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URBAN TRAIL SYSTEM PLANNING IN THE WESTERN UNITED STATES:  
AN ANALYSIS OF THE TRAIL-SPECIFIC PLANNING EFFORTS OF FOUR  
CITIES THAT HAVE IMPLEMENTED URBAN TRAIL SYSTEMS

by

Kenneth C. Richley

A project submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF LANDSCAPE ARCHITECTURE

Approved:

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UTAH STATE UNIVERSITY  
Logan, Utah

2012

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## ABSTRACT

Urban Trail System Planning in the Western United States:  
An Analysis of the Trail-Specific Planning Efforts  
of Four Cities that Have Implemented  
Urban Trail Systems

by

Kenneth C. Richley, Master of Landscape Architecture  
Utah State University, 2012

Major Professor: Dr. Carlos V. Licón  
Department: Landscape Architecture and Environmental Planning

States in the Western United States are growing at rates outpacing the rest of the nation. This growth is placing pressure on communities to develop their current open space for residential or commercial use. As cities develop a comprehensive open space plans, several elements arise. One critical element is connectivity. This connectivity is most often realized in the form of greenways. In many cities these greenways contain urban trail systems that provide significant recreation and connectivity benefits.

This thesis investigates the current recommended models used to plan for greenway, synthesizes them into a recommended model process, and analyzes case



studies of four cities that have implemented urban trail systems against this model framework.

The case studies include cities in the West with populations between 50,000 and 100,000 that are not part of a greater metropolitan area with demonstrated planning and implementation of urban trail systems. This selection provides the most relevance to smaller cities in the West that are beginning open space planning efforts.

Developing a recommended model process will aid smaller communities in planning for greenways by providing a step-by-step process from concept to implementation. This guide can provide a roadmap for communities that do not have experience with these planning models and can be used by citizens and non-planning professionals as well.

Three critical factors arose that were common to all case studies. First, the need to follow a trail-specific planning process. The communities studied had all made efforts to plan for trails apart from their general or comprehensive plans. Second, the planning process must have a robust public participation process. This ensures that community needs are met and buy-in is achieved for the implementation process. Lastly, the early identification of trail corridors is essential to the long-term planning process. This ensures that there are no surprises for the community when implementation begins. These factors should receive particular attention from communities wishing to develop urban trail systems.

## PUBLIC ABSTRACT

## Urban Trail System Planning in the Western United States: An Analysis of the Trail-Specific Planning Efforts of Four Cities that Have Implemented Urban Trail Systems

Kenneth C. Richley

As the population in the West grows at rates outpacing the rest of the country, smaller communities begin losing their open space to development. To combat this, communities often begin planning for open space conservation. One component that becomes critical in this planning is the element of connectivity. If this element of connectivity is essential to a communities open space planning effort they must plan specifically for these connections. Greenways and particularly greenways that contain urban trail systems can be an essential way to make these critical connections.

This thesis investigates the current recommended planning methods for greenway-specific planning, develops a synthesized model process from these recommendations, and then analyzes case studies of cities that have implemented urban trail systems against this framework. This uncovers critical factors that communities need to pay particular attention to in their greenway-specific planning efforts. This thesis aims to provide guidance for smaller communities in the West so that they can adequately plan for greenways and urban trail systems to make critical connections in their community and in their open space network.

Analyzing the current recommendations for greenway or trail-specific planning resulted in the following “Model” process steps: 1. Develop the Planning Framework, 2. Develop a Public Participation Strategy, 3. Establish a Vision, Goals, and Objectives, 4. Inventory and Analysis of Current Conditions, 5. Develop Potential Alternatives, 6. Evaluate and Select Preferred Alternatives, 7. Develop Implementation Strategy, 8. Plan Approval and Adoption, and 9. Develop Evaluation and Plan Review Process.

Since the aim is to provide guidance to smaller communities, case study cities were chosen that were easily relatable to these smaller communities. The case study cities were chosen using the following hierarchy: Cities in the West, population between 50,000 and 100,000, not part of a greater metropolitan area, and cities with evidence of current greenway planning and implementation.

This thesis found that there were several key factors that communities needed to follow to ensure a robust greenway and urban trail system. First, they need to follow a trail-specific planning process. The communities studied had all made efforts to plan for trails apart from their general or comprehensive plans. Second, the planning process must have a robust public participation process. This ensures that community needs are met and buy-in is achieved for the implementation process. Lastly, the early identification of trail corridors is essential to the long-term planning process. This ensures that there are no surprises for the community when implementation begins. These factors can play a role in helping communities to achieve a connected greenway system that contributes to a successful open space planning effort.

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## CHAPTER I

### INTRODUCTION

Western states are continuing to grow at rates outpacing the rest of the nation, with the top five fastest growing states being Nevada, Arizona, Utah, Colorado, and Idaho (Perry & Mackun, 2009). This growth is predicted to continue, with the West projected to grow faster than any other area of the country through 2030 (U.S. Population Projections, 2005). Much of the land-use planning discussion surrounding this growth is centered on the creation and preservation of open space as explained below. Kline (2006) sees these trends helping to motivate the current interest in open space preservation. Kotchen and Powers (2004) state that “The protection of open space from *urban sprawl* has emerged as one of the more pressing environmental issues in the United States” (p. 1). This is further illustrated by the number of ballot measures focused on open space preservation. In the ten years from 1988 to 1997 there was an average of 44 conservation finance measures per year placed on ballots across the nation. In the ten years from 1998 to 2007 there was an average of 164 ballot measures per year (Land Vote, 2011). One type of open space that is receiving particular attention is Greenways, and more specifically greenways that contain Urban Trail Systems (UTSs). A leading expert in greenway planning, Fábos, (2004) sees “the growth of greenway planning and implementation as the fastest among all planning and design activities in the United States” (p. 329).

This thesis is comprised of two parts: First is the research of the model process currently recommended to implement UTSs which results in a recommended Model Planning Process; second is the case study analysis of the planning process of four communities against this model framework, resulting in the identification of those steps in the Model Planning Process that are critical to implementation of UTSs. Because there is no vetted, universal planning process for trail-specific planning, this thesis has analyzed the planning models found in academic literature and developed by governmental planning agencies to compile a recommended process that is the synthesis of those found in the research. This recommended planning model is then used as framework to analyze the planning processes used by the cities chosen for the case studies. A systematic approach to reviewing the planning process offers insight into the steps critical for trail system planning and implementation.

Communities utilize different planning processes to achieve implementation of UTSs. They are often planned under the umbrella of open space planning as greenways and UTS's are a subset of open space. This study uncovers the processes used in selected case studies then and compares them to the recommended Model Process derived from current academic and governmental publications. This results in a recommendation of critical process steps and a practical implementation guide that need to be present when communities wish to implement a greenways and UTS.

In response to increasing populations, communities in the West are continuing to face pressure to develop their current open space for residential and commercial use. This research can position them to understand all aspects of the process needed to plan



for and implement UTS. By outlining the planning process and the critical steps, the public, local leaders, and local planners can envision the scope of the process needed to implement UTSs in their community.

### **The Challenges of Defining Open Space**

Because greenways are a subset of open space it is necessary to define open space in general and further define greenways specifically. It is difficult to find a consistent, inclusive definition of open space, as the definition is dependent on the context in which it is being discussed. Planning discussions focused on creating open space will look at open space differently than an assessments or inventories of a community's current open space. Geographic context also plays a role in the definition; a more rural area will typically have a different definition than an urban area. In a local example, this is illustrated in the subtle differences in the Salt Lake County definition and the Salt Lake City definition. As defined by the Salt Lake County Open Land Trust Fund Advisory Committee (Salt Lake County, 2011, para. 1), open space "is a parcel of land in a predominantly open and undeveloped condition that is suitable for any of the following:

- Natural areas;
- Wildlife and native plant habitat;
- Important wetlands or watershed lands;
- Stream corridors;
- Passive, low-impact activities;
- Little or no land disturbance; and/or
- Trails for non-motorized activities"

In a more urban context Salt Lake City (2011) includes "small neighborhood parks and community gardens" (para. 3). Portland, Maine (2011) cites its Evergreen

Cemetery as the city's largest open space. When completing an assessment of open space, the Miami Valley (Ohio) Regional Planning Commission (2005) included schools and landfills as part of their open space calculations. Zinn (2004) uses a definition of open space that:

“...includes three subsets: Productive land, environmentally significant areas, and green space. Productive land includes farm and agricultural lands and resource lands such as forests. Environmentally significant areas include wildlife habitats, wetlands, and coastal lands. Green spaces include public open space inside urban areas, such as parks, and large tracts of undeveloped lands outside urban areas (p. 1).”

The Center for Green Infrastructure Design is a non-profit in Salt Lake City, Utah, focusing on environmentally responsible land-use planning. They utilize an open space analysis tool that includes most of the definitions of open space, and uses them in a single comprehensive method of analysis. The Center's CEDAR approach addresses the Cultural, Ecological, Development, Agricultural, and Recreation definitions in a comprehensive open space evaluation. It also places a strong emphasis on the interconnectivity needed to create a robust type of viable open-space system.

Creating an all-inclusive definition of open space is not relevant to most discussions, as it would include all lands not commercially or residentially developed and include a vast number of individual definitions and subsets. Therefore each community must define open space as it relates to their individual development and conservation priorities. Analyzing the factors that are critical in the planning and preservation of all

types of open space would also be unlikely to yield conclusive results. This thesis focuses on a subset of all of the broad definitions found in the literature, namely greenways, and more specifically those that contain or are part of urban trail systems.

Table 1. Subset of General Open Space Definitions Applicable to Greenway Planning, illustrates the subsets of the general open space definitions that this thesis will address. It shows that greenways and UTSs are one subset of open space that can be studied independently. These greenways are intended to be a part of an integrated, holistic open space planning process but at the same time need to have a dedicated planning process.

---

Table 1

*Subset of General Open Space Definitions Applicable to Greenway Planning*

<b>Source</b>	<b>Definition/Subset</b>
<b>(Salt Lake County, 2011)</b>	Trails for non-motorized activities
<b>(Zinn, 2004)</b>	Green space
<b>(Center for Green Infrastructure Design, 2011)</b>	Recreational open space

---

Figure 1 illustrates a typical UTS. This is part of a more extensive regional trail system and illustrates the greenway-specific open space definitions highlighted in Table 1. The trail connects natural open spaces, recreational open spaces and other regional trails.

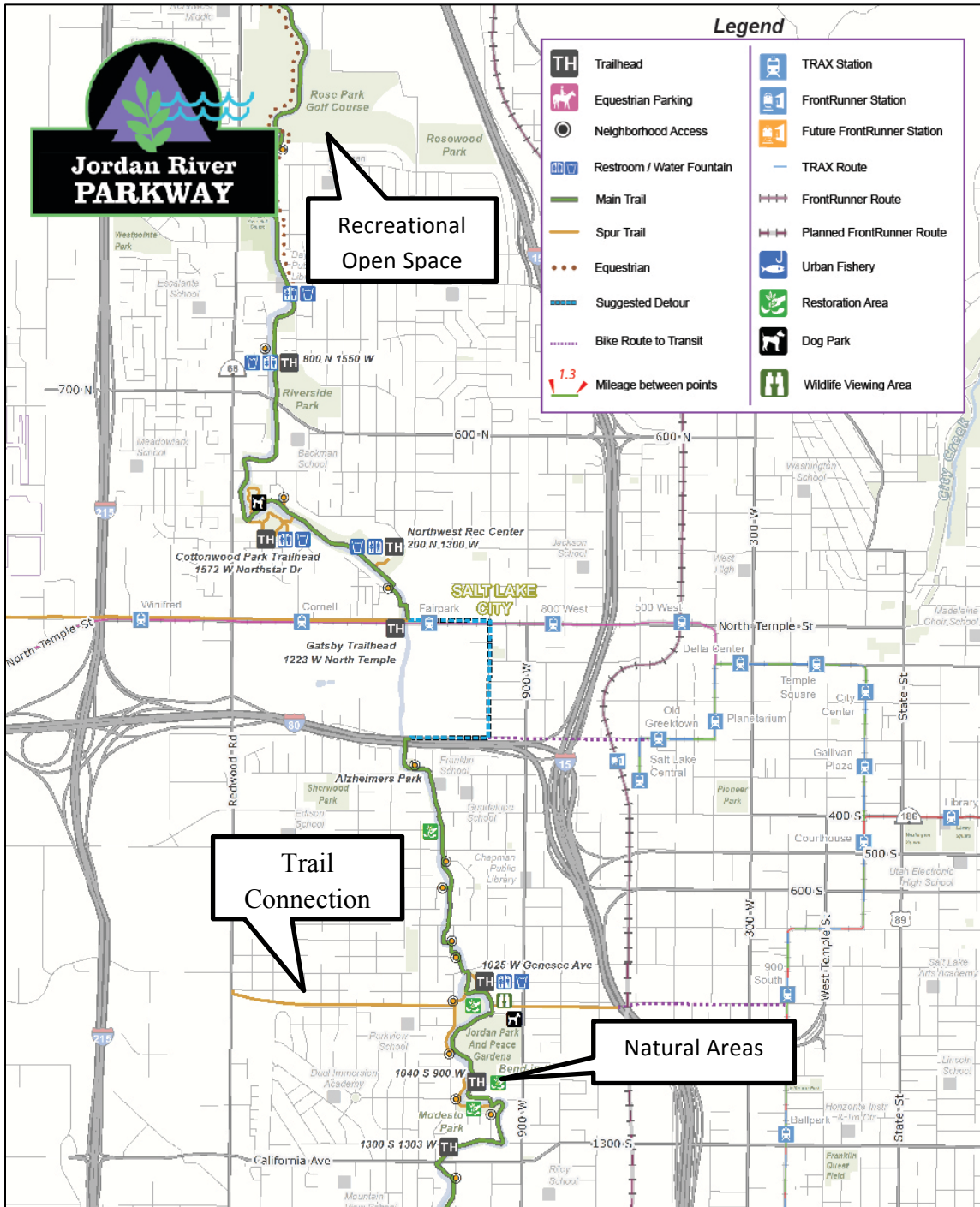


Figure 1. Typical Urban Trail System showing connections to natural open spaces, other regional trails, and recreational open spaces. Adapted from Jordan River Parkway Trail Map, by National Park Service Rivers, Trails, and Conservation Assistance Program for the Jordan River Commission, 2011.

This thesis objective is not aimed at defining an overall planning process for open space or land use, but the approach assumes that the overall planning and land-use framework already exists and that an urban trail system has been determined to be an integral part of the overall open space and land planning model. There are comprehensive planning models that should be used to develop overall plans while the process discussed in this thesis is focused in planning efforts specifically for greenways and urban trail systems as part of the overall land planning. These comprehensive land-use planning models such as the ones detailed by Steiner (2000) and the Center for Green Infrastructure Design (2011) are discussed later for framework/context purposes.

Because greenways are a subset of open space they can be defined more precisely. This more precise definition will allow a case study analysis of the planning methods used to implement UTSS to result in stronger conclusions than a study of general open space planning. The literature provides definitions that are consistent but vary in their level of specificity. A general definition of Greenways is that proposed by Ahern (1995): “Greenways are networks of land containing linear elements that are planned, designed and managed for multiple purposes including ecological, recreational, cultural, aesthetic, or other purposes compatible with the concept of sustainable land use” (p. 134). Again, this thesis will focus on those greenways that have a recreational trail component. This is illustrated by the definition that Little (1990) proposes in his seminal book

*Greenways for America:*

**greenway (grēn'-wā)** n. 1. A linear open space established along either a natural corridor, such, as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road, or

other route. 2. Any natural or landscaped course for pedestrian or bicycle passage. 3. An open-space connector linking parks, nature reserves, cultural features, or historic sites with each other and with populated areas. 4. Locally, certain strip or linear parks designated as a parkway or greenbelt. [American neologism: green + way; origin obscure.] (p. 1).

Understanding the definition of open space is only one part of understanding the planning for open space. The benefits of open space must also be understood so that planners can tailor their planning efforts to the desired results or benefits.

### **Benefits of Open Space**

Starting with the broad definitions of open space, the benefits associated with open space are as varied as the different types. As different authors and authorities list the benefits of open space those benefits shape the definitions and those definitions shape how planning for open spaces is approached. There are several major non-profit organizations dedicated to the preservation and creation of, and planning for open space. They each have a slightly different focus on what they see are the benefits of open space thus framing their motivation for the preservation and creation of open space. The following discussion details benefits as defined by several of the most influential organizations involved in open space conservation.

The Trust for Public Land is one of the leading non-profit land conservation organizations in the country. In 2011 alone they conserved over 131,000 acres adding to their total of more than 3,000,000 since 1972 (Trust for Public Land, 2011). The Trust for Public Land focuses on the economic benefits of open space and lists the following:

- Attract investment – Parks and open space create a high quality of life that attracts tax-paying businesses and residents to communities.
- Revitalize Cities – Urban parks, gardens, and recreational open space stimulate commercial growth and promote inner-city revitalization.
- Boost Tourism – Open space boosts local economies by attracting tourists and supporting outdoor recreation.
- Prevent Flood Damage – Floodplain protection offers a cost-effective alternative to expensive flood-control measures.
- Protect Farms and Ranches – Protecting agricultural lands safeguards the future of farming economies and communities.
- Promote Sustainable Development – Open space preservation helps communities prevent the higher costs of unplanned development.
- Safeguard the Environment – Open space conservation is often the cheapest way to safeguard drinking water, clean the air, and achieve other environmental goals (Lerner & Poole, 1999, p. 1).

The Rails-to-Trails Conservancy (RTC) is a non-profit organization that started in 1986, whose mission is to create a nationwide network of interconnected trails utilizing abandoned and currently active rail corridors. These rail corridors connect communities across the nation and are often one of the few remaining corridors in urban areas suited to

urban trail development. RTC works toward the health benefits produced by preserving this specific type of open space. RTC (2011) lists the following as benefits of rail-trails:

They encourage healthier, more mobile lifestyles by making possible places to walk, bike and more. They develop healthier economies by promoting tourism and local businesses, and increasing property values. They support a healthier climate and environment by making active transportation a viable alternative to the automobile. They contribute to healthier, more vibrant community interaction, connecting people to the places they live, work and play (“The Benefits of Rail-Trails”).

The Nature Conservancy (2006) focuses on the ecological benefits of preserving open space with the mission of benefiting “the plants, animals, and natural communities that represent the diversity of life on Earth...” (p. 5). In this context the recreational and alternative transportation benefits of greenways are seen as secondary to the ecological benefits. Labaree (1992) defines the benefits and functions of greenways as:

- Habitat for animal and plant species,
- Conduits along which people, animals, and plants move,
- Barriers for some species,
- Filters for animals, sediments, and nutrients from groundwater,
- Sources of water and seeds, and
- Ecological sinks for sediments and nutrients (pp. 9-10).

This ecological approach or focus on open space planning is the most prevalent approach in contemporary literature. There is a great breadth of work written on this topic. This literature spans a spectrum from small handbooks, such as *How Greenways Work- A Handbook on Ecology* (Labaree, 1992), to award winning texts such as Frederick Steiner’s *The Living Landscape – An Ecological Approach to Landscape Planning* (Steiner, 2000). The breadth of literature available is illustrated in Table 2. The simple



handbooks are intended for audiences such as the general public and local planning commissions. This is intended to strengthen the support for ecological planning from a more grass roots level or inform municipal government officials that have no planning background. The comprehensive texts are intended for planning professionals who have the ability to shape the entire land-use planning model for communities and regions. These texts are designed to frame land-use planning and open space conservation in an ecological framework. These ecological approaches to land-use and open space planning result in a planning process that is best summarized by Steiner in the figure 2. (Steiner, 2000):

---

Table 2

*Spectrum of Ecological Planning Approaches*

**How Greenways Work – A Handbook on Ecology**

(Labaree, 1992). Ipswich, MA: National Park Service and Atlantic Center for the Environment

Description - A 49 page handbook that is intended as a guide for private citizens and public officials wishing to design and manage greenways to fulfill their ecological potential. The handbook sees protecting these greenways as a way to create long-term ecological gain.

Content – Contains chapters on: Ecological Impacts of Development' Ecological Functions of Corridors – outlines six ecological functions of greenways, Greenways, Wildlife, and Water Resources – this chapter constitutes the majority of the handbook, discussing possibilities and limitations of planning for all six ecological functions of greenways, and Greenway Design and Management – details a more general set of issues involved in planning and designing greenways

A simple handbook meant for general public.

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**Greenway Planning: developing a landscape ecological network approach**

**(Linehan, Gross, & Finn, 1995).** *Landscape and Urban Planning* (33), 179-193.

Description – An academic paper that presents a “theoretical and methodological approach to greenway planning that accounts for regional biodiversity and systematizes the selection of greenway links.”

A theoretical approach to greenway planning.

Content – A methodological approach that utilizes: land cover assessment, wildlife assessment, habitat assessment, node analysis, connectivity analysis, network generation, and evaluation. “Network analysis is an appropriate approach to greenway planning, as it provides a method of systematizing the relationship between elements that can serve as greenway nodes as well as accounting for the conditions of the potential links.”

**Landscape Ecology Principles in Landscape Architecture and Land-Use Planning**

**(Dramstad, Olson, & Forman, 1996).** Island Press

Description – This book is intended to use simple tools to mesh government regulations, economic self-interest, and the land ethic. This handbook is based on Forman’s seminal work *Land Mosaics: The Ecology of Landscapes and Regions* (1995)

A primer on an ecological approach to land-use planning.

Content – The authors see the need for a succinct book to address the ecological aspects of land-use planning. Much like this thesis it is not intended to shape the worldview but to address specific topics in the larger planning process by listing key principles and examples that can be applied to design problems.

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**Tomorrow by Design: A Regional Design Process for Sustainability**

(Lewis Jr., 1996). Wiley

Description – “This book is for everyone who is interested in exploring an alternative process for reconciling explosive urban growth with our regional natural and cultural landscape forms.”

A methodology for regional land-use planning.

Content – “Once we recognize where all the known resources in a region are, we can see the patterns in which they occur. These patterns can guide how and where future growth can be placed to avoid destroying the essential resources that sustain life.”

Unlike the previous article, this book is intended to shape the foundation for land-use planning, and is intended to be a comprehensive process for regional planning.

**The Living Landscape – An Ecological Approach to Landscape Planning**

(Steiner, 2000). (2<sup>nd</sup> ed.). New York, NY: McGraw-Hill

Description – A 477 page text addressed “the growing urgency of environmental issues confronting human societies” and outlines how to “heal, enhance, and manage the life-sustaining processes of the planet and ensure the integrity and strength of the global environment that connects them.”

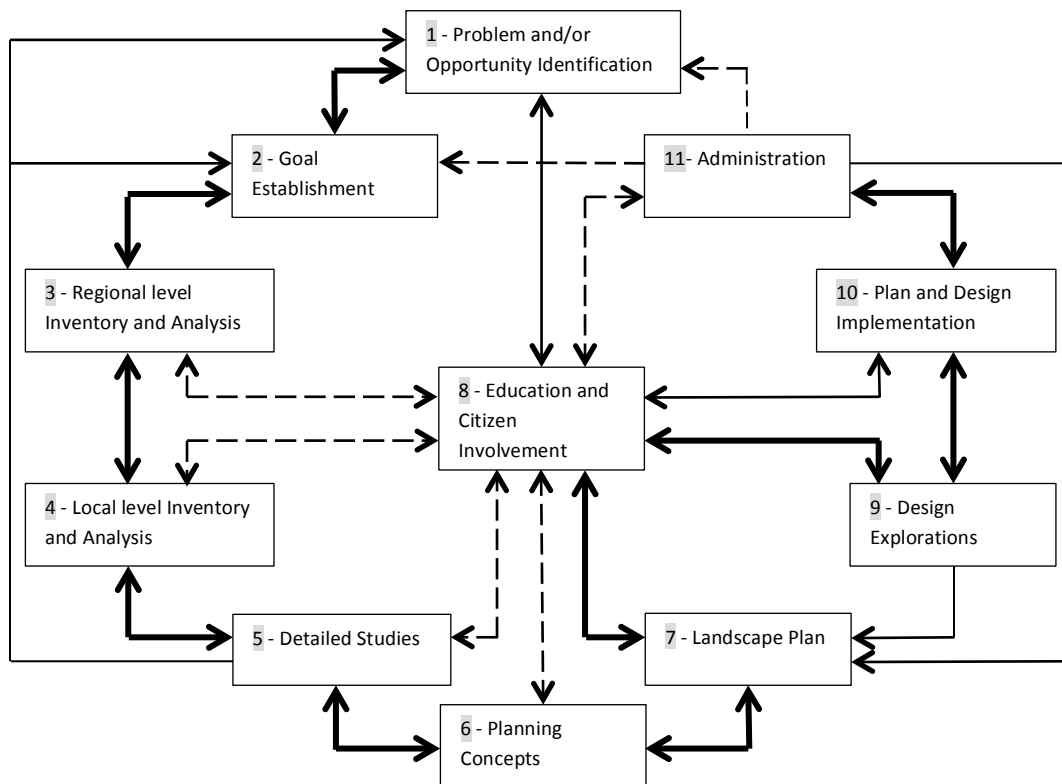
A detailed look at the ecological planning process.

Content – This text takes the current linear planning process and forms an ecological context around the typical steps in the planning process. This ecological framework is intended to “suggest opportunities and constraints for decision making about the use of the landscape.”

As shown later, this planning process is similar to the trail-specific planning processes recommended in academic text and by governmental entities. Steiner explains the interactions between the process steps:

The heavier arrows indicate the flow from Step 1 to Step 11. Smaller arrows between each step suggest a feedback system and, in turn, change from the subsequent step. The smaller indicate other possible modifications through the process. For instance, detailed studies of a planning area (Step 5) may lead to the identification of new problems or opportunities or the amendment of goals (Steps 1 and 2). Design explorations (Step 9) may change the landscape plan, and so on. Once the process is complete and the plan is being administered and monitored (Step 11), the view of the problems and opportunities facing the region and the goals to address these problems and opportunities may be altered, as indicated the dashed lines (Steiner, 2000, pp. 10-11).

This obviously points to an iterative nature of the planning process. Steiner continues in the book to expand on each of these steps and indicates that “The method offered here has a landscape ecological – specifically human ecological – bias” (Steiner, 2000, p. 24).



*Figure 2.* Ecological Planning Model showing interconnectedness of the planning process. Steiner (2000).

There are several approaches that take a more comprehensive look at open space and land use planning. These comprehensive approaches balance the health, recreation, and ecological benefits in their analysis. The Center for Green Infrastructure Design uses the CEDAR method which sees the benefits of open space in a more comprehensive manner. Similar to Lewis's regional planning method in *Tomorrow by Design* (1996), it recognizes the importance of economic development, recreation, and the preservation of cultural resources in creating an ecologically sustainable landscape. Both methods use a set of icons that can be used on maps to denote what Lewis (1996) terms Natural and Cultural Landscape Wealth (p. 75). These icons are used to engage the public in determining the importance of resources within their region. The CEDAR method distills Lewis's set of several hundred icons to a manageable set that is more suited for public involvement. This distilled set of icons in the CEDAR method places Cultural, Ecological, Development, Agricultural, and Recreation benefits on equal footing in the analysis phase. This can serve to accomplish one of the most difficult tasks in open space conservation; building support. By placing benefits such as development and ecology on the same level during the analysis phase, disparate groups can begin forming a partnership at the early phases of open space discussions. While the CEDAR method places these types of open space on equal footing, it sees greenways as a the critical link between all types of open space; "Without the element of connectivity, open spaces are merely a series of unrelated open lands rather than an integrated, interconnected system" (Center for Green Infrastructure Design, 2011) Because these connections are crucial to a complete open space system, this thesis concentrates on the urban greenways and urban trail systems as components of a larger planning strategy for open space.

When looking at these benefits in the context of UTS, a subset of benefits can be created. The list of benefits of greenways is a smaller subset of those listed for open space in general. They provide an important role in the overall open space infrastructure. They provide the links and connections to the many other open space types listed in the broader definition. They also provide links to other public, cultural, and natural resources. They are sources of recreation and also sources of alternative transportation. In many cases they can provide numerous ecological benefits as well. Table 3 illustrates the benefits of open space specifically relating to greenways. This is also illustrated in Figure 1 showing a typical urban trail system. This figure highlights a section of the regional Jordan River Trail and illustrates not only the trail itself but many of the benefits discussed in Table 3. Benefits of Greenways, by highlighting: the trail, neighborhood connections, spur trails, connections to transit, restoration areas, parks, and recreation areas.

---

Table 3

*Benefits of Greenways*

<b>Source</b>	<b>Benefits of Open Space relating to Greenways</b>
<b>(Trust for Public Land, 2011)</b>	Attract Investment Revitalize Cities Boost Tourism
<b>(The Nature Conservancy, 2006)</b>	Conduit along which people move Ecological benefits
<b>(Rails-to-Trails Conservancy, 2011)</b>	Encourage healthier lifestyle Promote tourism and local business

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<b>(Center for Green Infrastructure Design, 2011)</b>	Increase property values
	Provide alternative transportation
	Connect people to work and play
	Health benefits
	Reduction in transportation costs and emissions
	Supports local business and tourism

---

### **Current Open Space Planning Trends**

While the large, non-profit organizations, discussed earlier, focus nationally and even globally, communities have begun to realize the need to create and preserve open space on a local level. Research by Bengston, Fletcher, and Nelson (2004, p. 272) found that there has been a “remarkable growth in the number of state and local referenda on smart growth and open space preservation.” This is supported by the Trust for Public Land. They record the number of ballot measures across the country that are aimed at land conservation in their LandVote database (Land Vote, 2011). In the years from 1988-1997 there were an average of 44 ballot measures per year resulting in an average of \$1.78B in funds being approved for open space conservation and implementation of trail and recreational facilities. In the years 1998-2007 the average number of ballot measures rose to 164 per year. The approved funding rose as well to an average of \$9.3B per year. Kotchen and Powers (2004, p. 1) conducted an in-depth analysis of these referenda and found that: “Nearly 1,000 jurisdictions at the state, county, and local levels held open-space referenda between 1998 and 2003, and approximately 80 percent of these initiatives passed.”

Erickson (2004) states that more specifically that “Many cities in North America are attempting to implement connected greenway networks” (p. 1). This is supported by the number of ballot measures whose purpose is specifically to conserve or create greenways or trails. From 1988-1997 there were an average of 9.5 ballot measures per year that specifically mention trails or greenways as an objective and from 1998-2007 there were an average of 18.5 measures per year (Land Vote, 2011). This illustrates that greenway planning is being driven by not only planners and conservation organizations but is being driven and supported by local municipalities and the public. This shows the need to understand the process needed to plan these greenways to ensure successful completion of greenway and UTS visions.



## CHAPTER II

### CURRENT GREENWAY PLANNING MODELS

It seems little has changed in greenway planning in the past several decades. In 1969 Brooks concluded that: “The greatest barrier to the development of trails is finding suitable land” (1969, p. 2). She contends that one of the major responsibilities of the planning department is to maintain an inventory of potential sites. The reason for this is to be able to respond to potential demands made by citizens for trails and greenways. She also states that comprehensive trail plans are the exception rather than the rule. “Few governments have comprehensive plans for trail development, and, in fact, most trails seem to be the result of some individual or group seizing a development opportunity before it is lost” (Brooks, 1969, p. 2). Not much has changed since this was written in 1969. Erickson (2004) concludes that “coordinated greenway visions are lacking” (p. 1). This being said, there are communities in the urban west that have implemented more complete systems of greenways and UTSs and have comprehensive plans that anticipate growth and the completion of additional segments of urban trails.

A review of current greenway planning literature has found that there are few sources that comprehensively document the entire process. There are many sources that discuss the history and theory of greenways (e.g., Little, 1990; National Park Service, 1991; Rails-to-Trails, 1993) and many that address the design of greenways (e.g., Hellmund & Smith, 2006; Flink, Searns, & Olka, 2001; AASHTO, 1999), yet few that look at the entire process. Expanding the literature review has shown that recommended planning processes have been developed by state agencies, local county agencies, local

health departments and transportation departments. There is little evidence of individual communities documenting the planning process they use to develop UTSs. This thesis reviews these academic and organizationally developed planning guides and compares them to the processes being used by communities that have developed and implemented UTSs.

### **Academic Planning Models**

As mentioned previously there are few academic texts that present a comprehensive discussion of the trail planning process. A Portland State University study found that; “trail design and planning is not covered in most university transportation courses, with only five percent including any discussion of this topic” (Weigand, 2010, p. 7). This finding may be a result of the lack of academic texts that step through the process of trail and greenway planning.

In 1993, Flink and Searns published *Greenways: A Guide to Planning, Design, and Development*. This book is one of the few that takes a comprehensive look at the entire greenway planning process. They do contend that; “There is no single way to plan and implement a successful greenway.” However, concede that “The preparation of almost all greenway plans involves two key ingredients: a thorough investigation of the greenway project area and the involvement of the public” (p. 17). The chapters of their book define a process that encompasses the entire project cycle. In the author’s terms, this process is structured as follows:

- Envisioning Your Greenway
- Developing a Plan

- Partnerships: Organizing Your Greenway Effort
- Building Public Support for Your Greenway
- Funding Your Greenway
- The Greenway Design and Implementation Process

Additional chapters discuss management, liability and preservation of natural and cultural resources. In this case "Your" in the chapter titles, and throughout the book, refers to a committed greenway activist or group as opposed to a community's city council, planning and zoning commission, or governing board. Flink and Searns spend considerable time on the "Developing a Plan" chapter in the book, and consider it an integral part of the process. They have documented a detailed process that will result in a comprehensive master plan for a specific greenway corridor (see Figure. 3). It should be noted that this process is for planning a specific greenway corridor and not a greenway system. They recognize the fact that this may be part of a larger local or regional trail system but have outlined a planning process for a single corridor. Ryan (1993) sees that the development of a plan means little if there are no implementation strategies. Comprehensive multi-use trail plans have little chance of success if they are not integrated into policy and planning documentation that are actually used by planners, engineers, and decision makers (p. 45).

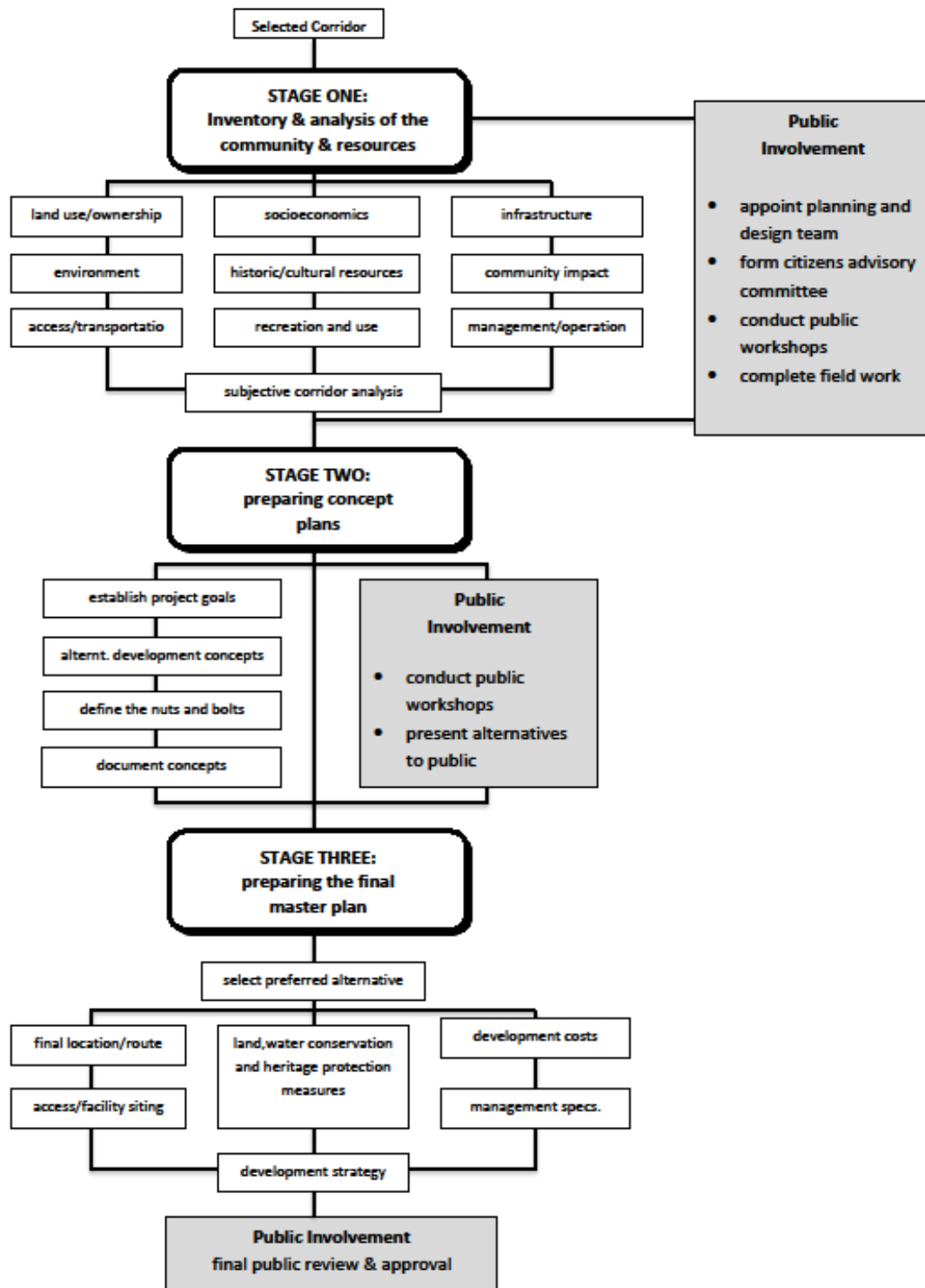


Figure 3. The Greenway Planning Process. (Flink & Searns, 1993).

## Governmental Planning Models

The majority of trail planning process literature is produced by governmental entities. This may stem from the planning process being so closely linked to regulations, ordinances, and zoning that dictates trail planning activities.

In 1992 the U.S. Department of Transportation – Federal Highway Administration commissioned a study of *Current Planning Guidelines and Design Standards Being Used by State and Local Agencies for Bicycle and Pedestrian Facilities* (U.S. Department of Transportation - Federal Highway Administration, 1992). A part of this study investigated current planning processes in an attempt to define the state-of-the-practice. The consultant selected for the report was to review reference documents and contact state and local agencies to review and report on their development process. This included the planning, design and implementation of bicycle and pedestrian facilities. For the planning process the report reviewed state and local agencies planning guidelines and a draft copy of Flink and Searns – *Guidelines for Creating Greenways*. The report concluded that the current best practices included processes used or proposed by the State of North Carolina and the State of Florida.

The State of Florida provides a detailed flow chart of the process similar to Flink and Searns. This is shown in Figure 4. Also similar to Flink and Searns, this flow chart details points where public involvement is key. It should be noted that the North Carolina planning process shown in Figure 5 does not provide a flow chart detailing the process. In the details of the process there are several steps that advocate public participation in the process. The plan mentions having members of the public involved in

the advisory committee and having a public meeting to identify hazards but does not integrate the public input process into the overall process in the same manner as Florida. Both North Carolina and Florida are currently still using or recommending these planning processes to create bicycle and pedestrian trail systems.

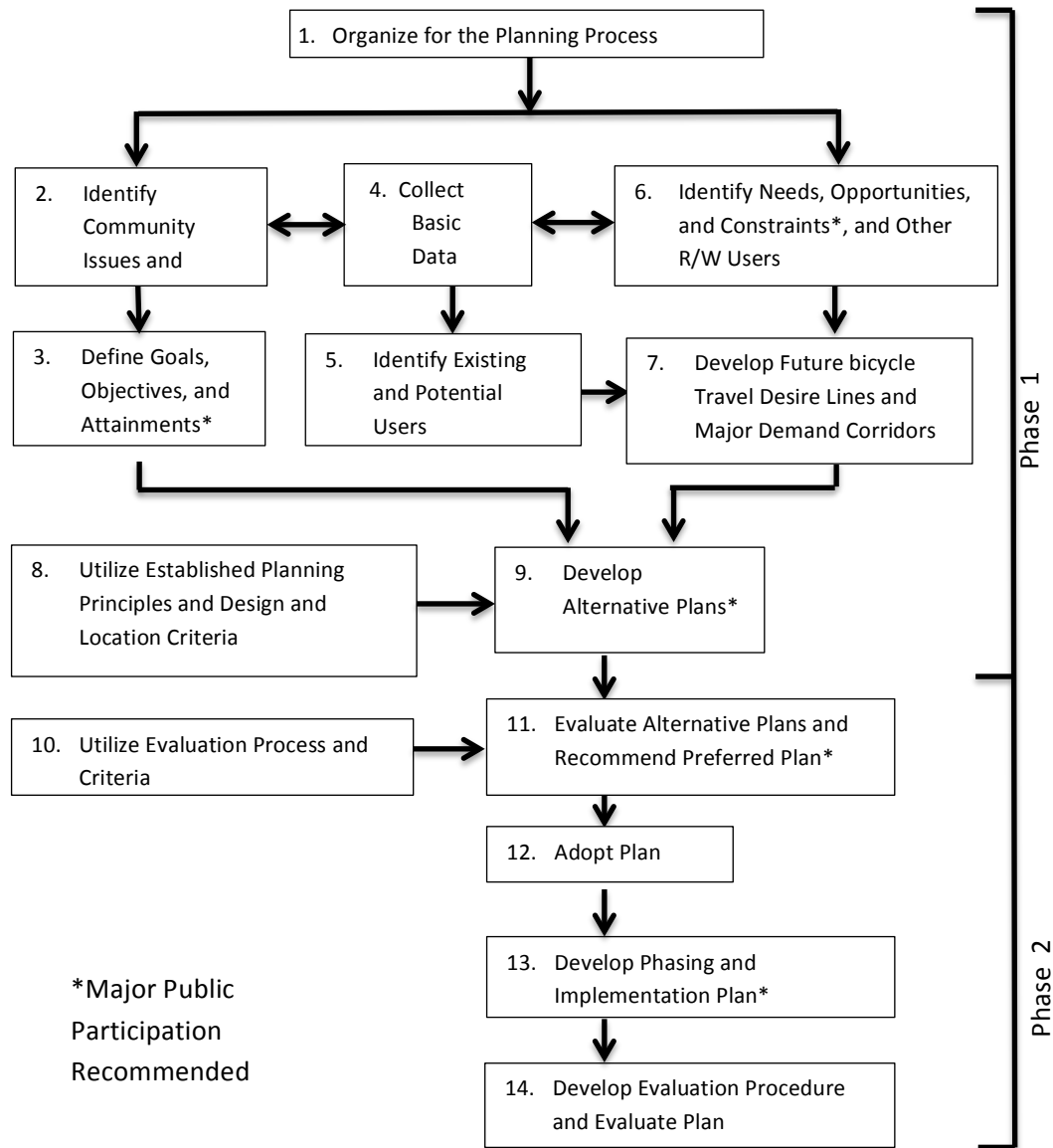
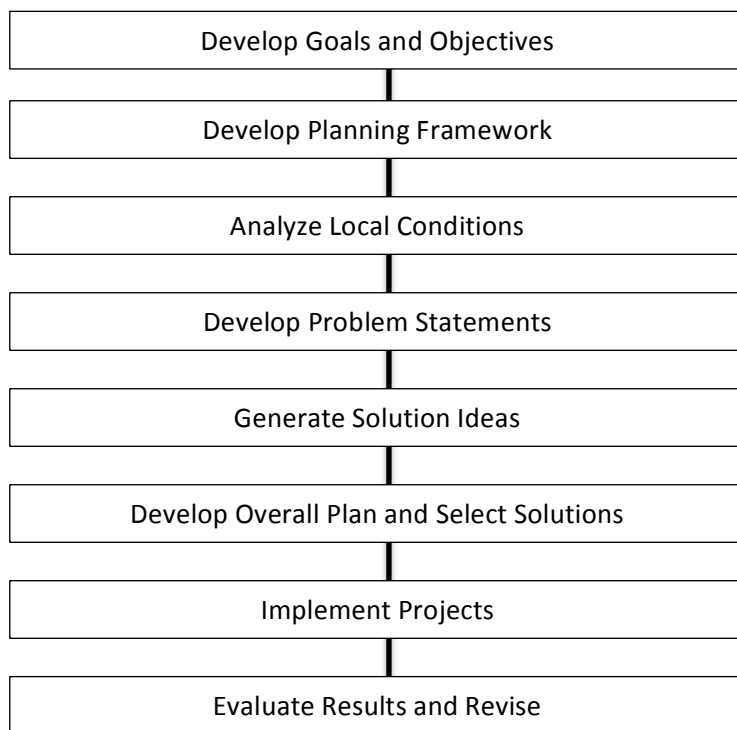
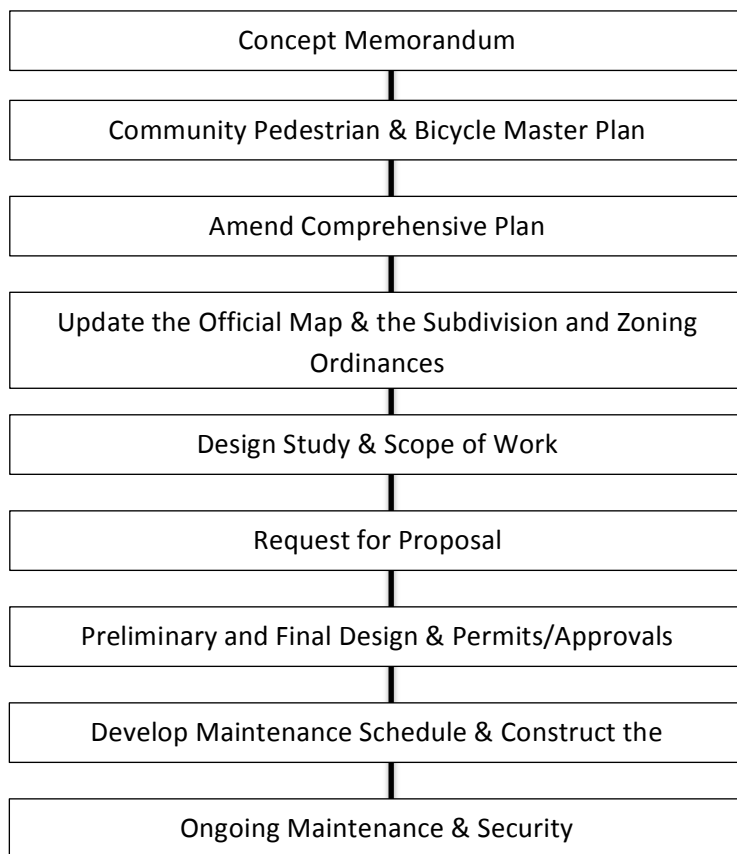


Figure 4. State of Florida Comprehensive Bicycle Transportation Planning Process. (Florida Department of Transportation, 1982) referenced in (U.S. Department of Transportation - Federal Highway Administration, 1992, p. 21).



*Figure 5.* State of North Carolina Planning Process (1994). (North Carolina Department of Transportation, 1994, p. 5).

Another governmental model is used and promoted by the Chester County, PA Planning Commission (CCPC). They published their *Trail & Path Planning – A Guide for Municipalities* in 2007 (Chester County Planning Commission, 2007), which recommended several trail planning resources, only one of which is an academic text. The other three references were planning process guides created by State and local agencies, again illustrating the lack of academic texts available on this topic. The process that is recommended by the CCPC is a synthesized combination of these resources that was developed into the following planning model shown in Figure 6:

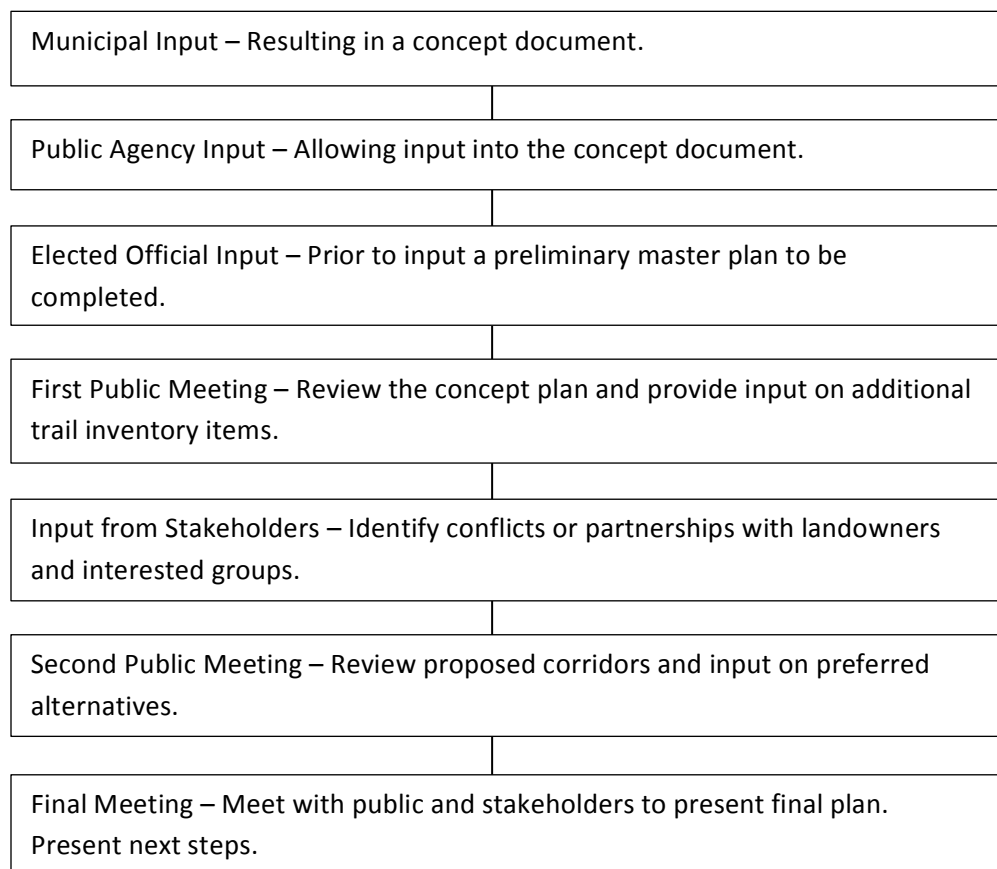


*Figure 6.* Chester County Planning Commission Planning Process. (Chester County Planning Commission, 2007, p. 7).

The reason given for developing the guidebook is to assist municipalities in planning for trails because they state that trail planning in Southeastern Pennsylvania is a relatively new field. They urge municipalities to approach trail planning “with all the seriousness of a highway project”, and encourage addressing trails in comprehensive plans, official maps, and zoning, subdivision, and land development ordinances (Chester County Planning Commission, 2007).



It should be noted that the CCPC plan outline shown in Figure 6 does not explicitly denote many of the steps that they recommend in the text of the document. For example, they do not denote public involvement in the process steps but in the text of the guidebook they state: “Regardless of the approach, all trail & path planning must include stakeholder and public involvement.” (Chester County Planning Commission, 2007, p. 89). They see the three key steps that require public involvement are: consensus on the concept, consensus on the corridor, and consensus on the alignment. They further outline a specific process for public involvement (see Figure 7). The CCPC also does not denote Inventory and Analysis as a specific step in the process diagram but outline a comprehensive inventory and analysis process within the guidebook. To make their process diagram more effective they should denote these specific steps in the process. In the analysis and synthesis of the model processes studied these steps are explicitly added to the process to accurately reflect the steps the CCPC recommends. This is shown in Figure 7.



*Figure 7. Chester County Planning Commission – Public Participation Process. (Chester County Planning Commission, 2007, p. 90).*

Recently, the Utah Department of Health (UDOH), in conjunction with the Utah Department of Transportation (UDOT), has developed a handbook entitled *Utah Bicycle & Pedestrian Master Plan Design Guide* (Utah Department of Health, 2011). This handbook guides communities in the development of a bicycle and pedestrian master plan. The outlined steps are:

**Identifying Goals and Objectives** – provides guidance for identifying 1) a purpose of the bicycle and pedestrian master plan, 2) goals and objectives of the plan, and 3) methods for integrating this plan into the community's existing planning structure (p. 7).

**Conducting an Inventory of Existing Conditions** – The goal of this chapter is to identify the infrastructure, programs, and policies already in place for pedestrians and bicycles. An inventory of existing conditions will inform the discussion on current facilities and that improvements can be made (p. 21).

**Public Involvement** – identifies a range of activities designed to engage the public as part of a bicycle and pedestrian master plan. Activities can range from small meetings with city staff to larger interactive public workshops (p. 47).

This Public Participation section will not be a chapter in the final master plan, but similar to CCPC, UDOH stresses the creation of a public involvement plan that is to be used during the entire planning process. They identify places in each section of the planning process where the public needs to be engaged.

**Analysis and Site Selection** – outlines the process of identifying specific sites for improvements. Techniques for site selection are discussed, including ideas for public involvement activities, evaluating problem areas based on demographics and topical foci, as well as the use of more advanced modeling techniques (p. 63).

**Planning and Design** – presents a variety of design components for consideration and adoption of a pedestrian and bicycle plan and infrastructure (p. 77).

**Project Selection and Prioritization** – will build upon those by outlining how to pair specific facilities with priority sites (p. 137).

**Implementation** – outlines the specific details associated with implementing the projects in the bicycle and pedestrian master plan, including costs and ongoing funding needs, and provides a comprehensive outline of existing funding sources for bicycle and pedestrian infrastructure. Additionally, this chapter discusses project phasing as way to implement projects over time (p.151).

**Monitoring** – presents a framework for monitoring the success of bicycle and pedestrian planning efforts. It includes tips on benchmarking progress, engaging local advocacy groups, and continuing to generate interest in bicycle and pedestrian issues once a master plan is complete (p. 167).

**Recognition Programs** – highlights a variety of recognition programs that are available for both bicycle and pedestrian projects. The first section focuses on awards for bicycle and pedestrian planning, while the second section focuses on awards for implementation (p. 177).

It is important to note that in Flink and Searns, Florida, CCPC, and UDOH models, public participation is stressed. This was evident in many other planning processes uncovered during the review of current planning processes. In reviewing the details in the North Carolina process, there is no mention of public participation. However, the North Carolina process has an actual step that refers to implementing the projects. They discuss implementing long and short-range plans as well as reviewing policy to ensure compliance to the plan. Even with these differences these processes are very similar and representative of current planning models. These model planning processes will be analyzed and synthesized into a recommended model planning process in the next section. This will in turn be used to evaluate the planning process used in the case studies.

### CHAPTER III

#### MODEL PROCESS RESEARCH AND SYNTHESIS

The four model processes studied have several common characteristics. They all outline a process that will guide a community in developing a plan to implement a greenway or UTS. In many cases their guidance only differs in the order in which they recommend the process steps happen. All of the processes have five process steps in common:

1. Establish a Vision, Goals, and Objectives
2. Inventory and Analysis of Current Conditions
3. Develop Potential Alternatives
4. Evaluate and Select Preferred Alternatives
5. Develop Implementation Strategy

It should be noted that all processes stress public participation in the Inventory and Analysis and the Evaluate and Select Preferred Alternatives steps.

In researching and analyzing the model processes the following steps are recommended to complete a robust process:

- Develop the Planning Framework – North Carolina Department of Transportation recommends this step to ensure integration with other plans. It also sets expectations of the planning process for non-planning participants in the process. It can also serve as a framework for a proposal request if consultants are being used.

- Develop a Public Participation Strategy – All model processes stress public participation, however UDOH is the only process that recommends developing a public participation strategy. This is the most recent planning model and integrates much of the latest social media concepts in the public participation process. With the increased methods of public input and outreach, developing a strategy can increase the diversity of the public input thus strengthening the process.
- Plan Approval and Adoption – Formalizing this step in the process can create support from local leaders that understand they are part of the approval process.
- Develop Evaluation and Plan Review Process – This step creates the understanding that this is a living document that needs periodic review. Creating measurement metrics can focus priorities after the completion of the plan.

Finally, although all of the model processes and the recommended model process explicitly outline a linear process, they recognize the iterative nature of the planning process. This iterative nature most often manifests itself in the public participation process. As information is solicited from the public, or as analysis is completed, it is incorporated into most segments of the plan. Steiner's Ecological Planning Model, shown in Figure 2, stresses the importance of the planning process being iterative and

shows Citizen Involvement as central to the process (Steiner, 2000). Steiner's planning model, while accurately depicting this iterative nature, can be unnecessarily complex when presenting the planning process to the general public and local leaders. In the interest of proposing a straightforward recommended planning process, the iterative nature of the planning process will be implicit and not denoted on the process diagram.

Figure 8 summarizes the model processes and proposes a synthesis of this process. This synthesis utilizes the steps that are common to each process and also adds steps that are needed to be a robust process.

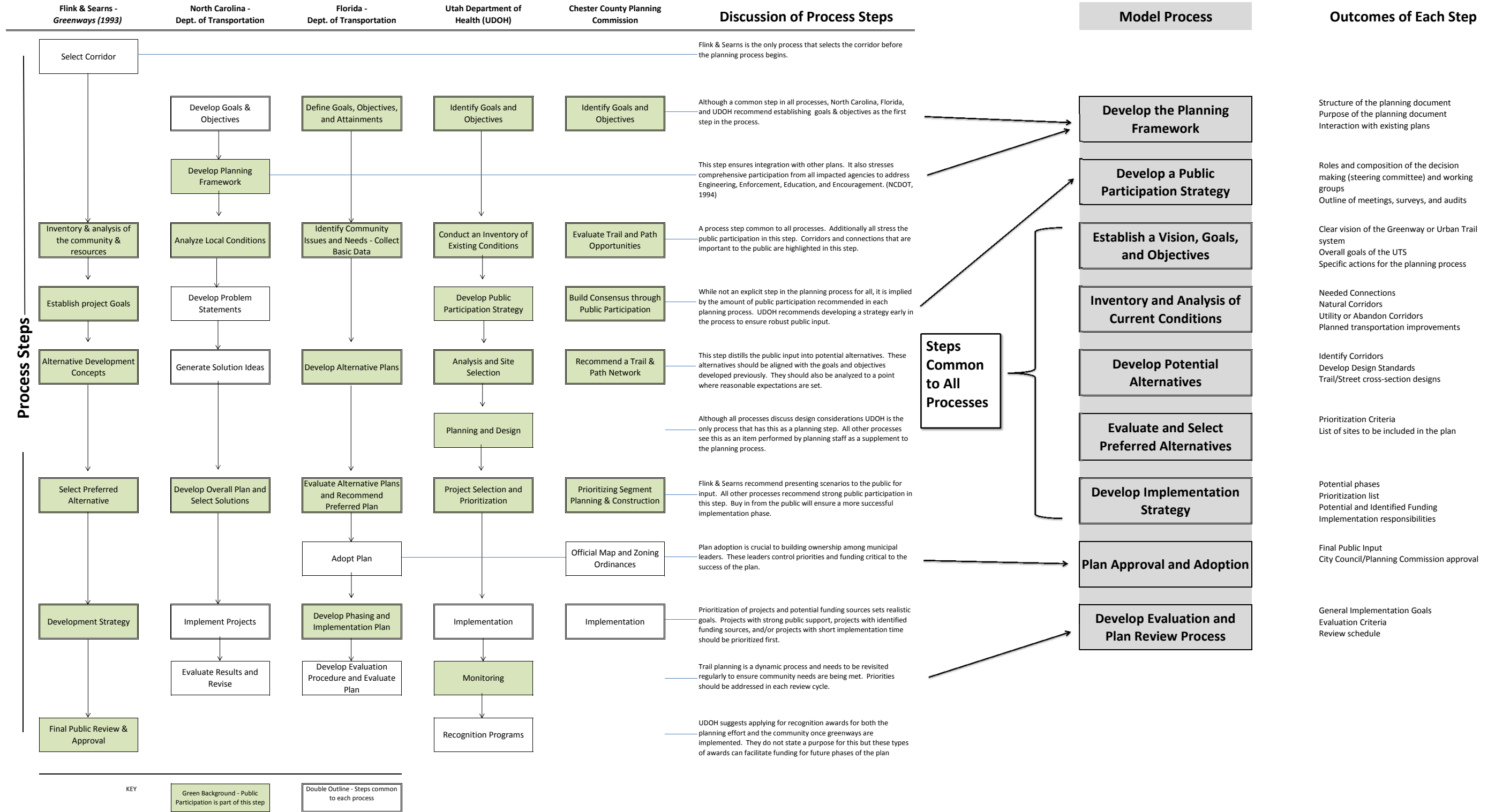


Figure 8. Model Process Analysis and Synthesis. Analysis of the recommended trail planning processes and their synthesis into a Model Process framework.



## CHAPTER IV

### CASE STUDIES ANALYSIS

#### **Methodology**

Given the variety of planning methods that are currently used, and the variety of tools used to implement these plans, a case study analysis of communities that have implemented greenway systems seems appropriate to address this research. A case study methodology is applicable to this research question because it has the ability to provide detailed explanations of real-life situations. The explanations of these situations, namely the processes used in planning for greenways and UTSs, are critical to determining what factors were most influential to the implementation of UTSs in the studied communities. The implementation of a greenway system is a complex process that can span decades from initial planning to on-the-ground implementation. The strength of a case study analysis is that it can provide a deeper understanding of a process as complex as that used to implement UTSs.

The planning process that this thesis is seeking analyze is influenced by many factors. Reviewing multiple cases highlights the influential factors in the process and thus strengthens the conclusions. If only one instance of a greenway implementation was studied, aspects of the complex process may not be used in the analysis, thus weakening the conclusions. Studying these multiple cases can lead to a general set of observations and conclusions. Also, by studying multiple cases, the number of factors studied can be reduced and the conclusions can be strengthened. When undertaking multiple case studies, Yin (1989) explains that “Every case should serve a specific purpose within the

overall scope of inquiry” (p. 53). This thesis will use what Yin terms a *literal* replication. Namely, the cases selected will test the same outcomes. In this instance; were there similar process steps present in all the cases to conclude that they were the steps that had the greatest influence on the implementation? An in-depth study of a small number of cases will allow for the greatest number of factors to be studied, again strengthening the conclusions.

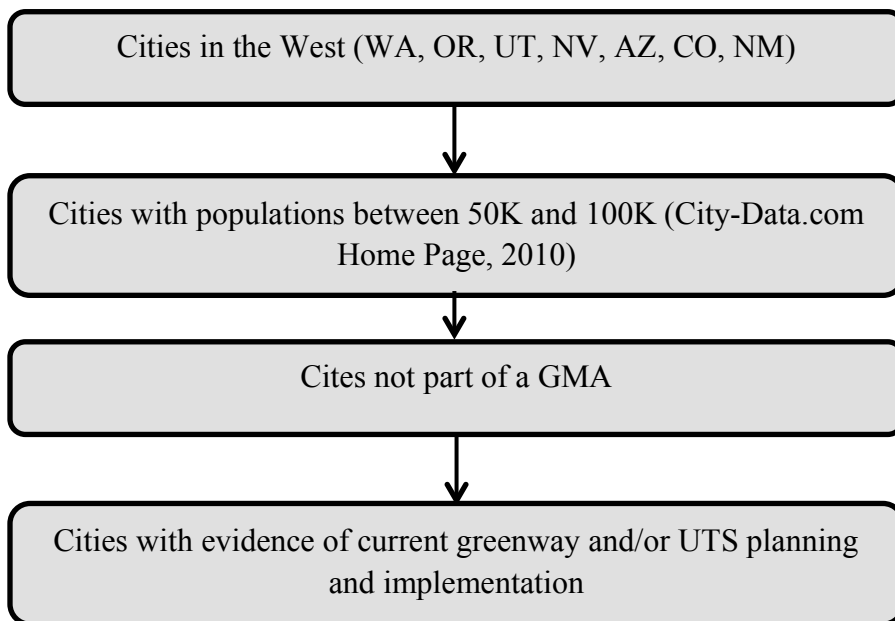
The objective of this case study is to find communities that have implemented greenway systems and determine if there are consistent process steps that were both present and contributed to the completion of UTS in the studied communities. By identifying these factors a process can be built that stresses the importance of these critical factors and increases a community’s chance of success in implementing UTS.

One of the major obstacles of this research was developing a list of the process steps that need to be studied. If an important step is not considered in the data set, a critical link may be missed. Researching current planning processes in a more general sense should reveal steps that current practitioners regard as critical to implementation. Another obstacle is the availability of historical data regarding the process that was used when specific trail sections were completed. This is another reason to consider multiple cases in this thesis.

### **Case Selection**

Many mid-sized rural communities find themselves facing the prospect of transitioning into larger more urban cities. In the western U.S. there are many of these communities that are not part of a greater metropolitan area (GMA), and do not benefit

from more large scale regional planning. The results of this thesis can aid these smaller communities in long range planning for greenways and UTS. Thus the following hierarchy was used to start the city selection process (see Figure 9):



*Figure 9.* Initial City selection hierarchy used to choose case study cities.

Using population data the first two filters resulted in 50 cities within the population guidelines. The next filter on the hierarchy (not part of a GMA), was chosen because, when cities are part of a GMA there are often regional planning efforts that can overshadow or replace a community's need to plan for greenways or UTS. This can be evident on a county level or on a state level. This filter narrowed down the number of cities to 22. Several of these cities had developed trail systems, however the following

four case studies were chosen because they were able to provide enough data to support a complete case study analysis.

- Bend, OR – The Bend urban trail system currently has 51 developed miles, with more trails under construction each year (Bend Park and Recreation District, 2008).
- Flagstaff, AZ – has over 50 miles of urban trails, with more being actively planned as part of the Flagstaff Urban Trail System (FUTS) (Flagstaff Metropolitan Planning Organization, 2011).
- Bellingham, WA – currently has over 64 miles of urban trails, and a well-documented trails plan (City of Bellingham, 2008).
- St. George, UT – has over 35 miles of off-street multi-use trails, and has plans to more than double that amount (City of St. George, 2006).

### **Data Collection and Analysis**

Urban Trail Systems are rarely imagined, planned, and implemented in a short time frame. This necessitates a review of the overall UTS planning process used currently and in the recent past. It also suggests that a chronological review of the planning process be completed for each case. The long time frame also suggests the possibility that different planning models could have been used for different segments of the overall UTS. Particular attention will be given to the first trail-specific planning effort in each community. It will be shown that many of the trail-specific planning efforts build on the initial effort, in particular their public input and corridor selection.

Trail planning process data will be collected by reviewing planning and zoning documentation, reviewing trail master plans, and researching city websites. The data will be organized in the following manner:

- Each case will begin with a brief dashboard outlining the community including: Population growth chart, miles of trails on the ground, first trail-specific planning effort, and current trail planning responsibilities. Trail miles were obtained by researching the current inventory sections of the planning documents throughout the years. In the case of St. George, this data was provided by the planning department for all trail segments.
- Past planning documents that relate to trails planning will be reviewed. Where specific planning processes are included in the documentation they will be noted. Note: some of the planning documents analyzed serve to only illustrate the support for trail planning. The pertinent documents are those that are specific to trail and greenway planning or have a substantial trail planning component.
- These pertinent documents from each case will be analyzed to show evidence that the trail planning process contains steps from the model process outlined in Figure 8 - Synthesis of Model Processes. This analysis will be represented graphically in charts titled – Analysis of Trail Planning Documentation. The resulting data will then be evaluated against the Model Process framework and conclusions drawn on the evidence of:
  - Omission of steps from the planning process

- Patterns and/or consistency of the process steps
- Progression of the planning documents
- Level of public participation in the planning process
- After each case is analyzed, general conclusions of the thesis will be presented to show evidence to what extent the planning processes of each case study utilize the process steps and outcomes in their past and current planning processes. The cases will be evaluated for:
  - Patterns and/or consistency among the case study conclusions
  - Patterns and/or consistency among the first major trail planning efforts for each of the case studies
  - Patterns and/or consistency among the latest trail planning efforts for each of the case studies

### **Bend, OR**

The analysis of Bend, OR follows, starting with a community profile in Table 4 and followed by an outline of trail planning in the community in Figure 10. A synopsis of prior planning efforts is conducted in Table XX. This synopsis shows the progression of trail specific planning efforts that have led to the urban trail system in Bend. The analysis concludes with an analysis of these planning efforts using the developed model process as a framework.

This case study illustrates an example of a community that has integrated trail planning into local, regional and state agencies in a consistent and comprehensive manner.

Table 4

*Bend, OR Community Profile*

Trails Planning Responsibility:	Bend Park & Recreation District (BPRD)
1 <sup>st</sup> Major Trail Planning Effort:	1995 Urban Trails Plan
Total Miles of Trails:	65 (Bend Park and Recreation District, 2008)
Planned Miles of Trails:	96 (Bend Park and Recreation District, 2008)
Supporting Trail Planning Partners:	City of Bend Oregon Department of Transportation Deschutes County

Figure 10 illustrates population, miles of trails, and when Bend started their first major trail specific planning effort. This information can be used by other communities to understand where they are in the trail planning and trail implementation process.

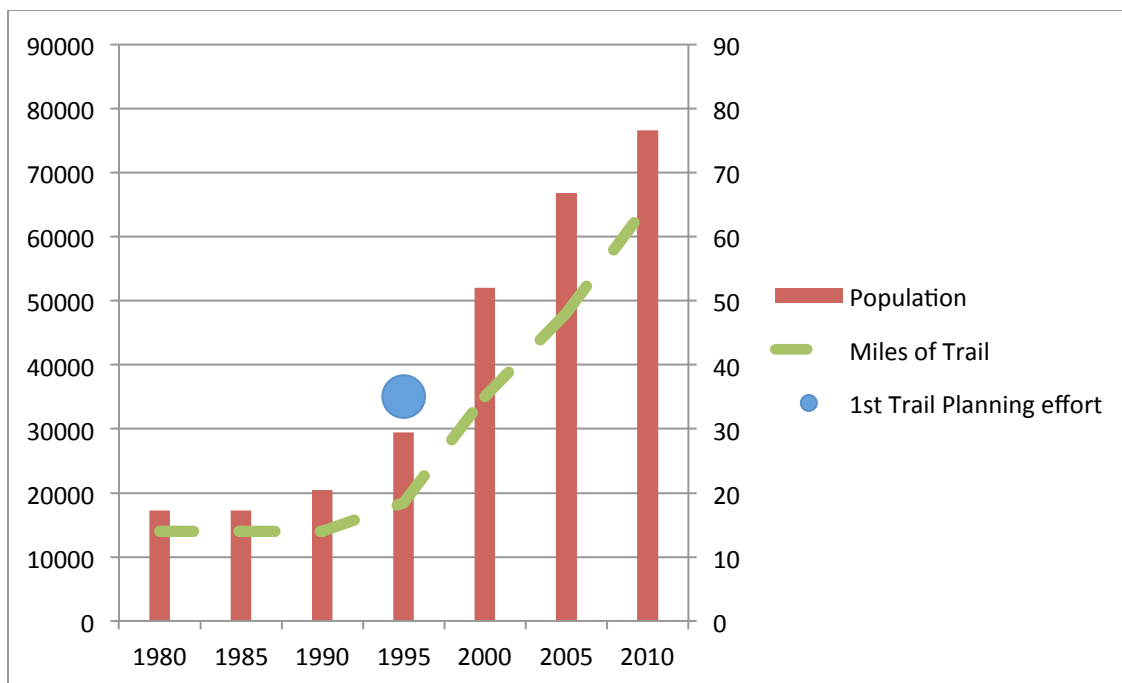


Figure 10. Population Growth & Cumulative miles of UTS: Bend, OR.

### **Trail Planning Outline – Bend, OR.**

Both the City of Bend and the Bend Park and Recreation District (BPRD) currently plan for trails in the Bend Metropolitan area. The BPRD was established in 1974 by the Central Oregon Intergovernmental Council. The BPRD is the organization that is charged with acquiring land and conducting the planning process to implement trails in the Bend area. Planning is also done at a regional and state level by Deschutes County and the State of Oregon; however, they do not conduct the specific trail planning activities that result in implementation within the Bend area, but are partners in the efforts of the BPRD. The Deschutes County Bicycle and Pedestrian Advisory Committee is an appointed citizen committee that advises Deschutes County, the City of Bend, and other communities within Deschutes County.

Table 5 is a review of the prior trail planning efforts made by the city of Bend and the other trail planning partners. This review is intended to provide a background on the process that resulted in the current urban trail system in Bend.

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Table 5

*Review of prior planning efforts for Bend, OR*

#### ***Bend Area General Plan (City of Bend, Deschutes County, 1975, 1998)***

This plan was adopted by the City Council and the Board of County Commissioners. One of the Plans Goals is “to establish a system of trails, greenways and wildlife corridors that are interconnected” (p 2-2). The plan also contains a policy that states “The city and Bend Metro Park and Recreation District shall share the responsibility to inventory, purchase, and manage public open space, and shall be supported in its efforts by the city and county” (p. 2-12) This illustrates the interconnectedness of the planning process. The plan further states; “The Bend Metro Park and Recreation District shall



acquire park sites and open space lands where possible to establish pedestrian, bikeway and greenway linkages between parks, open spaces, neighborhoods, and schools” (p. 2-13)

*BPRD – Comprehensive Plan* (Bend Park and Recreation District, 1981)

The plan was rewritten in 1995 to include the first inventory of trails, subsequently updated in 1998 and 2001. This plan was superseded by the Parks, Recreation, and Green Spaces Comprehensive Plan (BPRD, 2008). The trails outlined in the plan are shown in Figure 11. Note: As of 1995 none of the identified trails had been built.

*Bend Urban Trails Plan (City of Bend, 1995)*

This is the first plan for Bend that is dedicated solely to trails and trail planning. It was intended to enhance the trails portion of the Comprehensive Plan. It was funded by a grant from the Oregon Department of Transportation and the Department of Land Conservation and Development. The purpose of the grant was to study opportunities for multi-use trails to link activity centers and residential areas. The planning process used by Bend for the 1995 Trail Master Plan can be summarized as follows (steps with an \* have a public participation component) :

Form Trail Advisory Committee (TAC) \* - Consisting of Federal, State, and Local land management agencies, Trail and Bicycle advocacy groups, and the public. This TAC involved over forty members.

Trail Inventory – On-the-ground trail inventory and potential connectivity. The consultant spent two months gathering background data and developing conceptual trail alignments. They met with utility companies, irrigation districts, and railroad companies to discuss their willingness to allow trails in their corridors. This inventory process resulted in thirteen Primary trails being identified. Secondary and Neighborhood trails were also identified.

Introduce Trail Plan \* - Solicit public input on trail identification and location – The public was asked to describe heavily used trails within their neighborhoods. This input was researched and incorporated into the Trail Analysis section.

Trail Analysis – Comprehensive ranking analysis – The trail analysis consisted of a ranking process containing nine ranking criteria. This was used to rank the thirteen Primary trails resulting from the Trail Analysis section. This ranking was completed by four people reaching consensus on each point and then the ranking was reviewed by the TAC.

Design – Utilizes resources such as AASHTO 1991, Flink and Searns 1993 – This section contains guidance for trail design. It outlines the different trail types that comprise the system. This is general information to ensure that the public as well as

funding sources are informed on the specifics of each trail. This section also aids in compiling accurate costs for each trail depending on trail type.

#### Develop Implementation Strategy

- **Cost & Funding** – This outlines all of the costs associated with constructing each trail segment. It aids in prioritization and determination of appropriate funding sources. It also aids in compiling municipal budgets by outlining labor and overhead costs required to maintain the trails on a per-mile basis. A detailed list of potential funding sources and funding mechanisms are included in this section. This provides a possible roadmap to overcome the daunting task of funding an extensive trail system that is outlined in the plan.
- **Legal Issues** – This section outlines the legal issues associated with acquiring land and completing trail sections. This is intended to guide the City in adopting ordinances and guidelines for dealing with trails in the future.

**Future of Trails Plan \*– Next Steps** – This section recommends the adoption of the plan by the City of Bend as part of their Comprehensive Plan and Transportation Plan. It provides an extensive list of recommended policies that should be adopted to support the Urban Trails Plan.

#### *Bend Riverway – A Community Vision* (**Bend Park and Recreation Foundation, 1999**)

The study was conducted to develop a management plan for the Deschutes River. This corridor is the backbone of the Bend trail and open space system. Trails and trail connections were one of the main topics of interest in the plan. This plan can be considered in combination with the *Deschutes River Trail Action Plan* (2002). These plans together provide a complete plan for the Deschutes River Trail.

#### *Deschutes River Trail Action Plan* (Bend Park and Recreation District, City of Bend, Bend Park and Recreation Foundation, 2002)

This plan was adopted by the city of Bend and the BPRD. It resulted from and built upon the 1999 *Bend Riverway Study* and is focused on the individual segments needed to complete a trail along the Deschutes River and trail connections to the Bend Urban Trail System. This plan combined with the *Bend Riverway Study* form a complete planning process and are treated as a single planning effort in this thesis. The plan contained the following outline of the planning process:

##### Planning Process (Bend Riverway Study)

##### Planning Guidelines - Guiding Principles for the Riverway

The mission of the Bend Riverway is to promote the conservation and enjoyment of our

river. Guiding principles were developed by the Steering Committee to provide a framework within which the Riverway Project would operate. The Steering Committee considered these guidelines as a critical part of the process. The guiding principles are as follows:

#### Seek Common Ground

- Develop cooperative partnerships with agencies, private property owners, citizen and business groups
- Respect private property rights.
- Work within existing laws and regulations.
- Be a catalyst for good communication.

#### Build a Stronger Community Through Public Involvement

- Conduct extensive public outreach through a wide variety of methods.
- Actively engage all segments of the community.
- Develop a strong sense of river heritage in the community.
- Raise river awareness in order to foster stewardship.
- Focus on connecting neighborhoods and businesses to the river.
- Increase economic benefits to the community.

#### Envision a Legacy to Leave Our Children

- Build a community vision for the river within one year.
- Develop 5, 15 and 50-year goals.
- Maintain and enhance the quality of life in Bend.
- Protect the river's health.
- Sustain or increase economic vitality of Bend.
- Work creatively to protect the river using a variety of land preservation tools.
- Identify and interpret the historical, cultural and natural values of the river for future generations.

The Deschutes River Trail Action Plan continues the planning process and incorporates the following steps:

- Prioritized list of projects
- Individual project information
  - Site description
  - Project description
  - Land ownership character
  - List of potential partners
- Preliminary work required
  - Preliminary trail alignment
  - Definition of trail amenities
  - Property owner discussions if needed
- Construction project information
  - Program (what is to be constructed)

- Conceptual level construction budget
- Construction time line
- Project implementation steps
  - Funding sources
  - Project partners
  - Project schedule
- Project lead and support responsibility
  - Tasks, responsibilities and schedule
- Project management and maintenance program

Outlining the planning process is a critical step in Developing the Planning Framework. It allows the public and all involved to anticipate the outcomes of the process and feel comfortable with being involved in the process.

*Parks, Recreation, and Green Spaces Comprehensive Plan (Bend Park and Recreation District, 2008)*

This is the guiding document for the planning and implementation of the UTS and Greenway system in the Bend area. It is a comprehensive plan that also includes all type of indoor and outdoor recreation. Through public outreach the BMRPD found that walking/biking trails are among the most important facilities to resident households.

*Park & Recreation Trails Master Plan (Bend Park and Recreation District, 2008)*

This plan replaces the 1995 plan and is built upon the 2006 Bend Urban Area Bicycle and Pedestrian System Plan, the 2005 Parks, Recreation and Green Spaces Comprehensive Plan and the 2002 Deschutes River Trail Action Plan. “The Plan recommends improvements that will upgrade the existing system where needed, fill in the missing gaps, and connect to significant environmental features, schools, public facilities, local neighborhoods, other parks, and business districts throughout the area.” The current Bend Urban Trail System map is shown in Figure 12. Planning steps noted in the 2008 Plan:

- Public Input – Trail prioritization and new trail opportunities were a result of public meetings with Neighborhood Associations.
- Goals & Policies (Objectives) – The plan states that: “The following goals were derived from existing plans and input from the district’s Trail Plan Advisory Committee members, BPRD staff, and district residents.”
- Existing Conditions/Inventory – Including a needs overview, an inventory of existing conditions, and an analysis of opportunities and challenges.
- Selection Criteria – A selection criteria process was developed to evaluate and select preferred alternatives and develop priorities.
- Action Plans – action plans and capital improvement requirements were

presented for each identified trail section.

- Plan Adoption Resolution – BMPRD No. 306 – A RESOLUTION OF THE BEND METRO PARK & RECREATION DISTRICT BOARD OF DIRECTORS ADOPTING THE 2008 BMPRD TRAILS MASTER PLAN.

This formalized the adoption of the plan.

The results of these planning efforts have produced the current Bend Urban Trail System map shown in Appendix A.

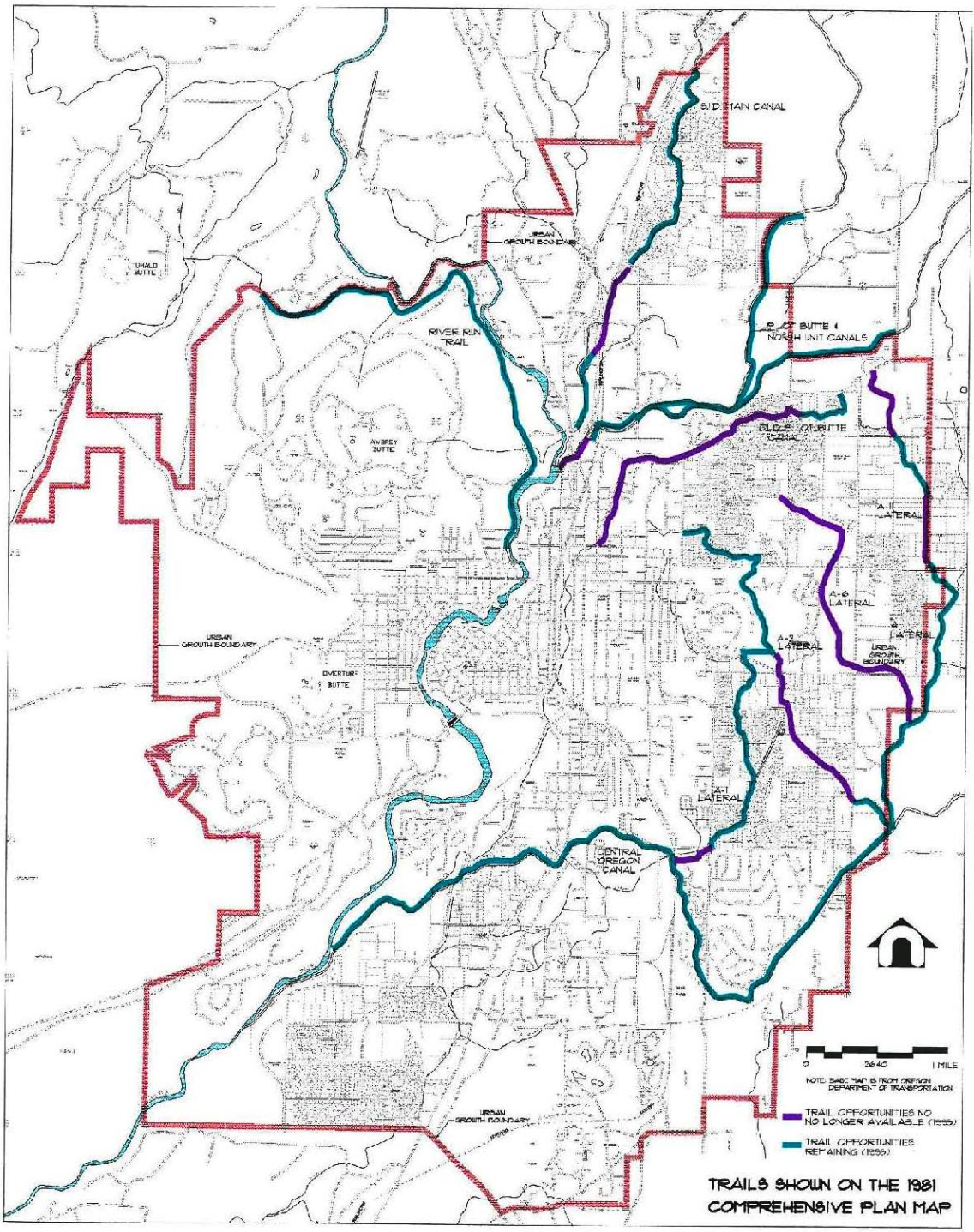


Figure 11. Trails Shown on the 1981 Bend Comprehensive Plan Map. (City of Bend, 1995, p. 6a).

### **Analysis against Model Process Framework.**

Figure 12. outlines the trail specific planning documents and compares them to the recommended model process. Explicit evidence that specific process steps and process step outcomes have occurred are noted.

In analyzing the case against the model framework, evidence of the following are verified:

- Omission of steps from the planning process
- Patterns and/or consistency of the process steps
- Progression of the planning documents
- Level of public participation in the planning process

*Omissions* - The most significant omission from the Bend planning documents was in the Develop Evaluation and Plan Review Process, Model Process step. Only the 2008 plan addressed the Review Schedule outcome of this step. There was also no evidence that the plans addressed trail opportunities associated with planned transportation improvements.

*Patterns/Consistency* - All plans showed evidence that they established the planning framework. All plans stress the need for connectivity within the urban trail system. All plans showed well documented evidence of prioritizing the identified potential trail segments. The Implementation Strategy Development showed some consistency but there was not evidence that all outcomes were completed during each planning process.

*Progression* - The 1995 plan was facilitated and prepared by a consultant. There was not evidence that nine of the Model Process outcomes were completed during this planning process. The current plan was prepared by city staff and there were only five outcomes that had no evidence of completion during the planning process.

*Public Participation* - Although the process for the 2008 plan is not as rigorous as the 1995 process, public participation is still a key component to the process. Input was solicited thorough the Bend Neighborhood Associations, through email, and at district presentations. The extent of the Technical Advisory Committees and Citizen Advisory Committees involvement is significantly different from the 1995 plan. The 1995 TAC contained over 40 members and the TAC for the 2008 plan contained three. There were eight members on the Citizen Advisory Committee for a total of eleven. This is significantly less than the 1995 plan. This illustrates the reliance on past planning efforts and the progression of the planning effort.

*General Observations* - Even though the 1981 Comprehensive Plan included a map outlining potential trails, none of the trails that were identified in the plan were built as of 1995. At this time the City of Bend obtained a Transportation Growth Management planning grant from the Oregon Department of Transportation. This grant was used to create a trail-specific plan that was focused on opportunities for multi-use trail to link activity centers and residential areas over the next 20 years. At that time the City hired a consultant to facilitate the process, collect & analyze the data, and prepare the plan. This resulted in the *Bend Urban Trails Plan* and would be the first time that the trail plan was



a stand-alone document that focused solely on trails, and can be considered the first time that trail planning was completed separately from a larger land-use planning effort.

The trails outlined in the 1981 plan, however, created a starting point to bring continuity to the vision of an urban trail system in Bend. This urban trail system concept is reference throughout the planning documentation from the early plans to the present.

Model Process	Model Process Outcomes	Key Trail Plans			Analysis of 1999 Bend Riverways Study/2002 Deschutes River Trail Action Plan		
		1995 Bend Urban Trails Plan	1999 Bend Riverways Study/2002 Deschutes River Trail Action Plan	2008 Trail Master Plan	Analysis of 1995 Bend Urban Trails Plan	Study/2002 Deschutes River Trail Action Plan	Analysis of 2008 Trail Master Plan
<b>Develop the Planning Framework</b>	Structure of the planning document Purpose/structure of the planning document Interaction with existing plans	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	1995 - This was presented in the scope of work for the consultant and included tasks and products to be completed. 1981 Comprehensive plan trail map was reviewed as part of the process.	No evidence that the structure of the document was discussed. The planning process was outlined in detail. Interactions with existing plans was listed as a guiding principle.	Plan builds upon previous plans so structure is similar and recognizable. Purpose outlined. Previous and current plans are discussed.
<b>Develop Public Participation Strategy</b>	Roles and composition of the decision making (steering committee) and working groups Outline of meetings, surveys, and audits	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	1995 Plan - 40+member Trail Advisory Committee Formed prior to work starting. Public participation stresses. No explicit evidence that a specific public participation plan was in place prior to the start of the planning process.	Public participation process outlined as a first step in the process. Steering Committee, Technical Advisory Committee, and Citizen Committee outlined.	Strategy was to solicit comments via established Bend Neighborhood Associations, surveys, and public meetings.
<b>Establish a Vision, Goals, and Objectives</b>	Clear vision of the Greenway or Urban Trail system Overall goals of the UTS Specific actions for the planning process	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	This was not evident in the plan - a small list of objectives was listed as a side note.	Immediate, short, medium, and long term goals outlined. Planning process detailed.	Comprehensive Goals & Policies section. Extensive section on benefits of trails and discussion of the UTS.
<b>Inventory and Analysis of Current Conditions</b>	Needed Connections Natural Corridors Utility or Abandon Corridors Planned transportation improvements	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Linkages to destinations used as a ranking criteria. Deschutes River highlighted as a primary corridor. Irrigation canals and transmission corridors highlighted. No evidence in the plan.	Existing conditions reports for sections of the riverway.	No new corridors are examined, updates on corridors proposed in previous planning are discussed. Connectivity listed as a priority in ranking criteria. Utility and Natural corridors are noted as being a priority.
<b>Develop Potential Alternatives</b>	Identify Corridors Develop Design Standards Trail/Street cross-section designs	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	13 individual trail sections or corridors selected. Trail design standards developed. Street crossing concept designs developed.	The individual segments of the corridor are addressed. No evidence of trail design standards. No evidence of trail cross-sections.	Detailed trail maps for each identified section are provided as well as costs and trail details. Design standards and Trail/Street crossings are examined and detailed.
<b>Evaluate and Select Preferred Alternatives</b>	Prioritization Criteria List of sites to be included in the plan	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Well documented prioritization criteria to choose trail segments. 13 documented trail segments.	Project Idea list generated.	Selection Criteria and project priorities are outlined.
<b>Develop Implementation Strategy</b>	Potential phases Prioritization list Potential and Identified Funding Implementation responsibilities	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	No Phasing recommended. No prioritized list. Potential funding sources identified. Implementation and maintenance responsibilities noted.	Land acquisition and detailed phasing strategy outlined. Prioritization of specific sections outlined. no potential funding outlined. Project partners and project lead identified for each section.	Phasing and priorities are reviewed on an annual basis with input from public and advisory committee. Prioritization allows for capital budget planning. Bend Metro Parks & Rec District assumes responsibility.
<b>Plan Approval and Adoption</b>	Final Public Input City Council/Planning Commission approval Recommendations for policy changes to support trails	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Final Draft presented to public for review. Adopted as part of the Comprehensive Plan and Transportation Plan. Policy recommendations made.	Plan was adopted internally by the Bend Riverway Association. and presented to the City Council and Planning & Zoning Commission without formal adoption.	Formal adoption and final public review. No recommendations for policy changes.
<b>Develop Evaluation and Plan Review Process</b>	General Implementation Goals Evaluation Criteria Review schedule	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	No evidence found.	No evidence found.	Review of trail inventory is listed as a priority to ensure they reflect current priorities.

Key  - evidence found  - no evidence found

Figure 12. Analysis of Trail Planning Documents vs. Model Process - Bend, OR.

## Flagstaff, AZ

The analysis of Flagstaff, AZ follows, starting with a community profile in Table 6 and followed by an outline of trail planning in the community in Figure 13. A synopsis of prior planning efforts is conducted in Table 7. This synopsis shows the progression of trail specific planning efforts that have led to the urban trail system in Flagstaff. The analysis concludes with an analysis of these planning efforts using the developed model process as a framework.

This case study illustrates an example of a community that has branded their urban trail system. Flagstaff has used the acronym FUTS (Flagstaff Urban Trail System) consistently for several decades which has increased public awareness of the system.

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Table 6

*Flagstaff, AZ Community Profile*

Trails Planning Responsibility:	Flagstaff Metropolitan Planning Organization
1 <sup>st</sup> Major Trail Planning Effort:	1988 Final Report – Flagstaff Urban Trails System Ad Hoc Committee
Total Miles of Trails:	50 (Flagstaff Metropolitan Planning Organization, 2011)
Planned Miles of Trails:	130 (Flagstaff Metropolitan Planning Organization, 2011)
Supporting Trail Planning Partners:	City of Flagstaff

Figure 13 illustrates population, miles of trails, and when Flagstaff started their first major trail specific planning effort. This information can be used by other communities to understand where they are in the trail planning and trail implementation process.

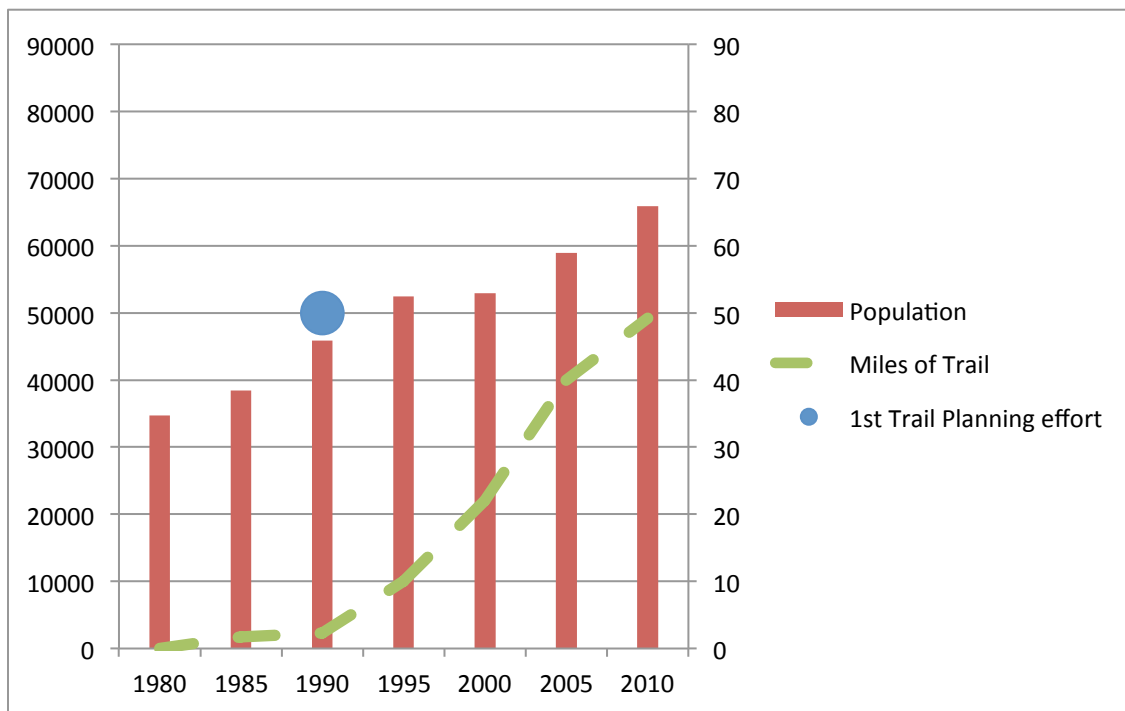


Figure 13. Population Growth & Cumulative miles of UTS: Flagstaff, AZ.

### Trail Planning Outline – Flagstaff, AZ.

The City of Flagstaff currently plans for trails under the Flagstaff Urban Trails System (FUTS). The city has addressed the topic of urban trails in numerous documents during the past two decades. They have the largest number of separate planning documents that address trails of any of the case studies. They use the *Flagstaff Area Regional Land Use and Transportation Plan (RLUTP)* (City of Flagstaff, 2001) to drive goals and objectives for the *Flagstaff Open Spaces Management Plan* (City of Flagstaff,

2007). It also drives the *FUTS Trail Priority Evaluation* (City of Flagstaff, 2011).

However, the *RLUTP* relies on previous planning efforts to derive the goals for the

FUTS. Twenty four area and master plans are listed in the reference list of the *RLUTP*.

Many of these plans support the same goals of creating a cohesive urban trail system for Flagstaff.

Table 7 contains descriptions of past planning efforts and how they relate to trail planning. Much of these descriptions are taken from the current *Flagstaff Open Spaces Management Plan* (Flagstaff Metropolitan Planning Organization, 2008). Discussing the planning efforts of the past two decades in the current planning document helps to put the current trail planning efforts into context.

Table 7

*Review of prior planning efforts for Flagstaff, AZ*

*Growth Management Guide 2000* (City of Flagstaff, 1987)

“In 1987, the city recognized that “the preservation of open space is important in enhancing a community’s quality of life. Open space has a functional use as a land resource, as a land use for recreation, and as a corridor for transportation”. Because many parcels that were then undeveloped would eventually be developed, the *Growth Management Guide 2000* (GMG) urged that “it is imperative that the City embark on a program of preserving quality open space within the urban areas of the City”” (Flagstaff Metropolitan Planning Organization, 2008, p. 4)

“In addition, the *GMG 2000* called for the creation of a safe and efficient city-wide bicycle and pedestrian system for commuting and recreational purposes.” (Flagstaff Metropolitan Planning Organization, 2008, p. 4)

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*Final Report – Flagstaff Urban Trails System Ad Hoc Committee* (City of Flagstaff, 1988)

The plan was meant to identify recreational and alternative transportation options for Flagstaff. The Ad hoc committee was appointed by City Council to “study and make recommendations pursuant to implementation of a City-wide Urban Trails System.” (p. 7)

*Flagstaff Bicycle Plan* (City of Flagstaff, 1991)

This was intended to cover a wide range of issues including: facility development, education, advocacy, enforcement, registration, funding, and implementation. It was meant to be the vehicle the city used to implement bikeways in the city. Although the plan was bikeway specific it addressed Type 1 bikeways which are separated path urban trails that would eventually become part of the urban trail system.

*Long Range Master Plan for Parks, Recreation and Open Space* (Flagstaff Parks and Recreation Division, 1996)

“Open spaces are to provide a setting for outdoor recreation, such as walking, jogging, bicycling, and wildlife viewing. The *Master Plan* also notes how open spaces contribute to maintaining Flagstaff’s identity: “Open spaces in Flagstaff enhance the city’s image as a ‘community in the forest.’” Among its recommendations is this: “Designate all city-owned lands adjacent to the Rio de Flag and its tributaries as greenbelt lands”” (Flagstaff Metropolitan Planning Organization, 2008, p. 5).

*A Vision for Our Community: Flagstaff 2020* (City of Flagstaff, 1997)

“Looking ahead to the year 2020, *A Vision* catalogs several aspirations: that most community residents live within a 15-minute walk of an open space access point, that designated urban open spaces and greenways are permanently protected, and that selected Forest Service and State Trust lands are permanently protected for open space use. Here is another goal: that within an urban growth boundary, all land “has been clearly designated for future development or [for] protection as open space”” (Flagstaff Metropolitan Planning Organization, 2008, p. 5).

*Flagstaff Area Open Spaces and Greenways Plan* (City of Flagstaff, Coconino County, 1998)

“In the words of its executive summary, “The primary goal of the Plan is to maintain Flagstaff’s quality of life by finding ways to balance development with the retention of

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open spaces and natural areas.” At the heart of the document are lists of lands recommended for retention as open space and their priority level in a four-point hierarchy. The focus was on lands that lay outside Flagstaff’s urban area at the time of its publication in 1998”” (Flagstaff Metropolitan Planning Organization, 2008, p. 5)

*Flagstaff Area Regional Land Use and Transportation Plan* (City of Flagstaff, Coconino County, 2001)

“This plan recognizes two distinct open space plans. The *Rural Open Spaces Plan* addresses areas that lie outside the urbanized area of Flagstaff but are connected (or should be connected) to the urban open spaces. Fundamentally, that plan is the *Flagstaff Open Spaces and Greenways Plan* of 1998, which is explicitly incorporated into the *Regional Plan*. The Urban Open Spaces Plan lays the groundwork for identifying and protecting open spaces within urban Flagstaff” (Flagstaff Metropolitan Planning Organization, 2008, pp. 5-6) The plan has a specific section relating to the FUTS plan and identifies remaining connections and linkages needed to complete the plan. It also drives the *FUTS Trail Priorities report* generated as a separate part of the planning process.

*FUTS Trails Priorities Report* (Flagstaff Metropolitan Planning Organization, 2011)

A summary of the comprehensive, systematic, and public process used to set priorities for construction of future FUTS trail segments. The priority rankings are used to determine which trails the City builds first; the highest priority trails are programmed in the City’s five-year capital plan, which in turn is used to determine annual budget requests and grant funding applications. The current Flagstaff Urban Trail System can be seen in the map in Appendix B.

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### **Analysis against Model Process Framework.**

Figure 14 outlines the trail specific planning documents and compares them to the recommended model process. Explicit evidence that specific process steps and process step outcomes have occurred are noted.

In analyzing the case against the model framework, evidence of the following are verified:

- Omission of steps from the planning process
- Patterns and/or consistency of the process steps
- Progression of the planning documents
- Level of public participation in the planning process

*Omissions* - The only consistent omissions are that utility and abandon corridors are not explicitly discussed in the planning documents, and that there are no evaluation criteria for the success of the plan. Because most of the routes have been long established in prior planning efforts, the need to address utility and abandon corridors may not be relevant to the identified routes. Because the prioritization process is tied to the capital improvement budget the evaluation of the success of the planned implementations may be discussed in a different forum.

*Patterns/Consistency* - All plans have strong selections of preferred alternatives and strong implementation strategies. They have developed prioritization criteria, prioritization lists, and potential funding sources. Although all of the plans did not address utility and abandon corridors, the inventory and analysis of existing routes was robust. As mentioned earlier this omission may have been a result of earlier planning analysis that concluded that there was no need for this type of corridor.

*Progression* - All plans appear to address the process steps consistently through the years. This may be as a result of the institutionalization of the Flagstaff Urban Trail System into the variety of land-use planning efforts. There has been a consistent message of supporting FUTS since 1988.



*Public Participation* - Although there was not always evidence that the public participation strategy was developed as a specific process step, there was evidence of strong public participation continuing throughout the years and in both trail-specific planning documents and general land-use planning documents. For all of the planning processes there was strong evidence of extensive public participation. This participation ranged from representation on the steering committees to public input meeting throughout the process. It is unclear if this public participation was a result of the planning process or was a driver of a more inclusive planning process.

*General Observations* - In evaluating all of the case study cities, Flagstaff has the most consistent branding and institutionalization of their urban trail system. FUTS is consistently mentioned and supported in both trail-specific and general land-use planning documents for both Flagstaff and the regional community as well. The early establishment of trail corridors and articulating the goals of the Flagstaff Urban Trail System weave a continuous thread through the early and current planning documentation. The FUTS goals are referenced in all the planning documentation reviewed.

Model Process	Model Process Outcomes	Key Trail Plans			Analysis of 1988 Flagstaff Urban Trails Ad Hoc Committee Report	Analysis of 1991 Flagstaff Bicycle Plan	Analysis of Regional Land Use & Transportation Plan/FUTS Priorities Report - 2011
		Final Report - Flagstaff Urban Trails System Ad Hoc Committee (1988)	Flagstaff Bicycle Plan (1991)	Regional Land Use & Transportation Plan (RLUTP) (2001)/FUTS Priorities Report 2011			
<b>Develop the Planning Framework</b>	Structure of the planning document Purpose/structure of the planning document Interaction with existing plans	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	City Council tasked Committee with proposing recommendations. City Council outlined outputs for the Committee. Interaction with prior plans is discussed.	Structure not specified. Purpose outlined in City Council resolution creating committee Interaction with other plans and with Forest Service trails addressed.	The RLUTP is updated regularly and follows the same structure The purpose and organization of the plan is described. The RLUTP interacts with several other planning documents. This is discussed in this document as well as the others.
<b>Develop Public Participation Strategy</b>	Roles and composition of the decision making (steering committee) and working groups Outline of meetings, surveys, and audits	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Roles of the committee were defined. No evidence of public input strategy or extensive public input - possibly not part of the scope of the committee.	Committee roles addressed in City Council Resolution Bicycle survey conducted. Prior planning efforts included public participation which drove the recommendations of this plan.	The Regional Task Force and the Core Planning Team are discussed. There is a separate document that outlines the public participation process used in the planning process. The visioning process also contained public input.
<b>Establish a Vision, Goals, and Objectives</b>	Clear vision of the Greenway or Urban Trail system Overall goals of the UTS Specific actions for the planning process	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Overarching goal of providing implementation recommendations. Specific actions outlined by the City Council.	Clear vision established for the Bicycle Plan. Overall goals outlined as recommendations from the committee. Specific actions for the planning process outlined in the City Council resolution creating the committee.	FUTS goals are derived from other planning documents and are well established. This document prioritizes these goals. No evidence of goals of the planning process are derived from visioning documents.
<b>Inventory and Analysis of Current Conditions</b>	Needed Connections Natural Corridors Utility or Abandon Corridors Planned transportation improvements	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Inventory of needed connections. Natural Corridors addressed. Utility corridors not discussed. No mention of working with Department of Transportation.	Needed connections are addressed in specific trail segments. River corridor seen as a top priority. No utility corridors mentioned in the plan. Planned transportation improvements specifically addressed.	The prioritization plan uses connections in the criteria. The corridors have already been established in prior planning documentation.
<b>Develop Potential Alternatives</b>	Identify Corridors Develop Design Standards Trail/Street cross-section designs	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Corridors identified. Basic design standards discussed. No detailed design standards.	Corridors identified. General engineering guidelines established and references listed for engineering standards.	The corridors, design standards and cross-section designs are all detailed in prior planning documentation.
<b>Evaluate and Select Preferred Alternatives</b>	Prioritization Criteria List of sites to be included in the plan	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Trails segments prioritized. Trail segments mapped.	No specific prioritization criteria listed. All proposed routes listed.	Extensive prioritization criteria is detailed in the Priorities Report. All future connections are listed in the report.
<b>Develop Implementation Strategy</b>	Potential phases Prioritization list Potential and Identified Funding Implementation responsibilities	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Two phases noted in the recommendations. Trail segments prioritized. Funding recommendations made. Recommend that city retain adequate staff for implementation.	No phasing recommended. One "highest priority" route listed. Potential funding identified. City of Flagstaff is responsible for implementation.	Phasing is not discussed. Detailed prioritization list is developed in the Priorities Report. The Flagstaff Metropolitan Planning Organization is responsible for implementation.
<b>Plan Approval and Adoption</b>	Final Public Input City Council/Planning Commission approval Recommendations for policy changes to support trails	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	No evidence of public input. Recommendations to City Council. Basic recommendation that planning & zoning procedures be addressed to allow for implementation.	No evidence of public review. Plan prepared at the request of the City Council. No evidence found.	The public input process is robust and detailed in the plan. The plan is approved by the City Council. The plan is integrated into the policies and regulations.
<b>Develop Evaluation and Plan Review Process</b>	General Implementation Goals Evaluation Criteria Review schedule	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Implementation goals discussed. No Evaluation criteria mentioned. Committee recommendations became part of future planning efforts.	Short term goals addressed. No evidence found. No evidence found.	Implementation goals are outlined. No evidence of evaluation criteria. The Prioritization Report is updated yearly.

Key  - evidence found  - no evidence found

Figure 14. Analysis of Trail Planning Documents vs. Model Process - Flagstaff, AZ.

## Bellingham, WA

The analysis of Bellingham, WA follows, starting with a community profile in Table 8 and followed by an outline of trail planning in the community in Figure 15. A synopsis of prior planning efforts is conducted in Table 9. This synopsis shows the progression of trail specific planning efforts that have led to the urban trail system in Bellingham. The analysis concludes with an analysis of these planning efforts using the developed model process as a framework.

This case study also illustrates an example of a community that has a strong regional planning effort that includes county and state planning efforts.

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Table 8

*Bellingham, WA Community Profile*

Trails Planning Responsibility:	City of Bellingham
1 <sup>st</sup> Major Trail Planning Effort:	1995 Urban Trails Plan
Total Miles of Trails:	64 (City of Bellingham, 2008)
Planned Miles of Trails:	70 (City of Bellingham, 2008)
Supporting Trail Planning Partners:	Whatcom County

Figure 15 illustrates population, miles of trails, and when Bellingham started their first major trail specific planning effort. This information can be used by other communities to understand where they are in the trail planning and trail implementation process.

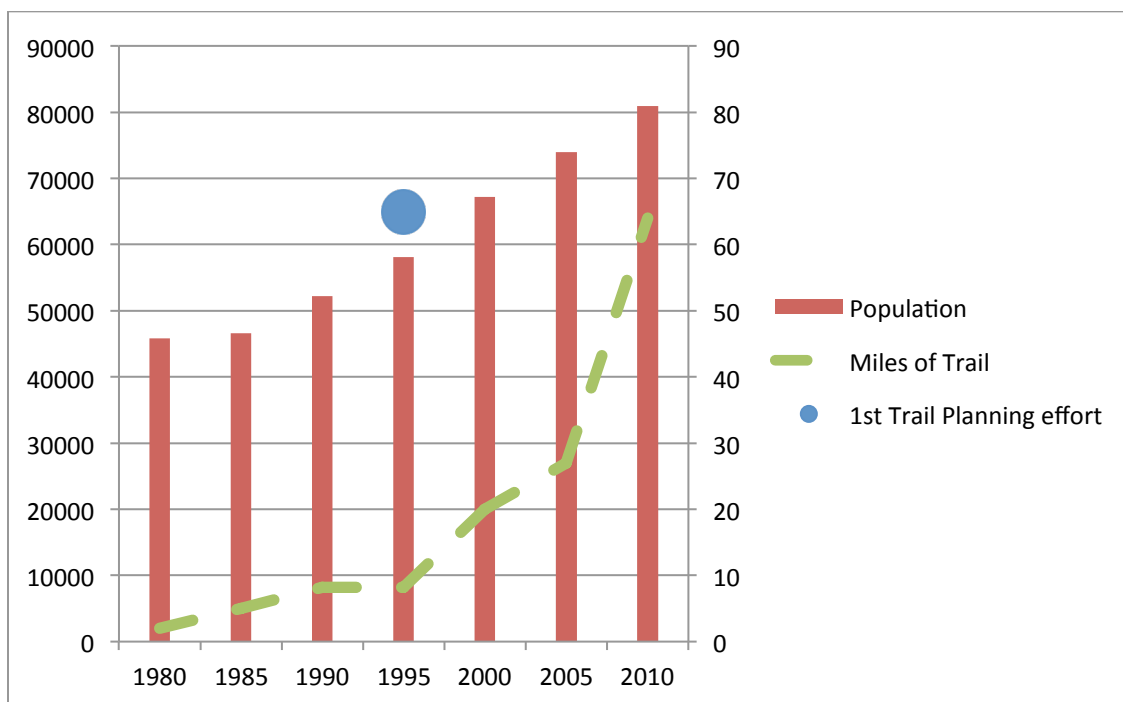


Figure 15. Population Growth & Cumulative miles of UTS: Bellingham, WA.

### Planning Outline – Bellingham, WA.

The City of Bellingham Parks and Recreation Department currently plans for trails in Bellingham. There are several ancillary groups that support this effort as well. These trail planning efforts are combined into the Parks, Recreation, & Open Space chapter of the comprehensive plan. There is, however, a regional trail system (the Coast Millennium Trail) that is part of Bellingham's urban trail system and it is planned in greater detail as a separate planning process. Trail corridors have been mentioned in various plans for Bellingham since the 1980's, however those corridors did not include North Bellingham until a separate plan was created in 2008 specifically adding trail corridors in North Bellingham. With this addition a complete picture of an interconnected trail system was realized for Bellingham.

Table 9 is a review of the prior trail planning efforts made by the city of Bellingham and the other trail planning partners. This review is intended to provide a background on the process that resulted in the current urban trail system in Bellingham.

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Table 9.

*Review of prior planning efforts for Bellingham, WA*

*Open Space, Parks, and Recreation Plan (City of Bellingham, 1994)*

Seventeen major trail corridors are outlined in the plan. Many of these were outlined in *The Bellingham Plan*. This is included as part of the comprehensive plan.

*Comprehensive Plan (City of Bellingham, 1995)*

The plan included an extensive trails component that was completed as a separate plan and inserted into the comprehensive plan. It outlined existing and potential trails and corridors.

*Coast Millennium Trail Master Plan (Whatcom County Parks & Recreation, Bellingham Parks & Recreation, Port of Bellingham, Whatcom County Council of Governments, 2000)*

This is a plan outlining a specific trail that while regional in nature, will become part of Bellingham's urban trail system. It is a planning effort aimed at identifying routes for this trail and funding sources.

*2006 Bellingham Comprehensive Plan (City of Bellingham, 2006)*

This plan contains the *2008 Parks, Recreation, and Open Space Plan* as a chapter within the plan. There are also general trail-specific goals that support the *Parks, Recreation, and Open Space Plan* within both the transportation element and the capital facilities element of the comprehensive plan.

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*Whatcom County Comprehensive Parks, Recreation, and Open Space Plan (Whatcom County, 2008)*

A countywide, comprehensive plan that addresses all types of recreation. The plan includes a trails section and Trail Design Standards and detailed cost estimates for identified trail segments. This plan contains the following objectives or outcomes of the planning process:

1. Define the setting
2. Inventory Assets
3. Forecast Demand
4. Identify appropriate roles and responsibilities
5. Develop the elements of a regional countywide plan\*
6. Determine the costs
7. Define an implementation program
  1. Adopt the plan Countywide
  2. Adopt the plan locally
  3. Implement program financing strategies
8. Determine Public Opinion (p. 1)

*North Bellingham Trail Plan (City of Bellingham, 2008)*

This arose from a community need to identify trail corridors in an underserved section of Bellingham. It became an appendix in the *Parks, Recreation and Open Space Plan* (City of Bellingham, 2008) which is a chapter in the comprehensive plan.

*Parks, Recreation and Open Space Plan (City of Bellingham, 2008)*

This is a comprehensive plan for several types of recreation opportunities. It contains an extensive trails section and multiple objectives for trail system development and implementation. The current Bellingham Urban Trail System is shown in Appendix C, and the Proposed trails are identified Appendix D. Cost and funding are detailed in the current plan.

### **Analysis against Model Process Framework.**

Figure 16 outlines the trail specific planning documents and compares them to the recommended model process. Explicit evidence that specific process steps and process step outcomes have occurred are noted.

In analyzing the case against the model framework, evidence of the following are verified:

- Omission of steps from the planning process
- Patterns and/or consistency of the process steps
- Progression of the planning documents
- Level of public participation in the planning process

*Omissions* - As in other cases there are no evaluation criteria to measure the success of the plan against the goals, objectives, and implementation goals. In the *2006 Comprehensive Plan* capital facilities element, there was a review of the projects that were listed in the 1995 plan and their status, but there was no evaluation of the success of the efforts between 1995 and 2006. There is also not discussion of design standards in the later plans. I was unable to find evidence that these design standards were outlined in other planning documentation. Because these standards were outlined in the 1995 plan and many miles of trails are already constructed, there may not be a need to articulate the specific trail types in this document.

*Patterns/Consistency* - All plans develop a public participation strategy by defining roles of the committees and outlining the public participation process. All plans establish

a vision, goals, and objectives for the urban trail system. They contain all outcomes of that process step.

*Progression* - The 2008 *Parks, Recreation, and Open Space Plan* contains more complete process steps than the other plans. The most significant change in the latest planning effort is the robust nature of the implementation strategy. The latest plan includes all of the outcomes recommended for this process step. There is also evidence that a more complete analysis of all possible corridors is completed in the current plan.

*Public Participation* - Public participation has been robust in all the Bellingham plans evaluated. There appeared to be no decrease in the level of input sought from the public. Both the 1995 plan and the 2008 plan solicited public input throughout the process from initial needs assessments to final approvals. There is evidence that the *North Bellingham Trail Plan* was a result of public demand. As mentioned in the Flagstaff analysis, further study would be needed to determine if the initial trail planning was the result of public demand or if the inclusive planning process resulted in the robust public participation.

*General Observations* - As mentioned in the Flagstaff case analysis, the planning for trails and a strong public involvement component appear to be institutionalized in the Bellingham planning process. Unlike Flagstaff, however, there is continuing evaluation of potential new corridors as shown by the *North Bellingham Trail Plan*. This plan identifies new corridors and is seamlessly integrated into the current planning document. This institutionalization of the trail planning process keeps trails as a high priority in the community. These trail corridors are identified in the early planning and provide continuity through to the current planning.



Model Process	Model Process Outcomes	Key Trail Plans			Analysis of 1995 Comprehensive Plan	Analysis of 2008 North Bellingham Trail Plan	Analysis of 2008 Parks, Recreation, and Open Space Plan
		1995 Comprehensive Plan	North Bellingham Trail Plan (2008)	Parks, Recreation and Open Space Plan (2008)			
<b>Develop the Planning Framework</b>	Structure of the planning document Purpose of the planning document Interaction with existing plans	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	The structure of the document is outlined. The purpose of the plan is outlined. The plans interaction with other plans is noted and an outline of the planning process is given	Structure not outlined. Purposed of the plan is discussed. No mention of interaction with other plans.	Structure outlined and similar to previous plans. Purpose outlined. Brief discussion of interaction with other plans.
<b>Develop Public Participation Strategy</b>	Roles and composition of the decision making (steering committee) and working groups Outline of meetings, surveys, and audits	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Roles of the various sub committees are addresses and the outline of the meetings is given. The public participation process is well documented.	Steering committee and sub-committees outlined. Detailed outline of the public process.	Discussion of Steering committee roles. Public participation meeting schedule outlined.
<b>Establish a Vision, Goals, and Objectives</b>	Clear vision of the Greenway or Urban Trail system Overall goals of the UTS Specific actions for the planning process	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Vision and goals of the UTS are given. Connectivity goals are stressed. Specific objectives are not noted. A need for the plan and process are noted.	Clear vision included. Goals and Objectives of the UTS outlined. Specific actions for the planning process outlined.	Vision for trail portion of the plan included. Goals for the trails portion of the plan outlined. Specific objectives of the planning process outlined.
<b>Inventory and Analysis of Current Conditions</b>	Needed Connections Natural Corridors Utility or Abandon Corridors Planned transportation improvements	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Needed connections are included. No evidence of natural corridor selection. Utility and abandon transportation corridors addressed. No evidence of integration with the transportation plan.	Need for connections in UTS objectives. Natural corridors noted as opportunity. Utility representatives on committee. Washington Department of Transportation on committee.	Needed connections listed as a priority. Specific goal to address natural corridors. Utility and transportation representatives on steering committee determining potential routes.
<b>Develop Potential Alternatives</b>	Identify Corridors Develop Design Standards Trail/Street cross-section designs	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Corridors are identified. General Design Standards are included. Some discussion of street crossings discussed.	Corridors outlined. No evidence of design standards. No evidence of trail cross-sections.	Potential future corridors identified. Need for design standards addressed. None in the plan. Need for trail cross-sections addressed. None in the plan.
<b>Evaluate and Select Preferred Alternatives</b>	Prioritization Criteria List of sites to be included in the plan	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	No specific prioritization criteria noted. List of corridors and specific sections included.	Prioritization criteria listed. List of selection trail sections included.	No evidence found. List of potential trail segments included.
<b>Develop Implementation Strategy</b>	Potential phases Prioritization list Potential and Identified Funding Implementation responsibilities	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	No phasing included. No prioritization list included Potential funding listed. City of Bellingham responsible for implementation.	No phasing or prioritization included in the plan. No potential funding identified. No implementation responsibilities identified.	No explicit phasing included. Capital facilities plan outlines several specific trails segments for implementation. Potential funding sources identified. City of Bellingham responsible for implementation.
<b>Plan Approval and Adoption</b>	Final Public Input City Council/Planning Commission approval	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Extensive public review. City Council input and approval.	Final Public Review meetings held. City Council and County adoption of the plan.	Final Public Review. City Council Public Meeting held.
<b>Develop Evaluation and Plan Review Process</b>	General Implementation Goals Evaluation Criteria Review schedule	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	General funding and implementation goals noted. No evidence of evaluation criteria. Review schedule detailed in the plan.	No evidence of implementation being addressed. No evidence found. No Review schedule.	Capital Facilities Plan in place. No evidence found. Plan is on a regular review schedule.

Key  - evidence found  - no evidence found

Figure 16. Analysis of Trail Planning Documents vs. Model Process - Bellingham, WA.

## St. George, UT

The analysis of St. George, UT follows, starting with a community profile in Table 10 and followed by an outline of trail planning in the community in Figure 17. A synopsis of prior planning efforts is conducted in Table 11. This synopsis shows the progression of trail specific planning efforts that have led to the urban trail system in St. George. The analysis concludes with an analysis of these planning efforts using the developed model process as a framework.

This case study also illustrates an example of a community that has only recently begun trail specific planning efforts but has managed to quickly implement trails in the community.

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Table 10

*St. George, UT Community Profile*

Trails Planning Responsibility:	City of St. George
1 <sup>st</sup> Major Trail Planning Effort:	1994 Parks Master Plan
Total Miles of Trails:	50 (City of St. George, 2006)
Planned Miles of Trails:	105 (City of St. George, 2006)
Supporting Trail Planning Partners:	

Figure 17 illustrates population, miles of trails, and when St. George started their first major trail specific planning effort. This information can be used by other communities to understand where they are in the trail planning and trail implementation process.

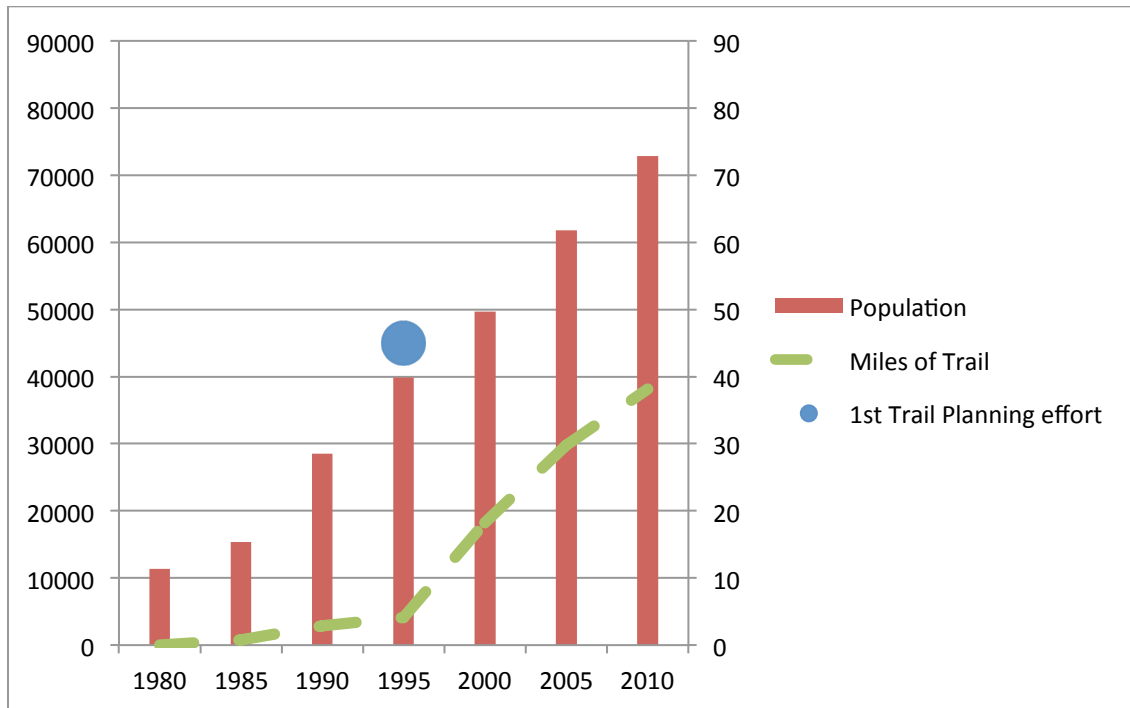


Figure 17. Population Growth & Cumulative miles of UTS: St. George, UT.

### Planning Outline – St. George, UT.

The City of St. George is the current trail planning authority. They plan for trails as a subset of their *Parks, Trails, Recreation, & Arts Master Plan*. They do not plan for trails specifically in a trails master plan. They currently title their current and proposed trails map their Trails Master Plan. The current trails section of their plan highlights future trails and sets priorities.

Table 11 is a review of the prior trail planning efforts made by the city of St. George and the other trail planning partners. This review is intended to provide a background on the process that resulted in the current urban trail system in St. George.

Table 11

*Review of prior planning efforts for St. George, UT**Parks Master Plan (City of St. George, 1994)*

In survey of users Trails & Bike Paths ranked higher than all other recreational amenities sought by residents. Plan resulted in an \$18M bond that allowed for city funds to be used for trails and as grant match dollars. Even though this plan was relatively small an extensive public survey was taken. The plan also included an inventory of existing conditions, recommendations for future improvements, and estimated costs. The plan relied heavily on National Recreation and Park Association (NRPA) standards as a basis for evaluation and recommendations. It should be noted that trail miles per resident or access to trails was not a component in the NRPA standards. The recommendation listed in the plan was “1 system per region” with no recommendations given for trail miles. Even with this lack of concrete recommendations by NRPA, city staff relied on survey results and advocated for additional urban trails. Final recommendations call for 6 miles of trails at a cost of \$443K. This is less than 2% of the total recommended monies required for the total list of park and facility recommendations.

*Parks, Trails, Recreation, & Arts Master Plan (City of St. George, 2006)*

The first plan for St. George that calls out Trails in the plan title. A comprehensive plan that has an extensive public participation component. It contains much of the Model Process content. In the public survey Trails were listed as the most desired “New Activity” and “New Facility” desired by residents. 78% of residents state that they use the existing trail system and 56% list connecting gaps in the system as the most needed improvement, and 36% feel linking neighborhoods is the most needed improvement. This plan has resulted in the St. George Urban Trail System map shown in Appendix E.

**Analysis against Model Process Framework.**

Figure 18. Analysis of Trail Planning Documents vs. Model Process – St. George, UT, outlines the trail specific planning documents and compares them to the

recommended model process. Explicit evidence that specific process steps and process step outcomes have occurred are noted.

In analyzing the case against the model framework, evidence of the following are verified:

- Omission of steps from the planning process
- Patterns and/or consistency of the process steps
- Progression of the planning documents
- Level of public participation in the planning process

*Omissions* - Since St. George has not conducted trail-specific planning efforts, much of the trail related process steps recommended in the model process are not present. Most notable are the lack of establishing a vision, goals, and objectives for the trail system. Also missing is a detailed inventory and analysis of the existing and potential corridors.

*Patterns/Consistency* - No clear patterns emerge from the analysis of the planning documentation. The potential trail corridors have been identified in all of the documents. This resulted from extensive public participation in the 1994 plan.

*Progression* - The 2006 plan made significant progress in identifying the priorities for the trail system and developing potential phases and a priority list.

*Public Participation* - The 1994 plan was driven by an extensive public survey and participation process. It identified trails as a top priority and resulted in

recommendations of trails in most neighborhoods. However, there has not been evidence of a trail-specific public participation process in any of the planning documents.

*General Observations* - The trail planning in St. George does not exhibit the same level of independence from the general land-use planning as the other case studies. St. George planning was able to provide a spreadsheet that outlined each trail segment in their system, when it was built, and how it was funded. The other case study cities were not able to provide that data without extensive research that was beyond the scope of this thesis. This may offer insight into the lack of planning documentation needed to get a trail system implemented in St. George.

Model Process	Model Process Outcomes	Key Trail Plans			Analysis of 1994 Parks Master Plan	Analysis of 2002 St. George General Plan	Analysis of 2006 Parks, Trails, Recreation, & Arts Master Plan
		1994 Parks Master Plan	2002 St. George General Plan	2006 Parks, Trails, Recreation, & Arts Master Plan			
<b>Develop the Planning Framework</b>	Structure of the planning document Purpose of the planning document Interaction with existing plans	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Document Scope was outlined.  No evidence of interactions with other plans.	Structure of the planning document outlined. Purpose is outlined. Other plans mentioned throughout the document.	This plan was prepared by a consultant. It can be inferred that the structure of the plan was discussed with city staff prior to the start of the planning process. Previous plans were reviewed.
<b>Develop Public Participation Strategy</b>	Roles and composition of the decision making (steering committee) and working groups Outline of meetings, surveys, and audits	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Extensive Public Survey was taken. Uses 9 geographic districts to get accurate results.	No discussion of who creates the plan.  Brief discussion of public participation in 1995 General Plan.	Steering committee was formed, focus groups (including a Trails focus group) were established, survey was conducted and public meetings were held.
<b>Establish a Vision, Goals, and Objectives</b>	Clear vision of the Greenway or Urban Trail system Overall goals of the UTS Specific actions for the planning process	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Vision, Goals, & Objectives were not explicitly stated. It was recommended that the city follow National Recreation & Park Association (NRPA) standards.	Basic goal of interconnected trail system. No specific goals.  General actions for the General Plan planning process.	No evidence found. No goals listed. No goals of the planning process listed.
<b>Inventory and Analysis of Current Conditions</b>	Needed Connections Natural Corridors Utility or Abandon Corridors Planned transportation improvements	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Current conditions were inventoried but no evidence of any corridor analysis.	No inventory of current trails. Brief mention of existing system. Brief discussion of river corridor. No evidence of Inventory or analysis	Needed connections and future trails were listed with action items required. They were also shown on the Urban Trail Map.
<b>Develop Potential Alternatives</b>	Identify Corridors Develop Design Standards Trail/Street cross-section designs	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Recommendations were listed on a generic level to meet level of service requirements.	Map of future trails included. No evidence of design standards.	Corridors are listed as specific segments needed. No evidence of design standards.
<b>Evaluate and Select Preferred Alternatives</b>	Prioritization Criteria List of sites to be included in the plan	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	No extensive evaluation was done for trails. Some general recommendations were made by geographic area.	No evidence of prioritization.	No prioritization criteria given for given priority list. List of needed trails and connections.
<b>Develop Implementation Strategy</b>	Potential phases Prioritization list Potential and Identified Funding Implementation responsibilities	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Potential funding sources were identified. The current impact fee, recent grants, and the potential of a General Obligation Bond were mentioned.	No phasing or prioritization included.  No potential funding list.	Short and long-term actions were outlined. Three levels of segment specific prioritization. The implementation chapter only consisted of potential funding sources.
<b>Plan Approval and Adoption</b>	Final Public Input City Council/Planning Commission approval	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	No evidence of final public input or plan approval.	Final public review of the plan. Adoption of the plan.	Final Public meeting conducted for public input. Plan presented to City Council and Planning Commission.
<b>Develop Evaluation and Plan Review Process</b>	General Implementation Goals Evaluation Criteria Review schedule	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	General goal to meet outlined level of service. No evidence of next steps or plan evaluation.	No evidence of implementation goals. No criteria for evaluating success of the plan. The General Plan is on a regular review schedule.	No evidence found. No evidence found. The Plan is on a regular review schedule.

Key  - evidence found  - no evidence found

Figure 18. Analysis of Trail Planning Documents vs. Model Process - St. George, UT.

## CHAPTER V

### CONCLUSIONS

#### **Case Study Conclusions**

##### **Model Process Verification**

There is evidence that all process steps are used as part of the planning process for each case city studied. They did not occur in each individual planning effort but they were present at some point in the planning processes throughout the years. The only process outcome that has no evidence of being used is the Evaluation Criteria outcome of the Develop Evaluation and Plan Review Process steps. There was no evidence that any of the case studies measured their performance to the plan. This validates the first part of the thesis which is developing the model process used to analyze the case studies. This also provides evidence that the recommended model process has been used and implemented in all of the case studies. In reviewing the planning documentation for all of the case studies there is no evidence to suggest the addition of process outcomes to the recommended model process. Again, this validates the research and development of the recommended model process.

##### **Progression of Planning Efforts**

In all cases current planning documents are more robust and are more complete when analyzed with the model process framework that the earlier planning processes for each city. The current planning processes contain more process outcomes than the earlier processes, suggesting a more robust planning process. In analyzing the extent to which



the model process is implemented in the case studies, one observation can be made. St. George has implemented the process to a significantly lesser degree than the other three cities. St. George showed the same progression in that their current plan is more robust than their earlier planning process when analyzed against the model process. However, when the current planning process for St. George is compared to the early planning processes of the other cities it is found to be less robust and contain less process outcomes. This suggests that there are other significant factors involved that can result in implementation of trails. It can also suggest that the process steps and process outcomes are being completed informally and not documented in the planning process. This is an area for further study.

In each case study the pace at which trails were implemented increased after the first major trail-specific planning effort. This indicates that these planning efforts either spur this trail implementation or are a result of other factors that result in the implementation of the trails.

### **Robust Public Participation Process**

In reviewing the public participation efforts detailed in the planning documentation several observations can be made. First, in all of the case studies the public participation process is well integrated into the planning process. Second, the desire for trail systems is a significant need in the surveys that were conducted. The first observation shows that the public participation is a critical part of the planning process. This is why the model process recommends developing a Public Participation Strategy as one of the first steps in the planning process. This is recommended and well outlined by

Utah Department of Health in their trail planning guide. The second observation indicates that a trail-specific planning process is needed to meet the needs of the citizens. In the cases of Bend, Flagstaff, and Bellingham, the first trail-specific planning effort seemed to play a role in the implementation of trail miles on the ground.

### **Early Identification of Trail Corridors**

When reviewing the cases of Bend, Flagstaff, and Bellingham it was observed that in all of the early planning efforts there was evidence that the development of a list of potential corridors was critical to the continuity of the plans going forward. In each case there appeared to be an institutionalization of the trail system. It became a significant part of future planning documents. It was referenced in local, regional, and state plans. This can be identified as a critical factor in the future implementation of trails. It can drive planning, zoning, and land acquisition strategies for the city. This institutionalization or branding was most evident in the case of Flagstaff. The Flagstaff Urban Trail System (FUTS) is referenced continually since the mid 1980's. The impact of this branding requires further study on its impact on implementation and potentially mitigating conflicts during implementation.

### **Recommendations for Communities planning for Urban Trail Systems**

Smaller communities in the urban West can learn much about planning for urban trail systems from cities like Bend, Flagstaff, Bellingham, and St. George. The key factors revealed in the analysis were a robust public participation process and early identification of the trail corridors. Bend, Bellingham and Flagstaff all saw increasing rates of miles of implemented trails on the ground after beginning a trail-specific

planning effort. All the communities integrated their trail planning efforts into the broader regional land-use planning efforts.

### **Future Research**

There are many factors that influence the implementation of urban trail systems in a community. The overall planning process is one of those factors. The planning process itself contains critical steps as demonstrated in this thesis. However, further research is needed to identify the influence of other factors in the implementation of urban trail systems. Those other factors may include: political climate, grassroots involvement, regional or state involvement, and possibly demographic or population based factors.

### **Potential Research Opportunities**

There are opportunities for several studies that together would provide a holistic view of the factors critical to successful implementation of an urban trail system. Several opportunities that were identified during the research for this thesis are:

- A detailed study and analysis of the **public participation** process and the role it plays in implementation would help to make the planning process more robust. A study could analyze the correlation between public involvement, planning, and implementation.
- As mentioned earlier, Flagstaff created branding of their trail system that has been consistent since the 1980's. The impact of early **trail system branding** or institutionalization needs to be studied. Are cities that continually reinforce the

need for trails more successful in implementing them? Are there less instances of conflict when implementing trail segments?

- A more detailed investigation of how cities like St. George are able to get 50 miles of trails without trail-specific planning efforts? This study could rely on **detailed interview** questions that probe the partners that were key in trail planning and implementation efforts. These interviews could direct more detailed research into the reasons identified by the participants.
- Research into the impact the **political climate, demographics, and/or regional involvement** have on trail implementation would be informative, however may not provide the same type of results as this thesis or other research. It is unlikely that these factors could be influence by trail planners and community administrators. It would tell these planners if their community has the correct mix of political or demographic factors to support successful trail system implementation.

As with much research, as many questions are raised as answers. This thesis has identified the critical factors in trail system planning, and further research could provide a holistic look at other factors that span the social, economic, and political spectrum and impact urban trail system implementation.

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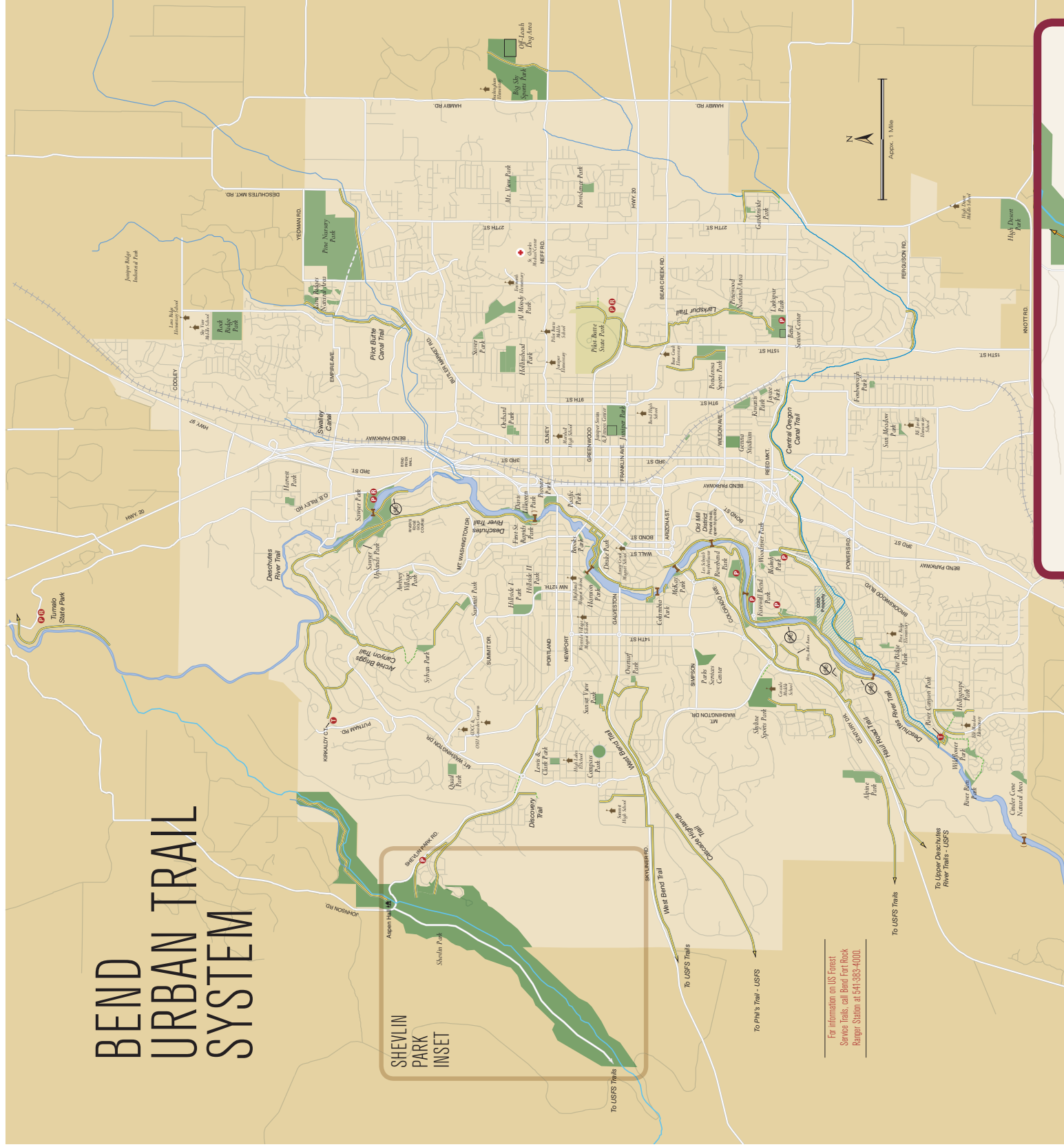
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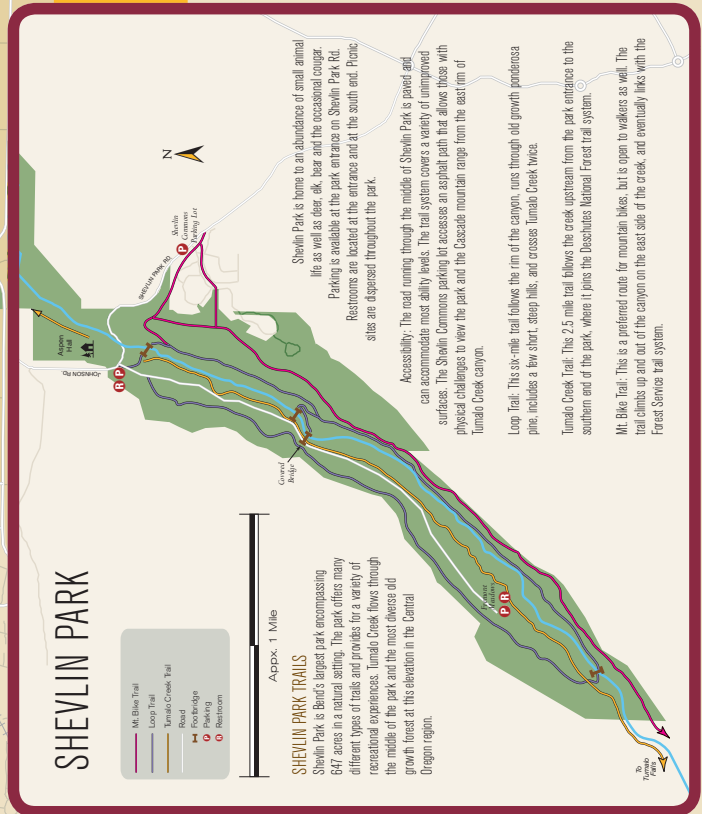
APPENDICES

Appendix A. Bend Urban Trail System Map

# BEND URBAN TRAIL SYSTEM



## SHEVLIN PARK INSET



### SHEVLIN PARK TRAILS

- Mt. Blue Trail
- Loop Trail
- Tumalo Creek Trail
- Footbridge
- Restroom
- Parking

Shevlin Park is Bend's largest park encompassing 647 acres in a natural setting. The park offers many different types of trails and provides for a variety of recreational experiences. Tumalo Creek flows through the middle of the park and the most diverse old growth forest at the elevation in the Central Oregon region.

Shevlin Park is home to an abundance of small animal life as well as deer, elk, bear and the occasional cougar. Parking is available at the park entrance on Shevlin Park Rd. Restrooms are located at the entrance and at the south and Phoebe sites are dispersed throughout the park.

Accessibility: The road running through the middle of Shevlin Park is paved and can accommodate most ability levels. The trail system covers a variety of unpaved surfaces: The Shevlin Commons parking lot accesses an asphalt path that allows those with physical challenges to view the park and the Cascade mountain range from the east rim of Tumalo Creek canyon.

Loop Trail: This six-mile trail follows the rim of the canyon, runs through old growth ponderosa pine, includes a few short, steep hills, and crosses Tumalo Creek twice.

Tumalo Creek Trail: This 2.5 mile trail follows the creek upstream from the park entrance to the southern end of the park, where it joins the Deschutes National Forest trail system.

Mt. Blue Trail: This is a preferred route for mountain bikers, but is open to walkers as well. The trail climbs up and out of the canyon on the east side of the creek, and eventually links with the Forest Service trail system.

### MAP LEGEND

- Existing Trail
- Trail Link
- Main Road
- Secondary Road
- Park
- State Park
- School
- Park District Boundary
- Footbridge
- Planned Footbridge
- Parking
- Restroom
- Trailhead

### WELCOME TO THE BEND URBAN TRAILS SYSTEM!

The Bend Urban Trails System, developed and managed jointly by the Bend Metro Park and Recreation District and the City of Bend, connects our community and encourages recreation and non-motorized transportation. Bend's trails allow for exercise, relaxation, and provide connectivity to parks, schools, services, the Deschutes River, and Forest Service trails beyond the Urban Growth Boundary. Trails in the system traverse many different landscapes including established parks, natural forest areas, and urban areas both sparsely and densely developed. The Urban Trails System currently includes approximately 31 development miles, with more trails under development each year. The Park and Recreation District is committed to increasing and improving the primary and connector trail routes as rights of way and funding opportunities become available.

### TRAIL ACCESSIBILITY

It is the goal of the Bend Metro Park and Recreation District to provide trail facilities that meet the U.S. Access Board recommendations for accessibility for

### CASCADE HIGHLANDS TRAIL

Good for mountain bikers and walkers alike, this trail begins at Overport Park on 7th Street and travels west up and over Overport before through Skyway Summit neighborhood to the roundabout at Mt. Washington Drive. It then continues west through Cascade Highlands, before connecting to the Forest Service Phoebe trail system. The trail provides a mix of paved and unpaved surfaces.

### CENTRAL OREGON CANAL TRAIL

From Bakley Park, the trail follows along the west side of Brookwood Blvd. and then heads northwest through Central Oregon Irrigation District (COID) property to an intersection with the Deschutes River Trail at what most trail users call an either up or down stream along the west of Bend Bakley Park. Trail users can head south on the east side of Brookwood Blvd. to the Central Oregon Canal and take the northward east along the canal. This section of the COID trail currently extends to American Lane. From here a short journey east along sidewalks on Reed Market Road leads to the southern end of the Larkspur Trail at Larkspur Park.

### BEND URBAN TRAIL OPPORTUNITIES

The Larkspur Trail extends between Pilot Butte State Park and Larkspur Park, passing through Pinewood Natural Area, both Pilot Butte and Larkspur Parks have ample parking and restroom facilities. Larkspur Park is also the site of the Bend Senior Center and the Rotary Centennial All Children's Playground. Walkers can add an additional mile by climbing the trail to the summit of Pilot Butte.

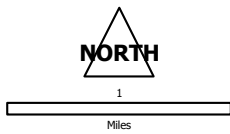
For information on US Forest Service Trails, call Bend Fire Rock Ranger Station at 541-385-4000.

Appendix B. Flagstaff Urban Trail System Map



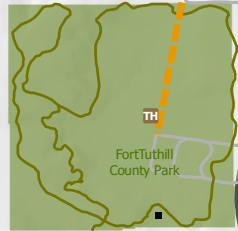
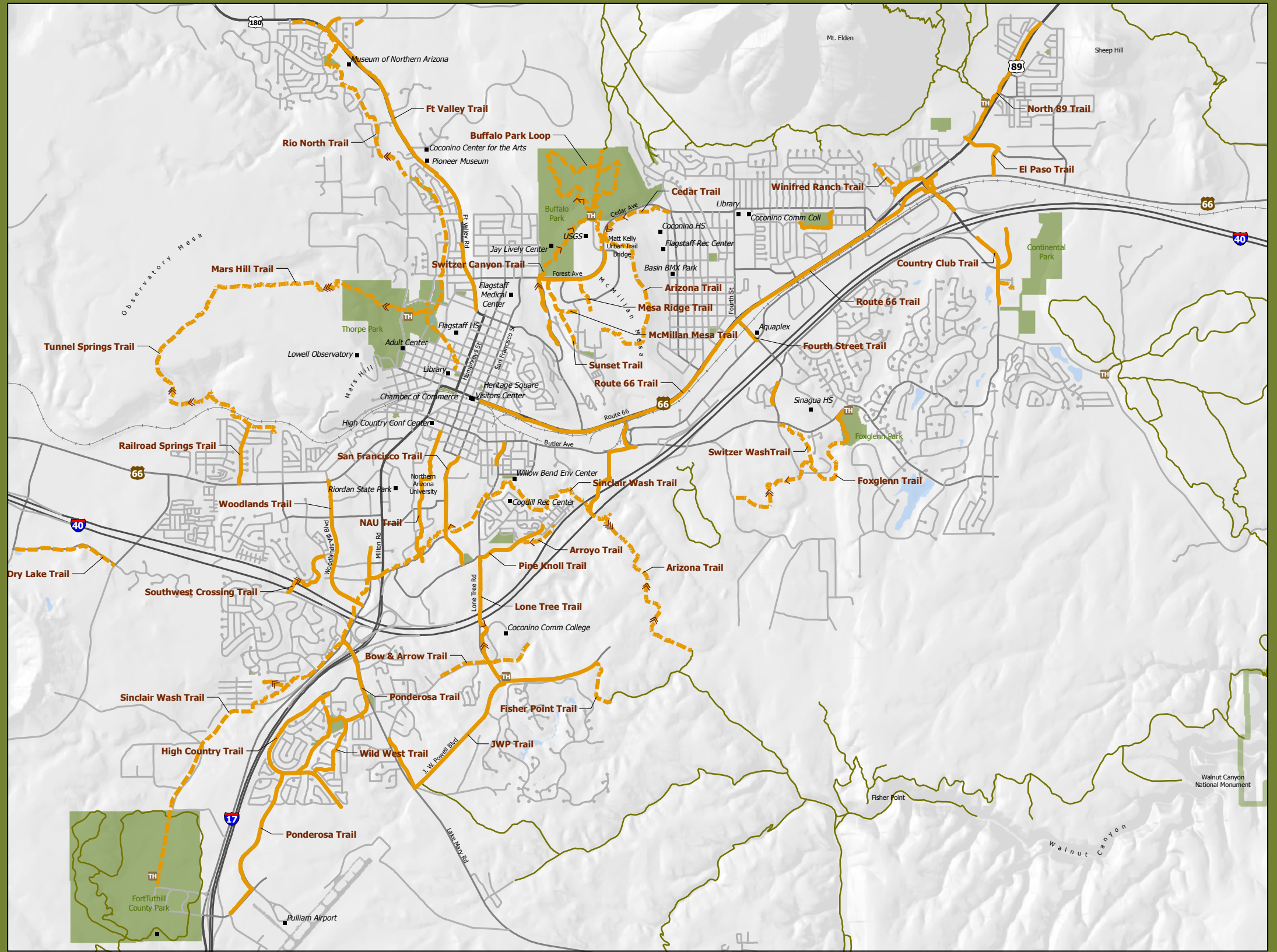
# Flagstaff Urban Trails System

- Unpaved FUTS
- Paved FUTS
- Trailheads
- Moderate hill
- Steep hill
- Very steep hill
- Singletrack trails



City of Flagstaff  
May 2010

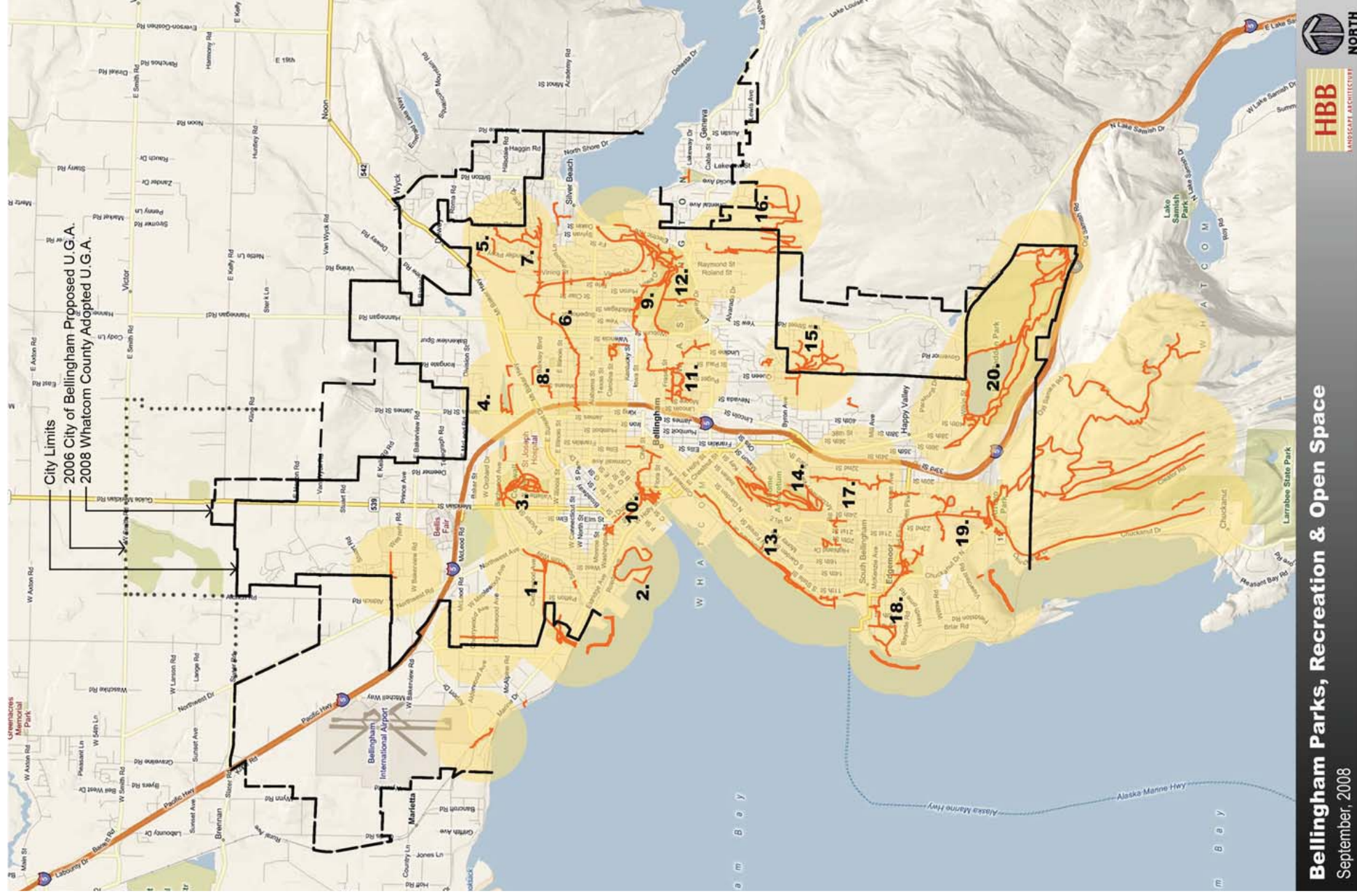
[www.flagstaff.az.gov/futs](http://www.flagstaff.az.gov/futs)



Appendix C. Bellingham Urban Trail System Map



# Existing Facilities Plan • Trails



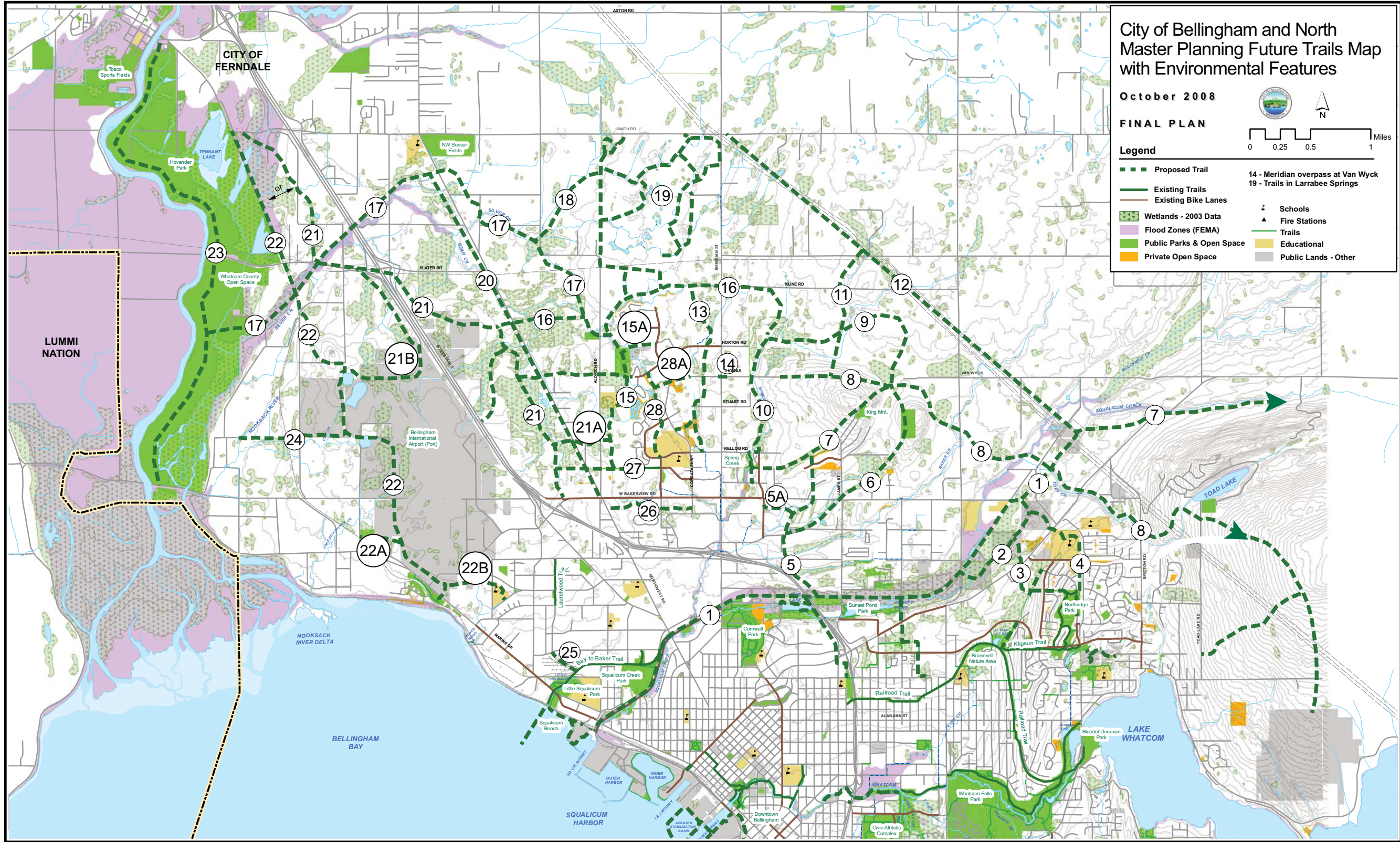
## Trails

1. Bay to Baker Trail
2. Squaticum Harbor Trail (Port)
3. Cornwall Park Trails
4. Sunset Pond Trails
5. Northridge Park Trails
6. Railroad Trail
7. Klipsun Trail
8. Moore-Pacific-Racine Trail
9. Whatcom Creek Trail
10. Old Village Trail
11. Civic Athletic Complex & Salmon Woods Trail
12. Whatcom Falls Park Trails
13. South Bay Trail
14. Sehome Hill Arboretum Trails
15. Samish Crest Trails
16. Lookout Mountain Trails
17. Connelly Creek Nature Area Trails
18. Lower Padden Trails
19. Interurban Trail
20. Lake Padden & Padden Gorge Trails

-  Existing Trail
-  Existing 1/2 mile radius

Appendix D. Proposed Bellingham Trail Map

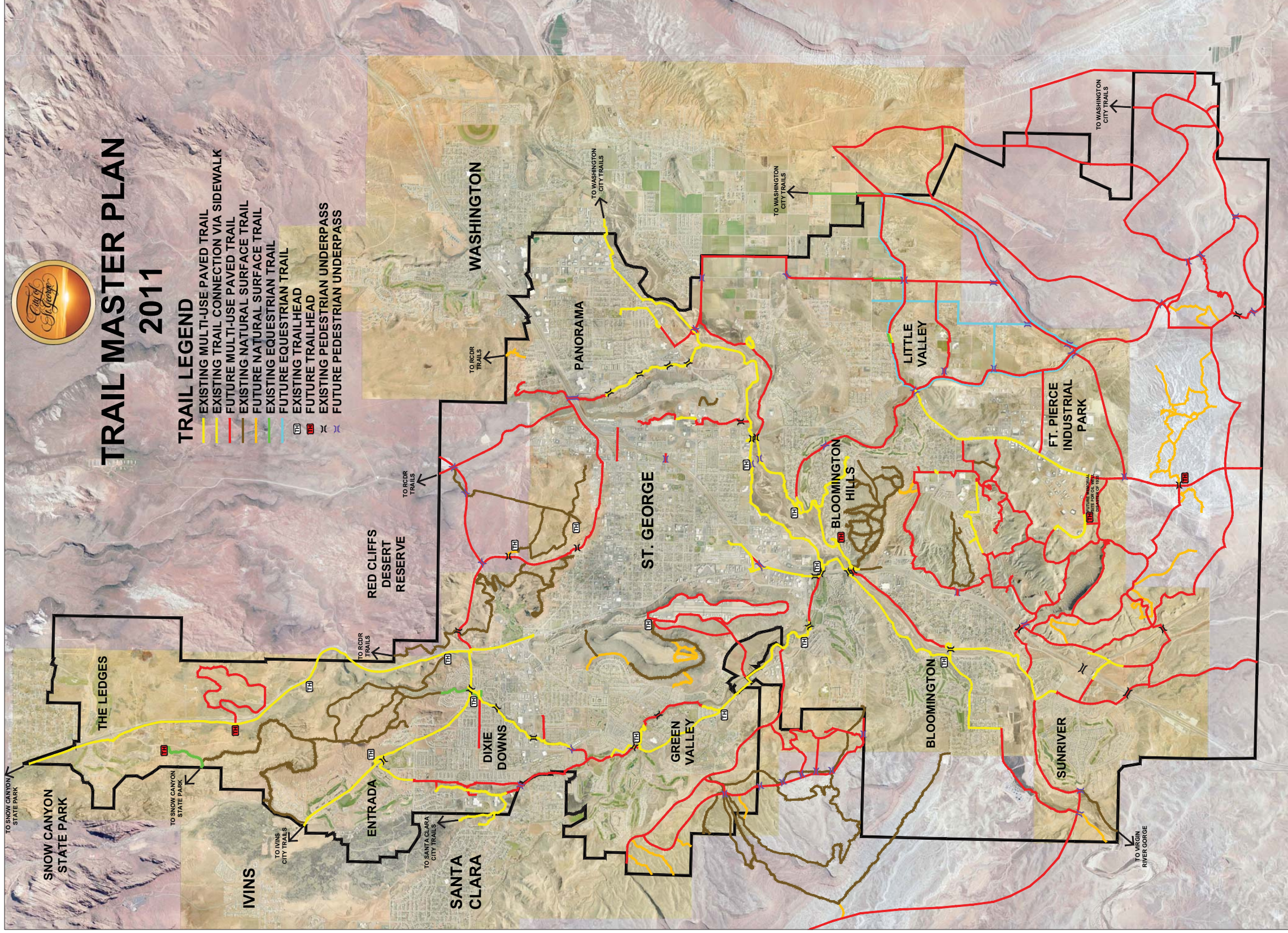






Appendix E. St. George Urban Trail System Map







Appendix F. Planning Process Quick Reference Guide

## Resources

Communities across the west have a wide variety of planning expertise. For those communities that do not have the staff or resources to accomplish this type of trail-specific planning on their own there are resources available to assist in planning, community involvement, visioning, and even funding. This is just a very short list of some of the resources available and the types of organizations that can help in this effort.

### Trail Planning Resources:

Utah Department of Health - Utah Bicycle & Pedestrian Master Plan Design Guide  
<http://health.utah.gov/obesity/documents/Utah%20Bike%20Ped%20Guide.pdf>

Chester County, Pennsylvania - Trail & Path Planning: A Guide for Municipalities  
<http://www.chesco.org/planning/cwp/view.asp?a=1676&q=646859>

### General Resources:

National Park Service - Rivers, Trails, & Conservation Assistance Program - this group provides technical assistance to communities for trail planning, open space conservation, and public visioning. [www.nps.gov/rta](http://www.nps.gov/rta)

Local Associations of Governments (AGOs) and Municipal Planning Organizations (MPOs) are often great resources for planning assistance.

### General Funding Resources:

Large scale projects are often funded by large organizations like the Federal Highway Administration, and the Center for Disease control. Smaller scale projects have numerous funding sources such as the Recreational Trails Program in each state. The key to unlocking these sources is to include as many organizations as possible in your planning effort. Invite the local Health Department, advocacy groups, County planning departments, land management agencies, State Parks and all interested groups.

## Urban Trail System Planning: Quick Reference

### The Need for Planning

As growth in Western states outpace the rest of the nation, communities are embarking on an increased level of land-use planning. In many cases this includes the need to plan for Greenways and Urban Trail Systems.

Successful communities are finding that having a trail-specific plan helps to: build community support, focus implementation efforts, and prioritize community needs.



This guide outlines a process to be used to create a trail-specific plan. It is a quick reference guide designed to enlighten the public and elected officials on the complexity of the process. It provides short descriptions of the steps in the process and lists the expected outcomes. It also highlights 3 key factors that can help ensure long-term success of the planning effort.

### Benefits of Trails

Trail systems can bring many benefits to communities. They can:

- Help build community
- Improve health of the residents
- Help educate children about nature
- Aid in economic development
- Increase property values
- Provide alternative transportation
- Improve ecology



## Urban Trail System Planning: Planning Process

This sets expectations for the process. It gets everyone (the public, elected officials, the planning department) on the same page about what this process means.

Developing a Public Participation Strategy is essential to ensuring everyone is involved. Gone are the days of just public meetings. Think Facebook, websites, collaboration.

By developing not only a Vision and Goals, but also objectives, progress can be measured and implementation steps can begin.

This highlights needed connections and can highlight "easy wins" for the initial phases of implementation. It also highlights corridors with potential to make connections.

Looking at all alternatives promotes dialog between stakeholders and involves the public in the decision making process.

Highlighting this in the plan promotes transparency in the process and reduces conflicts later in the process. A prioritization criteria helps to clearly define what is important to the community.

Understanding the short and long term timing keeps the process moving. The public and elected officials can relate to a priority list.

Formally adopting and approving the plan promotes ownership among the elected officials typically charged with supporting the implementation of the plan.

Having a scheduled review of the plan and a method to evaluate success keeps the document and the process alive and does not allow time to diminish the support of the plan.

Develop the Planning Framework	Develop a Public Participation Strategy	Establish a Vision, Goals, and Objectives	Inventory and Analysis of Current Conditions	Develop Potential Alternatives	Evaluate & Select Preferred Alternatives	Develop Implementation Strategy	Plan Approval and Adoption	Develop Evaluation and Plan Review Process
Outcome: • Document Structure • Document Purpose • Interaction with existing plans	Outcome: • Roles of decision making and working groups • Outline of meetings, surveys, and audits	Outcome: • Clear Vision of the Greenway system • Overall goals of the Greenway system • Specific actions for the planning process	Outcome: • Needed connections • Natural corridors • Utility or abandon corridors • Planned transportation improvements	Outcome: • Identify corridors • Develop design standards • Trail/street cross-section designs	Outcome: • Prioritization criteria • List of sites to be included in the plan	Outcome: • Potential phases • Prioritization list • Potential and identified funding • Implementation responsibilities	Outcome: • Final public input • City Council/ Planning Commission approval	Outcome: • General implementation goals • Evaluation criteria • Review schedule

## 3 Key Factors to Long-term Success

### Follow a trail-specific Planning Process

Successful communities have looked at trail planning as it's own planning process. This keeps trail system implementation from getting diluted within other planning documents and processes.

### Develop a robust Public Participation Plan

In today's climate public meetings are only one of many ways to ensure the public is involved in the process. Social media, websites, blogs, and discussion boards can ensure a broad spectrum of input.

### Identify Potential Corridors Early

Successful communities have identified corridors early in the process and have institutionalized them into the planning process giving long-term implementation a fighting chance.

# Resources

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Outcome:	Outcome:	Outcome:	Outcome:	Outcome:	Outcome:	Outcome:	Outcome:	Outcome:
<ul style="list-style-type: none"> <li>• Document Structure</li> <li>• Document Purpose</li> <li>• Interaction with existing plans</li> </ul>	<ul style="list-style-type: none"> <li>• Roles of decision making and working groups</li> <li>• Outline of meetings, surveys, and audits</li> </ul>	<ul style="list-style-type: none"> <li>• Clear Vision of the Greenway system</li> <li>• Overall goals of the Greenway system</li> <li>• Specific actions for the planning process</li> </ul>	<ul style="list-style-type: none"> <li>• Needed connections</li> <li>• Natural corridors</li> <li>• Utility or abandon corridors</li> <li>• Planned transportation improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Identify corridors</li> <li>• Develop design standards</li> <li>• Trail/street cross-section designs</li> </ul>	<ul style="list-style-type: none"> <li>• Prioritization criteria</li> <li>• List of sites to be included in the plan</li> </ul>	<ul style="list-style-type: none"> <li>• Potential phases</li> <li>• Prioritization list</li> <li>• Potential and identified funding</li> <li>• Implementation responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>• Final public input</li> <li>• City Council/ Planning Commission approval</li> </ul>	<ul style="list-style-type: none"> <li>• General implementation goals</li> <li>• Evaluation criteria</li> <li>• Review schedule</li> </ul>

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