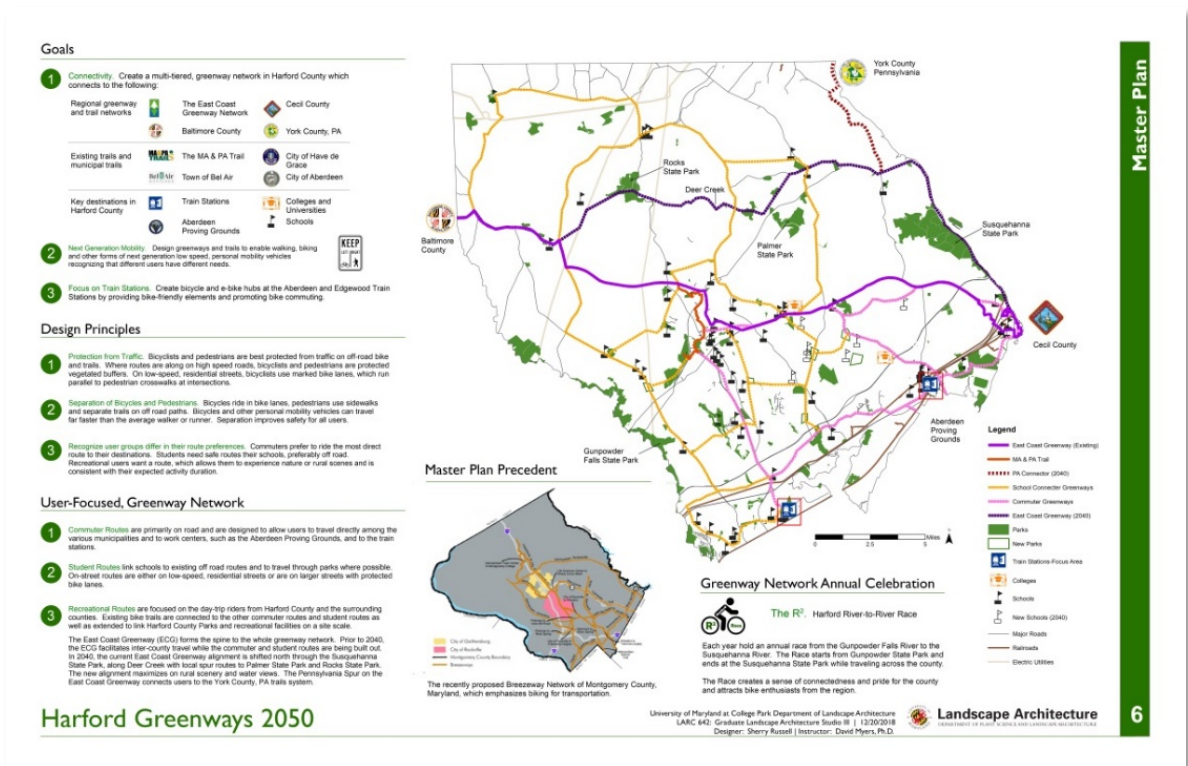


Figure 6. Master Plan, Author Sherry Russell. The master plan includes precedent, goals design principles and an annual event.

Master Plan 1

In the first master plan, the students focused their proposals around a user-focused greenway system with three primary users: 1) commuter routes, 2) student routes around schools and, 3) recreational routes in which the ECG provided both the existing alignment and a northern alignment focused on connecting parks within the picturesque Deer Creek Watershed. This northern alternative also proposes connections to existing trails in Pennsylvania and to the Susquehanna State Park. A “River to River” bike race was proposed as an annual celebration.

Master Plan 2

In the second submission, the student was heavily influenced by the organization of primary users, e.g., commuters, students, wineries and brewery users, etc. The brewery and winery alignment provide interesting alternate alignments in both the southern area (major built environment) and the northern area (major rural and agriculture environment) of county.

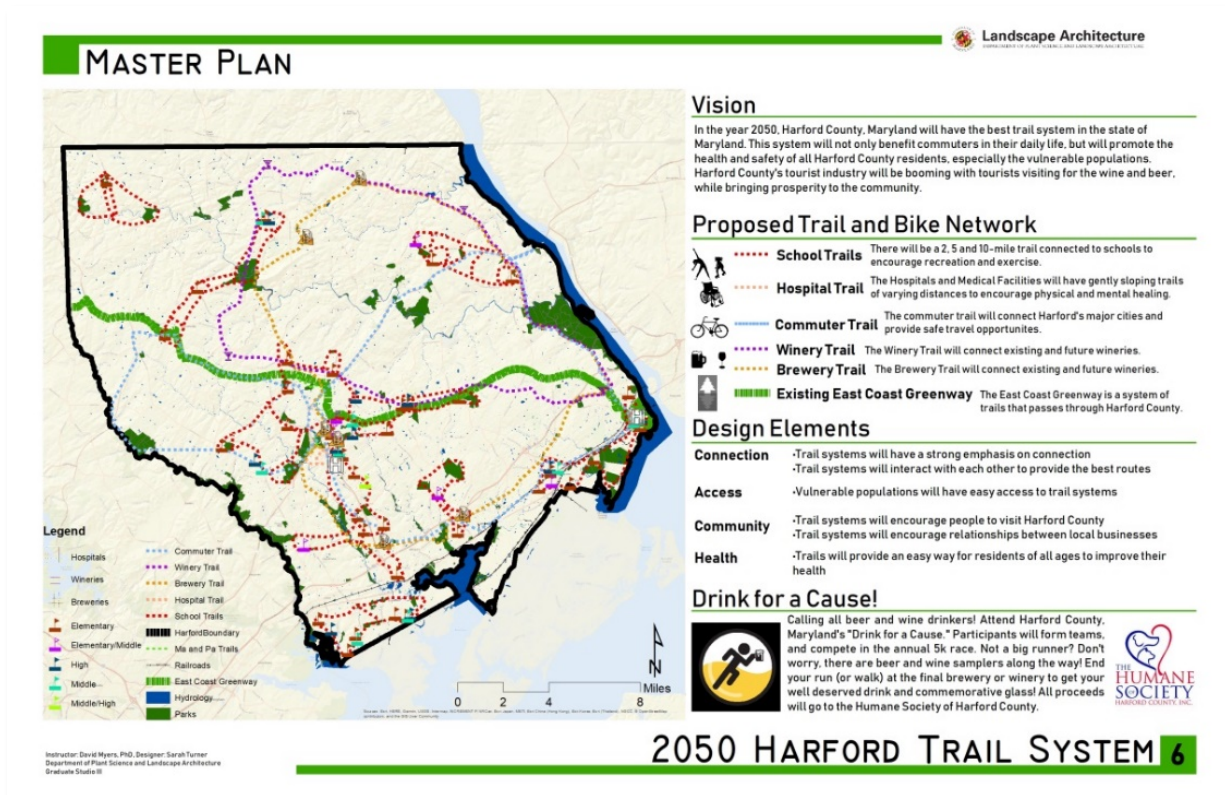


Figure 7. Master Plan, Author Sarah Turner. The master plan includes vision, proposed ideas, design elements and an annual event

Master Plan 3

For the third master plan, the student focused on art and using art to bridge communities as alternate sets of alignments for the ECG with a southern route and a northern route. The northern alternative provides a more direct alignment to and using Gunpowder State Park. The southern route focused more on placing the ECG alignment in a location to serve a greater proportion of the existing and proposed communities of Harford County.

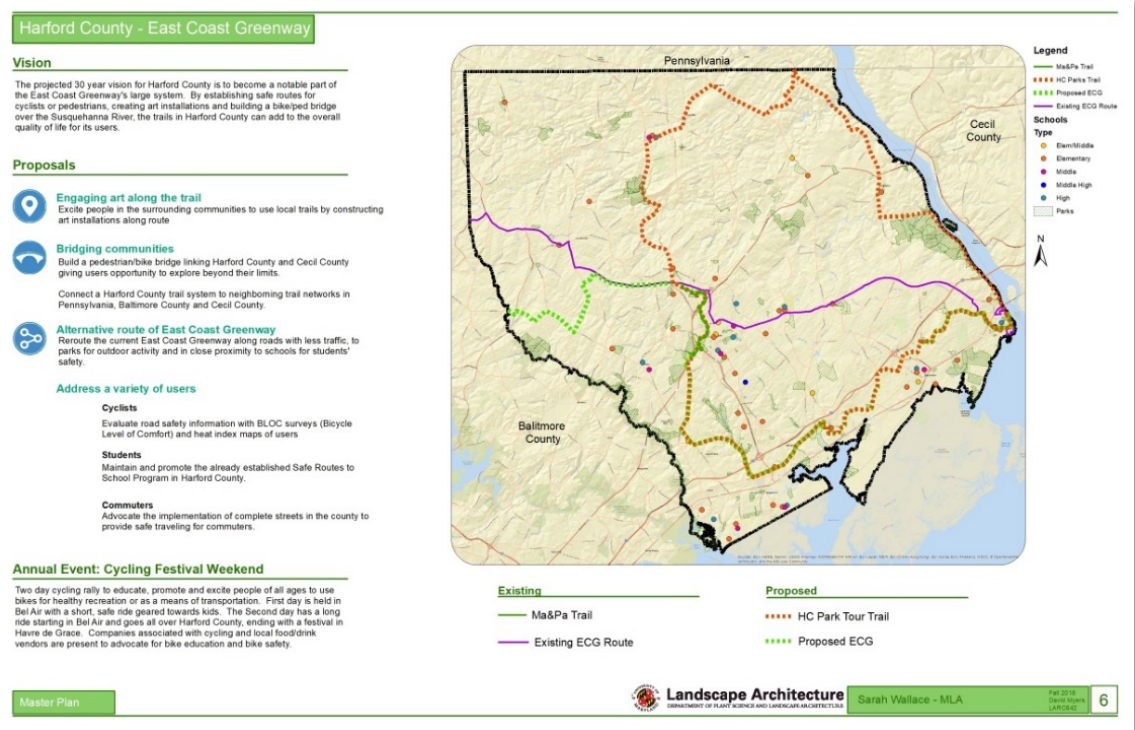


Figure 8. Master Plan, Author Sarah Wallace. The master plan includes vision, proposal and annual event.

In summary, the three master plans provided a significant number of ideas to consider for the ECG. The influence of the biking community, commuters, school-age populations and health related issues is clear in the proposals. The focus on these users reflects the process, collected information, and influence of individuals encountered in the process.

Envisioning Products: Focus Areas Designs

The most significant number of ideas related to the ECG was generated in the master plans. These ideas included alternative and multiple alternative alignments of the ECG. The requirement to create a focus area, a typical project requirement in many greenway focused studios, only yielded one site-focused area solely dedicated to the ECG. This was not due to the lack of importance of the ECG, rather to the importance of the everyday landscape and the range of users in the county-wide perspective that represented local users as opposed to through-users on the ECG. A further study with a focus on these concepts might be useful to explore how more focused ECG site designs would support both local users and through-users of ECG. For the three master plans, there were seven focus studies. The students were provided wide latitude in interpreting the deliverable of a focus study. One student chose a traditional single site for a more detailed inventory board and a solution board. Instead of designing a specific location, a second student used focus boards 7 and 8 to further explore and provide information on a broad set of users (Figure 9). A third student focused on the two train stations in the county with an interest in providing designs that would support increasing the percentage of commuters that might be used during the trail. Here the alternative route or complementary route of the ECG might find relevance and the redevelopment of the more populated and focused area in the southern county and population economic centers such as Aberdeen Proving Grounds.

The students presented their work via PowerPoint (all boards) to Harford County and have plans to present at other regional greenway related conference. The final report was assembled in PowerPoint and then converted to PDF format.



Figure 9. Example of a Focus Board. Students were required to have two focus boards but could decide how the that focus was the be interpreted

Discussion and Conclusion

This paper has documented a graduate studio case study project. From a pedagogical perspective, the decision to explore at a county-wide scale offered both advantages and disadvantages. In terms of disadvantages, it was more challenging to connect broader countywide master plan proposals to individual site-specific focus areas. The advantages including an exploration of a broader perspective of users and landscapes in which the students had to formulate a comprehensive overall countywide strategy. This broad perspective and the symposium, which had not been part of the original planning of the course, added to the creativity of the overall project. The students work not only demonstrates individual GIS technical capability but also design and planning process thinking which is noted graphically in their introduction boards. The projects created documentation of inventory and analysis boards and attempted to address the programmatic needs of everyday projected users for the ECG. The inventory and analysis information was utilized to create envisioning alternatives at master planning and selected focus studies for both the county and for the ECG. The project was an opportunity for each student to bring their own creativity to contribute to the ECG's efforts to realize the ECG and to explore how the ECG serves as an inspirational impetus to addressing the future needs of the citizens of Harford County.

Acknowledgements

Thanks to project team students Sherry Russel, Sara Turner and Sarah Wallace. Thanks also to Harford County for GIS data. Finally, I would like to thank Bruce Kinzinger, Bike Harford, Daniel Paschall and especially Melissa Miklus, PLA, ASLA for input and help.

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