LOOKING FOR PRODUCTIVE SYNTHESIS BETWEEN GREENWAY DESIGN AND HERITAGE TOURISM

by

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(Under the Direction of Douglas Pardue)

ABSTRACT

This thesis explores the reciprocal relationships between heritage tourism and greenway design and to evaluate how the integration of these two promotes sustainable and successful heritage greenway design. It hopes to propose reasonable strategies that, when applied to physical greenway projects, will greatly promote heritage tourism prosperity. Further, it hopes to inspire planners and landscape architects to consider incorporating heritage tourism into greenway design at both the systematic level and at specific sites. By creating a criteria framework concerning crucial elements from heritage tourism and greenway design, case studies are investigated and analyzed in regard to how they apply to the criteria. Then the Savannah Greenway project theoretically and practically gives an example of how the methodologies of this thesis would be employed physically in greenway projects, which ultimately proposes recommendations that are applied to the Savannah Greenway Conceptual Plan.

INDEX WORDS: Landscape Architecture, Greenways, Greenway Planning and Design,
Physical Greenway Design, Heritage Tourism, Heritage Interpretation

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CHAPTER 1

INTRODUCTION

1.1 Background

Greenways are considered as linear places or corridors that have great potential for supporting landscape sustainability and representing cultural identity locally and regionally (Little 1995). In multiple functions of ecology, aesthetic, and economy, they endow visitors wonderful opportunities with traveling on the route to appreciate and enjoy the nature beauty. Recently, concern for landscape's cultural and historical components has been an important goal in greenway planning, heritage tourism is considered as a crucial part in greenways' networks, as it exemplifies the representation and manifestation of culture and helps construct national identities. The interpretation of the heritage in greenways through natural and historical protection facilitates the vitality of greenway programs, and also gives appropriate recommendations for physical designs. Moreover, bringing heritage tourism to greenway tours will help visitors discover there is much to learn and be inspired to visit other places and participate in historic and cultural preservation.

In this background, the exploration of practical methods applied to historical greenway projects that support local heritage tourism is significant for designers and decision makers, to consider heritage and greenways at the level of systems through sustainable approaches, eventually achieving

the goal of creating a sustainable heritage greenway.

1.2 Problematic

Despite the fact that greenway design and planning network has existed in the United States for decades, heritage tourism and historical greenway conservation are often separately discussed in different articles instead of as reciprocal topics, the relationship is still weak and mostly unrelated. Aside from current research gaps, the connectivity of greenways to heritage sites is another issue in physical greenway design. Several historic sites are often disconnected on some segment of greenway routes, few visitors are willing to travel to these sites, which bring them monotonous and boring experiences without any attractive or distinctive historic features.

Additionally, in some heritage sites, there is no interpretive theme integrated with the greenway and heritage system, hampering peoples' active participation and leading to an unattractive tour. Moreover, interpretive elements are often hard to incorporate with natural and cultural resources, consideration of local features, and people's demands. For example, the difficulty of identifying obvious entrances or wayfinding in a natural area can easily mislead; few or no clear explanations in interpretive boards or signs will disappoint visitors, as will a lack of attractive features on the path to arouse memorable and meaningful feelings. These issues are impeding the growth for the integration of heritage tourism and greenways.

Last but not least, in recent years, for achieving the goal of sustainable cultural tourism, many international organization are making efforts on harmonious balance between heritage tourism development and environmental protection. The approaches are slightly different for UNESCO,

Table 1.1: Different Approaches of UNESCO, ECOVAST, the USA and China to "Sustainable Cultural Tourism"

	Different Approaches	Source
UNESCO (United Nations Educational, Scientific and Cultural Organization)	 Emphasizing on protection of natural and cultural resources (UNESCO 2010). Enhancing the well-being of communities and promoting a personal commitment (UNESCO 2016). International efforts that "develop an action-oriented international programme", for example, UNESCO World Heritage and Sustainable Tourism Programme (UNESCO 2016). A pro-poor tourism (PPT) approach that goes beyond the promotion of broad social-economic development (C. Ashley. et al 2001.) 	C. Ashley. et al 2001; Frederico Neto 2003; UNESCO 2016. http://www.unesco.org/
ECOVAST (European Council for the Village and Small Town)	 Strengthening economic perspectives and sustaining competitiveness in rural areas; Establishing a friendly cooperation system among small towns; Socio-economic approach: proposing policies and actions aimed at restructuring rural regions, and involving local residents; Involving in establishing heritage trial projects through rural landscapes (ECOVAST 2016). 	ECOVAST 2016. http://www.ecov ast.org
USA	 Proposing comprehensive tourism planning to assure minimal negative impacts for natural and cultural heritage; Protecting historic and cultural resources, and focusing on authenticity and quality; Giving attention to community building that improve community participation; Making educational and practical methods that raise people's awareness of heritage preservation. 	Craine, Kimber. 2005; Robert and Russell 2014;

China	 Culture is the theme for cultural tourism in china to emphasizing on distinctive history and culture (Liao 2011); 	
	 The concepts of "Sustainable tourism development" that transferred "economic growth" to "sustainable development", balancing the patterns of tourism development (Wikipedia 2016); 	Xu and Trevor Sofieldb 2013; Liao 2011;
	 Minimizing the impact on environment from tourism activities (Xu and Trevor Sofieldb 2013); 	Wikipedia 2016.
	 Cooperation with local travel agencies with regulations for heritage tourism (Xu and Trevor Sofieldb 2013). 	

UNESCO proposed a series of strategies for cultural tourism planning that will govern international principles of sustainable cultural tourism (UNESCO 2016). ECOVAST is focused more on the socio-economic approach in rural regions (ECOVAST 2016). For sustaining cultural and historic resources, the US has addressed the issue comprehensively, including "programmatic needs, local leaderships, stakeholder support, and educational approaches" (Craine 2005). In comparison to the US and Europe, China had proposed "sustainability in tourism development" in terms of policy making for the future (Wikipedia 2016). For Chinese tourism market, economic development is still a significant factor, for considering the preservation of necessary significant resources and decreasing the influence of tourism on the environment (Xu and Trevor 2013).

Facing such problematic, establishing a systematic level of evaluation for relationships between heritage tourism and greenway design, can inspire more ideas for designers and decision makers in physical greenway projects, which provide tourists an authentic and unique heritage experience. This will ultimately promote the prosperity of sustainable heritage tourism internationally.

1.3 Research Question

This thesis raises the research question: How can the reciprocal relationship between heritage tourism and greenway design help support both?

Then it comes with these sub-questions:

- How can heritage tourism help strengthen greenway design and inspire designers to consider greenways at the level of a system and specific sites?
- How can greenway design strengthen and support heritage tourism?
- What are the criteria for each reciprocal relationship between heritage and greenways?

1.4 Purpose and Significance

1.4.1 Purpose

This thesis attempts to develop valid strategies, and propose appropriate recommendations for the integration of a successful heritage greenway design. Reviewing previous and current research in greenway design and heritage tourism, six aspects will be selected for the evaluation. For greenway design, these aspects are physical connectivity, distinctive activities on the path, and physical design elements, and for heritage tourism, they are preservation and protection, heritage interpretation, and heritage touring needs. General recommendations related to heritage tourism interpretation will be proposed, which helps designers and decision makers solve new issues in greenway projects.

Additionally, this thesis also hopes to develop a coherent and comprehensive picture of heritage greenway planning and design, for creating a productive synthesis between heritage tourism and greenway design.

1.4.2 Significance

Cultural values and heritage conservation are considered essential part for historical greenway planning and design. The question of how to reasonably incorporate heritage tourism into greenways is crucial for designers and users for conserving valuable resources along greenways and establishing a successful heritage corridor. Vice versa, applying the principles of greenways into heritage tourism will help promote overall heritage prosperity and a local and regional historic legacy. Thus, the integration of heritage tourism and greenway design is necessary to better support the uniqueness and intangible values of historic areas.

Additionally, understanding the reciprocal relationship between heritage tourism and greenway design will help designers to consider greenways at the level of a system and specific sites, eventually promoting the successful integration of heritage tourism and greenway design. Proposed guidelines and principles will benefit future greenway design, encouraging prosperous and balanced local tourism, helping to lead planning, design, and maintenance decisions.

1.5 Research Strategies

In this thesis, several research strategies were employed based on the methodologies in Deming and Swaffield's book (2011), *Landscape Architecture Research: Inquiry, Strategy, Design*, including literature review, evaluation and diagnosis methodology (Deming and Swaffield 2011). In the literature review, current research in greenway design and heritage tourism will be reviewed for developing three criteria determining relevant crucial elements for evaluation framework. Evaluation and diagnosis strategy are employed for framework of key factors selected from heritage tourism and

greenways that show how their relations help support both, then in case studies, parallel comparisons and analysis are formulated for all cases concerning how productive synthesis works for a better integration of heritage tourism and greenway design.

1.6 Limitations and Delimitations

1.6.1 Limitations

Due to time constraints, this research cannot cover every aspect of greenway design and heritage tourism. Though many factors can be selected as criteria for their relationships, only six criteria are applied in this thesis. Another limitation is that the research material is not sufficient. For example, there are many physical greenway projects illustrating only a small part of cultural and interpretive elements applied in greenways instead of in a complete system, which hamper the depth of research.

1.6.2 Delimitations

Although many factors may influence the relationships between greenway design and heritage tourism, only six, the most significant factors, are selected for their evaluation in this thesis. For greenway design, other two aspects: financial issues and community engagement are not looked, because the method employed here is for broadly evaluating and generating ideas about heritage greenway, which will be used to inform the Savannah Greenway Design. Additionally, in this thesis, the methodology employed for evaluation and case study represents one measure, but not the only measure, to evaluate their relationships.

1.7 Thesis Structure

Chapter 2 gives a comprehensive overview of greenway literature that discusses previous and

current greenway about its evolution, development and current fields in greenway planning and physical design. It concludes that four key elements make up for successful greenways: connectivity, environmental conservation, recreation and activities on the path, and physical design elements.

Chapter 3 reviews and introduces theory of heritage tourism by discussing definition, evolution, previous and current researches in heritage tourism, and also summarizes four essential elements that make up for successful heritage tourism: preservation and protection, focus on authenticity and quality, enliven site interpretation, and heritage touring.

Chapter 4 begins with narrowing the scope of greenway design and heritage tourism to six factors that are selected from eight elements in chapter 2 and chapter 3. These six factors are closely related to each other and collectively become the criteria for framework evaluation, which helps to analyze what specific aspects of heritage tourism and greenway design help support both.

Chapter 5 uses case studies to investigate how five cases are applied to the evaluation framework in Chapter 4. After a systematic illustration and evaluation for each case, parallel quantitative comparisons are summarized and calculated to illustrate the degree to which each case is addressing good criteria developed for heritage and greenways. Collectively, patterns will be inferred and findings can be drawn.

Chapter 6 discusses the analysis from quantitative comparisons of the cases in chapter 5, then the lessons are drawn based on the findings and specific cases from the matrix are called out for discussion. Then recommendations are proposed to answer the sub-research questions, ultimately providing valid recommendations for physical heritage greenway design in future projects.

Chapter 7 focuses on Savannah Greenway that theoretically and practically gives an example of how the methodologies of this thesis would be employed in physically greenway projects, which ultimately proposes recommendations that are applied in Savannah Greenway Conceptual plan.

Chapter 8 concludes this thesis' contribution to further topics concerning future heritage greenway projects.

The structure of the thesis is presented as below (Figure 1).

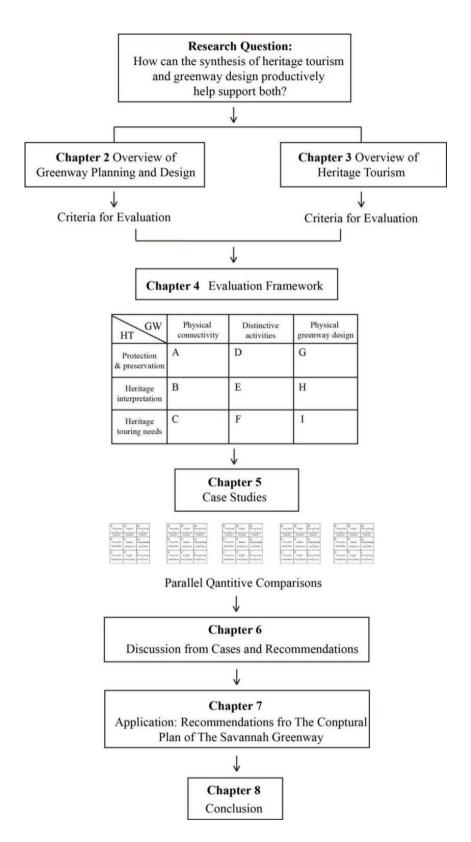


Figure 1: Thesis Structure (Figure by Author)

CHAPTER 2

OVERVIEW OF GREENWAY PLANNING AND DESIGN

2.1 Definition and Types

2.1.1 Definition

The greenway, as a linear and continuous corridor that connects essential areas and public spaces, has been considered to support multiple landscape functions to achieve the landscape sustainability. There appeared various definitions and categories in recent twenty-year greenway studies. This term was first created and used by Willam H. Whyte (1959), a landscape writer, who proposed in his book *Securing Open Space for Urban America* (Whyte 1959). Then in 1995, Charles Little gave a comprehensive definition of greenways in the book, *Greenways for American* (Little 1995). He concluded that a greenway is not only linear and open route connecting natural places including parks, historic sites, and valleys, but also "any natural or landscaped course" that provides path or tranquil route for pedestrian or bicyclists (Little 1995).

2.1.2 Greenway Types

Based on different scales and landscape context, and according to different researchers and scholars (Fabos 1995; Ahern 1995; Little 1995), greenways can be categorized into five major types:

1. Urban riverside greenways. This type of greenway is a kind of long linear route that follows near the river, waterfront areas. Figure 2.1 gives an example of the overview of Milwaukee River

Greenway.



Figure 2.1: Milwaukee River Greenway (Souce:http://www.rockthegreen.com/single-post/2016/04/11/River-Revitalization-Foundation)

Greenways with recreational functions: these types of greenways, having a high visual value,
 linked bunches of landscape natural and cultural resources that across recreational spaces (Fabos
 1995).



Figure 2.2: Recreational Greenway Encourages People Biking on the Path (Sources: City of Raleigh Capital Area Greenway Planning & Design Guide)

3. Cultural and historic greenways. Obviously, historic and heritage resources are distinctive characters of these type of greenways. They have high values of aesthetics, education, and economy

because of its valuable resources, and provide "permanent- seasonal accommodation" for lots of visitors (Fabos 1995).

- 4. Natural corridors with ecological values. Owned essential natural resources, these types are "ecological corridors" near rivers, waterfront areas and valleys that are easy to spot (Ahern 1995).
- 5. Comprehensive greenway systems or networks. It hopes establish the entire network that links various landscapes including parks, open spaces to greenways locally and regionally (Little 1995).

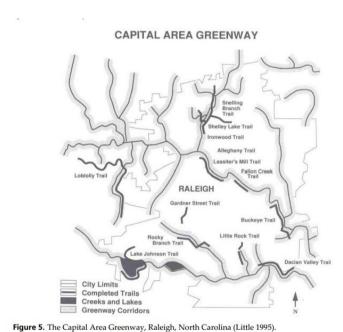


Figure 2.3: The Capital Area Greenway (Source: Image from Little 1995)

2.2 Evolution of the Greenway

2.2.1 History Movement

Most literature (Little 1995; Fabos 2004; Searns 1995) suggests that the original greenway concept was started from Frederick Law Olmsted and the famous Boston Park System in 1867

(Figure 2.4). It was normally called as "Emerald Necklace". Especially today, Olmsted's original concept of greenway also embraced several goals of new multiple greenway ideas (Luis 1998).



Figure 2.4: Olmsted's Park System (Source: Image from Fabos, 1985. P.131)

Later on, the "greenbelt" concept was proposed for maintaining landscape integrity and in the long history of the greenway evolution, it was considered as an important process (Luis 1998). With more expansion of greenway concepts, there appeared many landscape architects making effort in National Park Services for the development and connections of essential landscapes (National Park Service 2004). Other scholars like Philip Lewis (1964) received national attention for the "Wisconsin Heritage Trail Proposal" (Lewis 1964). He found numerous and scattered numbers of significant resources along river corridors, when he conducted natural and cultural mappings with his team.

Aside from Lewis, other landscape scholars also focused on ecological conservation and proposed some insightful methods. For example, Ian McHarg (1969) was one scholar to explore planning river corridors using landscape assessment techniques, which contributed a lot for greenway movement (McHarg 1969). Later, Luis (1998) gave high evaluation for McHarg that "his contribution to the greenway movement cannot be denied, as these areas often occur in linear patterns of spatial

distribution", and also integrate with other significant resources (Luis 1998).

Since 1990s, the "greenway movement" (Fabos 1996) has emerged as an international trend, many projects and countries were engaged in these greenway projects (Yu 2006). In this aspect, this movement involved more landscape architects to broaden their skills in this field, which will be beneficial for current and future greenway planning and design projects.

2.2.2 Contemporary Trends

Recently a number of practical and successful greenway projects have emerged, ranging from some scenic trails to larger comprehensive greenway systems. They have required resources to meet the objectives of their policies and their physical design strategies. Heated debates about the direction of greenways have concentrated on the ecological, recreational, aesthetic and economic aspects and how it interacts with communities, while little systematic research conducted on heritage greenways and their integration. Current research needs to be focused on the overall assessment of cultural, historical, natural and social aspects, helping to promote sustainability, and identifying the multiple values of landscape aesthetics, recreation and the tourism economy. It is providing numerous opportunities for the improvement in aspects of environmental conservation, recreation and heritage preservation that will be applied in both current and future greenway projects.

2.3 The Benefits and Functions of Greenways

Greenways can provide numerous benefits and functions concerning its multipurpose objectives and complicated landscape contexts. In this thesis, five benefits are developed and discussed: ecological, cultural and historical, recreational, aesthetics, tourism and economic benefits.

2.3.1 Ecological Benefits

As primary benefits, the greenways are regarded as an effective way to support natural conservation and ultimately achieve ecological sustainability. In the book, "Designing greenways", the author, Little (1995) explained several functions of greenways, which highlights its multiple benefits including ecological, recreational and economic values (Little 1995). The designing of greenway helps emphasize and remain some of the distinctive characters of the landscape, which contributes a lot for the goal of "landscape integrity" (Little 1995).

Greenways are also considered as a way of enhancing the fluency between habitats through nutrient movement and functions of nutrients, species, and energy, in this way to ultimately mitigate the fragmentation (Hellmund and Smith 2006). Moreover, greenways also help minimize the nature process, in which way helping for water conservation, erosion controlling and sediments filtering (Ahern 1995). Thus, greenways exert an essential part in environmental conservation that achieves for the goal of sustainability in the landscape frameworks, which provide wonderful opportunities for people to experience the natural beauty.

2.3.2 Cultural and Historic Benefits

There are many cultural and historic benefits for greenway systems. Dated back to 1995, Fabos (1995) pointed out that many greenways routes are integrated with historic and cultural benefits, since for more than hundreds of years, numerous cultural routes are traveling through rivers and waterfront for major traffic lines (Fabos 1995). Given attention to these aspects of natural conservation and historic preservation, the entire greenway will be greatly enhanced. Here giving a heritage river greenway as an example. On the Schuylkill River Greenway Project, designers and planners are

making great effort on preserving ancient tunnels, old canals, and other historic resources for environmental and natural conservation (Fabos 2004). By protecting valuable resources along the river, the greenway in the projects effectively reflected its cultural and historic benefits, and brought visitors wonderful greenway experiences.

2.3.3 Recreational Benefits

As for the recreational society, particularly in big cities, modern recreational functions are crucial aspects in greenways, and exert potential benefits for citizens (Yu 2006). As people are demanding more free time and a better work-life balance, the appearance of a recreational society with multiple recreational functions have become essential for contemporary society. Greenways can not only help to relieve a huge burden for people to engage in outdoor activities, but they can also improve the quality of life in the busy lives for members of local communities.

As transport corridors, greenways connect nicely with each other and, as a destination, provide a good way for the pedestrian, walkers, and cyclists for wonderful sightseeing along the landscape to where they want to go (Conine et. al., 2004).

2.3.4 Aesthetics Benefits

As a linear space that links separated green spaces, aesthetic values are manifested and strengthened by linking fragmented landscapes, and helping to enhance the overall image of the city (Yu 2006). In a larger context, a comprehensive greenway system with a well-designed layout and aesthetically pleasing arrangement provides continuous routes for visitors. This approach enhances the aesthetic value of the landscape. Moreover, design elements in a greenway such as plentiful plants,

completes the greenway facilities, and the contiguous traveling route contribute to a positive visual experience, and increase the awareness of the beauty for the visitors.

2.3.5 Tourism and Economic Benefits

Currently, some organization, companies and studies are making effective effort for improving tourism and economic benefits in greenway planning and design process. According to a study by The National Park Service (1992), it reflected that the greenways will affect the economic influence of local business that combined with traveling, public services and new employ (National Park Service 1992). All of these bring tourism opportunities for communities to cooperate with local companies. Greenways' economic benefits also reflect in the aspects of "land prices, increasing business and opportunities of commercial trade" (Bueno et. al., 1995). From such aspects, tourism and economic benefits are essential part that can not be overlooked in greenway planning and design.

2.4 Greenway Planning Strategies

In 1990s, a significant greenway planning strategy was proposed by Jack Ahern (1995), with four principles: "protective, defensive, offensive, and opportunistic" (Ahern 1995). As a strategic planning concept, this greenway planning has been developed over hundreds of years, and currently contributes a lot in the liner system for the integration of landscape planing to achieve in the sustainable framework (Sijmons 1990; Van 1998).

For these strategies, they represent how a comprehensive greenway network supports and strengthens the current landscape matrix from these four methods. Firstly, the strategy of "protective"

is applied to the situation when the current landscape can well support the process and patterns of sustainability (Yu 2006). Secondly, "defensive" strategy is employed when "a new buffer zone" is created for preserving the isolated area (Ahern 1995). In this way the core area is safely protected. Then "offensive" strategy can be used to create a "buffer zone" and new corridors that connected to the entire greenway network (Ahern 1995). The last strategy is often applied in the common situation where no corridors and landscape matrix exited. In this situation the opportunity comes. It helps to establish an optimized landscape pattern when the planning goal is clear to employ (Yu 2006). These four greenway strategies provide sensible and reasonable concepts that can inspire more for future physical greenway design projects.

2.5 Greenway Physical Design

After providing an overview of the greenway planning concept, the next section will introduce significant detailed features and facilities in a greenway physical design, which includes trail layout, slop, width, wayfinding system, surface material,

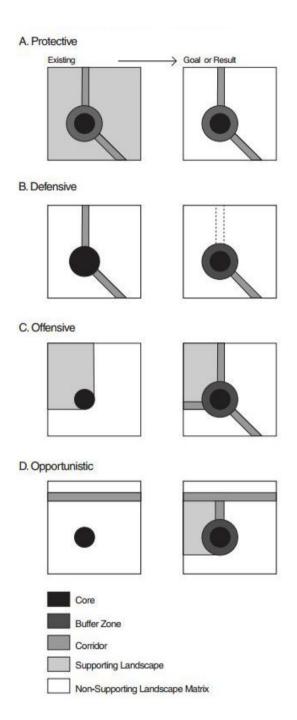


Figure 2.5: Greenway Planning Strategies (Source Image from Ahern 1995)

branding and logo, and greenway users (Figure 2.6).

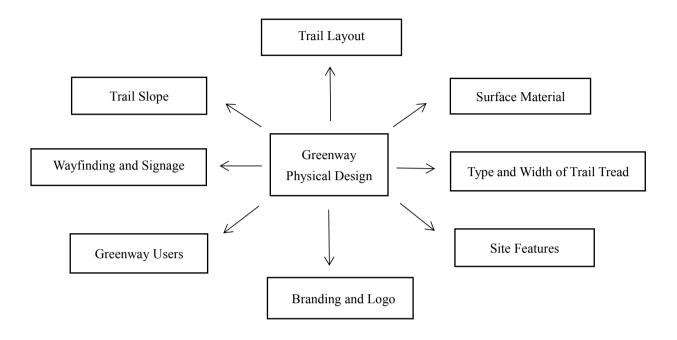


Figure 2.6: Components of Greenway Physical Design (Summary from Flink, Charles 1993; 2001)

2.5.1 Greenway Trail Layout

For greenway trail layout, In 1993, Flink and Searn (1993), gives six types of trail layouts in the book: *Greenways, A Guide to Planning, Design, and Development* (Flink and Searn 1993). These are "linear trail layout, loop trail layout, stacked loop trail layout, spoked loop trail layout and maze layout" (Flink and Searn 1993). These layouts can be differ, and not limited in only these six, but indeed they illustrate different and clear configurations of greenways, which serve as a good reference for landscape designers and planners to consider in the primary process for greenway planning.

Moreover, in practical physical greenway planning and design projects, more concrete and specific

situation can be occurred before proposing the layout, such as determining the topography, avoiding traveling sensitive areas and so on. But it at least, these six layouts provide sensible and comprehensive guidance for local communities when deal with practical programs.

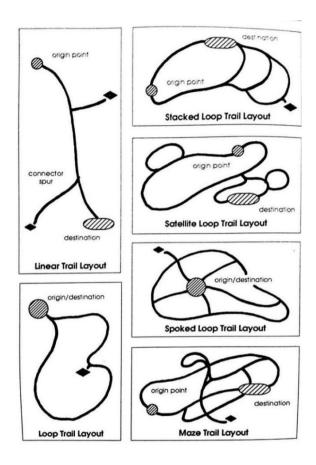


Figure 2.7: Types of Trail Layout

(Source: Image from Flink and Searns 1993)

2.5.2 Types of Trail Tread

According to Flink and Searns (1993), there are six types of treads (Figure 2.6). These are "single tread/single-use, single-tread/multiple-use, single-tread/time of use, single-tread/zoning for multiple use, and multiple tread/single use" (Flink and Searns 1993). Different types of trail tread

help to accommodate different users, as illustrated in the figure 2.8, their widths and situations are varied in order to meet several groups' needs of trail users.

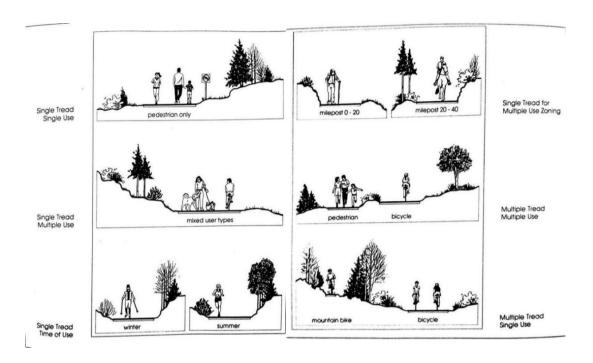


Figure 2.8: Types of Trail Treads

(Source: Image from Flink and Searns 1993)

2.5.3 Way Finding and Signage System

Wayfinding and signage on the entrance or at an intersection of a trail helps visitors to navigate the area, and orient them to other places nearby, and easy to found the sites they want to go. With creative and interesting interpretive elements, unique wayfinding can provide people with specific and direct distance information about their intended destination. These signs and wayfindings are not only simple structures giving guidance and information for users, but they can also be an interpretive way to endow local residents to identity with sites and elements of the existing greenway trail network.



Figure 2.9: Delaware & Lehigh Vehicular Wayfinding System (Source: Capital Area Greenway & Design Guide, 2014)



Figure 2.10: Walnut Creek Trail Sign (Source: http://gonehikin.blogspot.com/)

2.5.4 Branding and Logo

Unique branding could be regarded as key selling points for attracting visitors to a specific area. To some extent, distinctive and innovative branding strategies and logos are serving as a powerful catalyst to advance the reputation of greenway locally and regionally, and can help designers and greenway commission members to generate innovative ideas for new greenway designs, ultimately reinforcing the trails' identity. See examples in Figure 2.9.



Figure 2.11: Trail Logo Examples

(Source: Image from Flink et. al.2001)

2.5.5 Site Features

Other site features such as bridges, boardwalks, trailhead designs and artwork are all crucial components for a greenway design. These facilities need to be placed near various entrances to increase its utilization for visitors and staffs and easy to spot for maintenance (Flink and Searns 1993; 2001). Particularly for trailhead design, the entrance gives visitors their first impression when they enter the greenway, so a well-designed trailhead is of great significance.

2.6 Key Elements Determine Successful Greenway

After the summary of literature review for greenway planning and design, four key elements are proposed in this thesis to determine what makes a successful greenway.

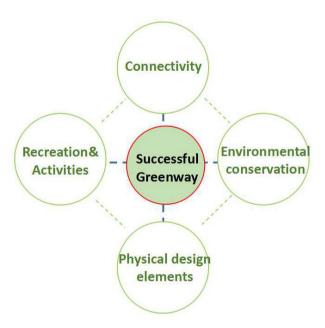


Figure 2.12: Key Element Determines Successful Greenway

(Figure by Author)

2.6.1 Connectivity

Among all of the aspects of a successful greenway design, connectivity is the first element for designers to consider, which helps promote landscape integrity in the entire greenway system. Some projects might only focus on one segment while ignoring the larger trail network or multiple destinations. Emphasizing the continuity of green spaces, fragmented green spaces in a greenway system will be connected and well structured.

Also, the ecological, social and economic value will be supported and strengthened. So overall, greenways offer a strategic approach to conserve and enhance landscape integrity by focusing on some of a landscape's most important connections and dynamics, and promoting the goal of sustainability, both locally and regionally.

2.6.2 Environmental Conservation

As for the ecological benefits of a greenway, environmental conservation is a crucial element for creating a successful greenway. Particularly in some sensitive areas, without appropriate connection or protection, these fragmented zones tend to be discarded or undervalued in the long term. Thus emphasizing the importance of environmental conservation, particularly in habitat areas, can increase and protect the area available to many types of animals and plants, and ensure the harmony between humans and nature.

2.6.3 Recreation and Activities/ Programs on Path

Distinctive recreational activities and programs are considered significant elements for a successful greenway design. They are designed to accommodate different types and demands of users, especially for specific users on the path. As for the two main groups of residents and tourists, they are

attracted and engaged in greenways' activities that combine historical, cultural and natural aspects.

Ultimately, this is to entice and motivate them to explore more of the community, and to better understand the stories of the city and its surroundings. Thus, the active engagement of recreational activities that accommodate different greenway users will help to enhance the lives for community and strengthen pride among local citizens.

2.6.4 Physical Design Elements that Represent and Reinforce Trail Identity

As previously discussed regarding greenway physical design, there are some distinctive greenway design features that greatly represent and reinforce the trail identity. Elements such as a comprehensive wayfinding system, branding strategies and logos, path material representing local identity, and other facilities, such benches, shelters and trail-head design. These all contribute to a successful greenway design.

CHAPTER 3

OVERVIEW OF HERITAGE TOURISM THEORY

3.1 Definition and Concepts

3.1.1 Definition of Heritage

Before being able to understand the term heritage tourism, it vital to know the meaning and significance of it. In 2013, Howard, a heritage scholar, proposed that heritage is considered to be used for preservation and collecting, instead of only for various architecture (Howard 2003). Then Smith (2006), the scholar referred that "heritage is a symbolic and emotional embodiment of our past, comprising of activities that involve remembering, commemoration and communication of memories, traditions and social values" (Smith 2006). These historic and cultural resources are considered as essential parts in the tourism market, which endow visitors emotional experience to appreciate the story of the past.

3.1.2 Definition of Heritage Tourism

The NTHP (National Trust for Historic Preservation) in the U.S gives the definition of heritage tourism that traveling somewhere and participating activities to experience the authenticity and interesting stories of the past (National Trust for Historic Preservation 2014). Heritage tourism can provide residents and tourists good opportunities of visiting local historic sites, and natural places, where impart them local traditions and essential information about the site. In this way it leads to a

memorable and unique experience.

3.1.3 UNESCO's Heritage Efforts that Related to Corridors

During recent years, UNESCO had identified many historic and cultural corridors that will potentially create many opportunities for local communities and multiple cultural chances in the tourism market (UNESCO World Heritage Conservation 2013). UNESCO has made significant efforts for sustainable heritage tourism through using various approaches. In 2013, UNESCO in cooperation with UNWTO, have launched a project called the "Silk Roads Heritage Corridor", which was promoting sustainable growth in the Asian area (UNESCO World Heritage Conservation 2013). This ancient Silk Road served as a significant trade route that linked several countries, such as China and Rome (UNESCO World Heritage Conservation 2013).

At the UNWTO meeting in 2016, there presented several sustainable tourism strategies such as "marketing and promotion, capacity building and tourism facilitation" (UNWTO Silk Road Programme 2016). These strategies not only creates unique and memorable experiences for worldwide travelers, but also provides extraordinary opportunities that will be helpful for future corridor projects. It also inspired many heritage scholars and designers to propose more valid and sensible strategies in terms of economic growth in the tourism market.

3.2 Evolution of Heritage Tourism

Going back to ancient times, human beings learned to exploit the remnants of the past as recreational resources in urban and rural areas (Newcomb 1979). The literature review suggested that heritage tourism initially emerged from remote places and certain periods, and were considered as the

oldest known tourism methods. In ancient manuscripts, the stories of ancient businessmen, sailors and adventurers were recorded such as when they were exploring and appreciating the Great Pyramids and the Nile River in Ancient Egypt.

In the middle ages, travelers from European countries traveled among old cultural cities where they appreciated the myriads of grandiose architecture, cathedrals and artworks (Marsh 1989). The Grand Tour, was an experience that enhanced education and artistic appreciation, and appeared at a time that was popular among European upper-class elites during the 16th and 17th centuries, which included Paris, Turin, Milan, Venice, Florence, Rome, and Naples (Towner 1985). Tourists then changed from English nobility to other groups of people such as lawyers, doctors and businessmen, later in the 18th century. This suggests that the theory proposed by Plog (1973) was verified in previous tourism research, in that travelers were divided into two groups, "all-concentric and psychocentric" (Plog 1973). Then during the middle of the 19th century, the Grand Tour became a fascination for American tourists, and has exerted a significant part in heritage tourism that has captured the attention of most visitors to Europe (Darren 2002). Despite more innovative tours now being formulated, many tourists still choose to follow the routes of those in the Middle Ages (Darren 2002).

3.3 Current Research in Heritage Tourism Theory

After conducting a literature review, it was identified that heritage research first began in the 1980s. Current research is concerned with these aspects: heritage interpretation, authenticity and quality, and heritage touring.

3.3.1 Heritage Interpretation

Heritage interpretation is considered as the process that visitors are enticed to obtain more information and get better experiences, if immersed into the combination of interesting, thematic environmental phenomena and historical stories (Smith 2006). Tilden (2008), a well-known heritage scholar in his classic book, *Interpreting Our Heritage*, told that based on primary information, interpretation illustrates it and then identifies the deep meaning of facts, and how our daily lives are related to them (Tilden 2008). So from a greater level of exploration, visitors are well-informed and understand better the significance and value of cultural legacies and what they impart into them (Smith 2006). This enriches their personal experience and enhances the chances of a meaningful heritage experience.

3.3.1.1 Interpretation and Tourist Experience

In terms of different types of visitors, interpretation is the most crucial factor for ensuring that they get an unforgettable experience. Schouten (1995) argues that tourists are mainly expecting memorable experiences and not all of them are interested in the reality of the history (Schouten 1995). Thus it is the way it is essential for the interpretation being well presented and accurately interpreted. In this circumstance, tourists gain the understanding of something presenting them according to their own interpretations, which can be historic activities, multiple culture or old

architecture (Elena 2007). Additionally, behaviors of visitors are more determined by the characters of interpretation and presentation (Darren 2002). As for the visitors, they actually do not care too much what type of specific tourism they belong to, as their goal is to gain a memorable experience and enjoy the tour with their families or friends (Darren 2002). Therefore, to better understand the educational and recreational role in order to create more unique experience as for different visitors, it is essential to propose such heritage interpretation.

3.3.1.2 Interpretive System Model and Interpretive Theme

The interpretive system model (Figure 3.1) reveals crucial aspects within the existing heritage tourism research that includes four key parts: interpretive theme, interpretive layers, the core of interpretation and interpretive media (Shi 2009). This figure 3.1 shows the system model and what their components are.

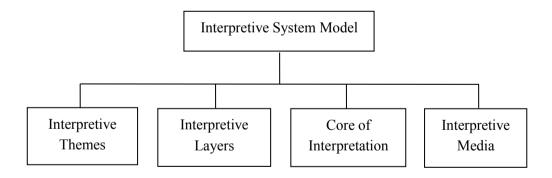


Figure 3.1: Interpretive System Model

(Source: Summary from Shi 2009)

3.3.2 Core of Heritage Tourism- Authenticity and Quality

As for the meaning and significance of authenticity, Boyd (2002), a heritage scholar asserted that

authenticity is the the core of heritage tourism to make a traveling "more unique and memorable" (Boyd 2002). Richard and Airey (2003) suggests that "to be persuasive and intriguing, interpretation must be based on history" (Richard and Airey 2003). To lead a real experience, other scholars hold slightly different views. Handler and Saxton (1988) indicated that rather than only endowing visitors emotional connection between themselves and the authentic world, this authentic experience also helps setting the feeling for a "real selves" (Handler and Saxton 1988). In this way they proposed insightful views of this core element for heritage tourism.

3.3.3 Heritage Touring and Touring Needs

As for heritage tourism and touring needs, different scholars have their different opinions and arguments about it. As Butler and Waldbrooke (1991) have asserted that, originally, heritage tourism is according to tourists' perceptions for characters of some destinations, instead of merely the sites themselves (Butler and Waldbrooke 1991). Another scholar, Moscardo (2001) stated that according to various views, "visitors are divided into 'mindless' or 'mindful' visitors, or normal tourists and heritage tourists" (Moscardo 2001). Giving such enticing and interesting tour and traveling, many tourists, particularly mindful visitors, are motivated at gaining authentic heritage experience, as they are personally and emotionally involved in places including parks, museums, theaters, and so on.

3.4 Key Elements for Successful Heritage Tourism

Table 3.1: Source Summarizing for Elements of Successful Heritage Tourism

Elements for a Successful Heritage Tourism	Source Summary
Preserve and Protect Significant Resources	ConsultEcon, Inc. 2002. Cultural Heritage Tourism. 2005. Cultural Heritage Tourism. ORG. 2016. McKercher. 1993.
2. Focus on Authenticity and Quality	Darren, J. Timothy, 2002. ConsultEcon, Inc. 2002. Cultural Heritage Tourism. 2005. Cultural Heritage Tourism. ORG. 2016. National Trust Heritage Tourism Program. 2014.
3. Enliven Site Interpretation	Darren, J. Timothy, 2002. ConsultEcon, Inc. 2002. Cultural Heritage Tourism. 2005. Cultural Heritage Tourism. ORG. 2016. National Trust Heritage Tourism Program. 2014.

	Darren, J. Timothy, 2002.
	ConsultEcon, Inc. 2002.
A ((T))	Cultural Heritage Tourism. 2005.
4. "Touring": Participation and	Cultural Heritage Tourism. 2016.
Collaboration	National Trust Heritage Tourism Program. 2014.
	McKercher. 1993.

Summarizing for the literature review for heritage tourism, and also referring to some current heritage project principles (Table 3.1), four factors are selected in this thesis, to determine a successful heritage tourism.



Figure 3.2: Key Elements Determine Successful Heritage Tourism (Figure by Author)

3.4.1 Preservation and Protection

Summarized from literature review, it can be concluded and inferred that preservation and protection of significant cultural and historic relics in heritage sites are considered essential processes that contribute to successful tourism. In 2014, five principles are proposed by The National Trust for Historic Preservation (2014), which considered that preservation and protection are primary for heritage tourism to confirm that historic and cultural resources are essential elements that can not substitute for local residents (National Trust Heritage Tourism Program 2014). To enhance people's awareness of preservation and protection for heritage resources, it is virtually significant for the community to identify valuable resources such as historic sites, local traditions and culture with a comprehensive protection plan (National Trust Heritage Tourism Program 2014).

3.4.2 Focus on Authenticity and Quality - Telling the Story

As mentioned previously, authenticity was introduced and considered a crucial part in heritage tourism (Boyd 2002). In the long term, it is crucial for heritage managers to create a more authentic environment, to provide a real and unique experience for visitors (Handler and Saxton 1988).

Although there are many issues to be resolved for a successful heritage tourism industry, the vision of authentic heritage tourism programs is promising and gives tourists various opportunities in traveling and visiting.

3.4.3 Enliven Site Interpretation

The literature review also introduced the concept of interpretation, which was identified as an essential component of heritage tourism. To make heritage tourism more successful, it is essential to develop an interpretation system that can provide a comprehensive method for enlivening the heritage

sites, and evoking tourists to be fully involved in a rich and wonderful heritage tour.

3.4.4 Heritage Touring and Touring Needs

As previously discussed, a more meaningful experience enables tourists to emotionally interact with sites and landscapes. To achieve a better and more successful experience in heritage tourism, a more thorough understanding and accommodating the needs and demands of various tourists can be a challenge for designers and decision makers to consider.

3.5 Summary

This chapter gave an overview of the definition, evolution and the current research focus of heritage tourism. Four key elements that contribute to determining how successful heritage tourism are: preservation and Protection, authenticity and quality, enliven site interpretation, and heritage touring. These elements help to generate criteria for evaluation of the relations with greenway design in chapter 4.

CHAPTER 4

EVALUATION FRAMEWORK

4.1 Introduction

Chapter 2 and 3 gave an overview of greenway design and heritage tourism by discussing its evolution and current trends, as well as its current research focus. They also summarized eight key elements for successful greenway design and heritage tourism. For greenway design, these are connectivity, environmental conservation, recreation and activities, and physical design elements that represent and reinforce trail identity, while for heritage tourism, they are preservation and protection, heritage interpretation, and heritage touring needs.

In this chapter, the scope of greenway design and heritage tourism is narrowed to six aspects. In greenway design, physical connectivity, distinctive activities on the path, and physical design elements are selected as the core elements related to heritage tourism (Figure 4.1). Firstly, as for greenways' physical connectivity, the linkages of various historic sites give tourists continuous and comprehensive heritage tour experience, also leading them to cultural and historic destination. Secondly, some activities on greenways are pertained to heritage programs, such as cultural events, historic festivals or celebrations, which can give attention to culture heritage tourists. Lastly, many detailed greenway designs that represent and reinforce trial identity can be integrated with interpretive heritage elements, exemplifying the distinctive

way for boosting heritage tourism. It will demonstrate how specific greenway features, such as wayfindings, brandings, and benches help with heritage interpretation, and create meaningful experience. In this circumstance, these core factors are selected.

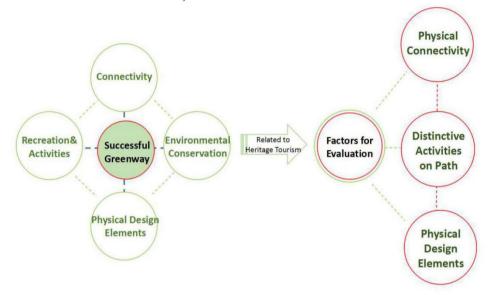


Figure 4.1: Factors Selected from Successful Greenway Elements (Figure by Author)

Similarly, preservation and protection, heritage interpretation, and heritage touring needs are the three aspects of heritage tourism that are related to greenway design (Figure 4.2). First of all, significant historic resources along greenways can be opportunities for tourists to explore and appreciate, thus appropriate historic preservation and protection can ensure such balance between heritage tourism and greenway activities. As for heritage preservation, cultural interpretive elements and distinctive themes help for creating a unique greenway tour, which are also considered closely related factors for greenway design. Lastly, accommodating heritage touring needs, particularly for heritage tourists, can engage public participation in greenway activities, and also inspire more ideas for physical greenway design features.

Consequently, all of three above are selected as key factors for supporting greenway design.

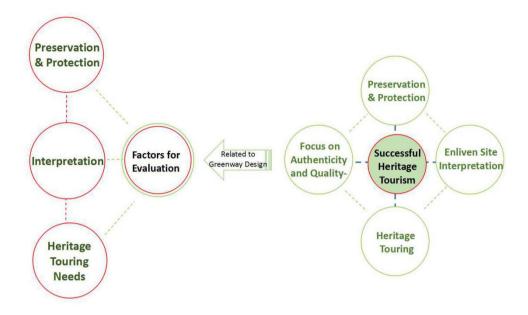


Figure 4.2: Factors Selected from Successful Heritage Tourism Elements (Figure by Author)

Then these six factors are separately listed in the evaluation framework (Figure 4.4), which help to analyze what aspects heritage tourism and greenway design help support both.

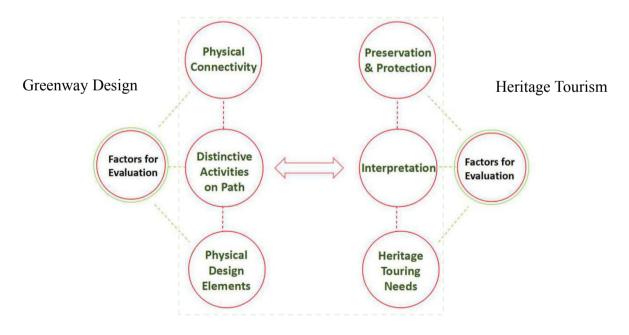


Figure 4.3: Criteria for Evaluation (Figure by Author)

	EVALUA	EVALUATION FRAMEWORK	
Greenway Design Heritage Tourism	Physcial Connectivity	Distinctive Activities On Path	Physical Design Elements/ that Pepresent And Reinforce Trail Identity
Preservation and Protection	More forms of connectivity based on preservation Loiscrete historical sites are linked to the greenway Continuity through multiple heritage preservation sites	 10. Activities focused on preservation and protection 11. Light foot-print activities 12. Protection and preservation activities through education 	 19. Wayfinding includes heritage conservation 20. Branding based on eco or/and cultural preservation 21. Physical design incorporates authentic heritage elements
Interpretation: Telling A Story About Heritage	4.Multiple linked interpretive sites 5. Interpretive theme based on connectivity 6. Sequential interpretation B	 13. Interpretation integrated into existing/conventional greenway activities 14. Heritage- based interpretive activities 15.Interpretive system model based on activity types 	22. Physical design details help with interpretation23. Branding have interpretive theme24. Signage and wayfinding incorporates interpretive elements
Heritage Tourism Needs	7.Safety when traveling on the route 8.Ability to navigate route 9.Variety of touring routes for rich experience	16.Activities coupled to touring needs 17. Touring periods (eg. 1-2h, 1-2d, 1-2w) based on multiple activities 18.Activities that meet the needs of specific tourists F	25.Detailed design elements that meet basic needs 26.Design elements accommodate specific tourists' needs 27.Branding helps create rich and meaningful experiences

Table 4.1: Evaluation Framework

4.2 Explanation of the Evaluation Framework

The evaluation framework (Table 4.1) presents twenty- seven scenarios demonstrating the synthesis between heritage tourism and greenway design concerning three aspects of each. The following paragraphs will provide a detailed explanation of these scenarios based on previously discussed theories and will be clearly illustrated with some practical examples.

A: Connectivity + Preservation and Protection

1. More Forms of Connectivity Based on Preservation

In the large context of the landscape configuration, the variety of a heritage corridor's linear forms, associated with alternative routes physically constitute the essential part for the greenways spatial natural and cultural environment, which are subsequently integrated into the entire heritage preservation and protection framework. These forms of connectivity, including canals and waterways, as well as biking and walking paths (Figure 4.5) are not only regarded as a replacement, but also help for the entire greenway planning process, as they have set up a linear network emphasizing on cultural and historic resources for achieving "landscape synergy" (Ahern 1995).

Additionally, in the process of landscape change and history transition, greenways' network follows the historic corridor that is abundant with cultural and natural resources. This provides multiple and dynamic opportunities for transportation, commodities trade, and tourism in this region where history and the complexity of the canal systems inevitably influence the shape and forms of the trails. A successful case example, such as the Illinois and Michigan Canal National Heritage Corridor (will refer to the case study in Chapter 5), links fragmented landscape features

such as historic towns and industrial sites, strengthening a durable network and linear features capable of ecological, recreational and social functions, formulating a successful model for the preservation of cultural and historic legacies.

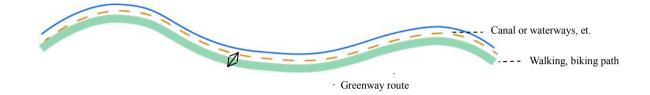


Figure 4.4: More Forms of Connectivity based on Preservation (Figure by Author)

2. Discrete Historic Sites are Linked to the Greenway

This greenway network was established along with fragmented historic sites, and is primarily based on the planning strategies of the "opportunistic", as proposed by Ahern (1995). As the greenway network model illustrates (Figure 4.6), this situation where one or more historic sites are separated from the greenway network, abundant cultural resources and historic remnants scattered near rivers or canals are often hard to notice. Just as Van (1998) and Sijmons (1990) highlighted that this strategy strives to set up a liner framework, which can replace the constraint of planning in the comprehensive landscapes (Van 1998; Sijmons 1990). Therefore, creating a potential greenway with a corridor employs the tactics of supporting overall continuity in the concept of the combination of greenway planning strategies (Ahern 1995) and the preservation of a heritage network. Consequently, such discrete historic sites get a great deal of attention and are able to achieve the desired landscape configuration in both the corridor planning and revitalization of heritage preservation.

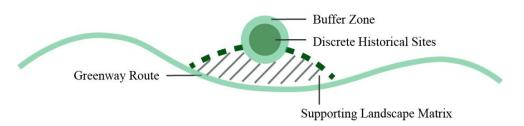


Figure 4.5: Discrete Historic Sites are linked to the Greenway (Figure by Author)

3. Continuity Through Multiple Heritage Preservation Sites

Following planning strategies and greenway intrinsic linear characters, this situation constitutes an integrated complementary greenway system within these linkages of multiple heritage preservation sites. Realistically, several segments of greenways are or can be ignored or discrete from the greenway system, or sometimes particular obstacles, such as different typologies, fragmentation of habitat areas can easily interrupt the trail or isolate islands along the corridor. As for these historic sites, the continuity of the greenways also ensures the fluency of valuable cultural and natural resources among various sites in the linear preservation network. In this way, a natural synergy is ultimately established for an inseparable and strong integration of heritage preservation and greenway physical connectivity.



Figure 4.6: Multiple Heritage Preservation Sites Linked on Greenway (Figure by Author)

B: Connectivity + Interpretation

4. Multiple Linked Interpretive Sites

Linkages of these interpretive sites of the greenway constitute a holistic and sustainable network in the spatial configuration context. Scattered among these interpretive sites, there can be numerous cultural and historic resources composing of cultural and interpretive transmissions that are circulated along the greenway, which contributes to the networks' intrinsic cultural values in the interpretive landscape pattern.

Furthermore, as a tourism draw, various sorts of interpretive information and resources are dispersed, particularly those that are attractive to visitors, such as tourists that are traveling to interpretive sites looking for meaningful and unique heritage visions. These interpretive sites offer distinctive opportunities for strategic communication between visitors and scattered cultural remnants, ameliorating peoples' negative feelings on tedious traveling routes.

Additionally, as crucial destinations among heritage products, these interpretive sites are more likely to encourage visitors to explore the local cultural traditions using various interpretive media. These methods create interactive and emotional learning experience for tourists, which promote memorable heritage tour experience.



Figure 4.7: Multiple Interpretive Sites Linked on Greenway (Figure by Author)

5. <u>Interpretive Theme Based on Connectivity</u>

Establishing a clear and creative theme system based on connectivity will facilitate the prosperity and high quality of heritage tourism in a region. Some scholars and related programs have indicated that linear routes or greenways, with a similar theme, can effectively motivate and attract visitors for traveling to a specific place they plan to (Elena 2007). In this circumstance, connecting these destinations into a route, with distinctive theme, can help establish a comprehensive network for heritage preservation and protection. One great example of a theme heritage route is the Virginia Music Heritage Trail (referred to the fifth case study in chapter 5), which emphasizes the uniqueness of the music heritage with the theme of "a place of beauty- a place of song" (The Crooked Road 2014). This heritage greenway brings vitality to this region. It also provides extraordinary opportunities for visitors to understand and experience traditional American music, ultimately fostering their pride and interest in both the preservation and celebration of local music history (The Crooked Road 2014).



Figure 4.8: Interpretive Music Theme as an Example for Greenway Connectivity (Figure by Author)

6. Sequential Interpretation

Based on regular successions in a similar pattern, it is of significance for designing sequential interpretation that creates convenient, durable and safe touring experience for tourists

by strengthening their individual understanding and appreciation of the heritage sites. By emphasizing rhythm, sequential interpretation draws in visitors, creating a special experience from the entrance into the greenway, and it also strengthens the landscape patterns by varying the modes of similar interpretive elements. Additionally, the perspective of the "Cycle of Evolution," proposed by Richard (1980), is considered as a cycle model for the tourism development (Richard 1980). Through a dynamic process of heritage greenway - emergence, growth, maturation and decline - sequential interpretation instills vitality into a heritage tour that effectively reinforce cultural and historic values, enhancing the fluency of the narrative for a dynamic greenway network (Richard 1980).

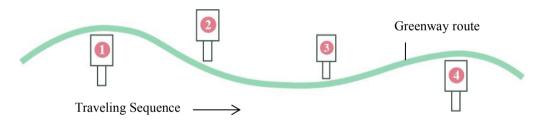


Figure 4.9: Sequential Interpretation (Figure by Author)

C: Connectivity + Touring Needs

7. Safety When Traveling on the Route

A lack of safety is the most common issue facing long linear greenways, particularly scenic long trails through untraversed areas. Some segments of the trails are not perfectly linked, or they may abruptly disappear into discarded cemeteries or high-crime areas where safety cannot be ensured. Moreover, mindful visitors have a high demand for safe routes, and they identify the

convenience of transportation to their destination, whether by bus or foot, particularly during the off season or at night. Concerning such situation, currently more and more greenway projects have taken measures to ensure that they provide visitors with a safe and convenient tour, such as detouring abandoned land or cultural sites with high crime rates, strengthening the linkage between some segments, and improving patrol security.

8. Ability to Navigate Route

Continuous greenway with clear route without interruption or blocking can effectively assist visitors, particularly mindless visitors, navigate a route. For example, when scenic trails disappear into wet marshes, visitors who do not bring maps or have a poor sense of direction will certainly get lost. Such situations can be avoided if the connectivity is greatly enhanced through appropriate measures, such as adding more necessary wayfindings and navigation signs. For mindful heritage tourists, their ability to obtain information helps sensitize them to the environment and improves their capacity to navigate the location. Therefore, connectivity greatly improve the efficiency of directly reaching the visiting, lodging and dinning destinations.

9. Variety of Touring Routes for Rich Experience

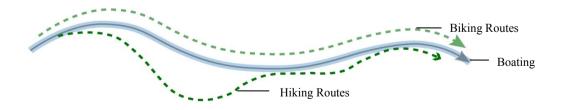


Figure 4.10: An Example of Variety of Routes Model (Figure by Author)

Diversity of traveling routes provides alternative transportation and multiple choices for

visitors supporting heritage tourism. It is reflected in the comprehensive greenway system which is composed of multiple paths, and also meets touring needs in aspects of transportation methods, touring guidance and humanistic care. As for the transportation methods, the road trail or water boating route gives visitors multiple travel options. A great example is the Anacostia River Greenway (referred to the third case study in chapter 5), where visitors can appreciate rich natural resources when they are traveling by boat or walking on multiple paths, which enriches their recreational experience. As for heritage tourists, various routes grant them a specific heritage experience of exploring the cultural resources and historic relics that are not often detected by non-heritage visitors.

D: Activities + Interpretation

10. Activities Focused on Preservation and Protection

Among the various activities on a path, those that focus on preservation and protection actively require people's participation and they are advertised as distinctive activities at most heritage sites. Recent years have seen the emergence of volunteer-based programs in new heritage greenway projects such as watershed cleanups, walking into natural heritage jungles and wildlife conservation hiking, which help create an interaction between visitors and their surroundings (Figures 4.11 and 4.12). Through these exploration and preservation activities, visitors gain a wonderful opportunity to explore and touch nature, and also appreciate the authenticity and identity of its significant cultural and ecological resources, which provokes a specific and evocative experience. Thus, such a combination is an effective way to improve the reputation and attractiveness of the heritage site.



Figure 4.11: River Watershed Cleanup in West Medford http://mysticriver.org/watershed-clean-ups/



Figure 4.12: Natural Hiking in the 22-mile Linville Gorge Loop. - Graham Hodge https://rootsrated.com/stories/backpacking-north-carolina-s-linville-gorge-loop

11. <u>Light Foot-Print Activities</u>

This type of activities ensure that tourism has a light impact on the sensitive environment. Even though most greenway activities are non-motor cycling and carbon free, such as biking or walking that have little influence on natural fields, they sometimes inevitably interfere with ecological conservation, especially if they involve traveling into sensitive areas or areas occupied by endangered species. So advocating such light foot-print activities is critically significant for the improvement of nature quality. Such activities balance the interaction between humans and nature, and create mutual harmony. Furthermore, they facilitate tourists' awareness of nature conservation and restoration, which also contributes to an authentic and enriching heritage experience.

12. Protection and Preservation Activities Through Education

Greenway activities with an educational purpose can enhance the trail users' awareness of preservation and protection, improving their understanding of the cultural and natural heritage, and also instill residents and visitors the feeling of identity. There are a variety of educational

trail activities, especially on special days such as Earth Day or annual local festivals. Of all users, students are the target group that benefits the most from these greenway programs. The pictures below show two greenway education programs that provide students with learning opportunities that involve touching nature. From such activities, tourists gain a further understanding of the history of an area by witnessing and participating in authentic exploration. These activities also act as catalysts, attracting other tourists and bringing vitality and prosperity to the greenway activities, and promoting more tourism opportunities.



Figure 4.13: Outdoor Discovery Center Macatawa Greenway Programs http://outdoordiscovery.org/education/sc hool-programs/



Figure 4.14: Field Study Trip in Redmond Greenway Education Program http://mtsgreenway.org/about/publications/ AnnualReport20092010.pdf

13. Interpretation Integrated Into Existing/ Conventional Greenway Activities

When meeting the demands of greenways' recreational function, an integration of interpretation perfectly manifests the goal of providing a provocative and memorable experience to local residents and tourists. Taking the activity of jogging in the background of heritage tourist sites as an example, to enhance heritage value, details that increase people's appreciation

of heritage interpretation need to be created and implemented. For example, slogans, necessary interpretive signs along the route, T-shirts related to interpretive themes, and brochures for the athletes are interpretive elements that substantially increase people's engagement during recreational activities. Such an approach avoids intentional incorporation of heritage interpretation into existing greenway activities, since it not only encourages people to obtain interpretive information, but also achieves the goal of promoting awareness of heritage protection.

14. <u>Heritage- Based Interpretive Activities</u>

These heritage-based activities can enhance the trail users' awareness of participation in greenway activities, helping enrich their experiences by providing a better understanding of natural and cultural heritage and legacies. By closely touching historic sites or experiencing local customs, visitors have the privilege of exploring the sites on their own, which intellectually and emotionally creates a close connection with the cultural and traditional circumstance.



Figure 4.15: Heritage-Based Interpretive Activity- Cragg Cabin Festival (Source:https://iandmcanal.org/event/ cragg-cabin-festival)



Figure 4.16: Heritage-Based Interpretive Activity- Sampling Artisan Food and Wines Festival http://www.travelmedford.org/blog/artinbloo m

With the goal of creating authentic and provocative experiences, heritage-based interpretive activities include holding historic events such as visiting historic battlefields, ancient places, and appreciating natural beauty like horse riding, trail hiking, and jogging. Some heritage tourists are interested in some intriguing and innovative festivals related to cooking, or joining in local residents to experience their lifestyle, just as the figure 4.15 and figure 4.16 illustrate. Apart from this, a great example is the Folk Potters trail. In the Folk Pottery Museum, interpretive activities are held that encourage visitors to experience handicrafts with craftsman, and video-presentations provide them a better understanding of the folk art tradition in Georgia from the 1840s (Burns et al.2010).

15. Interpretive System Model Based on Activity Types

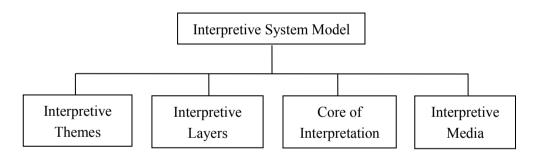


Figure 4.17: Interpretive System Model

(Source: Summary from Shi 2009)

As previously mentioned, the interpretive system model includes four parts: interpretive themes, interpretive layers, the core of interpretation, and interpretive media, as the figure 4.18 explained (Shi 2009). Based on a variety of activity types, different measures can be taken for each of these four parts. For example, recreational activities are an alternative approach to supporting the interpretive system model that influences participants' understanding of

of the interpretive system model will provide visitors with multiple tour experiences by giving them the opportunity to participate in a variety of activities that enhance their comprehensive understanding of heritage interpretation.

F: Activities + Touring Needs

16. Activities Coupled to Touring Needs

For coupling to touring needs, some activities such as jogging, hiking, and nature appreciation can provide visitors numerous opportunities for appreciating the beauty and getting involved in such recreation. As they immerse themselves in nature, a nostalgia is provoked that creates an emotional connection between the visitors and the heritage site's landscapes. For example, "The Folk Potters Trail of Northeast Georgia" endows tourists with opportunities of traveling through the countryside and beautiful scenery to visit pottery workshops (Burns et al.2010). In this workshop, it provides visitors with wonderful opportunities for appreciating the nature beauty of the trail by horse riding. And furthermore, the activity leads them to witness the process of pottery making, which arose them a fantastic feeling of touching the history and meeting the touring needs as well.

17. Touring Periods (eg. 1-2h, 1-2d, 1-2w) Based on Multiple Activities

To accommodate different types of visitors, and based on multiple greenway activities, the touring periods are varied. As for heritage tourists, they spend more time traveling and pay more; thus, they stay longer than non-heritage tourists. For example, in long linear greenways, there

always hold festivals and celebrations lasting a week or even longer, which entice people to experience traditions by living in local residents' homes. Other activities, such as monthly or annual music celebrations, accommodate the demands of music lovers and give them an opportunity to immerse themselves in the fantastic world of music.

18. Activities that Meet the Needs of Specific Tourists

Activities such as nature hikes, skateboarding, and horse-riding provide specific tourists, particularly heritage tourists, with wonderful opportunities to get close touch with heritage sites. For example, the hiking activities in the woods satisfy tourists' desires to explore and live in nature. From such exploration with nature, they are better informed of better understanding of the local cultural environment in a way that creates an emotional connection with the heritage site.

G: Physical Design + Preservation and Protection

19. Wayfinding Includes Heritage Conservation



Figure 4.18: River Town Arrival Wayfinding Signage (Source: Susquehanna River Water Trail Interpretive Master Plan)

Various types of wayfinding signs that incorporate conservation information are good tourism products for interpreting the authenticity of significant ecological resources in heritage areas. Serving directional and educational functions, some wayfinding signs highlight information that raises awareness of nature conservation while helping tourists navigate crucial heritage sites. Incorporated into informational knowledge and interpretive elements, small wooden or plastic boards manifest and help interpret ecologically significant areas. Moreover, ecological and cultural resources surroundings also influence the locations of wayfinding signs. For example, educational wayfinding signs found at entrances, in historic buildings or in state parks introduce detailed heritage history, while others situated in the woods serve a navigation purpose. The wayfinding sign examples (Figure 4.18) show information about native plant groupings and striking geological features. Bright colors or darker fabrics are integrated into the local characters, creating recognizable and fascinating tourist attractions for preservation and protection areas.

20. Branding Based on Eco or/And Cultural Preservation

Branding that incorporates ecological or/and cultural preservation is not only a distinctive feature that integrates with more ecological elements of a greenway, but it is also a powerful label for highlighting the uniqueness and identity of heritage preservation. Currently, by the creation of brands based on ecologic or/ and cultural preservation, it reinforces the reputation for establishing successful greenway projects. For instance, the logo of the Patapsco Valley Heritage greenway highlights ecological features, a river and a bridge, creating a complete heritage scene that alerts people to the need for valley and nature conservation along the heritage greenway.

Advertising this branding in the media, such as brochures, websites and videos, increased the public and local organizations' support for this valley heritage greenway project.



Figure 4.19: The Logo for Patapsco Valley Heritage Greenway (Source: http://www.ellicottcity.net/events/)

21. Physical Design Incorporates Authentic Heritage Elements

Physical design features that incorporate authentic elements help visitors understand heritage preservation in an authentic and unique way. For example, the rocks on a trail imitate the natural shape of the mountain, creating a great illustration of natural heritage elements in physical designs. From the panels that imitate nature, people can easily gain a sense of the need for protection and preservation, and authentically participate in the heritage tour. Other examples like benches, signs or shelters incorporating heritage features can also highlight heritage preservation. For instance, the text on a board describing authentic heritage elements can easily inform people about the ecological and natural features that are part of environmental conservation efforts.



Figure 4.20: Susquehanna Greenway Sign Design (Source: http://susquehannagreenway.org/sites/default)

H: Physical Design + Interpretation

22. Physical Design Details Help with Interpretation

Some details of physical design on paths provide potential opportunities for heritage interpretation. Elements such as lighting fixtures, signage and other amenities can be used to shed light on the identity of components in existing greenway trail systems. In the given example (Figure 4.22), the pavilion, the gray stone signage, the material and fabric of the detailed design features work together to create a complete interpretive scene along the House Creek Trail. The stone signage placed next to the decorated pavilion and the mosaic pavement introduce the history and story of the area, providing an illustrative and effective interpretation, which helps visitors better understand and appreciate such a small heritage area.



Figure 4.21: Signage Along House Creek Trail (Source: City of Raleigh, "Capital Area Greenway Planning & Design Guide")

23. Branding Has Interpretive Theme

Branding with a distinctive interpretive theme could be regarded as a tourist attraction. It also advances the reputation of greenways in the competitive local tourism market. The interpretive theme in the branding helps the region or community distinguish itself from others and highlights the quality and authenticity of its assets and resources. The specific theme related to the history of a region will give people an unusual impression, enhancing their understanding of the story within the interpretive theme. A great example is the Milwaukee River Greenway logo. This logo incorporates the Chinese traditional concepts of yin and yang in an innovative way, which symbolizes the interaction between human activities and legacies and the landscape of the greenways. From its identity design, the interpretive theme of representing the natural and cultural heritage is greatly represented in this design.



Figure 4.22: Milwaukee River Logo

(Souces: http://thiel.com/signage-milwaukee-greenway/)

24. Signage and Wayfinding Incorporates Interpretive Elements

Interpretive elements are considered crucial features that help strengthen the relationship between heritage interpretation and greenway design. Furthermore, they give designers ideas for creating cultural identity in physical greenway design. For small facilities, such as interpretive panels, bulletin boards and trail head signs, designers are tasked with creating special characters from local features. The example below shows the innovative design methods in The Susquehanna Greenway Project. Written in wooden material, interpretive techniques and their distinctive design features will attract visitors, and furthermore, other boards also have similar styles that placed along the greenway (Susquehanna Greenway Project 2012). The picture on the right shows several interpretive elements, including descriptive title, texts, informative graphics, and images, that help create an emotional connection between the individual and the historic sites (Susquehanna Greenway Project 2012).





Figure 4.23: Susquehanna Greenway Project (Source:http://susquehannagreenway.org/sites/default/files/Visual_Guidelines_July_2012.pdf)

As for the path characters, art pavement markers incorporating interpretive elements are appealing features that represent local cultural identity, and also provide trail users with an intriguing and interesting visual experience. With the first impression of aesthetic decorated patterns or mosaics, visitors are informed of the background and history of an area, and if they are local residents, the markers increase their sense of cultural identity. Steed Taylor's temporary "road tattoos" (Figure 4.24) are such example of symbolic art markers for greenway design.





Figure 4.24: Steed Taylor, Invasive "Road Tattoos" (Source: http://ncmuseum.org/visit/the_park/#slide-1-21)

I: Physical design + Touring Needs

25. <u>Detailed Design Elements that Meet Basic Needs</u>

A comprehensive wayfinding system helps meet the basic touring needs of safety and navigation. In recently years, more greenway projects have established such comprehensive systems that provide both heritage and mindless tourists with a more convenient and engaging tour. As for other design elements such as shelters and benches that represent and reinforce the greenway's identity, it is hoped that visitors will be satisfied with basic greenway facilities that help them navigate the site or provide lodging during touring seasons.

26. <u>Design Elements Accommodate Specific Tourists' Needs</u>

Interpretive signs provide detailed and abundant information about the historic sites and legacies to heritage tourists. Other design elements, such as paths in historic materials and shelters in local material that represent a greenway's identity, also help increase their sense of being in a historic place, enriching their experience.

27. Branding Helps Create Rich and Meaningful Experiences

The visual elements in great branding give heritage tourists the first striking impression of a heritage site, since they are curious and sensitive to information concerning heritage and greenways. This distinctive branding also stimulates their sense of preserving the heritage legacies, particularly if some interpretive elements are related to natural or cultural features that they appreciate. These features enhance and provoke their emotional experience.

4.3 Summary

This chapter developed the evaluation framework of the criteria that was generated in Chapter 2 and 3. It detailed and explained the twenty-seven scenarios of integration between greenway design and heritage tourism. This subsequently answered the main research question of how their reciprocal relationships help support both concepts. Then several cases will be discussed and analyzed that apply to this framework, and an evaluation will be employed for illustrating each case about how it applies to the framework, which to make a parallel comparison between heritage tourism and the greenway design.

CHAPTER 5

CASE STUDY

5.1 Introduction

Why Use Case Studies?

Case studies are used as the primary evaluation method in this thesis. According to landscape researcher Mark Francis (2001), it is considered an excellent research method in landscape architecture, as it provides a systematic methodology based on a literature review and qualitative comparisons (Francis 2001). The literature review was conducted in Chapters 2 and 3, and this chapter examines qualitative comparisons among six aspects related to heritage tourism and greenway design, searching for patterns and strong relations between them. These six aspects are: in heritage tourism, 1) preservation and protection, 2) heritage interpretation, and 3) heritage touring needs; in greenway design, 4) physical connectivity, 5) activities on the path, and 6) physical design elements. Additionally, as Francis (2001) suggests, the case study methodology expects to be an excellent way for the process of the profession, as the profession in the field of theory and knowledge develops further, more methods can be applied (Francis 2001). This thesis hopes to use a case study to advance the practice related to the relations between heritage tourism and greenway design.

Reasons/Methods for Selected Cases

These cases are selected from reviewing numbers of current successful heritage greenway projects online, books, or journals, collecting information data then making the quantitive comparison among them. The reasons and methods are listed as:

- The boundaries of selected greenways are fitted into the heritage corridor, abundant with abundant natural and cultural resources.
- The resources for some cases are from classic greenway books such as *Greenways for*America and Designing greenways, some are from official reports, and some are from the websites of successful greenway projects.
- Sufficient and valuable resources need to be easily found online or from literature.
- Different types of multi-use greenways are covered. They include ecological greenways
 and historic heritage corridors, and they also vary in length: the first two are long
 distance national corridors and the later ones are medium and small distance greenways
 in scenic and historic routes.

Methods for Case Study

In this chapter, heritage tourism and greenway design in each case are introduced based on these six elements (Figure 5.1). After reviewing and understanding these details, twenty-seven criteria in the evaluation framework will be concerned (Figure 5.1). Then the framework will be simplified and symbolized for the case analysis as Figure 5.2 shows, which gives systematic evaluation of each case.

,	Preservation & Protection
Heritage Tourism	Interpretation
	Touring Needs

Greenway Design			
Physical	Distinctive	Physical	
Connectivity	Activity	Design	

Figure 5.1: Introduction of Heritage Tourism and Greenway Design (Figure by Author)

	Ev	aluation framework	
GreenwayDesign Heritage Tourism	Physical connectivity	Distinctive activities on path	Physical design elements/ branding that represent and reinforce trail identity
Preservation & protection of authenticiy and identity of significant cultural & eco resources	1.More forms of connectivity based on preservation 2.Discrete historical sites are linked to the greenway 3.Continuity through multiple heritage preservation sites	10.Activities focused on preservation and protection 11.Light-footprint activities 12.Protection and preservation activities through education D	19.Wayfinding includes heritage conservation 20.Branding based on eco or/and cultural preservation 21.Physical design incorporates authentic heritage elements G
Interpretation: telling a story about heritage	Multiple linked interpretive sites Interpretive theme based on connectivity Sequential interpretation	Interpretation integrated into existing/conventional greenway activities Heritage- based interpretive activities Interpretive system model based on activity types	Physical design helps with interpretation Randing has interpretive theme Signage and wayfinding incorporates interpretive elements
	7.Safety when traveling on the route. 8.Ability to navigate route. 9. Variety of touring routes for rich experience.	16.Activities coupled to basic touring needs 17.Touring periods(eg. 1-2h, 1-2d, 1-2w) based on multiple activities 18. Activities that meet the needs of specific tourists.	25. Detailed design elements that meet the basic needs 26. Design elements accommodate specific tourists' needs 27. Branding helps create rich and meaningful experience

Figure 5.2: Evaluation Framework (Figure by Author)

Based on the evaluation framework in Chapter 4, the criteria, from number one to twenty-seven in each grid, are evaluated one by one in case studies. The results are calculated to evaluate and illustrate the degree to which each case is addressing excellent criteria developed for heritage and greenways. For colors to evaluate each case, green color signifies that the case studies proved for all criteria, orange meets two, and yellow means one. By examining the criteria collectively, patterns may be inferred and lessons can be drawn from these five cases.

Connectivity + Preservation & Protection	D Activities + Preservation & Protection	G Physical design + Preservation & Protection
B Connectivity + Interpretation	Activities + Interpretation	H Physical design + Interpretation
C Connectivity + Touring Needs	F Activities + Touring Needs	Physical design + Touring Needs

Figure 5.3: Symbolized Evaluation Framework (Figure by Author)



Figure 5.4: Evaluation for Color (Figure by Author)

The map shows the location of the cases in the U.S.

- 1. The Illinois and Michigan Canal National Heritage Corridor (IMCNH)
- 2. East Coast Greenway in Georgia
- 3. Anacostia River Water Trail
- 4. Civil War Heritage Trails
- 5. The Crooked Road: Virginia's Music Heritage Trail



Figure 5.5: The Cases in the U.S. (Resource map: http://swmaps.com/generic-us-map/)

5.2 Case Analysis

5.2.1 The Illinois and Michigan Canal National Heritage Corridor

5.2.1.1 Background Information

The Illinois and Michigan Canal National Heritage Corridor (IMCNHC) is the first national heritage corridor in the US, which connects The Chicago River to The Mississippi River and goes through 96 miles in the region (Wikipedia 2016). After being completed in 1848, this long transportation route rapidly transformed Chicago, a small and old city, into an important transportation center for the mid-west area, and it promoted economic revitalization as well as tourism development ("Road Part 2: The Story of The Illinois & Michigan Canal" 1988). From the figure 5.6, it is easy to see that numbers of historic towns and industrial fields are well-linked along the trail, which had set a comprehensive network for connecting the area.

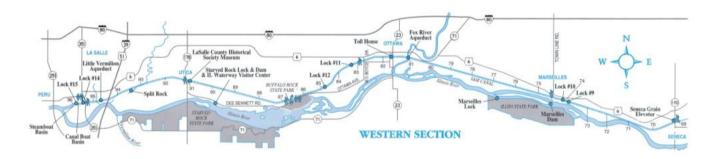


Figure 5.6: Western Section of I & M Canal National Corridor (Source: image from http://dnr.state.il.us/lands)

5.2.1.2 Introduction of Heritage Tourism and Greenway Design

Heritage Tourism

Table 5.1: Introduction of Heritage Tourism for IMCNHC (Table by Author)

u	Preservation & Protection	- Historic remnants, industrial archaeology, cultural resources are scattered in nearly one hundred miles routes, established a comprehensive plan for comprehensive ecological conservation as well as economic revitalization.
Heritage Tourism	Interpretation	 The overarching theme: Illinois & Michigan Canal Passageway. Interpretive sub- theme: a place for recreation and re-connectionInterpretive methods includes historic voyage, introduction brochures, visual programs.
	Touring Needs	- The touring needs of safety, navigation and lodging are highly satisfied with detailed innovative design elements such as shelters, picnic tables and native residents' houses.

As a national transportation corridor and center of cultural creativity, this corridor has played a significant role in American enterprise as a living history museum, being valuable for people's exploration of historic legacies, strengthening the overall heritage's reputation for half a century ("Road Part 2: The Story of The Illinois & Michigan Canal" 1988). Based on historic theme, heritage-based interpretive activities have developed in this region, bringing vitality and making it possible for greenway civilization and heritage prosperity. Interpretive elements in separated areas such as museums, state parks and archaeological sites along the greenway help in setting up a place to reconnect recreation enthusiasts and nature lovers with a better understand of the canal's heritage.



Figure 5.7: A River Thru History for Specific Tourists (Source: http://www.ariverthruhistory.com/)



Figure 5.8: Cragg Cabin Festival (Source: https://iandmcanal.org/event/cragg-c abin-festival

Greenway

Table 5.2: Introduction of Greenway Design for IMCNHC (Table by Author)

	Greenway Design	
Physical Connectivity	Distinctive Activity	Physical Design
- Followed by the historic waterway, the river water trail physically connects the Great Lakes, fragmented landscapes and separated historic remnants.	- Multiple activities opportunities include hiking, biking, camping, enhanced people's engagement in various celebrations and festivals.	- Interpretive wayfinding system - Interpretive boards - Well-designed rail-heads - Camping facilities - Local material path

As a passageway and "crucial gateway in the Midwest" ("Road Part 2: The Story Of The Illinois & Michigan Canal" 1988), the greenway has provided unprecedented opportunities supporting heritage preservation networks and sequential interpretation, and it also established more forms of connectivity, commemorating the story of the past and connecting with the heritage.

As for a comprehensive wayfinding system, the physical design incorporates cultural preservation elements potentially reinforcing and interpreting the heritage, and it engages more people in heritage preservation and activities with a higher quality of unique tour experience.







Figure 5.9, 5.10, 5.11: Activities on the Path: Biking, Horse Riding (Source: https://iandmcanal.org/experiences/trails2/)

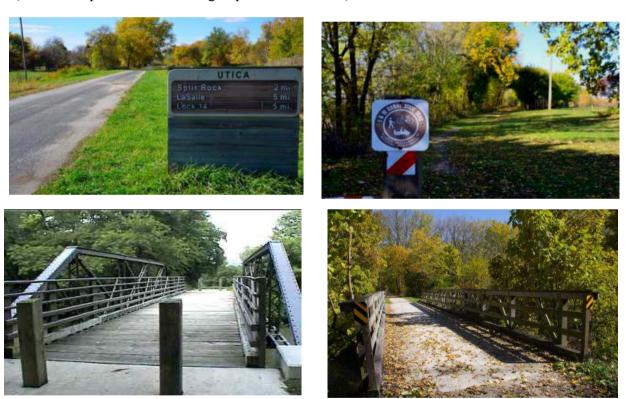


Figure 5.12, 5.13, 5.14, 5.15: Greenway Design Features: Wayfinding, Boardwalks (Source: https://iandmcanal.org/experiences/trails2/)

5.2.1.3 Evaluation for Relationships

	Case study: The Illinois and Mic	Case study: The Illinois and Michigan Canal National Heritage Corridor	
	Evaluati	Evaluation framework	
GreenwayDesign Heritage Tourism	Physical connectivity	Distinctive activities on path	Physical design elements/ branding that represent and reinforce trail identity
Preservation & protection of significant cultural & eco resources	1. Following the trail route, the canal established a natural connector, and transportation system 2. New path created for linking Starved Rock State Park into complete trail system 3. Historical remnants and ecological legacies near the canal are linked for connectivity	10. "Starved Rock Hike on National Trails Day" gives visitors an exploration of natural heritage area 11. Nasalle Canal boat activity set a great interaction with heritage conservation 12. "Mule-pulled" and "Canal Boat Tour" acvities arose people's awareness of canal preservation	19. Wayfinding system includes historical preservation information and navigation 20. Branding incorporates the conservation of corridor into image 21. Path characters: historic and local materials create authentic heritage experience
Interpretation: telling a story about heritage	4. Historical museum, visitor center and other interpretive sites are linked in the corridor 5. The overarching theme-Illinois & Michigan Canal Passageway, gives the significance of transportation in national and regional development 6.	13. 14. "Cragg Cabin Festival" and "New Irish Canal Digger's Tour" activities help interpreting American and canal history 15.	22. Specific elements (bridge, path material, boardwalk) incorporate interpretion 23. Branding with interpretive theme published online and tourism products 24. Wayfinding with two-dimension code provide tourists digital tour experience.
Heritage touring needs	 Safety are ensured along the trail Ability to navigate route Varitey of touring routes for rich experience 	16."Cycling the Canal and World Canals Tour Celebration" activities met the basic and high needs. 17. 18.Activities meet the needs of heritage tourists	25. Wayfinding/ signs meet the navigation and safety need 26. Shelters,trail head and other design accommodate specific tourists' needs 27. Branding helps leading rich and meaningful experience

Figure 5.16: Evaluation Framework for the 1st Case (Figure by Author)

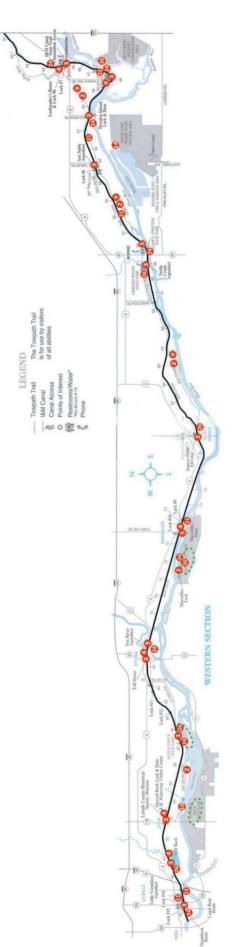


Figure 5.17: Criteria Meet on the Map (Source: http://dnr.state.il.us/lands)

5.2.1.4 Summary

1) Heritage Preservation and Protection Supporting for Greenway

Preservation & Protection	A Connectivity + Preservation & Protection	+	G Physical design + Preservation & Protection
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Figure 5.18:The First Summary

Findings suggest that the canal is doing a good job of connecting preservation with the protection of significant resources to support the heritage corridor's greenway.

In this case, heritage preservation and protection

provides a comprehensive network for enhancing

greenway design in a larger context. Connected

significant historic remnants, ecological legacies near

the canal, and discrete sites like Starved Rock State Park,

this canal established the natural connector that enhanced

the overall prosperity of heritage preservation. Furthermore,

it facilitates transportation system connectivity

D It is suggestive of favorable integration between

preservation.

regionally and sets a valuable model for future canal



Figure 5.19: Historical Remnants,
Trail Along the Canal
(Source:https://iandmcanal.or



Figure 5.20: Historic Remnants, Trail Along the Canal (Source: https://iandmcanal.org/)

distinctive activities and heritage

preservation, which brings people into an
authentic preservation environment and
gives them a fantastic experience of
exploring the beauty of nature and cultural
heritage. For instance, in "Mule-pulled"



Figure 5.21: "Mule-Pulled and "Canal Boat Tour"

Activities

(Source: https://iandmcanal.org/)

and "Canal Boat Tour," (Figure 5.15), visitors are introduced to the canal history and the story of the president, Mr. Lincoln, which facilitates their awareness of canal heritage greenway preservation.

Preservation and protection features are effectively integrated into physical designs that represent authentic heritage elements. As the example suggests (Figure 5.16), wooden bridges, historic fabrics, and local materials recall the change in time and lead visitors into a memorable heritage experience reflecting of the past.



Figure 5.22: Bridge Passing
Through Buffalo Rock State Park
(Source: http://www.about-bicycles.com/i-m-canal-bike-trail-pic3)

Corridor's Preservation Helps Strengthening Greenways

The national heritage corridor provides comprehensive linear concepts, focusing on the entire preservation and the balance between development and conservation at the systemic level. It also endows extraordinary opportunities for reconnecting the public with our heritage regionally and nationally, revolutionizes the transportation system of Illinois and plays a major role in national stories. All of these gives great opportunities for strengthening greenway connectivity.

2) Physical Design Supporting for Heritage Tourism

Physical Design

G Physical design
+ Preservation & Protection

H Physical design
- Interpretation

I Physical design
- Touring Needs

It is apparent that this case gives a great combination of design elements with all the other heritage tourism aspects. (Grid G is already illustrated in the last paragraph.)





Figure 5.24: Two-dimension Code in Sign Board (Source: https://iandmcanal.org/)

Figure 5.23:The Second Summary

H In this case, wayfinding with QR codes placed at entrances or along the way provides visitors a pleasurable digital tour experience (Figure 5.21), gives detailed site information and represents local identity. Additionally, artful sculptures and detail-designed signage are an enticing way for interpreting the corridor's story. Visitors are informed and motivated to sense the history and spirit of the place through this authentic and unique



Figure 5.25: Artworks of Sculpture of Ghost Bridge Near Buffalo Rock State Park (Source: http://iandmcanal. Org/l-trail-pics13)

Experience.

Physical designs help interpreting heritage conservation information and meet tourists' navigation needs, particularly for heritage tourists. For instance, mile markers with the trail logo show information about being 3.5 miles from Buffalo State Park (Figure 5.22), thus meeting tourists and particularly



Figure 5.26: Mile Markers Near Buffalo State Park (Source: http://www.about-bicycles.c om/)

horse riders' needs and appreciating heritage knowledge and history. Local materials along the path give tourists a special feeling of memorable experience in this historic journey for an hour of peaceful fun (Figure 5.23).



Figure 5.27: The Crushed Limestone

Pavement

(Source: https://iandmcanal.org/

experiences/trails)

Comprehensive Wayfinding and Signage Systems Help Raise Reputation of Heritage Tourism

Comprehensive and detailed wayfinding and signage systems are significant and useful for enhancing heritage reputation. Additionally, as the most distinctive features and powerful catalyst related to the competitive local tourism market, creative ideas of detailed elements and interpretive theme helps people better understand the corridor history. Some creative ideas for design elements such as artworks of sculpture of Ghost Bridge give inspiration of how to interpret the corridor's story and represent the heritage greenway's identity.

3) Areas of Concern

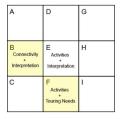


Figure 5.28: Areas of Concern

These two grids suggest that these two combinations need to be enhanced.

- B The overarching theme and several linked historic sites contributed to the entire connectivity; however, no sequential interpretations are designed for tours that interpret the canal history.
- by the greenway's connectivity, especially in regards to meeting specific tourists' needs, such as for a bicycle photographer who seeks an I&M Canal photo tour (Figure 5.24). This special landscape provides them with an attractive and meaningful experience.



Figure 5.29: Bicycles
Photographer Create Image
(Source:
http://www.about-bicycles.com
/BikeTrailPages/im-canal-trailpics13)

<u>Creating Sequential Interpretation can be the Design Inspiration</u>

for Strengthening Greenway connectivity

As for the connectivity combined with interpretation, there lacks of sequential interpretation to emphasize the rhythm for a convenient and enticing tour for visitors, thereby hampering peoples' understanding and appreciation for the interpretive theme. This gives the inspiration for the other greenway project of creating attractive route emphasising on the sequential interpretation.

4) The Poorest Relation of Some met

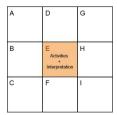


Figure 5.30: The Poorest Relation

For this poorest relation, the good aspect supports the heritage-based interpretation and the

incorporation of heritage into path activities. A recreational passageway network for the development of a hiking/biking trail was established starting from the 1970s. The "Cragg Cabin Festival" event provides a unique tour appreciating authentic crafts related to rituals and the history of prairie life by interacting with local people. There lacks of new and creative interpretive celebrations or festivals based on these existing activities, thereby leading to poorly relations.

5) Overview

All Criteria met

A Connectivity + Preservation & Protection	Activities + Preservation & Protection	G Physical design + Preservation & Protection
В	E	H Physical design + Interpretation
C Connectivity + Touring Needs	F	Physical design + Touring Needs

First and foremost, the clear and interpretive design system helps establish the overall greenway design and the connectivity of this heritage area. Various tourists' needs are also effectively satisfied. Additionally, innovative media such

Figure 5.31:All

as video tours, brochures and the audio need to be widely applied with detailed Criteria met physical greenway design elements, thereby endowing visitors with more fantastic approaches to a memorable and inspiring tour experience. Lastly, in a larger context, the comprehensive preservation heritage network helps reflect several national trends in landscape preservation, which have served as models for future heritage corridor projects.

Some Criteria met

А	D	G
B Connectivity + Interpretation	E Activities + Interpretation	Н
С	Activities + Touring Needs	I

Figure 5.32: Some Criteria met

Firstly, it can be learned that an interpretive system model is considered crucial in the integration of activities and interpretation. Incomplete interpretation can not exert the educational function for educating visitors. Moreover, lack of

interpretive theme with physical connectivity and activities is another challenge, without distinct common thread linking separate historic sites, the overarching

theme cannot regarded as the significance of transportation in national development and regional industrialization, focusing on a premier transportation corridor. Furthermore, developing creative activities based on existing conventional activities for enhancing both heritage tourism and greenways is necessary for decision makers and designers.

5.2.2 The Coastal Georgia Greenway - East Coast Greenway in Georgia

5.2.2.1 Background Information



Figure 5.33: The Coastal Georgia Greenway Map (Source: http://coastalgeorgiagreenway.org/coastal-georgia-greenway)

As part of the East Coast Geenway in Georgia, the coastal Georgia Greenway establishes a 155-mile trail system, which links together numerous historic cultural sites, recreational areas and archaeological towns from South Carolina to Florida, connecting six counties in coastal Georgia (Coastal Georgia Greenway 2016). Following an series of north-south routes, historic canal corridors,

and Highway 17 corridors, the coastal Georgia Greenway Committee is on the road for improving path conditions especially in the Savannah segment, promoting a comprehensive transportation system and sustainable tourism for the coastal communities in the future (East Coast Greenway 2016).

5.2.2.2 Introduction for Heritage Tourism and Greenway Design

Heritage Tourism

Table 5.3: Introduction of Heritage Tourism for the Coastal Georgia Greenway (Table by Author)

,	Preservation & Protection	- Followed north-south routes, several heritage preservation sites are linked in the corridor that had set a comprehensive preservation system in coastal areas.
Heritage Tourism	Interpretation	 Several linked Interpretive sites such as historic parks, museums and monuments help interpreting Georgia history and the greenway over recent years. Interpretive methods includes historic voyage, introduction brochures, audio tour.
	Touring Needs	- The touring needs of safety, navigation and lodging are greatly met by discovering of this historic trial and participating in cultural events and celebrations.

Traveling through abundant heritage resources and numerous interpretive sites along the coastal areas, this Coastal Georgia Greenway Project plays an important role in facilitating the transportation system. These significant cultural and ecological resources along the corridor provide comprehensive network to support greenway connectivity and activities on the path, promoting sustainable and healthy greenway tourism.

Greenway

As a multipurpose trail, Coastal Georgia Greenway creates a safe and continuous route for trail users, including cyclists, walkers, and joggers to enjoy a healthy and comfortable lifestyle. It also leads them to heritage areas with some heritage-based activities such as hiking and biking on the boardwalk available, providing many unique and fantastic opportunities for heritage tourism.

Table 5.4: Introduction of greenway for The Coastal Georgia Greenway (Table by Author)

	Greenway Design	
Physical Connectivity	Distinctive Activity	Physical Design
 Physically connects varies of historic routes from South Carolina to Florida throughout six coastal counties in Georgia. Inter-modal connection for alternatives transportation system 	- Daily exercising like biking, jogging, walking and alternative transportation activities. Other recreational trail-related activities include: nature appreciation, hiking, backpacking	 Logo with ecological features and activities Interpretive markers Shelters, benches Most paths are paved, filled with fine stone or natural material





Figure 5.34, 5.35: Biking on the Coastal Georgia Greenway

(Source: http://coastalgeorgiagreenway.org/gallery/)

5.2.2.3 Evaluation for Relations

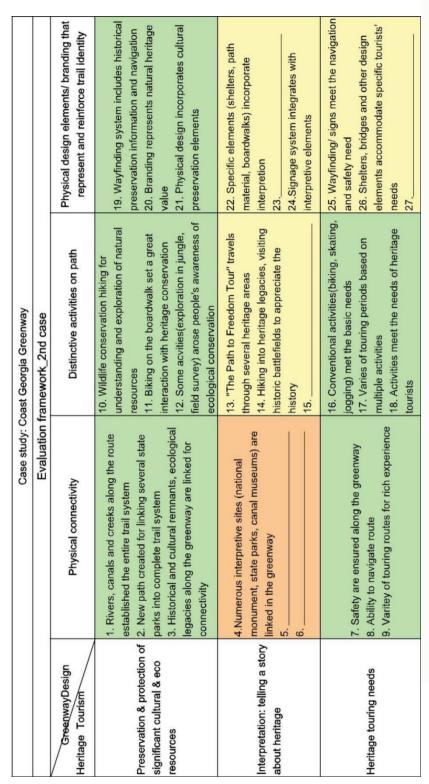


Figure 5.36: Evaluation Framework for the 2nd Case (Figure by Author)

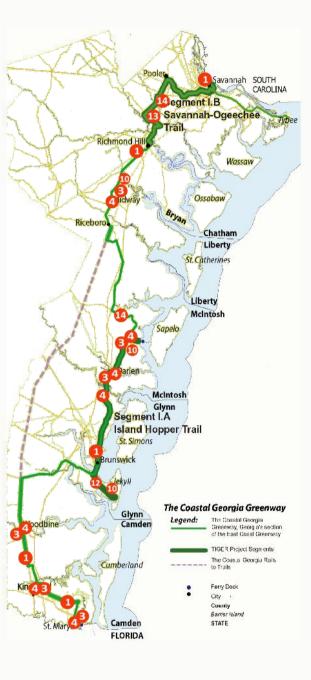


Figure 5.37: Criteria Meet on the Map (Source:http://coastalgeorgiagreenway.org/coastal-georgia-greenway)

5.2.2.4 Summary

1) Preservation and Protection Supporting for Greenway Design

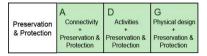


Figure 5.38: The First Summary

Findings

Findings suggest that this coastal corridor greatly supports the heritage corridor's greenway.

This combination links various historic routes from South Carolina to Florida through six coastal counties in Georgia. It also connects the rivers, creeks along marshes, and wetlands in the coastal area, which reinforces the heritage preservation network as well as contribute to the entire greenway's connectivity.

In terms of environmental suitability, activities integrated with heritage preservation and protection contribute to energy efficiency. In this case, small-footprint activities on the boardwalk and wooden bridges minimize environmental impact on the natural area in Savannah River National Wildlife Refuge, a sensitive coastal habitat (Figure 5.29).



Figure 5.39: Small-footprint **Biking** on the Boardwalk (Source:http://coastalgeorgia greenway.org/coastal-georgia -greenwayway/)

The comprehensive wayfinding and branding system is proved to effectively support natural heritage conservation. The logo, for example, incorporated characters of conservative coastal habitats, sunshine beach, native coconut plum, and recreational activities, reinforces 82



Figure 5.40: The Coastal Georgia Greenway (Source:http://coastalgeorgi agreenway.org)

the trail identity as well as promotes ecological heritage value.

Appropriate Heritage Preservation Strategies Contribute for Greenway System

As for a 155-mile ecological greenway, it is a great opportunity for designers and decision makers to emphasize the preservation concept in the entire greenway system. Proposing comprehensive conservation strategies, including transportation infrastructure and detailed designs contributes for better integration.

2) Touring Needs Supporting Connectivity and Activities

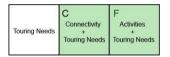


Figure 5.41: The Second Summary

Findings

The Coastal Georgia Greenway trail system makes great efforts to ensure safety for bikers or joggers. For instance, the system includes safe alternative transportation facilities, improvement of striping, and reduced bike lanes. These measures help to improve traffic flow efficiency to improve convenience and connectivity, thereby ensuring safe navigation.

Touring needs are greatly supported by multiple adventures and conventional activities such as whitewater rafting, mountain biking, and recreational cycling. For instance, heritage tourists are greatly provoked for rich experience by individually exploring natural wonders or in a group by cycling along the trails in Skidaway Island State Park. They gained memorable and pleasurable heritage experience 83



Figure 5.42: Cycling Along The Trails in Skidaway Island State Park (Source: http://coastalgeorgiagreenway .org)

when deeply immersed into this extraordinarily scenic and tranquil environment.

Accommodating Touring Needs Support for Greenways' Connectivity

In this case, rehabilitating basic transportation facilities, coordinating different touring periods based on multiple activities are considered appropriate measurement that lead a better experience for enhancing tourists' needs, which also contributes to greenways' connectivity and visitors' active engagement of tourism.

3) Area of Concern

A	D	G
В	E Activities + Interpretation	H Physical design + Interpretation
С	F	Physical design + Touring Needs

Figure 5.43: Area of Concern

Finding suggests that these three integration didn't set good relations.

Even heritage-based and interpretive activities in the coastal area are proved to be successful for the integration with heritage interpretation. The lack of interpretive system model based on activity types leads to a poor relation for the alternative transportation system.



Figure 5.44: The Poster Board with Logo in Jekyll Island (Source: http://happytrailswildtales.com/2014/ 06/jekyll-island-georgias-coastal-gree nway-trails-southernsummerfun/)

H A favorable combination gives to the interpretations integrated with specific design features. For instance, the interpretive poster board with a logo along this trail (Figure 5.33), putting in the eye-catching location, indicates the destination and shows the first image of the trail when cyclists

entered Jekyll Island. With such logo in this simple wooden poster board, it represents and reinforces the trails' local identity, which provokes and motivates visitors beginning their exciting tour from such simple glimpse. However, the interpretive elements featured ecological concepts with humans participation didn't highlight the cultural uniqueness of the branding, due to the lack of theme in the logo.

navigation and safety need both for visitors and specific tourists. Even though a multitude of design elements such as wayfinding, shelters, bridges in this greenway are proved to be effective for accommodating tourists' needs, the stereotype and the lack of creative theme in the logo lead this branding unattractive.





Figure 5.45: Wayfindings with Logo and Branding (Source:https://sagittariusdolly.wordpress.com/)

Creative Theme of the Logo Enhances the Reputation of

Heritage Tourism

As for a significant role of theme in the interpretive system, it is inspiring to accommodate multiple activities on the long liner route to the complete and comprehensive branding system. Just as New York did in this East Coast Greenway project (Figure 5.34), which integrated with ecological features to reinforce its theme as well as represent local identity, indicates recreational and sustainable tourism opportunities for residents and tourists.

4) Some Criteria met

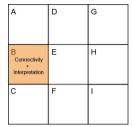


Figure 5.46: Some Criteria Met

The lack of interpretive theme and sequential interpretation in this case indicate a clear, interpretive theme as well as rhythm along the tour is necessary for integration of heritage interpretation for the greenway's connectivity.

5.2.3 Anacostia River Water Trail

5.2.3.1 Background Information

Traveling through Maryland to Washington, D.C., The Anacostia River Water Trail flows nine miles and links separated places for visitors and residents in the community (The Conservation Fund 2016). It provides visitors wonderful opportunities for traveling along the trail. Along the water trail, numerous natural and cultural resources are greatly preserved, which also provides pedestrians and bicyclists lots of recreational opportunities such as biking, jogging, and horse riding. The Anacostia River trail also celebrates America's history, specifically that of Captain John Smith, who explored abundant landscapes and rich natural and cultural resources in 1608 ("Anacostia River Water Trail Guide" 2015). With its establishment and development over the years, this water trail has gained great public attention for its river restoration and watershed conservation, and it has engaged more citizens in actively participating in this corridor.







Figure 5.47: Natural and Cultural Heritage (Source: "The Anacostia Water Trail pdf.")







Figure 5.48, 5.49, 5.50: Natural and Cultural Heritage Along the Anacostia River (Source: "The Anacostia Water Trail pdf.")

5.2.3.2 Introduction for Heritage Tourism and Greenway Design

Table 5.5: Introduction of Heritage Tourism for Anacostia River Water Trail (Table by Author)

	discounting of the state of the				
Heritage Tourism	Preservation & Protection	 Encompass plentiful ecological and cultural resources such as wetland, waterfront parks and aquatic areas, setting a comprehensive conservation and preservation network for Anacostia heritage area. The interpretive theme, retracing the history, described the vibrant 			
	Interpretation	voyage of John Smith, the explorer of this watershed, gave tourists comprehensive and an enticing picture of discovering of the heritage. -Interpretive methods includes historic voyage, introduction			
	Touring Needs	- The touring needs of safety, navigation and lodging are highly satisfied by exploration of the river corridor and its ecological resources in wetland, waterfront parks and aquatic garden.			

The Anacostia River and its watershed link multiple historic and cultural remnants and interpretive sites, providing numerous opportunities for activities focused on preservation, thereby helping establish a comprehensive network for greenway design. Through interpretation and engagement in rich and meaningful heritage experiences, visitors gain a better understanding of history related to the river corridor, and they have a strong personal experience from the story and the past. Also, they attain new depths of understanding and appreciation for the unique and vast values associated with the watershed's history in the 17th century, which helps to raise their awareness of cultural identity and to shape the American Indian culture ("Anacostia River Water Trail Guide" 2015).

Greenways

Table 5.6: Introduction of Greenway Design for Anacostia River Water Trail (Table by Author)

Greenway Design				
Physical Connectivity	Distinctive Activity	Physical Design		
-Physically connects 16 waterfronts to the Anacostia River, museums, parks and other popular destinations	- Various activities for exercising, recreation and natural appreciation including biking, jogging, skating on the path, which bring trail users fantastic greenway experience	 Interpretive wayfinding system Wooden boardwalk Innovative benches Innovative bridges Path in local material 		

The greenway provides visitors a successful connection with a wonderful tour along the Columbia area and connects sixteen riverside neighborhoods to the Anacostia River, waterfronts,

parks, and other famous places (District Department of Transportation 2014). With the goal of transportation advancement locally and regionally, the corridor has created a safe and convenient environment for users and visitors. Furthermore, its programming and adventurous activities bring vitality and potential opportunities for heritage tourism development and prosperity.



Figure 5.51: Biking, Rollerblading on the Trail (Source:http://www.anacostiaws.org/get-inv olved/recreation/anacostia-river)



Figure 5.52: Biking, Rollerblading on the Trail (Source:http://www.anacostiaws.org/get-in volved/recreation/anacostia-river)



Figure 5.53: Bridging the Divide: Innovative Boardwalk (Source:https://www.washingtonian.com/2015/05/04/anacostia-riverwalk/)



Figure 5.54: Boardwalk in Anacostia River (Source: http://www.jdland.com/dc)

5.2.3.3 Evaluation for Relations

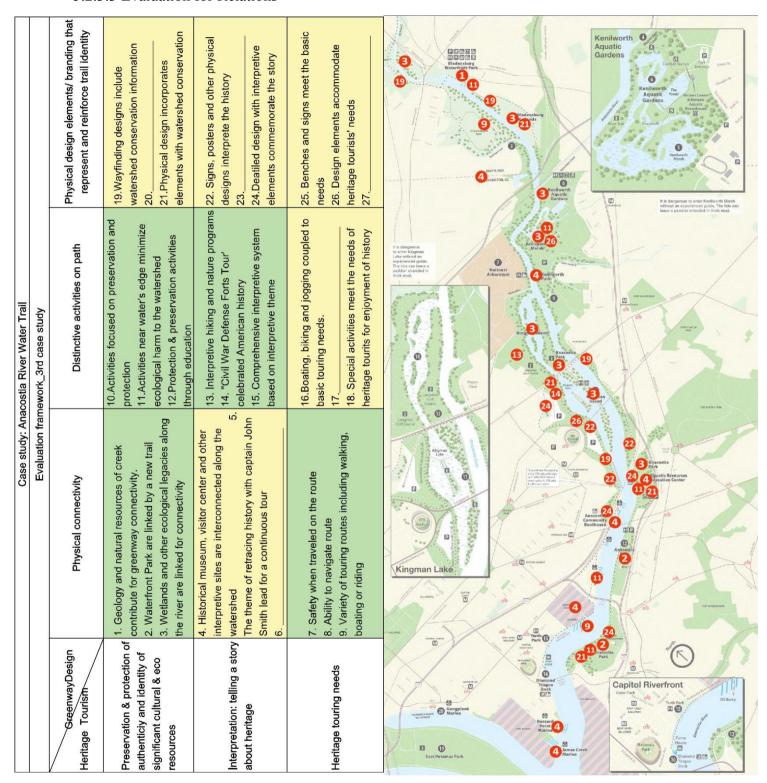


Figure 5.55: Evaluation Framework for the 3rd Case (Figure by Author)

Figure 5.56: Criteria Meet on the Map (Source: "The Anacostia Water Trail pdf.")

5.2.3.4 Summary

1) Connectivity Supporting the Heritage Tourism

Connectivity

A Connectivity
Preservation & Protection

B Connectivity
Interpretation

C Connectivity
Touring Needs

Findings suggest that this water greenway is doing a relatively good job of using its connectivity to support heritage tourism.

A From this strong relation, it is apparent that rivers, canals, and creeks along the route have established the



Figure 5.58: Boating Route Along River Corridor (Source: "The Anacostia Water Trail pdf.")

Figure
5.57:
The First
Summar

also contribute to connectivity.

Additionally, plentiful
natural resources, waterfront parks, wetlands and other
ecological conservation areas along the Anacostia River
also contribute to connectivity.

B The clear and inviting theme from several historic sites lined along greenway ties tourists into the past in a continuous interpretive tour; however, no sequential interpretation is created in this tour.

The touring needs of navigation, safety, and lodging are ensured in this case, leading to a rich and meaningful experience when traveling on this uninterrupted and diverse route, convenient to any destination, no matter by bike or by boat.



Figure 5.59: Boating Route Along River Corridor (Source: "The Anacostia Water Trail pdf.")

Clear sequential interpretation helps for strengthening greenway connectivity

In this case, even the tour is attracted to the visitors for its striking theme, the sequential interpretation is not clearly manifested. Thus it is considered essential to emphasis on its interpretive theme with sequential interpretation to strengthen its connectivity. Moreover, safety is still a challenge particularly for some segments of boardwalks. Although most tourists don't feel unsafe and inconvenienced during the day and tourism seasons, safety is still a threaten for them. For example, there are not enough lighting in scenic segments and lifeboats or necessary security methods near the river.

2) Activity Supporting Heritage Tourism

Activities Preservation & Protection Activities Interpretation Activities Touring Needs Anacostia River, enhancing their awareness of

These three grids show a good relation between activities and the support of heritage tourism.

Activities focusing on ecological conservation and preservation give people access and expose them to the natural beauty of the

Figure natural conservation and restoration. 5.60:

The Additionally, activities such

Second

Summary as fishing and swimming are limited in sensitive habitats or protected areas, minimizing ecological impact to the watershed.



Figure 5.61: Group Fishing Near the Trail (Source:https://www.fws.gov/n ews/blog/index.cfm)



Figure 5.62: "Guided Boat Tour" (Source:http://sailnauticus.org/a dult-sailing/learn-to-sail)

A comprehensive interpretive system in this case proved successful for interpreting the history of the famous sailor John Smith's life. Other heritage-based activities, including the "Civil War Defense Forts Tour" and the "Guided Boat Tour" held monthly and annually, facilitate people's understanding of the theme, recalling the river's story and celebrating American history from the 16th century.

jogging are coupled with basic touring needs for most visitors.

Some adventure activities are provided for heritage tourists such as a trip in a marsh, which meets the need for deep exploration through this heritage area.



Figure 5.63: Kayaking in Marsh (Source:http://sailnauticus.org/adult-sailing/learn-to-sail)

Active Participation of Greenway Activities Bring Vitality

for Heritage Tourism

Distinctive heritage-based activities proved to be effective for visitors' active participation, and regular activities' calendars established in this river trail proved to reinforce the combination of activities with heritage tourism and to accommodate various visitors' needs based on their multiple activities.

Physical Design

G
Physical design +
Preservation &
Protection

H
Physical design +
Interpretation

I
Physical design +
Touring Needs

3) Physical Design inspires Heritage Tourism

Findings suggest a medium connection between physical greenway design and heritage tourism.

Figure 5.64:

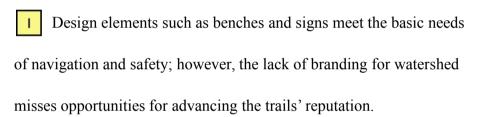
G

Wayfinding maps, logos, and other physical designs in this case

The Third exemplify comprehensive conservation information for the watershed. More Summary 93

detailed information in the kiosk is carefully designed that had helped tourists' understanding of the ecological background in a much more enticing and interesting way.

H Even though the overarching theme provides wonderful opportunities for interpretive designs in signs, posters, and kiosks, there is a lack of resources showing their integration. Moreover, the branding didn't creatively represent distinctive features combined with ecological elements and interpretive themes.



Attractive Interpretive Elements Highlighting Heritage Features is

Necessary for Designers to Consider

In this case, symbols are not perceived attractive and innovative in the design in representing powerful branding and reinforcing local identity in the competitive tourism market. Moreover, distinctive natural or cultural features in this logo are not perfectly manifested for representing its watershed conservation information, with only simple basic information for navigation presented (Figure 5.50). Thus it is necessary for designers to consider attractive interpretive elements that highlight heritage features.



Figure 5.65: Heritage and Wayfinding Interpretation Sign (Source:http://anc7d 01.org/)



Figure 5.66: Wayfinding Helps for Navigation (Source:https://jdant os.wordpress.com/2 011/1)

4) Overview

Criteria that All Met

A Connectivity + Preservation & Protection	D Activities + Preservation & Protection	G
В	Activities + Interpretation	Н
C Connectivity + Touring Needs	F	I

Heritage preservation and protection helps for enhancing connectivity and activities

It is apparent that heritage preservation

Figure 5.67 : Criteria All Met

contributes a lot to the greenway when integrated

with connectivity and activities, and it helps to

enhance the significance of the corridor's preservation and the reputation of Anacostia river trails.

Active Engagement of Multiple Activities Supports for Heritage

Preservation and Interpretation

Multiple activities integrated with heritage preservation and interpretation helps raise public awareness of active engagement for conservation and restoration in the comprehensive interpretive system.



Figure 5.68:
Wayfinding and Logo
of Anacostia
Riverwalk Trial
(Source:https://jdanto
s.wordpress.com/201
1/11/06/the-emerging
-anacostia-trail/)

Moreover, it provides extraordinary opportunities for visitors to appreciate the corridor's immense value in preservation and heritage interpretation.

Integration of Heritage Preservation Accommodating Touring Needs

Having been a major focus, the heritage preservation network provides a larger concept for supporting the greenway connectivity as well as accommodating tourists' needs. It targets local residents and visitors to inspire them with a greater sense of stewardship for heritage protection.

Criteria Some Met

A	D	G Physical design + Preservation & Protection
Connectivity + Interpretation	E	H Physical design + Interpretation
С	F Activities + Touring Needs	Physical design + Touring Needs

Figure 5.69 : Criteria Some Met

As for this relatively poor relation, it's of a challenge to create an innovative and distinctive signage and branding system with heritage interpretation principles, highlighting the overall reputation of the watershed corridor and heritage tourism. Active participation for multiple activities accommodating with touring needs during various seasons is another issues to

be addressed for decision makers and designers. Whereas for its great aspects, The Anacostia River Water Trail provides a successful model for preserving the American history, promoting a bright future of economic revitalization and heritage prosperity for the next generation.

5.2.4 Atlanta Campaign Heritage Trail®- Civil War Trail in Georgia

5.2.4.1 Background Information



Figure 5.70: Civil War Trial Map in Georiga (Source:http://www.civilwa rheritagetrails.org/ga-civilwar-trails-map/ga-atlanta-c ampaign.html)

fighting in this region.

The Atlanta Campaign Heritage Trail travels from the northwest of Georgia to Atlanta, thoroughly describing the Civil War history in the Atlanta campaign area and connecting other Civil War trails, for example, the March to the Sea and the Chickamauga Battlefield Trail into the entire Georgia Civil War Heritage Trails system (Figure 5.70). Following some segments of historic routes, this trail honors important battlefields from the Civil War and illustrates Georgia's rich heritage. It also honors the soldiers and citizens who sacrificed for the nation in some tragic

5.2.4.2 Introduction for Heritage Tourism & Greenway Design

Heritage Tourism

Table 5.7: Introduction of Heritage Tourism for Atlanta Campaign Heritage Trail (Table by Author)

8 B	8	
	Preservation & Protection	- Followed Civil War historic routes, numerous historic legacies and archaeological resources are separated and well linked in the Atlanta Campaign heritage areas, setting for a comprehensive historic preservation network.
Ë		- The theme, recalling civil war history, commemorates the story
Heritage Tourism	Interpretation	of courage and contribution the heroes sacrificed in the battlefield. - Interpretive sites such as battlefields, historic parks, museums and libraries' helps telling civil war history to the public. -Interpretive methods includes historic voyage, introduction
	Touring Needs	 brochures, audio tour. Touring needs of safety, navigation and lodging are greatly met by discovering of this historic trial and participating in its cultural events and celebrations.

Abundant with historic remnants and cultural resources, the Atlanta Campaign Heritage Trail provides tourists extraordinary tours for appreciating and memorizing Civil War history through active engagement in distinctive activities. Through interpretation, visitors gain a deeper understanding of the civil war history that developed in Atlanta. The overarching theme provides splendid opportunities for heritage-based activities and celebrations on the trail, recalling people's memories of the past as well as leading a meaningful heritage experience. These heritage interpretations accommodate tourists' needs, helping generate more ideas for integrating interpretive elements in the trail's detailed designs, promoting heritage and greenway prosperity.

Greenway

Table 5.8: Introduction of Greenway Design for Atlanta Campaign Heritage Trail (Table by Author)

Greenway Design				
Physical Connectivity	Physical Design			
- Physically connects the historic routes from northwest Georgia to Metro Atlanta Plentiful historic and interpretive sites are linked for connectivity.	- Varies of recreational activities are provided for visitors such as hiking, jogging, fishing, camping, bringing trail users fantastic experience.	 Interpretive markers Interpretive wayfinding Shelters, benches Branding with interpretive theme 		

Connected by numerous cultural resources and interpretive sites, the greenway provides various opportunities integrated with heritage preservation and interpretation, supporting comprehensive preservation as well as meeting most tourists' demands. Additionally, some distinctive activities on the trail exploring civil war battle mysteries provide alternatives for connecting to heritage, bringing vitality to the heritage sites.



Figure 5.71, 5.72, 5.73: A Few Sight on the Trail (Source: http://www.civilwarheritagetrails.org/ewExternalFiles/Apr2014.pdf)

5.2.4.3 Evaluation for Relations

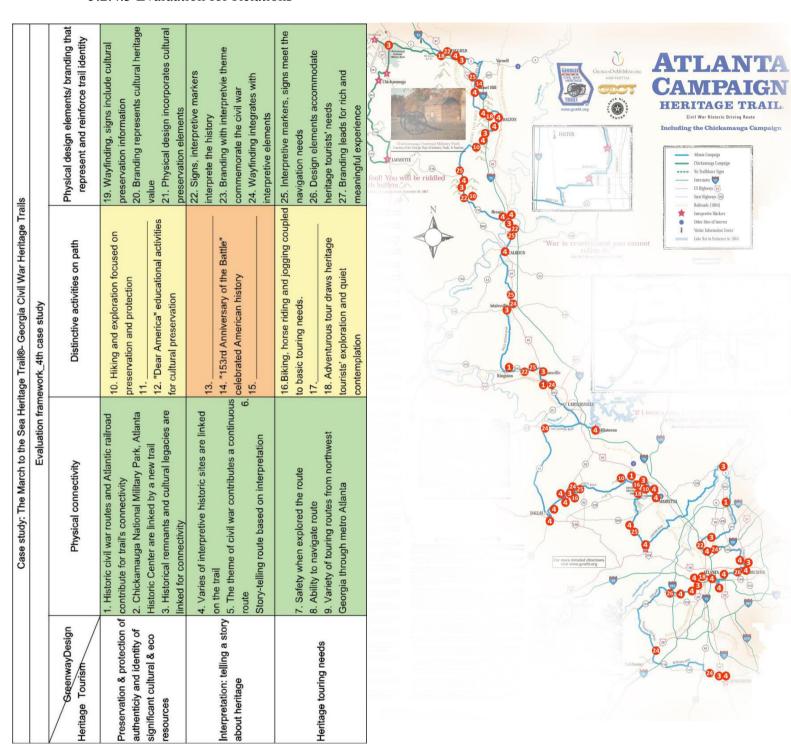


Figure 5.74: Evaluation Framework for the 4th Case (Figure by Author)

Figure 5.75: Criteria Meet on the Map for the 4th Case (Source: http://www.civilwarheritagetrails.org/ewExt ernalFiles/Apr2014.pdf)

5.2.3.4 Summary

1) Greenway Connectivity Supporting for Heritage Tourism

Connectivity

A Connectivity
Preservation & Protection

B Connectivity
Interpretation

C Connectivity
Touring Needs

The findings suggest that this trail has a strong relation with heritage tourism.

Alabama Road, Due West Road, and Stilesboro Road. Marked within the main route,

which are incorporated as crucial segments in the comprehensive heritage corridor system.

Additionally, historic remnants and cultural legacies are considered as complementing significant parts thereby strengthening the cultural completeness and the transportation system.

Figure 5.76:

The First

Summary

The trail theme, recalling civil war history, enhances the greenway's connectivity through various interpretive methods such as a historic voyage, introduction brochures, and an audio tour.

Many famous historic sites, such as the Battle of Peachtree Cree, Dalton Confederate Cemetery, and Resaca Battlefield Historic Site, all linked by the common thread, give tourists a sequentially interpreted tour, repeatedly strengthening the historic rhythm and leading the trail's connectivity.

C A variety of routes are carefully designed for heritage tourists and historians. These visitor groups are targeted by some popular sites and explore more on the civil war trail and spontaneously,

Historic Theme Helps Strengthen Greenway Connectivity and Public Participation

the safety and navigation demands are potentially strengthened by such connectivity.

Systematic design and planning for the combination of preservation and thematic interpretation have helped strengthen the connectivity for all of the civil war trails. Furthermore,

the historic theme emphasizing on sequential interpretation in the route design proved to be potentially attractive for engagement of visitors.



Figure 5.77: Resaca Battlefield Historic Site in Civil War Trial (Source:http://www.civilwartraveler. com/WEST/GA/nw-atlantaCampaig n.html)



Figure 5.78: Story of the Campaign for Atlanta (Source:http://www.civilwarherita getrails.org/ga-civil-war-trails-ma p/ga-atlanta-campaig.html)

2) Physical Design provides Inspiring Strategies for Interpreting Heritage

Finding

Physical Design

G
Physical design
+
Preservation & Protection

H
Physical design
Interpretation

I
Physical design
Touring Needs

This finding suggests that physical design has a favorable connection with heritage tourism.

Various types of designs featured in this civil war trail prove to be successfully incorporated with authentic heritage preservation and interpretive elements, helping advance

people's awareness of cultural and regional identity. For Figure 5.79 :

The Second Summary

instance, the cannon in the logo, as a striking feature in

civil war branding, echoes the ruthlessness of history

and highlights the war's unique cultural values to the public.



Figure 5.80: Interpretive Marker in Civil War Trail (Source:http://www.c ivilwarheritagetrails. org/ga-civil-war-trail s-map/ga-atlanta-cam paign.html)

The signs, markers, branding, and wayfinding markings on this trail integrated with interpretive elements, have proved to manifest the history of the civil war. Repeatedly, using branding as the example, the interpretive theme, better illustrated by the simple graphic, implicitly conveys the meaning of retracing and commemorating civil war battles,

thereby reminding people of the trail's reflecting back into the historic mirror when touring on the heritage route.



Figure 5.81: Wayfinding with Theme Logo (Sourcehttp://civilwartal k.com/threads/peach-tree -creek-crossing.107916/)

Considering this trails' tortuous route and length, tourists'

needs for safety and navigation are greatly satisfied by the detailed designs. The distinctive interpretive markers and signage systems, usually placed beside battlefields and state parks, meet tourists' basic needs and evoke an emotional connection that promotes better understanding of civil war history for a unique heritage experience.

<u>Distinctive Physical Design Can be Design Inspiration that Encourages Heritage Tourism</u>

Distinctive and detailed physical design in this case, including interpretive markers, signage, wayfindings incorporated with authentic heritage element and interpretive features established a comprehensive network for commemorating history and raised the heritage reputation. Moreover, it collectively engaged visitors participation in heritage preservation and protection that accommodating their desire of exploring the mystery of the past for an emotional heritage experience.

3) Activity Integrated with Heritage Tourism

Activities

Activities + Preservation & Protection

Activities

Interpretation

Activities + Touring Needs

Summary

It is apparent that there is not a relatively good relation between greenway activities and heritage tourism.

Various activities in the historic battlefield and civil war reenactment sites, such as continuous living history activities and the exploration of the American Civil War, facilitate public attention toward understanding the preservation and protection of civil war history. Moreover, they set an exciting way for raising the reputation and

Figure 5.82: The Third attractiveness of tourism related to the Atlanta Campaign locally and regionally.

Findings suggest that in this civil war trials, there lacks of interpretive system or model integrating heritage interpretation into conventional greenway activities. For example, in the activity of celebrating for the battlefield, it serves as a window for people attending and visiting the original battlefield, celebrating American history.

F Touring needs are relatively supported in this civil war heritage trail, such as biking, horse riding, and jogging, all coupled to basic touring needs. Additionally, adventurous tours draw heritage tourists' exploration and quiet contemplation, provoking a rich and meaningful personal heritage experience.

There is a Need to Create More Heritage-Based Interpretive Activities that Boost Peoples'

Participation

The lack of interpretive system and heritage-based interpretive activities proved to deteriorate people's participation and decreased their emotional interaction and understanding of heritage legacies. It is also not considered a favorable connection accommodating with tourists need, which

consequently leads to poor heritage experience. Thus only a comprehensive interpretive system integrated with multiple activities established that could core of heritage perfectly manifested for a visitor' rich experience of remembering, preserving and commemorating significant historic legacies.

4) Overview of All Criteria met

A Connectivity + Preservation & Protection	D	G Physical design + Preservation & Protection
B Connectivity + Interpretation	E	H Physical design + Interpretation
C Connectivity + Touring Needs	F	Physical design + Touring Needs

Figure 5.83: The Third Summary

It is apparent that the connectivity and physical design of the greenway all have favorable relations to the support of heritage tourism. The comprehensive trail network and signage system suggest that they did a good job of correlating with heritage interpretive elements, which endows public an unforgettable heritage experience.

5.2.5 The Crooked Road: Virginia's Music Heritage Trail

5.2.5.1 Background Information



Figure 5.84: The Map of Virginia's Music Heritage Trail (Source: image from https://www.myswva.org/tcr/venues)

TILE CROOKED POAD

Figure 5.85: Logo of Virginia's Music Heritage Trail (Source: https://www.myswva.org)

Having the striking feature of music heritage, The Virginia's Music Heritage Trail traveled

through 300 miles, and established a comprehensive music network that celebrates festivals and connects nine main heritage sites along the greenway routes (The Crooked Road 2014). This trail provides extraordinary opportunities for visitors to understand and experience American music in the traditional region. Just as praised by The New York Times (2014), this music treasure is to be "a place where musical authenticity was born and nurtured" (The Crooked Road 2014).

5.2.5.2 Introduction for Heritage Tourism and Greenway Design

Table 5.9: Introduction of Heritage Tourism for Virginia's Music Heritage Trail (Table by Author)

	Preservation & Protection	- With many historic music venues and scenic attractions, it established a preservation network for celebrating the cultural landscape in this traditional music heritage area.				
Heritage Tourism	Interpretation	- Interpretive theme of "a place of beauty- a place of song" offer visitors ways to understand the music history, bringing vitality for this region -Interpretive heritage methods includes: audio music heritage tour, guidebook, and interpretive signage.				
	Touring Needs	- Accommodating tourists needs for exploration and appreciation of the music history ranging from residents to traditional music lovers and musicians.				

Heritage Tourism

Having a distinctive cultural music heritage feature, the Crooked Road Region describes a pioneering picture of music stories in this area, and celebrated a lot for local tradition and culture. To explore this cultural heritage, complicated trails networks are developed for a closer interaction with musical tradition. It imparts the public with tremendous treasury opportunities, fostering their pride and interest in preservation and celebration. Moreover, the interpretive theme of rich musical history

encourages more attractive celebrations and activities on the greenway, as well as the integration with numbers of detailed physical designs.

Greenway

Table 5.10: Introduction of Greenway Design for Virginia's Music Heritage Trail (Table by Author)

Greenway Design					
Physical Connectivity	Distinctive Activity	Physical Design			
- In Appalachian region, it physically connects nine major music venues, two tourism organizations, 60 affiliated venues and destinations, setting a comprehensive music trail system	- Numerous opportunities for activities like biking, jogging, walking and alternative transportation activities.	- Logo with music characters - Interpretive markers - Shelters, benches - Wayside exhibits along the trail			

Virginia's Music Heritage Trial is physically connected to many heritage music sites, which provides visitors wonderful indoors and outdoors opportunities to travel on the greenway to experience these historic music sites with rich musical and cultural history. Detailed physical designs such as logo with music features and wayside exhibition incorporating historic elements help highlight the musical heritage traditions and stories. They give the visitors enormous opportunities to explore and appreciate the beauty of musical heritage.

	Case study: The Laughlin F	Case study: The Laughlin Regional Heritage Greenway Trail	
	Evaluation fram	Evaluation framework_5th case study	
GreenwayDesign Heritage Tourism	Physical connectivity	Distinctive activities on path	Physical design elements/ branding that represent and reinforce trail identity
Preservation & protection of 1. authenticiy and identity of 2.	1	10. Outdoor adventures for music heritage 19. preservation	19. 20. Branding based on music and
significant cultural & eco resources	3 Historical music sites and cultural attractions are connected through the route	11. 12. Traditoinal education programs 21. Benches design concerning muscial heritage preservation musical authenticity	cultrual preservation 21. Benches design represents musical authenticity
4. Nine major h musuem, conce Interpretation: telling a story along the route about heritage 5. The theme o history leads fo 6.	 Nine major heritage music venues, musuem, concert halls are interconnected along the route The theme of celebrating American music history leads for a continuous tour 	 Interpretive music festivals into conventional greenway activities Affiliated venues and musical festivals Comprehensive interpretive system based on interpretive theme 	22. Wayside exhibits, shelters, benches interprete the music heritage 23. Branding with interpretive theme represents country music 24. Signage with heritage interpretive elements celebrate the music history
Heritage touring needs	7. Safety when traveled on the music trail 8. Ability to navigate route 9.	 16. Hiking, biking coupled to navigation and safety needs. 17. Touring periods of annual or weekly festivals based on multiple activities 18. All year- round musical festival meet the needs of traditional music lovers 	25. Shelters and signs meet the basic needs 26. Wayside exhibits accommodate music lovers' needs 27. Branding helps leading rich music experience

Figure 5.86: Evaluation Framework for the 5th Case (Figure by Author)



Figure 5.87: Criteria Meet on the Map (Source: https://www.myswva.org/tcr)

5.2.5.4 Summery

1) All Criteria met

	Activities	Physical Design
Interpretation	Activities + Interpretation	H Physical design + Interpretation
Touring Needs	F Activities + Touring Needs	Physical design + Touring Needs

Findings

Findings suggest that this music trail is doing a good job of combining these four integration.

Figure 5.88: Criteria All met

Based on multiple activities help musical heritage interpretation. Visitors gain tremendous pride and interest by actively participating in distinctive activities such as community meals, gallery exhibits, and artisan demonstrations to experience the heritage. It also furthers their understanding of local musical traditions and encourages their awareness of musical history.

For traditional music lovers, their needs are greatly enhanced by visiting all-year-round, annual or weekly festivals. For example, they can visit concerts, communicate with musicians, or explore music gallery exhibits based on different

H Wayside exhibits, shelters, and benches with interpretive guitar features, help interpret the intrinsic value of

festival seasons and touring periods.



Figure 5.89: Music Festival Engaging People (Source:https://www.myswv a.org/venue/bristol-rhythm-a nd-roots-reunion)



Figure 5.90: Music Lovers Celebrating Music Festival Along the Trail (Source:https://www.myswva .org/venue/bristol-rhythm)



Figure 5.91: Bench with Music Features (Source:http://www.claibornehou se.net/sites-of-interest/area-musi c-events)

American music traditions. It is the birth place of live music, and it fosters visitors' cultural awareness in this region. Similarly, other signage and wayfinding with logo also contribute for a remarkable musical heritage interpretation.

Creative and attractive designs such as signs, brochures, benches in this music trail have accommodated music lovers' needs. For instance, the wayside exhibits along the trail (Figure.5.67), with logo and detailed illustration of music history helps for identification and navigation. It also give a comprehensive and clear information about the historic music trail with illustrated pictures, historic photos, and interpretive



Figure 5.92: Wayside Exhibits
Along the Trail
(Source:http://mshajobtour.com/jmh/southwest-virginia-living/our-music-culture/)

words, endows visitors an overall understanding of the scenic spot. Its audio guidance service also highlights this heritage music attractions that encourage visitors an unforgettable heritage experience.

Well-designed, Distinctive Logo Integrating into the Interpretive System can Effectively Enhance

Heritage Reputation

A well-designed, distinctive logo that integrates into the entire interpretive system is the key factor of representing musical heritage and enhances of cultural value. As a striking interpretive characters, it productively provoke peoples' curiosity for exploration of the heritage sites and touring on the greenway. And consequently it exerts a powerful branding for improving the attractiveness of the heritage greenway and serves as fantastic tourism draw.

2) Connectivity Integrated with Heritage Tourism

Connectivity

A Connectivity

Preservation & Protection

B Connectivity

Interpretation

C Connectivity

Touring Needs

measures.

Findings

This finding suggests a relatively poor relation of connectivity for supporting heritage

tourism.

Even part segments of this trial follow the linear form such as Mountain music in Virginia, and

Figure 5.93: its connectivity is being strengthened by
The Second
Summary numbers of cultural attractions and historic
sites some preservation areas are seldom hard to be notice

sites, some preservation areas are seldom hard to be noticed.

However, this doesn't address its failure since the trails'

cultural preservation will be strengthened by other appropriate

B With the distinctive theme which is to celebrate

American music history, nine major heritage music venues,

museums, and series of concert halls are interconnected along
the route, giving visitors a continuous "place of song" tour,

thereby leading the trails' connectivity.

In terms of celebrating musical heritage, it is enough to develop only one main route in this region because it meets most music lovers and other visitors' demands (Figure. 5.71) Additionally, it has been proved safe and easy for navigation



Figure 5.94: Mouth Along the Crooked Road in Virginia (Source:http://www.avitectur e.com/index.php/news)



Figure 5.95: Major Venues on the Crooked Road (Source:https://www.myswv a.org/venue/country-cabin-ii)



Figure 5.96: Wayfinding Fit

Music

Lovers' Needs
(Source:https://www.myswva.

org/venue/country-cabin)

when provided with adequate lighting and wayfindings in this region.

Consideration of Sequential Interpretation with Preservation System

The balance of the liner preservation system integrated with ecological conservation in this case reflected to be a challenge for designers to consider. Also, it is necessary to create sequential interpretation accordingly with its unique theme that expands the variety of touring routes based on multiple activities, and it productively promotes a stronger connectivity.

3) Heritage Preservation and Protection Supports Greenway Design

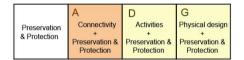
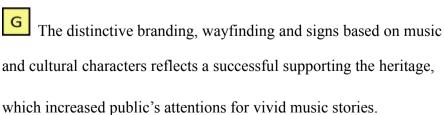


Figure 5.97: The Third Summary

Findings

It is apparent that heritage preservation doesn't give a favorable support for greenway design in this case.

In the music trail, a traditional music education program concerning music heritage preservation proved to be successful, which raises people's awareness of the significance of music history. However, there lacks evidences showing if cultural activities made a negative impact on historic legacies and the environment.



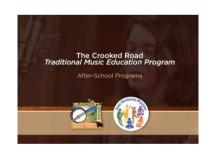


Figure 5.98: Traditional
Music Education
Program Logo
(Source:https://www.my
swva.org/tcr/tmep/)

There is a Need to Consider Heritage Preservation Integrated with Multiple Activities and

Distinctive Branding System

As for this integration, there reflected an opportunity for the balance between ecological conservation strategies with cultural celebrations and interpretive design elements. Additionally, light-footprint activities didn't emphasized in this case that gives Figure 5.99: Wayfinding Based on Music Characters another issue, which exploring a better interaction with sensitive (Source:https://theblondeco yote.com/2011/07/10) natural and cultural heritage areas. Even this relations are not strong enough, it still reflects a favorable integration of heritage with multiple activities and

WEST

5.3 Summary and Findings from Cases

comprehensive branding system.

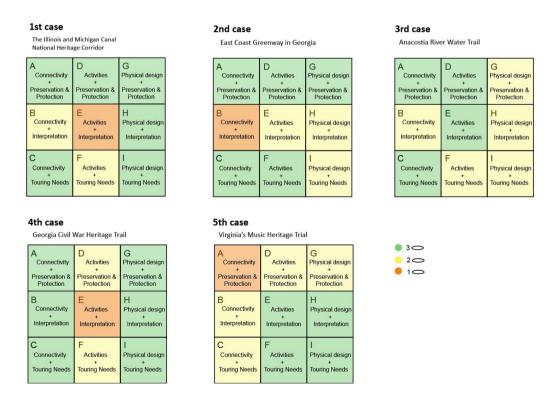


Figure 5.100: Case Study Graphic Evaluation (Figure by Author)

Summarized from all the cases, the graphic evaluations are presented, which provide a parallel comparison for all the cases.

Findings

From all the parallel comparisons in the graphic evaluation forms, it is apparent that most relationships were found in these cases to be proven successful. Among them, the first and the fourth case studies, The IMCNHC and Civil War Heritage Trails, were found to have the strongest relations between heritage and greenways because they met six green criteria compared to the other cases. The fifth case, The Virginia's Music Heritage Trail only demonstrated four areas of successful integration between greenways and heritage, and therefore represents the poorest relations between the greenways and heritage.

3

0 1

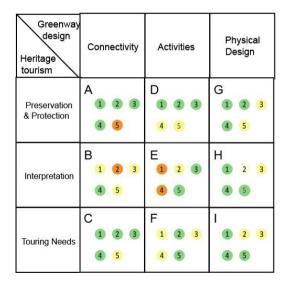


Figure 5.101: Calculation of Criteria Met (Figure by Author)

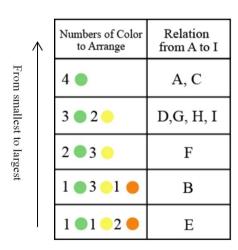


Figure 5.102: Arrangement of Criteria Met (Figure by Author)

clearly indicates that among these five cases it concerns nine aspects from A (The integration of Physical Connectivity and Heritage Preservation) to I (The integration of Physical design and Touring Needs), in which the criteria among them are proved to go from most successful to the poorest. Figure 5.3 is arranged from the largest to the smallest of the criteria of the cases shown. Four cases met all criteria for A (The integration of connectivity and heritage preservation) and C (The integration of connectivity and touring needs), which suggests the greatest relationship among these cases. It is also apparent that B: the integration of greenway activities with interpretation suggesting that the four cases proved to be the most unsuccessful. Lastly comes E, the integration of activities with interpretation is the poorest relation that shows two red dots marked. This reflects that some issues need to be addressed. Lessons can be drawn and discussed from the specificity of the findings and comparing all five cases in the next chapter.

CHAPTER 6

DISCUSSION AND RECOMMENDATION FOR PHYSICAL HERITAGE GREENWAY DESIGN PROJECTS

6.1 Introduction

In the last the chapter, five case studies were discussed and analyzed from parallel comparisons, to investigate how they applied to the criteria framework demonstrating the relationships between heritage tourism cases. From this analysis, lessons will be drawn and explored in this chapter based on the findings of the calculations and arrangements of the criteria. Specific cases from the matrix are discussed, with recommendations then proposed for a future physical heritage greenway design project. It is expected that this will eventually answer the sub-research question "how can the integration of heritage tourism and greenway design help to inspire designers to consider greenways at the level of a system and specific sites?"

6.2 Major Lessons from Case Studies

Based on the findings and the two figures in the last chapter (Figure 6.1 and Figure 6.2), there are several lessons that can be drawn. Particularly, five emerge from the findings. Arranged from largest to smallest, these are:

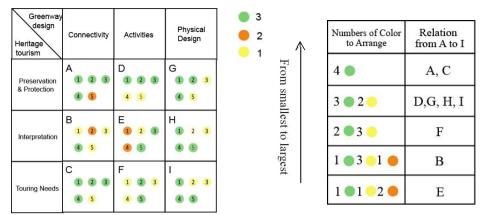


Figure 6.1: Summary From the Parallel Comparison of Cases (Figure by Author)

Figure 6.2: Numbers of Color to Arrange (Figure by Author)

- Greenway connectivity can help other goals of heritage preservation and enrich visitors' heritage experiences by enabling diverse route types.
- Comprehensive wayfinding systems and logos tied to heritage are significant way to enhance the identity of heritage tourism.
- Combining multiple greenway activities with heritage preservation can inspire design program and elements.
- The use of rhythm can create sequential interpretation that strengthens greenway connectivity.
- An interpretive system model can help designers address challenges of integrating interpretation with greenway activities.

6.3 Discussion Based on Five Lessons

1. <u>Greenway connectivity can help other goals of heritage preservation and enrich visitors' heritage</u>

<u>experiences by enabling diverse route types</u>

Numbers of Color	Relation
to Arrange	from A to I
4 🌑	A, C

Greenway design Heritage tourism	Connectivity		
Preservation & Protection	A 1 2 3 4 5	D	G
	В	E	Н
	С	F	I

Figure 6.3: A: Connectivity with Heritage Preservation (Figure by Author)

As previously discussed, the contribution of a greenway's connectivity to heritage preservation primarily serve to establish a linear and comprehensive preservation network. Apart from this aspect, the goal of heritage preservation is also reflected in balancing the development between heritage preservation and cultural diversity. From Figure 6.3, the successful integration of these four cases suggest various approaches for strengthening connectivity based on different types of greenways, including valleys, canals, or in a larger space, configuration of the waterways. Whereas, when investigating the poorest relationship in the fifth case, Virginia's Music Heritage Trial, which is different from the other four cases within linear landscapes such as rivers, canal, or valleys nearby, it suggests that its connectivity is being strengthened by the number of cultural attractions and historic sites. Since parts of the segments of this trail follow the linear routes like the mountains and valleys, its overall route patterns form the basis of a cultural music background. This is to ensure the balance between cultural route's connectivity with heritage preservation that emphasizes the cultural development for the greenway.

In addition, without the goal of establishing a linear and comprehensive preservation network, the greenway connectivity will still support heritage tourism from other aspects. In other words,

the connectivity of greenways can help other goals related to heritage preservation, like the cultural background in Virginia's Music Heritage Trial. So from this point of view, the music trail is not considered to be performing poorly, as it provides a different alternatives that are beyond the three criteria of connectivity. Therefore it provides such an opportunity for greenway planners to formulate appropriate strategies concerning a linear preservation system based on different greenway types, natural settings and landscape contexts.

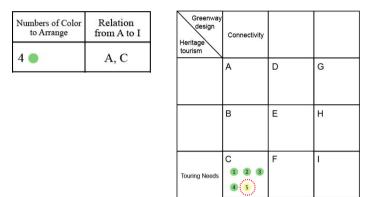


Figure 6.4: C: Connectivity with Heritage Touring Needs (Figure by Author)

According to these case studies, the findings suggest that all four cases set a favorable integration of connectivity that accommodates heritage touring needs. All these cases can inspire designers to develop alternative routes for endowing visitors, particularly heritage tourists, with unforgettable and emotional experiences. Nevertheless, only one major route was found in the fifth case, Viginia's Music Heritage Trial, that engages visitors with multiple recreational activities, suggesting a relative poor relationship, even thought it celebrated music heritage on its cultural interpretive route. In this music trail, it has been enough to develop only one main route in this region because it has already met most music lovers and other visitors' demands. However, because of the increasingly high demand from heritage tourists for the authenticity

and uniqueness of heritage tours, developing various routes that provide them multiple choices is exceedingly necessary.

2. <u>Comprehensive wayfinding systems and logos tied to heritage are significant way to enhance the identity of heritage tourism.</u>

		_				periods.
Numbers of Color to Arrange	Relation from A to I		Greenway design Heritage	Connectivity		Physical Design
3 • 2 •	D,G, H, I		tourism	A	D	G
2 • 3 •	F					1 2 3
			Interpretation	В	E	H 1 2 3 4 5
				С	F	1 2 3

Figure 6.5: G, H, and I: Greenway Physical Design Supporting Heritage Tourism (Figure by Author)

After investigating these case studies, the findings demonstrated that comprehensive and detailed physical design and signage systems, including interpretive markers, signage, and wayfindings, are significant and useful for enhancing heritage reputation.

First of all, distinctive and comprehensive wayfinding system can be considered as a powerful catalyst to the competitive local tourism market in the region. The first case, The IMCNHC, and fourth case, Atlanta Campaign Heritage Trail demonstrated the excellent work of establishing comprehensive physical design

systems. In Atlanta Campaign Heritage Trail case, the signs, markers, branding, and wayfinding markings on this trail, integrated with interpretive elements, have proved to manifest the history of the Civil War. Repeatedly, using branding as the example, the interpretive theme, better

illustrated by the simple graphic, implicitly conveys the meaning of retracing and commemorating civil war battles, thereby reminding people of the trail's reflecting back into the historic mirror when traveling along the heritage route.

Additionally, various types of wayfinding signs that incorporate conservation information are effective tourism products for interpreting the authenticity of significant ecological resources in heritage areas. Just as most cases exemplified, there are successful examples of creative wayfinding and signage that are carefully designed, which have helped tourists' understanding of the ecological background in a much more enticing and attractive way.

Therefore, this comprehensive wayfinding system and distinctive logos exceedingly encourage visitors' participation in heritage preservation and protection that accommodate their desire for exploring an appealing journey, leading to a rich heritage experience. Thus, all these successful cases can inspire greenway designers and planners to propose more innovative branding and logos that represent local identity instead of a stereotyped one.

3. <u>Combining multiple greenway activities with heritage preservation can inspire design</u> program and elements.

According to these case studies, it's apparent that most cases exemplified excellent example of greenway activities combined with heritage preservation. This entices planners and designers to advocate more innovative activities to stimulate public active participation.

Numbers of Color to Arrange	Relation from A to I	
3 • 2 •	D,G, H, I	
2 • 3 •	F	

Greenway design Heritage tourism		Activities	
Preservation & Protection	Α	D 1 2 3	G
	В	E	Н
	С	F	I

Figure 6.6: D: Greenway Activities Combined with Heritage Preservation (Figure by Author)

Firstly, active participation of multiple greenway activities brings vitality to heritage preservation, endows greenway planners and designers with potential design ideas that are related to creative greenway activities. It also provides extraordinary opportunities for visitors to appreciate the greenways' immense value while imparting knowledge of historic preservation and protection.

Additionally, activities focusing on ecological conservation on the greenway allow people to expose themselves to the natural beauty, gain a memorable and pleasurable heritage experience while deeply immersed into this scenic and tranquil environment. Particularly for the fourth case, Civil War Heritage Trial and fifth case, Viginia's Music Heritage Trial, these reflected the need for designers to consider the balance between ecological conservation strategies with cultural celebrations. Various activities in the historic battlefield and civil war reenactment sites, such as continuous living history activities and the exploration of the American Civil War, facilitate public attention toward understanding the preservation and protection of Civil War history.

Numbers of Color to Arrange	Relation from A to I	
3 • 2 •	D,G, H, I	
2 • 3 •	F	

Greenway design Heritage tourism		Activities	
	Α	D	G
	В	E	Н
Touring Needs	С	F 1 2 3 4 5	I

Figure 6.7: F: Greenway Activities Combined with Touring Needs (Figure by Author)

According to this matrix and findings, design inspirations can also come from innovative greenway activities that accommodate touring needs, summarized from the second case, East Coast Greenway in Georgia, and the fifth case, Virginia's Music Heritage Trial. In these two cases, touring needs are greatly supported by multiple adventures and conventional activities such as whitewater rafting, mountain biking, and recreational cycling. In the case of East Coast Greenway in Georgia, heritage tourists are excited about the rich experience by individually exploring natural wonders or in a group, by cycling along the trails in Skidaway Island State Park. The other three cases, which didn't give relative good integration, showing that touring periods based on multiple activities still need to be considered in the heritage site. Thus, it is necessary to create multiple greenway activities that meet different types of tourists, especially heritage tourists' needs, can provide them with opportunities for adventure and exploration of a heritage journey.

4. The use of rhythm can create sequential interpretation that strengthens greenway connectivity.

Numbers of Color	Relation	
to Arrange	from A to I	
1 • 3 • 1 •	В	

Greenway design Heritage tourism	Connectivity		
	Α	D	G
Interpretation	B 1 (2) 3 4 5	E	Н
	С	F	I

Figure 6.8: B: Greenway Connectivity Integrated with Heritage Interpretation (Figure by Author)

From these case studies, it is apparent that considering rhythm to create sequential interpretation on the routes is necessary for strengthening the connectivity, since there is only one case (the fourth) illustrated that it was effective concerning this aspect. Creating sequential interpretation gives tourists a contiguous and attractive route that links multiple historic interpretive sites along the greenway, and also brings them a unique and inviting heritage tour, based on the findings from the four cases. Just as the fourth case illustrated, Civil War Heritage Trial provides tourists with a sequentially interpreted tour that highlights its distinctive theme, recalling Civil War history, using several interpretive sites such as the Battle of Peachtree Creek, Dalton Confederate Cemetery, and Resaca Battlefield Historic Site. However, the exception is the second case, East Coast Greenway in Georgia that demonstrates a poor integration of heritage interpretation for the greenway's connectivity, since an appropriate interpretive theme is missed along the routes. Although currently, this safe, continuous greenway has already attracted numbers of tourists and facilitated local tourism, adding a distinctive theme into its logo or posters can be a good opportunity for enhancing its uniqueness and identity, which have a huge potential for raising its tourism reputation. Thus, it can give ideas for greenway designers and decision makers to propose attractive and distinctive routes considering rhythm, which creates a clear, inviting interpretive trail.

5. An interpretive system model can help designers address the challenges of integrating interpretation with greenway activities

Numbers of Color to Arrange	Relation from A to I	Greenway design Heritage		Activities	
1 • 1 • 2 •	Е	tourism	A	D	G
		Interpretation	В	E- (1) 2 3 (4) 5	Н
			С	F	I

Figure 6.9: E: Greenway Activities Integrated with Heritage Interpretation (Figure by Author)

First and foremost, by establishing a comprehensive interpretive system model, it helps designers consider creating thematic stories for a story-telling route, which can be integrated with more innovative activities along the routes. For visitors who engage in these activities, it can enrich their personal experience and enhance the awareness of preservation of significant cultural legacies. Compared to the first and the fourth cases, the third, Anacostia River Water Trail, and the fifth case, Virginia's Music Heritage Trial illustrated a great integration of interpretation based on existing conventional activities. In the third case, Anacostia River Water Trail, interpretive hiking nature programs in celebrated American history proved to be

successfully facilitate people's active participation of the interpretation and preservation, recalling the river's story and celebrating American history from the 16th century.

In addition, proposing a comprehensive interpretive system model is a great opportunity to develop such heritage interpretation, which can instill extraordinary vitality to greenway activities, and ultimately can bring visitors a rich and unique heritage experience. Nevertheless, there are two cases, the first, The IMCNHC, and The Civil War Heritage Trails, have little interpretive media and no creative interpretive theme, no creative and appropriate activities developed for reasonable interpretation to the public. As a result, it is necessary to create an interpretive system model to conventional greeenway activities, which stimulates peoples' active participation and enhances their understanding of the local traditions related to heritage legacies along attractive route.

After the discussions above, it can be concluded that with all these aspects strengthened, greenways will impart visitors a continuous, and rich heritage experience, motivated visitors and also further the overall heritage prosperity. Similarly, meeting all criteria including heritage preservation, interpretation and touring needs help support a successful greenway design.

6.4 Recommendation for Physical Heritage Greenway Design Project

Based on the lessons and discussions above, relative recommendations are proposed below, which can be references for existed and future physical greenway projects.

Lesson 1

Greenway connectivity can help other goals of heritage

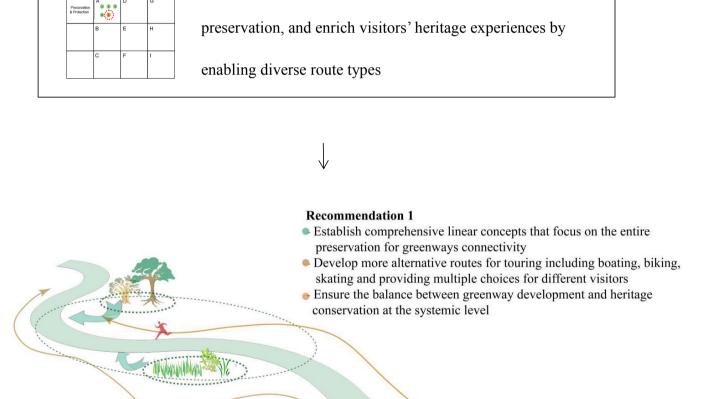
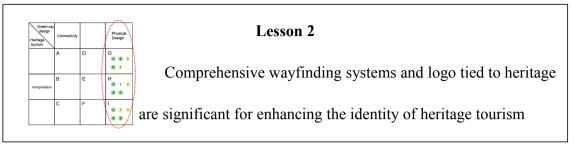


Figure 6.10: Recommendation 1 (Figure by Author)



- Establish a comprehensive way finding system
- Create innovative branding to inspire and raise the reputation of heritage greenway

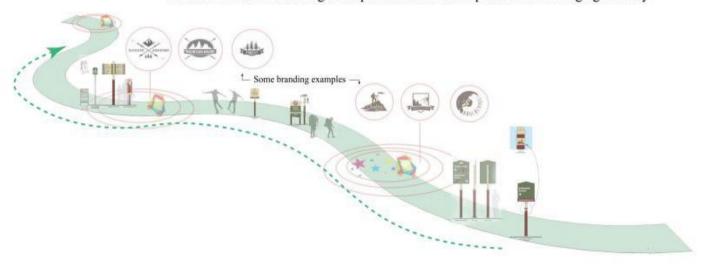
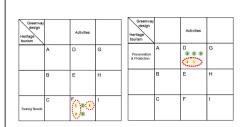


Figure 6.11: Recommendation 2 (Figure by Author)



Lesson 3

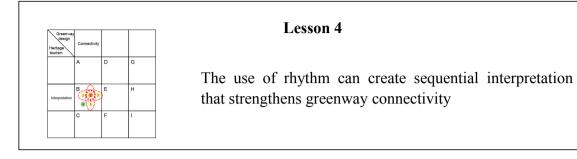
Combining multiple greenway activities with heritage preservation can inspire design program and elements



- Create innovative multiple greenway activities focused on preservation and protection
- Create innovative multiple greenway activities that accommodates tourist needs



Figure 6.12: Recommendation 3 (Figure by Author)





- Create sequential route interpretation that strengthens greenway connectivity
- Emphasize the rhythm of multiple interpretive sites

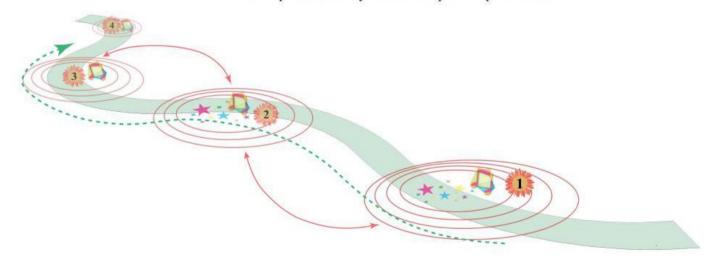
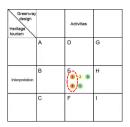


Figure 6.13: Recommendation 4 (Figure by Author)



Lesson 5

An interpretive system model can help designers address

challenges of integrating interpretation with greenway activities



- Establish a comprehensive interpretive system model based on different activity types
- Create distinctive and innovative themes for public participation on greenway
- Develop appropriate interpretation based on existing conventional activities

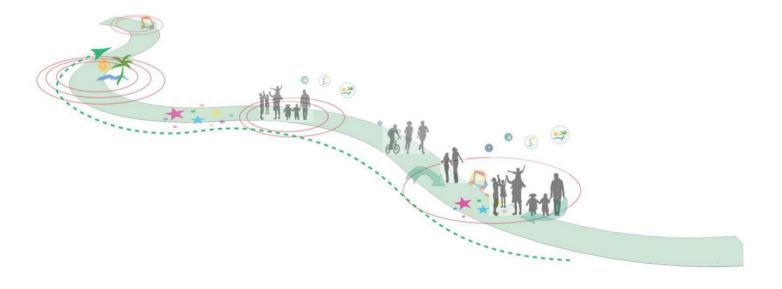


Figure 6.14: Recommendation 5 (Figure by Author)

CHAPTER 7

APPLICATION: RECOMMENDATIONS FOR THE CONCEPTUAL PLAN OF THE SAVANNAH GREENWAY

7.1 Introduction

In the last chapter, recommendations for a successful integration of heritage tourism, as well as greenway design in physical greenway projects, were drawn from the lessons of case studies. For better verification and application purposes, this chapter focuses on The Savannah Greenway as an example, in order to further the relative recommendations applied to the physical greenway project. Following the same methodology of analysis and diagnosis employed in case studies, it repeatedly applies the analysis and recommendations on existing conceptual planning. This aids in solving the issues of integration for heritage tourism and greenway, specific to several sites within The Savannah Greenway.

7.2 Background Information of the Savannah Greenway and Heritage Tourism

As the case study in chapter 5 shows, the background of this Coastal Georgia Greenway has already been introduced. The application greenway: Savannah-Ogeechee Trail, is one segment in the Coastal Georgia Greenway. It stretches 30 miles, and is linked with other sections including: Island Hopper Trail, as well as The Coastal Georgia Rail to Trail, which runs throughout Chatham County (Savannah Economic Development Authority 2016). Based on

primary conceptual plan proposed by Coastal Greenway Study Committee in 2015, here the context is narrowed to downtown Savannah, from Savannah River to Chatham Pkwy (Figure 7.3).

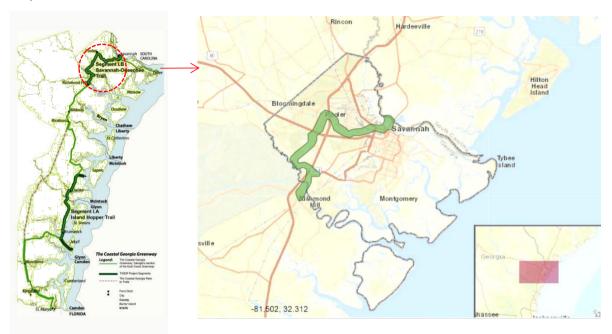


Figure 7.1: Coastal Georgia Greenway (Source:http://coastalgeorgiagreenway.org/coastal-georgia-greenway)

Figure 7.2: Coastal Georgia Greenway in Savannah Segment (Figure by Author) (Source of Background Map: http://www.arcgis.com/)

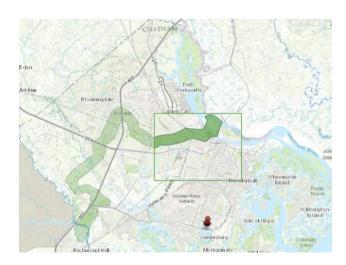


Figure 7.3: Segment in this Thesis of Savannah Greenway (Figure by Author) (Background Map: http://www.arcgis.com/)

7.2.1 Heritage Tourism in Savannah

Having earned a well-respected reputation as a famous tourism destination in the southeast of the US, The Savannah Greenway has attracted lots of visitors with its enticing long history and numerous tourist attractions. Visitors have many opportunities of exploring and visiting museum, some historic parks and churches in the downtown historic districts (Savannah Economic Development Authority 2016). Tourist's needs for safety, navigation, and lodging are very well met when discovering this historic trail and their participation in cultural events and celebrations. These activities give them a great chance to closely touch on Savannah's history.

7.2.2 Background and Context of The Savannah Greenway

Located in Chatham County and following north-south routes, several heritage preservation sites are linked in The Savannah Greenway. Traveling near the Geechee Corridor and Savvannah-Ogeechee Canal, the Savannah Greenway connected separated ecological areas and fragmented landscapes that contribute for a overall corridor sustainability. Having linked many famous sites such as Savannah Museum, National Parks and Waterfront Districts, it established a comprehensive system that provide visitors and residents with wonderful opportunities of recreational activities and natural appreciation. In recent years, local organization and some companies are cooperated together for the greenways' further extension, facilitating the overall greenway development and heritage prosperity.

7.3 Framework Analysis of Savannah Greenway

Table 7.1: Evaluation Framework for Savannah Greenway (Table by Author)

Evaluation framework_ Savannah Greenway			
GreenwayDesign Heritage Tourism	Physical connectivity	Distinctive activities on path	Physical design elements/ branding that represent and reinforce trail identity
Preservation & protection of significant cultural & eco resources	Ogeechee canal corridor along the route established the entire trail system New path created for linking several state parks into complete trail system Historical and cultural remnants, ecological legacies along the greenway are linked for connectivity	10. Wildlife conservation hiking for understanding and exploration of natural resources 11. Biking on the boardwalk set a great interaction with heritage conservation 12. Some acvities(exploration in jungle, field survey) arose people's awareness of ecological conservation	20. 21. Physical design incorporates cultural preservation elements
Interpretation: telling a story about heritage	4.Numerous interpretive sites (national monument, state parks, canal museums) are linked in the greenway 6.	13. 14. Hiking into heritage legacies, visiting historic battlefields to appreciate the history	22. Specific elements (shelters, path material, boardwalks) incorporate interpretion 23. 24. Signage system integrates with interpretive elements
Heritage touring needs	7. Safety are ensured along the greenway 8. Ability to navigate route 9. Varitey of touring routes for rich experience	16. Conventional activities(biking, skating, jogging) met the basic needs 17. Varies of touring periods based on multiple activities 18. Activities meet the needs of heritage tourists	25. Wayfinding/ signs meet the navigation and safety need 26. Shelters, bridges and other design elements accommodate specific tourists' needs

Having investigated the condition and context of Coastal Georgia Greenway in Savannah, then following the analysis and diagnosis methodology employed in the case studies, the evaluation framework came out; exploring each integration between heritage tourism and greenways in the Savannah. Whereas slight differences were reflected for the evaluation forms as found in the 3rd case in chapter 5, it can be clear that there are several areas that exemplified the criteria that some were met or not well met, as signified by the red circle marks (Table 7.1). Therefore, recommendations are proposed for these areas that need to be paid attention to.

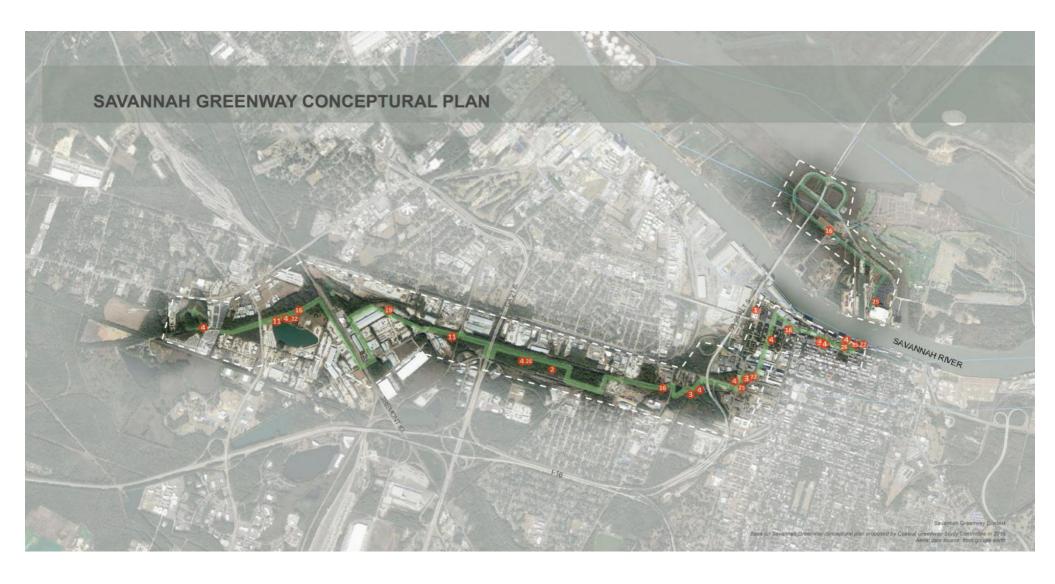


Figure 7.4: Savannah Greenway Conceptual Plan (Figure by Author)

7.4. Recommendations From Evaluation Framework

From the evaluation framework, the simplified diagram is shown below (Figure 7.5), from which it can be found very apparent where several criteria are not met. Following such findings, recommendations are proposed for the Savannah Greenway, concerning integration that didn't meet well between heritage tourism and greenways. There are several areas or sites that can be called out to carefully investigate how these recommendations are specifically applied.

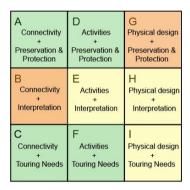


Figure 7.5: Simplified Evaluation Framework (Figure by Author)



Recommendations 1

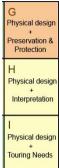
- Create sequential route interpretation that strengthens greenway connectivity.
- Emphasize the rhythm among multiple interpretive sites to strengthens greenway connectivity.



Recommendation 2

• Establish a comprehensive interpretive system based on different activity types.

• Develop appropriate interpretation based on existing conventional activities.



Recommendation 3

- Create detailed physical elements that incorporate heritage preservation in order to raise peoples' awareness of heritage protection.
- Create comprehensive way-finding systems, as well as branding that have interpretive themes, in order to enhance the identity of heritage, in addition to enriching peoples' heritage experience.

7.5 Recommendations Applied to Conceptual Plan and Specific Sites

The three recommendations shown below, as well as the referencing of Figure 7.6, help illustrate an understanding of the concept detailed within.



Figure 7.6: Recommendations Applied to Conceptual Plan and Specific Sites (Figure by Author)

7.5.1 First Recommendation: Applied to Conceptual Plan and Specific Sites

After completion of the inventory and analysis of interpretive sites and historic district in downtown Savannah (Figure 7.7), the first recommendation is shown in Figure 7.8. Notice that there are many historic museums, churches, and art galleries scattered along or near the greenway. It is therefore proposed, to create sequential interpretation that strengthens Savannah Greenway's connectivity, in a likeness that relates to its history.

7.5.2 Second Recommendation: Applied to Conceptual Plan and Specific Sites

This recommendation is applied for these four specific sites: First Brayan Baptist Church, Georgia State Railroad Museum, Muse Arts Warehouse, and Savannah Trolley Tours (see Figure 7.9). As the Figure 7.9 suggests, comprehensive interpretive system among these sites enhanced peoples' participation for greenway activities. More specifically, the greeneawy in Georgia State Railroad Museum, using appropriate interpretation from the greenway to the entrance of museum, such as interpretive markers, artworks representing Savannah history, gives a guidance that can evolve people on the greenway. In such approach it suggestively hope the integration between heritage tourism and greenways be strengthened.

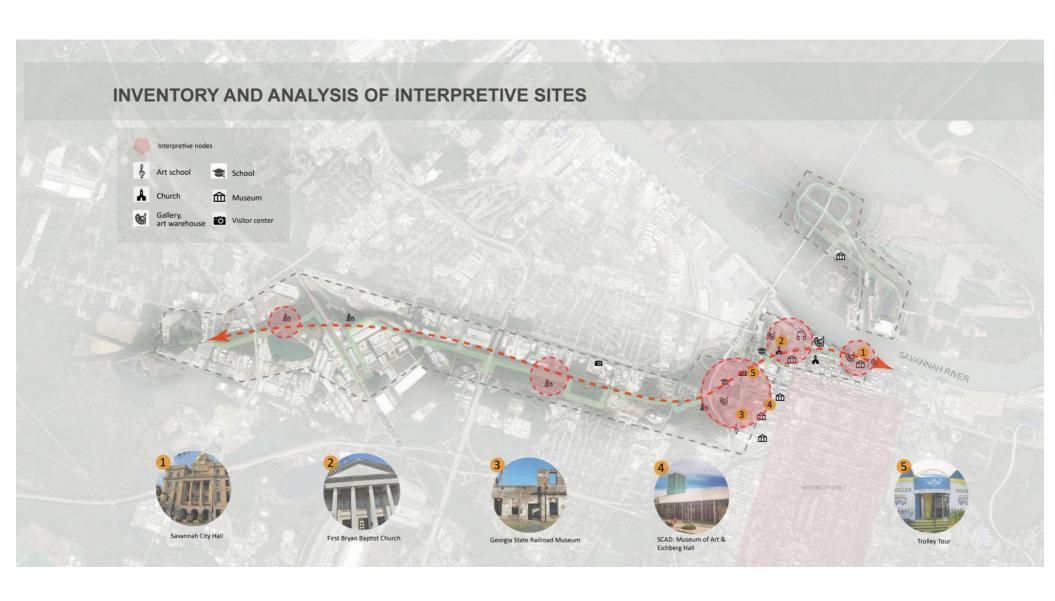


Figure 7.7: Inventory and Analysis of Interpretive (Figure by Author)

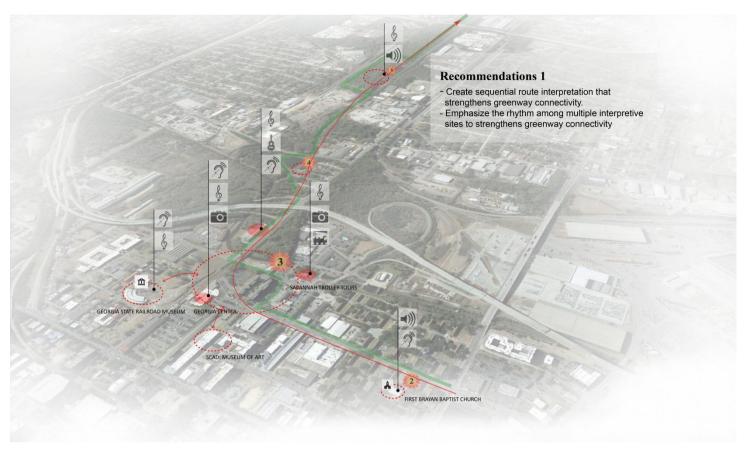


Figure 7.8: The First Recommendation on Savannah Greenway (Figure by Author)

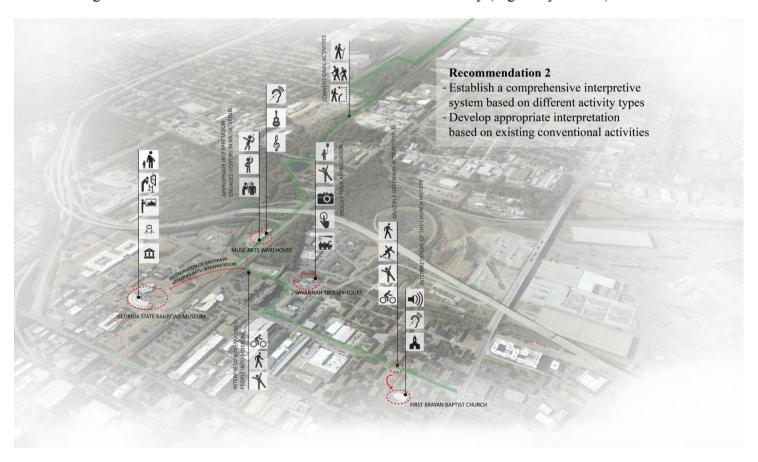


Figure 7.9: The Second Recommendation on Savannah Greenway (Figure by Author)

7.5.3 Third Recommendation: Applied to Specific Sites

The third recommendation is more specifically focused on detailed design elements that are integrated with interpretation of heritage. The location shown is an entrance to the heritage park, which was proposed by Savannah Conceptual Plan, Greenway Study Committee in 2015, which will be built for commemorating the history of the Civil War in Savannah. Also, this heritage park will help set up the greenway park system connecting the existed Battlefield Park and Springfield Canal in Savannah (Figure 7.10).



Figure 7.10: Location of the Entrance to Heritage Park (Aerial Map from Google Earth)

In this entrance, some detailed interpretive elements for interpreting the Civil War history in Savannah are suggested along the existing greenway. Here are some detailed design ideas for heritage interpretation:

- Signs with interpretative elements in stones and woods
- Guided tour or audio tour
- Brochures introducing the heritage parks and Savannah Greenway

• Art pavements on the path

Figure 7.1 illustrates in the perspective to show the before and after.



Figure 7.11: Perspective for the Third Recommendation:

Entrance to the Heritage Park (Figure by Author)

In these detailed designs, the art pavements, in a gray chain design, with the words "In Grateful Remembrance of People Who have Fallen in the Defense of Democracy & Their Country", carved in, to symbolize the long and continuous story of the past. It also signifies the

unity and honors the people who have sacrificed for the nation during the war, which is appealing to visitors as they enter the greenway. Moreover, visitors can choose a guided tour through the park. In Figure 7.10, a group of people is listening to the tour guide who is giving the introduction of the history of Savannah, the heritage park, and the story behind the cracked stone that is reminiscent of the old buildings damaged in the Civil War.

These design features would not only serve as a window for visitors to have a general review of the history of the Civil War from the entrance, but would also raise their awareness of the significance for the heritage's protection of the site, and enrich real and unique experiences as well.

7.6 Summary and Discussion

This Savannah Greenway project theoretically and practically gives an example of how the methodologies of this thesis would be employed in physical greenway projects, which ultimately proposes recommendations applied in the Savannah Greenway Conceptual Plan.

Despite these applications only being suggestions, it exemplifies an inspiring picture for future greenway projects.

However, there still remains a challenge for greenway designers and planners to consider for interpreting heritage through design approaches. Emphasizing on wayfinding and interpretive elements can lead to designers using ideas which are too heavy for the heritage sites, and can hamper peoples' real experience with touching nature. So designers may need to find better methods for appropriate interpretations of heritage preservation.

Just as the entrance to the heritage park shows, some opportunities exist for proposing more creative ways of interpretation, including interpretive signs alongside heritage sites, guided tours, and some technologies such as audio tours and brochures, that have a minimal impact to the environment. The guided tour, for example, in the first case study, the "Mule-pulled" activity in IMCNHC, helps people obtain further understanding about heritage in a place close to nature. In those tours, visitors are introduced to the canal history and the story of the history and are immersed into the past by vivid descriptions through the tour from the guide. Other interpretation methods such as the audio tour or brochures for self-guiding, and even intriguing artwork displayed on the greenways also facilitate the awareness of canal heritage preservation. Through such design approaches, the planning and design goals of enhancing the identity of heritage and enriching peoples' heritage experience can be achieved.

Therefore, the recommendations and specific design approaches in the Savannah Greenway give a example of further understanding and application of the methodology and evaluation framework proposed in this thesis, which contribute to a better synthesis between heritage tourism and greenway design.

CHAPTER 8

CONCLUSION AND FURTHER DISCUSSION

8.1 Conclusion

This thesis explores and answers the primary research question, "How can the reciprocal relationship between heritage tourism and greenway design help support both?" The findings from the literature review, and the evaluation and diagnosis methodology used to explore their relationships ultimately provide recommendations that can be applied for greenway planning and physical greenway projects. Through researching the literature review on greenways and heritage tourism, the author has proposed six core elements, then the evaluation and diagnosis of strategies are employed for five case studies suggesting several approaches for productive synthesis between the two fields. The recommendations in this thesis can regarded as a reference for landscape designers to focus more on a comprehensive system level, contributing uniqueness and success to what may be called heritage greenways.

To answer the research question, the author developed and employed an evaluation framework in Chapter 4 that approached the problem by developing specific criteria related to greenways and heritage tourism, which were then evaluated in five case studies, examining productive relationships between heritage and greenways. The framework suggests general recommendations which can be revised for other different sites and specific project scale. This

can be a promising opportunity for landscape architects and planners when formulating new assessments following the evaluation methodologies. In respect to the case studies, data and evaluation process provides evidence for existing and future greenway projects. Further considerations concerning specific design guild lines can be proposed, based on these recommendations for different design projects.

As previously discussed in chapter 6, generally, the synthesis of greenway and heritage tourism has an enormous potential for the linear network with natural, cultural and recreational elements, which can contribute to a comprehensive heritage greenway system. Then in the application, Savannah Greenway gives the example of employing the methodology used in the thesis, and discussed how the recommendations generated from the framework and applied for the Savannah Greenway conceptual plan. More specifically, these recommendations are significant for the following:

Firstly, in the larger context of entire preservation, the comprehensive greenway network integrated with heritage preservation helps reflect several national trends in landscape preservation, which have served as models for future heritage greenway projects. It is important to establish such a linear framework, ensuring the balance for the heritage greenway network naturally, culturally, and socially, just as suggested in this thesis.

In addition, the interaction between people's participation in greenway and heritage tourism are greatly enhanced. The integration of greenway activities and heritage tourism facilitates the development of heritage sites, and also motivates active engagement, proposed as the third and fifth recommendations. By creating multiple integrated activities in various areas, tourists' needs

are effectively satisfied. With creative ideas for activities, visitors are more engaged in various heritage- based celebrations for a memorable and inspiring tour experience.

Lastly, as for specific design inspirations, these recommendations also give design for current heritage greenways projects that are cooperating with the heritage corridor commission. For example, a clear and interpretive design system help updates the greenway design elements and the development of the heritage area. These strategies in this thesis, such as developing an interpretive plan, creating distinctive theme and a comprehensive wayfinding system, will be a valuable reference for them.

8.2 Further Discussion

From the conclusion above, other aspects can be taken into consideration for future physical greenway projects, in order to provide a coherent and comprehensive picture concerning the synthesis with other heritage tourism projects.

Discussion for the Framework

In terms of the framework, not only can it be used as a broad evaluation tool, but as the evaluation process and case analysis show in this thesis, it can also be considered as useful "generative design tool" for physical heritage greenway projects. Firstly, it helps designers to be more comprehensive in their thinking, and to consider a range of crucial issues in both heritage tourism and greenways. And, it also facilitates further consideration about which factors in the framework are significant, when dealing with the integration of heritage and greenways at the design level.

Moreover, the use of the framework helps designers by enhancing creativity and

overcoming several constraints that encompass unique design aspects that are all centered on "heritage greenways". Specifically, the framework inspires designers to propose detailed design ideas when considering the integration of interpretive elements with physical greenway designs. The unique features of greenway designs can be manifested in distinctive interpretive heritage elements, comprehensive wayfinding systems, as well as unique branding that can represent local identities.

As for how to determine "success" using the criteria of the framework, this thesis focused more on comprehensive and qualitative approaches, rather than a quantitative one. Although it was not used in this study, the quantitative method still proved sensible and contributed to the case analysis. In the physical greenway project or further consideration, detailed criteria about quantitative methods may be considered worthwhile, because it can determine how many green squares equals "success" or how many oranges mean failure, as the generative design tool. In this circumstance, this method helps designers and decision makers propose specific criteria for different practical projects, which are based on appropriate and real situations.

As for the six criteria in this thesis, further considerations can be given to more integration of three or four elements rather than combining only two. For example, the integration of greenway activities, with greenway connectivity and heritage interpretation, may lead to better synthesis, and better design potentials related to heritage on greenways. Thus, it provides much more alternatives and opportunities for future heritage greenway projects.

Discussion of Key Elements from Heritage Tourism and Greenways

As for some concepts in a greenway project like the strategies of "protective, offensive,

defensive, opportunistic", from the findings it is suggested "opportunistic" strategy is better than an alternative, as it overcomes the constraint of establishing the landscapes through sustainable corridor planning approaches. It also gives more tourism opportunities for the revitalization of heritage preservation in discrete areas to the entire heritage greenway system. The benefits of this opportunistic strategy are proved later by the case study. Specifically, the fifth case, Virginia Music Heritage trail, which reinforces its cultural identity by taking some discrete music venues and turning them into an existing greenway network.

The idea of authenticity within heritage tourism, as previously stated, is a priority consideration in the tourism planning process, and it is also vital for designers to focus on the preservation of valuable cultural and historic resources. This can achieve the goal of greenway sustainability when mixed with greenways' planning strategies. For the US, paying attention to authenticity is done through conservation and accurately sustaining the natural and cultural resources. This then presents visitors with a real experience of nature. By emphasizing the importance of understanding and appreciating historic values that minimize its impact on the environment, authenticity aims at creating an enjoyable overall heritage experience for travelers in future heritage greenway projects. So, the increasing role for designers and having a better understanding of authenticity will bring theoretical and practical approaches for both heritage preservation and greenway development in the future.

Additionally, the balance between heritage preservation and greenway development is another crucial consideration based on the findings of this thesis. In a larger landscape context, the coexistence between the environment, culture and social aspects, with the unification of

space and time, contributes to the productive synthesis of heritage tourism and greenways. From a long-term perspective, appropriate heritage preservation integrated with the development of greenways through more sustainable approaches will bring greater revitalization to a region.

These significant cultural and historic resources along the corridors will contribute to a comprehensive and sustainable heritage greenway network, which promotes tourism for the next generation of tourists.

Lessons for China

First of all, understanding heritage authenticity is likely to provide greater inspiration for designers in China. They will begin to consider conflicting designs and thinking between heritage conservation and greenway development. Despite the concepts of sustainable development being raised in China and more decision makers now realizing the importance of the issue, more projects will have a heavy reliance on the utilization of resources on historic sites. This will change how designers and officials will think about tourism in the future.

As for the commercialization and development of heritage corridors in China, it is necessary to reinforce its cultural reputation and incorporate that with detailed greenway design. This can then create a distinctive cultural identity that represents unique Chinese cultural resources and traditions. Lastly, educating the general public about the sustainability of tourism is crucial, because in the future this will see more and more domestic and international visitors around China. New approaches and creative technologies for interpreting historic sites can be designed to minimize the environmental impact, and also provide tourists with a more authentic heritage experience. Thus, to achieve the goals of sustainable tourism both for heritage and

greenway sites in China, the different participants should cooperate and stimulate each other to put these principles into practice.

Generally, there are continuous challenges for greenway designers and planners for integrating heritage tourism with greenways, as there are projects that combine both greenways and heritage tourism that can be studied. Looking for alternative criteria for a more productive synthesis will contribute to long-term sustainability. This thesis is hopeful that the criteria and recommendations proposed for "heritage greenways" will be of significant inspiration for future physical greenway design projects. It also seeks to encourage greenway planners and landscape designers to formulate more sensible policies and valid guidelines that focus on heritage greenways at both system and site levels. As argued previously, coordinating their productive integration with different circumstances in greenway projects will encourage opportunities for local heritage tourism. It can also provide tourists with an authentic and unique experience, that comes from a comprehensive and creative infusion of heritage tourism throughout the planning and design of greenway projects.

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