Silver Comet Trail Economic Impact Analysis and Planning Study

July 2013

NWGRC
NORTHWEST GEORGIA REGIONAL COMMISSION
A Region With A Bright Future

ARC
ATLANTA REGIONAL COMMISSION

GDOT
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Project Stakeholders

Georgia Department of Transportation
Polk County Board of Commissioners
Polk County Tourism
City of Rockmart
GRITS
Georgia Bikes
City of Dallas
PATH Foundation
Paulding County Transportation
Rome Chamber of Commerce
Outdoor Chattanooga
Cobb County Department of Transportation
Cobb County Parks and Recreation, Cultural Affairs Dep't.
Silver Comet Cycles
Bike Cobb
Walker County
City of Atlanta Department of Parks, Recreation and Cultural Affairs
City of Atlanta Department of Planning and Community Development
Georgia Department of Economic Development
Lula Lake Land Trust
Rome/Floyd County Planning Department
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Project Background

Introduction and Project Purpose

The Northwest Georgia Regional Planning Commission (NWGRC) has been working with neighboring jurisdictions and project stakeholders to recognize the value of the nation's longest and oldest paved rail trail, the Silver Comet Trail.

In December 2012, NWGRC selected a qualified trail consultant team to prepare a two-part study to identify existing and future economic impacts and future expansion of the trail.

This report evaluates the current and potential demand and use of the Silver Comet Trail and its associated economic impacts on a local and regional level. Future trail expansion opportunities are also identified and include cost-benefit and use analysis. The report is intended to provide a framework for future trail expansion that builds on the function of the existing facility, attracts tourism and business development, and stimulates the local economy.

History of the Silver Comet Trail

The Silver Comet Trail is named after the Silver Comet passenger train, which carried passengers from the northeast United States to Virginia, North Carolina, South Carolina, Georgia, and Alabama from 1947 to 1969. After cancelling passenger service in the late sixties, the rail line only carried freight until it was closed in 1989.

In 1992, The Georgia Department of Transportation (GDOT) bought the inactive rail line that ran through Cobb, Paulding, and Polk counties from CSX. GDOT wanted the rail line for future use as a high-speed transit route. Instead the corridor has been operated and maintained as a shared use, non-motorized trail since construction began in Cobb County in 1998. Construction of the Silver Comet Trail began through a collaborative effort among GDOT, Georgia State Parks, PATH Foundation, Cobb County DOT, Paulding County, and Polk County. Each of the three counties (Cobb, Paulding, and Polk) lease the rail trail from GDOT and operate and maintain their sections in cooperation with several local advocacy groups.

Regional Context

Local Context

Context

The Silver Comet Trail is located 13 miles northwest of Atlanta, Georgia. It begins in the city of Smyrna at the Mavell Road Trailhead and extends 61 miles west through Cobb, Paulding, and Polk counties to the Georgia/Alabama state line. The trail links seven cities along its route: Smyrna, Powder Springs, Hiram, Dallas, Braswell, Rockmart, and Cedartown.

At the Georgia/Alabama state line, the Silver Comet Trail connects to the 33-mile long Chief Ladiga Trail. Plans are underway to extend the Chief Ladiga an additional 7 miles. Both the Silver Comet Trail and Chief Ladiga Trail are paved shared-use trails that have been acquired through the process of federal railbanking. The combined Silver Comet and Chief Ladiga Trail length is approximately 100 miles from Smyrna, Georgia to Anniston, Alabama.

Project Goals

The Silver Comet EIA and Planning Study was developed using the following project goals:

1. Collect, analyze, and publish data on the typical and prospective users and associated economic impacts of the Silver Comet Trail.
2. Increase economic development in the region by promoting the Silver Comet Trail as a destination that offers a variety of attractions and amenities to all trail users.
3. Make information about the Silver Comet Trail, its amenities, and nearby attractions readily available through a variety of communication outlets.
4. Determine the most appropriate elements of a safe, secure, and accessible trail environment for all types of trail users.
5. Improve connectivity between the Silver Comet Trail and nearby municipalities and destinations.
6. Develop a Plan that is integrated with other existing and future bicycle plans and other municipal and regional plans.
7. Pursue funding and partnership opportunities for the long-term maintenance and management of the Silver Comet Trail.

The Silver Comet Trail reaches 61 miles within the state of Georgia.

Stakeholder Involvement

The *Silver Comet Economic Impact Analysis and Planning Study* drew many stakeholders who have been involved with the trail since its earliest development in the 1990s. Efforts were made to involve each stakeholder group throughout the planning process including a workshop that was scheduled in January 2013 to discuss project goals, needs, and challenges. A second stakeholder workshop was held in May 2013 to review the draft plan and results of the economic impact analysis.

Stakeholder meeting held in January 2013.

The following stakeholders were identified as part of the project and provided input and oversight of the plan:

- Georgia Department of Transportation
- Polk County Board of Commissioners
- Polk County Tourism
- City of Rockmart
- GRITS
- Georgia Bikes
- City of Dallas
- PATH Foundation
- Paulding County Transportation
- Rome Chamber of Commerce
- Outdoor Chattanooga
- Cobb County Department of Transportation
- Cobb County Parks and Recreation, Cultural Affairs Dep't.
- Silver Comet Cycles
- Bike Cobb
- Walker County
- City of Atlanta Department of Parks, Recreation and Cultural Affairs
- City of Atlanta Department of Planning and Community Development
- Georgia Department of Economic Development
- Lula Lake Land Trust
- Rome/Floyd County Planning Department
- City of Rome

Stakeholders' primary interests included:

1. Determining spurs and trail connections to the trunk line of the Silver Comet Trail
2. Providing user services along the trail such as lodging, restaurants, and entertainment that would spur economic growth
3. Developing a more robust wayfinding system that directs users to destinations and towns along the trail
4. Partnership opportunities with other uses such as mountain biking and bicycle rentals were also desired.

Several concerns with the existing Silver Comet Trail were also determined, including future maintenance, funding, and lost economic development opportunities that attract employers, businesses, and residents.

Benefits of Trails and Greenways

Given the hard work involved in the planning, design, and development of the existing Silver Comet Trail and future connections, it is important for all those involved in any effort to periodically remind themselves, and others, of the meaning behind the work and the tremendous value it brings to the broader community. Communities across the U.S. and throughout the world are investing in trails as a factor of overall livability. They do this because of their obligation to promote health, safety, and welfare, and also because of the growing awareness of the many benefits of having a connected system of trails and greenways, which include social, ecologic, and economic benefits. The following are general benefits of greenways and trails. A more detailed summary of the specific benefits of the Silver Comet Trail can be found in Chapter 3.

Greenways and Trails Create Value & Generate Economic Activity

The economic benefits of trails are generated from several sources and accrue to many different local groups, including residents, businesses, and government agencies. First, trails increase adjacent property values, which benefits property owners as well as local government agencies that see increased property tax revenues. Second, trails attract both businesses and tourists, spurring economic development that benefits all residents. Third, improved bicycle and pedestrian access near businesses, through trails or other means, has been shown to increase sales while reducing the need for expensive parking. Finally, trails are less expensive to construct than roadways and allow residents to travel by bike or foot, saving money on gas and car maintenance.

Example of a bicycle and canoe rental combined with refreshment vendors at a trailhead

Greenways and Trails Increase Real Property Values

There are many examples, both nationally and locally, that affirm the positive connection between trails, walkability, and property values.[1] Residential properties will realize a greater gain in value the closer they are located to trails and greenspace. In a survey of home buyers by the National

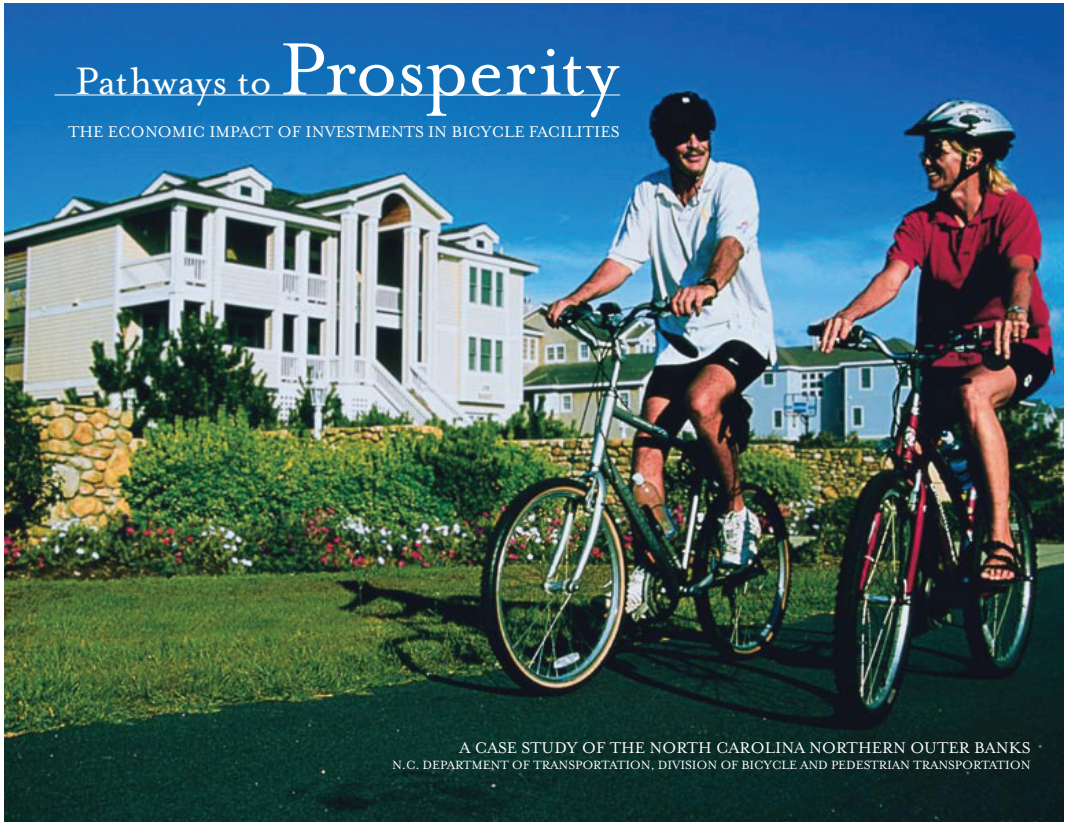
Developers understand the positive impact of trails on property values.

Association of Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices (highway access was number one).[2] Similarly, the 2009 report "Walking the Walk" by CEO's for Cities, which looked at 94,000 real estate transactions in 15 markets, found that in 13 of those markets, higher levels of "walkability" were directly linked to higher home values. For example, in Apex, North Carolina, the Shepard's Vineyard housing development added $5,000 to the price of each of the 40 homes adjacent to the regional greenway – and those homes were still the first to sell.[3] Other findings from the Trust for Public Land's 'Economic Benefits of Parks and Open Space' and the Rails-to-Trails Conservancy's 'Economic Benefits of Trails and Greenways', are illustrate how trails have positively impacted property values across the country.

Greenways and Trails Spur Economic Growth

In addition to real estate values, trails also create positive economic impacts from tourism and recreation-related revenue. Trails and greenways create opportunities in construction and maintenance, recreation rentals (such as bicycles, kayaks, and canoes), recreation services (such as shuttle buses, ferry services, and guided tours), historic preservation, restaurants, and lodging. The industry rule of thumb is that for every one dollar of investment, there is a three dollar return on that investment, if not more. One of the most relevant tourism examples that saw an even higher return on investment is from the North Carolina coast. In the Outer Banks, bicycling is estimated to have an annual economic impact of $60 million, and 1,407 jobs are supported by the 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area. The annual return on bicycle facility development in the Outer Banks is approximately nine times higher than the initial investment.[4] Another study in Kansas City found an even higher return of $11.80 for every $1 invested.

Like the Outer Banks, the northwest Georgia region is currently a significant draw to tourists because of the Silver Comet Trail, with jobs directly attributable to tourists and many more supported through indirect effects.[5] Expanding connections to the Silver Comet Trail could build upon this existing activity base and provide a safe and enjoyable way for tourists to visit towns in northwest



Download the full report, "Pathways to Prosperity", from: http://www.ncdot.gov/bikeped/researchreports

Georgia so that these areas can share in the economic gains of tourism.

Recreational facilities also attract businesses seeking a place to locate with a high quality of life for their employees. In Morgantown, West Virginia, the 45-mile Mon River trail system is credited by the Convention and Visitors Bureau for revitalizing an entire district of the city, with a reported $200 million in private investment as a direct result of the trail.[6] Similarly, Chicago's Millenium Park is credited with one-quarter of all new retail, commercial, and residential development that has taken place in the East Loop since the park's creation.[7] At the street scale, pedestrian and bicycle access have been shown to increase retail sales. High quality walking and cycling conditions tend to attract retail customers.[8,9] Further, consumers report a willingness to pay approximately 11 percent more for goods in landscaped business districts than in non-landscaped districts. They are willing to pay as much as 50 percent more in these districts for convenience goods.[10] One of the goals of the Silver Comet Trail expansion will be to link commercial and residential areas in order to reap these benefits for local businesses.

Greenways and Trails Offer Transportation Cost Savings

When looking at the returns on investment noted above, it is also important to put into perspective the massive differences in costs inherent in the transportation decisions we make, both as individuals and as a region. Consider the individual costs associated with various forms of transportation. Walking is virtually free and the cost of operating a bicycle is far less than operating a car. A study cited by the Victoria Transport Policy Institute found that households in automobile-dependent communities devote 50 percent more of their income to transportation (more than $8,500 annually) than households in communities with more accessible land use and more multi-modal transportation systems (less than $5,500 annually).

On a broader scale, consider the regional costs of our transportation infrastructure investments. According to the Federal Highway Administration, the basic cost of a single mile of urban, four-lane highway is between $20 million and $80 million. In urban bottlenecks where congestion is the worst, common restrictions such as the high costs of right of ways and the need to control high traffic volumes can boost that figure to $290 million or more.[11] By contrast, the costs of bicycle and pedestrian facilities range anywhere from a few thousand dollars per mile to rarely more than $1 million, with great variability between types of infrastructure and local circumstances.[12]

Bicycling and walking are affordable forms of transportation, and with the relatively low cost and high return on investment for trails, it is hard to argue against developing a regional system that creates value and generates economic activity.

Greenways and Trails Enhance Bicycle and Pedestrian Transportation Options

Communities that invest in trail systems will be better prepared to accommodate shifting modes of travel, especially as driving becomes more expensive. Provided there are viable alternatives to driving, Americans are willing to change their travel habits, as shown during the dramatic increases in gas prices in 2008. According to the Rails to Trails Conservancy and the Bikes Belong Coalition, "Every day, more commuters switch to public transportation, bicycling and walking in places where prior infrastructure investments have made these options safe and convenient".[13]

Choosing to bike or walk rather than to drive, however, is often made difficult by the way our cities and towns have developed. The sprawling nature of many land development patterns often leaves residents and visitors with little choice but to drive, even for short trips. In fact, nearly two-thirds (62.7 percent) of all driving trips we make are for a distance of five miles or less.

Surveys by the Federal Highway Administration show that Americans are willing to walk as far as two miles to a destination and bicycle

as far as five miles. A system of expanded trails in the northwest Georgia region, combined with other bicycle and pedestrian infrastructure, will offer viable opportunities for walking and biking to homes, workplaces, schools, parks, downtowns, and cultural attractions.

Greenways and Trails Improve Health through Active Living

Additional trails throughout Cobb, Paulding, and Polk counties will contribute to the overall health of residents by offering people attractive, safe, and accessible places to bike, walk, hike, jog, and skate. In short, regional trails will create better opportunities for active lifestyles. The design of our communities—including towns, subdivisions, transportation systems, parks, trails, and other public recreational facilities—affects people's ability to reach the recommended 30 minutes each day of moderately intense physical activity (60 minutes for youth). According to the Centers for Disease Control and Prevention (CDC), "*Physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year, and contributes to the obesity epidemic*".[14]

CASE STUDY

A Health Impact Assessment of Park, Trail, and Green Space Planning in Greenville, South Carolina

In 2012, the South Carolina Institute of Medicine and Public Health conducted a Health Impact Assessment (HIA) to determine the health effects that parks, trails, and green space have on the west side population of Greenville, South Carolina. The HIA team ranked the possible health benefits to the area based on the estimated significance of impact. These include opportunities for physical activity provided at low- to no-cost, improved social cohesion and social capital, community and family economic stability, access to healthy food, individual and community safety, and improved air and water quality. According to the HIA, "Research has demonstrated that individuals with high levels of social cohesion live longer and experience improved mental and physical health." In regards to food access, "Research shows that providing access to healthy and affordable foods is an important contributing factor for decreasing cancer and chronic diseases." The HIA builds upon its listing of potential effects and includes recommendations on how to maximize the health benefits of park, trail, and green space gained by the community.

In identifying a solution, the CDC determined that by creating and improving places in our communities to be physically active, there could be a 25 percent increase in the percentage of people who exercise at least three times a week.[15] This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits.[16] In a December 2010 article published by the Mayo Clinic, it is suggested that:

"Walking, like other exercise, can help you achieve a number of important health benefits such as:

- Lowered low-density lipoprotein (LDL) cholesterol (the "bad" cholesterol),
- Elevated high-density lipoprotein (HDL) cholesterol (the "good" cholesterol),
- Lowered blood pressure,
- Reduced risk of or managed type 2 diabetes,
- Improved mood, and
- Increased feelings of strength and fitness."

Many public agencies are teaming up with foundations, universities, and private companies to launch a new kind of health campaign that focuses on improving people's options instead of reforming their behavior. A 2005 Newsweek Magazine feature, "Designing Heart-Healthy Communities," cites the goals of such programs: "*The goals range from updating restaurant menus to restoring mass transit, but the most visible efforts focus on making the built environment more conducive to walking and cycling.*"[17] Clearly, the connection between health and greenways is becoming common knowledge. The Rails-to-Trails Conservancy puts it simply: "*Individuals must choose to exercise, but communities can make that choice easier.*"

Greenways Enhance Environmental Stewardship by Reducing Vehicle Emissions & Fuel Consumption

Trails can help to reduce automobile dependency, which in turn leads to a reduction in vehicle emissions – a benefit for Georgians and the surrounding environment. As of 2003, 27% of U.S. greenhouse gas emissions are attributed to the transportation sector, and personal vehicles account for almost two-thirds (62%) of all transportation emissions.[18] Primary emissions that pose potential health and environmental risks are carbon dioxide, carbon monoxide, volatile organic compounds (VOCs), nitrous oxide (N2O), and benzene. Children and senior citizens are particularly sensitive to the harmful affects of air pollution, as are individuals with heart or respiratory illnesses. Increased health risks such as asthma and heart problems are associated with vehicle emissions.[19]

Decreasing the dependency on daily motor vehicle trips and increasing the availability of alternative travel methods such as bicycling and walking can reduce emissions and assist in improving air quality. Replacing two miles of driving each day with walking or bicycling will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.[20] The Silver Comet Trail will enable citizens to consider replacing two miles of driving with walking or bicycling because the trail links neighborhoods to important basic needs destinations, such as grocery stores, schools, retail areas, and parks. Other studies have likewise shown air quality benefits as a result of increased walking and bicycling rates and reduced vehicle miles traveled:

As of 2008, roughly 9.5% of all U.S. trips are made by walking or bicycling. A modest increase in walking and bicycling to 13% of all trips would save 3.8 billion gallons of gasoline each year and reduce CO2 emissions by 33 million tons. A substantial increase in walk and bike rates to 25% of all trips would save 10.3 billion gallons of gasoline and prevent 91 million tons of CO2 emissions.[21]

Minneapolis-St. Paul, MN: If bicycles were used for half of the short trips made on good weather days, the Twin Cities could prevent 300 deaths and save $57 million in annual medical costs due to reduced air pollution and increased physical activity. Collectively, 11 major Midwest cities would save $7 billion in medical costs each year and prevent 1,100 deaths.[22]

A 5% increase in the walkability of a neighborhood is associated with a per capita 32.1% increase in active travel, 6.5% fewer miles driven, 5.6% fewer grams of nitrous oxide (N2O) emitted, and 5.5% fewer grams of volatile organic compounds (VOCs) emitted.[23]

Greenways Enhance Environmental Stewardship by Improved Water Quality and Wildlife Habitat

There are a multitude of environmental benefits from trails, greenways, and open spaces that help to protect the essential functions performed by natural ecosystems. Multi-use trails are often included as part of greenway or green space corridors, offering transportation options while also contributing to environmental quality. Green space corridors help link fragmented tracts of land to provide larger habitats for wildlife while also protecting sensitive natural features, natural processes, and ecological integrity. These tracts of open space also contribute to cleaner air by preserving stands of plants that create oxygen and filter air pollutants such as ozone, sulfur dioxide, carbon monoxide, and airborne particles of heavy metals. Vegetation within the green space corridors also creates a buffer to protect streams, rivers, and lakes, preventing soil erosion and filtering pollution caused by agricultural and roadway runoff.[24] Trails that are built within green space corridors give bicyclists,

pedestrians, and other non-motorized trail users access to these natural areas and provide safe off-road facilities for walking and bicycling. These corridors also provide opportunities for restoring wildlife habitat in areas that have been previously disturbed.

Greenway Enhance Environmental Stewardship by Encouraging Energy Conservation and Independence

According to the National Association of Realtors and Transportation for America, 89% of Americans believe that transportation investments should support the goal of reducing energy use.[25] The transportation sector currently accounts for 71% of all U.S. petroleum use, with 40% of daily trips made within two miles or less and 28% less than a mile.[26] Providing alternative modes of travel has the potential to reduce dependency on foreign oil and promote more energy-efficient transportation choices in communities.

Greenways and Trails Enhance Cultural Awareness and Community Identity

Trails, greenways, and open space can serve as connections to local heritage by preserving historic places and by providing access to them. They provide a sense of place and an understanding of past events by drawing greater public attention to historic and cultural locations and events. Trails often provide access to historic sites such as battlegrounds, bridges, buildings, and canals that otherwise would be difficult to access or interpret. Each community or region has its own unique history, its own features and destinations, and its own landscapes. By recognizing, honoring, and connecting these features, the combined results serve to enhance cultural awareness and community identity, potentially attracting tourism. Being aware of the historical and cultural context when naming parks and trails and designing features will further enhance the overall trail and park user experience.

Finally, greenways and trails provide opportunities for people to interact with one another outside of work and their immediate neighborhood. Positive interaction (such as through exercising, strolling, or even just saying 'hello') among people from a wider community helps to build trust and awareness of others, which strengthens the overall sense of community.

Endnotes

1. American Planning Association. (2002). How Cities Use Parks for Economic Development.

2. National Association of Realtors and National Association of Home Builders. (2002). Consumer's Survey on Smart Choices for Home Buyers.

3. Rails to Trails Conservancy. (2005). Economic Benefits of Trails and Greenways.

4. NCDOT and ITRE. (2006). Bikeways to Prosperity: Assessing the Economic Impact of Bicycle

Facilities.

5. Wilmington-New Hanover County Joint Coastal Area Management Plan: 2006 Update.

6. Rails to Trails. (Danzer, 2006). Trails and Tourism.

7. "2009 Rudy Bruner Award: Silver Medal Winner – Millennium Park," Rudy Bruner Foundation (2010).

8. Hass-Klau, C. (1993). Impact of pedestrianization and traffic calming on retailing: A review of the evidence from Germany and the UK. Transport Policy, 1(1); European Commission. (1999).

Cycling: the way ahead for towns and cities. Retrieved from http://ec.europa.eu/environment/archives/cycling/cycling_en.pdf.

9. Victoria Transport Policy Institute. (2011). Evaluating non-motorized transportation benefits and costs. Todd Litman. p. 39.

10. Warwick District Council. (2003). The benefits of urban trees. Chris Hastie. p.2.

11. Active Transportation for America: The Case for Federal Investment in Bicycling and Walking. Rails to Trails Conservancy and Bikes Belong Coalition 2008 / Sissel, S., Cost per Highway Mile, 2008

12. Krizek, K.E. Guidelines for Analysis of Investments in Bicycle Facilities, 2006

13. Active Transportation for America: The Case for Federal Investment in Bicycling and Walking, 2008

14. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (1996). Physical Activity and Health: A Report of the Surgeon General.

15. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2002). Guide to Community Preventive Services.

16. Rails-to-Trails Conservancy. (2006). Health and Wellness Benefits.

17. Newsweek Magazine. (10/3/2005). Designing Heart-Healthy Communities.

18. Office of Transportation and Air Quality, Environmental Protection Agency. (2006). Greenhouse Gas Emissions from the U.S. Transportation Sector: 1990-2003. Report number EPA 420 R 06 003

19. Health Effects Institute (2010). Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects. Special Report 17.

20. Federal Highway Administration. (1992). Benefits of bicycling and walking to health.

21. Gotchi, T. & Mills, K. (2008). Active transportation for America. Rails-to-Trails Conservancy. Retrieved from http:/www.railstotrails.org/resources/documents/

whatwedo/atfa/ATFA_20081020.pdf.

22. Grabow, M.L., Spak, S.N., Holloway, T., Stone, B., Mednick, A.C., & Patz, J.A. (2011). Air quality and exercise-related health benefits from reduced car travel in the Midwestern United States. Environmental Health Persepectives, 120(1): 68-76.

23 Frank, L.D., Sallis, J.F., Conway, T.L., Chapman, J.E., Saelens, B.E., and Bachman, W. (2006). Many Pathways from Land Use to Health: Associations between Neighborhood Walkability and Active Transportation, Body Mass Index, and Air Quality. Journal of the American Planning Association 72(1): 75-87.

24. Arendt, R. (1994). Rural by Design. American Planning Association, Chicago, Illinois.

25. National Association of Realtors and Transportation for America. (2009). 2009 Growth and Transportation Survey. http://t4america.org/docs/011609_pr_nart4poll.pdf

26. Bureau of Transportation Statistics. (2010). Transportation Statistics Annual Report 2010. Retrieved from: http://www.bts.gov/publications/transportation_statistics_annual_report/2010/

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CHAPTER TWO

Trail Usage Evaluation

Overview

The trail usage evaluation for this project is a first of its kind for the Silver Comet Trail. While efforts have been undertaken to analyze portions of the Silver Comet Trail since its initial development, there has never been an effort to look at the entire 61 mile stretch of trail.

The trail evaluation was used to answer several questions including:

- How many people are using the trail and where are people using the trail?
- Who is using the trail?
- When and how often are people using the trail?
- Do people spend money in the communities along the trail and if they do, what do they spend their money on?

To get answers to these questions, the planning team developed a data collection methodology specific to this project but one that is also in line with national best practices. The methodology for the trail usage evaluation, along with the results, are presented in the sections that follow.

Summary of Findings

Summary of Count Findings

- Number of trail users counted: 6,524 people
- 71% of users were cyclists.
- 28% of users were pedestrians.
- The weekly trail volumes are highest during the weekends.
- Women are more likely to use trail heads that are in more densely populated areas, such as a downtown or trail head with significant user volumes.
- Pedestrian volumes are highest at trail heads in more densely developed areas.
- At rural trail heads or less developed areas, the majority of users are cyclists.
- Smyrna Trail Head
  - -Highest estimated annual trail volume
  - -Highest % of pedestrians compared to all users counted at trail head
- Cedartown Trail Head
  - - Lowest estimated annual trail volume
  - - Georgia/Alabama State Line

Summary of Survey Findings

- Number of Surveys: 889
- 84% of people drive to the trail.
- 97% of people use the trail for exercising or recreation.
- The trail is a regional trail. People visiting the trail traveled from23 counties and 8 different states, including Washington state, to use the trail.
- The majority of trail users use the trail often (more than 5 times a month) and use it year round.
- Highest ranking improvements desired:
  - - Restrooms
  - - More trails
  - - Wayfinding and signage
- When users spend money while using the trail, the majority of them spend money on food.
- When users spend money while using the trail, the majority of them (approximately 80%) spend $50 or less.
- When people visit the trail from out of town, the majority of them are just visiting for the day.

Methodology

The trail evaluation for this project used the methodology developed as part of the National Bicycle and Pedestrian Documentation Project (NBPDP). The project is co-sponsored by Alta Planning + Design and the Institute of Transportation Engineers (ITE) Pedestrian and Bicycle Council. The project provides a consistent model for data collection and on-going data use for communities across the US.

The national methodology provides standardized formats for data collection and analysis. Annual counts conducted in a systematic manner provide strong benchmarking information on bicycling, walking and trail activity. Count data can help understand existing bicycling and pedestrian patterns, understand needs, plan for future bikeways, walkways, and trails, and measure the success of existing programs and facilities. While the count data does not provide comprehensive mode share data, it does offer a snapshot of peak bicycle and pedestrian activity on a typical day.

Information was collected using counts and surveys. The counts provide baseline data of volumes of users along the trail, as well as other user characteristics such as mode of travel. The surveys help identify trip characteristics, additional user characteristics, and user attitudes and preferences about trail conditions.

Volunteers conducted counts and surveys through training administered by the consultant.

Locations

Counts were conducted at nine locations along the trail. The locations were selected based on the following criteria:

- trail conditions
- geography (rural to urban)
- jurisdiction
- anticipated higher volumes of trail use
- proximity to destinations

Intercept surveys were conducted among random users.

The selected count locations included:

- Alabama/Georgia State Line
- Cedar Town Trail Head
- Rockmart Trail Head
- Rambo Nursery Trail Head
- Dallas Trail Head
- Hiram Trail Head
- Powder Springs Trail Head
- Silver Comet Cycles Trail Head
- Smyrna Trail Head

Summary data for trail heads is included in the Trail Count Summary section of this chapter. Additionally, trail head specific count data is provided in the Appendix.

Dates

The days of the week and the times of day for the counts were in line with NBPDP standards. Additionally, the time of day for the weekend counts was extended from the typical two-hour time period to a four-hour time period. The extended time period was selected to incorporate the NBPDP recommended time of 12pm-2pm as well as the 10am-12pm, which the steering committee felt was important to capture local trail use patterns.

It should be noted that while counts were scheduled for four dates in March, trail evaluations were only conducted on two Wednesdays and the first Saturday. Trail evaluations were canceled on Saturday March 23 due to inclement weather. While best practices encourage the use of a minimum of two data points for analysis, the Planning Team felt comfortable that the first Saturday represented a typical spring day. The weather on Saturday March 16 was sunny and warm.

Table 2.1 Trail Evaluation Dates

COUNT WEEK	WEEKDAY	WEEKEND
Week 1	Wednesday March 13	Saturday March 16
Week 2	Wednesday March 20	Saturday March 23 (cancelled)

Table 2.2 Trail Evaluation Time of Day

DAY OF WEEK	TIME
Weekday (Wednesday)	PM: 4 -6pm
Weekend (Saturday)	PM: 10am-2pm

Forms

Two field count forms, one for the weekday counts and one for the weekend counts, were used for the trail evaluation. Two form types were needed because the time periods for data collection (two hours for weekday counts versus four hours for weekend counts) are different. Two survey forms, one for the field surveys and one for the online survey, were used for the trail evaluation. Two form types were needed because the questions differ for those using the trail for a specific trip and those not using the trail for a specific trip. Instructions on how to use the field survey were provided during the volunteer training webinar. The count and survey forms for the used for the trail evaluation are provided in the Appendix of this report.

Volunteer Training

To ensure the data was collected consistently and accurately, all volunteers were required to participate in a data collection training session. This requirement was important to ensure the data was collected consistently and accurately and to provide a means of quality control. The session was hosted and led by the Planning Team using a webinar and online video.

Table 2.3 Summary of Volunteer Training

DATE	FORMAT	VIEWING AREAS
Thursday March 7 from 12pm – 1pm	Online webinar	Online; Atlanta Regional Commission; and the Northwest Georgia Regional Commission

Topics covered included:

- Overview of the project
- Logistics
- Preparation for the day of the count
- Setting up for the counts and surveys
- How to conduct the counts and surveys
- What do you do when the count and survey time is over.

Counts
User counts were conducted in the field at nine pre-selected locations. The counts were manual screen line counts conducted by trained volunteers. One volunteer from each volunteer team was assigned the task of conducting the counts.

The screen line counts were conducted along the trail, rather than at a trail head intersection or street crossing. Screen line counts are used to collect data on the number of people who pass a specific point, or "screen", traveling in one of two directions. Screen line counts are different than intersection counts, which document the number of people passing through an intersection in three or more directions.

Surveys
Surveys were conducted in the field and online.

Field Surveys
The field surveys were conducted at the same time as the counts. The volunteers tasked with conducting the surveys were asked to survey as many trail users as possible during their scheduled time slots. Volunteers either read the survey questions to trail users and document their responses or allowed the participants to complete the survey themselves.

Online Surveys
The online survey was hosted by the Planning Team using Survey Money and was distributed by the steering committee to list-serves and email lists managed by the Northwest Georgia Regional Commission, Atlanta Regional Commission and local advocacy groups. The online survey was open from early February 2013 to the end of March 2013.

Trail Count Summary
Volunteers counted a total of 6,524 users along the Silver Comet trail at nine locations over three count periods. The count periods in total covered eight hours during peak use periods during weekdays and weekends. The information was used to estimate the volume of trail users as well as identify who is using the trail and how.

Key findings include:

- **The trail head with the highest annual volume of users is Smyrna (433,535 people)**
- **The trail head with the lowest annual volume of use is Cedartown (25,124 people)**
- **The majority of people using the trail are cyclists (71%) followed by pedestrians (28%) and other (1%).**
- **Pedestrian volumes are highest in more densely populated areas.**

- **At rural and more remote trailheads, the majority of users are cyclists.**
- **Women are more likely to use trail heads that are in more densely populated areas, such as a downtown or trail head with significant user volumes.**
- **The highest volumes along the trail are during the weekend, with weekday use significantly less compared to weekend use.**

Volume of Users

The highest volume of trail use is at the beginning of the trail in Smyrna. From eastern Cobb County, the volume of use decreases progressively to where the trail ends at the Georgia-Alabama line and connects to the Chief Ladiga Trail in Alabama. Annual trail volumes range from 433,535 people in Smyrna to 25,124 at the Cedartown Depot and Trail Head.

Table 2.4. Trail Head Ranking by User Characteristics

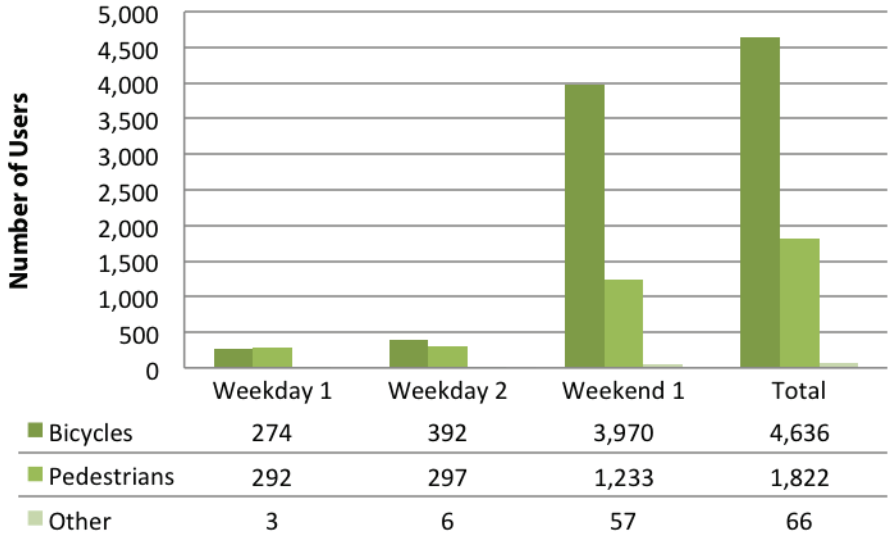
EVALUATION LOCATION RANKINGS	ANNUAL VOLUME	BICYCLES/ TOTAL USERS RANK	PEDESTRIANS/ TOTAL USERS RANK	OTHER/ TOTAL USERS RANK	FEMALE RANK	MALE RANK
1. GA/AL State Line	8	1	9	8	9	1
2. Cedartown Trail Head	9	3	7	8	4	6
3. Rockmart Trail Head	7	8	2	1	2	8
4. Rambo Nursery Trail Head	6	5	5	7	7	3
5. Dallas Trail Head	5	4	6	6	8	2
6. Hiram Trail Head	4	6	4	3	5	5
7. Powder Springs	3	2	8	4	6	4
8. Silver Comet Cycles Trail Head	2	7	3	5	3	7
9. Smyrna Trail Head	1	9	1	2	1	9

Table 2.5. Estimated Daily, Monthly and Annual Trail Use By Location (All Users)

LOCATIONS	ADJUSTED ANNUAL TOTAL	AVERAGE MONTHLY USE	AVERAGE DAILY USE	ANNUAL VOLUME RANK
1. GA/AL State Line	47,002	3,917	129	8
2. Cedartown Trail Head	25,124	2,094	69	9
3. Rockmart Trail Head	90,087	7,507	247	7
4. Rambo Nursery Trail Head	191,984	15,999	526	6
5. Dallas Trail Head	203,111	16,926	556	5
6. Hiram Trail Head	270,217	22,518	740	4
7. Powder Springs	276,664	23,055	758	3
8. Silver Comet Cycles Trail Head	349,885	29,157	959	2
9. Smyrna Trail Head	433,535	36,128	1,188	1

In terms of volume by day of the week, weekend user volumes are the greatest. During weekdays, the percentage of people walking and biking is roughly equivalent. However during weekend, the majority of users are riding a bike. Other users, such as those roller blading or on a skateboard, remain low regardless of the day of the week.

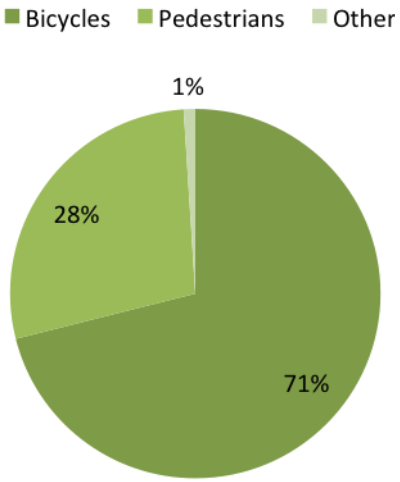
Figure 2.1 Total Trail Volume By User Type and Day of the Week



User Activity

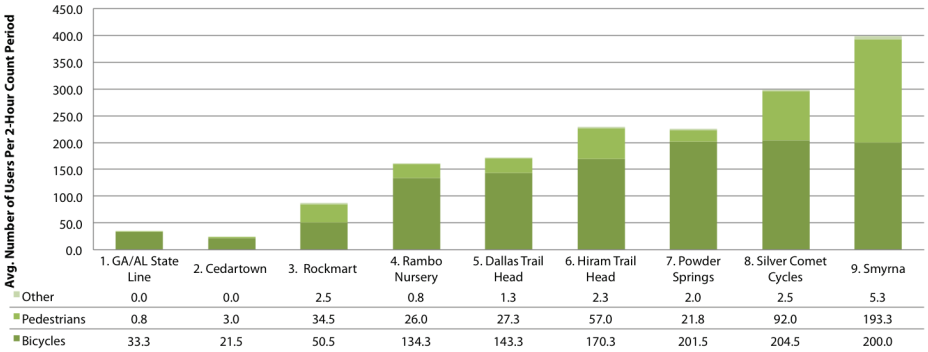
Overall, the majority of people using the trail are riding a bike. Of all the people counted during the three count periods, 71% were riding a bike, 28% were walking and 1% were traveling by other means such as rollerblades, scooter or skateboard.

Figure 2.2 Silver Comet Trail Use by User Activity



In addition overall trail user by user activity, several trends were identified. Where trail heads are located in more developed areas, the percentage of people walking and biking is more balanced. Where trail heads are located in less developed and rural areas, the percentage of people walking decreases and the percentage of people biking increases. Figure 2.3 illustrates the distribution by user activity at each of the nine count locations.

Figure 2.3 Average Number of Users Per 2-Hour Count Period by Count Location



	1. GA/AL State Line	2. Cedartown	3. Rockmart	4. Rambo Nursery	5. Dallas Trail Head	6. Hiram Trail Head	7. Powder Springs	8. Silver Comet Cycles	9. Smyrna
Other	0.0	0.0	2.5	0.8	1.3	2.3	2.0	2.5	5.3
Pedestrians	0.8	3.0	34.5	26.0	27.3	57.0	21.8	92.0	193.3
Bicycles	33.3	21.5	50.5	134.3	143.3	170.3	201.5	204.5	200.0

Gender

The majority of people using the trail are male. **Of all the people counted during the three count periods, 62% were male and 38% were female.**

In addition to overall usage, several interesting gender trends were identified. The gap between male and female users is smallest at less remote areas, such as trail heads with high user volumes and in more developed areas. Women were less likely to use more remote and rural trail heads to access and use the trail.

Figure 2.4 Silver Comet Trail Usage by Gender

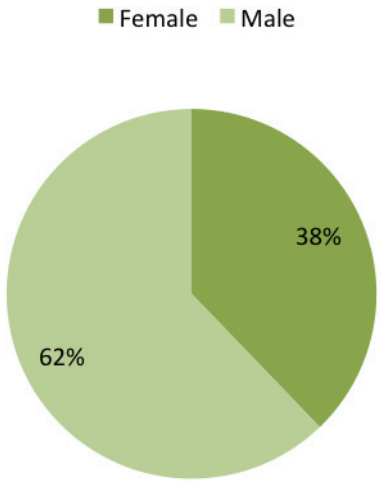
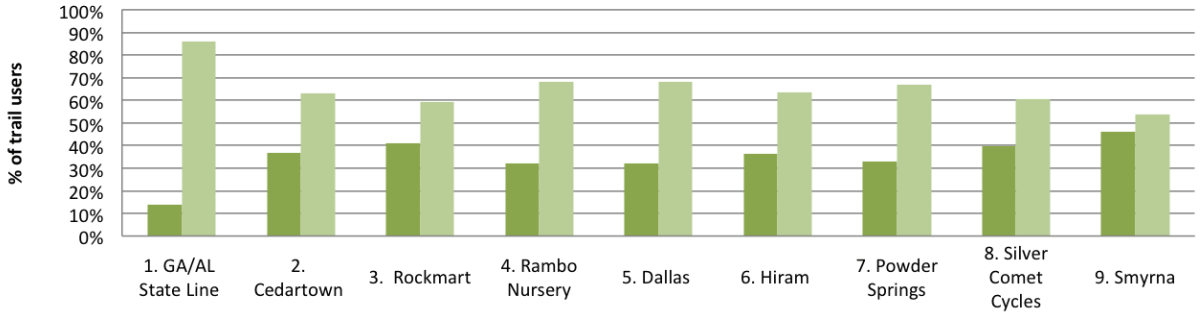


Figure 2.5 Trail Use by Gender and Trail Head Location



	1. GA/AL State Line	2. Cedartown	3. Rockmart	4. Rambo Nursery	5. Dallas	6. Hiram	7. Powder Springs	8. Silver Comet Cycles	9. Smyrna
% Female	14%	37%	41%	32%	32%	37%	33%	40%	46%
%Male	86%	63%	59%	68%	68%	63%	67%	60%	54%

Trail Evaluation Surveys

In total, 889 trail evaluation surveys were conducted for this project. 472 were collected in the field during count periods at nine locations. Additionally, 417 online surveys were collected during a two-month period from February to March of 2013.

Field surveys were conducted at all nine count locations during three count periods. The locations with the highest percentage of surveys collected includes Smyrna and Rockmart. The majority of surveys were conducted during the Saturday field count.

Figure 2.6 Distribution of Field Surveys by Survey Location

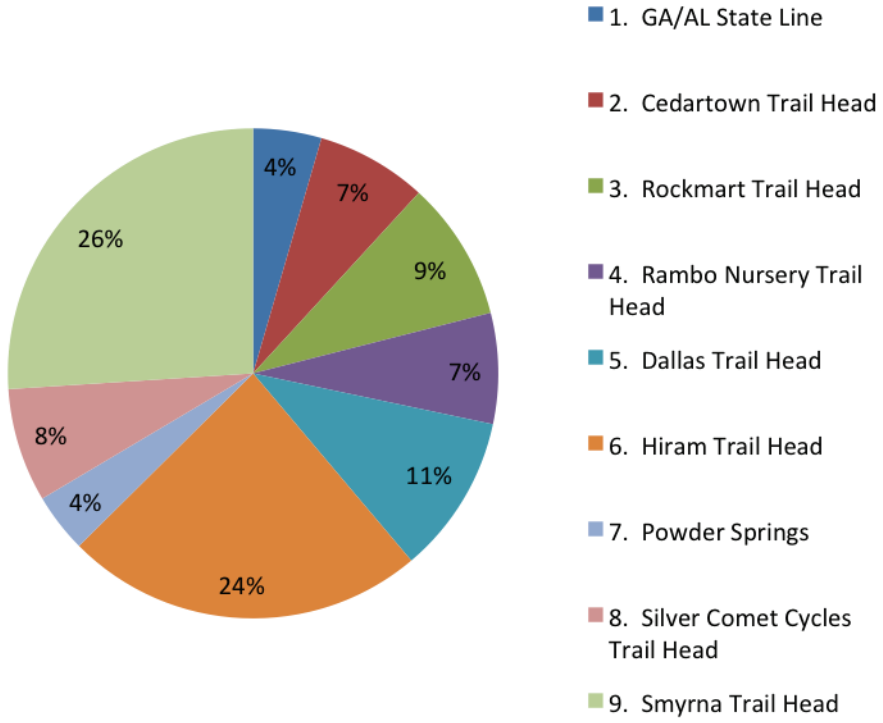


Figure 2.7 Distribution of Field Surveys by Count Date and Day of Week

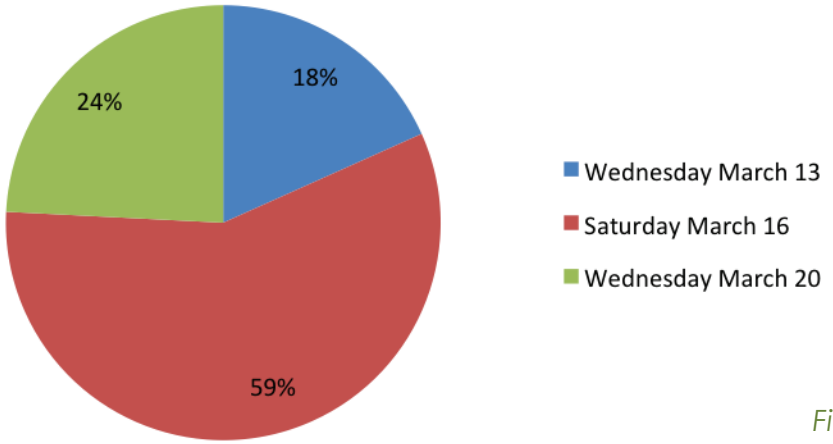


Figure 2.9 Field Survey Participant Activity

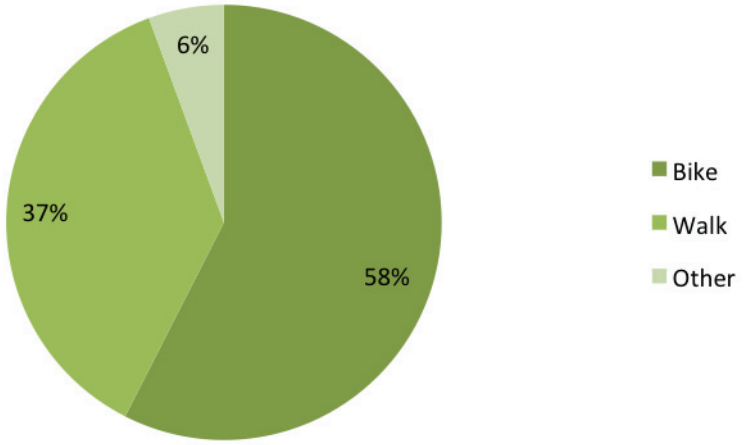
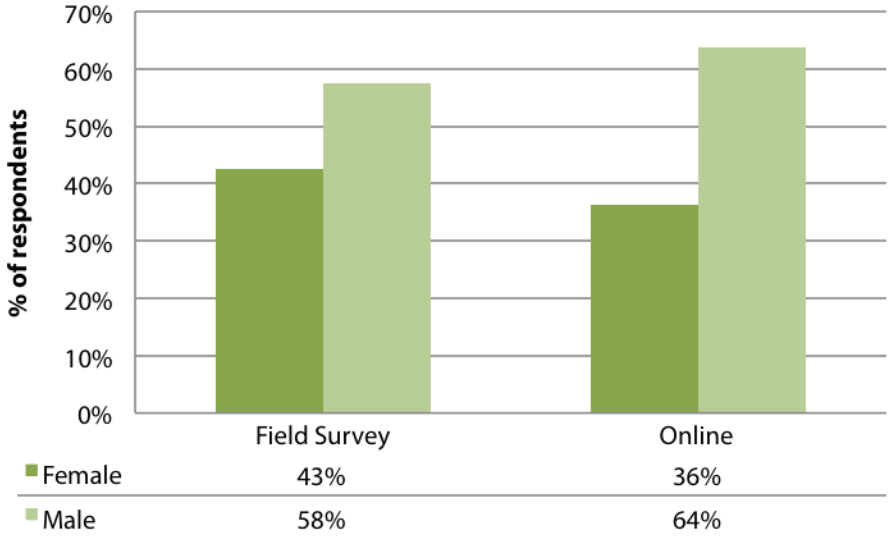


Figure 2.8 Gender of Field and Online Survey Participants



Key Survey Findings

Key findings include:

- The Silver Comet Trail is a regional trail . **Of the 472 people surveyed in the field, respondents came from 23 counties in Georgia and everyone count in the Northwest Georgia Regional Commission and the Atlanta Region.**
- People visit the trail from around the country. **Of those people interviewed, people came from 23 other states and as far away as Washington state.**

Respondent Characteristics

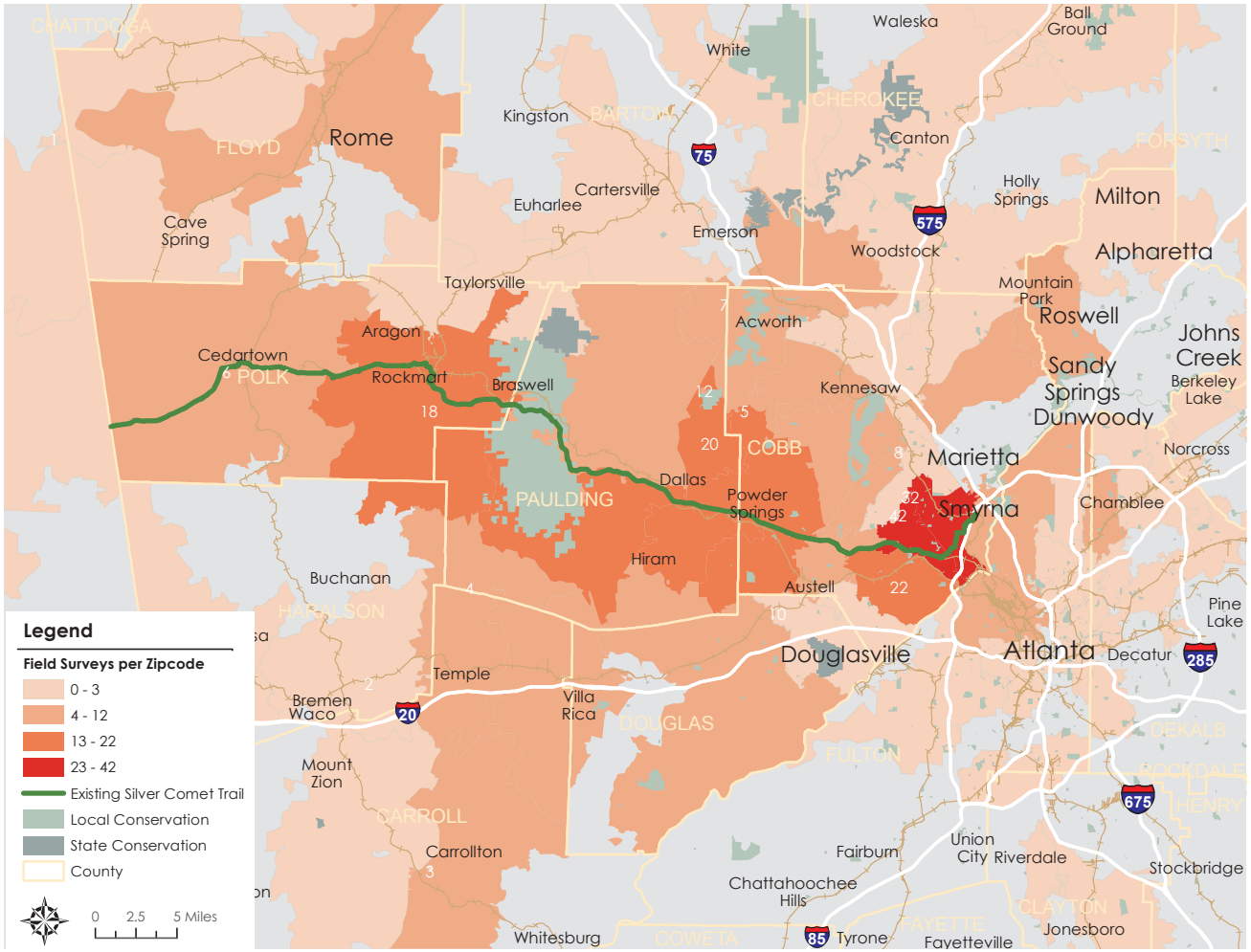
Of the people that participated in the surveys, the majority of respondents were male. This response rate is likely the result of the gender distribution of people using the trail rather than their willingness to take a survey.

By activity, the majority of people that responded were biking (58%), followed by walking (37%) and other (6%). Like the gender of field survey participants, the distribution of the activity of survey participants reflects a similar activity distribution observed during the counts.

Where do people live that use the trail?

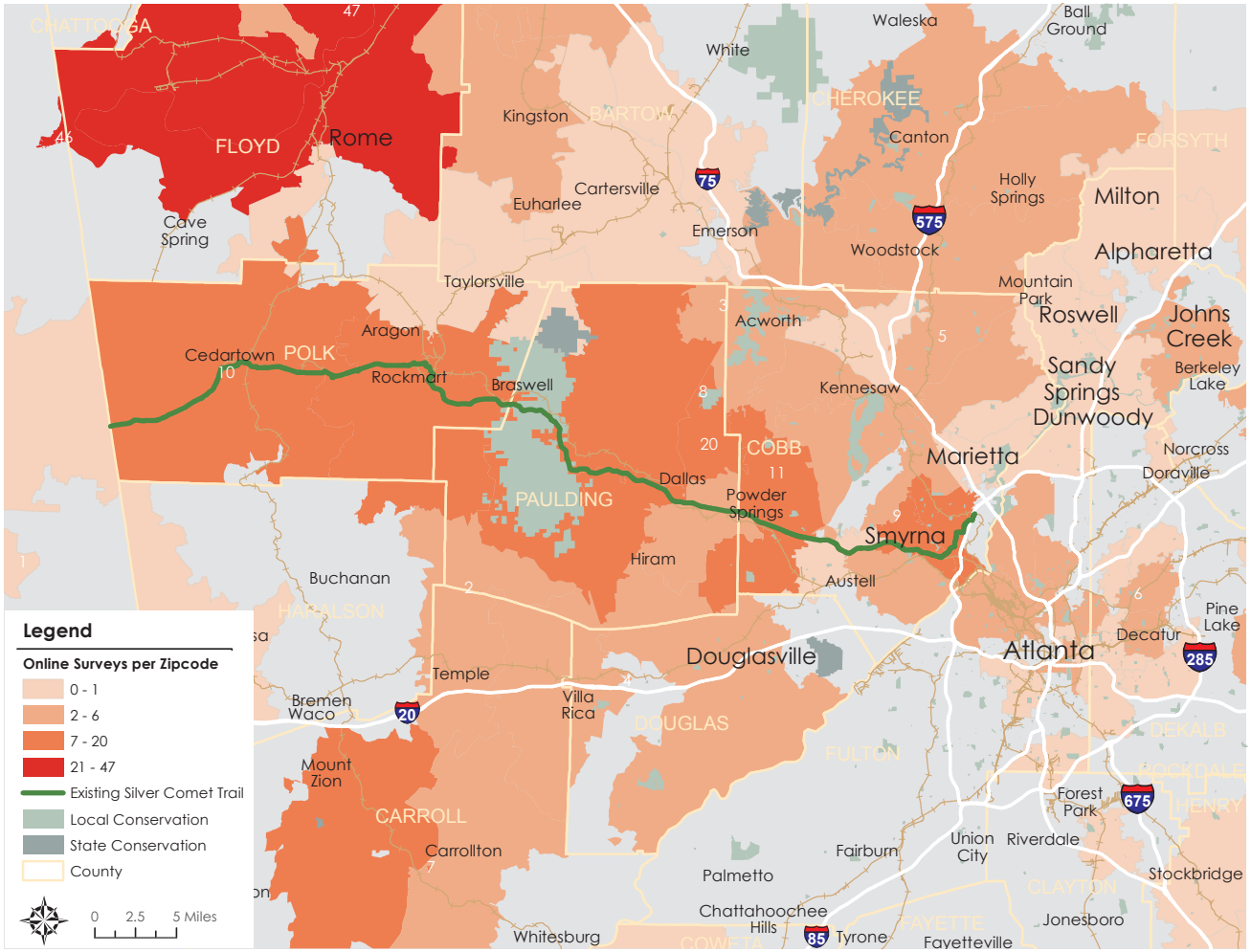
A significant number of field survey participants were from the counties that the trail passes through (Cobb, Pauling and Polk Counties) or the adjacent counties. However, Maps 2.1 and 2.2 show that the trail also draws people from throughout Georgia, including many of the counties in the

Map 2.1 Distribution of Field Survey Home Zip Code



northwest Georgia region and the Atlanta region. In total, survey responses were from 15% of all counties in Georgia (23 out of 159).

Map 2.2. Distribution of Online Survey Home Zip Code



How do people get to the trail?

Figure 2.10 shows how people get to the trail. Field survey participants were asked 'How did you get to the trail?' and online survey participants were asked 'How do you get to the Silver Comet Trail?' Both surveys show that the majority of people (approximately 80%) access the trail by car. **Approximately 15% of people access the trail by walking or biking** and approximately 5% of people use public transit or other modes of travel to get to the trail.

Why do people use the trail?

Figure 2.11 and 2.12 show why people use the trail. Field survey participants were asked 'How did you get to the trail?' and online survey participants were asked 'How do you get to the Silver Comet Trail?' For the field survey, respondents said **the two primary reasons for using the trail are for exercising (76.1%) and recreation (20.9%)**. Just over 1% of the field survey participants said their trips were for non-recreational purposes such as commuting to work or local trips for shopping.

Figure 2.10 How do people get to the trail?

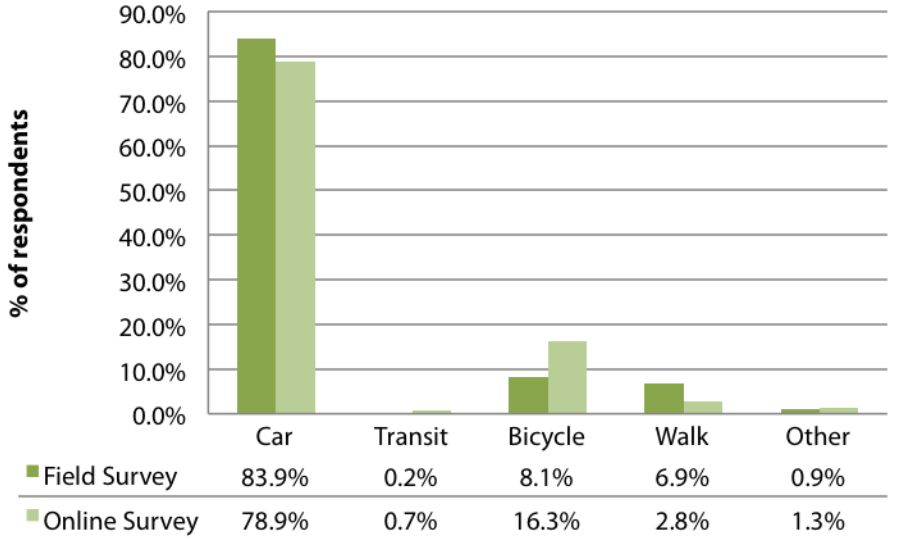


Figure 2.11 Field Survey: What best describes the purpose of this trip?

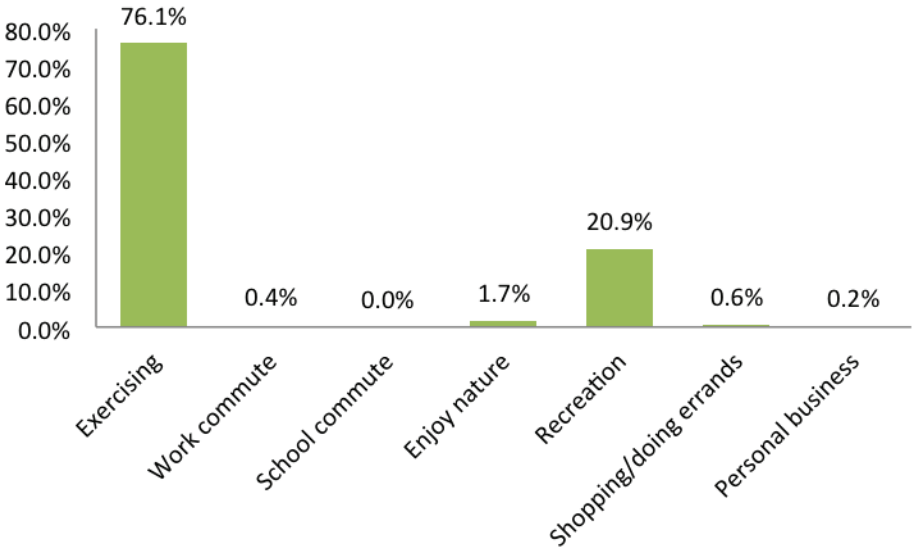


Figure 2.12 Online Survey: Why do you use the Silver Comet Trail (check all that apply)?

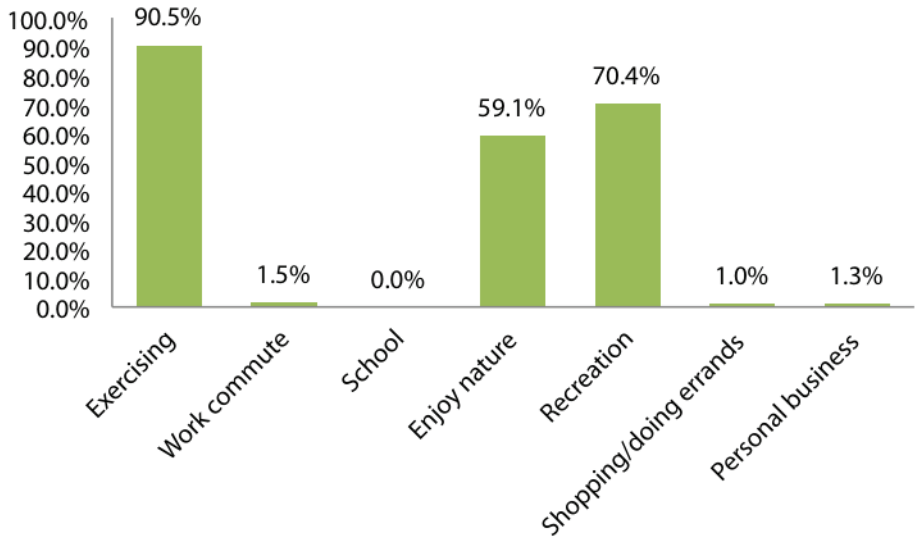
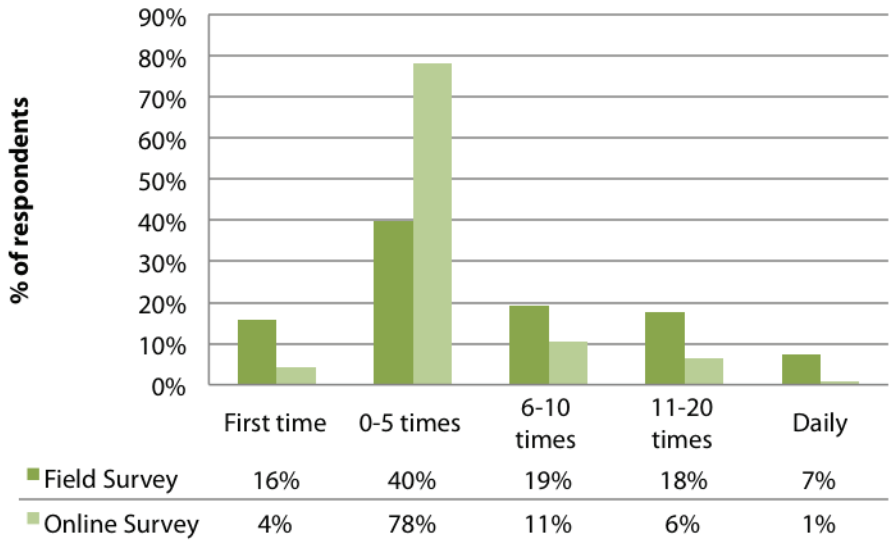


Figure 2.13 In the past month, about how often have you used the trail?



The results from the online survey reflected similar sentiments. The majority of people completing the online survey said they use the trail for some type of recreational purpose. The main reasons for using the trail included exercising, enjoying nature and recreation. Very few people said they use the trail for commuting or other non-recreational trips.

How often do people use the trail?

Figure 2.13 shows how often people used the trail in the past month. The questions were asked in March in the field and online from February to March of 2013. The question asked of field and online survey participants was 'In the past month, about how often have you used the trail? The survey results show that for those that use the trail, they use it often. **The field survey results show that 40% of respondents use the trail**

Figure 2.14 What time of year do people use the trail?

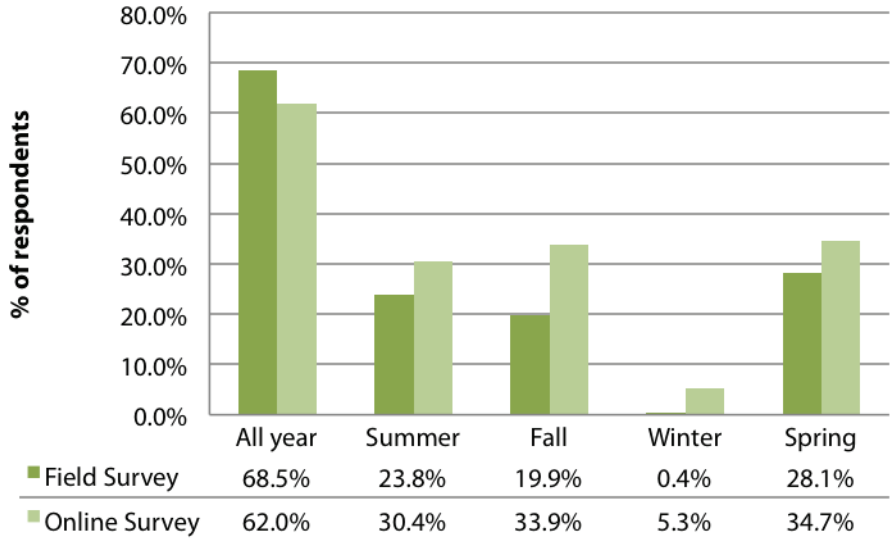
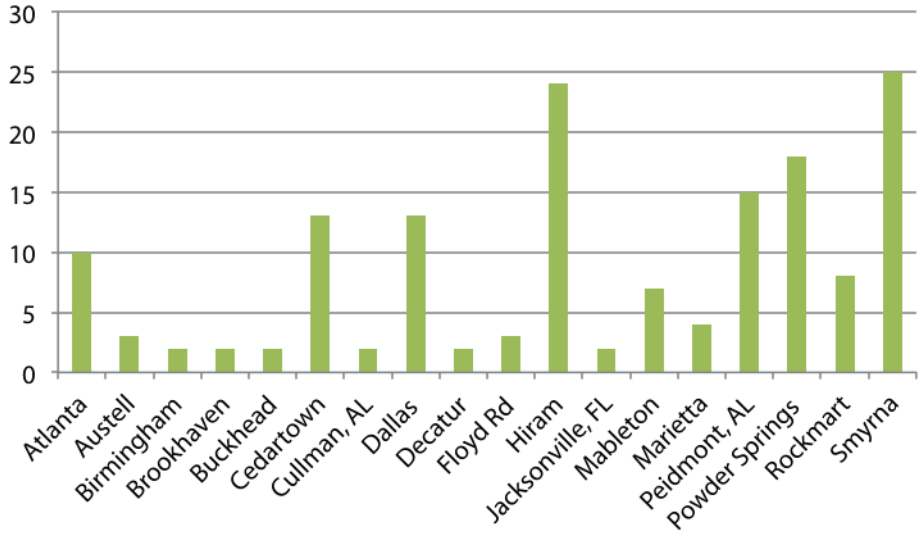


Figure 2.15 Trip Origins listed two or more times by field survey participants



0-5 times a month and 44% of respondents use the trail 6 or more times a month. The majority of online respondents (78%), use the trail 0-5 times a month and 18% of respondents use the trail 6 or more times a month.

What time of year do people use the trail?

Figure 2.14 shows what time of year people use the trail. Field and online survey participants were asked 'Please check the seasons in which you use the trail (check all that apply).' Of all the people surveyed, the majority use the trail year round (62.0% and 68.5% respectively for online and field surveys). **By season, use appears to be general consistent during the summer, fall and spring.** Winter is the one season where use drops significantly.

How far do people travel along the trail and how much time do people spend on the trail?

Table 2.6 shows how far people travel along the trail and how much time they spend on the trail. Field survey participants were asked "What is the total length of this trip (start to finish)?" People responded by giving any of the following: distance (in miles), time (in minutes), origin (city), and/or destination (city). On average, people spend 96 minutes on the trail and travel 21 miles. The median time and distance is 60 minutes and 12 miles respectively. **The most frequent trip origin cities provided were Smyrna and Hiram.** The most frequent destination cities provided were Cedartown and Rockmart.

Table 2.6 Trip distance and trip time along the trail.

	MEDIAN	MEAN	MINIMUM	MAXIMUM
Trip Distance (in miles)	12	21	0.5	145
Trip Time (in minutes)	60	96	8.5	540

Do people use public transit to access the trail?

Figure 2.17 shows the response people gave when asked specifically about using public transit to access the trail. Field survey participants were asked 'Will any part of this trip be taken on public transit?' and online survey participants were asked 'Do you ever use public transit to get to the Silver Comet Trail?' Responses to both questions show that only **1 – 2% of trail users access the trail by using public transi**t.

What are the reasons people use the trail?

Figure 2.18 shows the reasons people chose to use the trail as opposed to somewhere else. Field survey participants were asked 'Why are you using the trail as opposed to somewhere else (Please select all that apply)?' and online survey participants were asked 'Why do you use the Silver Comet Trail as opposed to somewhere else?' **The primary reason people use the trail are because it is accessible/close, lower traffic volumes and**

Figure 2.17 Do people use public transit to access the trail?

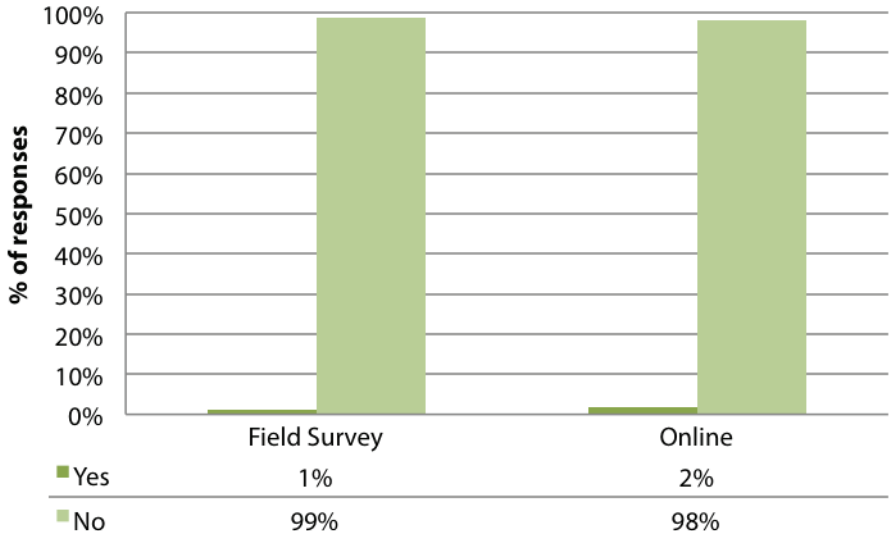


Figure 2.18 Reasons people use the trail as opposed to somewhere else.

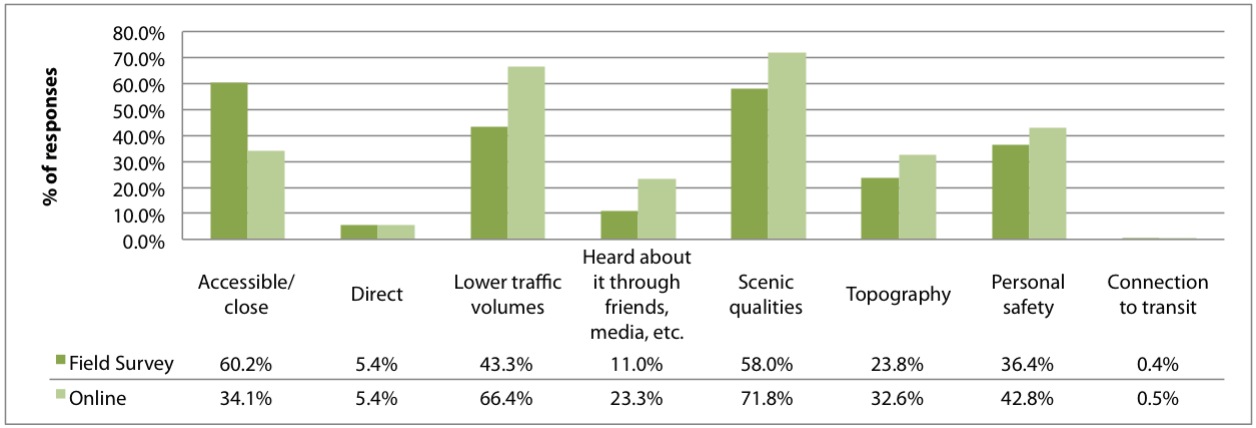


Figure 2.19 What improvements do people want to see along the trail?

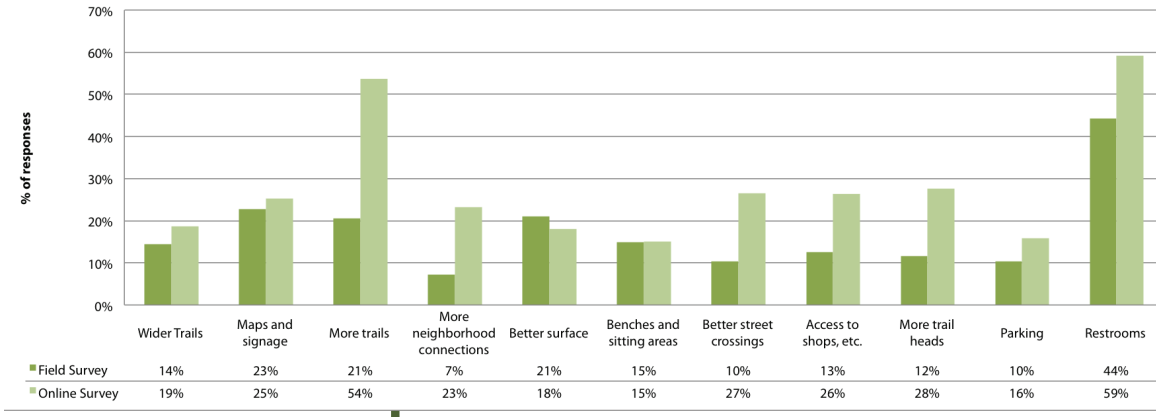
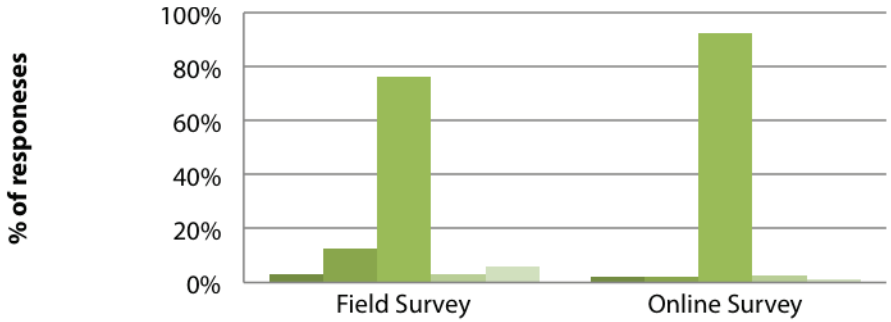


Figure 2.20 What is the ethnicity of people using the trail?



	Field Survey	Online Survey
Hispanic/Latino	3%	2%
African American	13%	2%
Anglo/Caucasian	77%	92%
Asian	3%	2%
Other	6%	1%

the scenic qualities. The directness of the trail to destinations and connection to transit had the lowest response rates.

What improvements do people want to see along the trail?

Figure 2.19 shows what improvements people would like to see along the trail. Field and online survey participants were asked 'What would you like to see improved along the Silver Comet Trail (Please check all that apply)?' **The highest priority improvement is restrooms**, however it is not clear whether their response means more restrooms, better restrooms, or both. Other higher priority improvements include maps and signage, better surface and wider trails.

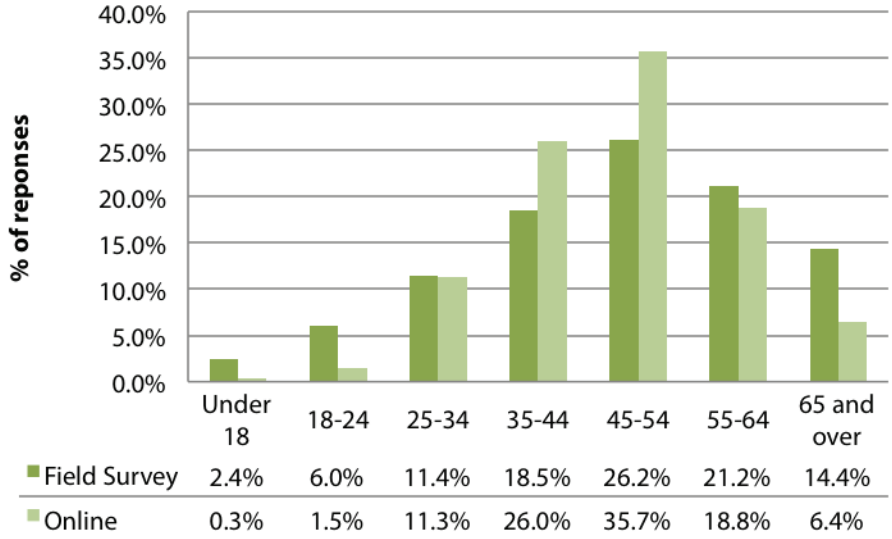
What is the ethnicity of people using the trail?

Figure 2.20 shows the ethnicity of people using the trail. Field and online survey respondents were asked 'What ethnic group do you belong to?' Both the field and online surveys show that the majority of trail users are anglo/Caucasian. However what is interesting is the difference is responses for other ethnic groups. The field surveys show that **non-anglo/Caucasian ethnic groups have a greater distribution and share** of all users of the trail than what the online survey suggests.

What is the age of people using the trail?

Figure 2.21 shows the age distribution of people using the trail. Field and online survey participants were asked 'What is your age group?' Both the surveys have a similar distribution of responses with the **majority of people indicating they are between the age of 35-64.** The field survey, however, shows that there are likely more people under the age of 24 and over the age of 65 that use the trail.

Figure 2.21 Age of trail users



CASE STUDY

Marin County Parks Preserve Trail Census and Survey

This study was drafted in 2011 for the Marin County Department of Parks to determine who its trail users are, when and how often users visit the trails, and their trail attitudes, preferences, and experiences.

The trail study found that an estimated 2.8 million to 3.7 million people visit the Marin County Parks trails every year. Approximately 76% of trail users are pedestrians, compared to 23% bicyclists. The most popular preserves in terms of visitor activity were Baltimore Canyon, Blithedale Summit, and Camino Alto. The study also determined how people travel to the preserves; the majority (69%) arrived by driving or carpooling, while 22% arrived by walking. The survey found that visitor experiences with and opinions of the trails were positive overall: 97% reported good to great trail conditions, 76% reported good to great maps and signs, and 94% reported good to great trail interactions. This study provides a good model for how an agency can use a trail census and survey to inform the planning process by determining what aspects of the trail system are working well, what aspects need improvement, and how they can better serve the needs of visitors.

Figure 2.22 Survey respondent reported household income

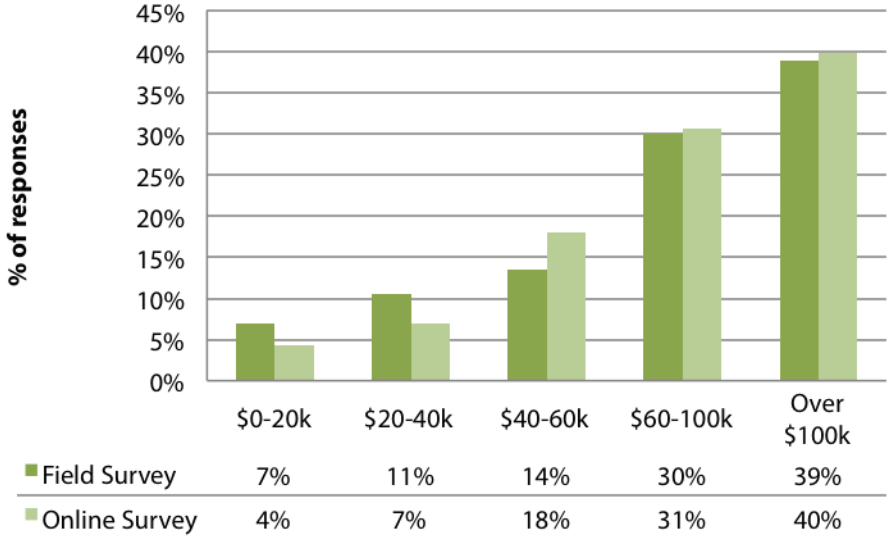
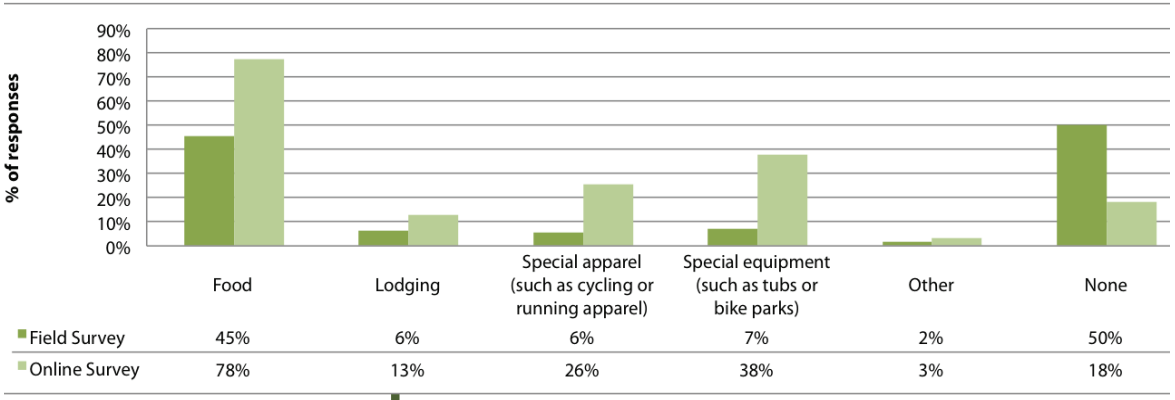


Figure 2.23 What do people buy when they use the trail?



What is the household income of people using the trail?

Figure 2.22 shows the household income of survey participants. Field and online survey participants were asked 'What is your household income?' The **majority of survey respondents (approximately 70%) have a household income greater than $60,000.**

What do people buy when they use the trail?

Figure 2.23 shows what people spend money on when they use the trail. Field survey participants were asked 'Do you anticipate spending money on any of the following categories during this trip (check all that apply)?' and online survey participants were asked 'Do you ever spend money on any of the following categories during a trip along the Silver Comet Trail (check all that apply)?' Field surveys show that the **majority of people either do not spend money or they spend money of food**. Online surveys indicate that the majority of people spend money on food or special equipment.

How much do people spend, on average, during a trip?

Figure 2.24 shows how much people typically spend during a trip. Field survey participants were asked 'If you do anticipate spending money, what do you estimate your party's overall spending to be during this trip?' and online survey participants were asked 'If you do spend money during a trip, what do you estimate your average spending to be during a typical trip?' The **majority of respondents (79% and 83% respectively for field and online survey responses) said they spend between $0 and $50 during a trip.**

Figure 2.24 How much do people spend, on average, during a trip?

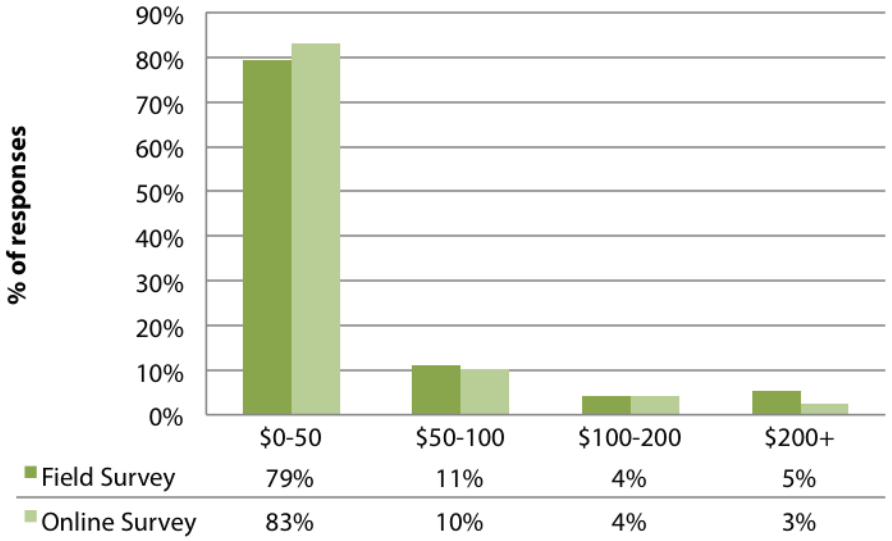


Figure 2.25 Are people visiting from out of town?

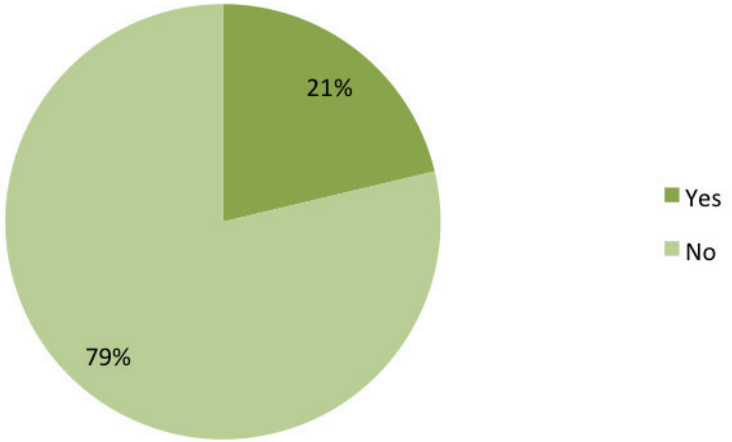
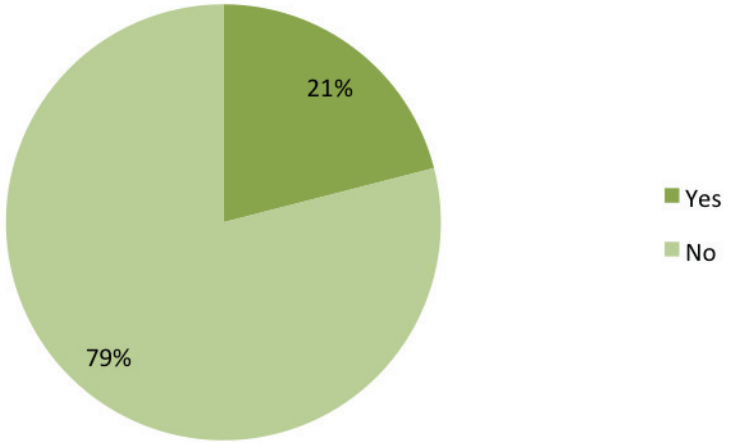


Figure 2.26 Do you ever stay overnight when using the trail?



Do out of town visitors use the trail?

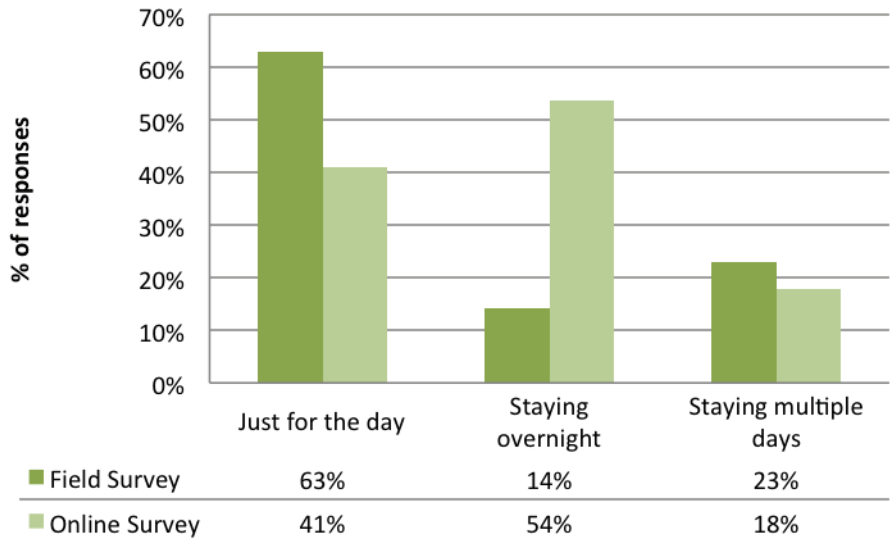
Figure 2.25 shows whether people visit from out of town. Field survey participants were asked 'Are you visiting from out of town?' **21% of respondents said they were visiting from out of town**.

Figure 2.26 shows whether people using the trail ever stay overnight when they do. Online survey participants were asked 'Do you ever stay overnight when using the Silver Comet Trail?' **21% of respondents said they stay overnight when using the trail.**

Figure 2.27 shows whether people stay overnight or just visit for the day when they are visiting from out of town. Field survey participants were asked 'If you are visiting

from out of town, how many days will you be in town?' and online survey participants were asked 'If you do stay overnight, how many days do you spend traveling along the trail (check all that apply)? ' Of the people that are visiting the trail that took a field survey, the **majority (63%) were just visiting for the day. However, there is also a sizeable group of visitors that stay overnight (14%) or stay multiple days (23%).**

Figure 2.27 How long do people stay when visiting?



For people visiting, what is the purpose of their trip?

Figure 2.28 shows the purpose of visitors' trip. Field survey participants were asked 'If you are visiting from out of town, was this trip just to use the trail or did you plan to do other things as well?' and online survey participants were asked 'If you do stay overnight near the trail, do you just use the trail or do you do other things as well?' The majority of respondents said they just use the trail. This response, combined with the response from Figure 2.25 indicates that **the majority of visitors are just visiting for the day and that many of the visitors are traveling from within the region to use the trail.**

For people stay overnight when visiting the trail, where do they stay?

Figure 2.29 shows where people stay when visiting and using the trail. Field survey participants were asked 'If you are staying overnight, where are you staying?' and online survey participants were asked 'If you stay overnight when using the trail, where do you stay?' **The majority of field survey participants were are visiting and staying overnight stay at a hotel**.

Figure 2.28 Purpose of trip for people visiting from out of town

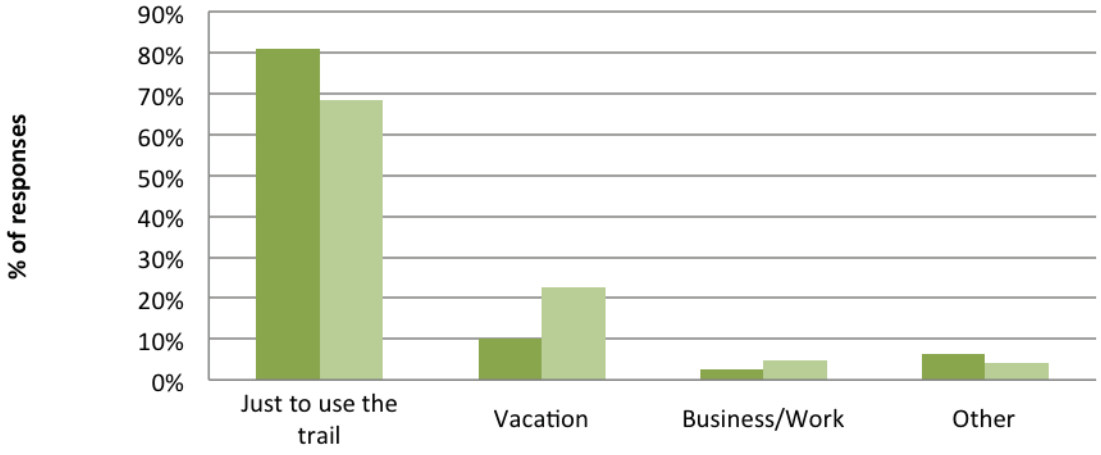
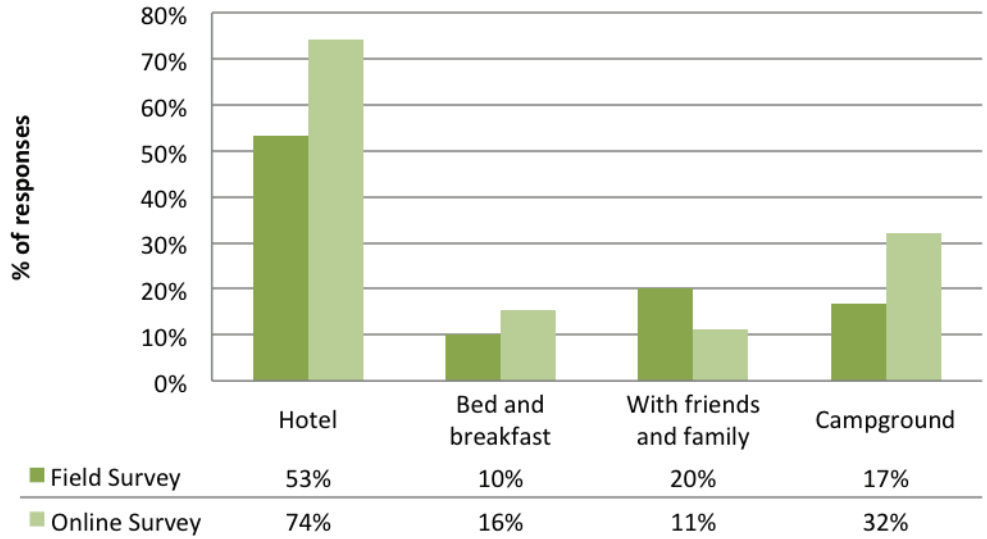


Figure 2.29 Where do people stay when visiting the trail?




Dillard Street
Trail Connector
Historic
Downtown
Library

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Economic Impact Summary

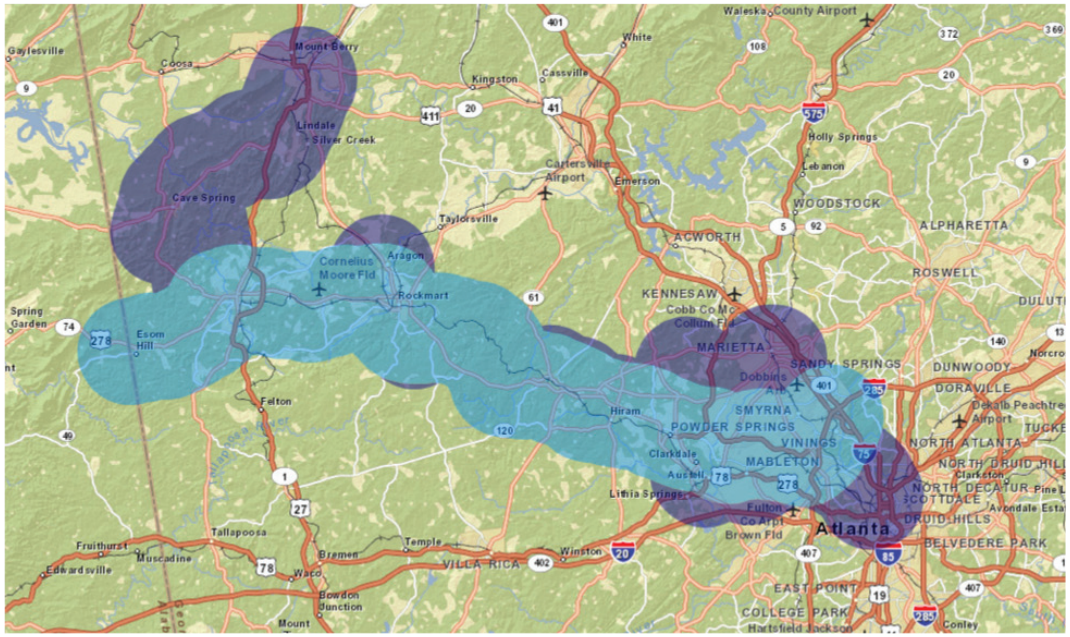
Introduction And Overview

Our economics expert, Econsult Solutions, calculated the economic impacts from spending from local and non-local visitors on durable and non-durable goods by extrapolating from previous studies done by others in the field as well as previous work done by Econsult Solutions. Data was drawn from reliable outside sources that provided information on retail consumption by NAICS code as compiled from the US Bureau of Labor Statistics' Consumer Expenditure Survey (e.g. ESRI).

The Northwest Georgia Regional Commission (NWGRC) is exploring the expansion of the Silver Comet Trail (see Figure 3.1). This expansion will increase the trail by over 66 miles, consisting of roughly 27 miles of improvements and expansions on the Northwest portion of the trail, 7 miles along the central part of the trail, and 32 miles on the western portion of the trail. This will increase the Silver Comet Trail by 108 percent, and will double the number of people living within four miles of the Silver Comet Trail (see Table 3.1). Such an expansion is intended to increase trail usage, improve regional connectivity, and strengthen the recreational amenity for residents and visitors alike.

In determining whether and how to pursue expanding the Silver Comet Trail network, it is useful to consider the many economic benefits that will confer to residents, local merchants, and the State of Georgia as a whole. Recreational amenities such as rail-trails are increasingly seen as regional economic development tools, even if their economic impacts are difficult to quantify.

Figure 3.1 – Silver Comet Trail Current Location and Proposed Expansion
(Blue = 4-Mile Buffer around Current Trail, Purple = 4-Mile Buffer around Proposed Expansion)



Source: ESRI (2013), Econsult Solutions, Inc. (2013)

Table 3.1 – Residential Population Located within Four Miles of the Silver Comet Trail

	Within 4 mi. of Existing Trail	Within 4 mi. of Expanded Trail	Within Project Service Area	Within the State of Georgia
Population	**411,742**	**808,237 (96% more)**	**869,172**	**9,774,937**
Households	**160,641**	**326,379 (103% more)**	**316,429**	**3,618,481**

Source: US Census Bureau (2010), Econsult Solutions, Inc. (2013)

The purpose of this chapter is to examine, identify, and quantify the many economic benefits associated with the Silver Comet Trail in its current form as well as in its expanded form. Economic benefit categories include the following:

1. **Direct Activity** – As a recreational amenity, its direct use results in related spending by users, which benefits local merchants.
2. **Tourism Activity** – While many of those direct users are local residents, some

are visitors, who inject additional spending into the State in travel-related expenditure categories such as accommodations, food, and entertainment.

3. **Spillover Impacts** – Together, these infusions of direct spending in turn generating spillover impacts throughout the State, as merchants ramp up their operations in response to new demand and as employees spend a portion of their earnings within their local economies.
4. **Unmet Demand** – This new demand provides a catalyst for business formation and attraction, as unmet demand is absorbed by new and relocating merchants.
5. **Fiscal Impacts** – These economic expansions also grow various tax bases, which produces additional tax revenues for the State.
6. **Property Value Impacts** – The trail itself is a positive amenity that people are willing to pay a premium to have in close proximity, resulting in higher property values for residents and higher property tax revenues for local municipalities and school districts.
7. **New Development** – Some of the increase in value associated with areas near the amenity motivates not only higher property values for existing homes but also the addition of new homes, further increasing an area's property tax base.
8. **Employer and Employee Attraction** – In addition to drawing in out-of-state visitors and serving in-state residents, the Silver Comet Trail has a similar attraction and retention effect on employers and employees, resulting in increased commercial activity within the State.
9. **Mobility** – The additional mobility conferred to the State by the amenity increases the number of non-automobile trips that are taken, with

Trail users are willing to pay a premium to be in close proximity to the Silver Comet Trail.

time, environmental, and economic gains for all.

10. **Direct Use and Health Benefits** – The existence of the amenity results in direct use benefits for users, including positive health outcomes and therefore lower health care costs.
11. **Ecological Services Rendered** – The existence of the amenity also provides valuable ecological services that would otherwise need to be paid for in the open market.

These impact estimates are based on direct survey data, past research, existing literature, and, where necessary, conservative assumptions. Estimates associated with the Silver Comet Trail in its current form represent a retrospective look at what impacts have been and are currently being enjoyed, while estimates associated with the Silver Comet Trail in its expanded form represent a prospective look at what impacts will be enjoyed upon expansion.

Even with the extensive primary and secondary research that went into these analyses, it is impossible to precisely know the magnitude of these various economic impacts, nor is it necessary, since the purpose of these impact estimates is to introduce their existence and their relative level into the broader policy discussion on whether and how to invest in such an amenity. Accordingly, numbers are rounded and should be considered order of magnitude estimates, rather than precise amounts.

The purpose of this chapter is to inform the present discussion on whether and how to expand the Silver Comet Trail. Attention is given to the costs and benefits of expanding the Silver Comet Trail network. Attention is also given to ways in which the Silver Comet Trail's usage and therefore its economic impact can be maximized, through a review of a variety of promotional and organizational best practices.

Table 3.2 – Estimated Usage of the Current Silver Comet Trail, by Major Trailhead

GA/AL State Line	Cedartown Trail Head	Rockmart Trail Head	Rambo Nursery Trail Head	Dallas Trail Head	Hiram Trail Head	Powder Springs	Silver Comet Cycles Trail Head	Smyrna Trail Head	Total # Uses
47,000	25,000	90,000	192,000	203,000	270,000	277,000	350,000	434,000	1,888,000

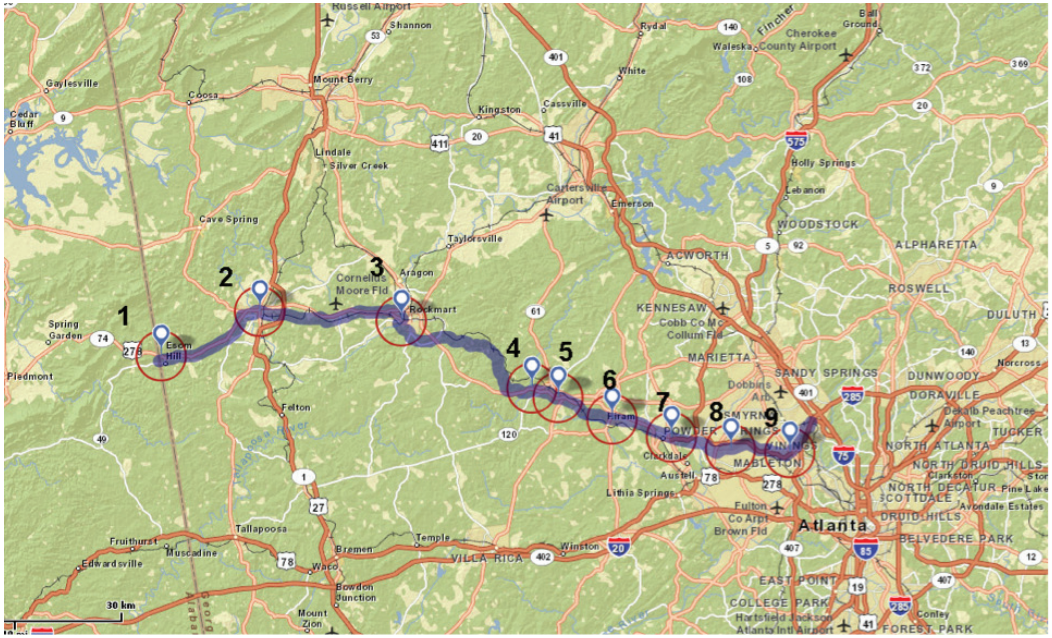
Source: Alta Planning + Design (2013), Econsult Solutions, Inc. (2013)

Table 3.3 – Estimated Recreational Usage Patterns of Residents Living within Four Miles of the Current Silver Comet Trail, by Recreational Activity

Activity	% of Population That Participates	Total # Users	Avg # Uses/Yr	Total # Uses
Backpacking/Hiking	10.6%	44,000	46	2M
Bicycling (Mountain)	4.2%	17,000	35	1M
Bicycling (Road)	11.2%	46,000	35	2M
Jogging/Running	11.5%	47,000	82	4M
Walking for Exercise	31.3%	129,000	68	9M
Total				**17M**

Source: Georgia Department of Natural Resources (2011), US Census Bureau (2012), Econsult Solutions, Inc. (2013); M=million

Figure 3.1 Numbering of Selected Trailheads of the Current Silver Comet Trail



Source: Econsult Solutions, Inc. (2013)

Direct Activity

Overview

As a recreational amenity, the Silver Comet Trail attracts significant usage, which in turns stimulates the State economy as users make purchases before, during, and after their enjoyment of this amenity. The following pages explore the scale and composition of spending within the State associated with the existence of the Silver Comet Trail, and their total economic and fiscal impact, net of the many spillover effects that result from that spending. This section focuses on direct usage of the Silver Comet Trail and attendant spending associated with that usage.

Current Trail Usage

Primary research conducted during the Trail Usage Evaluation indicates that the **Silver Comet Trail likely currently generates at least**

1.9 million uses each year (see Table 3.2 and Figure 3.1). This estimate is corroborated by secondary research conducted by Econsult Solutions, Inc. on the recreational profile of the population living within a 4-mile radius of the Silver Comet Trail, which suggests that this group of over 400,000 people participate in an aggregate 17 million recreational uses per year (see Table 3.3).[1] Hence, an estimated 1.9 million uses, which includes uses by non-residents (i.e. visitors), would seem to represent a reasonably low capture rate of recreational usage by nearby residents, and in fact these figures may suggest that the estimate of 1.9 million uses is too low.

[1] *Specifically, US Census Bureau data and Statewide Comprehensive Outdoor Recreation Plan data were used to develop a profile of recreational activity for the population located within four miles of the Silver Comet Trail.*

Future Trail Usage

It is unknown exactly how much more use the Silver Comet Trail will generate once it is expanded. One can very easily argue that if the expansion doubles the number of people living within four miles of the Silver Comet Trail, it will similarly double usage of the Silver Comet Trail. Recreational amenities tend to be enjoyed by people who have easy access to them, and since the introduction of recreational amenities to areas that did not previously have them tends to result in their being used by residents who now have easy access to them. In fact, one can make a defensible argument that **usage will increase by even more, since oftentimes regional trails result in an exponential increase in usage as greater connectivity leads to even more and longer usage than what the sum of multiple individual links might indicate**.

Table 3.4 – Estimated Usage of the Silver Comet Trail in its Current and Expanded Form

Estimated Current Uses	% Increase from Expansion	Estimated Future Uses
1.89M	50%	2.83M

Source: Alta Planning + Design (2013), Econsult Solutions, Inc. (2013)

Table 3.5 – Estimated Per-Party Spending for Users of the Silver Comet Trail

Spending Per Party	$0-$50	$50-$100	$100-$200	$200+	Weighted Average
% Responses	79%	11%	4%	5%	$49

Source: Alta Planning + Design (2013), Econsult Solutions, Inc. (2013). For weighted average, midpoints were assumed for each spending range, and $300 was assumed for the $200+ spending range.

To be conservative, it is assumed that the expansion of the Silver Comet Trail will increase usage by 50 percent. This is half of what would be estimated if an increase proportionate to the number of nearby households was used, and is roughly proportionate to the proposed mileage increase in the Silver Comet Trail. Based on this conservative assumption, **usage of the expanded Silver Comet Trail will be about 2.8 million uses per year** (see Table 3.4).

Direct Spending

Primary research conducted during the Trail Usage Evaluation indicates that the average per-party spending for users of the Silver Comet Trail is about $50 (see Table 3.5). This is in line with research on other trails similar to the Silver Comet Trail, and represents a small fraction of the estimated total recreational spending by people living near the Silver Comet Trail (see Table 3.6)[2].

Assuming an average party size of two and only one activity per trip, this suggests **aggregate spending associated with the current Silver Comet Trail of about $47 million** (1.9 million uses x 1 use/trip x 2 people/party x $50/party = $47 million) and **aggregate spending associated with the expanded Silver Comet Trail of about $71 million** (2.8 million uses x 1 use/trip x 2 people/party x $50/party = $71 million) (see Table 3.7).

[2]For example, Marcouiller et al (2002) estimated $25 per visit day for local visitors and $53 per visit day for non-local visitors within the State of Wisconsin, while Carleyolsen et al (2006) estimated an average of $43 per user trip for a variety of uses across studies in Canada and the US.

Table 3.6 – Estimated Annual Recreational Spending by Residents Living within Four Miles of the Current Silver Comet Trail, for Selected Recreational Categories

Recreational Category	Within 4 mi. of Existing Silver Comet Trail	Within 4 mi. of Expanded Silver Comet Trail	Within Project Study Area	Within the State of Georgia
Bicycles	$20	$20	$13	$18
Camp Fees	$25	$24	$19	$24
Camping Equipment	$6	$6	$5	$6
Fees for Recreational Lessons	$128	$122	$84	$114
Food and Drink on Trips	$431	$394	$312	$382
Sports, Recreation and Exercise Equipment	$140	$134	$115	$135

Source: ESRI (2013), Econsult Solutions, Inc. (2013)

Table 3.7 – Estimated Aggregate Spending from Users of the Silver Comet Trail in its Current and Expanded Form

Trail	Estimated # Uses	Uses/Trip	People/Party	Estimated Spending per Party	Estimated Aggregate Spending
Current	**1.88M**	**1**	**2**	**$50**	**$47M**
Expanded	**2.83M**	**1**	**2**	**$50**	**$71M**

Source: Alta Planning + Design (2013), Econsult Solutions, Inc. (2013)

Tourism Activity

Overview

A meaningful proportion of the usage and spending estimated in the previous section comes from visitors. Their spending profile includes not only spending related to their usage of the Silver Comet Trail but spending in other travel-related categories, such as accommodations, food, and entertainment. This too represents an economic boost for the State and a reason to invest in the Silver Comet Trail and in its expansion.

Tourism Component of Usage

Primary research conducted during the Trail Usage Evaluation indicates that about 21 percent of users of the Silver Comet Trail come from outside of Georgia. This seems reasonable, given that a 150-mile radius from the Silver Comet Trail (i.e. a 2 ½ hour drive) reaches into population centers in Alabama, North Carolina, and Tennessee and captures an overall population of about 15 million, of which half are located outside of the State of Georgia (see Table 3.8 and Figure 3.2). This suggests that **out-of-state visitors represent about 400,000 out of the 1.9 million current uses of the Silver Comet Trail and about 600,000 out of the 2.8 million future uses of the expanded Silver Comet Trail** (see Table 3.9).

Tourism Spending

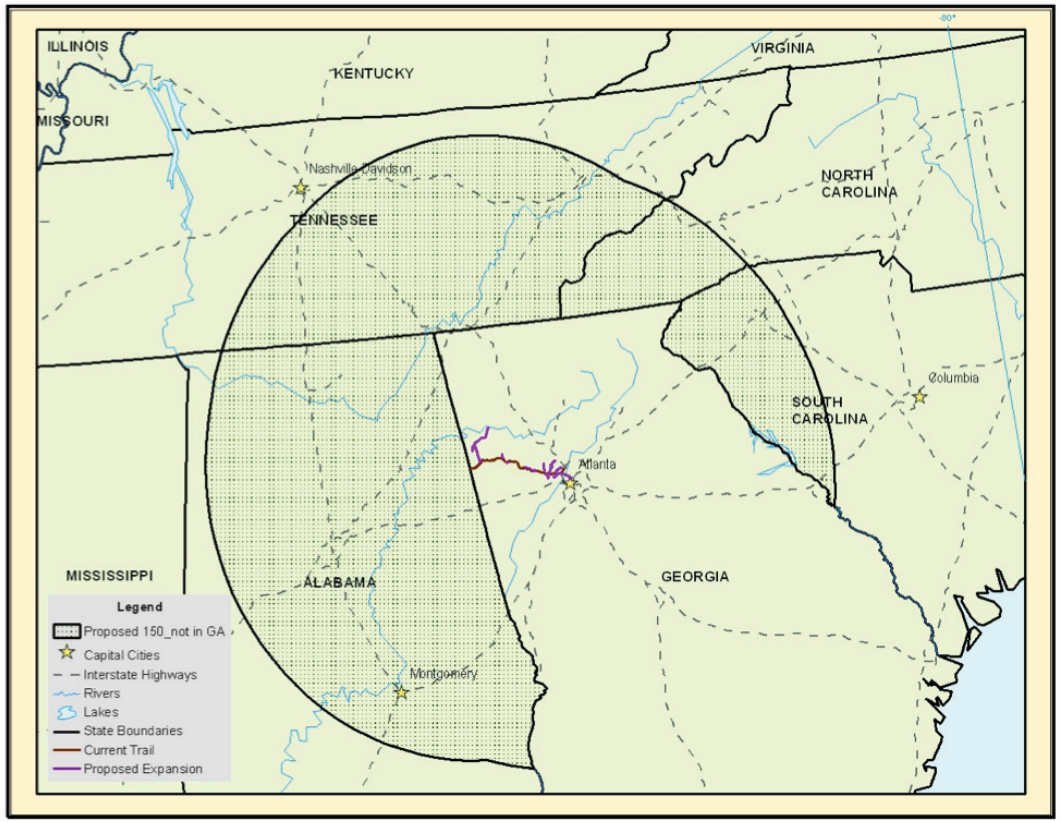
Out-of-state visitors are likely to have a spending profile that is fundamentally different from that of residents. First, if they are

Table 3.8 – Population within a 150-Mile Buffer of the Silver Comet Trail in its Current and Expanded Form

	Current	Expanded	Total	# Outside of GA	% Outside of GA
Population	14.98M	0.54M	15.53M	7.40M	48%
Households	5.72M	0.20M	5.93M	2.93M	49%
Housing Units	6.54M	0.23M	6.77M	3.36M	50%

Source: US Census (2010), Econsult Solutions, Inc. (2013)

Figure 3.2 150-Mile Radius from Current and Expanded Silver Comet Trail



Source: : ESRI (2013), Econsult Solutions, Inc. (2013)

Table 3.9 – Out-of-State Visitor Component of the Estimated Aggregate Annual Uses of the Silver Comet Trail in its Current and Expanded Form

Trail	Estimated # Uses	% Out-of-State Tourists	Estimated # Uses by Residents	Estimated # Uses by Out-of-State Tourists
Current	**1.88M**	**21%**	**1.49**	**0.39**
Expanded	**2.83M**	**21%**	**2.24**	**0.59**

Source: Alta Planning + Design (2013), Econsult Solutions, Inc. (2013)

Table 3.10 – Estimated Per-Day Spending by Visitors to Georgia

Trail	# Visitors	Aggregate Spending	Per-Day Spending	% of All Visitors
In-State	38.9M	$4.01B	$103	26%
Out-of-State	109.5M	$11.93B	$109	74%
Day Trip	30.9M	$1.70B	$55	21%
Overnight	116.7M	$14.24B	$122	79%
Total	**147.6M**	**$15.94B**	**$108**	**100%**

Source: US Travel Association (2012), Georgia Department of Tourism (2012), Econsult Solutions, Inc. (2013)

Table 3.11 – Estimated Aggregate Spending from Users of the Silver Comet Trail in its Current and Expanded Form, Including Tourism Spending by Out-of-Town Visitors

Current	# Uses	People/Party	Recreational Spending per Party	Tourism Spending per Party	Estimated Aggregate Spending
Residents	1.49M	2	$50	$0	$37M
Tourists	0.39M	2	$50	$50	$20M
Total	**1.88M**				**$57M**
Expanded	**# Uses**	**People/Party**	**Recreational Spending per Party**	**Tourism Spending per Party**	**Estimated Aggregate Spending**
Residents	2.24M	2	$50	$0	$56
Tourists	0.59M	2	$50	$50	$30
Total	**2.83M**				**$86**

Source: Alta Planning + Design (2013), Econsult Solutions, Inc. (2013)

traveling from farther away, they are more likely to make purchases on recreational amenities before, during, and after their use of the Silver Comet Trail. Second, they incur additional spending related to their visit, including higher outlays on transportation and food and potentially (for overnight stays) outlays on accommodations.

It is conservatively assumed that out-of-state visitors represent an additional $50 in spending per day per party (for a total of $100 per day per party: $50 on recreation before, during, and after usage of the Silver Comet Trail, and $50 on all other spending). As a point of reference, statewide it is estimated that visitors to Georgia spend over $100 per day ($55 for day visitors and $122 for overnight visitors) (see Table 3.10). This means that **out-of-state visitors to the current Silver Comet Trail are responsible for an additional $20 million per year within the State, and that out-of-state visitors to the expanded Silver Comet Trail will be responsible for an additional $30 million per year within the State** (see Table 3.11). Hence, **recreational and tourism spending combined represent $57 million now from the current Silver Comet Trail and $86 million in the future from the expanded Silver Comet Trail** (see Table 3.12).

Spillover Impacts

Overview

The Silver Comet Trail is responsible for a

Table 3.12 – Estimated Aggregate Spending from Users of the Silver Comet Trail in its Current and Expanded Form, Including Tourism Spending by Out-of-Town Visitors

Current	Estimated Aggregate Recreational Spending	Estimated Aggregate Tourism Spending	Estimated Aggregate Spending
Residents	$37	$0	$37M
Tourists	$10	$10	$20M
Total	**$47**	**$10**	**$57M**
Expanded	**Estimated Aggregate Recreational Spending**	**Estimated Aggregate Tourism Spending**	**Estimated Aggregate Spending**
Residents	$56	$0	$56M
Tourists	$15	$15	$30M
Total	**$71**	**$15**	**$86M**

Source: Alta Planning + Design (2013), Econsult Solutions, Inc. (2013)

considerable amount of direct spending, in the form of recreational spending that takes place before, during, and after use of the Silver Comet Trail, as well as in the form of tourism spending that is drawn into the State by the existence of the Silver Comet Trail. These direct expenditures in turn generate spillover economic effects, as merchants ramp up their operations in response to new demand and as employees spend a portion of their earnings within their local economies. As a result, additional jobs are supported and additional industries are benefitted.

Economic Impact Methodology

Economic activity generated by the Silver Comet Trail, in the form of recreational spending and out-of-state visitor spending, in turn produces two kinds of spillover effects. First, locally sourced materials generate increased business activity for local vendors, who in turn ramp up their activities and their own sourcing; this is known as the indirect effect. Second, workers earn wages and in turn spend a portion of their earnings within their local economies; this is known as the induced effect. The composition and scale of these spillover effects can be modeled using Regional Input-Output Modeling System (RIMS II) multiplier data provided by the US Department of Commerce Bureau of Economic Analysis.

In this way, one can model the total economic impact generated by the Silver Comet Trail. For the purposes of this report, these impacts were sized to the level of the State of Georgia and to the four-county region representing parts of the State that are geographically proximate to the Silver Comet Trail, which includes Polk, Paulding, Cobb, and Fulton counties (referred to as the Region in this report). Direct expenditures generate economic activity that ripples out from the Silver Comet Trail. Since the Region is completely contained within the State, the State economic impact figures include the Region economic impact figures, and the difference between the two represents the amount of economic activity that takes place in the parts of the State outside the Region (See Appendix C for additional detail on Econsult Solutions' economic impact methodology).

Economic Impact from Recreational and Tourism Spending

As estimated above, the Silver Comet Trail is currently responsible for about $57 million in direct spending per year, and will be responsible for about $86 million in direct spending per year once it is expanded. These direct expenditures in turn generate considerable spillover impacts throughout the Region and State:

- In its current form, **the Silver Comet Trail generates about $100 million in total expenditures throughout the Region each year, supporting about 750 jobs and about $20 million in earnings, and generates about $120 million in total expenditures**

Table 3.13 – Estimated Economic Impact from Direct Recreational and Tourist Spending Associated with Current Silver Comet Trail

	Within the Four-County Region	Within the State of Georgia
Direct Expenditures	$57M	$57M
Indirect & Induced Expenditures	$41M	$61M
Total Expenditures	**$98M**	**$118M**
Total Employment (Jobs)	**750**	**1,310**
Total Earnings	**$20M**	**$37M**

Source: US Department of Commerce (2011), Econsult Solutions, Inc. (2013)

Table 3.14 – Estimated Economic Impact from Direct Recreational and Tourist Spending Associated with Expanded Silver Comet Trail

	Within the Four-County Region	Within the State of Georgia
Direct Expenditures	$86M	$86M
Indirect & Induced Expenditures	$62M	$91M
Total Expenditures	**$147M**	**$177M**
Total Employment (Jobs)	**1,130**	**1,980**
Total Earnings	**$30M**	**$55M**

Source: US Department of Commerce (2011), Econsult Solutions, Inc. (2013)

throughout the State each year, supporting about 1,300 jobs and about $37 million in earnings (see Table 3.13).

- In its expanded form, the Silver Comet Trail will **generate about $150 million in total expenditures throughout the Region each year, supporting about 1,100 jobs and about $30 million in earnings, and will generate about $180 million in total expenditures throughout the State each year, supporting about 2,000 jobs and about $55 million in earnings** (see Table 3.14).

Industry Distribution of Economic Impact From Recreational and Tourism Spending

These economic impacts are widely distributed across numerous industries throughout the Region and State. The **retail and food industries see significant impacts from the Silver Comet Trail, but other industries besides those two represent 56 percent of the expenditure impact and 43 percent of the employment impact within the Region, and 61 percent of the expenditure impact and 48 percent of the employment impact within the State** (see Table 3.15).

Table 3.15 – Industry Distribution of Estimated Economic Impact from Direct Recreational and Tourist Spending Associated with the Silver Comet Trail

Expenditure Impact within the Four-County Region	%	Expenditure Impact within the State of Georgia	%
Retail trade	31.1%	Retail trade	27.7%
Food services and drinking places	12.9%	Food services and drinking places	11.3%
Transportation and warehousing	8.2%	Real estate and rental and leasing	8.0%
Arts, entertainment, and recreation	7.0%	Transportation and warehousing	7.6%
Real estate and rental and leasing	6.6%	Finance and insurance	6.1%
All other industries	34.2%	All other industries	39.3%
Employment Impact within the Four-County Region	**%**	**Employment Impact within the State of Georgia**	**%**
Retail trade	36.8%	Retail trade	33.6%
Food services and drinking places	19.9%	Food services and drinking places	17.9%
Transportation and warehousing	9.6%	Transportation and warehousing	11.0%
Arts, entertainment, and recreation	6.3%	Arts, entertainment, and recreation	6.0%
Real estate and rental and leasing	5.0%	Accommodation	4.8%
All other industries	22.5%	All other industries	26.7%

Source: US Department of Commerce (2011), Econsult Solutions, Inc. (2013)

Table 3.16 – Comparison of Supply and Demand for Selected Retail Categories within a Four-Mile Radius of the Current Silver Comet Trail

	Demand	Supply	Gap	# Merchants
Food & Beverage Stores	$769	$676	$93	237
Health & Personal Care Stores	$162	$137	$26	173
Gasoline Stations	$735	$830	($95)	153
Clothing & Clothing Accessories Stores	$195	$132	$63	254
Sporting Goods, Hobby, Book & Music Stores	$52	$48	$4	108
Food Services & Drinking Places	$761	$631	$130	840
Total Retail Trade and Food & Drink	$5,033	$5,216	($183)	**3,033**
Total Retail Trade	$4,272	$4,585	($313)	**2,193**
Total Food & Drink	$761	$631	$130	**840**

Source: ESRI (2013), Econsult Solutions, Inc. (2013)

Unmet Demand

Overview

The extent to which the economic impacts described in the previous section actually accrue to the Region and State depends on the existence of local merchants to meet the demand for various goods and services by users of the Silver Comet Trail. The purpose of this section is to compare what is being demanded by consumers with what is being supplied by merchants, to see where there is unmet demand that therefore represents an opportunity for more localized capture of economic activity.

Leakage Analysis

Leakage analysis is a common tool for discerning unmet demand in a particular geography. By comparing demand, in the form of the consumption patterns of local residents, with supply, in the form of the sales patterns of local merchants, a sense of where demand exceeds supply and where supply exceeds demand can be estimated. By itself, leakage analysis is incomplete. Local residents are free to satisfy their demands through non-local merchants, and local merchants are free to sell to visitors. Leakage analysis does provide some sense of where there might be opportunities for localized capture of economic activity.

A leakage analysis of the four-mile radius along the current Silver Comet Trail suggests particular unmet demand for food and apparel merchants (see Table 3.16):

1. **Demand for food services and drinking places exceeds supply by about $130 million.**
2. **Demand for food and beverage stores exceeds supply by about $90 million.**

Cedartown Depot

3. **Demand for clothing and clothing accessories stores exceeds supply by about $60 million.**

Retail Opportunities Near Trailheads

Trailheads are particularly strategic locations for merchants, since they represent entry and exit points for trail users and are therefore more likely to be places where users will seek out various goods and services. A closer look at nine key trailheads of the Silver Comet Trail indicates a wide disparity in retail penetration at these locations, from only one merchant near the Coot's Lake Beach Trailhead to over 200 at the Silver Comet Connector (see Table 3.17). These trailheads vary widely in amenities such as parking and restrooms, as follows:

- SCC: The Silver Comet Connector is a paved trail that connects the Highland Station shopping center to the start of the Silver Comet Trail at the Mavell Road Trailhead. Along with parking at Highland Station, amenities include a Publix, a bank, various restaurants, bike shops, Starbucks, many retail stores.
- FRT: Floyd Road Trailhead, located at mile marker 4.2, has great amenities including a convenience store, nice restrooms, ample parking, a fountain park, and SCD Cycles, located in the restored Silver Comet Depot.
- PST: Powder Springs Trailhead, located at mile marker 9.5, is a paved trailhead that provides easy access to fast food. Downtown Powder Springs is nearby, and Powder Springs Shopping Center is across the street from the trailhead and has gas stations, grocery stores,

Table 3.17 – Count of Merchants within a Four-Mile Radius of Selected Trailheads of the Silver Comet Trail

	SCC	FRT	PST	HT	CLBT	VWT	RT	NDSC	CD	All 9
Food & Beverage Stores	19	11	7	9	0	5	6	6	19	82
Health & Personal Care Stores	18	16	8	15	0	3	3	3	7	73
Gasoline Stations	6	11	6	7	0	6	6	7	9	58
Clothing & Clothing Accessories Stores	23	15	2	13	0	4	4	4	9	74
Sporting Goods, Hobby, Book & Music Stores	4	10	4	9	0	2	1	1	2	33
Food Services & Drinking Places	74	62	30	57	1	23	26	26	35	334
All Retailers	**236**	**192**	**86**	**175**	**1**	**67**	**72**	**76**	**137**	

Source: ESRI (2013), Econsult Solutions, Inc. (2013). Total does not equal the sum of the rows above it because not all retail categories are shown.

restaurants, and banks.

- HT: Hiram Trailhead, at mile marker 14.7 on the Silver Comet Trail, is in the city of Hiram with nearby shopping including a Walmart, gas stations, grocery stores, restaurants, and banks.
- CLBT: Coot's Lake Beach Trailhead, located at mile marker 33.5, is next to Coot's Lake Beach. In addition to a public swimming pool, there is a nearby convenience store and gas station.
- VWT: Van Wert Trailhead, located at mile marker 36, has a convenience store nearby.
- RT: Rockmart Trailhead, located at mile marker 37.6, marks the start of the combined Riverwalk Park and The Silver Comet Trail that travels through downtown Rockmart. The park is near downtown Rockmart.
- NDSC: Nathan Dean Sports Complex, located at mile marker 38.7, is a sports field. Additionally, there is lots of shopping nearby including restaurants, gas stations, and a Walmart.
- CD: The Cedartown Depot, located at mile marker 51.4, is a replica of the original Seaboard Airline Railway depot. The depot serves as the Cedartown Welcome Center and has a Silver Comet Museum. The depot is staffed during the day, and is a few blocks from historic downtown Cedartown.

It is unknown where the major trailheads will actually occur along expanded sections of

the Silver Comet Trail. A similar inventory and analysis is recommended to identify retail opportunities near future trailheads along the expanded corridor. .

Fiscal Impacts

Overview

In addition to generating economic impacts, the Silver Comet Trail expands various State tax bases, which in turn produces additional tax revenues for the State. These fiscal impacts are an important part of the benefit associated with the Silver Comet Trail and with expanding it in size, for they represent a direct return to the State on its investment.

Fiscal Impact Methodology

Direct expenditures generate economic activity that expands various State tax bases and therefore generates various State tax revenues. These tax revenue increases can be modeled by looking at the extent to which various economic impacts increase various parts of the State economy (see Appendix C for additional detail).

Fiscal Impact from Recreational and Tourism Spending

It is estimated that direct recreational and tourism spending associated with the Silver Comet Trail, in addition to generating significant spillover impacts through the Region and State, also produce meaningful tax revenues for the State each year. Direct recreational and tourism spending associated with the Silver Comet Trail at its current size, plus the spillover impacts that result from that spending, **produce about $3.5 million per year in tax revenues for the State, while in its expanded form, that amount increases to about $5 million per year** (see Table 3.18).

Table 3.18 – Estimated Fiscal Impact from Direct Recreational and Tourist Spending Associated with the Silver Comet Trail

	Current	Expanded
Income Tax Revenues	$1.1M	$1.6M
Sales Tax Revenues	$2.4M	$3.3M
Business Tax Revenues	$0.1M	$0.2M
Total Tax Revenues	**$3.5M**	**$5.1M**

Source: US Department of Commerce (2011), Econsult Solutions, Inc. (2013)

Property Value Impacts

Overview

An important impact of the Silver Comet Trail, which has nothing to do with usage and spending, is the positive effect it has on nearby property values. As a major recreational resource, the Silver Comet Trail represents an amenity people are willing to pay a premium to be located near, even if they themselves do not plan to use it. This bids prices up, increasing property values and thus representing both a wealth gain for homeowners and an increase in the property tax base for municipalities and school districts.

The Positive Property Value Effects of Recreational Amenities

There is an extensive literature associated with the positive property value impacts of recreational amenities such as a trails, parks, and green space. This positive property value impact occurs because people value being near such amenities, and are therefore willing to pay a premium for such proximity. Statistical techniques such as hedonic regression analyses can be used to estimate the incremental impact of proximity to a recreational amenity, controlling for all other explanatory influences (See Appendix C for additional detail). This body of analyses suggests that **proximity to a recreational amenity confers a 4 to 7 percent increase in home values within a quarter-mile** (see Table 3.19).

Table 3.19 – Selected Studies of the Property Value Impact of Trails and Parks on Home Values within a Quarter-Mile

Source	% Impact
A Dynamic Approach to Estimating Hedonic Prices for Environmental Goods: An Application to Open Space Purchase – Riddel (2001)	4%
Quantifying the Economic Value of Protected Open Space in Southeastern Pennsylvania – Econsult Corporation (2010)	7%
The Economic Impact of the Catawba Regional Trail – Campbell and Monroe (2004)	4%
The Economic Impact of the Ecusta Rail-Trail – Econsult Corporation (2012)	4%
The Potential Economic Impacts of the Proposed Carolina Thread Trail – Econsult Corporation (2007)	4%
Valuing the Conversion of Urban Green Space – Econsult Corporation (2010)	7%

Source: Econsult Solutions, Inc. (2013)

The Magnitude of the Positive Property Value Effect of Proximity to the Silver Comet Trail

A direct multivariate regression analysis of the Silver Comet Trail's effects on nearby property values is beyond the scope of this report. However, a low-end estimate of 4 percent for houses within a quarter-mile can be used to calculate an aggregate property value impact figure.

The 4 percent estimate approach is likely conservative for at least three reasons:

1. First, the literature suggests that 4 percent is the low end of the range of positive impacts, so it is possible that the actual impact of the Silver Comet Trail is higher than 4 percent.
2. Second, what is being assumed is a fixed 4 percent increase in property values, which essentially represents a static, one-time influence. In fact it is often the case in analyses like these that the property value impact is not only static and one-time in nature but has an ongoing aspect to it. In other words, proximity to a recreational amenity not only confers nearby houses with a particular property value increase, relative to other houses, but it also results in a higher annual appreciation rate, such that the property value differential grows over time. This is consistent with findings that proximity to green space is valued more highly now than even five to ten years ago.
3. Third, by only considering houses within

Table 3.20 – Aggregate Positive Property Value Impact to Houses Located within a Quarter-Mile of the Silver Comet Trail

	Current	Expanded
Population	16,626	54,453
Housing Units	7,292	25,110
Average House Value in 2012	$137,255	$166,496
Aggregate Home Value	$1.0B	$4.2B
Estimated % Increase Associated within Proximity to the Silver Comet Trail	4%	4%
Aggregate Positive Property Value Impact	**$40M**	**$167M**

Source: ESRI (2013), Econsult Solutions, Inc. (2013)

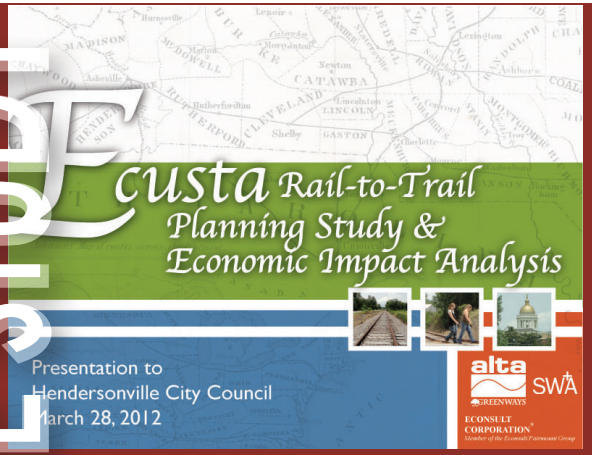
a quarter-mile of a recreational amenity, such an assumption ignores any positive property value impact on houses outside of a quarter-mile. In reality, houses can and do sell at a premium for being "close" to a recreational amenity without being within a quarter-mile of it.

In other words, the magnitude of the positive property value effect of proximity to the Silver Comet Trail is likely to be greater than 4 percent. And, the number of houses for which that positive effect applies is likely to be more than just those within a quarter-mile of the Silver Comet Trail. Nevertheless, to be conservative, these assumptions are used to estimate the aggregate property value impact of the Silver Comet Trail.

The Aggregate Property Value Effect of the Silver Comet Trail

There are about 25,000 houses located within a quarter-mile of the current Silver Comet Trail, and about 46,000 houses located within

CASE STUDY



The Economic Impacts of the Ecusta Rail Trail

This study was conducted for the City of Hendersonville, North Carolina, to determine the feasibility and economic impact of converting an inactive rail corridor into a paved shared-use trail. The corridor is a 20-mile line that connects the City of Hendersonville, Town of Laurel Park, Horseshoe, Etowah, Pisgah National Forest, and the City of Brevard. Trail design, engineering, and construction is estimated to cost $9.9 million ($495,000 per mile), with the total closer to $13.4 million if ancillary facilities such as trailhead parking, wayfinding signage, and roadway crossing improvements are included. In exchange, the economic return on investment for local communities is estimated at a $42 million one-time return from direct and indirect expenditures for construction materials and labor costs, as well as initial property value increases. An additional return of $9.4 million is expected each year due to tax revenues, visitor spending, health care cost savings, property value increases, and direct use value to users. Conservative estimates for tourism impacts estimate that the trail will draw about 20,000 visitors every year, generating a $2 million increase in revenue due to visitor spending. These valuable benefits show the positive economic impact that trail projects can contribute to local communities.

a quarter-mile of the expanded Silver Comet Trail, which means that **even a 4 percent increase in property value represents a significant aggregate increase in household wealth: about $180 million for the current Silver Comet Trail and about $315 million for the expanded Silver Comet Trail** (see Table 3.20). In other words, the **Silver Comet Trail is responsible for about $180 million in increased household wealth, growing to $315 million upon expansion, among owners of houses within a quarter-mile of the Silver Comet Trail.** Said another way, household wealth would decrease by $180 million (or by $315 million, if referring to the expanded Silver Comet Trail) if the Silver Comet Trail were to be removed and replaced by something that had neither a positive nor a negative effect on nearby house values.

The Annual Fiscal Impact From These Positive Property Value Impacts

In addition to generating household wealth, the Silver Comet Trail, in its positive property value impacts, also produces higher property tax revenues for municipalities and school districts. In other words, if properties are accurately assessed, and if the Silver Comet Trail is responsible for increasing the value of properties located within close proximity of it, then it is also responsible for raising the property tax base for localities and thus generating more property tax revenues than if it did not exist. The average effective property tax rate[3] in localities near the Silver

[3] Effective tax rate represents the tax bill divided by the tax base, and is calculated by multiplying the tax rate by the ratio between the assessed value and the market value (also known as the equalization ratio).

Table 3.21 – Aggregate Annual Increase in Property Tax Revenues to Municipalities and School Districts Associated with the Positive Property Value Effect the Silver Comet Trail

	Current	Expanded
Aggregate Positive Property Value Impact	$40M	$167M
Average Effective Property Tax Rate	1.25%	1.25%
Aggregate Increase in Property Tax Revenues	**$0.5M**	**$2.1M**

Source: Econsult Solutions, Inc. (2013)

Table 3.22 - Illustrative Simplified Pro Forma Analysis of a Development Site and of the Meaningful Difference Proximity to the Silver Comet Trail Can Make on Development Feasibility

	Base Scenario	SCT Scenario
Price	$300,000	$312,000
Quantity	50	50
Total Revenue	$15,000,000	$15,600,000
SF/Unit	2,500	2,500
$/SF	$100	$100
Variable Costs	$12,500,000	$12,500,000
Fixed Costs	$1,000,000	$1,000,000
Profit (Loss)	**$1,500,000**	**$2,100,000**
As a % of Costs	**11%**	**16%**
Go/NoGo @ 15%	**No**	**Yes**

Source: Econsult Solutions, Inc. (2013)

Comet Trail is about 1.25 percent, so the estimated **aggregate positive property value impact of the Silver Comet Trail in turn yields about $2 million more per year in property taxes now, growing to $4 million more after expansion** (see Table 3.20).

New Development

Overview

Some of the value of proximity to the Silver Comet Trail is reflected in higher values for existing properties. Other values are reflected in higher interest in new development on vacant parcels. This section explores the extent to which the Silver Comet Trail can catalyze new development, which has the positive effect of replacing vacant parcels with productive parcels, reducing blight and growing local property tax bases.

Development Opportunities

New development happens when development opportunities present themselves such that they offer a return on

investment higher than alternative uses of capital. The Silver Comet Trail, by conferring additional value to nearby locations, has the effect of converting some development sites from unattractive to attractive. It does so by increasing the return on investment on those sites, by increasing the price a site can be sold for without having any effect on the cost that must be borne to develop the site.

Specifically, it was conservatively estimated that proximity to the Silver Comet Trail confers a 4 percent increase in house values, relative to other houses not proximate to the Silver Comet Trail. This 4 percent difference, while it may seem small, can on the margins have an effect on whether a development site is worth pursuing. Some development sites are already attractive and will get advanced, while other development sites are so

Table 3.23 - Positive Impact Associated with Development of Vacant Housing Units within a Half-Mile of the Current Silver Comet Trail

% Built Out Scenario	10%	20%	30%
# New Units	77.5	155	232.5
Aggregate Increase in Market Value	$14M	$28M	$41M
Annual Increase in Property Tax Revenues	$0.19M	$0.34M	$0.53M

Source: Econsult Solutions, Inc. (2013)

Table 5.3 Positive Impact Associated with Development of Vacant Housing Units within a Half-Mile of the Expanded Silver Comet Trail

% Built Out Scenario	10%	20%	30%
# New Units	310	620	930
Aggregate Increase in Market Value	$53M	$105M	$158M
Annual Increase in Property Tax Revenues	$0.65M	$1.29M	$1.99M

Source: Econsult Solutions, Inc. (2013)

unattractive that the 4 percent increase will not make them attractive. However, for some development sites, even that small increase will prove the difference between "go" and "no go" (see Table 3.22).

There are currently about 775 vacant housing units within a quarter-mile of the current Silver Comet Trail, and about 3,100 vacant housing units within a quarter-mile of the expanded Silver Comet Trail. If even a fraction of these sites get developed into new housing units because of investment in the Silver Comet Trail, that will represent a significant increase in the aggregate market value of housing and also in the annual property tax revenues generated to localities (see Table 3.23 and Table 3.24).

Additional Benefits

Overview

In addition to the spending generated by the Silver Comet Trail, and the value conferred to residential locations that are near it, the Silver Comet Trail produces a number of other positive economic benefits to the State and to its residents and businesses. These benefits, while quantifiable, tend to be more qualitative in nature.

The Silver Comet Trail and its future connections have many direct and indirect benefits.

Employer And Employee Attraction

Increasingly, recreational amenities are demanded by employers and employees and are therefore an important part of location decisions[4]. It is difficult to know just how many employers and employees have

4 See, for example: "Quality of Life in the Planning Literature," Dissart and Deller (2000) and "Amenities as an Economic Development Tool: is there Enough Evidence?" Gottlieb (1994).

The Silver Comet Trail offers free use of an outdoor amenity.

chosen the State as a location because of the Silver Comet Trail, or how many will relocate (if currently out-of-state) or remain (if currently in-state) when it is expanded. However, to the extent that it plays a role in attracting and retaining employers and employees, the Silver Comet Trail is making a major contribution to the State economy.

Mobility

By encouraging and facilitating non-automobile trips, the Silver Comet Trail improves mobility and reduces the number of car trips that are taken. Being able to choose between multiple modes leads to gains for users, as they have more options for their business and leisure travel. It also takes cars off the road, which has at least three positive benefits. It reduces pollution for all, which improves air quality. It reduces congestion for the remaining drivers, saving time and additional energy consumption. It also reduces wear on roads, minimizing maintenance and replacement costs.

Direct Use Benefits

Silver Comet Trail users do not pay directly for their use, but do generate value for themselves. This value is known as a direct use benefit, and can be quantified by using "willingness to pay" surveys, which tend to assign per-trip values ranging from a couple of dollars for leisure walking to significantly more for more intensive activities like trail biking. Particularly at a time in which people are seeking no-cost and low-cost leisure options, the value associated with free use of an outdoor amenity is quite high, so the Silver Comet Trail represents a meaningful resource for the State and its residents.

Health Benefits

One aspect of the value conferred to users of the Silver Comet Trail is the positive health outcomes associated with active recreation.

There is both an increasing awareness of and literature on the direct linkage between access to recreational amenities, increased frequency of exercise, positive health outcomes, and lower health care costs. As health care costs soar, recreational amenities are seen by governments and citizens alike as an important way to encourage active lifestyles and minimize negative health outcomes. Specifically, active recreation has been shown to lower health care costs in four major categories:

1. Direct health care costs – Those related to immediate avoidance of negative health outcomes
2. Indirect health care costs – Those related to long-term avoidance of chronic negative health outcomes
3. Direct and indirect worker compensation costs – Those related to reduction in worker compensation claims
4. Absenteeism and "presenteeism" costs – Those related to loss of workplace productivity from sickness or impaired ability to perform

Ecological Services Rendered

Green space such as parks and trails themselves render valuable ecological services that might otherwise have to be purchased in the marketplace. For example, tree-lined trails work to clean air, purify water, and sequester carbon. Depending on the size, configuration, and characteristics of the current and expanded Silver Comet Trail, the value of these services may or may not be large, but they are nevertheless worth including in the overall discussion on benefits and costs.

Silver Comet Trail

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Recommendations

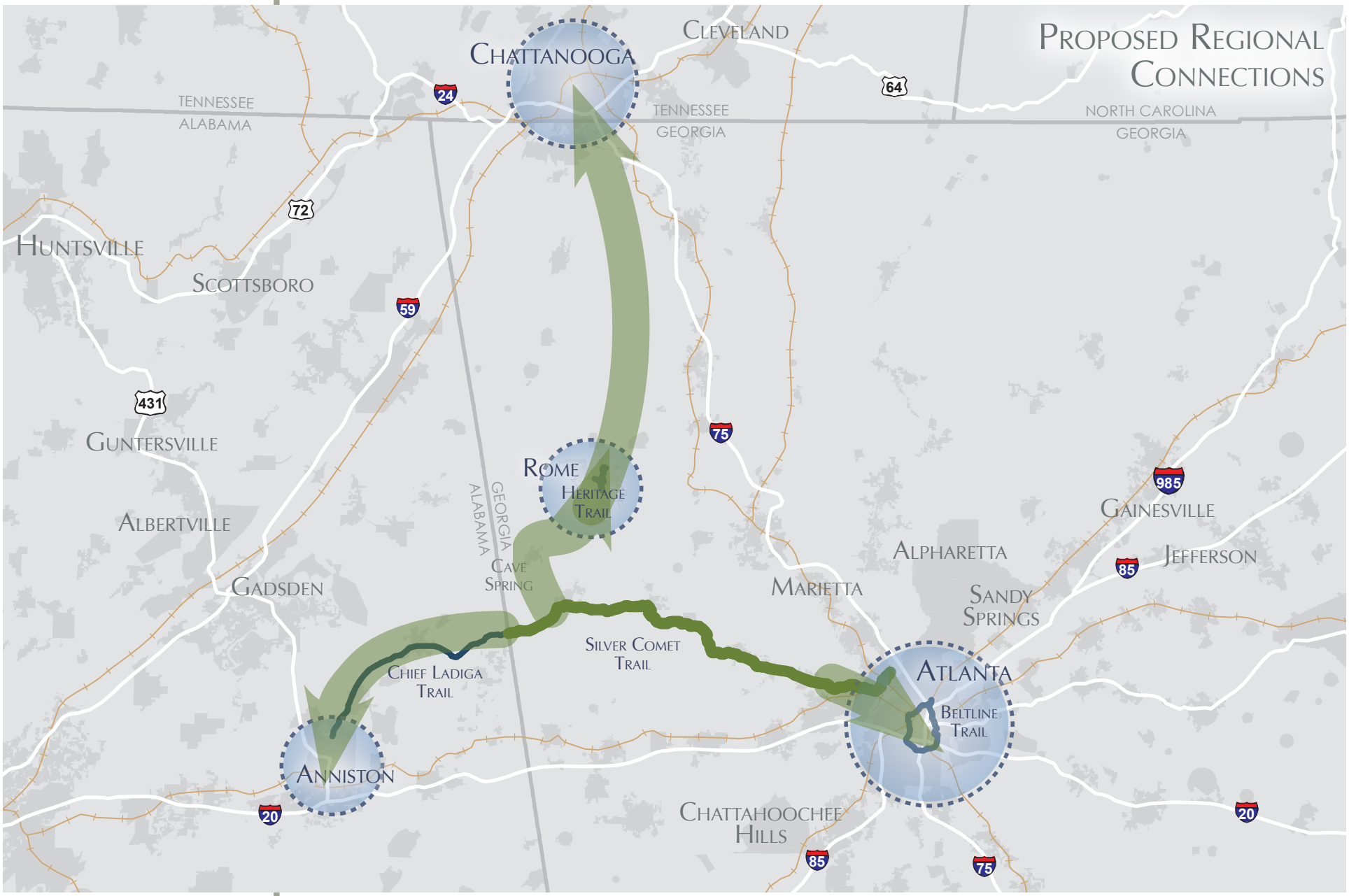
Overview

Results of the trail usage evaluation and economic impact analysis demonstrate that the Silver Comet Trail is a local and regional recreational destination that supports the local economies along its corridor. Additional connections to the trail can expand the reach and scope of those economic benefits. At the local level, strategic bicycle and pedestrian infrastructure links between the trail and neighboring communities will directly connect trail users to businesses. At the regional level, new links between the current trail and cities like Rome, Marietta, and Atlanta will connect entire communities directly to the trail. Regional connections also hold the potential to expand the trail's influence nationally, enhancing its reputation as a unique recreational amenity that attracts visitors from around the country and world.

This chapter provides detailed recommendations for local and regional connections to the trail. In addition, it describes recommendations for trail features and amenities along the existing corridor and future additions.

Many plans for cities and counties in the region have already recommended connections and extensions to the Silver Comet Trail. Those existing proposals were used as the starting point for this chapter's recommendations. Plans reviewed include the following:

- *2007 Atlanta Regional Commission Bicycle & Pedestrian Plan*
- *2008 Cobb County Trail Plan*
- *2008 Paulding County Trail & Greenway Master Plan*
- *2008 Rome and Floyd County Trail Facilities Plan*
- *2009 Cobb County Bicycle & Pedestrian Improvement Plan*
- *Connect Atlanta: Atlanta's Comprehensive Transportation Plan*
- *Georgia State Route 6 Transportation Corridor Study*


Proposed Regional Connections
Chattanooga
Cleveland
Tennessee
Alabama
Tennessee
Georgia
North Carolina
Georgia
24
64
72
Huntsville
Scottsboro
59
431
Guntersville
Albertville
Gadsden
75
Rome
Heritage Trail
Georgia
Alabama
Cave Spring
985
Gainesville
Alpharetta
Jefferson
85
Marietta
Sandy Springs
Silver Comet Trail
Chief Ladiga Trail
Atlanta
Beltline Trail
Anniston
20
Chattahoochee Hills
85
75
20

Regional Corridor Expansion

Several opportunities exist for new connections at the regional level.

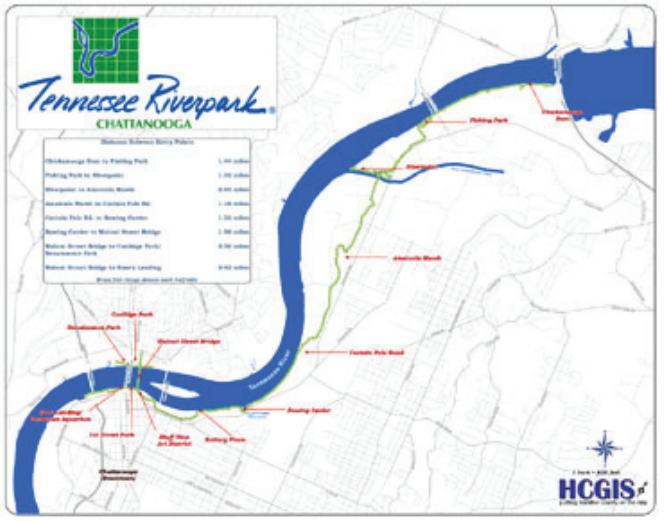
Alabama

The trail is already directly connected to the border of Anniston, Alabama via the 33-mile long Chief Ladiga Trail. This trail begins at the Alabama/Georgia state line and continues through Piedmont, Jacksonville, and Weaver before its completion in north Anniston. An extension of the trail into downtown Anniston would provide a crucial link to the multi-modal transit station on Anniston's 4th Street. This extension is currently planned by the Town of Anniston1. The link would allow a trail user to ride the Silver Comet Trail from its eastern end to the Chief Ladiga Trail, and then take an Amtrak train back to Atlanta. This Amtrak route does not currently allow stowed luggage, however, preventing riders from checking their bike on the train. The Atlanta Regional Commission, tourism promotion organizations, bicycle advocacy organizations, and the Town of Anniston should work with Amtrak to overturn this policy.

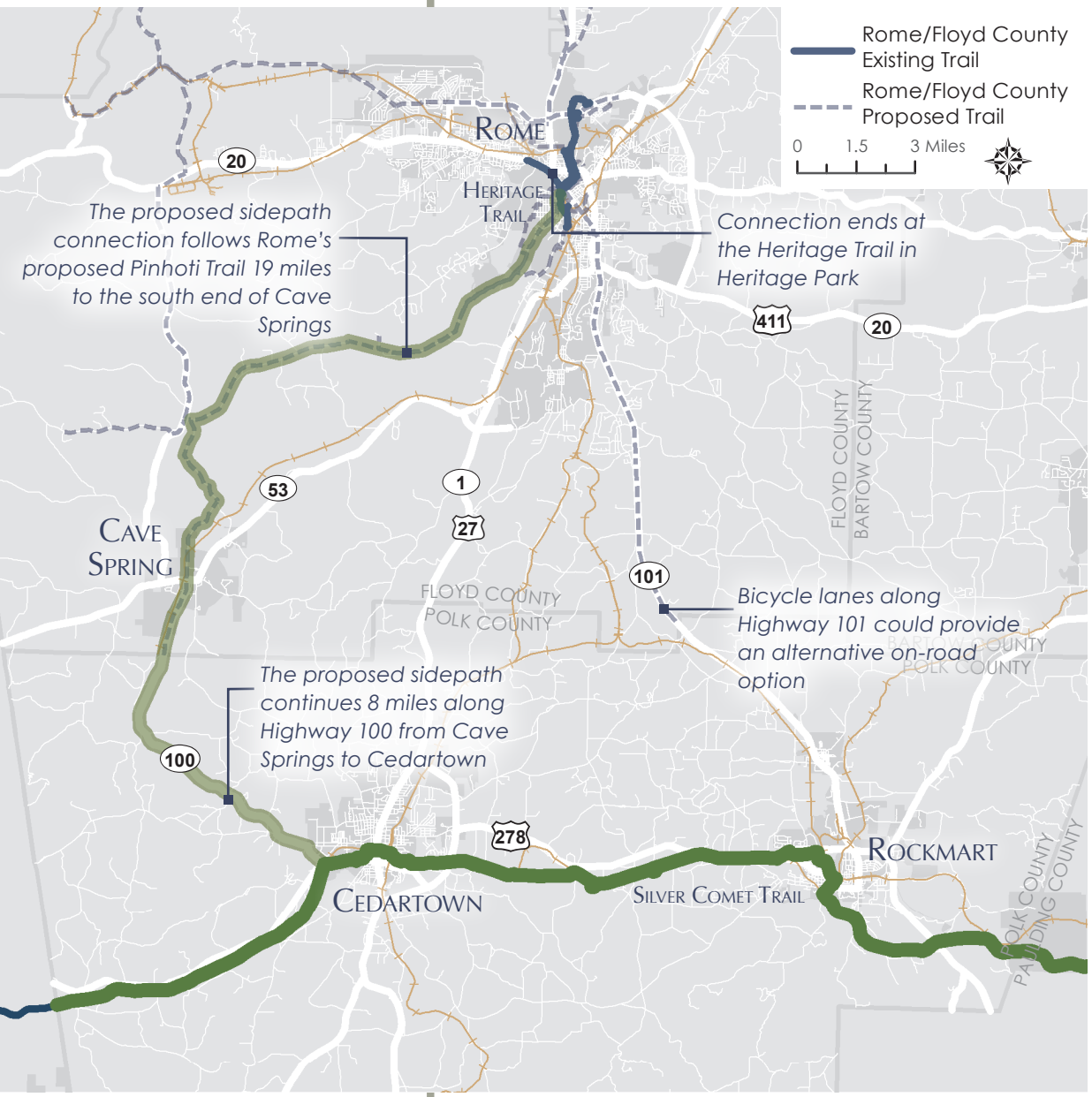
Chattanooga

Chattanooga, Tennessee lies 100 miles north of the Silver Comet Trail along the border of Georgia and Tennessee. The city has a vibrant bike culture of its own, and has developed high-quality recreational trails like those within the Tennessee Riverpark. Residents of Chattanooga have long expressed interest in a trail connection between the city and the Silver Comet Trail. There are opportunities to connect several towns, natural areas, and recreational destinations along the way, with the potential for economic dividends to the northwest Georgia region and Chattanooga metropolitan area.

This connection would likely extend north from Rome (see Rome section for more details) and link the communities of Summerville, Lafayette, Rock Spring, Chickamauga, and Chattanooga Valley. The route could follow roadways as a sidepath or on-road facility, or rail lines in the form of a rail-trail. The full connection would likely contain a combination of these facility types. Several natural areas within this region should be linked as well, either directly or through spur and loop trails off of the main corridor. The Pigeon Mountain Wildlife Management Area, Lula Lake Land Trust, and planned mountain bike trails throughout the region are a few examples.



The Tennessee RiverPark travels 10 miles along the Tennessee River from the Chickamauga Dam in Tennessee Valley to downtown Chattanooga. Photo Source: http://www.hamiltontn.gov/tnriverpark/



Proposed Rome Connection

ROME

The fast-growing City of Rome, located 25 miles north of Cedartown, completed a comprehensive trails plan in 2008. This plan recommends a bicycle connection to the Silver Comet Trail, detailing two alternative routes that link to Cedartown and Rockmart respectively. Rome residents and bike groups regularly make use of the Silver Comet Trail and have continued to express interest in such a connection.

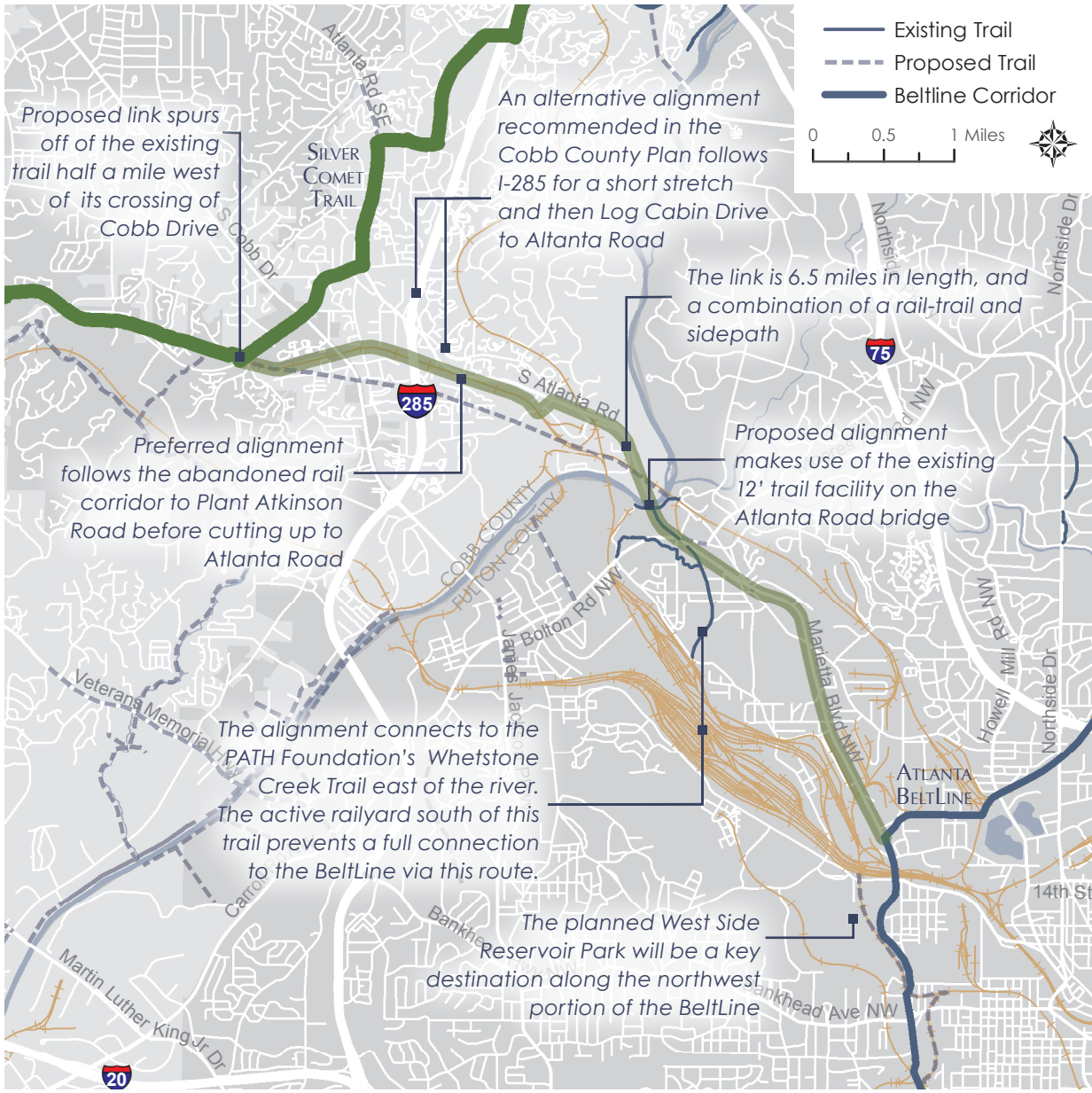
This study recommends the alternative that follows portions of Rome's proposed Pinhoti Trail, as detailed at left. The Pinhoti Trail is a National Recreational Trail that extends 100 miles and currently stops in Alabama, but is planned through northwest Georgia. According to the *Rome and Floyd County Trail Facilities Plan,* the trail is a combination of multi-use paths and shared roadway routes.

The proposed route begins at the Heritage Park Trail in downtown Rome and continues along Broad Street and Black Bluffs Road to the Cedar Creek Cemetery. It then follows Spout Springs Road and Mill Road into Cave Springs, where it continues along Highway 100 south to Cedartown. The route should take the form of a continuous sidepath in the long-term. In the short-term, a combination of sidepaths in developed areas and on-road bicycle lanes through rural areas can form the connection.

City of Atlanta

The Atlanta BeltLine is a comprehensive revitalization effort of 22 miles of historic railroad corridors circling downtown Atlanta. The project includes 22 miles of rail transit, 33 miles of multi-use trails, 1,300 acres of parks, 5,600 units of affordable housing, and 1,100 acres of brownfields remediated. The full project build-out will link 45 neighborhoods and connect them to the entire metropolitan area through a variety of transit connections.

The PATH Foundation, established in 1991, has played an important role in developing a network of off-road trails in Atlanta in an effort to connect neighborhoods and preserve the regional character. In just twenty-two years, PATH has developed over 180 miles of trail throughout Georgia and has become a nationally recognized model for trail-building success. PATH's linear parks have become part of the landscape in urban and rural areas, in affluent and impoverished communities. PATH has made significant progress toward building Georgia a network of trails, including: The Silver Comet, Stone Mountain, Lionel Hampton, South Peachtree Creek, Westside, Arabia Mountain, Chastain Park, Whetstone Creek, and South River Trails. PATH trails enhance community spirit and bring neighborhoods together. Each day, thousands of joggers, walkers, bikers and skaters from all walks of life escape the roads and hit the trails for travel and recreation.



Proposed Atlanta BeltLine Connection

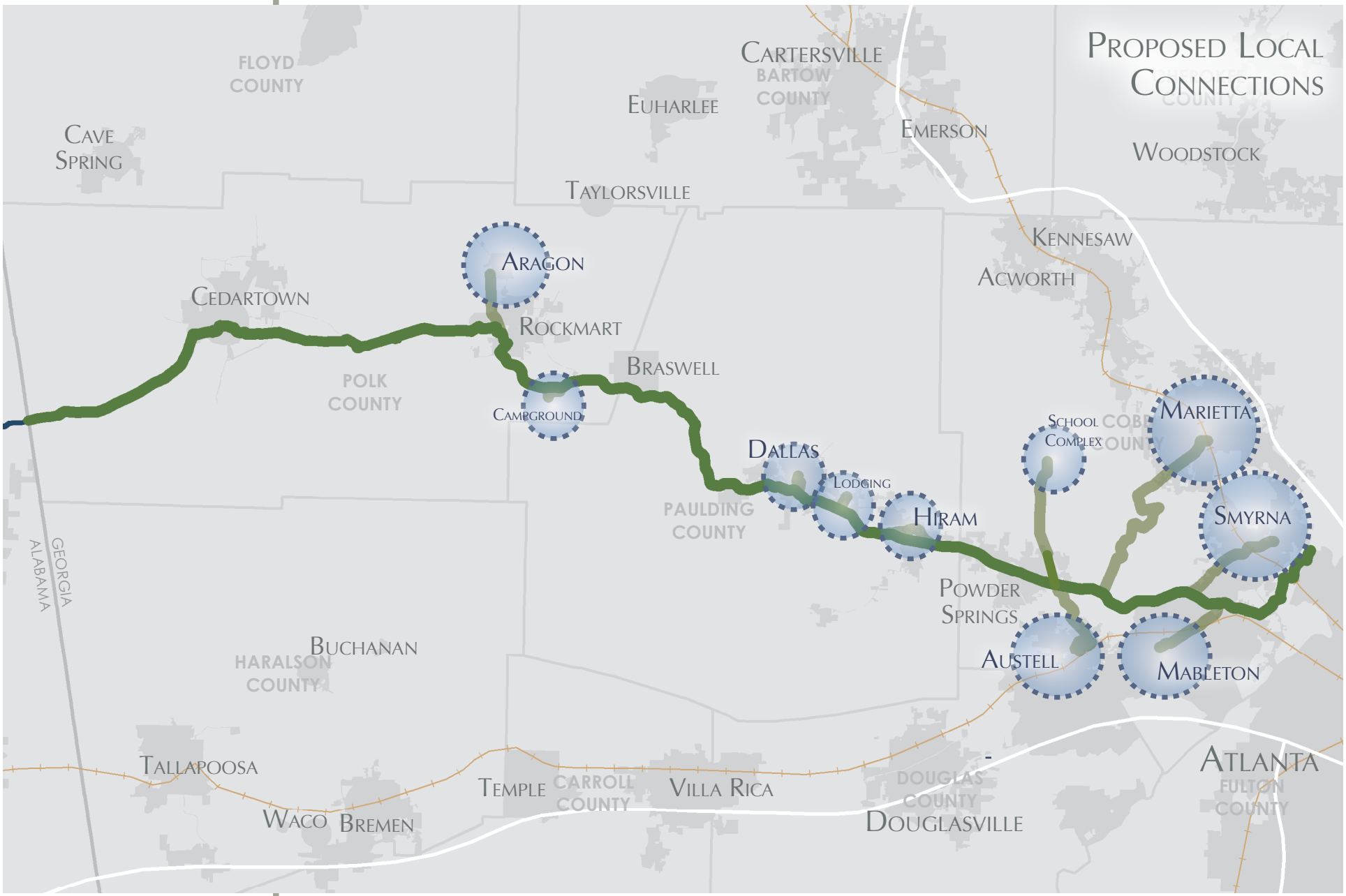
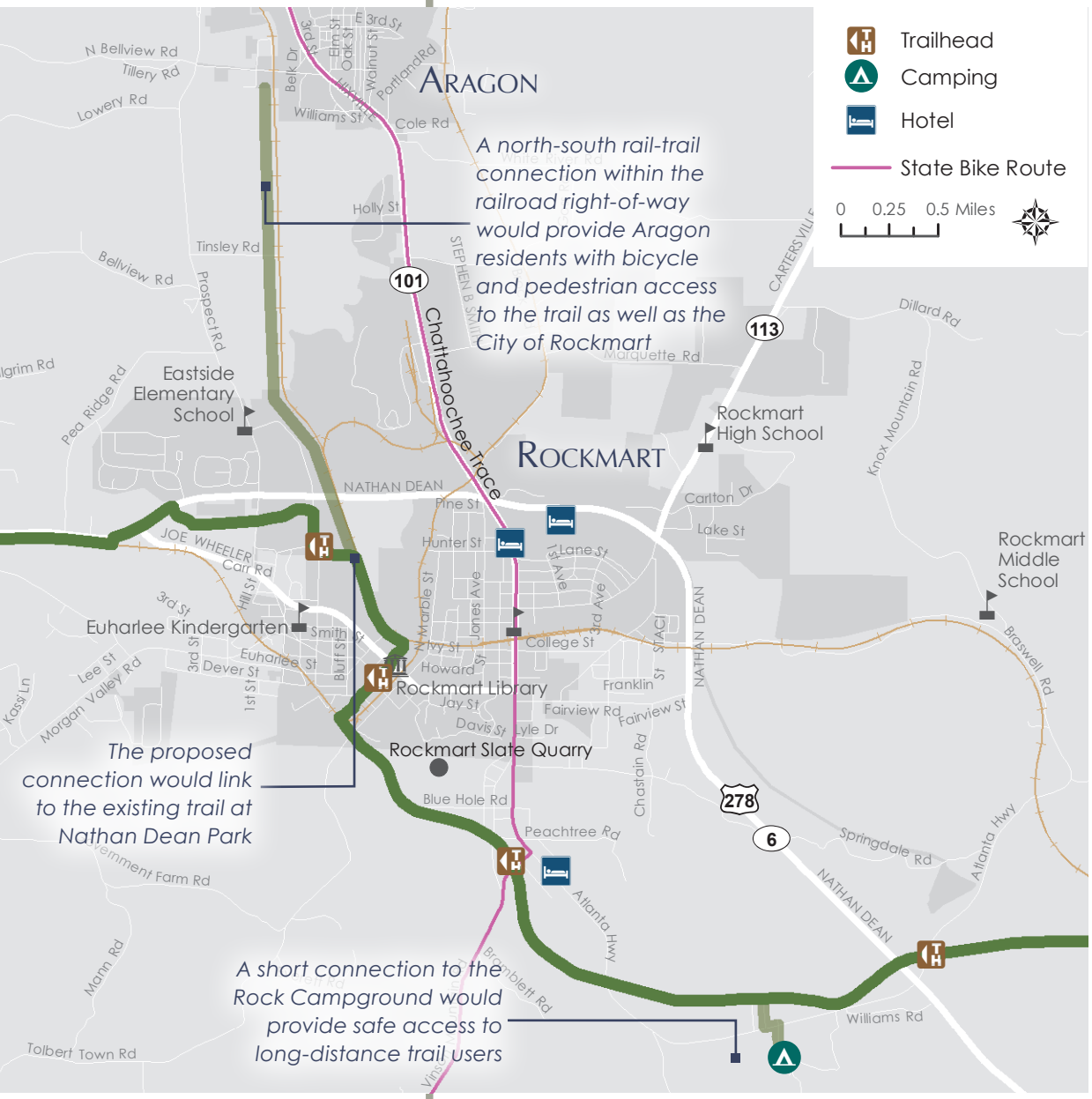

Proposed Local Connections
Floyd County
Cartersville
Bartow County
Euharlee
Emerson
Cave Spring
Woodstock
Taylorsville
Kennesaw
Aragon
Acworth
Cedartown
Rockmart
Braswell
Polk County
Campground
School Complex
Marietta
Dallas
Lodging
Paulding County
Hiram
Smyrna
Georgia
Alabama
Powder Springs
Buchanan
Austell
Mableton
Haralson County
Tallapoosa
Atlanta
Fulton County
Temple
Carroll County
Villa Rica
Douglas County
Waco
Bremen
Douglasville

Table 4.1 Summary of Local Connections

CONNECTION	FROM	TO	FACILITY TYPE	MILEAGE
Aragon	Nathan Dean Park	New Prospect Road baseball field	Multi-Use Trail (Rail Trail)	2.5
Campground	Atlanta Highway & Forsyth Lake Cir	The Rock RV Park & Campground	Bicycle Lanes & Sidewalk	0.4
Dallas Downtown	Seaboard Ave	Cooper Ave & Johnson St	Bicycle Lanes & Sidewalk	0.8
Lodging	Old Harris Rd	Days Inn Dallas	Bicycle Lanes & Sidewalk	0.7
Hiram Commercial Center	Coppermine Rd; Rosedale Dr	Jimmy Lee Smith Pkwy	Multi-Use Trail (Sidepath)	2.2
School Complex	Wild Horse Creek Trail (spur) at Macedonia Rd	Still Elementary School	Multi-Use Trail (Sidepath)	4.0
Austell Downtown	Wild Horse Creek Trail	Sweetwater St	Multi-Use Trail (Riparian corridor)	4.3
Marietta Downtown	Olley Creek	Atlanta St	Multi-Use Trail (Riparian corridor/Sidepath)	10.2
Smyrna Loop	Concord Rd	Spring Road Trail at Village Pkwy	Multi-Use Trail (Sidepath)	4.2
Mableton Commercial Center	Copper Lake Rd	Front St & Floyd Rd	Multi-Use Trail (Sidepath)	3.2

A multi-use trail connection from the Silver Comet Trail to the Atlanta BeltLine trail network will provide bicycle and pedestrian access from the entire Atlanta region to the Silver Comet. While residents of this region already travel to the trail by vehicle, this connection will enable residents to access the trail by foot, bike, or transit. It will expand the economic benefits to the towns along the trail corridor because of this additional access, as well as further the benefits accrued to towns along the BeltLine by linking the two projects.

This study recommends a connection along the CSX rail corridor west of the Chattahoochee River and a sidepath along Marietta Boulevard east of the river. Further study on the feasibility and specific routing of this connection is required. Several alternatives exist west of the river, as laid out the in the *2008 Cobb County Trail Plan*. The preferred alternative from that plan should be implemented if the CSX right-of-way cannot be obtained.



Proposed Aragon and Camping Connections

Local Corridor Expansion

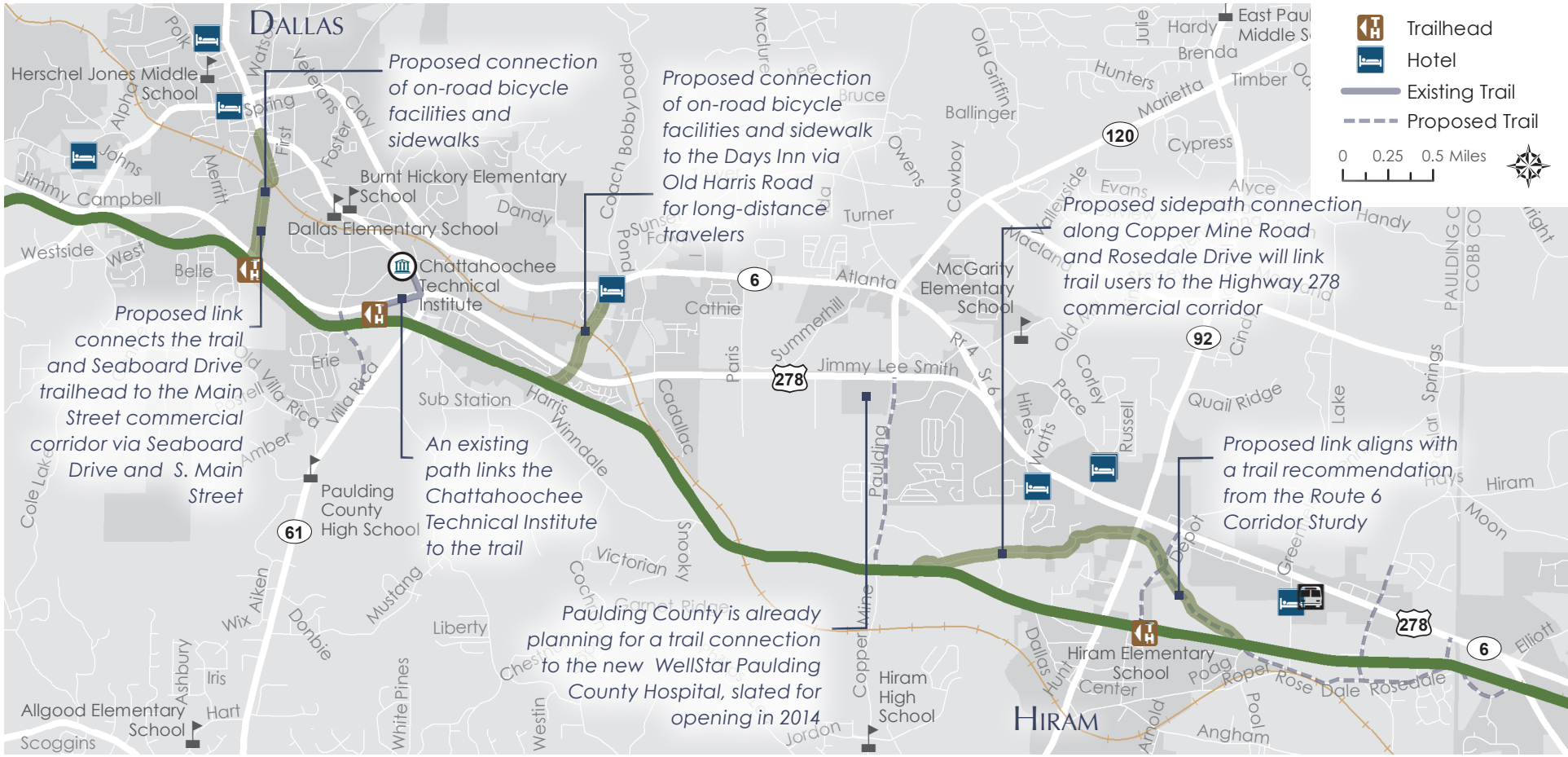
In addition to the regional connections described above, there are several opportunities to provide direct access for pedestrians and cyclists in communities along the current corridor. Proposed local connections are summarized in the table below. More detail on the routing and purpose of each connection is provided on the following pages.

Rockmart Region

The Silver Comet is currently well-connected to the City of Rockmart. The trail runs through the City's Nathan Dean Park complex as well as directly past the downtown core, where Frankie's Italian Restaurant is covered floor-to-ceiling with messages from trail users.

There is no direct connection, however to the neighborhing City of Aragon. A proposed rail-trail along the Norfolk Southern rail line that runs directly north to this small city would provide direct trail access to its residents. It would also provide those residents multi-modal access the City of Rockmart itself. An alternative on-road or sidepath connection could follow the Chattahoochee Trace State Bike Route along Highway 101.

A second new connection is proposed just south of Rockmart to the campground off of the Atlanta Highway. This connection will ensure long-distance travelers can safely access the Rock Campground. A sidewalk



Proposed Dallas and Hiram Connections

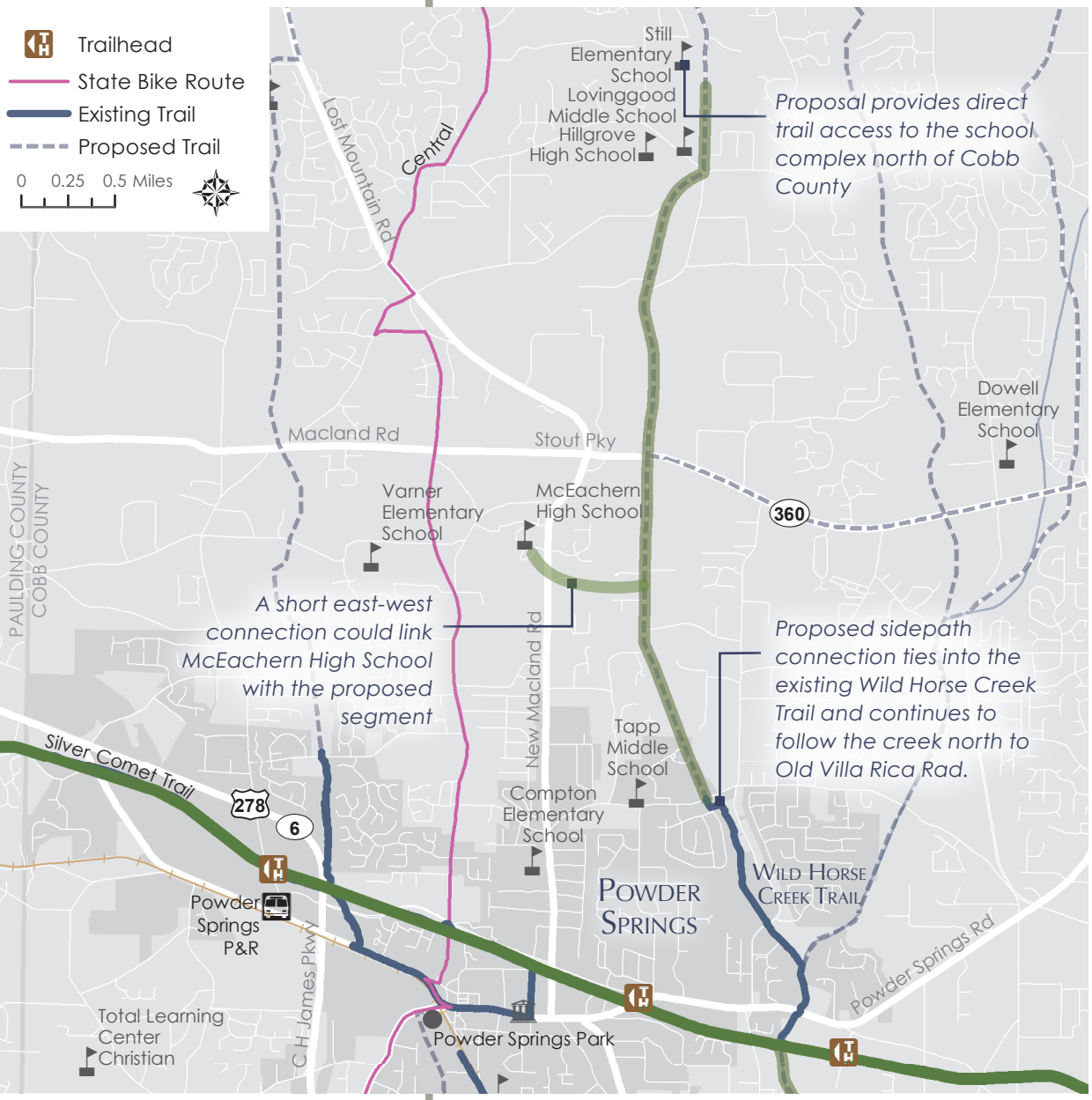
and bicycle lanes are recommended.

Dallas

Highway 278 currently separates the Silver Comet from the City of Dallas. Opportunities exist to better connect key destinations in Dallas to the trail with bicycle and pedestrian facilities. The city has already taken steps to provide bicycle lanes along Memorial Drive. Additional opportunities are outlined above.

Hiram Commercial Corridor

While the trail runs directly through the City of Hiram, the major commercial area along Highway 278 is not currently connected. Bicycle and pedestrian access to this corridor will support the current businesses located there, including lodging options, and generate potential for additional trail-friendly businesses.



Proposed School Connection

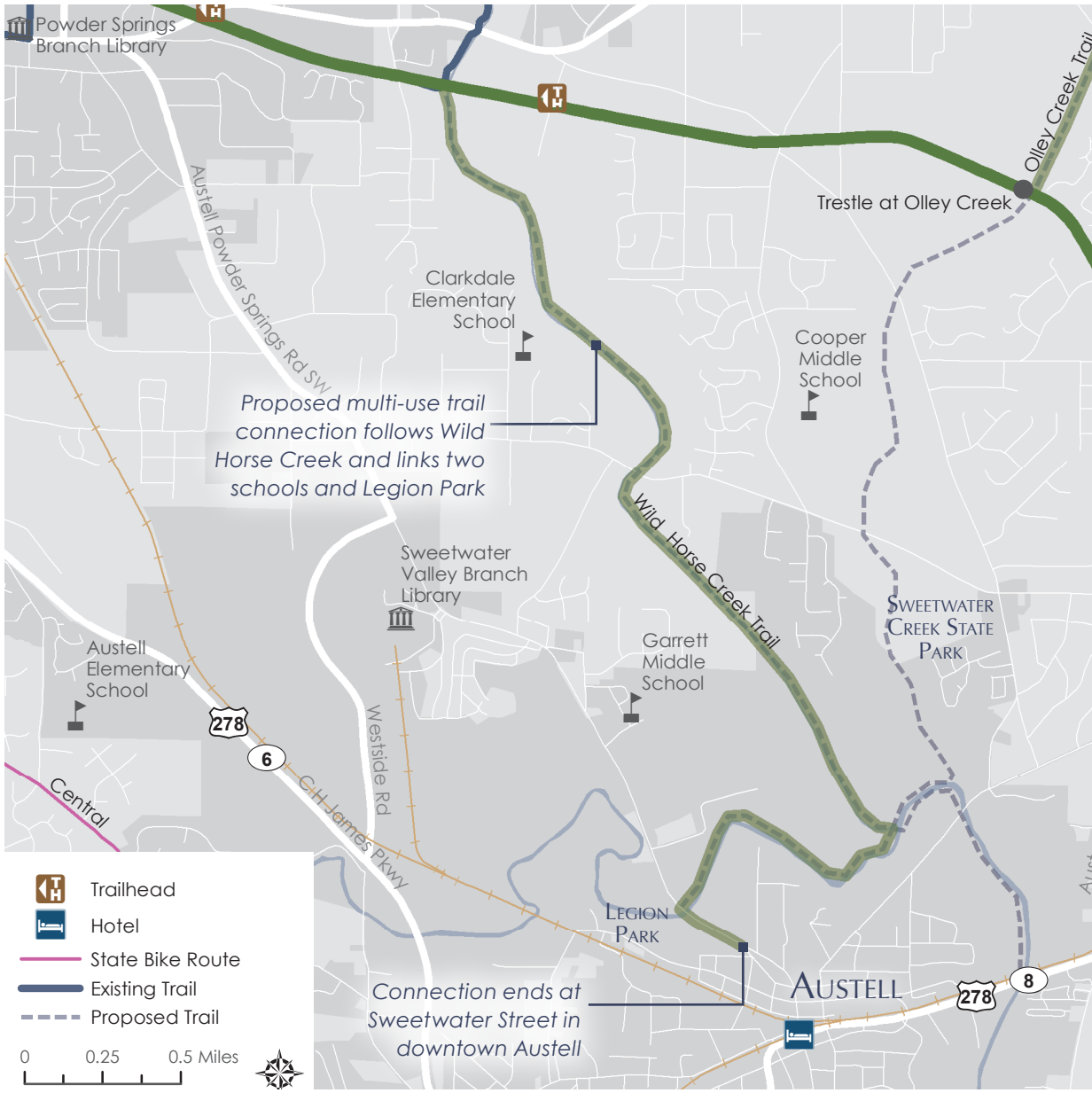
Cobb County School Complex

The Wild Horse Creek Trail currently extends bicycle and pedestrian access to the Silver Comet to the north edge of Powder Springs and Tapp Middle School. The Cobb County Trail Plan recommends a further extension of this trail along the creek to Old Villa Rica Road, and then north to the Dallas Highway.

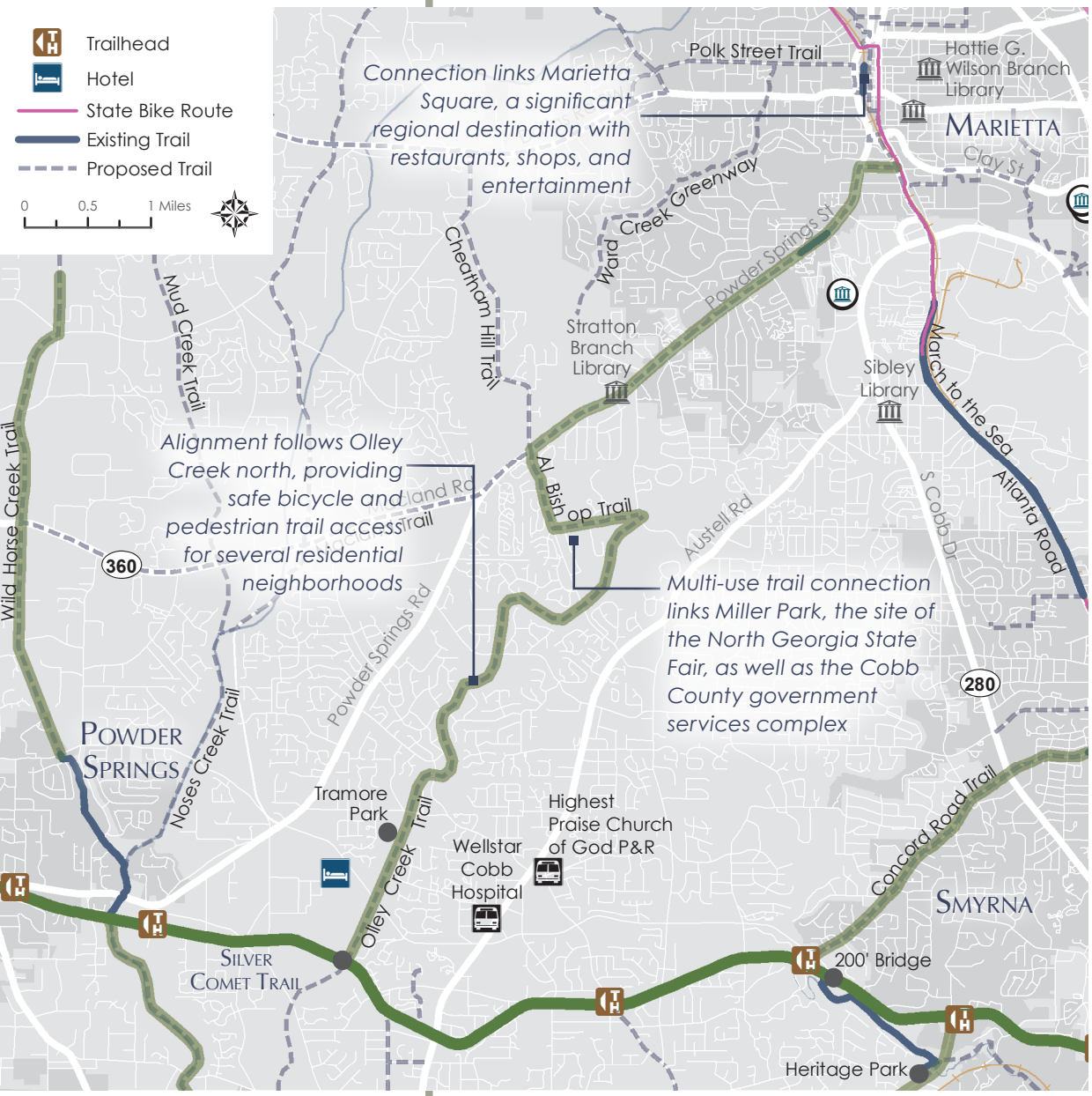
This study recommends a sidepath along this segment up to the school complex at Luther Ward Road be prioritized. This connection will provide a trail amenity to students of the Elementary, Middle, and High Schools at this location, and build on the connectivity of the trail network in Powder Springs. It will also provide trail access to the neighborhoods north of Macland Road.

Austell

A southern extension of the Wild Horse Creek Trail would connect the Silver Comet Trail and Powder Springs trail network to central Austell. The proposed route follows the Cobb County Trail Plan's alignment along the southern portion of Wild Horse Creek. This scenic connection would link two schools, several neighborhoods, and Legion Park. The multi-use trail connection would end as a sidepath along Powder Springs Road linking to Sweetwater Street and the downtown core.



Proposed Austell Connection



Proposed Marietta Connection

MARIETTA

Historic downtown Marietta and its central feature, Marietta Square, is a popular regional destination with significant retail and commercial amenities. A connection to Marietta would leverage the significant draw of this City on tourists and connect the sizeable population of Marietta to the trail.

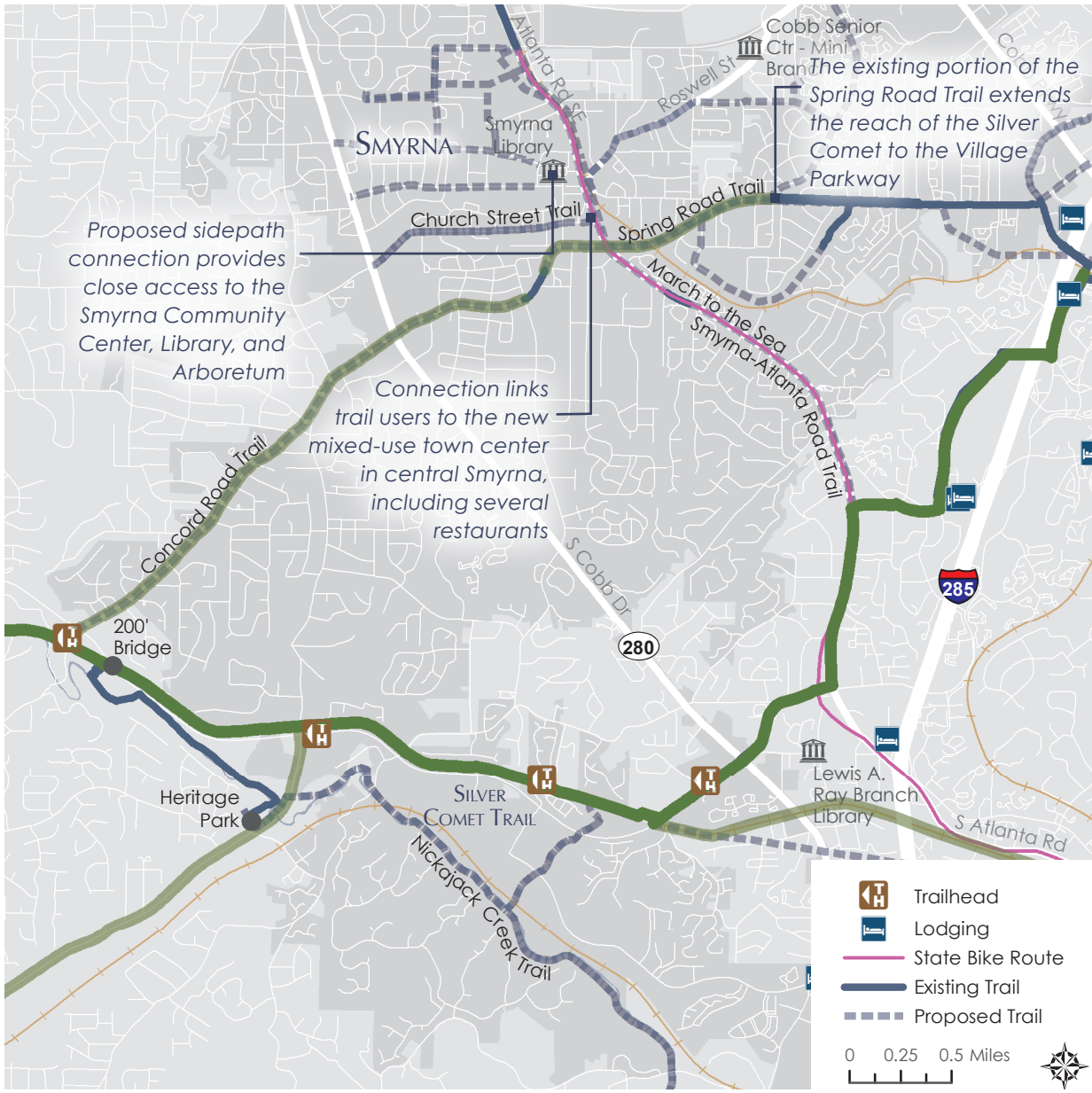
The proposed link shown at left follows proposed alignments of several distinct trails recommended in Cobb County's Trail Plan: the Powder Springs Road Trail, the Al Bishop Trail, and the Olley Creek Trail. The link follows Olley Creek northeast from the Silver Comet past Tramore Park in the form of a multi-use trail. It continues to follow the creek alignment past several residential neighborhoods until reaching Bishop Park and Miller Park at Al Bishop Drive. The link then continues as a sidepath along Callaway Road, Powder Springs Street, and Cemetery Street before connecting to the March to the Sea State Bike Route just south of downtown Marietta.

Smyrna Loop

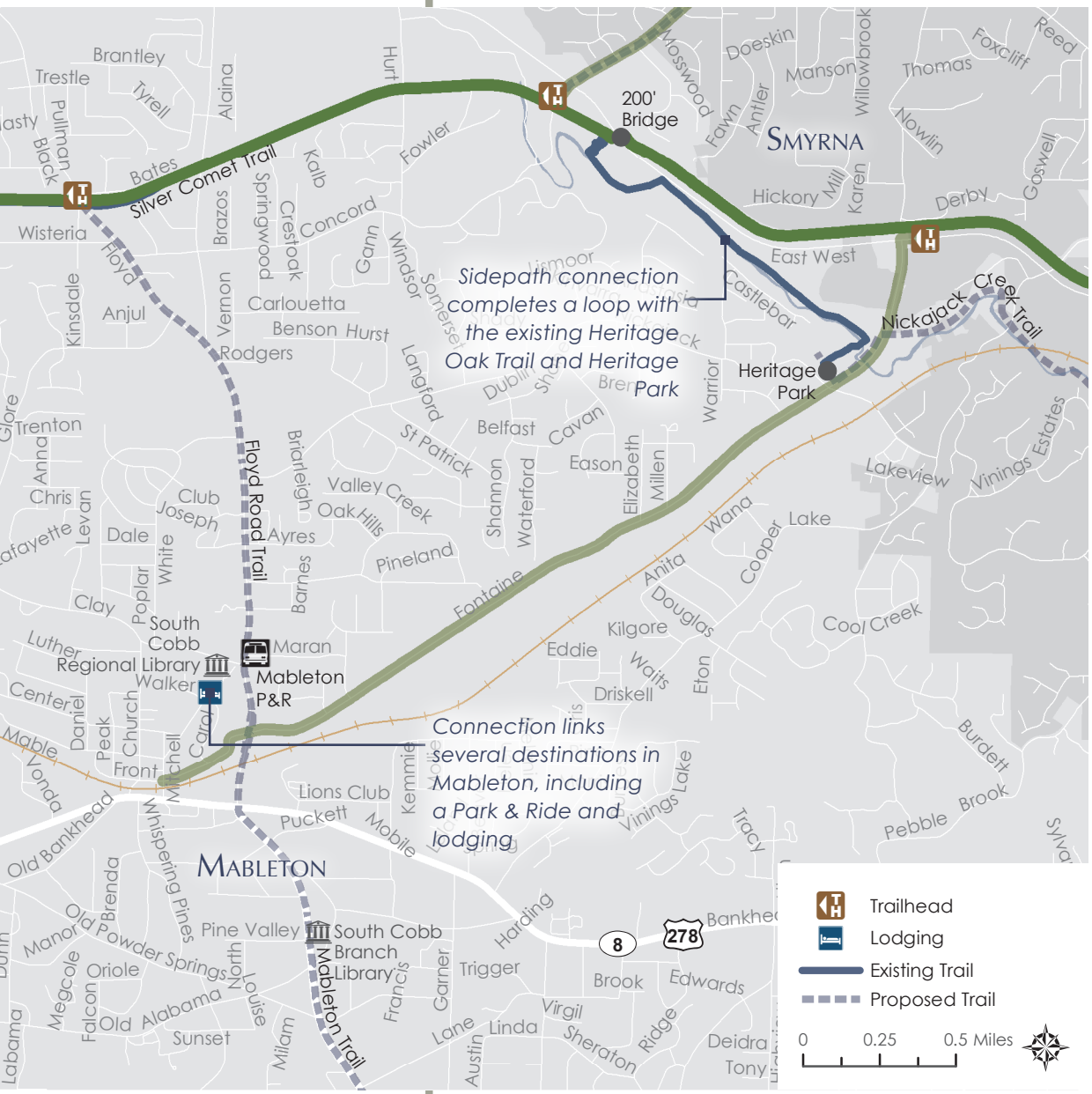
The Silver Comet currently diverges from the its rail corridor alignment at the East-West Connector, where it continues at a series of sidepaths. This extension, termed the Cumberland Connector, provides a critical connection across I-285 with a bicyclea nd pedestrian bridge along Mt. Wilkinson Parkway. This extension is then connected back to Smyrna with the Spring Road Trail and another bicyle and pedestrian bridge across I-285 at Cumberland Boulevard.

A new sidepath connection along Concord Road and Spring Road linking the Spring Road Trail back to the Silver Comet would create an approximately 13-mile trail loop. This loop would be a significant amenity for runners, cyclists, and other trail users in Smyrna, and increase use of the east end of the Silver Comet.

The proposed link begins at the Concord Road Trail, and continues as a sidepath along Concord Road and Spring Road. Additional bicycle facilities along Atlanta Road from its intersection with Spring Road to the Smyrna Community Center are also recommended to ensure a complete link to this destination and the new mixed-use town center just south of it .



Proposed Smyrna Connection



Proposed Mableton Connection

Mableton

Mableton is an unincorporated suburb of Metropolitan Atlanta that holds 30,000 residents. The proposed connection to the center of Mableton links its two major commerical corridors - Floyd Road and Veterans Memorial Highway. The connection also completes a 3-mile loop with the Heritage Oak Trail near the border of Smyrna.

The proposed sidepath connection begins at the Fontaine Road trailhead and continues along Fontaine Road south to the central commercial area. Pedestrian and bicycle access from this corridor directly to commercial destinations should be considered upon implementation.

Future Trailheads and Amenities

Trailheads are important features that provide access to the trail facility. Major trailheads include restrooms, parking areas for vehicles and trailers, maps and kiosks, and signposts for the trail and its features. Minor trailheads usually include a map or kiosk of the trail network, connections to adjacent sidewalks or bicycle facilities, and shared parking. Minor trailheads are sometimes referred to as "walk-up" trailheads.

The Silver Comet Trail has 21 total major and minor trailheads that vary in size and character. Most trailheads are spaced at adequate distances between one to eight miles. The largest gap between trailheads is between Dallas and Braswell (11.5 miles) in western Paulding County. This is a more remote section of the trail as it extends through the Paulding Forest Wildlife Management Area and not many roadways intersect the trail. Additional trailheads are recommended as Paulding County's proposed trail network is built out.

Future corridors, if expanded, should consider strategic trailhead locations at or near trail intersections to encourage accessibility and use. Where proposed connections are made at schools, parks, or other practical shared use public facilities, signage should be installed to direct trail users. Proposed trailheads should be considered near the beginning of expanded corridors at the following locations:

- *Marietta* at Kennesaw Mountain National Battlefield; and Marietta Square
- *Austell* at Legion Park
- *Powder Springs* at Lost Mountain Park
- *Cave Spring* at Cave Spring Elementary

It is important to optimize existing parks, schools, publicly owned right of way, and any adjacent land uses that may be suitable for parking, rest rooms, and other support features for trail users. Proposed trailhead locations listed above will require further study and design, as well as coordination with landowners, GDOT, and local development plans and ordinances.

For all newly constructed trailheads, efforts should be made to source local or regional materials and use sustainable construction methods whenever possible. Sustainable construction methods and products provide long-term maintenance benefits, extended material lifespan, and are healthy for the environment. Examples include permeable paving, energy efficient structures, and localized stormwater management.

The Design Guidelines Appendix provides additional information on trailhead design, ancillary facilities, and signage.

Cobb County Trailhead Facilities

Phasing Strategy

Completion of the connections recommended in this chapter will require a concerted effort of a variety of stakeholders as well as a mix of funding sources. Potential funding sources for the implementation of these connections are provided in Appendix A. Certain connections, however, can and should be completed sooner. This section provides a phasing strategy for implementation of trail connections. Phasing is based on two main factors:

- *Feasibility of the connection* - potential cost and right-of-way availability
- *Potential benefits of the connection* - potential to expand the reach and profile of the Silver Comet Trail

These considerations were combined to generate the following strategy on Table 4-3. 4-4. and 4-5. This strategy should remain flexible and be reevaluated as new opportunities or constraints arise.

CASE STUDY

Swamp Rabbit Trail & the Greenville Health System

The Greenville Health System (GHS) Swamp Rabbit Trail is a 17.5-mile rail-trail along the Reedy River that runs north from Greenville, South Carolina to the Town of Travelers Rest. The Greenville County Economic Development Corporation purchased the abandoned rail bed in 1999, and in 2010, the trail officially opened for use. The GHS partnered with the City of Greenville and Greenville County and provided $1 million for trail development and marketing, in exchange for trail naming rights. Since 2009, the GHS has sponsored an annual 5K race and fun run along the Swamp Rabbit Trail to encourage trail use and physical activity and to promote the overall health of the Greenville community. The trail connects Greenville Technical College, a YMCA complex, Furman University, neighborhoods, businesses, and several parks, churches, and schools. An attractive, easy-to-read wayfinding and signage system directs users to and along the trail. Other trail facilities and amenities include several trailheads with ample parking; public restrooms; water fountains; and a trail website with an interactive map, events listing, and online store. These efforts have helped to make the Swamp Rabbit Trail a popular recreation destination, with an estimated 350,000 visitors each year.[1]

[1] Reed, Julian. 2012. Greenville Hospital System Swamp Rabbit Trail 1-Year Findings. http://greenvillerec.com/swamprabbit/impactstudy

Table 4.3 Phasing Plan: Short Term Recommendations

	CONNECTION	LEAD AGENCY	RECOMMENDATIONS
			SHORT TERM (0-5 YRS.)
	Downtown Anniston	City of Anniston	Feasibility study to extend the Chief Ladiga Trail to downtown Anniston is complete. Officials currently seek resources for implementation.
	Rock Campground	Polk County	Can be completed affordably with signage and on-road bicycle facilities in the existing right-of-way.
	Downtown Dallas	City of Dallas & Paulding County	Sidewalks already exist along the recommended section. On-road bike facilities and signage can complete link.
	Days Inn Dallas	City of Dallas & Paulding County	Sidewalk exists along portion of roadway. It should be extended to Silver Comet Trail and Days Inn. Include on-road bike facility.

Table 4.4 Phasing Plan: Mid-Term Recommendations

	CONNECTION	LEAD AGENCY	RECOMMENDATIONS
			MID-TERM (5-10 YRS.)
	Rome & Cave Spring	City of Rome & Floyd County	Strong bicycling culture in Rome, momentum for connection make it a top priority. Length and cost make it a mid-term goal.
	Marietta	City of Marietta & Cobb County	Significant potential. Contained in the adopted Cobb County Trail Plan. Length and cost make it a mid-term goal.
	Smyrna	City of Smyrna & Cobb County	Significant potential. Contained in the adopted Cobb County Trail Plan. Length and cost make it a mid-term goal.
	Hiram	City of Hiram & Paulding County	Commercial corridor along 278 is lower connection priority for County than downtown Dallas. Connection should be built out in mid-term as sidepaths or combination of on-road bicycle facilities and sidewalks.
	Austell	Cobb County	Should be prioritized after Marietta and Smyrna.
	Aragon	City of Aragon & Polk County	Agreement with railroad is required to accomplish the recommended Aragon connection. Talks should begin in the short-term to initiate process. Anticipated build-out to take place in the mid-term.

Table 4.5 Phasing Plan: Long Term Recommendations

	CONNECTION	LEAD AGENCY	RECOMMENDATIONS
			LONG TERM (10-20 YRS.)
	Chattanooga	City of Chattanooga & Northwest Georgia Regoinal Commission	Connection will transform Silver Comet Trail and Northwest Georgia Region. Further analysis and compilation of funding sources will be required to accomplish this.
	Atlanta BeltLine	Cobb County & City of Atlanta & PATH Foundation	This connection provides a critical link to the future BeltLine and City of Atlanta. The northwest portion of the BeltLine is likely to be completed last. This expectation, along with the reamining right-of-way acquisition required, make this a long-term priority.
	Mableton	Cobb County	This connection should be built out with any redevelopment or reconstruction along Fontaine Road.
	School Complex	Cobb County	This connection should be built out with redevelopment or reconstruction of Villa Rica Road.

Development Costs

The following table indicates development costs by phase. More detailed budgetary cost estimates for planning, design, and construction of proposed Silver Comet Trail connections are summarized in Appendix D: Costs.

Table 4.2 Summary of Estimated Costs

Id	CONNECTION	ESTIMATED LINEAR FEET	FACILITY			ESTIMATED COST (M)
			Multi-Use Trail	Sidewalk	Bicycle Lanes	
1	Atlanta via Beltline	34,307	34,307	-	-	$7.2
2	Mableton	17,077	17,077	-	-	$3.6
3	Smyrna loop trail	21,976	21,976	-	-	$3.8
4	Marietta	53,704	53,704	-	-	$8.5
5	Austell	22,552	22,552	-	-	$4.8
6	School	20,969	20,969	-	-	$3.5
7	Highway 278 in Hiram	11,553	11,553	-	-	$2.1
8	Days Inn - Dallas	3,496	-	1,584	3,496	$0.8
9	Dallas town center	3,997	-	-	3,997	$1.0
10	Campground	2,293	-	2,293	2,293	$1.1
11	Aragon	13,200	13,200	-	-	$2.3
12	Rome via Cave Spring	100,972	100,972	-	-	$12.9
13	Cave Spring	42,995	42,995	-	-	$7.4

Note: Cost estimates were not generated for the Alabama and Chattanooga connections because of their out-of-state jurisdiction and conceptual nature respectively.

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Economic Development Strategy

Maximizing Impact

Overview

Promotional and organizational best practices for other recreational amenities can be drawn from in guiding the expansion of the Silver Comet Trail towards maximum impact. The purpose of this section is to provide such guidance, to the end of steering expansion efforts towards actions that will result in the outcomes associated with the benefits discussed in this report. Four categories of best practices will be discussed: existing trail identity, branding efforts, infrastructure investment and cross-agency collaboration.

Best Practices

Existing Trail Identity

Trail identity can be defined as the visual cues users receive when entering, exiting, or using a trail. Identity is influenced by many factors. Geography, surrounding land use, natural features, history, and local community can be used to create a sense of place. These tools are often personified and used in marketing and promotion materials. Establishing a strong trail identity creates interest and can attract tourism and increase visitation, thereby stimulating the local economy.

Part of the Silver Comet corridor's appeal is the diversity of landscapes and population centers to be experienced over 61 miles. The trail extends through rural and urbanized areas, including three counties and six population centers. Much of the remaining trail traverses remote, natural areas including the Paulding Forest Wildlife Management Area.

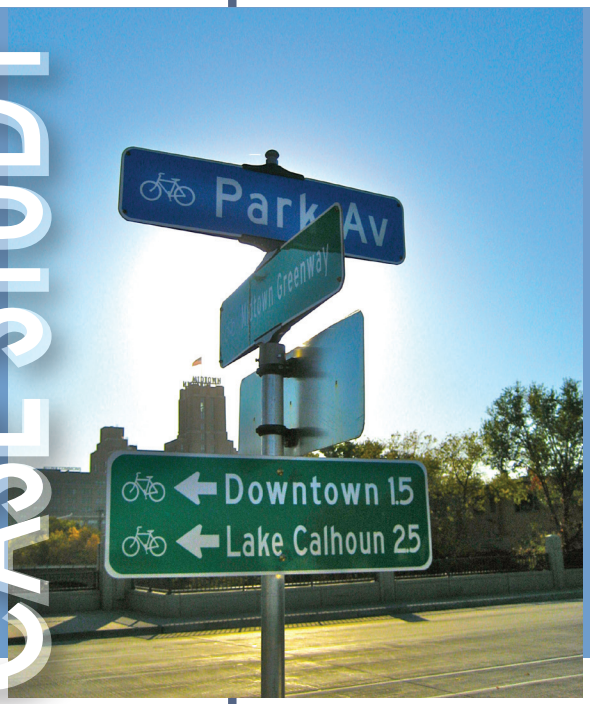
Future trail connections that connect to the Atlanta Beltline Trail, the city of Rome and Town of Cave Springs, and ultimately Chattanooga will contribute to the diversity of trail use and

character. These connections can have a positive influence on trail identity, increasing visitation and trail-oriented business development. The Silver Comet Trail is already considered a regional attraction. Expanding the northern and southern reach of this facility has the potential to enhance local communities and market the trail as a world-class destination.

Branding Efforts

Recreational amenities that sprawl over dozens of miles can yet be described by a single brand that unifies the promotional message and the user experience. For example, the Adirondacks and the Outer Banks have immediate name recognition among travelers, regardless of whether they are the actual names of geographical locations that can be found on a map. Significantly, they are all seen as one distinct destination to consider when making vacation plans, thus greatly increasing their draw in contrast to the sum of the much smaller draw of the individual destinations contained within them.

CASE STUDY



Minneapolis Midtown Greenway

The Midtown Greenway in Minneapolis has implemented a successful wayfinding system that communicates to users how far, in minutes; a destination is for both bicycling and walking. Other wayfinding systems can include signage that communicates health educational tools, such as how many calories are burned for a certain distance walked or biked on the trail. Additionally, overhead trail signage or "gateways" at road crossings that are visible from the roadway help to market the trail and increase awareness. The gateways typically include the trail name and a short list of destinations and travel times along the corridor. (http://midtowngreenway.org/.)

Examples of wayfinding signage systems ranging from static signage to digital kiosks, to QR codes.

Signage and Wayfinding

The Silver Comet Trail has its own logo and signage system. PATH Foundation maintains and replaces signage along the trail. The existing system uses mile markers, gateways, and kiosks made of recycled plastic. Although durable and strategically placed, many kiosks are missing maps or wayfinding elements entirely. PATH is considering transitioning to aluminum signage for increased long-term maintenance.

To strengthen the Silver Comet Trail's identity, the logo, signage, and brand would benefit from a more unified and updated aesthetic, with an increase in wayfinding opportunities. At a minimum, wayfinding signage should be installed along the trail at strategic locations near lodging, restaurants, services, and town centers to increase economic growth opportunities.

Alongside overall name recognition comes a number of tangible components of a single unified brand, such as a logo, signage, and other design elements. These components, when used across geographies and on multiple platforms (physical signage, brochures, websites, social media) and by multiple operators (state and local government, as well as hotels, retailers, and restaurants), can reinforce that single identity and thus strengthen the location's overall draw, both to residents and tourists.

Infrastructure Investment

The purpose of infrastructure investment, in the case of the Silver Comet Trail, is multi-faceted. First, it enhances the user experience by refreshing worn elements and replacing them with newer ones. This sends both a tangible and psychological message – to residents, that the amenity is worth a repeat visit because it has been upgraded, and to visitors, that the amenity is now even more worth the time to explore. Second, it enhances the user experience by tying the entire system of trails together in a cohesive manner. Given that a main goal of the expansion of the Silver Comet Trail is to exponentially increase the ways in which it can be explored, it is vital that clear signage is provided that allows users to navigate through new sections and connect between previously disparate sections. And, as new users are expected – both residents who live close to new sections and visitors who are compelled by the expanded Silver Comet Trail to take a day trip or overnight stay to enjoy it – this presents an opportunity to tell the story of the Silver Comet Trail and create a new impression on its users.

Inter-Agency Collaboration

An under appreciated way to maximize the impact of a new or expanded recreational amenity is to foster inter-agency collaboration. Usage, spending, and overall enjoyment can be enhanced if there can be better integration between the related but separate work of various public and private

sector entities. For example, within the State's government, there are opportunities for the Department of Tourism and the Department of Transportation to collaborate on branded signage and other ways to mark the area and facilitate wayfinding. Local and regional entities should also be connected to, in order to promote the expanded Silver Comet Trail and connect it to other local and regional attractions. And, as mentioned above, private sector entities within the hospitality industry – hotels, retailers, restaurants, and sellers of recreational goods and services – need to be brought into a working partnership that creates a unified and enhanced experience for residents and visitors alike.

New Development

Visitor Outreach, Promotions and Marketing

The Silver Comet Trail serves as as a link to the outdoors, providing residents and visitors easily accessible opportunities for community building, recreation, education, exercise and transportation. The trail is a facility that is available to all income groups, all neighborhoods, and all community groups, regardless of background and experience. Many residents likely take pride in the trail, as it has become part of their daily, weekly, or monthly lives, and it has allowed them to access basic needs and interact with neighbors without automobile dependence.

Interpretive Opportunities

Interpretive signage programs that promote the historical and cultural value of a community are placemaking tools and inform trail users of important nearby destinations. As future connections are made to the Silver Comet Trail trunk line, additional historical and cultural information should be incorporated into the signage program as programming progresses over time.

Similarly, if connections are made to schools within walking or bicycling distance, the Silver Comet Trail can serve as a hands-on environmental classroom for people of all ages to learn historical information and experience natural landscapes, furthering environmental awareness. Local schools and community groups will be able to incorporate outdoor learning activities into their curriculums and expose children to the experience of outdoor education. According to the book Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder, by Richard Louv, a reduction in time spent outside seems to increase behavioral problems, anxiety, depression, and attention deficit disorder, whereas more time outside increases an understanding of the natural world, relieves stress, and reduces undesirable behaviors. All subjects or curriculum can be presented in an outdoor classroom. Outdoor classrooms also provide alternatives for all to gain a better knowledge of what natural resources are and to understand the interconnectedness of these resources.

Parents gather with their kids to help children learn about riding bicycles safely to school during a bicycle education class.

Opportunities are available in an outdoor classroom to educate youth on the importance of taking care of the environment.

Bicycle Education & Skills (Adults)

Bicycle Skills Training Courses should be developed and offered to adult cyclists of all levels who wish to learn bicycling technique, how to navigate busy roads and complex junctions, and how to teach their children the proper and safe way to ride a bicycle. Courses that are taught as a series of three-hour, on-bike classes on the weekends would most likely be convenient for the majority of adults. The League of American Bicyclists offers excellent resources on proper bicycling practices and have League Cycling Instructors (LCIs) that teach courses to suit the needs of any cyclist.

Bicycle Education & Skills (Youth)

Bicycle Skills Training Courses should be developed and offered as part of summer camps or as an independent summer camp to youth cyclists of all levels to teach bicycling technique and how to navigate busy roads and complex junctions. These trainings could range from one-time, three-hour intensive trainings to a week-long series of daily, two-hour trainings as part of summer camps, to full-week bike adventure camps. The youth courses could also be incorporated into the physical education curriculum in elementary schools and middle schools, which would guarantee that a high percentage of the youth population in the northwest Georgia region are taught proper and safe handling of a bicycle. The Parks and Recreation Departments of the City of Atlanta, Cobb County, and other interested programs stakeholders should partner with community centers or the Boys and Girls Club to initiate adult and youth bicycle education and skills classes that can be attended in the evenings during the week or on the weekends.

Law Enforcement

Bicycle education courses should be taught by law enforcement officers to law enforcement officers to give all officers the tools they need to properly enforce the traffic and parking laws as they relate to bicyclists and pedestrians. The course curriculum should include information on the "rules of the road" for bicyclists, as well as the traffic laws for motorists. The course should be a combination of classroom instruction and field practice. The program will also be useful to police departments for educational outreach to the bicycle community or other organizations. Incorporating skills training and certification for officers who wish to patrol on bicycle could also be included in

these courses.

Bicycle Repair Programs

Bike repair programs encourage the learning of technique and create feelings of empowerment in participants in the program. Many programs teach bike safety, maintenance, and on-road skills and have encouraged more people to bicycle for exercise, transportation, and leisure. In addition, these programs have increased the visibility of bicycling in communities. Community bike-repair programs take different forms, but typically they are run by local community groups. These groups acquire used bicycles, often through donations, that are repaired by volunteers who are offered training for the repairs and an option to volunteer for earn-a-bike programs. Bicycle repair programs and bicycle co-ops successfully train citizens in proper bicycle maintenance for the simple trade of sweat equity. Citizens can bring in their own bicycle and learn how to perform maintenance and repairs and, in return, offer their time to perform maintenance and repairs on donated bicycles that will be distributed back out into the community.

Public Art Program

Art is one of the best ways to strengthen the connection between neighbors, community members, business owners, and local officials. Across America and elsewhere, public green or open spaces are being dedicated to local or regional art. Artists are employing a remarkably wide range of creative strategies to foster awareness of public spaces and are lending or donating pieces of art in support of the community initiative.

In 2004, American Trails launched "Artful Ways", a new partnership with the National Park Service Rivers and Trails Program, the USDA Forest Service, and the Bureau of Land Management. Artful Ways will encourage creative ways of enhancing trail interpretation and trail-related facilities on National Recreation Trails using temporary and permanent site-based art. NWGRC and ARC stakeholders should consider initiating a similar program for the Silver Comet Trail and partner with local artists to create engaging public art pieces for display at deliberate locations along the trail.

Public art along trails enhances the trail users' experience and promotes local artists.

Art Walks

To compliment the public art program, NWGRC and ARC should work with the local artists to plan and promote "Art Walks on the Trail", a series of events during which local artists may display pieces of their work for sale. An "Art Walk on the Trail" event should be planned on a segment of trail that is accessible from a trailhead. These events

would raise awareness of the Silver Comet Trail, attract people to the facility, create opportunities to socialize and meet new people, and promote local artists. Artists would benefit from the increased public exposure, especially those who do not have their own gallery or store front to display and sell their work.

Bicycle Parking Supports Local Establishments

All affected jurisdictions along the Silver Comet Trail corridor should update local zoning, licensing, and permit processes that designate the types and numbers of bicycle parking required at private employment and retail facilities. These facilities should offer bicycle parking in safe, well-illuminated areas near entrances. Providing secure bicycle parking is a key ingredient in efforts to encourage bicycling as a form of transportation. Placing long-term bicycle parking at transit stations provides opportunities for multi-modal travel and supports alternative transportation choices. Adequate and safe places to park bicycles will draw rail trail users into downtown areas to perform any number of activities that stimulate the local economy, such as shopping or enjoying a meal at a local establishment, running an errand at the post office, or returning a library book.

Recreational Community Activities: Weekend Walkabouts

Weekend Walkabouts are recreational community activities occurring regularly that promote community building, environmental stewardship, walking, and physical activity, while also bringing attention to the new rail trail. Weekend Walkabouts can be held either monthly from May to October or quarterly to include one walk per season, depending on community momentum and leadership. Weekend Walkabouts should be scheduled and held along different stretches of the rail trail. The events' walking routes should highlight safe and inviting places to connect to the rail trail and should be three miles or less in length. These events are ideal for individuals, families, and seniors.

Weekend Walkabouts may be organized based on themes for each walk, such as an architectural tour or a "Steeple Chase" tour (visiting historic churches located in close proximity to the rail trail). The tour could focus on the rail trail connections to parks, neighborhoods, or schools, or it could focus on the public art that will be located along the rail trail as part of the public art program. To generate added marketing potential, community leaders, artists, historians, or local celebrities could be chosen to lead each walk. For each event, at least one volunteer should be positioned at both the front and the rear of the walking group. The pace should remain at 2-2.5 miles per hour or less. A refreshment break with water should be offered at the halfway point for any walk of two or more miles.

Race Event Opportunities

Recreational running and bicycling races are extremely popular community building events. Local area events and races such as the Silver Comet 10K, half and full marathon, Dixie200 Relay, Race for a Cure, Frankie's Ride to the Border, already exist and help to foster community spirit. Project stakeholders should reach out to the organizations that plan and promote existing runs and bicycle events to determine if there are opportunities for partnership and rerouting race courses to run segments of a race on future trail connections. National Running Day takes place in June every year, and planning a new community event for an upcoming National Running Day would generate excitement in the region. Successful national examples of recreational community events are the "Susan G. Koman Race for the Cure", Ragnar Relay races, and the Warrior Dash. Obstacle courses such as the Warrior Dash and the Tough Mudder have become increasingly popular events around the country and should be considered in future programming initiatives for the trail. A more traditional event such as a duathlon should also be considered in future programming for the rail trail, as the cycling or running segment of the event could easily be planned on the trail.

Most local running stores and volunteer groups (such as Georgia Running and Big Peach Running Company) are already assisting with promotion and planning of races and have member email list-serves that they use to send information.

Walking or Bicycling Poster Contest

This fun and interactive local competition educates and engages students about the variety of benefits the trail provides. The poster contest should include an educational component that teaches students how the rail trail impacts the health, transportation, environment, and economies of the communities it traverses. A field trip to the rail trail should be planned for the class before the poster contest to inspire and excite the children. Each year Polk, Paulding, Cobb, (and eventually Floyd) County should coordinate with the school districts to schedule the contest and develop the "scoring" criteria for the posters. Students in grades four, five, or six would be the best age group for this contest, and the school districts should determine which grade (or grades) should participate. Once the details of the contest have been clearly defined, the students should be tasked with creating a poster that highlights the benefits and value of using the trail. Students could be asked to include their favorite memory from the class' trail field trip. A selection panel made up of the participating school districts

Race events draw visitors to the area, spurring tourism-related benefits, and create a sense of local community pride.

will choose the winner of the contest. After the announcement of the winning entry, the poster should be incorporated into the trailhead signage and put on display for a predetermined amount of time.

Walking and Bicycling Groups

Community walking or bicycling groups are dedicated to promoting, motivating and encouraging members to walk or bike for the health of it; to improve their quality of life by living active and healthy lifestyles; and fostering the spirit of fellowship and having fun along the way to better health and fitness. Most groups are open to all ages and abilities; however, some schedule different events offering more or less strenuous options for group members. In some communities, groups even offer "singles" bicycle rides which connect single adults with other people who enjoy the same activity. Many groups are formed with the goals of increased physical activity, enjoying good company, meeting new people, and finding pleasure in exploring new places in the community in a non-competitive environment – "Go at your own pace". Members celebrate health, fun, and the social benefits of physical activity by providing a variety of exercise and social events. There are several existing walking and bicycling clubs in Atlanta and the northwest Georgia region, and a map of the trail with trailhead areas and connections to other trails and parks should be developed and distributed to the existing groups.

Trail clean-up days preserve the natural environment and help with the overall management and maintenance of the trail.

Environmental Stewardship

Adopt-A-Trail Programs assist with maintaining, enhancing, and monitoring the trails and trailheads all over the country. Volunteers are utilized as part of the program and can be assigned segments of the rail trail. Anyone with an interest in trails and the outdoors can volunteer for the program. Individuals, families, businesses, community and service organizations, churches, schools, and scout troops are all examples of volunteers. Creating an Adopt-A-Trail program provides an opportunity for all members of the community to be actively involved in conservation and preservation. Through this program, local community groups and businesses could have to option of making a donation that is used for trail clean-up and maintenance. Helping to maintain and enhance the rail trail improves the resource for all to enjoy. The effort brings trail and nature enthusiasts closer to the environment and their community. Volunteers will enjoy the time they spend outdoors and the personal satisfaction gained through volunteerism. Volunteer activities could include:

- Keeping the trail surface free of sticks, rocks and other debris.
- Pruning small limbs from the trail corridor.
- Cleaning debris from benches, bridges,

and stairs.

- Litter clean-up.
- Cleaning waterbars and drainage ditches.
- Reporting trees across the trail, erosion problems, suspicious or illegal activities, vandalism, & safety issues.

Walking School Buses and Bicycle Trains

A walking school bus is a group of children walking to school with one or more adults. If that sounds simple, it is, and that's part of the beauty of the walking school bus. It can be as informal as two families taking turns walking their children to school or as structured as a route with meeting points, a timetable, and a regularly rotated schedule of trained, trustworthy volunteers.

A variation on the walking school bus is the bicycle train, in which adults supervise children riding their bikes to school. The flexibility of the walking school bus or bicycle train makes it appealing to communities of all sizes with varying needs.

When beginning a walking school bus or bicycle train, remember that the program can always grow. It often makes sense to start with a small bus or train and see how it works. Pick a single neighborhood that has a group of parents and children who are interested. It's like a carpool—without the car—with the added benefits of exercise and visits with friends and neighbors. For an informal bus:

- Invite families who live nearby to walk or bike.
- Pick a route and take a test trip.
- Decide how often the group will walk or bike together.

Success with a simple walking school bus or bicycle train may inspire a community to build a more structured program. This may include more routes, more days of walking, and more children. Such programs require coordination, volunteers, and potentially attention to other issues, such as safety training and liability. The school principal and administration, law enforcement, and other community leaders will likely be involved.

First, determine the amount of interest in a walking school bus or bicycle train program. Contact potential participants and partners, such as parents and children; principal and school officials; law enforcement officers; and other community leaders.

The Centers for Disease Control and Prevention recommend one adult for every six children. If children are age 10 or older, fewer adults may be needed. If children are ages four to six, one adult per three children is recommended.

A good time to begin is during International Walk to School Week, which takes place every October. Walk or bike and look for ways to encourage more children and families to be involved. There are numerous neighborhoods

located near or adjacent to the Silver Comet Trail, and at least three schools are located within 1/2 mile walking or bicycling distance of the trail. These conditions work well with the creation of walking school buses or bicycle trains. The counties should meet with representatives of the school system to begin discussing the development of this community program. There may be a "local champion" who already walks or bicycles with their child to school.

National Bike Month and Walk to School Day Support/Participation

National Bike Month is an opportunity to celebrate the unique power of the bicycle and the many reasons people choose bicycles as their mode of transportation or for recreation.

The schools located along, or in close proximity to the Rail Trail, should support, and as much as possible, encourage students, teachers and staff to participate in National Bike Month activities.

The NWGRC and ARC, in partnership with the counties and towns along the existing and future trail corridor should encourage employers and school systems to offer incentives to employees and students who participate in National Bike Month activities and Walk to School Day events to promote initiative and reward their participation. For example, Cobb, Paulding, and Polk County should encourage school districts to partner with parents to organize bicycling trains and walking school buses for the children who will participate in Walk to School Day. Each group of students should be led safely to school by a parent or teacher volunteer. Additionally, the State should also encourage employers to allow flexible work days to employees participating in National Bike Month.

Cost-Benefit Framework

Overview

Investment decisions are usually made in part based on a cost-benefit framework: what are the costs associated with an investment, and do the benefits that accrue from that investment positively compare? The purpose of this section is to aggregate the findings from this report into such a framework, so as to inform the decision as to whether and how to invest in the expansion of the Silver Comet Trail.

Cost Considerations

Expansion of the Silver Comet Trail will entail two kinds of costs: upfront capital costs and ongoing maintenance costs. Neither of these costs was estimated for this report, but when such cost estimation work is performed, it will be useful to understand them on a per-mile basis, and to understand how that per-mile cost may vary depending on how much the Silver Comet Trail is expanded by. In other words, it is likely that there are some fixed elements associated with both upfront

capital costs and ongoing maintenance costs, such that per-mile costs decrease if more mileage is added.

Benefit Considerations

Expansion of the Silver Comet Trail will entail a number of benefits, as articulated in this chapter (see Table 5.1):

1. $24 million more in recreational spending and $5 million more in tourism spending per year
2. $50 million more in economic impact each year within the Region, supporting 400 more jobs within the Region
3. $60 million more in economic impact each year within the State, supporting about 700 more jobs within the State and generating about $1.5 million more in tax revenues each year to the State
4. $130 million more in property value impact and $1.7 million more in annual property tax revenues to municipalities and school districts (and even more if investment catalyzes new development in addition to conferring property value gains on existing homes)
5. A greater magnitude of a number of more intangible benefits, such as greater attraction and retention of employers and employees, increased mobility (and attendant declines in emissions, congestion, and road wear), more direct use value, lower health care costs, and more ecological services rendered

Future Considerations

As noted above, to what extent these benefits are actually produced depends in large part on the characteristics of the expansion of the Silver Comet Trail, and not just on whether it happens or not: the quality, configuration, and design of the expansion will go a long way towards determining the existence and magnitude of these benefits. Nevertheless, these preliminary estimates serve as a useful guide for weighing the costs and benefits of any proposed expansion.

As noted above, to what extent these benefits are actually produced depends in large part on the characteristics of the expansion of the Silver Comet Trail, and not just on whether it happens or not. For example, the quality, configuration, and design of the expansion will go a long way towards determining the existence and magnitude of these benefits.

Where it is expanded to also matters, since areas proximate to major population centers are more likely to generate additional use both from those residents as well as from visitors who wish to use the trail while they are visiting nearby destinations. For example, a proposed future expansion to Chattanooga will make the Silver Comet Trail more accessible to the millions of people who live in and around that city as well as those who visit that city each year.

Table 5.1 Summary of Benefits Associated with the Expanded Silver Comet Trail

IMPACT CATEGORY	INCREASE IN BENEFITS	PER-MILE BENEFITS
Recreational Spending	From $47M to $71M per year	$0.71M- $1.07M
Tourism Spending	From $10M to $15M per year	$0.15M- $0.22M
Regional Economic Impact	From $98M supporting 750 jobs to $147M supporting 1,130 jobs per year	$1.48M- $2.22M supporting 11-17 jobs
Statewide Economic Impact	From $118M supporting 1,310 jobs to $177M supporting 1,980 jobs per year	$1.78M- $2.68 supporting 19-30 jobs
Statewide Fiscal Impact	From $3.5M to $5.1M per year	$0.05M- $0.08M
Property Value Impact	From +$182M to +$316M	$2.8M- $4.8M
Property Tax Gains from Property Value Impact	From $2.3M to $4.0M per year	$0.03M- $0.06M
New Development	More than twice as much aggregate increase in market value and annual increase in annual property tax revenues	

Source: Econsult Solutions, Inc. (2013)

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Implementation

Overview

A wide range of contributors have been involved in the planning, design, and implementation process for the Silver Comet Trail years before this study began. In order to determine the steps necessary to begin implementing additional trail connections to the Silver Comet Trail, it is important to recognize that the recommendations within this plan will require continued leadership and dedication to trail development on the part of a variety of agencies. Equally critical, and perhaps more challenging, will be meeting the need for a recurring source of revenue. Even small amounts of local funding could be very useful and beneficial when matched with outside sources. Most importantly, the local governments within the northwest Georgia region need not accomplish the recommendations of this Plan by acting alone; success will be realized through collaboration with state and federal agencies, the private sector, and non-profit organizations.

Given the present day economic challenges faced by local governments (as well as their state, federal, and private sector partners), it is difficult to know what financial resources will be available to implement this plan. However, there are still important actions to take in advance of major investments, including key organizational steps, the initiation of education and safety programs, and the development of strategic lower-cost trail projects. Following through on these priorities will allow the key stakeholders to be prepared for regional trail development over time while taking advantage of strategic opportunities, both now and as opportunities arise.

Implementation Schedule

Every trail project is unique, and, therefore, it is important to develop an implementation schedule that will meet the needs of the community while also taking into account budgetary constraints. Significant streamlining occurs when various phases of construction are consolidated into larger projects, and design

Table 6.1 Estimated Project Timeline

PROCESS	DESCRIPTION	CRITICAL PATH TASKS (MOS)	CONCURRENT TASKS (MOS)
RFQ	Request for Qualifications and Consultant Selection	3	
Contracting	Contracting between the City and the Consultant	2	
Survey	Detailed survey of the project area	2	
Preliminary Design	Preliminary Design of the Project	3	
Review	Review of Preliminary Design by Regulatory Agencies	3	
Permits	Application for local, state, federal permits		18
Final Design	Final Design of the project		2
Review	Review of Final Design by Regulatory Agencies		1
CD's	Preparation of Construction Documents	2	
Bidding	Soliciting public bids for the project	2	
Contracting	Contracting between the City and the Builder	1	
Construction	Construction of the rail trail	8 - 18	
TOTAL TIME FOR ONE PHASE OF DESIGN/CONSTRUCTION: 26-36 MONTHS			

and permitting for the entire project can be reviewed as one project. In the event that connections are not able to be funded as a single construction project and must be phased by section, a general schedule for the implementation of a single phase or section can be seen by looking at "typical" time frames for the various processes that projects must go through. These time frames are generally consistent, regardless of the size of a particular project. The general schedule presented in Table 6.1 is based on similar greenway project schedules. Since some of these processes occur simultaneously, the times listed are not cumulative. Items considered to be on the "critical path" are shown in the second column from the right.

Funding Strategies

Generally, greenways and trails are funded through a combination of local, state, and federal sources. Many funding programs require a minimum local match depending on the type of funding utilized. In some instances communities have successfully leveraged grant money from private foundations or state programs as a match for other funding sources. In-kind technical support is also available from federal and state agencies, such as the National Park Service.

Greenway and trail proponents should pursue a variety of funding sources for construction. Reliance on a single funding source can lead to a boom/bust cycle of construction as funding levels shift with the political winds. "Appendix A: Funding Sources" provides comprehensive information on funding programs that are typically used in Georgia for trail development, spur trail connections, or for the implementation of associated trail features and amenities.

Implementation Action Steps

The recommendations in previous sections provide the framework for the plan, while the following action steps provide a guide for the identified agencies and jurisdictions to further refine. It is important for positive, successful action to take place in order to build momentum and gain support on a regional level.

Step 1: Adopt the Silver Comet Trail Planning Study and Economic Impact Analysis.

Through adoption, the *Silver Comet Trail Planning Study and Economic Impact Analysis* becomes an official planning document of the region. Adoption procedures vary from community to community depending on existing plans and policies. In each jurisdiction, the planning board (as applicable) should review and recommend the plan to its governing body, which in turn must consider and officially incorporate the recommended trails of this plan into its land-use plans. The following entities should adopt this plan:

- Northwest Georgia Regional Commission (NWGRC)
- Atlanta Regional Commission (ARC)
- Polk County Board of Commissioners
- City of Rockmart
- City of Dallas
- Paulding County Transportation
- Chattanooga
- Cobb County
- City of Atlanta
- Rome/Floyd County Planning Department

Silver Comet Trail connections will be constructed in phases.

The plan should be reviewed and adopted by the appropriate approving body. The managing agency can then use this document to apply for funding.

Step 2: Continue Ongoing Public Outreach Efforts for Proposed Silver Comet Trail Connections.

An important element of success in obtaining support is to involve the public in

the recommended trail connections. Before proceeding with design, it will be necessary to build grass roots support and a broad constituency for each planning effort from design through construction and operation.

Public support regarding the benefits of the trail should also be developed within the local business community, among any local environmental or recreational groups, and with any groups related to travel or tourism (see Chapter 1 for a list of project stakeholders). It may be necessary to meet with individual landowners and local business owners in addition to holding community meetings. These meetings can serve to publicize the broad benefits of trails as well as the specific local benefits of the Silver Comet Trail. They also serve as a forum to address potential concerns and issues. Additional ways to involve the public and systematically garner support for the project include:

- Encourage existing non-profit groups to support the mission of creating the project
- Seek positive media stories that illustrate the benefits of the trail project to the wider community
- Present the project at community meetings, civic group meetings, and committee meetings, similar to what is being done through Bike! Walk! Northwest Georgia!
- Organize a trail event on the Silver Comet Trail to get the public excited about what future connections will become
- Identify a high-profile local champion such as an elected official or community leader

This work has already been commenced by the many stakeholders involved since the project's inception. This is an important element of involving the public, as the Silver Comet Trail has established a group of steadfast supporters of the project who can provide invaluable assistance in supporting future connections and aspects of the project.

Step 3: Form a Regional Trail Management Agency.

The Silver Comet Trail is a multi-jurisdictional project traversing three counties and multiple municipalities. Future connections will increase these numbers. One centralized authority is needed to plan, develop, and maintain facilities, as well as interface with the general public.

For successful implementation and operations, the Silver Comet Trail's expansion will require regional management. The careful creation of a Regional Management Agency would include a cooperative effort with the NWGRC and ARC.

The proposed concept for a Regional Regional Management Agency is to start small, with one model project – the Silver

Comet Trail – and establish good working relationships between various jurisdictions with regard to this pilot project. The following proposal outlines the structure for a Regional Management Agency that would handle the day-to-day operations of the Silver Comet Trail only. The proposed structure and responsibilities could be expanded over time to include other jurisdictions within the northwest GA region, Atlanta, and Chattanooga area, as well as other parks, trails, and open space projects. The proposal is modeled after the Northern Virginia Regional Park Authority[1] , which has successfully managed a number of parks and recreational facilities for more than 50 years.

Operations and maintenance refers to specific day-to-day tasks and programs performed to assure resources and facilities are kept in good, safe, usable condition. This begins with sound design, durable components, and a comprehensive management plan. The management plan should be embraced by the entities responsible for maintaining the trail network at the beginning of the implementation process. In addition, community groups, residents, business owners, developers, and other stakeholders should be engaged in the long-term stewardship of the resources preserved and enhanced by the Silver Comet Trail and its connections.

Figure 6.1 Silver Comet Trail Regional Management Agency

Additional trail connections will involve multiple agencies.

Administrative Structure, Roles, and Responsibilities

For a successful trail facility to be developed, it is critical for those involved in the operations and management of the Silver Comet Trail to understand their role in supporting and managing the trail. The Silver Comet Trail and its spurs will be developed and maintained by separate jurisdictions. Figure 6.1 illustrates the organizational structure for operating and managing the existing trail and future connections. Members of the Regional Management Agency would be responsible for making policy decisions and establishing a line of two-way communication. They would convey to other members the interests of their jurisdiction, and convey activities of the Agency back to their localities. Members would work together on a voluntary, cooperative basis and would meet quarterly.

Meetings would be open to the public, providing local land owners and trail users a forum to address issues and concerns regarding cross-access, vegetation control, illegal corridor use, and daily operations. Individuals and organizations wishing to use the Silver Comet Trail for special events would also require the approval of the Regional Parks and Trails Authority. Listed below are the key departments and organizations that will play a role in the implementation, maintenance, and management of the Silver Comet Trail as part of the Regional Management Agency.

NWGRC and ARC

- Coordination for transportation grant funding. In the event additional coordination is needed for other roles, NWGRC and ARC could serve as a facilitator of meetings, especially if it involves the Mayors or City/Town Managers of each jurisdiction.

Cobb, Paulding, Polk and Floyd County

- Each county effected by the Silver Comet Trail and its connections would have the overall responsibility for trail development and maintenance, with a supporting role from the PATH Foundation. The counties will need to work closely with the Planning Department in the design development of trails within each community.

- NWGRC and ARC will be the facilitator for this shared role.
- Routine and remedial maintenance along existing and future trail connections.

PARKS AND RECREATION DEPARTMENTS

- Scheduling events, marketing, etc. Parks and Recreation Departments would work closely with Commerce and Tourism departments. NWGRC and ARC can facilitate these meetings to get things started.
- Jointly, volunteers could be coordinated for various tasks, such as guided trail walks, seasonal clean ups, etc.

ROLE OF CITY POLICE DEPARTMENTS

- The City Police Departments should assist the Parks and Recreation Departments with patrolling and law enforcement for existing and future Silver Comet Trail lands and facilities.

ROLE OF COUNTY SHERIFF'S DEPARTMENTS

- Similarly, the County Sheriff's Departments should assist with patrolling of the Silver Comet Trail and associated facilities.
- For future trails, as part of the public involvement process, local officers should be part of steering committees or project task forces to provide safety and security oversight during design.

PLANNING DEPARTMENTS

- The Planning Departments should provide support for the Silver Comet Planning Study and Economic Impact Analysis and assistance with future implementation of the system. This can be accomplished by defining future phases within related planning effort, utilizing the rezoning process to encourage dedication of lands, and planning transportation improvements in coordination with trails.

NON PROFIT AGENCIES

- PATH Foundation, GRITS, and Bike! Walk! Northwest Georgia! have been instrumental during the development of the Silver Comet Planning Study and Economic Impact Analysis and should continue to work closely with the NWGRC and ARC throughout design development.

ROLE OF PRIVATE SECTOR

The private sector throughout northwest Georgia is the primary beneficiary of the Silver Comet Trail and its future connections. As such, private organizations, businesses, and individuals can and should play an important role in the development and management of the system. Private sector groups and businesses can sponsor implementation projects for open space and trails as a partner of the cities. These groups can also help to maintain open space and trail lands through cooperative management agreements with the local agency.

ROLE OF LOCAL BUSINESSES AND CORPORATIONS

Local businesses and corporations might choose to sponsor a segment of trail for development or maintenance. Businesses and corporations can work with the Parks and Recreation Departments to give money, materials, products, and labor toward the development of a trail facility. Businesses can also consider installing facilities, such as bike racks or lockers, benches, and signage, that link their operations to the Silver Comet Trail.

ROLE OF CIVIC ORGANIZATIONS

Local civic groups and organizations - including the Junior League, Boy Scouts and Girl Scouts, Women's Club, Chamber of Commerce, garden clubs, YMCA, Kiwanis, and Rotary Clubs, to name a few - can be participants in the implementation of the Silver Comet Trail. These organizations can play a vital role in building future sections of trail, maintaining and managing trail lands and facilities, and co-hosting events that raise money for the Silver Comet Trail.

There are many ways in which civic organizations can participate in the development of future Silver Comet Trail connections. The most appropriate involvement can be determined by matching the goals and objectives of each organization to the needs of the trail program.

ROLE OF INDIVIDUAL CITIZENS

Local residents who are interested in the development of future Silver Comet Trail connections can participate by agreeing to donate their time, labor, and expertise to the Parks and Recreation Departments.

Residents might choose to partner with a friend or form a local neighborhood group that adopts a section of trail for maintenance and management purposes. As an adopt-a-trail organization, individuals might help pick up trash, plant flowers and trees, care for newly planted vegetation, and serve as additional "eyes and ears" for safety and security on trail lands. All volunteer efforts would be recognized by the Parks and Recreation Department through a community-wide program.

Routine and Remedial Maintenance

Maintenance needs will depend upon many factors, including trail surface type, the use of paint or thermoplastic for markings, and traffic volumes. The Cobb, Paulding, and Polk County should make immediate repairs to any trail facilities that are damaged or have hazardous conditions. A local staff member in charge of maintenance should set up a free maintenance hotline for users to provide information about spot maintenance needs in the urban area.

A government staff member should also be designated as the main contact for the maintenance of trail facilities near any

roadway right-of-way. This staff member should coordinate with the appropriate departments to conduct maintenance activities in the field or with GDOT. Funding for an ongoing maintenance program should be included in the responsible agency's operating budget or Capital Improvements Program.

Trail Facility Management and Administration

A memorandum of agreement (MOA) should be established between Cobb, Paulding, Polk, Floyd County, and PATH Foundation for management, operations, and maintenance of the Silver Comet Trail and its connections. The primary purpose of this agreement is to ensure that the public's health and safety are protected during the normal use of the trail. The Silver Comet Trail should be classified under this agreement as a "linear park" and maintained in a manner that is consistent with other park and trail facilities.

Staffing Needs

In addition to funding for routine and non-routine maintenance activities, it is recommended that additional staffing needs be considered during the annual budgeting process. These additional staffing needs include a Trail Coordinator who

CASE STUDY

Northern Virginia Regional Park Authority (NVRPA)

The NVRPA was established in the 1950s to carry out the planning, development, and operations of regional parks and trails in Northern Virginia. Citizens and representatives of Arlington County, Fairfax County, Loudoun County, the City of Alexandria, the City of Falls Church, and the City of Fairfax work together to protect and preserve Northern Virginia's natural beauty. To date, over 10,000 acres of wooded land, meadows, streams, and lakes have been preserved. The presence of a Regional Park Authority in Northern Virginia makes it possible to preserve sensitive habitats, lands, and water bodies on a large scale that would not be possible for individual cities and counties to accomplish alone. The six local governments that make up the NVRPA have pooled their funds together with the Virginia Department of Conservation & Recreation, the Land & Water Conservation fund, and REI -- along with contributions from other member jurisdictions, state and federal grants, and private and non-profit donations -- to create a well-managed system of parks and trails that benefit the entire region.

would be responsible for implementing the trail maintenance management system and coordinating volunteers responsible for trail maintenance. It is recommended that this new position be a full-time staff person supervised by the NWGRC or ARC. It is recognized that adding additional staff may not be immediately possible, and in many small-to-medium sized communities the duties and responsibilities of the Trail Coordinator are handled by existing staff until additional staff can be hired.

Step 4: Identify Funding

Achieving the vision that is defined within this plan will require, among other things, a stable and recurring source of funding. Communities across the country that have successfully engaged in trail programs have relied on multiple funding sources to achieve their goals. No single source of funding will meet the recommendations identified in this plan. Instead, stakeholders will need to work cooperatively with all the municipality, state, and federal partners to generate funds sufficient to implement the program.

A stable and recurring source of revenue is needed to generate funding that can then be used to leverage grant dollars from state, federal, and private sources. The ability of the local agencies to generate a source of funding for trails depends on a variety of factors, such as taxing capacity, budgetary resources, voter preferences, and political will. It is very important that these local agencies explore the ability to establish a stable and recurring source of revenue for trails.

Donations from individuals or companies are another potential source of local funding. NWGRC and ARC should establish an Adopt-A-Greenway program as a mechanism to collect these donations for future connections. In addition to a formalized program, a website should be set up as an easy way for individuals to donate smaller amounts.

Federal and state grants should be pursued along with local funds to pay for trail ROW acquisition and trail design, construction, and maintenance expenses. "Shovel-ready" designed projects should be prepared in the event that future federal stimulus funds become available. Recommended funding sources may be found in Appendix A.

Step 5: Plan, Design, Construct, And Maintain Future Silver Comet Trail Connections.

Once a trail segment is selected and land is acquired, trail design typically follows. However certain segments connecting to the Silver Comet Trail will require a more detailed planning or feasibility study prior to engaging the design process. In addition, the design of certain recommended corridors connecting to the Silver Comet Trail trunk line will require clearing and grading, and design or construction documents will vary in their complexity. It will be essential for

County, City, and Town staff to determine the intended uses of a particular segment and to design and construct with those uses in mind. Intended uses of the trail will dictate the ideal trail surface and will have a direct bearing on the construction and maintenance costs. Trail construction costs will vary, and until a project is put out for competitive bid, there is no way to accurately determine local prices. A competitive bid process should ask for the cost of trail construction using the three most common trail construction surfaces (granite screening, asphalt, and concrete) in order to fully understand the costs and potential savings when making a decision between one building material over another. Work closely with a design consultant to ensure the contract documents are being developed according to this plan's recommendations; state, local, and federal permitting issues; design specifications; and budget costs. It will be essential for the Regional Trail Management Agency to manage this very important step.

Personal safety, both real and perceived, heavily influences a trail user's decision to use a trail and a community's decision to embrace a trail system. Proper design must address both the perceived safety issues (i.e., feeling safe or fear of crime) and actual safety threats (i.e., infrastructure failure and criminal acts). Creating a safe trail environment goes beyond design and law enforcement and should involve the entire community. The most effective and most visible deterrent to illegal activity on the trail and at the trailhead will be the presence of legitimate users. Getting as many "eyes on the corridor" as possible is a key deterrent to undesirable activity.

An example of a permeable fence between a trail and residential backyards (residential properties are on the right) using CPTED principles.

CPTED is a proactive approach to deterring undesired behavior in neighborhoods and communities. CPTED is defined as "the proper design and effective use of the built environment that can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life." The basic premise of CPTED is that the arrangement and design of buildings and open spaces can encourage or discourage undesirable

behavior and criminal activity. A report prepared for the National Institute of Justice noted that "physical features influence behavior" and the "[offenders] prefer to commit crimes that require the least effort, provide the highest benefits and pose the lowest risks" . When all spaces have a defined use and the use is clearly legible in the landscape, it is easier to identify undesired behavior. The following are the four key CPTED principals:

- Natural Access Control, including the placement of entrances, exits, fencing, landscaping, hours of operation and lighting. Natural access control helps to clearly differentiate public and private space.
- Natural Surveillance, including the placement of physical features, activities, and people to maximize visibility. Natural surveillance increases the opportunity "to be seen" and thereby deters unwanted behavior.
- Territorial Reinforcement strategies put the spotlight on undesired behavior and activities, increasing the perception of being watched. Strategies include the use of physical attributes such as fences, paving materials, public art, signage, and "security" landscaping materials to convey ownership of the space along the corridor and buffer private properties. Pedestrian-scaled mile markers tagged with emergency IDs or "address" codes, along with emergency phones (where cell service is not available), are key territorial reinforcement strategies. Including pedestrian-scaled mile markers, GPS coordinates and signs are also effective strategies.
- Maintenance to allow for the continued use of the space for its intended purpose. Maintenance is an expression of ownership of a property. Unmaintained facilities indicate that there is a greater tolerance of disorder and less control by the intended users.

Annual operations and maintenance costs vary, depending upon the facility to be maintained, level of use, location, and standard of maintenance. Operations and maintenance budgets should take into account routine and remedial maintenance over the life cycle of the improvements and on-going administrative costs for the operations and maintenance program.

Step 6: Begin Top Priority Project Construction.

By moving forward quickly on priority trail projects, agencies in the region will demonstrate their commitment to carrying out this plan and will better sustain enthusiasm generated during the public outreach stages of the planning process. Refer to Chapter 4: Recommendations for priority trail project ranking.

With existing available funds, award a construction contract for Phase 1 of the

Silver Comet Trail connections. Develop a predetermined timeline for construction completion. The design consultant can provide assistance by helping to facilitate the bidding process. Depending on funding sources, the contractor may need to be selected through a formal bidding process in which the project scope and parameters are publicly defined.

Step 7: Evaluation

Working with regional partners, establish a recurring trail usage evaluation program to determine trends over time, effectiveness of new connections, and economic impact. Train and enlist the help of volunteers similar to their work completed during the Trail Usage Evaluation.

Conclusion

It is necessary to make north/south connections to preserve and expand the vitality of the Silver Comet Trail as a regional attraction and recreational draw. The Silver Comet Trail is already a model public amenity that has increased adjacent property values, fulfilled a need for outdoor recreation opportunities, offered a safe route for bicycle commuting as an alternate to driving, raised recreational revenue, revitalized local communities, and improved the overall quality of life in northwest Georgia. By reaching to make additional regional connections to this invaluable economic development tool, the region is making the commitment to increase these benefits for its citizens and visitors. There are obstacles to overcome before these benefits can be realized. Using the action steps outlined above, objectives can be achieved with the patience and cooperative effort of regional jurisdictions and project partners. A foundation of local leaders, trail advocates, and citizen support will contribute to the successful planning, design, and consequent construction of the Silver Comet Trail that will be enjoyed by generations to come.

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Appendix A: Funding Sources

Trail Funding Sources Overview

Due to the cost of most construction and trail development activities, it may be necessary to consider several sources of funding, that when combined, would support these costs. This appendix outlines sources of funding at the federal, state, and local government levels and from the private sector. These sources cover a variety of costs related to trail and community development along proposed Silver Comet Trail connections and surrounding areas. The following descriptions are intended to provide an overview of available options and do not represent a comprehensive list. Funding sources can be used for a variety of activities, including: planning, design, implementation and maintenance. It should be noted that this section reflects the funding available at the time of writing. The funding amounts, fund cycles, and even the programs themselves are susceptible to change without notice.

Federal Funding Sources

Federal funding is typically directed through State agencies to local governments either in the form of grants or direct appropriations, independent from State budgets, where shortfalls may make it difficult to accurately forecast available funding for future project development. Federal funding typically requires a local match of approximately 20%, but there are sometimes exceptions, such as the recent American Recovery and Reinvestment Act stimulus funds, which did not require a match. Since these funding categories are difficult to forecast, it is recommended that the local jurisdiction work with its Metropolitan Planning Organization (MPO) or Regional Commission (RC) on getting pedestrian projects listed in metro and state Transportation Improvement Programs (TIP), as discussed below. The following is a list of possible Federal funding sources that could be used to support construction of many trail improvements. Most of these are competitive, and involve the completion of extensive applications with clear documentation of the project needs, costs, and benefits.

Moving Ahead For Progress In The Twenty-First Century (MAP-21)

The largest source of federal funding for bicycle and pedestrian is the US DOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal- Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty- First Century (MAP-21) was enacted in July 2012 as Public Law 112-141. The Act replaces the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 - June 2012. MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27 month period between July 2012 and September 2014. It is not possible to guarantee the continued availability of any listed MAP-21 programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and thus may continue to provide capital for active transportation projects and programs.

In Georgia, federal funds are administered through the Georgia Department of Transportation (GDOT) and Metropolitan Planning Organizations, such as the Atlanta Regional Commission (ARC). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system. There are a number of programs identified within MAP-21 that are applicable to bicycle and pedestrian projects, such as the Recreational Trails Program and Safe Routes to Schools.

More information: http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

Transportation Alternatives

Transportation Alternatives (TA) is a new funding source under MAP- 21 that consolidates three formerly separate programs under SAFETEALU: Transportation Enhancements (TE), Safe Routes to School (SR2S), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, and rail-trails. TA funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TA does not provide a guaranteed set-aside for this activity as SAFETEA-LU did. Unless the Governor of a given state chooses to opt out of Recreational Trails Program funds, dedicated funds for recreational trails continue to be provided as a subset of TA. MAP-21 provides $85 million nationally for the RTP. Complete eligibilities for TA include: Transportation

Alternatives as defined by Section 1103 (a) (29). This category includes the construction, planning, and design of a range of bicycle and pedestrian infrastructure including "on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990." Infrastructure projects and systems that provide "Safe Routes for Non-Drivers" is a new eligible activity.

More information: http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

Safe Routes To School

The purpose of the Safe Routes to Schools (SRTS) program is to promote safe, healthy alternatives to riding the bus or being driven to school. All projects must be within two miles of primary or middle schools (K-8). Under MAP-21, dedicated funding for the SRTS program has been eliminated. However, SRTS activities are eligible to compete for funding alongside other projects under the Transportation Alternatives Program. Eligible projects may include:

- Engineering improvements. These physical improvements are designed to reduce potential bicycle and pedestrian conflicts with motor vehicles. Physical improvements may also reduce motor vehicle traffic volumes around schools, establish safer and more accessible crossings, or construct walkways, trails or bikeways. Eligible improvements include sidewalk improvements, traffic calming/speed reduction, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, and secure bicycle parking facilities.
- Education and Encouragement Efforts. These programs are designed to teach children safe bicycling and walking skills while educating them about the health benefits, and environmental impacts. Projects and programs may include creation, distribution and implementation of educational materials; safety based field trips; interactive bicycle/pedestrian safety video games; and promotional events and activities (e.g., assemblies, bicycle rodeos, walking school buses).
- Enforcement Efforts. These programs aim to ensure that traffic laws near schools are obeyed. Law enforcement activities apply to cyclists, pedestrians and motor vehicles alike. Projects may include development of a crossing guard program, enforcement equipment, photo enforcement, and pedestrian sting operations.

Highway Safety Improvement Program

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides $2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural roads set-aside unless safety statistics demonstrate that fatalities are increasing on these roads. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds.

Surface Transportation Program (STP)

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of projects on any Federal-aid Highway including the National Highway System, bridges on any public road, and transit facilities. Bicycle and pedestrian improvements are eligible activities under the STP. This covers a wide variety of projects such as on-street facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. SAFETEA-LU also specifically clarifies that the modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is an eligible activity. Funds under Title 23 generally may be used

only for projects that are on the Federal aid highway system -- which typically does not include local or minor collector roads. However, bicycle and pedestrian projects not located on the Federal-aid highway system may be funded under the STP (and therefore also under the Transportation Enhancement Activities, Congestion Mitigation and Air Quality Improvement Program) and under the Bridge Program. Highway Safety Improvement Program funds may be spent on any public highway or trail. In addition, non-construction projects, such as maps, coordinator positions, and encouragement programs, are eligible for STP funds.

More information: http://www.fhwa.dot.gov/safetealu/factsheets/stp.htm

Transportation, Community, And System Preservation Program

The Transportation, Community, and System Preservation (TCSP) Program provides federal funding for transit oriented development, traffic calming, and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services, and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The TCSP Program

funds require a 20 percent match. Pedestrian and bicycle projects meet several TCSP goals, are generally eligible for the TCSP program and are included in many TCSP projects. The program provides funding for a comprehensive initiative including planning grants, implementation grants, and research to investigate and address the relationships among transportation, community, and system preservation plans and practices and identify private sector-based initiatives to improve those relationships. The program was authorized at $61 million nationally in federal fiscal year 2011 and provided $782,640 for the Atlanta Beltline City Hall East Bicycle/Pedestrian Bridge. Congress has identified projects to be selected for funding through the TCSP program. Assuming that this method is used to allocate TCSP funds in the future, local jurisdictions will need to work closely with their RC/MPO, GDOT, and members of Congress to gain access to this funding.

More information: http://www.fhwa.dot.gov/tcsp/

Congestion Mitigation And Air Quality Improvement Program (CMAQ)

The Congestion Mitigation and Air Quality (CMAQ) Improvement program provides funds for programs in "air quality non-attainment and maintenance areas" (areas that do not meet federal air quality standards) and projects designed to improve air quality and reduce congestion, without adding single occupant vehicle capacity to the transportation system. Along the proposed Silver Comet Trail connections, Cobb, Floyd, Fulton, and Paulding Counties were designated as non-attainment areas for PM2.5 as of December 2012. The federal formula for CMAQ allocates funds based on MPO population and congestion. Georgia gets approximately $58 million in annual CMAQ funds, with the Atlanta Regional Commission receiving the majority of funds. These federal dollars can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. CMAQ funding is processed by GDOT through Georgia's Metropolitan Planning Organizations (MPOs). Individual project proposals must meet a minimum cost threshold of $100,000, and must meet a required local share of 20%. SAFETEALU authorized an extension of CMAQ Program funds through FY 2012.

More information: www.dot.ga.gov/cmaq

Recreational Trails Program (RTP)

The Recreational Trails Program (RTP) provides funds to the States to develop and maintain recreational trails and trail related facilities for both non-motorized and motorized recreational trail uses. The RTP is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). Federal transportation

funds benefit recreation including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles. The RTP funds come from the Federal Highway Trust Fund, and represent a portion of the motor fuel excise tax collected from non-highway recreational fuel use: fuel used for off-highway recreation by snowmobiles, all-terrain vehicles, off-highway motorcycles, and off-highway light trucks. The RTP funds are distributed to the States by legislative formula: half of the funds are distributed equally among all States, and half are distributed in proportion to the estimated amount of non-highway recreational fuel use in each State. See the Funding Levels by State. Recreational Trails Program funds are apportioned to the States by legislative formula (23 U.S.C. 104(h)). FHWA receives $840,000 per year for program administration, trail related research and technical assistance, and training. The remainder of the funds is distributed to the States. Half of the funds are distributed equally among all States, and half are distributed in proportion to the estimated amount of non-highway recreational fuel use in each State: fuel used for off-road recreation by snowmobiles, all-terrain vehicles, off-road motorcycles, and off-road light trucks. In 2012, Georgia received $1,624,535 in apportioned funds for its Recreational Trail Program, with $1,464,588 obligated. In 2013, Georgia has received $ 1,740,137 in apportioned funds, with obligation levels yet to be determined as of this writing. Under MAP-21, governors may choose to opt out of a portion or all of this "dedicated" RTP funding. As of this writing, the governor of Georgia has not opted out of the RTP funding. If the governor does opt out, these funds still must remain in Transportation Alternatives.

More information: http://www.fhwa.dot.gov/environment/recreational_trails/index.cfm

National Recreation Trails

Though not a source of funding, NRT designation from the Secretary of the Interior recognizes exemplary existing trails of local or regional significance. NRT designation provides benefits, including access to technical assistance from NRT partners and listing in a database of National Recreation Trails. In addition, some potential support sources will take NRT designation into account when making funding decisions. The Silver Comet Trail was designated a National Recreation Trail in 2002.

More information: http://www.americantrails.org/nationalrecreationtrails/

Rivers, Trails, And Conservation Assistance Program

Also not a source of funding, RTCA is a technical assistance arm of the National Park Service dedicated to helping local groups and communities preserve and develop open space, trails and greenways. RTCA is an important resource center for many

trail builders in urban, rural and suburban areas. "Instead of money," their Web site notes, "[RTCA] supplies a staff person with extensive experience in community-based conservation to work with a local group on a project."

More Information: http://www.nps.gov/ncrc/programs/rtca/index.htm

Federal Transit Administration Programs

Federal Transit Administration (FTA) funding is available for projects designed to improve access to transit. Individual grant programs vary on the specific goals, but eligible improvements include crossing improvements, pedestrian signals, sidewalks and trails. Programs of the FTA are described in the following section.

FTA Urbanized Area Formula Program

The FTA capital/operating grant is for urbanized areas with populations over 50,000. This grant can be used for pedestrian or bicyclist access to transit.

More information: http://www.fta.dot.gov/funding/grants/grants_financing_3561.html

Formula Grants For Other Than Urbanized Areas

This program is formula-based and provides funding to states for supporting public transportation in rural areas with populations of less than 50,000. This grant funds routes to transit, bike racks, shelters, and equipment for public transportation vehicles.

More information: http://www.fta.dot.gov/funding/grants/grants_financing_3555.html

Metropolitan And Statewide Planning

This program provides funding for statewide and metropolitan coordinated transportation planning. Federal planning funds are first apportioned to State DOTs. State DOTs then allocate planning funding to MPOs. Eligible activities include pedestrian or bicycle planning to increase safety for non-motorized users, and to enhance the interaction and connectivity of the transportation system across and between modes.

More information: http://www.fta.dot.gov/funding/grants/grants_financing_3563.html

Partnership For Sustainable Communities

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to "improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide." The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure ("Provide more transportation choices:, develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign

oil, improve air quality, reduce greenhouse gas emissions, and promote public health"). The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including both TIGER I and TIGER II grants). Georgia jurisdictions should track partnership communications and be prepared to respond proactively to announcements of new grant programs. Initiatives that speak to multiple livability goals are more likely to score well than initiatives that are narrowly limited in scope to pedestrian improvement efforts.

More information: http://www.sustainablecommunities.gov/

Federal Community Development Block Grant

Community Development Block Grant (CDBG) funds are allocated through the States to local municipal or county governments for projects that enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low and moderate income. The program provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at HUD. The CDBG program provides annual grants on a formula basis to 1209 general units of local government and States. Federal CDBG grantees may use Community Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grants funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs.

More information: http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs

Rivers, Trails, And Conservation Assistance Program

The Rivers, Trails and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation funds available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users,

encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development in Georgia locales indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

More information: http://www.nps.gov/ncrc/programs/rtca/

State Funding Sources

Unlike many states, Georgia has no consistent funding source that supports acquisition, development and rehabilitation of outdoor recreation areas. While the State of Georgia operated a Recreation Assistance Fund from 1978-1999, the state is currently one of fourteen states with no consistent source of funds for parks and recreational agencies. Lacking state assistance for recreation, many of the programs operated in Georgia are derived from federal funding sources administered at the state level.

Transportation Improvement Programs (TIP)

Transportation Improvement Programs (TIPs) in Georgia are administered by Metropolitan Planning Organizations (MPOs) within metro areas. These TIPs can contain a variety of transportation projects, including bicycle and pedestrian facilities. Outside of metro areas, Georgia maintains a Statewide Transportation Improvement Program (STIP). However, bicycle and pedestrian planning in non-MPO areas are typically funded through Regional Commissions (RCs). The distinctions between MPOs and RCs are discussed below. The Atlanta Regional Commission (ARC) includes planning levels for both the MPO and RC level, with MPO boundaries including several counties outside of the core ARC area.

The proposed Silver Comet Trail connections in Cobb, Fulton, and Paulding Counties are located within the ARC MPO area; the trail connections in Polk and Floyd Counties are located within the Northwest Georgia Regional Commission (NWGRC).

Metropolitan Planning Organizations (MPOs) are federally designated agencies created in urban areas containing more than 50,000 people. Fifteen MPOs operate within Georgia. They are charged with conducting comprehensive, coordinated planning processes to determine the transportation needs of their respective constituencies, and prioritizing and programming projects (including bicycle and pedestrian projects) for federal funding. The MPOs conduct open public meetings annually for input into the development of the Long Range Plans and Transportation Improvement Programs.

The Georgia State Planning Act of 1989 included key provisions for the creation of Regional Development Commissions throughout the state intended to assist local governments in planning and coordinate regional planning. These entities were

later consolidated into twelve Regional Commissions (RCs). GDOT contracts with Regional Commissions (Except the Atlanta Regional Commission) to provide bicycle and pedestrian transportation services. Sample projects include:

- Regional bicycle and pedestrian plans
- Safe Routes to School Plans
- Rails-to-Trails Feasibility Studies
- Purchasing bike route signage and coordinating their installation
- Bike route and trail mapping
- Walkable community design workshops

Atlanta Regional Commission Division of Bicycle and Pedestrian Planning: http://www.atlantaregional.com/transportation/bicycle--pedestrian

Northwest Georgia Regional Commission: http://www.nwgrc.org/

Georgia Statewide Transportation Improvement Program: http://www.dot.ga.gov/informationcenter/programs/transportation/Pages/stip.aspx

Governor's Highway Safety Office

The Governor's Highway Safety Office (GHSO) is Georgia's advocate for highway safety. This office works with law enforcement, judicial personnel and community advocates to coordinate activities and initiatives relating to the human behavioral aspects of highway safety. The GHSO's mission is to develop, execute and evaluate programs to reduce the number of fatalities, injuries and related economic losses resulting from traffic crashes on Georgia's roadways. The office works in tandem with the National Highway Safety Administration to implement programs focusing on occupant protection, impaired driving, speed enforcement, truck and school bus safety, pedestrian and bicycle safety and crash data collection and analysis. Programs administered by the Governor's Highway Safety Office are 100% federally funded.

More information: http://www.gahighwaysafety.org/

Georgia Recreational Trail Program

In Georgia, the administration of the Recreational Trail Program is handled by the Department of Natural Resources (DNR), Division of Parks, Recreation, and Historic Sites. Under this program, the Grants Administration and Planning Unit of Georgia DNR provides 80/20 grant assistance for eligible applicants for land acquisition, development of public recreational trails, non-routine maintenance, and assessment of existing public trails.

The Georgia Recreational Trail Program has several criteria for applicants of trail funding. Lands and facilities that receive funding must be for public trails or the direct support of trail usage. In order to satisfy the public requirement, trail facilities must be open to the general public without discrimination during reasonable times and hours, and must be maintained and operated

for public recreational usage. Eligible applicants must be legally constituted entities such as state and federal agencies, cities, counties, recreational commissions, or recreational authorities with legislative sanction. Applicants must also demonstrate that proposed trail projects are identified or further a specific planning goal of Georgia's Statewide Comprehensive Outdoor Recreation Plan (SCORP). Likewise, the proposed trail project should be consistent with needs identified in the sponsor jurisdiction's local comprehensive plan.

Annual grant cycles begin with applications in the fall and grant awards announced in early March of the following year.

More information: http://georgiastateparks.org/Content/Georgia/word/grants/09-2012/rtpmanua.pdf

Land And Water Conservation Fund

The Land, Water & Conservation Fund (LWCF) program is a federally funded, state administered grant program and provides matching grants to local governments and state agencies that provide recreation and parks, for the acquisition and development of public outdoor recreation areas and facilities. All grant projects must be on publicly owned land. In Georgia, the LWCF has helped finance land acquisition for linear parks, such as the Chattahoochee River National Recreation Area.

The Georgia Department of Natural Resources (DNR) Division of Parks, Recreation, and Historic Sites conducts a Statewide Comprehensive Outdoor Recreation Plan (SCORP) each five years to articulate state recreational policy and maintain eligibility for federal funds from the Land and Water Conservation Fund (LWCF). LWCF grants support state, county, and city outdoor recreation projects for land acquisition, development, and rehabilitation.

The most recent iteration of the SCORP covers the planning period of 2008-2013. Under this plan, three key priorities are identified as follows:

- Promote Health / Fitness and Livability of All Communities
- Enhance Economic Vitality
- Conserve and Properly Use Natural Resources

Of these three primary goals, the promotion of health, fitness, and livability appears to apply the most closely to trail development. For example, one key recommendation under this goal is to explore ways of connecting existing parks and recreational facilities for pedestrians and non-motorized vehicles, such as bikes and in-line skates.

Georgia Land & Water Conservation Fund Grants: http://gastateparks.org/grants/lwcf

Georgia Statewide Comprehensive Outdoor Recreation Plan: http://www.gastateparks.org/item/152835

Local Government Funding Sources

Municipalities often plan for the funding of pedestrian and bicycle facilities/improvements through development of Capital Improvement Programs (CIPs). For example, the City of Powder Springs has financed local extensions connecting to the Silver Comet Trail through municipal general funds. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. A variety of possible funding options available to Georgia jurisdictions for implementing bicycle and pedestrian projects are described below. However, many will require specific local action as a means of establishing a program, if not already in place.

Capital Reserve Fund

Other states have created statutory authority for municipalities to create capital reserve funds for any capital purpose, including bicycle and pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose of the fund, the duration of the fund, the approximate amount of the fund, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants and donations for the specified use.

More information: http://www.osc.state.ny.us/localgov/pubs/lgmg/reservefunds.pdf

Community Improvement Districts (CIDs)

Community Improvement Districts (CIDs) are a voluntary self-taxing mechanism for funding governmental services, such as parks and recreation, road construction, storm water and waste water systems, water systems, public transportation, and other services. CIDs can levy taxes, fees and assessments on non-residential properties and apply the funds to governmental services and facilities within the CID boundary. CIDs can also fund improvements through issuing bonds. However, CID-issued bonds may not be considered an obligation of the state or local government other than the CID itself. The Georgia General Assembly may create a CID by local legislation, with conditional approval of the city or county government where the CID is located. In addition, the creation of a CID is contingent on receiving the written consent of a majority of the property owners within the CID that would be subject to CID taxes, fees and assessments. The governing body of each CID as designated by the Legislature must include representatives from each city or county within the CID.

More information: Georgia Constitution Article IX, Section VII http://www.lexisnexis.com/hottopics/gacode/

Tax Allocation Districts (TADs)

Tax Allocation Districts (TADs), often called Tax Increment Financing (TIF) in other states, are a mechanism for funding improvements in blighted or underutilized areas based on future property value increases. TADs operate by establishing a current tax base floor for a given TAD district area and applying future taxes over and above the tax floor for a given period of time to pay the costs of infrastructure. Most often, but not always, TADs issue bonds to fund infrastructure improvements that are aimed at spurring redevelopment and property value increases. TAD funds may be used for a wide range of development activities. Cities, counties and school systems may decide independently whether to participate in a TAD. City or County TADs require a jurisdiction-wide referendum for approval and the creation of a local redevelopment agency to administer the TAD. The local redevelopment agency is tasked with identifying a specific redevelopment area and public improvements needed to help the area attract new private development. Since a determination of blight is required, TADs generally apply to urbanized "brownfield" or "grayfield" sites rather than undeveloped rural property. One prominent example of TAD financing for bicycle/pedestrian infrastructure is the Atlanta Beltline TAD.

More information: http://aysps.gsu.edu/publications/TAD_compiled.pdf

Installment Purchase Financing

As an alternative to debt financing of capital improvements, communities can execute installment or lease purchase contracts for improvements. This type of financing is typically used for relatively small projects that the seller or a financial institution is willing to finance or when up-front funds are unavailable. In a lease purchase contract the community leases the property or improvement from the seller or financial institution. The lease is paid in installments that include principal, interest, and associated costs. Upon completion of the lease period, the community owns the property or improvement. While lease purchase contracts are similar to a bond, this arrangement allows the community to acquire the property or improvement without issuing debt. These instruments, however, are more costly than issuing debt.

More information: http://www.development.ohio.gov/Business/tif/

Taxes

Many communities have raised money for general transportation programs or specific project needs through self-imposed increases in taxes and bonds. For example, Pinellas County residents in Florida voted to adopt a one cent sales tax increase, which provided an additional $5 million for the development of the overwhelmingly popular Pinellas Trail. Sales taxes have also been used in Allegheny County, Pennsylvania, and in Boulder, Colorado to fund open

space projects. A gas tax is another method used by some municipalities to fund public improvements. A number of taxes provide direct or indirect funding for the operations of local governments and public improvement projects that can be used for bicycle and pedestrian facilities. Some of them are:

Special Purpose Local Option Sales Taxes (SPLOST)

In Georgia, sales tax is imposed on all retail sales, leases and rentals of most goods, as well as taxable services (occupancy taxes fall under this category as well). Georgia cities and counties have the option of imposing an additional Special Purpose Local Option Sales Tax (SPLOST). State law requires approval of a resolution to establish a SPLOST by a countywide referendum with a defined end date. SPLOST funds can only be applied to specified capital improvement projects. The City of Thomasville, Georgia has recently approved a SPLOST program for the construction of multi-use trails.

More information: http://www.gasplost.org/

Property Tax

Property taxes generally support a significant portion of a municipality's activities. However, the revenues from property taxes can also be used to pay debt service on general obligation bonds issued to finance greenway system acquisitions. Because of limits imposed on tax rates, use of property taxes to fund greenways could limit the municipality's ability to raise funds for other activities. Property taxes can provide a steady stream of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.

More information: https://etax.dor.ga.gov/ptd/adm/about.aspx

Excise Taxes

Excise taxes are taxes on specific goods and services. These taxes require special legislation and funds generated through the tax are limited to specific uses. Examples include lodging, food, and beverage taxes that generate funds for promotion of tourism, and the gas tax that generates revenues for transportation related activities.

Fees

A variety of fee options have been used by local jurisdictions to assist in funding pedestrian and bicycle improvements. Enabling actions may be required for a locality to take advantage of these tools.

Storm Water Utility Fees

Greenway trail property may be purchased with storm water fees, if the property in question is used to mitigate floodwater or filter pollutants. Storm water charges are typically based on an estimate of the amount of impervious surface on a user's property.

Impervious surfaces (such as rooftops and paved areas) increase both the amount and rate of storm water runoff compared to natural conditions. Such surfaces cause runoff that directly or indirectly discharge into public storm drainage facilities and create a need for storm water management services. Thus, users with more impervious surface are charged more for storm water service than users with less impervious surface. The rates, fees, and charges collected for storm water management services may not exceed the costs incurred to provide these services.

Impact Fees

Developers can be required to pay impact fees through local enabling legislation. Impact fees, which are also known as capital contributions, facilities fees, or system development charges, are typically collected from developers or property owners at the time of building permit issuance to pay for capital improvements that provide capacity to serve new growth. The intent of these fees is to avoid burdening existing customers with the costs of providing capacity to serve new growth so that "growth pays its own way." Communities that institute impact fees must develop a sound financial model that enables policy makers to justify fee levels for different user groups, and to ensure that revenues generated meet (but do not exceed) the needs of development. Factors used to determine an appropriate impact fee amount can include: lot size, number of occupants, and types of subdivision improvements. A developer may reduce the impacts (and the resulting impact fee) by paying for on- or offsite pedestrian improvements that will encourage residents/tenants to walk or use transit rather than drive. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

More information: http://www.dca.state.ga.us/development/PlanningQualityGrowth/programs/impactfees.asp

In-Lieu-Of Fees

As an alternative to requiring developers to dedicate on-site greenway or pedestrian facility that would serve their development, some communities provide a choice of paying a front-end charge for off-site protection of pieces of the larger system. Payment is generally a condition of development approval and recovers the cost of the off- site land acquisition or the development's proportionate share of the cost of a regional facility serving a larger area. Some communities prefer in-lieu-of fees. This alternative allows community staff to purchase land worthy of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls short of qualitative interests.

Bonds And Loans

Bonds have been a very popular way for communities across the country to finance their pedestrian and greenway projects. A number of bond options are listed below. Contracting with a private consultant to assist with this program may be advisable. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote. Billings, Montana used the issuance of a bond in the amount of $599,000 to provide the matching funds for several of their TEA-21 enhancement dollars. Austin, Texas has also used bond issues to fund a portion of its bicycle and trail system.

Revenue Bonds

Revenue bonds are bonds that are secured by a pledge of the revenues from a specific local government activity. The entity issuing bonds pledges to generate sufficient revenue annually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.

General Obligation Bonds

Cities, counties, and service districts generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. The local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. Frequently, when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public entity's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. Bond measures are typically limited by time, based on the debt load of the local government or the project under focus. Funding from bond measures can be used for right-of-way acquisition, engineering, design, and construction of pedestrian and bicycle facilities. Voter approval is required.

Special Assessment Bonds

Special assessment bonds are secured by a lien on the property that benefits from the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.

State Revolving Fund Loans

Initially funded with federal and state money, and continued by funds generated by

repayment of earlier loans, State Revolving Funds (SRFs) provide low interest loans for local governments to fund water pollution control and water supply related projects including many watershed management activities. These loans typically require a revenue pledge, like a revenue bond, but carry a below market interest rate and limited term for debt repayment (20 years).

Funds From Private Foundations & Organizations

Many communities have solicited greenway and pedestrian infrastructure funding assistance from private foundations and other conservation-minded benefactors.

PATH Foundation

The PATH Foundation is a non-profit organization that partners with state and local governments to fund the construction and maintenance of trails in Georgia. Since its inception, the PATH foundation has constructed more than 160 miles of hiking, biking, and walking trails, including the Silver Comet Trail. PATH foundation staff provides assistance to local governments in planning, designing, building and maintaining trail projects. The foundation has created a "PATH Standard" for trail facilities to provide regular specifications for multi-use paths. The PATH Foundation has conducted several successful capital campaigns to solicit donations from charitable foundations and individual donors. In some cases, PATH provides matching funds to finance the development of trails. The PATH foundation also sponsors an "Adopt a Trail" program to coordinate volunteers for supplemental maintenance programs. Numerous local charitable organizations and business interests have provided support for the PATH foundation, including the James M. Cox Foundation, Arthur M. Blank Family Foundation, Georgia-Pacific Foundation, Georgia Power Foundation, Northside Hospital Foundation, SunTrust Bank Atlanta Foundation, Turner Broadcasting System, The Wachovia Foundation, and the Robert W. Woodruff Foundation.

More information: http://pathfoundation.org/

The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation was established in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas: To assure that all Americans have access to basic health care at a reasonable cost To improve care and support for people with chronic health conditions To promote healthy communities and lifestyles To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs.

More information: http://www.rwjf.org/grants/

REI Grants

REI is dedicated to inspiring people to love the outdoors and take care of the places they love. REI focuses philanthropic efforts on supporting and promoting participation in active volunteerism to care for public lands, natural areas, trails and waterways. This focus engages a full spectrum of REI resources to mobilize communities around outdoor stewardship. The store teams cultivate strong partnerships with local non-profit organizations that engage individuals, families and entire communities in outdoor volunteer stewardship. REI stores use their public visibility, staff support and online communication tools to connect people to the stewardship opportunities hosted by their partners. These store resources thereby drive customers' attention, awareness and involvement in support of partner programs and needs. REI also supports local partners financially with grant funding. The grants program begins with nominations from store teams who select the local non-profits with whom they've developed enduring and meaningful partnerships. Nominated partners are then invited to submit applications for grant funding. REI grants provide partner organizations with the resources and capacity to organize stewardship activities and get volunteers involved.

More information: http://www.rei.com/about-rei/grants02.html

Walmart State Giving Program

The Walmart Foundation financially supports projects that create opportunities for better living. Grants are awarded for projects that support and promote education, workforce development/ economic opportunity, health and wellness, and environmental sustainability. Both programmatic and infrastructural projects are eligible for funding. State Giving Program grants start at $25,000, and there is no maximum award amount. The program accepts grant applications on an annual, state by state basis January 2nd through March 2nd.

More information:

http://walmartstores.com/CommunityGiving/8168.aspx?p=8979

The Rite Aid Foundation Grants

The Rite Aid Foundation is a foundation that supports projects that promote health and wellness in the communities that Rite Aid serves. Award amounts vary and grants are awarded on a one year basis. A wide array of activities are eligible for funding, including infrastructural and programmatic projects.

More information: http://www.riteaid.com/company/com munity/foundation.jsf

Bank Of America Charitable Foundation, Inc

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood

Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

More information: http://www.bankofamerica.com/foundation

The Trust For Public Land

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the Trust for Public Land is the only national nonprofit working exclusively to protect land for human enjoyment and well being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

More information: http://www.tpl.org

National Trails Fund

American Hiking society created the National Trails Fund in 1998 as the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting, and maintaining foot trails in America. The society provides funds to help address the $200 million backlog of trail maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than $240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from $500 to $10,000 per project. Projects the American Hiking Society will consider include: Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements; Building and maintaining trails that will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage; Constituency building surrounding specific trail projects, including volunteer recruitment and support.

More information: http://www.americanhiking.org/

The Conservation Alliance

The Conservation Alliance is a non-profit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. One hundred percent of its member companies' dues go directly to diverse, local community groups across the nation For groups who seek to protect the last great wild lands and waterways from resource extraction and commercial development, the Alliance's grants are substantial in size (about $35,000 each), and have often made the difference between success and defeat. Since its

inception in 1989, The Conservation Alliance has contributed $4,775,059 to grassroots environmental groups across the nation, and its member companies are proud of the results: To date the groups funded have saved over 34 million acres of wild lands and 14 dams have been either prevented or removed-all through grassroots community efforts. The Conservation Alliance is a unique funding source for grassroots environmental groups. It is the only environmental grant maker whose funds come from a potent yet largely untapped constituency for protection of ecosystems - the non-motorized outdoor recreation industry and its customers. This industry has great incentive to protect the places in which people use the clothing, hiking boots, tents and backpacks it sells. The industry is also uniquely positioned to educate outdoor enthusiasts about threats to wild places, and engage them to take action. Finally, when it comes to decision-makers – especially those in the Forest Service, Nation-al Park Service, and Bureau of Land Management, this industry has clout - an important tool that small advocacy groups can wield. The Conservation Alliance Funding Criteria:

- The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation.
- The Alliance does not look for mainstream education or scientific research projects, but rather for active campaigns.
- All projects should be quantifiable, with specific goals, objectives and action plans and should include a measure for evaluating success.
- The project should have a good chance for closure or significant measurable results over a fairly short term (one to two years).
- Funding emphasis may not be on general operating expenses or staff payroll.

More information: http://www.conservationalliance.com/grants

Bike Belong Grants

The Bikes Belong Grant program funds important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include greenways and rail trails accessible by pedestrians and bicyclists. Applicants can request a maximum amount of $10,000 for their project, and priorities are given to areas that have not received Bikes Belong funding in the past three years. A new Bikes Belong opportunity is Community Partnership Grants. These grants are designed to foster and support partnerships between city or county governments, non-profit organizations, and local businesses to improve the environment for bicycling in the community. Grants will

primarily fund the construction or expansion of facilities such as bike lanes, trails, and paths. The lead organization must be a non-profit organization with IRS 501(c)3 designation or a city or county government office.

More information: http://www.bikesbelong.org/grants/

The Cinergy Foundation

The Cinergy Foundation places special emphasis on projects that help communities help themselves. The Foundation supports local community, civic and leadership development projects. The Cinergy Foundation also views community foundations as positive vehicles for sustaining the long-term health of a community and promoting philanthropic causes. Infrastructure needs by a community will not be considered. The Cinergy Foundation supports health and social service programs which promote healthy life styles and preventative medical care. United Way campaigns are included in Health and Social Services funding.

More information: http://www.cinergy.com/foundation/categories.asp

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Valuable in-kind gifts include donations of services, equipment, labor, or reduced costs for supplies.

Corporate Donations

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented. Such donations can improve capital budgets and/or projects.

Private Individual Donations

Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Municipalities typically create funds to facilitate and simplify a transaction from an individual's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented. Such donations can improve capital budgets and/or projects.

Fundraising / Campaign Drives

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial

backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

Land Trust Acquisition And Donation

Land trusts are held by a third party other than the primary holder and the beneficiaries. This land is oftentimes held in a corporation for facilitating the transfer between two parties. For conservation purposes, land is often held in a land trust and received through a land trust. A land trust typically has a specific purpose such as conservation and is used so land will be preserved as the primary holder had originally intended.

Volunteer Work

Residents and other community members are excellent resources for garnering support and enthusiasm for a greenway corridor or pedestrian facility. Furthermore volunteers can substantially reduce implementation and maintenance costs. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.

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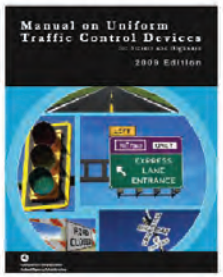
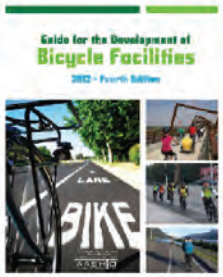
Appendix B: Design Guidelines

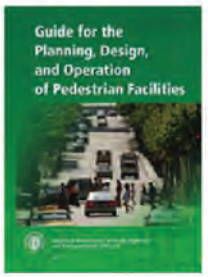
Introduction

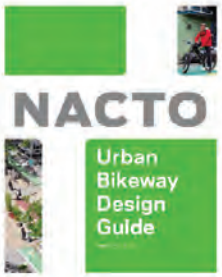
This technical handbook is intended to assist member jurisdictions in the selection and design of facilities for the Silver Comet Trail and its future conenctions. The following appendix pulls together best practices by facility type from public agencies and municipalities nationwide. Within the design chapters, treatments are covered within a single sheet tabular format relaying important design information and discussion, example photos, schematics (if applicable), and existing summary guidance from current or upcoming draft standards. Existing standards are referenced throughout and should be the first source of information when seeking to implement any of the treatments featured here.

These design guidelines are flexible and should be applied using professional judgment. This document references specific national guidelines for bicycle and pedestrian facility design, as well as a number of design treatments not specifically covered under current guidelines. Statutory and regulatory guidance may change. For this reason, the guidance and recommendations in this document function to complement other resources considered during a design process, and in all cases sound engineering judgment should be used.









National Standards

The Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) defines the standards used by

road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic. The MUTCD is the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings.

To further clarify the MUTCD, the FHWA created a table of contemporary bicycle facilities that lists various bicycle-related signs, markings, signals, and other treatments and identifies their official status (e.g., can be implemented, currently experimental). See Bicycle Facilities and the Manual on Uniform Traffic Control Devices.1

Treatments not explicitly covered by the MUTCD are often subject to experiments, interpretations and official rulings by the FHWA. The MUTCD Official Rulings is a resource that allows website visitors to obtain information about these supplementary materials. Copies of various documents (such as incoming request letters, response letters from the FHWA, progress reports, and final reports) are available on this website.2

American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, updated in June 2012 provides guidance on dimensions, use, and layout of specific bicycle facilities. The standards and guidelines presented by AASHTO provide basic information, such as minimum sidewalk widths, bicycle lane dimensions, detailed striping requirements and recommended signage and pavement markings.

Offering similar guidance for pedestrian design, the 2004 AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities provides comprehensive guidance on planning and designing for people on foot.

The National Association of City Transportation Officials' (NACTO) 2012 Urban Bikeway Design Guide3 is the newest publication of nationally recognized bikeway design standards, and offers guidance on the current state of the practice designs. The NACTO Urban Bikeway Design Guide is based on current practices in the best cycling cities in the world. The intent of the guide is to offer substantive guidance for cities seeking to improve bicycle transportation in places where competing demands for the use of the right of way present unique challenges. All of the NACTO Urban Bikeway Design Guide treatments are in use internationally and in many cities around the US.

Meeting the requirements of the Americans with Disabilities Act (ADA) is an important part of any bicycle and pedestrian facility project. The United States Access Board's proposed Public Rights-of-Way Accessibility

1 Bicycle Facilities and the Manual on Uniform Traffic Control Devices. (2011). FHWA. http://www.fhwa.dot.gov/environment/bikeped/mutcd_bike.htm
2 MUTCD Official Rulings. FHWA. http://mutcd.fhwa.dot.gov/orsearch.asp
3 http://nacto.org/cities-for-cycling/design-guide/

Guidelines4 (PROWAG) and the 2010 ADA Standards for Accessible Design5 (2010 Standards) contain standards and guidance for the construction of accessible facilities. This includes requirements for sidewalk curb ramps, slope requirements, and pedestrian railings along stairs.

Some of these treatments are not directly referenced in the current versions of the AASHTO Guide or the MUTCD, although many of the elements of these treatments are found within these documents. In all cases, engineering judgment is recommended to ensure that the application makes sense for the context of each treatment, given the many complexities of urban streets.

State Standards

DAVID or BYRON's INPUT HERE/GDOT Referenced-material

Additional References

- In addition to the previously described national standards, the basic bicycle and pedestrian design principals outlined in this chapter are derived from the documents listed below. Many of these documents are available online and provide a wealth of public information and resources.

4 http://www.access-board.gov/prowac/
5 http://www.ada.gov/2010ADAstandards_index.htm

Additional US Federal Guidelines

- American Association of State Highway and Transportation Officials. (2001). AASHTO Policy on Geometric Design of Streets and Highways. Washington, DC. www.transportation.org
- United States Access Board. (2007). Public Rights-of-Way Accessibility Guidelines (PROWAG). Washington, D.C. http://www.access-board.gov/PROWAC/alterations/guide.htm
- United States Department of Justice. (2010). 2010 ADA Standards for Accessible Design. http://www.ada.gov/2010ADAstandards_index.htm

Best Practice Documents

- Alta Planning + Design and the Initiative for Bicycle & Pedestrian Innovation (IBPI). (2009). Fundamentals of Bicycle Boulevard Planning & Design. http://www.ibpi.usp.pdx.edu/media/BicycleBoulevardGuidebook.pdf
- Alta Planning + Design. (2009). Cycle Tracks: Lessons Learned. http://www.altaplanning.com/App_Content/files/pres_stud_docs/Cycle%20Track%20lessons%20learned.pdf
- Association of Pedestrian and Bicycle Professionals (APBP). (2010). Bicycle Parking Design Guidelines, 2nd Edition.

- City of Portland Bureau of Transportation. (2010). Portland Bicycle Master Plan for 2030. http://www.portlandonline.com/transportation/index.cfm?c=44597
- Federal Highway Administration. (2005). BIKESAFE: Bicycle Countermeasure Selection System. http://www.bicyclinginfo.org/bikesafe/index.cfm
- Federal Highway Administration. (2005). PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System. http://www.walkinginfo.org/pedsafe/
- Federal Highway Administration. (2005). Report HRT-04-100, Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations. http://www.fhwa.dot.gov/publications/research/safety/04100/
- Federal Highway Administration. (2001). Designing Sidewalks and Trails for Access. http://www.fhwa.dot.gov/environment/sidewalk2/contents.htm
- King, Michael, for the Pedestrian and Bicycle Information Center. (2002). Bicycle Facility Selection: A Comparison of Approaches. Highway Safety Research Center, University of North Carolina – Chapel Hill. http://www.hsrc.unc.edu/pdf/2002/BicycleFacilitySelectionMKingetal2002.pdf
- Oregon Department of Transportation. (2012). Oregon Bicycle and Pedestrian Design Guide. http://www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml
- Rosales, Jennifer. (2006). Road Diet Handbook: Setting Trends for Livable Streets.

Multi-Use Paths

- A multi-use path (also known as a greenway or shared-use path) allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Path facilities can also include amenities such as lighting, signage, and fencing (where appropriate).
- Key features of multi-use paths include:
- Frequent access points from the local road network.
- Directional signs to direct users to and from the path.
- A limited number of at-grade crossings with streets or driveways.
- Terminating the path where it is easily accessible to and from the street system.
- Separate treads for pedestrians and bicyclists when heavy use is expected.


General Design Practices


Trails in River and Utility Corridors


Trails in Abandoned Rail Corridors


Shared Use Paths along Roadways


Natural Surface Trails

Multi-Use Paths

General Design Practices

Description

Multi-use paths can provide a desirable facility, particularly for recreation, and users of all skill levels preferring separation from traffic. Bicycle paths should generally provide directional travel opportunities not provided by existing roadways.

Guidance

Width

- 8 feet is the minimum allowed for a two-way path and is only recommended for low traffic situations or under certain design constraints.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users. A separate track (5' minimum) can be provided for pedestrian use.

Lateral Clearance

- A 2 foot or greater shoulder on both sides of the path should be provided. An additional foot of lateral clearance (total of 3') is required by the MUTCD for the installation of signage or other furnishings.
- Where there is not enough shoulder to meet off-sets at the top of a slope, consider the use of dense shrubbery (see image at right).

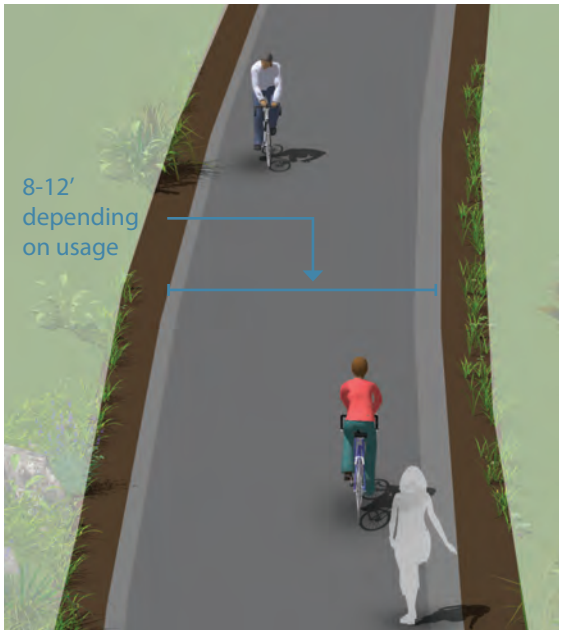
Overhead Clearance

- Clearance to overhead obstructions should be 8 feet minimum, with 10 feet recommended.

Striping

- When striping is required, use a 4 inch dashed yellow centerline stripe with 4 inch solid white edge lines.
- Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.

Terminate the path where it is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street.



Multi-Use Paths

Paths in River and Utility Corridors

Guidance

Multi-use paths in utility corridors should meet or exceed **general design practices**. If additional width allows, wider paths, and landscaping are desirable.

Access Points

Any access point to the path should be well-defined with appropriate signage designating the pathway as a bicycle facility and prohibiting motor vehicles.

Path Closure

Public access to the path may be prohibited during the following events:

- Canal/flood control channel or other utility maintenance activities
- Inclement weather or the prediction of storm conditions

Duke Energy/Progress Energy Transmission ROWs

DAVID/BYRON, ARE THERE DUKE ENERGY GUIDELINES FOR STATE OF GA?

Description

Utility and waterway corridors often offer excellent path development and bikeway gap closure opportunities. Utility corridors typically include powerline and sewer corridors, while waterway corridors include canals, drainage ditches, rivers, and beaches. These corridors offer excellent transportation and recreation opportunities for bicyclists of all ages and skills.

Multi-Use Paths

Paths in Abandoned Rail Corridors

Guidance

Multi-use paths in abandoned rail corridors should meet or exceed **general design practices**. If additional width allows, wider paths, and landscaping are desirable.

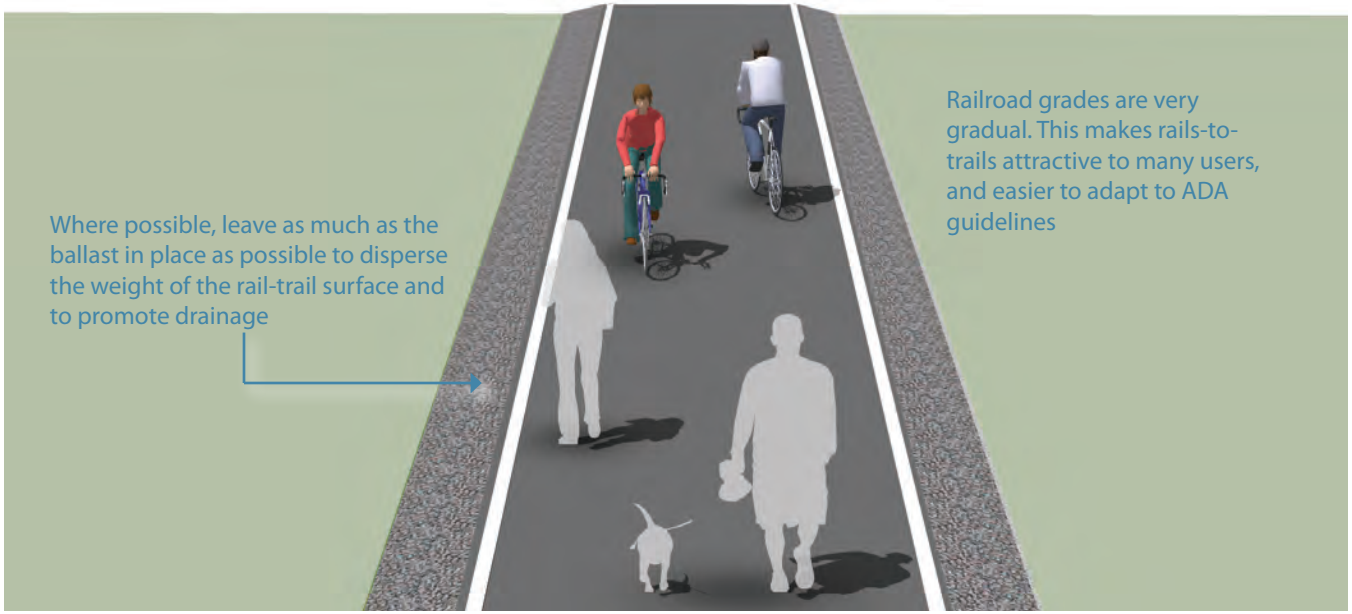
In full conversions of abandoned rail corridors, the sub-base, superstructure, drainage, bridges, and crossings are already established. Design becomes a matter of working with the existing infrastructure to meet the needs of a rail-trail.

Description

Commonly referred to as Rails-to-Trails or Rail-Trails, these projects convert vacated rail corridors into off-street paths. Rail corridors offer several advantages, including relatively direct routes between major destinations and generally flat terrain.

In some cases, rail owners may rail-bank their corridors as an alternative to a complete abandonment of the line, thus preserving the rail corridor for possible future use.

The railroad may form an agreement with any person, public or private, who would like to use the banked rail line as a trail or linear park until it is again needed for rail use. Municipalities should acquire abandoned rail rights-of-way whenever possible to preserve the opportunity for trail development.



Multi-Use Paths

Shared Use Paths Along Roadways

Description

A shared use path allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles.

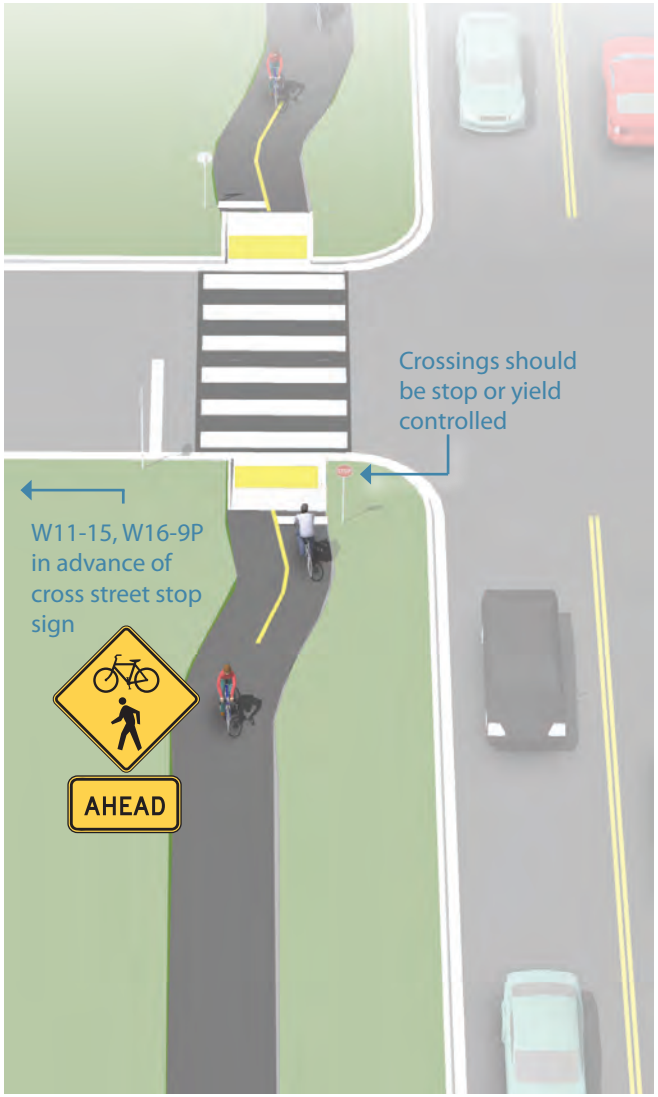
Along roadways, these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding where bicyclists enter or leave the path.

The AASHTO Guide for the Development of Bicycle Facilities generally recommends against the development of shared-use paths directly adjacent to roadways.

Guidance

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations or under certain design constraints.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users such as joggers, bicyclists, rollerbladers and pedestrians. A separate track (5' minimum) can be provided for pedestrian use.
- Bicycle lanes should be provided as an alternate (more transportation-oriented) facility whenever possible.

Pay special attention to the entrance/exit of the path as bicyclists may continue to travel on the wrong side of the street.



Multi-Use Paths

Natural Surface Trails

Guidance

Trails can vary in width from 18 inches to 6 feet or greater; vertical clearance should be maintained at nine-feet above grade.

Base preparation varies from machine-worked surfaces to those worn only by usage.

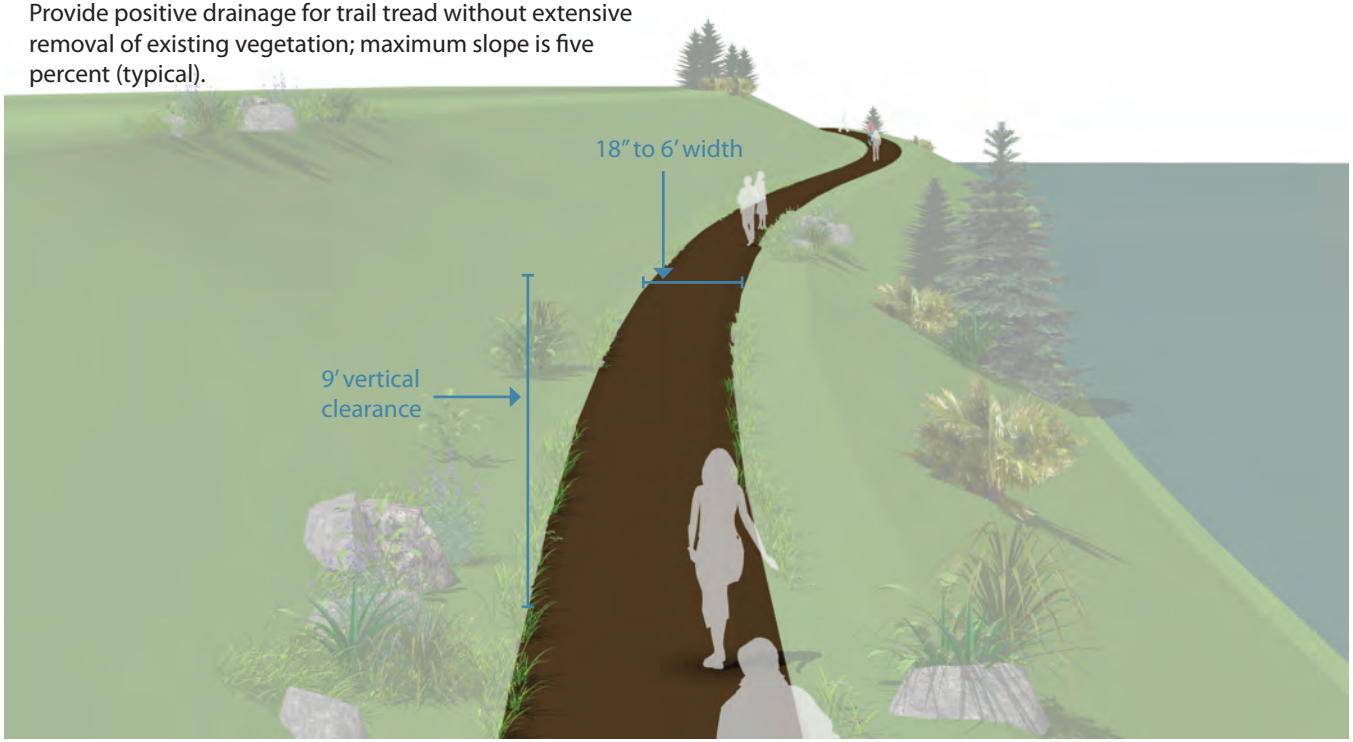
Trail surface can be made of dirt, rock, soil, forest litter, or other native materials. Some trails use crushed stone (a.k.a. "crush and run") that contains about 4% fines by weight, and compacts with use.

Provide positive drainage for trail tread without extensive removal of existing vegetation; maximum slope is five percent (typical).

Description

Sometimes referred to as footpaths or hiking trails, the natural surface trail is used along corridors that are environmentally-sensitive but can support bare earth, wood chip, or boardwalk trails. Natural surface trails are a low-impact solution and found in areas with limited development or where a more primitive experience is desired.

Guidance presented in this section does not include considerations for bicycles. Natural surface trails designed for bicycles are typically known as single track trails.



Multi-Use Paths

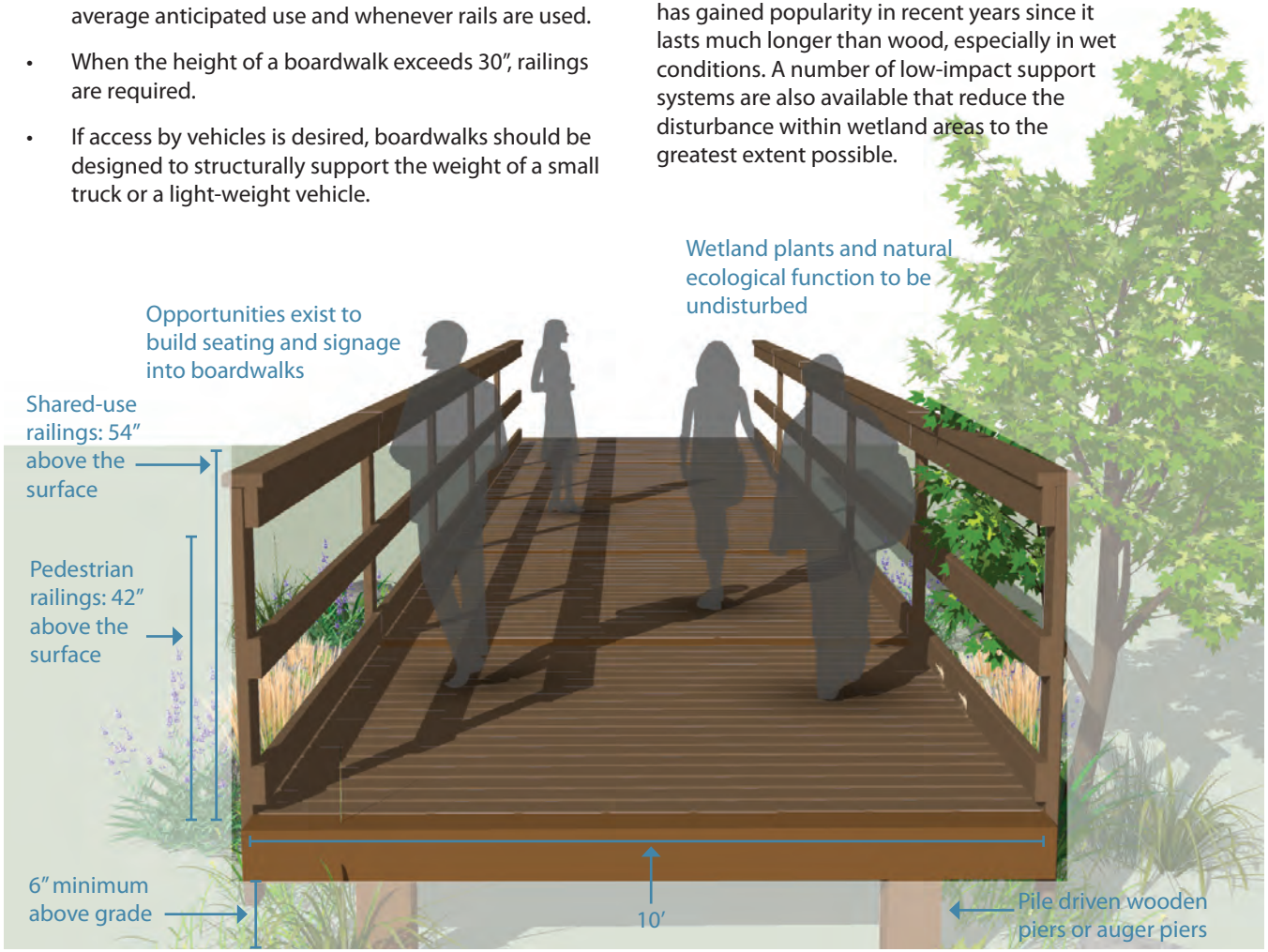
Boardwalks

Guidance

- Boardwalk width should be a minimum of 10 feet when no rail is used. A 12 foot width is preferred in areas with average anticipated use and whenever rails are used.
- When the height of a boardwalk exceeds 30", railings are required.
- If access by vehicles is desired, boardwalks should be designed to structurally support the weight of a small truck or a light-weight vehicle.

Description

Boardwalks are typically required when crossing wetlands or other poorly drained areas. They are usually constructed of wooden planks or recycled material planks that form the top layer of the boardwalk. The recycled material has gained popularity in recent years since it lasts much longer than wood, especially in wet conditions. A number of low-impact support systems are also available that reduce the disturbance within wetland areas to the greatest extent possible.



Multi-Use Paths

Trail Bridges

Guidance

- The clear width of thr bridge should allow for 2 ft of clearance on each end of the pathway.
- Bridge deck height should match that of the path surface to provide a smooth transition.
- Bicycle and shared-use paths should include a 54" guard rail where hazardous conditions exist.
- A minimum vertical clearance of 10 ft is desirable for motor vehicle access. Minimum height is 42 inches.
- Maximum opening between railing posts is 6 inches.
- A trail bridge should support 6.25 tons if motor vehicle access is permitted. (AASHTO 2002)

Description

Multi-Use Trail bridges (also 'bicycle/pedestrian bridges' or 'footbridges') are most often used to provide trail access over natural features such as streams and rivers, where a culvert is not an option. The type and size of bridges can vary widely depending on the trail type and specific site requirements. Some bridges often used for multi-use trails include suspension bridges, prefabricated span bridges and simple log bridges. When determining a bridge design for multi-use trails, it is important to consider emergency and maintenance vehicle access.

Path/Roadway Crossings

At-grade roadway crossings can create potential conflicts between path users and motorists, however, well-designed crossings can mitigate many operational issues and provide a higher degree of safety and comfort for path users. This is evidenced by the thousands of successful facilities around the United States with at-grade crossings. In most cases, at-grade path crossings can be properly designed to provide a reasonable degree of safety and can meet existing traffic and safety standards. Path facilities that cater to bicyclists can require additional considerations due to the higher travel speed of bicyclists versus pedestrians.

Consideration must be given to adequate warning distance based on vehicle speeds and line of sight, with the visibility of any signs absolutely critical. Directing the active attention of motorists to roadway signs may require additional alerting devices such as a flashing beacon, roadway striping or changes in pavement texture. Signing for path users may include a standard "STOP" or "YIELD" sign and pavement markings, possibly combined with other features such as bollards or a bend in the pathway to slow bicyclists. Care must be taken not to place too many signs at crossings lest they begin to lose their visual impact.

A number of striping patterns have emerged over the years to delineate path crossings. A median stripe on the path approach will help to organize and warn path users. Crosswalk striping is typically a matter of local and State preference, and may be accompanied by pavement treatments to help warn and slow motorists. In areas where motorists do not typically yield to crosswalk users, additional measures may be required to increase compliance.


Marked/Unsignalized Crossings


Route Users to Existing Signals


Signalized/Controlled Crossings


Overcrossings


Bollard Alternatives

Path/Roadway Crossings

Marked/Unsignalized Crossings

Guidance

Maximum traffic volumes

- ≤9,000-12,000 Average Daily Traffic (ADT) volume
- Up to 15,000 ADT on two-lane roads, preferably with a median
- Up to 12,000 ADT on four-lane roads with median

Maximum travel speed

- 35 MPH

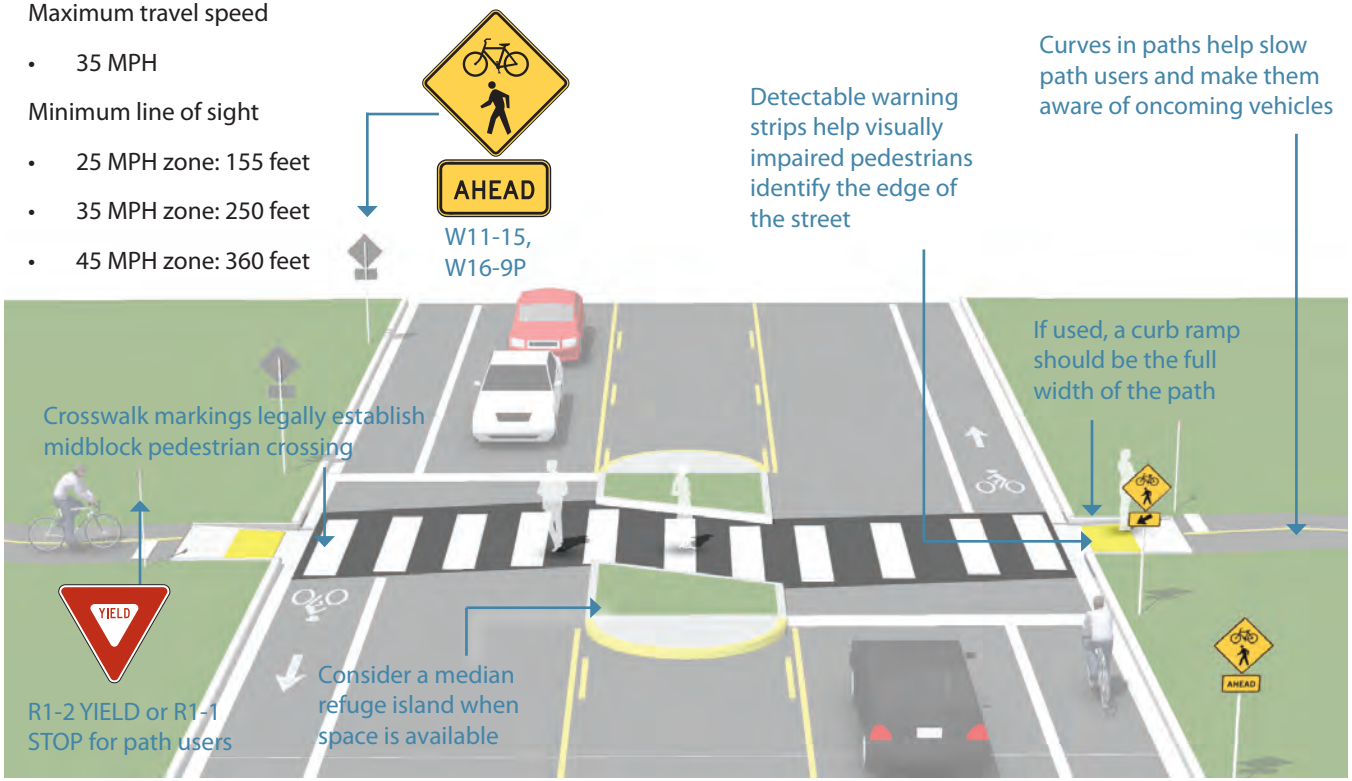
Minimum line of sight

- 25 MPH zone: 155 feet
- 35 MPH zone: 250 feet
- 45 MPH zone: 360 feet

Description

A marked/unsignalized crossing typically consists of a marked crossing area, signage and other markings to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, pathway traffic, use patterns, vehicle speed, road type, road width, and other safety issues such as proximity to major attractions.

When space is available, using a median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the safe crossing of one side of the street at a time.



Path/Roadway Crossings

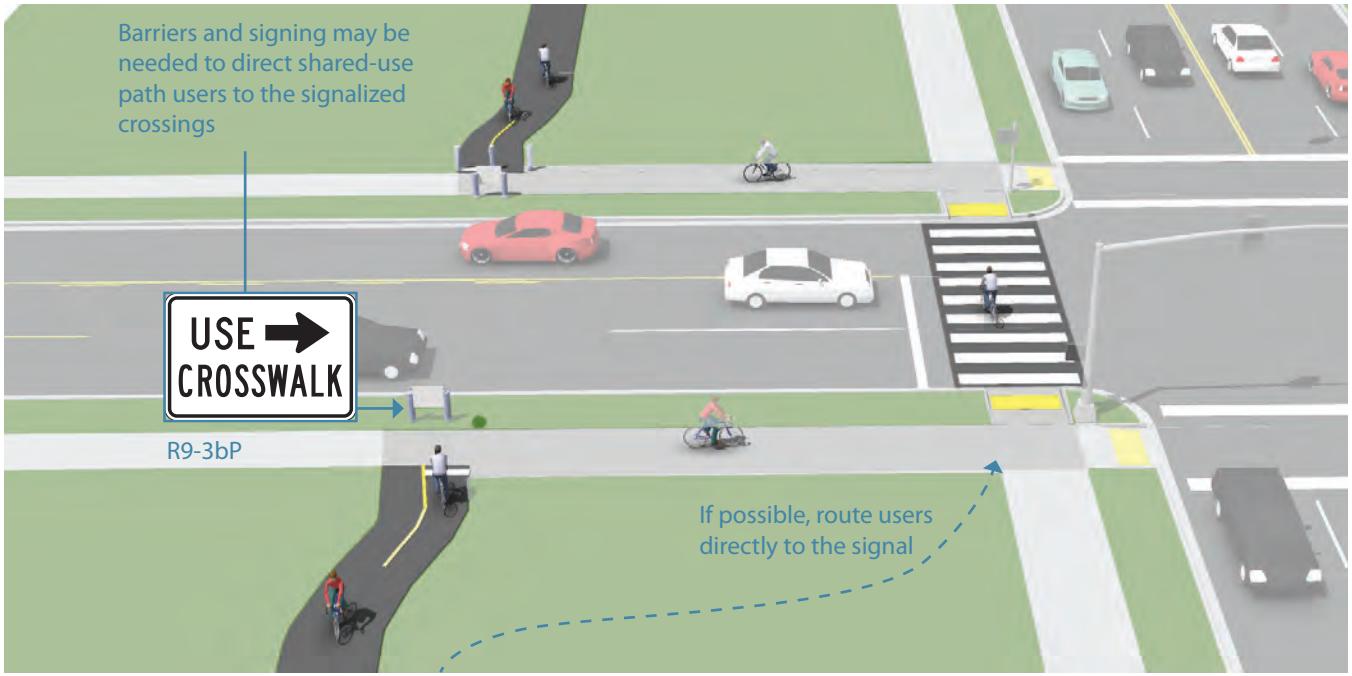
Route Users to Signalized Crossings

Guidance

Path crossings should not be provided within approximately 400 feet of an existing signalized intersection. If possible, route path directly to the signal.

Description

Path crossings within approximately 400 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection to avoid traffic operation problems when located so close to an existing signal. For this restriction to be effective, barriers and signing may be needed to direct path users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.



Signalized/Controlled Crossings

Guidance

Hybrid beacons (illustrated here) may be installed without meeting traffic signal control warrants if roadway speed and volumes are excessive for comfortable path crossings.

Full traffic signal installations must meet MUTCD pedestrian, school or modified warrants. Additional guidance for signalized crossings:

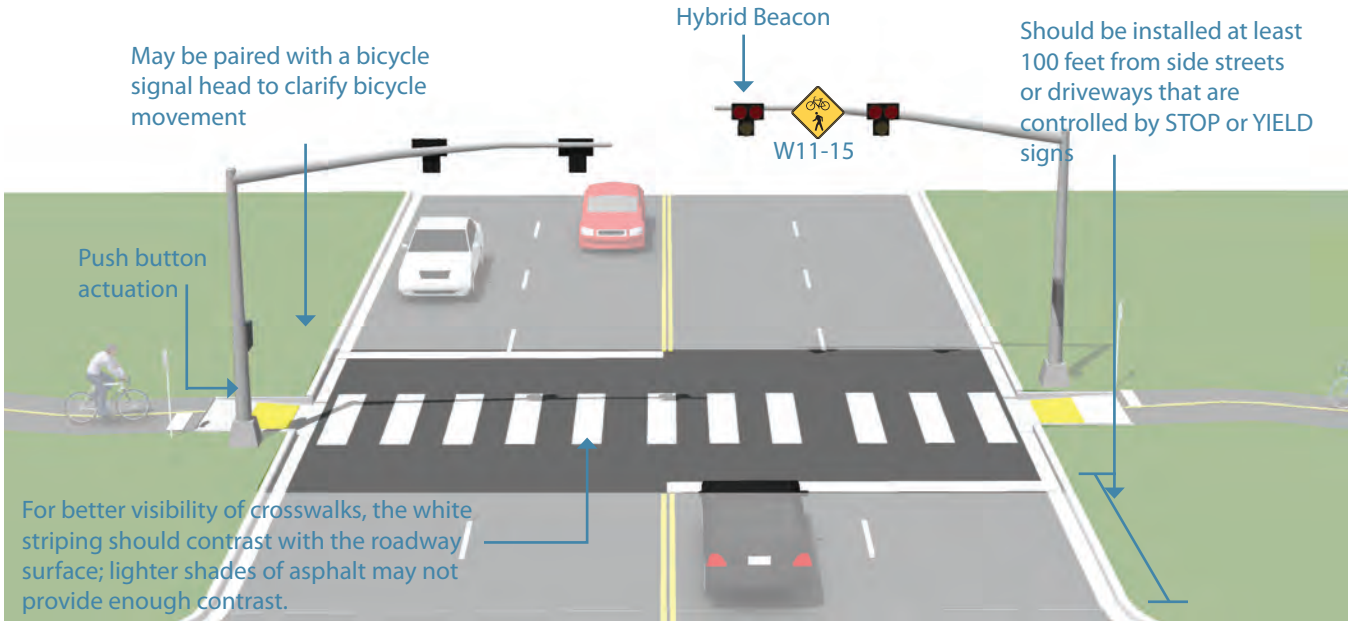
- Located more than 300 feet from an existing signalized intersection
- Roadway travel speeds of 40 MPH and above
- Roadway ADT exceeds 15,000 vehicles

Description

Signalized crossings provide the most protection for crossing path users through the use of a red-signal indication to stop conflicting motor vehicle traffic. The two types of path signalization are full traffic signal control and hybrid signals.

A full traffic signal installation treats the path crossing as a conventional 4-way intersection and provides standard red-yellow-green traffic signal heads for all legs of the intersection.

Hybrid beacon installation (shown below) faces only cross motor vehicle traffic, stays dark when inactive, and uses a unique 'wig-wag' signal phase to indicate activation. Vehicles have the option to proceed after stopping during the final flashing red phase, which can reduce motor vehicle delay when compared to a full signal installation.



Path/Roadway Crossings

Bollard Alternatives

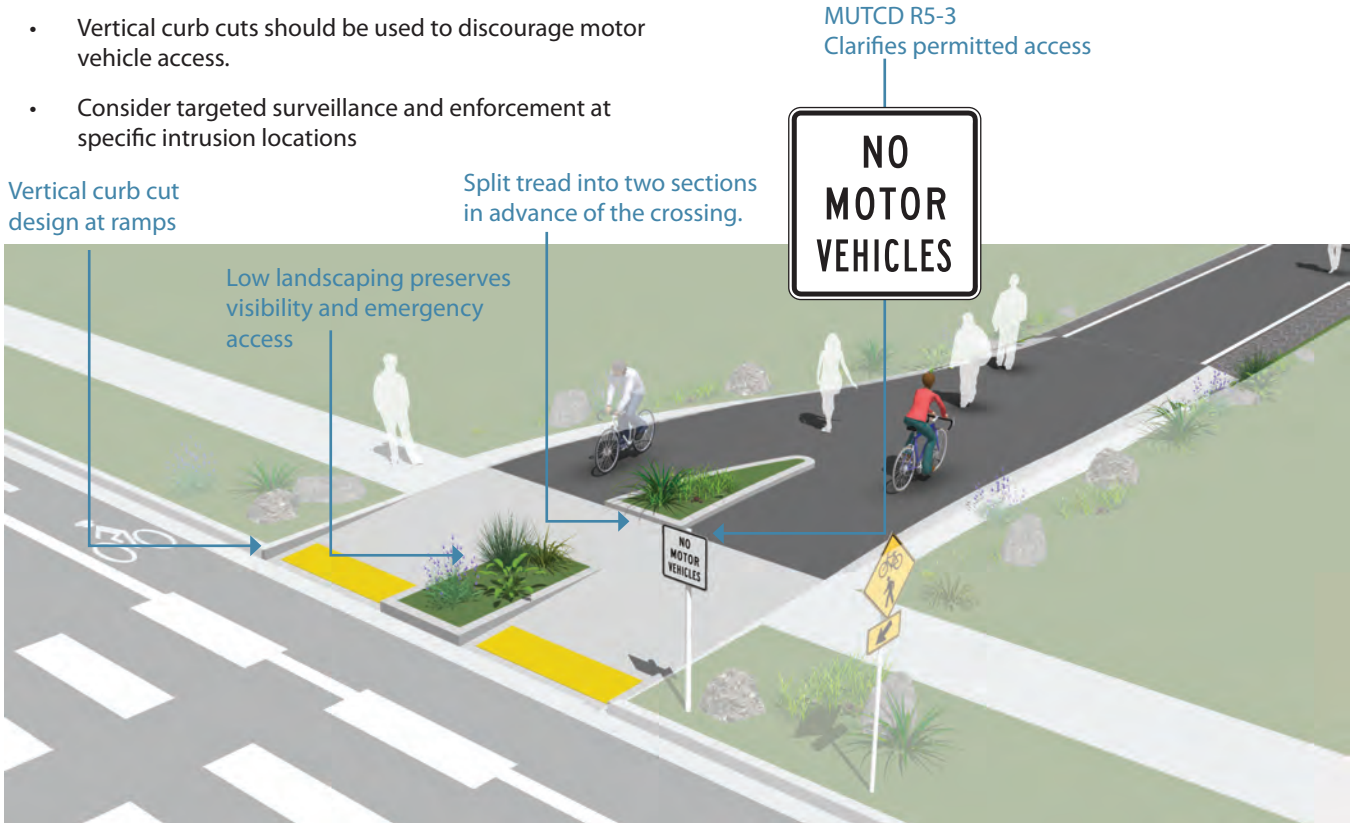
Guidance

- Bollards or other barriers should not continue to be used unless there is a documented history of unauthorirzed intrusion by motor vehicles.
- "No Motor Vehicles" signage (MUTCD R5-3) may be used to reinforce access rules.
- At intersections, split the path tread into two sections separated by low landscaping.
- Vertical curb cuts should be used to discourage motor vehicle access.
- Consider targeted surveillance and enforcement at specific intrusion locations

Description

Bollards are physical barriers designed to restrict motor vehicle access to the multi-use path. Unfortunately, physical barriers are often ineffective at preventing access, and create obstacles to legitimate trail users.

Alternative design strategies use signage, landscaping and curb cut design to reduce the likelihood of motor vehicle access.



Path/Roadway Crossings

Overcrossings

Guidance

8 foot minimum width, 14 feet preferred. If overcrossing has any scenic vistas additional width should be provided to allow for stopping. A separate 5 foot pedestrian area may be provided for facilities with high bicycle and pedestrian use.

10 foot headroom on overcrossing; clearance below will vary depending on feature being crossed.

Roadway:	17 feet
Freeway:	18.5 feet
Heavy Rail Line:	23 feet

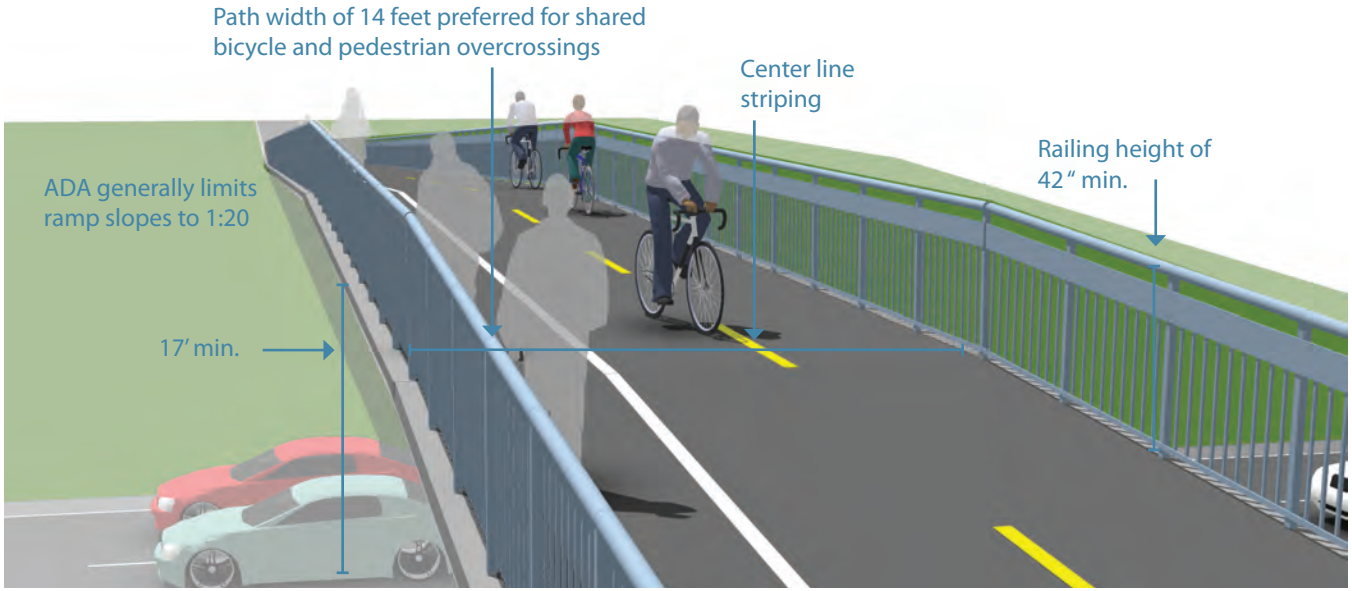
The overcrossing should have a centerline stripe even if the rest of the path does not have one.

Description

Bicycle/pedestrian overcrossings provide critical non-motorized system links by joining areas separated by barriers such as deep canyons, waterways or major transportation corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist.

Grade-separated crossings may be needed where existing bicycle/pedestrian crossings do not exist, where ADT exceeds 25,000 vehicles, and where 85th percentile speeds exceed 45 miles per hour.

Overcrossings require a minimum of 17 feet of vertical clearance to the roadway below versus a minimum elevation differential of around 12 feet for an undercrossing. This results in potentially greater elevation differences and much longer ramps for bicycles and pedestrians to negotiate.



Path/Roadway Crossings

Undercrossings

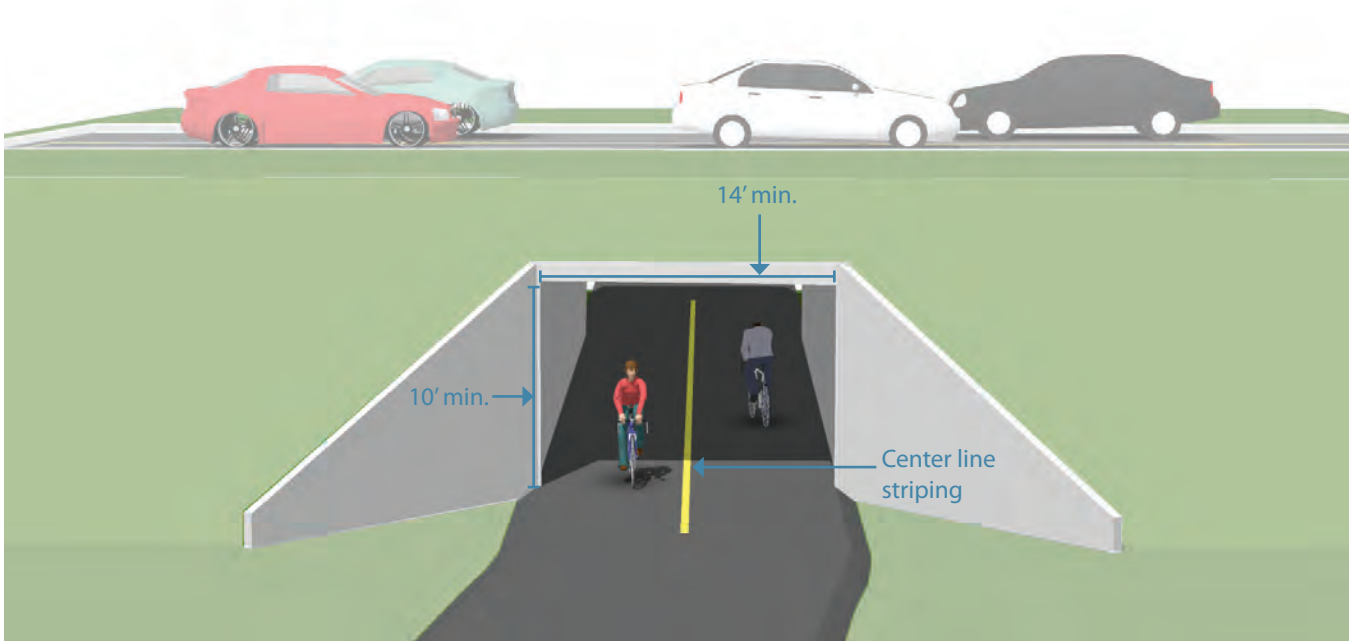
Guidance

- 14 foot minimum width, greater widths preferred for lengths over 60 feet.
- 10 foot minimum height.
- The undercrossing should have a centerline stripe even if the rest of the path does not have one.
- Lighting should be considered during the design process for any undercrossing with high anticipated use or in culverts and tunnels.

Description

Bicycle/pedestrian undercrossings provide critical non-motorized system links by joining areas separated by barriers such as railroads and highway corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist.

Grade-separated crossings are advisable where existing bicycle/pedestrian crossings do not exist, where ADT exceeds 25,000 vehicles and where 85th percentile speeds exceed 45 miles per hour.



Wayfinding Signage

Wayfinding Sign Types

Description

A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. There are three general types of wayfinding signs:

Confirmation Signs

Indicate to bicyclists that they are on a designated bikeway. Make motorists aware of the bicycle route.

Can include destinations and distance/time. Do not include arrows.

Turn Signs

Indicate where a bikeway turns from one street onto another street. Can be used with pavement markings.

Include destinations and arrows.

Decisions Signs

Mark the junction of two or more bikeways.

Inform bicyclists of the designated bike route to access key destinations.

Destinations and arrows, distances and travel times are optional but recommended.

Alternative Designs

A customized alternative design may be used to include pedestrian-oriented travel times and local logos (design at right is an example only).

Wayfinding Signage

Wayfinding Sign Placement

Guidance

Signs are typically placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes.

Decisions Signs

Near-side of intersections in advance of a junction with another bicycle route.

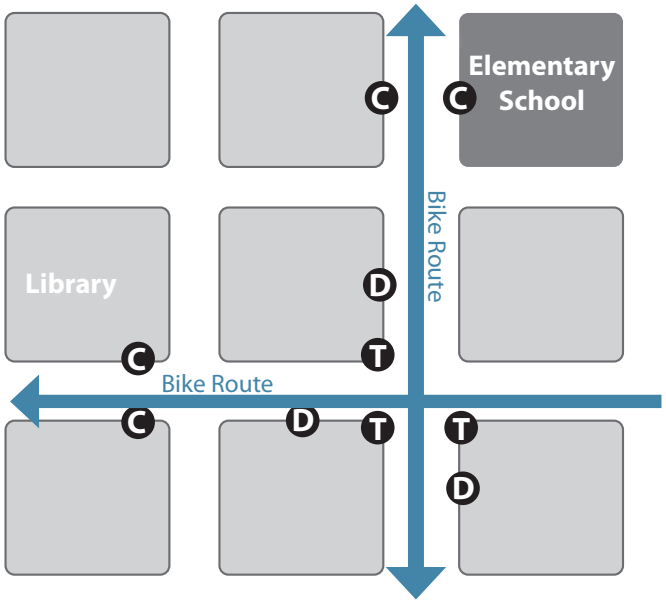
Along a route to indicate a nearby destination.

Confirmation Signs

Every ¼ to ½ mile on off-street facilities and every 2 to 3 blocks along on-street bicycle facilities, unless another type of sign is used (e.g., within 150 ft of a turn or decision sign). Should be placed soon after turns to confirm destination(s). Pavement markings can also act as confirmation that a bicyclist is on a preferred route.

Turn Signs

Near-side of intersections where bike routes turn (e.g., where the street ceases to be a bicycle route or does not go through). Pavement markings can also indicate the need to turn to the bicyclist.




THIS TRAIL HAS BEEN INDUCTED INTO
The Rail-Trail Hall of Fame
rails-to-trails conservancy
www.railstotrails.org
THE SILVER COMET
TRAIL
OPEN
DAWN TO DUSK

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Appendix C: Economic Impacts

Economic Impact Model Methodology

History

The theory behind input-output modeling stretches as far back as the mid 17th century, when Sir William Petty described the interconnectedness of "production, distribution, and wealth disposal." While Perry can be credited with noticing links between economies, input-output modeling did not begin to take true form until the mid 18th century, when French physician François Quesnay created the Tableau Économique. His work detailed how a landowner spends his earnings on goods from farms and merchants, who in turn spend their money on a host of goods and services. Over the course of the century, an algebraic framework was added by Achille-Nicholas Isnard. Robert Torrens and Léon Walras refined the model by establishing the connections between profits and production.

The modern input-output system can be attributed to Wassily Leontief. In his thesis, "The Economy as a Circular Flow" (1928), he outlined the economy as an integrated system of linear equations relating inputs and outputs. This framework soon gained popularity, and became a widely accepted analytical tool. In 1936, Leontief produced the first input-output analysis of the US. Leontief's work became the US Department of Commerce's Bureau of Economic Analysis's (BEA) standard benchmark for US production in the 1950s. Leontief received a Nobel Prize for his work in 1973.

By the 1970's, the BEA had developed regional multipliers that could benchmark regional production throughout the US. Through extensive surveying, the impacts of each industry could be determined at the individual county level. These multipliers later became known as the Regional Input-Output Modeling System, RIMS. These multipliers would later be improved in the 1980s and reclassified as RIMS II multipliers. This new system soon became a trusted standard in economic impact studies. The updated RIMS

II multipliers show the effect on the local economy that localized expenditures have in terms of employment, output, and earnings.

Application

The use and application of multipliers are fairly basic and intuitive. Multipliers, in their most basic form, are the result of an algebraic analysis expressing how two inputs are interconnected in the production of an output. The result of the equation generates a multiplier that is broken down into direct, indirect, and induced effects. In a generalized example: if the multiplier for good "X" to good "Y" is 3, then the direct of good "X" on "Y" is 1, with indirect and induced effects of 2. Essentially, every unit of good "X" supports 2 units of good "Y".

When implemented on a large complex scale, such as that of the US economy or any subsection of it, multiplier effects across industries can be complicated. However, the same general concept comes into play. Each industry has largely different and varied inputs into other industries. The quantity of the output is largely decided by the scale and efficiency of the industries involved. As a result, the sum of those inputs equates to an output product plus a value added/ component. By arranging these inputs and outputs by industry in a matrix, and performing some algebra to find the Leontief inverse matrix, each industry's effect on final demand can be estimated. Additionally, the direct, indirect, and induced effects can also be determined. Direct effects include direct purchases for production, indirect effects include expenses during production, and induced effects concern the expenditures of employees directly involved with production. Using building construction as an example, the direct effects would include materials, brick, steel, and mortar, the indirect effects would involve the steel fabrication, concrete mixing, and the induced effects would consider the construction workers purchases from their wages. While impacts vary in size, each industry has rippling effects throughout the economy. By using an input-output model, these effects can be more accurately quantified and explained.

RIMS II is one of several popular choices for regional input-output modeling. Each system has its own nuances in establishing proper location coefficients. RIMS II uses a location quotient to determine its regional purchase coefficient (RPC). This represents the proportion of demand for a good that is filled locally; this assessment helps determine the multiplier for the localized region. RIMS II takes the multipliers and divides them into over 500 industry categories in accordance to the North American Industrial Classification System (NAICS) codes. A comprehensive breakdown of a region's multipliers by industry can be shown.

Despite the usefulness of input-output modeling, there are some shortcomings to the system. Notably, input-output models ignore economies of scale. Input-output models assume that costs and inputs remain proportionate through different levels of production. Further, multipliers are not generally updated on a timely basis; most multipliers are prone to be outdated with the current economy. If the multipliers are sourced from a year of a recession economy, the multipliers may not accurately represent the flows from an economic boom period. Additionally, the multipliers may not capture sudden legal or technological changes which may improve or decrease efficiency in the production process. Regardless, I-O models still serve as the standard in the estimation of local and regional impacts.

Economic Impact Model

The methodology and input-output model used in this economic impact analysis are considered standard for estimating such expenditure impacts, and the results are typically recognized as reasonable and plausible effects, based on the assumptions (including data) used to generate the impacts. In general, one can say that any economic activity can be described in terms of the total output generated from every dollar of direct expenditures. If an industry in a given region sells $1 million of its goods, there is a direct infusion of $1 million into the region. These are referred to as direct expenditures.

However, the economic impact on the region does not stop with that initial direct expenditure. Regional suppliers to that industry have also been called upon to increase their production to meet the needs of the industry to produce the $1 million in goods sold. Further, suppliers of these same suppliers must also increase production to meet their increased needs as well. These are referred to as indirect expenditures. In addition, these direct and indirect expenditures require workers, and these workers must be paid for their labor. These wages and salaries will, in turn, be spent in part on goods and services produced locally, engendering another round of impacts. These are referred to as induced expenditures.

Direct expenditures are fed into a model constructed by Econsult Corporation and based on RIMS II data. The model then produces a calculation of the total expenditure effect on the regional economy. This total effect includes the initial direct expenditure effect, as well as the ripple effects described, the indirect and induced expenditure effects.

Part of the total expenditure effect is actually the increase in total wages and salaries (usually referred to as earnings), which the model can separate from the expenditure estimates. Direct payroll estimates are fed into the "household' industry of the input-output model. Impacts of this industry are estimated using the personal consumption

expenditure breakdown of the national input-output table and are adjusted to account for regional consumption spending and leakages from personal taxes and savings. The direct, indirect, and induced earnings represent a component of the total economic impact attributable to wages and salaries. Finally, the model calculates the total expenditures affecting the various industries and translates this estimate into an estimate of the total labor (or jobs) required to produce this output.

In short, the input-output model estimates the total economic activity in a region that can be attributed to the direct demand for the goods or services of various industries. This type of approach is used to estimate the total economic activity attributable to the expenditures associated with various types of spending in the region (see Table C.1 and Figure C.1).

FISCAL IMPACT MODEL THEORY

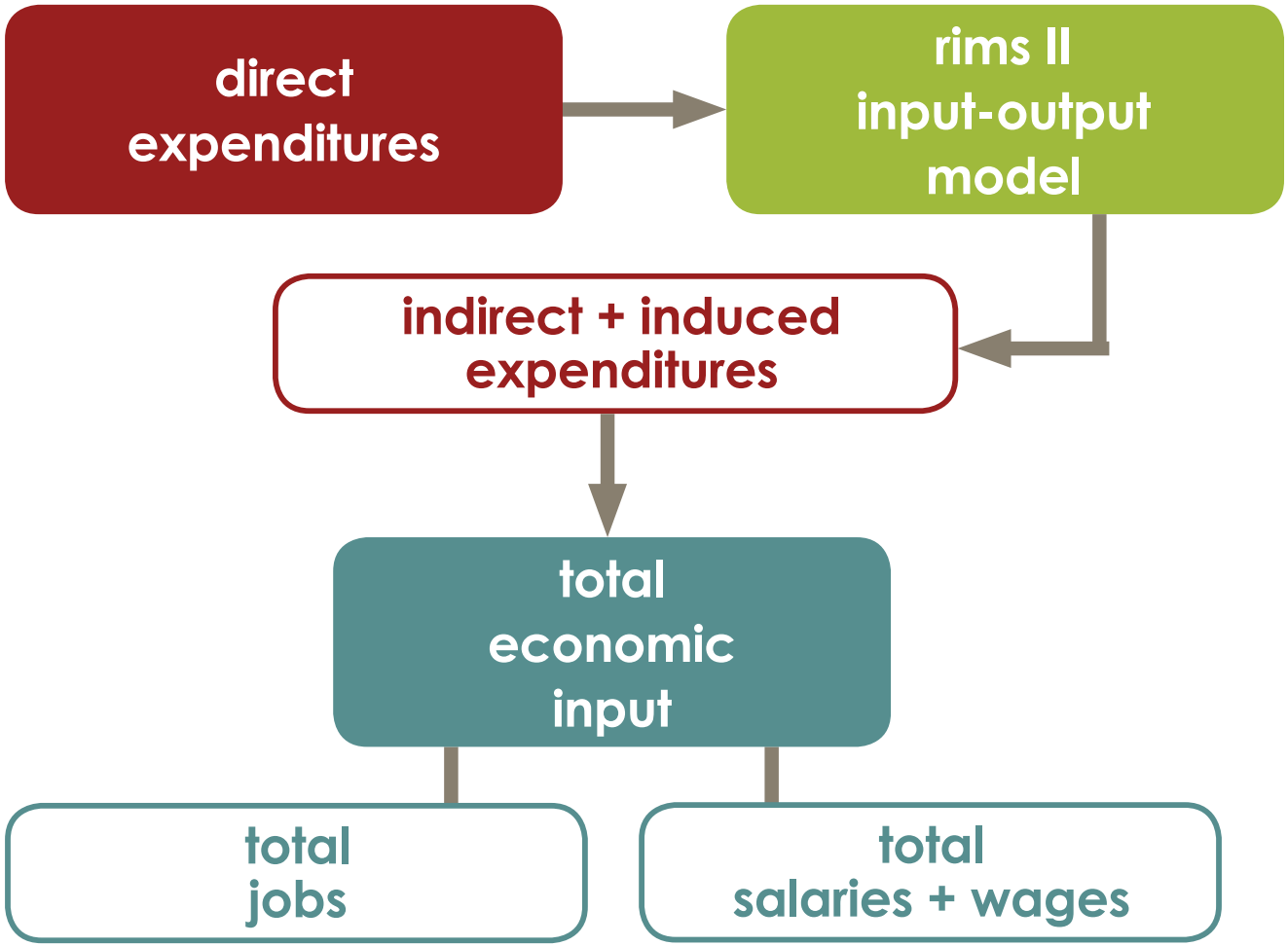
The RIMS II model provides estimates of the economic impact of a new project or program on the regional economy. It does not, however, estimate the fiscal impact of the increased economic activity on state and local governments. Econsult has constructed a model that takes the output from the RIMS II model and generates detailed estimates of the increases in state and local tax collections that arise from the new project. Those revenues are in fact a part of the total economic impact of a new project that is often ignored in conventional economic impact analyses.

The RIMS II model provides estimates of direct, indirect, and induced expenditures, earnings, and employment within the defined region. The Econsult fiscal impact model combines the RIMS II output with the relevant tax types and tax bases associated with the jurisdiction or jurisdictions for which fiscal impact is being modeled. Specifically, the estimated earnings supported by the direct, indirect, and induced expenditures generated by the model are used to apportion the net increase in the relevant tax bases and therefore in those tax revenue categories. The resulting estimates represent the projected tax revenue gains to the jurisdiction or jurisdictions as a result of the increased business activity and its attendant indirect and induced effects.

Sources

- Miller, Ronald E., and Peter D. Blair. Input-output Analysis Foundations and Extensions. Cambridge, UK: Cambridge UP, 2009. Print.
- Bess, Rebecca & Ambargis Zoë. "Input-Output models for Impact Analysis: Suggestions for Practitioners Using RIMS II Multipliers" Conference Proceeding, Southern Regional Science Association Conference March 2011
- Lahr, Michael. "Input-Output Analysis: Technical Description and Application." Rutgers University Edward J. Bloustein School of Planning and Public Policy, 2010.

FIGURE C.1 – FLOWCHART OF INPUT-OUTPUT METHODOLOGY FOR ESTIMATING ECONOMIC IMPACT



Source: Econsult Corporation (2012)

Table C.1 – Glossary of Terms for Input-Output Models

- **Multiplier Effect** – the notion that initial outlays have a ripple effect on a local economy, to the extent that direct expenditures lead to indirect and induced expenditures.
- **Economic Impacts** – total expenditures, employment, and earnings generated.
- **Fiscal Impacts** – local and/or state tax revenues generated.
- **Direct Expenditures** – initial outlays usually associated with the project or activity being modeled; examples: one-time upfront construction and related expenditures associated with a new or renovated facility, annual expenditures associated with ongoing facility maintenance and/or operating activity.
- **Direct Employment** – the full time equivalent jobs associated with the direct expenditures.
- **Direct Earnings** – the salaries and wages earned by employees and contractors as part of the direct expenditures.
- **Indirect Expenditures** – indirect and induced outlays resulting from the direct expenditures; examples: vendors increasing production to meet new demand associated with the direct expenditures, workers spending direct earnings on various purchases within the local economy.
- **Indirect Employment** – the full time equivalent jobs associated with the indirect expenditures.
- **Indirect Earnings** – the salaries and wages earned by employees and contractors as part of the indirect expenditures.
- **Total Expenditures** – the sum total of direct expenditures and indirect expenditures.
- **Total Employment** – the sum total of direct employment and indirect employment.
- **Total Earnings** – the sum total of direct earnings and indirect earnings.

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Appendix D: Development Costs

Opinion of Probable Costs

All cost estimates should be considered with the following notes and limitations in mind:

- This "Opinion of Probable Cost" (OPC) should not be considered a guaranteed maximum cost, but instead is a professional opinion of probable construction costs at the time of this study. Costs should be revisited every two years and updated accordingly. It should be anticipated that bids and actual costs will vary from this OPC.
- The "Cost Factor", as utilized, is a percentage of calculated costs, which is added to the subtotal. The Cost Factor helps compensate for unknown elements or conditions, variations in quantities used, and other unforeseen circumstances.
- A separate "Contingency Fund" should be developed above and beyond the total figure in the OPC. This fund will provide for modifications to the design, higher than anticipated costs, and other program alterations after construction initiation.
- Cost estimates do not include the following: land acquisition, retaining walls, fencing, rock and unsuitable soils excavation, permitting fees, mobilization, and taxes.

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Atlanta Beltline / Silver Comet Connectior
SECTION 1
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	34,745	LF	$3.00	$104,234.92
2	Silt Fence (Each Side)	69,490	LF	$3.00	$208,469.84
3	Fine Grading (0-5 cu ft/lf)	34,745	LF	$4.28	$148,708.49
4	Construction Entrance	14	EA	$3,000.00	$42,000.00
5	Bank Stabilization	2,000	LF	$4.28	$8,560.00
6	Hydroseeding	34,745	LF	$0.32	$11,118.39
	Total Earthwork, Demolition, Clearing + Erosion Control				***$523,091.64***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	34,745	LF	$55.00	$1,910,973.55
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	300	LF	$20.00	$6,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*34,745*	*LF*	*$23.00*	*$799,134.39*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*34,745*	*LF*	*$10.00*	*$347,449.74*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$3,063,557.68***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses	0	LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures	0	EA	$500,000.00	$0.00
15	Trailhead	2	EA	$500,000.00	$1,000,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	7	EA	$1,800.00	$12,600.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	7	EA	$325.00	$2,275.00
20	Tree Planting	34	EA	$500.00	$17,000.00
21	Raised Planters/Bollards	18	EA	$500.00	$9,000.00
22	Trash/Recycle Receptacles	7	EA	$350.00	$2,450.00
23	Benches	14	EA	$750.00	$10,500.00
	Total Structures and Special Features				***$1,062,075.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	6	EA	$175.00	$1,050.00
25	Signage (Traffic Control)	18	EA	$250.00	$4,500.00
26	Bank Stabilization	2,000	LF	$40.00	$80,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	3	EA	$5,525.00	$16,575.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)		EA	$10,020.00	$0.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$102,125.00***
E.	**OTHER**				
32	Registered Land Survey	34,745	LF	$2.00	$69,489.95
	Total Other				***$69,489.95***
	SUBTOTAL ALL AREAS				$4,820,339.27
	COST FACTOR		20% Contingency		$964,067.85
	FEASIBILITY, DESIGN, ENGINEERING		30%		$1,446,101.78
	GRAND TOTAL ALL AREAS				$7,230,508.91

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Mabelton Silver Comet Connection
SECTION 2
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	17,077	LF	$3.00	$51,231.01
2	Silt Fence (Each Side)	34,154	LF	$3.00	$102,462.02
3	Fine Grading (0-5 cu ft/lf)	17,077	LF	$4.28	$73,089.58
4	Construction Entrance	6	EA	$3,000.00	$18,000.00
5	Bank Stabilization	800	LF	$4.28	$3,424.00
6	Hydroseeding	17,077	LF	$0.32	$5,464.64
	Total Earthwork, Demolition, Clearing + Erosion Control				***$253,671.25***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	17,077	LF	$55.00	$939,235.20
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	400	LF	$20.00	$8,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*17,077*	*LF*	*$23.00*	*$392,771.08*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*17,077*	*LF*	*$10.00*	*$170,770.04*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$1,510,776.32***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	1	EA	$500,000.00	$500,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	3	EA	$1,800.00	$5,400.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	3	EA	$325.00	$975.00
20	Tree Planting	16	EA	$500.00	$8,000.00
21	Raised Planters/Bollards	24	EA	$500.00	$12,000.00
22	Trash/Recycle Receptacles	3	EA	$350.00	$1,050.00
23	Benches	6	EA	$750.00	$4,500.00
	Total Structures and Special Features				***$540,175.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	8	EA	$175.00	$1,400.00
25	Signage (Traffic Control)	24	EA	$250.00	$6,000.00
26	Bank Stabilization	800	LF	$40.00	$32,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)		EA	$5,525.00	$0.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	4	EA	$10,020.00	$40,080.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$79,480.00***
E.	**OTHER**				
32	Registered Land Survey	17,077	LF	$2.00	$34,154.01
	Total Other				***$34,154.01***
	SUBTOTAL ALL AREAS				$2,418,256.58
	COST FACTOR		20%	Contingency	$483,651.32
	FEASIBILITY, DESIGN, ENGINEERING		30%		$725,476.97
	GRAND TOTAL ALL AREAS				$3,627,384.87

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Smyrna Silver Comet Connection
SECTION 3
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	21,976	LF	$3.00	$65,927.14
2	Silt Fence (Each Side)	43,951	LF	$3.00	$131,854.27
3	Fine Grading (0-5 cu ft/lf)	21,976	LF	$4.28	$94,056.05
4	Construction Entrance	8	EA	$3,000.00	$24,000.00
5	Bank Stabilization	400	LF	$4.28	$1,712.00
6	Hydroseeding	21,976	LF	$0.32	$7,032.23
	Total Earthwork, Demolition, Clearing + Erosion Control				***$324,581.68***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	21,976	LF	$55.00	$1,208,664.15
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	3,000	LF	$20.00	$60,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*21,976*	*LF*	*$23.00*	*$505,441.37*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*21,976*	*LF*	*$10.00*	*$219,757.12*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$1,268,664.15***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	1	EA	$500,000.00	$500,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	4	EA	$1,800.00	$7,200.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	4	EA	$325.00	$1,300.00
20	Tree Planting	18	EA	$500.00	$9,000.00
21	Raised Planters/Bollards	180	EA	$500.00	$90,000.00
22	Trash/Recycle Receptacles	4	EA	$350.00	$1,400.00
23	Benches	8	EA	$750.00	$6,000.00
	Total Structures and Special Features				***$623,150.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	60	EA	$175.00	$10,500.00
25	Signage (Traffic Control)	180	EA	$250.00	$45,000.00
26	Bank Stabilization	400	LF	$40.00	$16,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	21	EA	$5,525.00	$116,025.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	9	EA	$10,020.00	$90,180.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$277,705.00***
E.	**OTHER**				
32	Registered Land Survey	21,976	LF	$2.00	$43,951.42
	Total Other				***$43,951.42***
	SUBTOTAL ALL AREAS				$2,538,052.25
	COST FACTOR		20%	Contingency	$507,610.45
	FEASIBILITY, DESIGN, ENGINEERING		30%		$761,415.68
	GRAND TOTAL ALL AREAS				$3,807,078.38

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Marietta Silver Comet Connection
SECTION 4
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	53,704	LF	$3.00	$161,111.01
2	Silt Fence (Each Side)	107,407	LF	$3.00	$322,222.02
3	Fine Grading (0-5 cu ft/lf)	53,704	LF	$4.28	$229,851.70
4	Construction Entrance	20	EA	$3,000.00	$60,000.00
5	Bank Stabilization	8,010	LF	$4.28	$34,282.80
6	Hydroseeding	53,704	LF	$0.32	$17,185.17
	Total Earthwork, Demolition, Clearing + Erosion Control			$0.00	***$824,652.70***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	53,704	LF	$55.00	$2,953,701.81
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	2,700	LF	$20.00	$54,000.00
9	*10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)	53,704	LF	$23.00	$1,235,184.39
10	*10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)	53,704	LF	$10.00	$537,036.69
	*Alternative trail surfaces not included in cost estimates				
	Total General Construction				***$3,007,701.81***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	2	EA	$500,000.00	$1,000,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	10	EA	$1,800.00	$18,000.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	10	EA	$325.00	$3,250.00
20	Tree Planting	40	EA	$500.00	$20,000.00
21	Raised Planters/Bollards	162	EA	$500.00	$81,000.00
22	Trash/Recycle Receptacles	10	EA	$350.00	$3,500.00
23	Benches	20	EA	$750.00	$15,000.00
	Total Structures and Special Features				***$1,149,000.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	54	EA	$175.00	$9,450.00
25	Signage (Traffic Control)	162	EA	$250.00	$40,500.00
26	Bank Stabilization	8,010	LF	$40.00	$320,400.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	17	EA	$5,525.00	$93,925.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	10	EA	$10,020.00	$100,200.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$564,475.00***
E.	**OTHER**				
32	Registered Land Survey	53,704	LF	$2.00	$107,407.34
	Total Other				***$107,407.34***
	SUBTOTAL ALL AREAS				$5,653,236.85
	COST FACTOR		20% Contingency		$1,130,647.37
	FEASIBILITY, DESIGN, ENGINEERING		30%		$1,695,971.06
	GRAND TOTAL ALL AREAS				$8,479,855.28

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Austell Silver Comet Connectior
SECTION 5
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	22,552	LF	$3.00	$67,656.28
2	Silt Fence (Each Side)	45,104	LF	$3.00	$135,312.56
3	Fine Grading (0-5 cu ft/lf)	22,552	LF	$4.28	$96,522.96
4	Construction Entrance	8	EA	$3,000.00	$24,000.00
5	Bank Stabilization	6,873	LF	$4.28	$29,416.44
6	Hydroseeding	22,552	LF	$0.32	$7,216.67
	Total Earthwork, Demolition, Clearing + Erosion Control			$0.00	***$360,124.92***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	22,552	LF	$55.00	$1,240,365.16
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	200	LF	$20.00	$4,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*22,552*	*LF*	*$23.00*	*$518,698.16*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*22,552*	*LF*	*$10.00*	*$225,520.94*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$1,988,584.25***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	1	EA	$500,000.00	$500,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	4	EA	$1,800.00	$7,200.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	4	EA	$325.00	$1,300.00
20	Tree Planting	18	EA	$500.00	$9,000.00
21	Raised Planters/Bollards	12	EA	$500.00	$6,000.00
22	Trash/Recycle Receptacles	4	EA	$350.00	$1,400.00
23	Benches	8	EA	$750.00	$6,000.00
	Total Structures and Special Features				***$539,150.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	4	EA	$175.00	$700.00
25	Signage (Traffic Control)	12	EA	$250.00	$3,000.00
26	Bank Stabilization	6,873	LF	$40.00	$274,920.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	2	EA	$5,525.00	$11,050.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)		EA	$10,020.00	$0.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$289,670.00***
E.	**OTHER**				
32	Registered Land Survey	22,552	LF	$2.00	$45,104.19
	Total Other				***$45,104.19***
	SUBTOTAL ALL AREAS				$3,222,633.35
	COST FACTOR		20%	Contingency	$644,526.67
	FEASIBILITY, DESIGN, ENGINEERING		30%		$966,790.01
	GRAND TOTAL ALL AREAS				$4,833,950.03

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - School Silver Comet Connection
SECTION 6
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	20,969	LF	$3.00	$62,906.08
2	Silt Fence (Each Side)	41,937	LF	$3.00	$125,812.16
3	Fine Grading (0-5 cu ft/lf)	20,969	LF	$4.28	$89,746.00
4	Construction Entrance	8	EA	$3,000.00	$24,000.00
5	Bank Stabilization	4,800	LF	$4.28	$20,544.00
6	Hydroseeding	20,969	LF	$0.32	$6,709.98
	Total Earthwork, Demolition, Clearing + Erosion Control				***$329,718.22***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	20,969	LF	$55.00	$1,153,278.09
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	800	LF	$20.00	$16,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*20,969*	*LF*	*$23.00*	*$482,279.93*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*20,969*	*LF*	*$10.00*	*$209,686.93*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$1,169,278.09***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	1	EA	$500,000.00	$500,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	4	EA	$1,800.00	$7,200.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	4	EA	$325.00	$1,300.00
20	Tree Planting	18	EA	$500.00	$9,000.00
21	Raised Planters/Bollards	48	EA	$500.00	$24,000.00
22	Trash/Recycle Receptacles	4	EA	$350.00	$1,400.00
23	Benches	8	EA	$750.00	$6,000.00
	Total Structures and Special Features				***$557,150.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	16	EA	$175.00	$2,800.00
25	Signage (Traffic Control)	48	EA	$250.00	$12,000.00
26	Bank Stabilization	4,800	LF	$40.00	$192,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	5	EA	$5,525.00	$27,625.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	3	EA	$10,020.00	$30,060.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$264,485.00***
E.	**OTHER**				
32	Registered Land Survey	20,969	LF	$2.00	$41,937.39
	Total Other				***$41,937.39***
	SUBTOTAL ALL AREAS				$2,362,568.70
	COST FACTOR		20%	Contingency	$472,513.74
	FEASIBILITY, DESIGN, ENGINEERING		30%		$708,770.61
	GRAND TOTAL ALL AREAS				$3,543,853.04

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Hiram Silver Comet Connection
SECTION 7
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	11,553	LF	$3.00	$34,660.34
2	Silt Fence (Each Side)	23,107	LF	$3.00	$69,320.68
3	Fine Grading (0-5 cu ft/lf)	11,553	LF	$4.28	$49,448.75
4	Construction Entrance	4	EA	$3,000.00	$12,000.00
5	Bank Stabilization		LF	$4.28	$0.00
6	Hydroseeding	11,553	LF	$0.32	$3,697.10
	Total Earthwork, Demolition, Clearing + Erosion Control			$0.00	***$169,126.88***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	11,553	LF	$55.00	$635,439.60
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	500	LF	$20.00	$10,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*11,553*	*LF*	*$23.00*	*$265,729.29*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*11,553*	*LF*	*$10.00*	*$115,534.47*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$645,439.60***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	1	EA	$500,000.00	$500,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	2	EA	$1,800.00	$3,600.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	2	EA	$325.00	$650.00
20	Tree Planting	14	EA	$500.00	$7,000.00
21	Raised Planters/Bollards	30	EA	$500.00	$15,000.00
22	Trash/Recycle Receptacles	2	EA	$350.00	$700.00
23	Benches	4	EA	$750.00	$3,000.00
	Total Structures and Special Features				***$538,200.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	10	EA	$175.00	$1,750.00
25	Signage (Traffic Control)	30	EA	$250.00	$7,500.00
26	Bank Stabilization		LF	$40.00	$0.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	3	EA	$5,525.00	$16,575.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	2	EA	$10,020.00	$20,040.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$45,865.00***
E.	**OTHER**				
32	Registered Land Survey	11,553	LF	$2.00	$23,106.89
	Total Other				***$23,106.89***
	SUBTOTAL ALL AREAS				$1,421,738.38
	COST FACTOR		20% Contingency		$284,347.68
	FEASIBILITY, DESIGN, ENGINEERING		30%		$426,521.51
	GRAND TOTAL ALL AREAS				$2,132,607.57

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Days Inn Silver Comet Connectior
SECTION 8
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	3,496	LF	$3.00	$10,486.70
2	Silt Fence (Each Side)	6,991	LF	$3.00	$20,973.40
3	Fine Grading (0-5 cu ft/lf)	3,496	LF	$4.28	$14,961.02
4	Construction Entrance	2	EA	$3,000.00	$6,000.00
5	Bank Stabilization	0	LF	$4.28	$0.00
6	Hydroseeding	3,496	LF	$0.32	$1,118.58
	Total Earthwork, Demolition, Clearing + Erosion Control			$0.00	***$53,539.70***
B	**GENERAL CONSTRUCTION**				
7	*10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)*	*3,496*	LF	$55.00	$192,256.14
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	1,584	LF	$20.00	$31,680.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*3,496*	LF	*$23.00*	*$80,398.02*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*3,496*	LF	*$10.00*	*$34,955.66*
11	5' Concrete Sidewalk (4" thick, slab on grade, no reinforcing)	*1,584*	LF	*$20.00*	*$31,680.00*
12	5' Pavement widening for bike lane (Includes sawcut existing pvmt, grading, 10")	*7,392*	LF	*$55.00*	*$406,560.00*
	Total General Construction				***$469,920.00***
	**Alternative trail surfaces not included in cost estimates*				
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead		EA	$500,000.00	$0.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	1	EA	$1,800.00	$1,800.00
18	Kiosks	1	EA	$2,500.00	$2,500.00
19	Mile Markers	1	EA	$325.00	$325.00
20	Tree Planting	2	EA	$500.00	$1,000.00
21	Raised Planters/Bollards	12	EA	$500.00	$6,000.00
22	Trash/Recycle Receptacles	1	EA	$350.00	$350.00
23	Benches	2	EA	$750.00	$1,500.00
	Total Structures and Special Features				***$14,225.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	4	EA	$175.00	$700.00
25	Signage (Traffic Control, Directional)	12	EA	$250.00	$3,000.00
26	Bank Stabilization		LF	$40.00	$0.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	1	EA	$5,525.00	$5,525.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	1	EA	$10,020.00	$10,020.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$19,245.00***
E.	**OTHER**				
32	Registered Land Survey	3,496	LF	$2.00	$6,991.13
	Total Other				***$6,991.13***
	SUBTOTAL ALL AREAS				$563,920.83
	COST FACTOR		20%	Contingency	$112,784.17
	FEASIBILITY, DESIGN, ENGINEERING		30%		$169,176.25
	GRAND TOTAL ALL AREAS				$845,881.25

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Dallas Town Center Silver Comet Connectior
SECTION 9
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	4,657	LF	$3.00	$13,969.96
2	Silt Fence (Each Side)	9,313	LF	$3.00	$27,939.92
3	Fine Grading (0-5 cu ft/lf)	4,657	LF	$4.28	$19,930.47
4	Construction Entrance	2	EA	$3,000.00	$6,000.00
5	Bank Stabilization	400	LF	$4.28	$1,712.00
6	Hydroseeding	4,657	LF	$0.32	$1,490.13
	Total Earthwork, Demolition, Clearing + Erosion Control			$0.00	***$71,042.48***
B	**GENERAL CONSTRUCTION**				
7	*10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)*	4,657	LF	$55.00	$256,115.90
8	Curb and Gutter (Concrete, 6" x 30", TP 2)		LF	$20.00	$0.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*4,657*	LF	*$23.00*	*$107,103.01*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*4,657*	LF	*$10.00*	*$46,566.53*
11	5' Concrete Sidewalk (4" thick, slab on grade, no reinforcing)		LF	*$20.00*	*$0.00*
12	5' Pavement widening for bike lane (Includes sawcut existing pvmt, grading, 10'	*9,313*	LF	*$55.00*	*$512,231.80*
	Total General Construction				***$512,231.80***
	**Alternative trail surfaces not included in cost estimates*				
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead		EA	$500,000.00	$0.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	1	EA	$1,800.00	$1,800.00
18	Kiosks	1	EA	$2,500.00	$2,500.00
19	Mile Markers	1	EA	$325.00	$325.00
20	Tree Planting	2	EA	$500.00	$1,000.00
21	Raised Planters/Bollards	24	EA	$500.00	$12,000.00
22	Trash/Recycle Receptacles	1	EA	$350.00	$350.00
23	Benches	2	EA	$750.00	$1,500.00
	Total Structures and Special Features				***$20,225.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	8	EA	$175.00	$1,400.00
25	Signage (Traffic Control)	24	EA	$250.00	$6,000.00
26	Bank Stabilization	400	LF	$40.00	$16,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	2	EA	$5,525.00	$11,050.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	2	EA	$10,020.00	$20,040.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$54,490.00***
E.	**OTHER**				
32	Registered Land Survey	4,657	LF	$2.00	$9,313.31
	Total Other				***$9,313.31***
	SUBTOTAL ALL AREAS				$667,302.58
	COST FACTOR			20% Contingency	$133,460.52
	FEASIBILITY, DESIGN, ENGINEERING			30%	$200,190.78
	GRAND TOTAL ALL AREAS				$1,000,953.88

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Campground Silver Comet Connectior
SECTION 10
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	4,198	LF	$3.00	$12,593.62
2	Silt Fence (Each Side)	8,396	LF	$3.00	$25,187.24
3	Fine Grading (0-5 cu ft/lf)	4,198	LF	$4.28	$17,966.90
4	Construction Entrance	2	EA	$3,000.00	$6,000.00
5	Bank Stabilization	400	LF	$4.28	$1,712.00
6	Hydroseeding	4,198	LF	$0.32	$1,343.32
	Total Earthwork, Demolition, Clearing + Erosion Control				***$64,803.08***
B	**GENERAL CONSTRUCTION**				
7	*10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)*	*4,198*	LF	$55.00	$230,883.04
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	4,198	LF	$20.00	$83,957.47
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*4,198*	LF	$23.00	*$96,551.09*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*4,198*	LF	$10.00	*$41,978.73*
11	5' Concrete Sidewalk (4" thick, slab on grade, no reinforcing)	*4,198*	LF	$20.00	*$83,957.47*
12	5' Pavement widening for bike lane (Includes sawcut existing pvmt, grading, 10'	*8,396*	LF	$55.00	*$461,766.08*
	Total General Construction				***$629,681.02***
	**Alternative trail surfaces not included in cost estimates*				
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead		EA	$500,000.00	$0.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	1	EA	$1,800.00	$1,800.00
18	Kiosks	1	EA	$2,500.00	$2,500.00
19	Mile Markers	1	EA	$325.00	$325.00
20	Tree Planting	2	EA	$500.00	$1,000.00
21	Raised Planters/Bollards	12	EA	$500.00	$6,000.00
22	Trash/Recycle Receptacles	1	EA	$350.00	$350.00
23	Benches	2	EA	$750.00	$1,500.00
	Total Structures and Special Features				***$14,225.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	4	EA	$175.00	$700.00
25	Signage (Traffic Control, Directional)	12	EA	$250.00	$3,000.00
26	Bank Stabilization	400	LF	$40.00	$16,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	2	EA	$5,525.00	$11,050.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)		EA	$10,020.00	$0.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$30,750.00***
E.	**OTHER**				
32	Registered Land Survey	4,198	LF	$2.00	$8,395.75
	Total Other				***$8,395.75***
	SUBTOTAL ALL AREAS				$747,854.84
	COST FACTOR		20% Contingency		$149,570.97
	FEASIBILITY, DESIGN, ENGINEERING		30%		$224,356.45
	GRAND TOTAL ALL AREAS				$1,121,782.27

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Aragon Silver Comet Connectior
SECTION 11
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	13,200	LF	$3.00	$39,599.38
2	Silt Fence (Each Side)	26,400	LF	$3.00	$79,198.77
3	Fine Grading (0-5 cu ft/lf)	13,200	LF	$4.28	$56,495.12
4	Construction Entrance	4	EA	$3,000.00	$12,000.00
5	Bank Stabilization	800	LF	$4.28	$3,424.00
6	Hydroseeding	13,200	LF	$0.32	$4,223.93
	Total Earthwork, Demolition, Clearing + Erosion Control			$0.00	***$194,941.20***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	13,200	LF	$55.00	$725,988.68
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	200	LF	$20.00	$4,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*13,200*	*LF*	*$23.00*	*$303,595.27*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*13,200*	*LF*	*$10.00*	*$131,997.94*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$729,988.68***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses	0	LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	1	EA	$500,000.00	$500,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	2	EA	$1,800.00	$3,600.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	2	EA	$325.00	$650.00
20	Tree Planting	14	EA	$500.00	$7,000.00
21	Raised Planters/Bollards	12	EA	$500.00	$6,000.00
22	Trash/Recycle Receptacles	2	EA	$350.00	$700.00
23	Benches	4	EA	$750.00	$3,000.00
	Total Structures and Special Features				***$529,200.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	4	EA	$175.00	$700.00
25	Signage (Traffic Control)	12	EA	$250.00	$3,000.00
26	Bank Stabilization	800	LF	$40.00	$32,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	1	EA	$5,525.00	$5,525.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	1	EA	$10,020.00	$10,020.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$51,245.00***
E.	**OTHER**				
32	Registered Land Survey	13,200	LF	$2.00	$26,399.59
	Total Other				***$26,399.59***
	SUBTOTAL ALL AREAS				$1,531,774.47
	COST FACTOR		20% Contingency		$306,354.89
	FEASIBILITY, DESIGN, ENGINEERING		30%		$459,532.34
	GRAND TOTAL ALL AREAS				$2,297,661.71

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Rome Silver Comet Connection
SECTION 12
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	90,665	LF	$3.00	$271,995.80
2	Silt Fence (Each Side)	181,331	LF	$3.00	$543,991.61
3	Fine Grading (0-5 cu ft/lf)	90,665	LF	$4.28	$388,047.35
4	Construction Entrance	34	EA	$3,000.00	$102,000.00
5	Bank Stabilization	6,400	LF	$4.28	$27,392.00
6	Hydroseeding	90,665	LF	$0.32	$29,012.89
	Total Earthwork, Demolition, Clearing + Erosion Control			$0.00	***$1,362,439.64***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	90,665	LF	$55.00	$4,986,589.72
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	1,500	LF	$20.00	$30,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*90,665*	*LF*	*$23.00*	*$2,085,301.16*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*90,665*	*LF*	*$10.00*	*$906,652.68*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$5,016,589.72***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	3	EA	$500,000.00	$1,500,000.00
16	Directional Signage	3	EA	$250.00	$750.00
17	Interpretive Signage	17	EA	$1,800.00	$30,600.00
18	Kiosks	3	EA	$2,500.00	$7,500.00
19	Mile Markers	17	EA	$325.00	$5,525.00
20	Tree Planting	64	EA	$500.00	$32,000.00
21	Raised Planters/Bollards	90	EA	$500.00	$45,000.00
22	Trash/Recycle Receptacles	17	EA	$350.00	$5,950.00
23	Benches	34	EA	$750.00	$25,500.00
	Total Structures and Special Features				***$1,652,825.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	30	EA	$175.00	$5,250.00
25	Signage (Traffic Control)	90	EA	$250.00	$22,500.00
26	Bank Stabilization	6,400	LF	$40.00	$256,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)	12	EA	$5,525.00	$66,300.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)	3	EA	$10,020.00	$30,060.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$380,110.00***
E.	**OTHER**				
32	Registered Land Survey	90,665	LF	$2.00	$181,330.54
	Total Other				***$181,330.54***
	SUBTOTAL ALL AREAS				$8,593,294.90
	COST FACTOR		20%	Contingency	$1,718,658.98
	FEASIBILITY, DESIGN, ENGINEERING		30%		$2,577,988.47
	GRAND TOTAL ALL AREAS				$12,889,942.35

PRELIMINARY PROBABLE COST OF CONSTRUCTION

Apr-13

PROJECT NAME - Cave Spring Silver Comet Connectior
SECTION 13
Project Summary

NO.	ITEM	QTY.	UNIT	COST	EXTENSION
A.	**EARTHWORK, DEMOLITION, CLEARING + EROSION CONTROL**				
1	Clearing + Grubbing (includes litter and vandalism removal)	51,427	LF	$3.00	$154,282.34
2	Silt Fence (Each Side)	102,855	LF	$3.00	$308,564.68
3	Fine Grading (0-5 cu ft/lf)	51,427	LF	$4.28	$220,109.47
4	Construction Entrance	20	EA	$3,000.00	$60,000.00
5	Bank Stabilization	3,200	LF	$4.28	$13,696.00
6	Hydroseeding	51,427	LF	$0.32	$16,456.78
	Total Earthwork, Demolition, Clearing + Erosion Control				***$773,109.28***
B	**GENERAL CONSTRUCTION**				
7	10' Concrete Multi-Use Trail (4" thick, 3,000 PSI conc., WWF, 4" gravel base)	51,427	LF	$55.00	$2,828,509.60
8	Curb and Gutter (Concrete, 6" x 30", TP 2)	800	LF	$20.00	$16,000.00
9	**10' Asphalt Multi-Use Trail (1½ " thick bituminous surface, 4" gravel base)*	*51,427*	*LF*	*$23.00*	*$1,182,831.29*
10	**10' Crushed Stone Trail (¾" crushed stone, compacted, 6" deep)*	*51,427*	*LF*	*$10.00*	*$514,274.47*
	**Alternative trail surfaces not included in cost estimates*				
	Total General Construction				***$2,844,509.60***
C.	**STRUCTURES AND SPECIAL FEATURES**				
13	Lighting and Wiring of Overpasses and Underpasses		LS	$22,000.00	$0.00
14	Rehabilitation of Existing Structures		LS	$500,000.00	$0.00
15	Trailhead	2	EA	$500,000.00	$1,000,000.00
16	Directional Signage	6	EA	$250.00	$1,500.00
17	Interpretive Signage	10	EA	$1,800.00	$18,000.00
18	Kiosks	6	EA	$2,500.00	$15,000.00
19	Mile Markers	10	EA	$325.00	$3,250.00
20	Tree Planting	40	EA	$500.00	$20,000.00
21	Raised Planters/Bollards	48	EA	$500.00	$24,000.00
22	Trash/Recycle Receptacles	10	EA	$350.00	$3,500.00
23	Benches	20	EA	$750.00	$15,000.00
	Total Structures and Special Features				***$1,100,250.00***
D.	**SAFETY TREATMENTS**				
24	Detectable Warning Mat	16	EA	$175.00	$2,800.00
25	Signage (Traffic Control)	48	EA	$250.00	$12,000.00
26	Bank Stabilization	3,200	LF	$40.00	$128,000.00
27	Intersection Treatment (Unsignalized Crossing with curb ramp and crosswalk)		EA	$5,525.00	$0.00
28	Intersection Treatment (Signalized Crossing - Countdown Signal Only)		EA	$10,020.00	$0.00
29	Raised Crosswalk		EA	$7,000.00	$0.00
30	Intersection Treatment (Signalized Crossing - HAWK)		EA	$52,500.00	$0.00
31	Black wrought iron fencing along steep slopes		LF	$90.00	$0.00
	Total Safety Treatments				***$142,800.00***
E.	**OTHER**				
32	Registered Land Survey	51,427	LF	$2.00	$102,854.89
	Total Other				***$102,854.89***
	SUBTOTAL ALL AREAS				$4,963,523.78
	COST FACTOR		20%	Contingency	$992,704.76
	FEASIBILITY, DESIGN, ENGINEERING		30%		$1,489,057.13
	GRAND TOTAL ALL AREAS				$7,445,285.66