

CONNECTIONS

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TE Helps Restore Ravaged C&O Canal in D.C.

By James Evans, D.C. Department of Public Works

Less than three years ago, the District of Columbia experienced a series of natural disasters. The legendary "Blizzard of '96" brought a disastrous flood from sudden drenching rains and melting snow that overran the Potomac River and ravaged the region's historic Chesapeake and Ohio Canal (C&O Canal). The canal was hit again the same year by Tropical Storm Fran, which left more shredded locks, destroyed bridges, and tore away more sections of canal's towpath. The severity of the two floods in 1996 made it the worst year in the canal's history with floodwaters breaching nearly 80 percent of the canal. These natural disasters forged a special partnership between the D.C. Department of Public Works (D.C. DPW) and the U.S. National Park Service (NPS), which used Transportation Enhancements (TE) funds to not only repair damage along the C&O Canal, but also improve facilities as they were rebuilt.

Vital and Historic Resource to Washington Area

The fragile C&O Canal stretches nearly 185 miles along the Potomac River from Cumberland, MD, into the heart of the historic Georgetown district of Washington, D.C. During its heyday in the mid-to-late nineteenth century, the canal served as a commercial waterway for coal-laden barges pulled by mules, but was soon eclipsed as a transportation facility by its faster neighbor, the B&O Railroad. The canal was designated a national monument in 1961 and was upgraded as a National Historic Park in 1971, after nearly becoming an automobile parkway in the 1950s. More than four million people use the canal each year for hiking, camping, boating, biking, jogging, picnicking, bird watching, and fishing. The number of people using this urban park makes it one of the most visited parks in the nation.

Severe Damage Left Much to Be Repaired

The 1996 floods caused millions of dollars in damages to the C&O Canal. Nearly \$65 million (thirteen times the park's entire annual



The new Fletcher's Boathouse bridge links people and vehicles with the popular canal towpath, a rail-trail, and the Potomac River. (Photo: D.C. DPW)

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About the District's TE Program:

The D.C. DPW Enhancements Program receives project requests from members of the U.S. Congress, cabinet secretaries, elected city officials and citizens of the District of Columbia. In addition to the efforts to restore the C&O Canal, the District has used TE funding for outdoor sculpture renovation on historic bridges, construction of a boardwalk through the historic Kenilworth Aquatic Gardens, and the Metropolitan Branch Trail.

For More Information:

On the D.C. DPW's projects, call:
James Evans: 202-673-2377

The National Park Service C&O Canal
Web site: www.nps.gov/choh

The C&O Canal Association Web site:
www.omcdesigns.com/canal/

The Potomac Conservancy Web site:
www.canal.com

maintenance budget) was needed just to restore the canal back to its former use and beauty. After a century of nature's onslaught, the NPS was not about to give up and mobilized a flood recovery plan. The D.C. DPW and the D.C. Department of Recreation and Parks responded to the NPS' call for action. In a series of partnership agreements, these District offices and the NPS combined TE funds and National Recreational Trail funds for a series of projects to contribute to the restoration of the canal towpath from Georgetown to the Maryland state line.

TE Project #1: Reconstruct Retaining Wall

Beginning one year after the floods, the D.C. DPW initiated the reconstruction of the C&O Canal retaining wall built in the 1890s, with some sections dating to 1824. The wall runs adjacent to a well-traveled road, Canal Road, and parallels the canal. D.C. DPW needed to make the wall safer for vehicular collisions when reconstructing it, yet also knew that preserving the appearance of a historic wall was important as well. To accomplish both needs, the D.C. DPW attempted a unique approach: the top three feet of the wall were removed and rebuilt around a center core made of concrete similar to a "Jersey barrier." This approach allowed D.C. DPW to use the historic wall as a safety barrier as opposed to building a new modern wall along side the existing one.



The Canal Road retaining wall project preserved the wall's historic appearance and added modern safety improvements. (Photo: D.C. DPW)



Workers rebuild Georgetown wall using dry-stone masonry technique. (Photo: D.C. DPW)

TE Project #2: Construct Access Bridge

The next phase involved the design and construction of a new pedestrian and vehicular bridge over the canal. The only access for emergency and maintenance vehicles was an earthen crossing in the middle of the canal, located near Fletcher's Boathouse, a canoe and bicycle rental facility. This crossing was also slightly damaged during the floods.

In 1997, D.C. DPW and FHWA approved \$572,000 in TE funds for the construction of the Fletcher's Boathouse Bridge. The new bridge is at an ideal location for more than just vehicular access; it sits at the intersection of the canal, the Potomac River, and the 11-mile Capital Crescent Trail. The bridge thus serves as a point of connectivity among important and very popular recreation and transportation facilities in D.C.

A surprise result of the bridge construction project was the discovery of archeological artifacts. The area where steps and ramps to the new bridge were planned turned out to be a 2000-year old pre-historic site containing more than 60,000 artifacts. Once this was discovered, the D.C. DPW allocated approximately \$65,000 in TE funds for an excavation. Within just a 30-square foot area, archaeologists found Native American fire hearths, pottery sherds, rare stone gorgets and material samples.

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Can TE Projects Contribute to Healthy Living?

Research Links Increased Physical Activity Levels with Trails

By Hugh Morris, Rails-to-Trails Conservancy

Editor's Note: The following article expresses the opinions of the author and does not necessarily reflect the view of the Federal Highway Administration.

Introduction

While people enjoy trails for many reasons, there is new research that provides further support for building trails: increased physical activity by people in communities with trails. Since Transportation Enhancements (TE) funds can be used for trail development, it is possible that TE has been and will continue to help communities be more healthy.

Dr. Ross Brownson and a team of researchers at St. Louis University and the Centers for Disease Control and Prevention recently completed a study on the impact of trails on physical fitness levels. The study, titled "Promoting Physical Activity in Rural Communities: Walking Trail Access, Use, and Effects", is to be published in the *American Journal of Preventive Medicine* in March of this year.

The health benefits of physical activity have been well established. Regular physical activity tends to reduce the risk of coronary heart disease, hypertension, noninsulin dependent diabetes, colon cancer, osteoarthritis, and osteoporosis.

Walking is the most common physical activity. As a method of promoting public health, it is attractive because of its acceptability and accessibility. The current recommendation by public health advocates is for adults to obtain a minimum of 30 minutes of moderate-intensity physical activity on most if not all days of the week.

Despite the positive effects of physical activity and the relative ease of obtaining exercise by walking, more than one quarter of the U.S. population is completely inactive and the prevalence of inactivity is greatest in rural areas.

As a way to encourage increases in physical activity, and walking in particular, public health advocates have been recommending the construction of trails. Public health advocates view

the development of trails as a relatively low cost method of promoting physical activity. Trails facilitate walking by reducing barriers related to convenience and accessibility. Yet, while it is clear that people use such trails, until now no research had been conducted to determine if the development of trails induces people to increase their level of physical activity.

Methodology

This study used a telephone survey to interview 1,269 people who live in twelve rural counties in Missouri about their walking behaviors. At the time of the survey, there were a total of 21 trails in these counties, most asphalt or gravel. The trails tend to be quite short, from 0.13 to 2.38 miles in length and have been part of the community from six months to five years.

Results

Nearly 45% of respondents indicated that they had walked in the past month for exercise and 20% had walked five or more times per week for 30+ minutes per outing. This latter group is referred to as "regular walkers." People aged 60 years and older, women, and persons with more education were all more likely to have walked in the past month than the overall population. Persons who were divorced or separated were less likely to have walked in the past month. Regular walkers were more likely to be age 60 years and over, widowers, those with more education, and those with incomes over \$35,000.

The major finding of this study resulted from the authors' investigation into whether or not respondents perceived that the existence of walking trails had influenced their behavior. The

authors found that among persons who had used the trails, over half reported that they had increased their amount of walking since they had begun using the trail. Within this group, women were more likely to report that they had increased their amount of physical activity. Further, respondents with less education and lower incomes were more likely to have increased their levels of physical activity due to trail use.

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Respondents	Used Walking Trails?	Increased Walking Since Using Trail?
Age Group		
19-39	44.3%	60.3%
40-59	37.1%	52.5%
60+	34.2%	52.6%
Gender		
Men	29.8%	41.0%
Women	43.6%	59.7%
Race/Ethnic Group		
Caucasian	39.7%	55.0%
African American	34.5%	70.0%
Other	22.2%	0.0%
Note: For respondents reporting having access to walking trails.		

PROJECT NOTES

LEHIGH, PENNSYLVANIA

Lehigh and Northampton Transportation Authority (LANTA) in Pennsylvania recently approved bicycle racks on buses in those two towns. The project is funded with a TE award totaling \$48,000, and is only one of the projects for which the towns received funding. A \$40,000 TE award also is being used to complete design of an interactive display at the Safety Square at the proposed America on Wheels Museum at Lehigh Landing in Allentown, while another \$30,000 in TE award money is going toward completing improvements to a bike/pedestrian/transit facility next to the LANTA transfer point at Broad and Guetter streets in Bethlehem. [*The Morning Call*]

TIGER, WASHINGTON

A \$139,381 TE award will restore the historic Tiger Store to its traditional role as a gateway for visitors to northern Pend Oreille County. Generations of visitors and locals warmed themselves around a wood stove in the old frontier building. Tiger has been an important junction in Pend Oreille County, marking Indian trails and prospecting trails. The store has been operating as a museum since 1986 and with the refurbishment will continue to serve as a historical landmark. Visitors will be able to shop for local arts and crafts while learning about the history of the area. [*The Spokesman-Review*]

WASHBURN, NORTH DAKOTA

The Lewis and Clark Interpretive Center in Washburn is expanding its size and scope thanks to a TE award totaling \$800,000. The expansion project begins in April and should be completed within a year. Lewis and Clark were the original transportation experts: by necessity they perfected the use of intermodal travel, from canoes to horses to foot they traveled the US and set down paths and maps that laid the groundwork for our present day trails and highways. The North Dakota Lewis and Clark Bicentennial Foundation recognizes the important role these explorers played and are working to raise an additional \$200,000 to serve as their match. [*The Bismarck Tribune*]

FAYETTE COUNTY, PENNSYLVANIA

A new 620-foot-long bridge spanning the Youghiogheny River now connects the northern and southern sections of the Youghiogheny River Trail South, filling in the last piece of the 28-mile trail through Ohiopyle State Park in Fayette County. The bridge is part of a proposed 204-mile trail from Pittsburgh to Cumberland, MD. The bowstring truss bridge is made of weathering steel and timber, and offers an unobstructed view of the river. The \$2.1 million project, including trail work and rehabilitation of the visitor center plaza and parking lot, was completed in eight months, with most of the funding provided by a TE award.

STATEWIDE MISSISSIPPI

The Mississippi Department of Archives and History and the Mississippi Civil War Battlefield Commission have been awarded a Transportation Enhancements award of \$4.9 million for the statewide Civil War Trail Project. The Civil War Trail Project will create heritage tourism routes linking Mississippi's most significant Civil War sites, as well as restore three historic landmarks. Once restored, the Corinth Depot will house the Northeast Mississippi Museum and the Coker House will be open for tours. The Schaifer House, the only surviving antebellum structure on the battlefields, will be restored to serve as an interpretive center. [*Mississippi History Newsletter*]

NEW PUBLICATIONS RELATED TO TE ACTIVITIES

Fighting Billboard Blight: An Action Guide for Citizens and Public Officials

This is a 90-page comprehensive tool published by Scenic America for anyone interested in learning how to control billboards in their community. Contains information on how to begin evaluating your billboard situation, background on the 1965 Highway Beautification Act, case studies, definitions, and tips for working with the media and the government. Cost: \$20. To order, visit Scenic America's web site at www.scenic.org, call 202-543-6200, or fax 202-543-9130.

New Study on TE Funded Trail

Trail User's Study: Little Miami Scenic Trail

The Little Miami Scenic Trail is a Transportation Enhancements funded rail-trail project in Ohio. The Ohio-Kentucky-Indiana Regional Council of Governments prepared the study on behalf of the Ohio Greenways Initiative. The findings of this survey include estimations that 150,000 to 175,000 people use this trail each year, and spend \$3.1 to \$3.7 million annually on trip-related expenses. Cost: \$12. To order, call Ann Gordon, OKI Regional Council of Governments, 513-621-6300.

Scholarly Paper on Bicycling Cites TE:

Bicycling Renaissance in North America? Recent Trends and Alternative Policies to Promote Bicycling

This study finds that in the last two decades, Americans have doubled their number of bicycle trips, and public policy has become more supportive of bicycling since the passage of ISTEA and TEA-21. The authors cite Transportation Enhancements as the source for funding for the "vast majority of federally funded bicycle projects." Includes case studies of bicycling in six U.S. and one Canadian city, and seven proposals to increase bicycle use. Written by John Pucher, Charles Komanoff, and Paul Schimek, published in *Transportation Research Part A*, Vol. 33, Nos. 7/8, 1999, pp. 625-654 (Pergamon, 1999). To order a copy, call Elsevier Science Publishers at 212-633-3730, or email usinfo-f@elsevier.com.

TE Funded Trails Honored in Millennium Trails Initiative

Applications for Community Millennium Trails Now Available!

Recognizing the importance of trails to America's history and its future, the White House Millennium Council, the U.S. Department of Transportation, and Rails-to-Trails Conservancy formed the Millennium Trails Initiative as a way to honor American trails. Three different categories of awards were designed: National, Legacy, and Community Millennium Trails. National and Legacy Millennium Trails were announced in 1999.

Applications for Community Millennium Trails are being accepted until May 6, 2000, and award designees will be announced on National Trails Day, June 3, 2000. For more information on the Millennium Trails program and for application information, visit the Millennium Trails Web site at www.millenniumtrails.org, email miltrails@transact.org, or call toll-free 1-877-MIL-TRLS.

Transportation Enhancements (TE) funds have contributed greatly to the development of trails in the United States. Many of the National and Legacy Millennium Trails contain TE projects as part of the trail, such as bridges in Virginia and Pennsylvania that contribute to the Appalachian Trail, restoration of a depot along the Cowboy Trail in Nebraska, and roadside trailheads for the Cumberland Trail State Park in Tennessee.

In celebration of the contribution of TE to these nationally recognized Millennium Trails, NTEC compiled the following list of National and Legacy Millennium Trails that could be identified as having received TE funds. Congratulations to all these TE trails for being honored in the Millennium Trails Initiative.

National Millennium Trails

Appalachian National Scenic Trail
East Coast Greenway

Legacy Millennium Trails

Delaware Coastal Heritage Greenway
Florida National Scenic Trail
Coastal Georgia Greenway
BWI Trail/Baltimore & Annapolis Trail/Colonial Annapolis Maritime Trail (MD)
Norwottuck Network (MA)
Southeast Michigan Greenways Trail
Katy Trail and Rock Island Extension (MO)
The Cowboy Trail (NE)
Historic Columbia River Highway State Trail (OR)
George S. Mickelson Trail (SD)
Cumberland Trail State Park (TN)
Bonneville Shoreline Trail (UT)
Greenbrier River Trail (WV)

Restoring the C&O Canal in D.C.

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TE Project #3: Dry-Stone Masonry Saves Wall

Sixty feet of dry-laid stones in a 500-foot gravity wall supporting historic structures in Georgetown nearly collapsed during the floods. The pressure of water buildup and fill behind the wall had the making of a very expensive million dollar project. The Dry Stone Masonry Conservancy of Lexington, KY, brought in Richard Tufnell, a master stone-fence mason, to assess the damage. Tufnell set out to restore the massive wall by using dry-stone masonry building techniques that flourished in 18th and 19th century America. Without the use of tie-backs and cement, Tufnell insured the stability of the wall by locking stones together at an inward angle and by replacing some of the loose silt fill behind the wall with fine gravel. The old dry-wall technique will allow the wall to breathe and to naturally drain, and should guarantee that the wall will last another 200 years. This portion of the canal restoration project came to only \$303,000 in TE funds—far less than the cost of the engineering solution originally proposed for this project.

Park and Transportation Resource Preserved and Enhanced

With limited resources, and particularly with the help of Transportation Enhancements funds and National Recreational Trail funds, the District of Columbia has allocated more than \$11 million in funds for these and numerous other important projects along the C&O Canal. The District of Columbia found the Transportation Enhancements program an invaluable resource for restoring and enhancing the canal. When costs were measured against the benefits the canal provides to tourism, scenic beauty, wildlife preservation, and as a transportation and recreational resource, these investments were very well worth it.

Final Guidance Published

On December 17, 1999, the Federal Highway Administration (FHWA) published the *Final Guidance on Transportation Enhancements Activities* as established per 23 U.S.C. and TEA-21. FHWA published its Interim Guidance June 17, 1999. Since that time a number of additional issues have been raised and addressed to further clarify the guidance. As a result, FHWA added three sections to the Final Guidance: Functional Classification, Americans with Disabilities Act (ADA) and TE, and TE Questions and Answers. A new memorandum regarding Functional Classification was also added to the appendices. To view this new Final Guidance on-line, go to www.enhancements.org, or to order a copy, email NTEC at ntec@transact.org or call NTEC at 888-388-6832.

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New TE Kiosk Available to Promote Enhancements

By Danyell Diggs, Federal Highway Administration

While the TE program stands out from the crowd of federal highway programs in many ways, having an eye-catching display for conferences to draw attention to the possibilities with TE is important. The Federal Highway Administration's (FHWA) new and improved TE program kiosk—available for use by FHWA divisions and state DOTs for general conference activities—is already serving this purpose.

The kiosk is used to provide a TE program overview reflective of past ISTEA efforts and changes under TEA-21, and to display exemplary projects made available from the 12 TE activities. The kiosk display consists of a TE backdrop, a stand with countertops, and three bright blue iMac computers (two with program and project information and one with Internet connections). The computer program that runs continuously includes video, pictorial, and auditory information about the TE program and projects.

The kiosk will be used by FHWA TE staff for a variety of future events. It has already proven to be an excellent outreach and marketing tool to promote and encourage the Transportation Enhancements program.

Information concerning the kiosk and how it might be used to support your upcoming conference or workshop can be obtained by calling Danyell Diggs or Harold Peaks of FHWA's Office of Human Environment at 202-366-0106.

Connections is a quarterly publication of the National Transportation Enhancements Clearinghouse sponsored by the Federal Highway Administration. Submission of articles as well as letters and other comments are welcome.

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Unless otherwise stated, the contents of this newsletter reflect the views of the authors who are responsible for the opinions, findings and conclusions presented herein. The contents do not necessarily reflect the views or policies of FHWA and USDOT.

Physical Activity and Trails. . .

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Surprisingly, researchers found that reported travel distance to trails appeared to have only a slight effect on quantity of walking, with nearly half of respondents traveling at least 15 miles to access a trail.

Conclusions

The researchers conclude their report on a hopeful note. Typically, persons who are in lower socio-economic strata and those who are very sedentary are the most difficult to encourage to increase their levels of physical activity. The results of this study suggest that trail development may be a way of encouraging these folks to increase their physical activity levels as they were the ones most likely to show an increase. This group of researchers is continuing their work with focus group studies of trail users and a longer-term study of trail promotion and use.

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