

# CROSSNORE BICYCLE & PEDESTRIAN PLAN UPDATE

Adopted October 11, 2016

# Acknowledgements

#### **Town of Crossnore Elected Officials**

Tudor Vance, Mayor Ginny Smith Billy Howard Dan Vance Eddie Yarber Jessie Smith

### **Stakeholder Planning Committee**

Tudor Vance, Mayor Jesse Smith Rachel Deal Ann Baker Jenna Thompson Andrew Florence Tommie Tennant





# **Technical Assistance Provided By**David Graham, HCCOG Transportation Planner

Dean Ledbetter PE, NCDOT Division 11 Planning Engineer

# **Purpose**

The purpose of this plan update is to improve safety, make walking and biking a viable transportation option, enhance tourism, and provide a basis for future Town decisions and funding requests related to pedestrian and cycling needs.

#### Need

The Town expressed a desire to enhance the transportation network as well as the community by planning a series of sidewalks and trails between key origins and destinations. Connections to the Post Office, Crossnore Elementary School and various locations at The Crossnore School will benefit the community as a whole by providing an alternate transportation mode to these high traffic areas. A lack of sidewalks and designated walking and biking areas limits opportunities for citizens to enjoy walking, jogging, hiking or cycling. By providing accessible, inviting facilities, the Town can provide opportunities for everyone to improve their health through exercise. Finally, a well planned pedestrian and bicycle network not only enhances the community but meets a transportation need.

### **Background**

The Town of Crossnore has been seeking to improve conditions for residents and visitors within and around the town limits for many years. Many planning efforts have been undertaken that address aesthetics, mobility, and community development, including:

- STEP Master Plan
- High Country Regional Trail Plan
- NCSU Crossnore Design Charrette
- Crossnore Enhancement Committee
- NCDOT Design of Sidewalk along Crossnore Drive
- Crossnore School Master Plan
- Avery County Comprehensive Transportation Plan

This plan update will provide for revisions to the 2010 Crossnore Bicycle & Pedestrian Plan through stakeholder and public input, and incorporate findings from those efforts into a plan update that will provide the Town with an updated guide to achieving many of the goals and objectives that were developed.

#### **Process**

The Crossnore Bicycle & Pedestrian Plan was updated utilizing a similar process that was used to develop the 2010 Plan as follows:

- Initial scoping meeting with the Town of Crossnore
- Identification of stakeholders and stakeholder meeting
- Presentation of Draft Plan Update to Crossnore Board of Alderman
- Posting of plan for public comment
- Public workshop and stakeholder review
- Public Hearing and Consideration of Plan Update approval by Crossnore Board of Alderman

In an effort to continue to improve safety, encourage walking and biking, and to enhance tourism within the Town of Crossnore, The Town of Crossnore requested technical assistance from the High Country Council of Governments to update the 2010 Crossnore Bicycle & Pedestrian Plan. An initial meeting was held with town officials and members from the original Stakeholder Planning Committee to discuss possible updates to the 2010 Crossnore Bicycle & Pedestrian Plan.

# **Existing Conditions**

This section is intended to provide information on the road network, safety, landscape and existing pedestrian and bicycle transportation system in Crossnore. This information will be used to make specific updated recommendations for pedestrian and bicycle improvements.

#### **Road Network**

Four state roads are located in the plan area: Crossnore Drive, Dellinger Road, US Highway 221, and Walt Clark Road.

NCDOT claims only maintained areas for right-of-way along these routes. Local streets have a right of way based on the maintenance area as well. The typical maintained right-of-way is between 25 and 30 ft.

Right-of-way or easements will need to be acquired before any sidewalk or path is constructed along a local or state road.

Road:	Traffic Counts:	Posted Speed Limits:
Crossnore Drive	1500 AADT	25 mph
Dellinger Road	420 AADT	25 mph
Walt Clark Road	1,000 AADT	55 mph (35 in school zone)
US 221	5,000 AADT	35 mph

(2014 AADT = Annual Average Daily Traffic)

#### **Accidents**

Accident analyses were prepared for Crossnore Drive, Dellinger Road, US Highway 221 and Walt Clark Road for the time period January 1, 2007 through December 31, 2011. Crash rates along these facilities did not exceed statewide crash rates for these types of facilities. According to the Avery County Comprehensive Transportation Plan, there were a total of 11 accidents within the study area and none involved pedestrian or cyclists during the study period.

# **Existing Bicycle Facilities**

There are some families utilizing the Crossnore Town Park Trail. There are some local cyclists using Walt Clark Road and Crossnore Drive.



Sidewalk along Crossnore Drive from the Meeting House to Crossnore Baptist Church entrance (Concrete)



The trail extending from Crossnore Elementary School to Crossnore Park along Walt Clark Road (Asphalt)



There is a section of 3 ft sidewalk located between the Crossnore School's Sales Store and the Weaving Room. This sidewalk does not appear to be designed for the general public.



There are trails located within the property of the Crossnore School.



A gravel path along the east side of Crossnore Drive from a point across the road from the parking lot at Crossnore Baptist Church extending to the Crossnore School Amphitheatre

#### **Barriers / Obstacles**

The following barriers / obstacles exist and were considered when recommendations were prepared:

Access to the Sloop Dam: The area on the north side of the Linville River is privately owned and a trail would need to cross the privately owned land to follow an existing trail or to go directly to the dam from either Crossnore Presbyterian Church or the Town of Crossnore Wastewater Treatment Facility. Access on the south side of the river would require trails through an area currently being used by the NC Division of Forest Resources for research, and the introduction of the general public to these areas could introduce contaminants into the research area.

**Safely crossing US 221:** A pedestrian bridge over US 221 has been planned for many years.

**Lack of publicly owned right-of-way:** Any sidewalk or trail construction will require the acquisition of right of way or easements which can delay construction and increase project costs.

**Topography:** The elevation of Crossnore is 3,369 ft above sea level. Topography in the area consists of steep slopes with many streams in the lower lying areas. Areas immediately adjacent to many of the roads have steep slopes, which will increase the cost of sidewalk/path construction along many of the roads in town. While the speed limit in Crossnore is 35 mph or less, sight distances are very limited due to the topography of the area.

# **Origins, Destinations and Points of Interests**

The following are origins, destinations, and points of interest of pedestrians and cyclists in Crossnore or destinations that residents would like to be able to walk to:

- Crossnore Presbyterian Church
- Sales Store
- Pool Site
- Crossnore Town Park
- Post Office
- Benfield Rd
- Weaving Room
- Old US 221 Pedestrian Bridge Site
- Mercantile
- Crossnore School Amphitheatre
- Crossnore Sloop Chapel
- Sloop Dam
- Crossnore Elementary School
- NC Division of Forest Resources Corpening Fishing Parking Area
- Art Gallery Training Facility (River Access)

The term "point of interest" is used because while these may be destinations for some, official access has not been granted to the general public at the time this plan was

updated. However, these were points that were identified as places that cyclists and pedestrians may be interested in visiting.

### **Public Parking**

Public Parking is available at the following locations:

- Crossnore Meeting House:19 spaces
- Sales Store: 25 spaces and 2 handicap
- Post Office: 5 spaces and 1 handicap
- Crossnore Town Park: 10 spaces
- Coffee Shop: 15 spaces and 1 handicap
- Linville River Mercantile: 7 spaces
- NC Division of Forest Resources Corpening Training Facility River Access: 8 spaces
- Crossnore Baptist Church: 105 spaces and 10 handicap
- Crossnore Elementary School: 63 spaces and 4 handicap
- Crossnore Presbytarian Church: 52 spaces in the lower parking lot

Parking is not recommended at Crossnore Fellowship Presbyterian Church due to the proximity of the home located on the northern edge of the parking lot.

# **Pedestrian Recommendations**

#### **Trails and Sidewalks**

Updated recommendations for trails and sidewalks were developed through analyzing the existing plan, public input, deficiencies in the current pedestrian system, growth patterns, and input from the Stakeholder Planning Committee.

Cost estimates are included as guidance for making recommendations. Prices can change over time, and will vary significantly based on terrain, necessary utility relocation, soil condition, etc. The facility estimates below do not include any right-of-way acquisition or engineering services.

# 1) Johnson Lane: Sales Store to Weaving Room



=\$2,400 (Completed Project)

This trail would connect the Sales Store, Art Gallery, Prayer Garden, and Weaving Room. An off-road trail facility is recommended to maintain the character of the trail systems located on campus. The off-road trail would draw visitors away from the road and draw attention to the Labyrinth and sculptures that may otherwise go unnoticed if pedestrian facilities are constructed adjacent to the roadway. Cost Estimate: 240 ft. x \$10 (5 ft. trail)

# 2) Crossnore Drive: Benfield Road to Dellinger Road Intersection



This section would provide pedestrian access to the core of the Town of Crossnore: The Post Office, Town Hall, Meeting House, Sales Store, Coffee Shop, Volunteer Fire Department, the Crossnore School, and Crossnore Baptist Church. The sidewalk would also provide a connection to the center of Town for a blind resident who is very active in the community and frequently walks in this area. A crosswalk should be considered at the

intersection of Dellinger Road/Johnson Lane with Crossnore Drive. The crosswalk should be installed in conjunction with appropriate signage and traffic calming device such as neck down or center island to slow speeding motorists. This sidewalk section and associated crosswalk can provide a connection to the proposed off-road Crosstown Trail (recommendation # 10) which provides access to Crossnore Elementary School and Crossnore Park.

Cost Estimate: 630 ft. x \$31 per linear foot (5 foot sidewalk) = \$19,530

# 3) Crossnore Drive: Poplar Street to Walt Clark Road



This trail would serve as a connection between the center of Town and outlying pedestrian generators such as the Crossnore Fellowship Presbyterian Church and Loaves and Fishes Restaurant. This would also serve as a link connecting to the Crossnore Town park as well as the proposed offroad Crosstown Trail (recommendation # 10) which provides access to the core of the Town of Crossnore. A trail section is recommended through here to maintain the natural character of the

environment as this is a steep and wooded area.

Cost Estimate: 328 ft. x \$20 (10 ft. trail) = \$6,560

# 4) Walt Clark Road: Town of Crossnore Park to Crossnore Fellowship Presbyterian Church Parking Lot



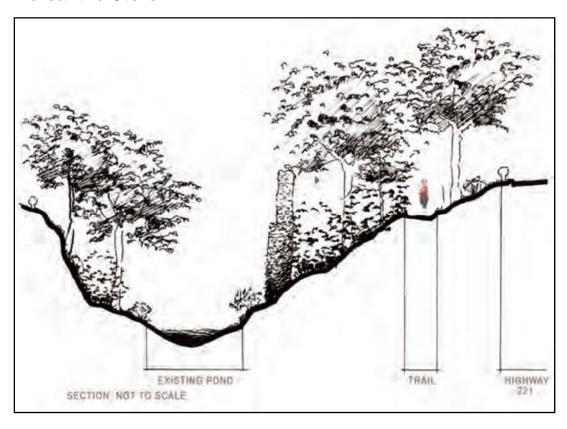
Extend a trail from the Crossnore Town Park to the parking lot of Crossnore Fellowship Presbyterian Church. An asphalt trail is recommended along this section to maintain the character of the trail connecting the park to Crossnore Elementary School. Users can walk across the parking lot to continue on future sections of trail and/or sidewalk along Crossnore Drive. Cost Estimate: 330 ft. x \$35 ft (5 ft. asphalt trail) = \$11,480

# 5) Maple Street: Crossnore Drive to US 221

The preferred route would be on the west side to connect to the restaurant parking lot which would reduce the length of the project, however, if an easement or right ofway is not available, the east side can be utilized. A sidewalk or asphalt trail is recommended through this section because of potential drainage issues and to transition from the restaurant's asphalt parking lot to the proposed trail along Crossnore Drive.

Cost Estimate: 450 ft. x \$35 (asphalt trail) = \$15,750

# 6) Bird Sanctuary Trail: Crossnore Baptist Church to the Linville River Mercantile Store



This should be a trail to maintain the wilderness character of the trail's surroundings. This trail will begin at the back of the Crossnore Baptist Church parking lot and continue along the east side of the stream by the former YMCA Pool and Chimneys to the Linville River Mercantile Store. Steps will need to be installed from the pool to the store location. Railing and/or other barriers should be installed to restrict access to the pool until improvements can be made. At some point the vegetation around the pool site will need to be removed and the pool site improved to make it safer and more appealing as a destination. The pool site as indicated in previous plans and studies has the potential to be a focal point in the community.

Cost Estimate: 971 ft. x \$20 (10 ft. trail) = \$19,420 (Completed Project)

# 7) US 221: Crossnore Presbyterian Church to Fishing Parking Area north of NC Division of Forest Resources Corpening Training Facility





This is a proposed trail or asphalt path that will begin at the east side of the pedestrian bridge (recommendation # 9) and typically follow the areas already cleared under the existing power lines along the south and east side of US 221 from Crossnore Presbyterian Church to the parking area north of the Corpening Training Facility entrance. The Division of Forest Resources is in the process of constructing a parking lot and access to the Linville River to accommodate fishermen. At some point, the Division of Forest Resources will construct a short trail along the river to allow additional fishing access.

Cost Estimate: 2,100 ft. x \$20 (10 ft trail) = \$18,600

# 8) Dellinger Road: Crossnore Drive to US 221



Visualization of Proposed Pedestrian Improvement

This is proposed to be an elevated walking trail that will provide an alternate route to the Mercantile Store and Pedestrian Bridge. It is recommended that the trail be placed on the west side of Dellinger Road to reduce the cost of filling and stabilizing a bank on the east side. Due to the steepness of the slopes adjacent to the roadway, the trail will need to be cut into the bank to provide a needed separation between the road and trail users to enhance safety.

Cost Estimate: 1,659 ft. x \$20 (10 ft. trail) = \$33,180

# 9) Crossnore Pedestrian Bridge





The old pedestrian bridge was removed in 1995 and had been used by local residents to walk to Crossnore Presbyterian Church since 1930. The old archway still stands and can be incorporated into the landing of a replacement bridge. The old bridge was another focal point in the community because it tied the Crossnore Community to the Crossnore Presbyterian Church and Sloop Dam.

The reinstallment of the bridge would restore the connection to the historic church and provide a link to the recommended trail that is to extend from Crossnore Presbyterian Church to the parking area north of the NC Division of Forest Resources Corpening Training Facility. Prior to construction of a new bridge, an encroachment agreement must be obtained from NCDOT along with approval of the bridge design.

Cost Estimate: \$300,000

Visualization of Proposed Pedestrian Improvements







**10) Crosstown Trail** (Phase 1: Creekwalk Loop; Phase 2: Creekwalk to Poplar Street; Phase 3: Poplar Street to Johnson Lane)





The proposed Crosstown Trail will provide links to the existing Creekwalk trail, Crossnore Park, Crossnore Elementary School, Crossnore town center, Crossnore Creek, and the Mercantile. A portion of the trail in proximity to the existing Creekwalk trail will provide for a Creekwalk loop around Clark Branch. A large portion of the trail is located on Crossnore School Property and a small portion is on Crossnore Elementary School property.

An existing pedestrian bridge can be used to cross Clark Branch north of Crossnore Park. A link can be provided to the Creekwalk loop near the existing picnic shelter and the opposite end of the Creekwalk trail near Crossnore Elementary School. In addition, crosswalks will be needed to cross Poplar Street and Crossnore Drive to the south east of Crossnore First Baptist Church.

Cost Estimate: 5,942 ft. x \$35 (5 ft. asphalt trail) \$207,970

# 11) Sloop Dam Trail



Dr. Eustice Sloop engineered a hydroelectricity plant for the local hospital and the town from the dam which is located on the Linville River. The dam has been identified as a historical point of interest. The proposed Sloop Dam Trail will begin at the east side of the proposed pedestrian bridge (recommendation # 9), go through the Crossnore Pedestrian Church property, cross Knob Hill Road and ultimately provide access to the Sloop Dam through private property with dense forest. The trail

will require pedestrian infrastructure approximately half way between the proposed pedestrian bridge (recommendation #9) and the Sloop Dam.

Cost Estimate: 3,980 ft. x \$10 (5ft. trail) \$39,080

# 12) Dellinger Loop



This trail is accessed behind the Crossnore First Baptist Church property and continues along the south side of Pine Street to a proposed Dellinger Road crosswalk. The trail then follows the Dellinger Road trail (recommendation #8) alignment to the intersection of Dellinger Road and US 221. A crosswalk for Dellinger Road is proposed at this intersection for access to the Mercantile and the alignment for trail recommendations 6 (Bird Sanctuary Trail) and 10 (Crosstown Trail). Using the trail 6 and 10 alignment, the Dellinger Loop trail will

loop back to the First Baptist Church property and run parallel with Crossnore Creek. Cost Estimate: 1,801 ft. x \$20 (10ft. trail) \$36,020

# 13) Walking Tour













In addition to the previous recommendations, the Stakeholder Planning Committee is interested in providing visitors to the Town of Crossnore a walking tour of the town and Crossnore School. The walking tour will be produced as a separate map or brochure that visitors can use to navigate points of interest in Crossnore on foot. Points of interest include:

- Weaving Room
- Crossnore School Administration Building
- Meditation Garden
- Dar Cabin
- Sloop Chapel Ben Long Fresco
- Sale Store
- Post Office
- Town Fountain

- Coffee Shop
- Crossnore Volunteer Fire Department
- Guy Building Old Sloop Hospital
- Town Hall
- Meeting House
- Amphitheater
- Old High School site
- Rachel's Foot Bridge
- Crossnore First Baptist Church

# Other Recommendations

#### US 221:

Bike lanes should be requested as part of the US 221widening (R-2595 and R-2596) to accommodate local cyclists as well as those on longer rides passing through the area or connecting to the Blue Ridge Parkway. While neither project is funded at this time, comments should be made to NCDOT early in the planning process.



#### Walt Clark Road:

"Share the Road" signs should be installed along this roadway. In addition, a request to add shoulders should be made if traffic volumes increase.

#### **Crossnore Drive:**

"Share the Road" signs should be installed along this roadway. The feasibility of adding shoulders should be evaluated when designing trails and/or sidewalks along this facility.

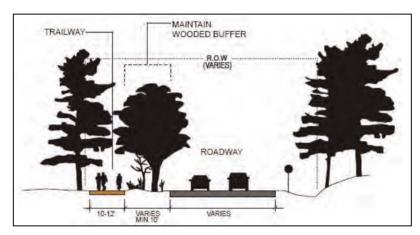


### **Crosswalks:**

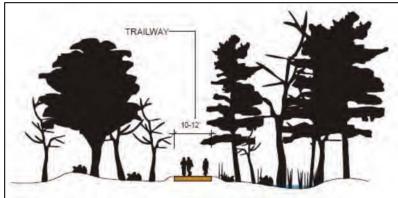
Crosswalks along with proper traffic calming will force vehicular traffic to slow down and look for pedestrians.
Crosswalks should be considered at the Crossnore Drive intersection with Dellinger Road/Johnson Lane, Dellinger Road/Pine Street, Dellinger Road/US 221, Poplar Drive, and Crossnore Drive near Crossnore First Baptist Church.



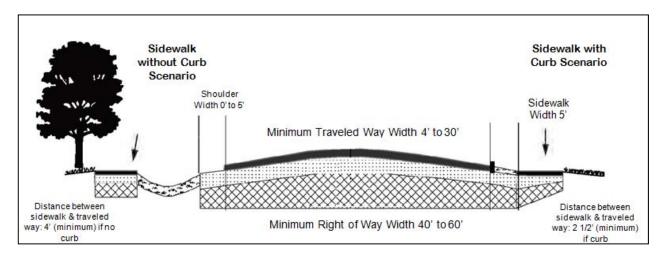
# **Cross Sections**



SEPARATED SHARED USE TRAILWAY WITH ROADWAY: A SEPARATED TRAILWAY IN THE RIGHT-OF-WAY. THE TRAILWAY IS SEPARATED FROM THE MOTOR TRAFFIC BY AN OPEN SPACE OR BARRIER EITHER WITHIN THE ROAD RIGHT-OF-WAY OR AN INDEPENDENT RIGHT-OF-WAY.



SHARED USE TRAILWAY: THE CROSS-SECTION REFERS TO TRAILWAY THAT LEAVES THE ROAD RIGHT-OF-WAY. A 10 TO 12 FOOT WIDE TRAILWAY IS RECOMMENDED.



# **Traffic Calming**

# **Traffic Calming**

Due to motorists exceeding the posted speed limits, it is recommended that traffic calming devices be considered at the previously mentioned crosswalk locations. Areas of primary concern include but are not limited to Crossnore Drive at Johnson Lane/Delinger Road and also at Crossnore Drive Dellinger Road/Pine Street, Dellinger Road/US 221, Poplar Drive, and Crossnore Drive to Maple Street as well as near Crossnore First Baptist Church because of the potential need for pedestrians to cross the road at these locations. The following traffic calming devices should be considered:

### Gateways/Entryways

Gateways include decorative signing and/or landscaping to visually identify the entrance to a neighborhood or commercial district. This measure helps to make the area appear more as a destination rather than a connection to another area. Gateways are often incorporated into a median island.

Cost Estimate: Varies depending on size and material.



Advantages: may reduce traffic volumes, can create vehicular hazards, positive aesthetic effect, good functionality, improves neighborhood quality of life, no impact to emergency response times.

**Disadvantages:** can create vehicular hazards, can create poor visibility conditions, can be expensive.

# **Center Island Narrowings and Crossing Islands**

Narrowing of the roadway with a raised center island, typically planted, between the travel lanes. They also provide a pedestrian refuge thereby allowing pedestrians to cross one travel lane at a time.

Cost Estimate: Varies depending on size and material.



**Advantages:** may reduce speeds and volumes, positive aesthetic effect, good functionality, increases pedestrian safety

**Disadvantages:** loss of on-street parking, impact to emergency response vehicles if lanes are too narrow, should not be used in areas with frequent driveways

#### **Traffic Circles**

Provides circular, counterclockwise operations at intersections by placing a raised island in the middle of the intersection. Vehicles on the through street must change their travel path to maneuver around the circle. Entry into the intersection is often controlled by Yield signs on all approaches.

Cost Estimate: \$5,000 -\$10,000



**Advantages:** may significantly reduce speeds on through streets, reduces intersection collisions, provides additional street aesthetics, may be used as a volume control device without limiting access.

**Disadvantages:** may require the removal of parking near intersections, may cause sight distance problems for vehicles, depending on

size and location - may have high installation costs, may impact emergency response times, may impede large vehicles

#### Roundabouts

Similar to traffic circles but larger and with "splitter islands "on each approach that flare at the entry into the circle. They are more typically used as a substitute for a traffic signal. Traffic on the approaches must yield to vehicles within the circle.

Cost Estimate: Single lane roundabout \$20,000-\$120,000 (Varies depending on right of way requirements)



**Advantages:** reduces vehicle speeds, eliminates typical left-turn conflicts, more economical to maintain than traffic signal, reduces crash severity

**Disadvantages:** requires large amount of rightof-way, may require additional lighting to lessen driver confusion at night, not a typical traffic

calming measure for local streets (used more for collectors and minor thoroughfares), initial cost is high

#### **Neckdowns**

Neckdowns are used to make streets more pedestrian friendly by shortening the crossing distance and reduce speed by narrowing travel lanes.

Cost Estimate: \$4,000 - \$6,000



**Advantages:** increased pedestrian safety, reduces speeds

**Disadvantages:** may require bicyclists to merge with traffic, may slow emergency vehicles, loss of on-street parking

# **FUNDING SOURCES**

#### The Recreational Trails Program

The Recreational Trails Program provides funds through the *Moving Ahead for Progress in the 21st Century Act* (MAP 21). Funds are administered in North Carolina by the Division of Parks and Recreation. The funds can be used for new trail/greenway construction, trail head/trail markers, and land acquisition for trail purposes. The maximum grant amount is \$100,000 and the minimum grant amount is \$10,000. Required match of funds received is 25%.

#### **Land and Water Conservation Fund**

The Land and Water Conservation Fund Program provides funds to local governments for conservation and recreation purposes. Trail construction is an eligible use of funds.

#### North Carolina Department of Transportation (NCDOT)

NCDOT's Strategic Transportation Investment (STI) Law became effective on June 26, 2013. STI is a new funding formula in North Carolina where all modes of transportation (highway, bicycle and pedestrian, aviation, etc...) compete for available funding. Bicycle and Pedestrian Transportation projects are required to be submitted for project prioritization and consideration in the State Transportation Improvement program (STIP) through the High Country Rural Planning Organization (HCRPO). In order for a project to be eligible project prioritization, a 20% match from local government will be required, right-of-way for the project must be secured, and a cost estimate for the project must be provided.

#### Water Resources Development Project Grant Program

This program is administered by the state Division of Water Resources, with two grant cycles per year. Among the eligible projects are "water-based recreation sites" which includes greenways. The program pays 50% of a project's total cost. Total available funding is around \$500,000 per cycle. Individual grant amounts vary widely.

#### North Carolina Parks and Recreation Trust Fund (PARTF)

PARTF provides grants up to \$500,000 to local governments for a wide variety of recreation opportunities, including trails. The amount of funding available per annual cycle varies according to legislative appropriations. A cash match of 50% of the total project cost is required. If the project includes land donation, the value of the donation can be substituted for the same amount of cash match. Award criteria place emphasis on planning and public involvement.

#### **Blue Cross Blue Shield of NC Foundation**

The Blue Cross Blue Shield of NC Foundation offers grants to local communities for health promotion. Grant funds may be used for pedestrian facilities, or pedestrian education and encouragement programs.

#### **Private Donations**

Many trail advocates have formed nonprofit organizations primarily for the purpose of accepting private donations and grants. Citizens have various reasons for giving, including obtaining tax benefits, a personal desire to use a trail, civic-mindedness, and public recognition; among others.

#### **Events**

Creating high-profile events and charging a fee for participation is a way of indirectly obtaining donations from citizens who otherwise would not donate directly. For example, a sponsored run with a fee for participation not only generates donations but also highlights a use and benefit of a trail. One river trail group sells rubber ducks for a rubber duck race on the river, with cash prizes to owners of the winning ducks.

#### **Private Foundations**

Trails offer benefits that frequently coincide with the objectives of foundations. Foundations interested in economic development, community development, recreation for low-income residents, environmental education and awareness, health improvement, and others, might be willing to support a trail project.