



# THE MENDOTA TRAIL

## POTENTIAL ECONOMIC IMPACTS TO LOCAL COMMUNITIES



**KEY-LOG**  
**ECONOMICS**

**PREPARED FOR**  
**Mountain Heritage, Inc.**  
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*Research and strategy for the land community*

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Key-Log Economics remains solely responsible for the content of this report, the underlying research methods, and the conclusions drawn. We have used the best available data and employed appropriate and feasible estimation methods but nevertheless make no claim regarding the extent to which these estimates will match the actual magnitude of regional economic impacts experienced when the Mendota Trail is completed.

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*Trail recreation bolsters  
the United States  
economy with more than  
\$201 billion annually in  
consumer spending and  
1.76 million jobs.*

**THE 2017 OUTDOOR RECREATION ECONOMY,**  
OUTDOOR INDUSTRY ASSOCIATION



Railroad trestle over the North Fork  
of the Holston River, Mendota  
© Eva Beaulé

A person wearing a yellow and black plaid shirt, dark shorts, a black helmet, and a black backpack is riding a mountain bike on a grassy trail. The trail is surrounded by lush green trees and foliage. The scene is captured from a rear perspective, showing the rider's back and the path ahead.

# A POWERFUL ECONOMIC ENGINE

*Well-managed and funded parks and trails make strong, economic sense and are job-creating enterprises for the economic vitality of communities and their surrounding regions.*



Railroad trestle over Abrams Creek,  
©Rick Heppert

## EXECUTIVE SUMMARY

FROM DAMASCUS TO GALAX AND POINTS IN BETWEEN, TRAILS ARE BREATHING NEW ECONOMIC LIFE INTO SOUTHWEST VIRGINIA'S SMALL TOWNS AND RURAL COMMUNITIES. This report highlights the impact that trails and trail tourism is having on state and local economies, and estimates the regional economic impacts of the Mendota Trail, a 12.5-mile recreational trail that will connect the communities of Bristol and Mendota in Washington County, Virginia.

The vision for the Mendota Trail project is to develop a section of the abandoned Virginia & Southwestern Railway corridor into a destination, multi-purpose trail that provides residents and visitors with substantial outdoor recreational opportunities and connects the two town centers. In addition to recreational benefits, many see the Mendota Trail as a potential economic boost for rural Washington County, which has been largely dependent on the agriculture industry.

The cost of building the entire Mendota Trail as envisioned is approximately \$2.4 million. The first mile of the trail, completed in 2017, begins in Mendota and ends adjacent to North Fork of the Holston River. Construction is currently underway for an unbroken, 5-mile section extending from Bristol to Benhams.

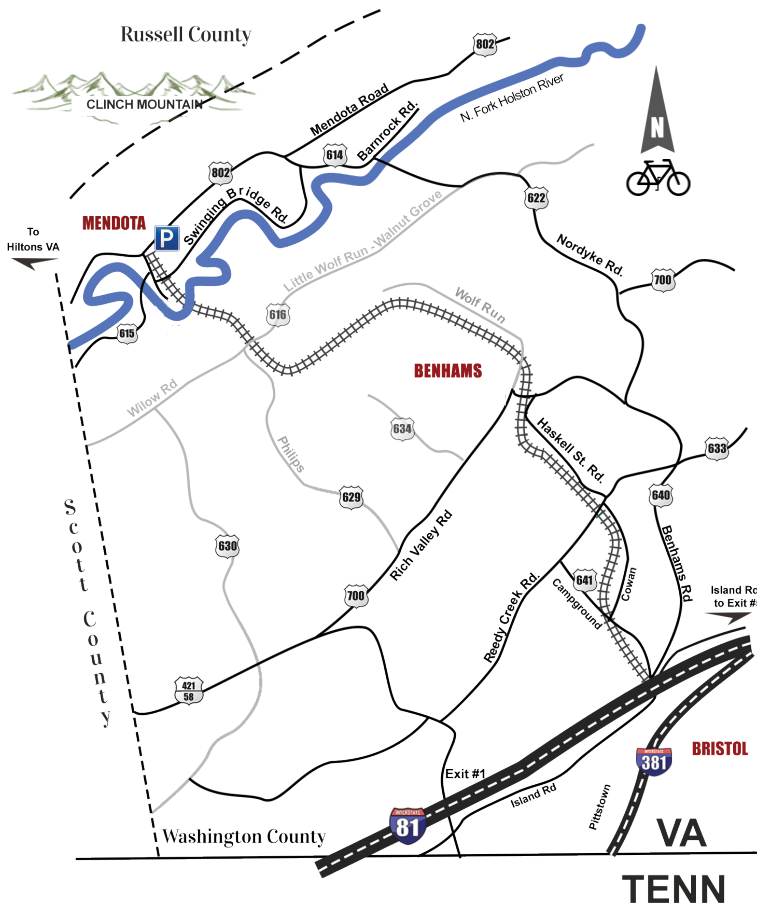
Nationally, recreational trail use — and the spending that comes along with it — are increasingly viewed as drivers for economic development. Trails and their users generate many and substantial economic benefits to unincorporated communities, small towns and cities. Countless economic impact and case studies reveal that trails contribute to economies through tourism, events, community improvement, property values, health care cost savings, jobs and investment, and consumer spending.

The research contained in this report includes interviews and an extensive review of studies of the economic impacts and benefits of regionally-relevant trails. We identify economic impact and benefit figures, including the potential contribution to local economic development, for trails similar to the Mendota Trail based on geography, land use, demographics, economy, trail length, connectivity, and trail activities. Literature sources led to a comparative understanding of trail impact experiences, visitor levels, and amenities.

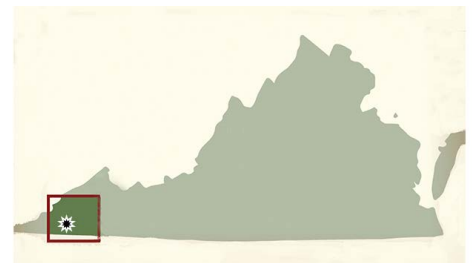
Using the information collected, scenario-based economic impacts were calculated using the Regional Input-Output Modeling System (RIMS II) from the Bureau of Economic Analysis. These estimates were generated from project trail development costs and non-local visitor spending estimates based on relevant trail studies.

Overall, results indicate that completion of the Mendota Trail project would help bring new jobs and economic opportunities to the area. At just 10,000 users, the economic impact to the local economy would be approximately \$119,366 in terms of value added (value of goods and services provided) and result in approximately four jobs. These impacts are estimated based on the magnitude of visitor expenditures rather than time, so, for example, 10,000 non-local visitors over 2 years would result in half these impacts per year. If additional infrastructure amenities and programming efforts were developed, allowing for broader trail user constituency, the economic impact could increase to as much as \$298,415 and result in nine jobs. In each scenario the Mendota Trail project would have a positive impact on the local economies.

### Mendota Trail Map



Ribbon Cutting for the “first mile” of the Mendota Trail  
©Frank Kilgore



### The Mendota Trail

The trail heads northwesterly to Mendota, Virginia, starting near the I-81 underpass on Island Road at the northern boundary of Bristol, Virginia.

©Mountain Heritage Inc.



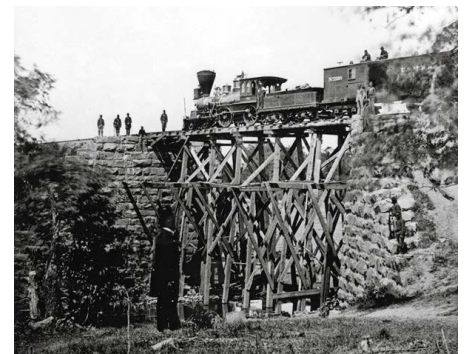
Railroad trestle, Mendota  
© Rick Heppert

# BACKGROUND

## RAILS TO TRAILS

The 1950s and 1960s saw a drastic decline in the country's railway passenger traffic, due in large part to the creation of the interstate highway system and the advent of passenger air service. By the mid-1960s, as railways were closing at an increasingly rapid pace across the country, a movement began in the Midwest to convert these abandoned or unused rail corridors into public trails. America's first rail-to-trail project, Wisconsin's Elroy-Sparta State Park, was formally established in 1965. The Illinois Prairie Path followed shortly thereafter. By 1986 there were 250 miles of open rail-trails in America. Today, just 30 years later, this number has grown nearly 100-fold to more than 23,614 miles, representing 2,000 open rail trails<sup>1</sup>.

Rail trails were slow to take off in Virginia. The state currently has 407 miles of trails converted from rails. By comparison, states like Michigan, Minnesota, and Wisconsin each have close to 2,000 miles or more<sup>2</sup>. Virginia's 68 rail trails include the Virginia Creeper Trail, the New River Trail, and the multi-state Washington and Old Dominion Trail.



Railways were a dynamic part of the economic centers of towns across the United States.  
Library of Congress

<sup>1</sup> Rails to Trails Conservancy. <https://www.railstotrails.org/>

<sup>2</sup> See footnote 1

## VALUE PROPOSITION

More than 20 years after trains stopped running through Bristol and Mendota in 1977, the city of Bristol initiated plans for a rail trail. But the project stalled and then was seemingly abandoned in 2008.

In 2016 the City of Bristol chose to return the abandoned rail section to the private sector. Ownership of 12.5 miles of rail bed including 17 trestles was transferred to the non-profit Mountain Heritage Inc., with the intention of rehabilitating it into a multi-use trail corridor: the Mendota Trail.

The proposed 12.5-mile Mendota Trail will run from Bristol to Mendota across Washington County's western corridor. The vision for the Mendota Trail project is to develop a section of the abandoned Virginia & Southwestern Railway corridor into a destination, multi-purpose trail that provides residents and visitors with a substantial outdoor recreational opportunity and connects the two town centers.

The Mendota Trail corridor represents a unique blend of railway history and interaction with the environment as it traverses across the North Fork of the Holston River. The southern trailhead in Bristol offers easy access to and from Interstate 81. Moreover, it is less than an hour's drive to the Appalachian Trail and the Virginia Creeper Trail.

On October 9, 2017 the first mile of trail officially opened, extending from Mendota to the North Fork of the Holston River. Construction is currently underway for an unbroken, 5-mile section from Bristol to Benhams.

In addition to recreational benefits, many see the Mendota rail trail as a potential economic boost for rural Washington County, which has been largely dependent on the agriculture industry. As of 2016, Washington County, Virginia has a population of 54,562, a poverty rate of 14.3%, a median household income of \$43,835, and a median age of 45.<sup>3</sup> In Southwest Virginia counties with similar demographics, trails like the Virginia Creeper Trail and the New River Trail have become key infrastructural components of the region's \$1 billion annual tourist economy.



**Volunteers hand-digging a detour trail to the North Fork of the Holston River.**  
©Frank Kilgore

*“Like much of rural America, especially rural Appalachia, Southwest Virginia has seen strong downward trends in the traditional economic sectors of manufacturing, mining, and agriculture over the last 25 years. Since 1990, farm employment has decreased by 22%, mining employment has decreased by 45%, and manufacturing has decreased by 46%.”*

**Friends of Southwest Virginia,**  
Economic Impact Analysis Report  
(March 2016).

<sup>3</sup> “Washington County, VA.” DATA USA, 2017, [datausa.io/profile/geo/washington-county-va/#intro](https://datausa.io/profile/geo/washington-county-va/#intro)





Mendota Fire Tower  
© Brad Deel

# TOURISM, COMMUNITY AND HEALTH BENEFITS

## A REVIEW OF THE LITERATURE

An extensive literature review was conducted that included regional and national trail economic impact studies, trail master plans, and general web research into trail use. Research focused on gaining a deep understanding of trends surrounding trail impact experiences, visitor levels, and amenities.

Economic impact studies for six regional trails are summarized in the case studies that follow. These trails share two or more of the following characteristics with the Mendota Trail: non-motorized, link two or more villages or towns, relatively short, and comparable community demographics.

### Trails Attract

Nationally, recreational trail use, and the spending that comes along with it, are increasingly viewed as drivers for economic development. According to the 2017 Outdoor Industry Association's Outdoor Recreation Economy Report, a total of 145 million Americans – more than 44% of the total U.S. population – engaged in some type of outdoor recreation annually. In

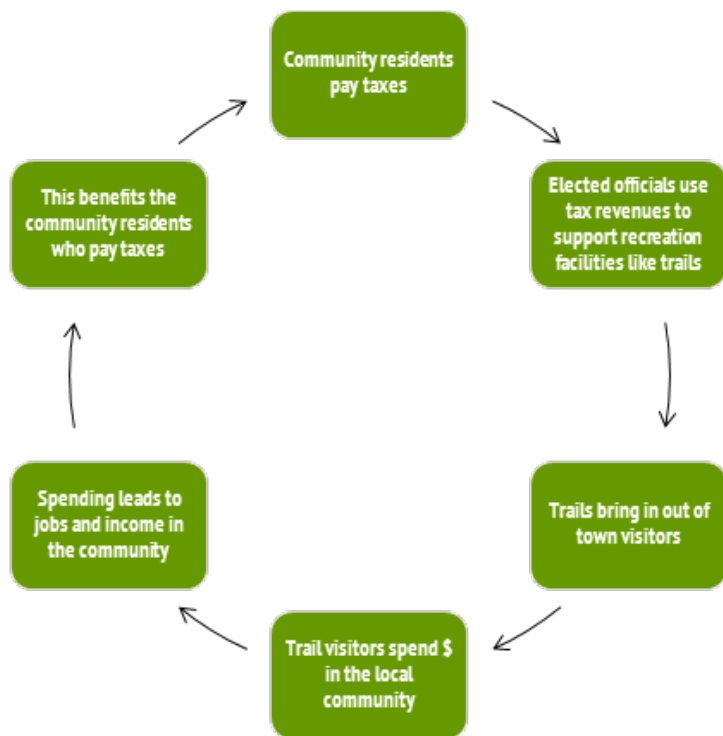
*Every year,  
American consumers  
spend more on  
outdoor recreation  
than they do on  
pharmaceuticals and  
fuel, combined.*

**THE 2017 OUTDOOR RECREATION ECONOMY,**  
OUTDOOR INDUSTRY ASSOCIATION

terms of economic impact, outdoor recreation generates more than double the impact of the U.S. oil and gas industry<sup>4</sup>.

Trail recreation generates over \$201.4 billion in spending and supports over 1.76 million jobs annually. In addition, each year trail recreation generates \$28.3 billion in federal, state and local tax revenue<sup>5</sup>.

And as trail sports and other forms of outdoor recreation dollars move through the economy, the multiplier effect grows to \$1.6 trillion in total annual economic activity and 12 million jobs. And unlike many sectors, outdoor recreation is resilient, and even grows during economic downturns. As an example, the outdoor recreation industry grew about 5% annually between 2005 and 2011, with trail recreation playing an important part in that growth. A 2011 USDA Forest Service Recreation Trends study showed that day hiking, compared to all outdoor activities, is expected to demonstrate the most growth in adults by 2060, at 70% to 113%. Likewise, the total number of days that adults will participate in day hiking annually is projected to increase by 77% to 116%<sup>6</sup>.



## Trails Deliver

Trails and their users generate many and substantial economic benefits to unincorporated communities, small towns and cities. Countless economic impact and case studies reveal that trails impact economies through tourism, events, community improvement, property values, health care costs, jobs and investment, and consumer spending.

Trails help to increase nearby property values and make the community more appealing to homebuyers, who list proximity to walking and biking

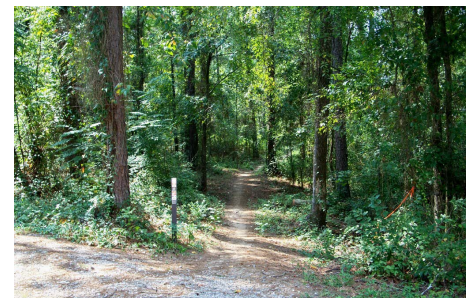
<sup>4</sup> “The Outdoor Recreation Economy.” Outdoor Industry Association, Outdoor Industry Association, 2017, outdoorindustry.org/wp-content/uploads/2017/04/OIA\_RecEconomy\_FINAL\_Single.pdf

<sup>5</sup> See footnote 4

<sup>6</sup> “Hiking Trails in America” American Hiking Society, American Hiking Society, 2015, americanhiking.org/wp-content/uploads/2015/05/AHS\_RPT\_fnl\_LOW.pdf

*“(Trails) link unincorporated communities, small towns and cities, and natural wonders into networks of local economic growth organized around outdoor tourism.”*

Jacob Stump, DePaul University



## Trails Benefit Fitness & Sales

At South Carolina’s Forks Area Trail System, about 80 percent of users are local, most of them having never biked before the trail was built. Now the 200-300 users per day that visit the 35-mile long course have helped support a double digit increase in bike store sales and service, “an astonishing trend given that two out of three users of the trail did not bike before it was built”.

Source: Bikes Belong; Photo: U.S. Forest Service

paths as one of the most important features in selecting a community. Likewise, trails influence location and relocation decisions for businesses, as local amenities help to attract potential employees. They also help to revitalize depressed and unoccupied areas. Additionally, trails encourage an active lifestyle, thereby helping to reduce medical costs by increasing physical activity. In Virginia, \$375 million is spent annually for medical costs associated with physical inactivity and poor diet<sup>7</sup>. Trails also cut transportation costs such as gas, increase tax revenue in local communities, and support and create jobs and local businesses. Collectively these economic benefits greatly outweigh the costs of land acquisition, trail construction and maintenance<sup>8</sup>.

## Virginia Trends

Each year, outdoor recreation in Virginia generates \$21.9 billion in consumer spending, 197,000 direct jobs, \$6.5 billion in wages and salaries, and \$1.2 billion in state and local tax revenue. According to the Outdoor Industry Association, 57% of Virginians participate in outdoor recreation annually and are more likely to participate in trail/road running than the average American<sup>9</sup>.

Tourism along trails and the associated spending has generated millions of dollars in economic impact for Virginia and surrounding states. For instance, the U.S. Forest Service reported that the Virginia Creeper Trail connecting Damascus and Abingdon attracts approximately 100,000 users annually and generated more than \$1.6 million in local revenues in 2004<sup>10</sup>. The New River Trail in Wythe, Virginia supported 426 jobs and realized an estimated economic impact of \$12.1 million in 2017<sup>11</sup>. Throughout the literature review process, dozens of economic impact studies from across the country highlight the multidimensional economic impact trails generate for the communities that surround them.

<sup>7</sup> "Adding Value to Your Community." DCR, Virginia Department of Conservation and Recreation, [www.dcr.virginia.gov/recreational-planning/tr-sbiia1](http://www.dcr.virginia.gov/recreational-planning/tr-sbiia1)

<sup>8</sup> "Economic Benefits of Trails." ConservationTools.org, Pennsylvania Land Trust Association, [conservationtools.org/guides/97-economic-benefits-of-trails](http://conservationtools.org/guides/97-economic-benefits-of-trails)

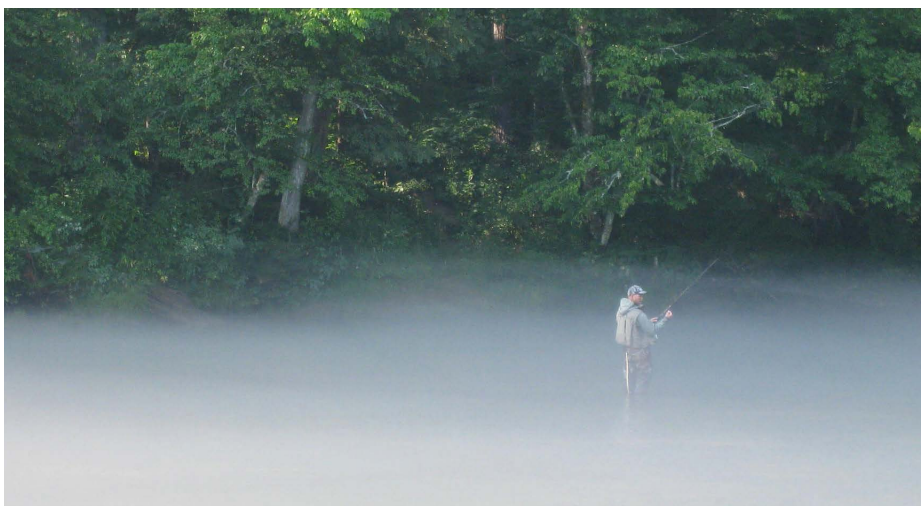
<sup>9</sup> Outdoor Industry Association "Virginia Outdoor Recreation Economy Report. 2017, [https://outdoorindustry.org/wp-content/uploads/2017/07/OIA\\_RecEcoState\\_VA.pdf](https://outdoorindustry.org/wp-content/uploads/2017/07/OIA_RecEcoState_VA.pdf)

<sup>10</sup> Bowker et al. "The Virginia Creeper Trail: An Assessment of User Demographics, Preferences and Economics". 2004, <https://www.srs.fs.usda.gov/recreation/VCT.pdf>

<sup>11</sup> Magnini, Vincent P. "Virginia State Parks – 2017 Economic Impact Report." *Virginia Department of Conservation and Recreation*, Virginia Tech Pamplin College of Business, Jan. 2018, [www.dcr.virginia.gov/state-parks/document/2017-economic-impact-study.pdf](http://www.dcr.virginia.gov/state-parks/document/2017-economic-impact-study.pdf)

*"From 2004 to 2014, travel expenditures in Southwest Virginia increased by almost \$322 million, with travelers spending a total of \$971 million in 2014. In this ten year period, travel expenditures have increased by 50%, and in the five years from 2010-2014, expenditures increased by 17%."*

**Friends of Southwest Virginia,**  
Economic Impact Analysis Report  
(March 2016)



## Abingdon: "Play Outdoors"

Tucked in the mountains of southwest Virginia, the 240-year old town of Abingdon bills itself as an "outdoor lover's dream come true". It's home to the Virginia Creeper Trail; Whitetop Laurel Creek, one of the best fly fishing streams in Virginia; and Mount Rogers, the highest peak in Virginia. The town of just over 8,000 people has successfully capitalized on its outdoor recreational and cultural art assets, and now boasts more restaurants per capita than New York, San Francisco, and New Orleans.

©Bob Mueller

# CASE STUDIES

## THE VIRGINIA CREEPER TRAIL (VCT)



The Virginia Creeper Trail  
©Bob Mueller

The Virginia Creeper Trail (VCT), internationally recognized as one of the most scenic rail trails in the eastern United States, passes through Mount Rogers National Recreation area and the highland country of southwestern Virginia. It stretches 34 miles from Abingdon through Damascus along the Whitetop Laurel River and up to its highest point, Whitetop Station, near the North Carolina state line.

In 2004, the U.S. Forest Service estimated VCT’s annual trail use<sup>12</sup>, local economic impacts from non-local visitor spending, and net economic benefits for all trail users<sup>13</sup> as follows:

**Table 1: Economic Impact of the VCT (2004)**

Aggregate Net Economic Value to Users	Net Economic Value to Users	Nonlocal Visitor Spending in the Two Counties	Economic Impacts from Nonlocal Visitor Spending	Jobs Supported	Labor Income
\$2.3-\$3.9 million	\$23-\$238 per person	\$1 million	\$1.6 million	27.4	\$610,000

Due to the popularity of VCT and four adjacent trails, the number of businesses in Damascus, which sits at their intersection, has tripled in just 9 years. And revenue from business license fees more than doubled increasing from \$22,800 in 2003 to \$52,800 in 2014. Similarly, meals and lodging tax revenue for the town increased nearly 300% in just over 10 years, growing from \$42,000 in 2001-2002 to over \$112,000 in 2013.

<sup>12</sup> In 2004, trail use was estimated at 100,000 users. With the growth in outdoor recreation, it’s estimated this number has more than doubled in the past 14 years

<sup>13</sup> See footnote 10

### *At a Glance*

**State:** Virginia

**Counties:** Washington & Grayson

**Length:** 34 miles

**Uses:** Year-round hiking, mountain biking and horseback riding

**Features:** 47 trestles varying in length from 100- to 600-foot long

**Annual Users:** 100,000 (2004)

**Economic Impact:** \$1.6 million (2004)

**Jobs Supported:** 27.4

# THE NEW RIVER TRAIL STATE PARK



New River Trail State Park  
©meu1gato (used with permission from TrailLink)

The 57-mile New River Trail runs through southern Virginia’s Grayson, Carroll, Wythe, and Pulaski counties along the New River. In 1986, the Norfolk Southern Railroad donated the railroad corridor, which originally supplied iron to the Commonwealth of Virginia.

The Virginia Department of Conservation and Recreation’s *2017 Virginia State Parks - Economic Impact Report* estimated the following activities and impacts associated with the New River Trail State Park:

**Table 2. Visitor spending for New River Trail State Park**

Day User Spending	Overnight User Spending	Resident Spending	Non-resident Spending	Total Visitor Spending
\$31.0 million	\$219,000	\$16.5 million	\$14.7 million	<b>\$31.2 million</b>

**Table 3. Jobs attributed to New River Trail State Park**

Direct Jobs	Indirect Jobs	Induced Jobs	Total Jobs	FTE Jobs*
356.9	48.3	62.9	468.1	<b>426.0</b>

**Table 4. Employment, labor income, value-added, tax revenue associated with New River Trail State Park**

Impact Type	Employment	Labor Income	Total Value-Added
Total Effect	468.1	\$14.6 million	<b>\$22.7 million</b>
Total state & local taxes	\$2.8 million		

## At a Glance

**State:** Virginia

**Counties:** Carroll, Grayson, Pulaski & Wythe

**Length:** 57.7 miles

**Uses:** Year-round hiking, biking, horseback riding, fishing and cross-country skiing

**Features:** Two tunnels, three major bridges and 30 trestles

**Economic Impact:** \$22.7 million (2017)

**Jobs Supported:** 426

# HIGH BRIDGE TRAIL STATE PARK



**High Bridge Trail State Park**  
©Cindy Gerner (used with permission from TrailLink)

The High Bridge Trail runs just over 31 miles along the former rail bed of the Norfolk & Western Railway in central Virginia. The park's centerpiece is the nearly half-mile long High Bridge that towers 125 feet above the Appomattox River. It is the longest recreational bridge in Virginia and one of the longest in the United States. During the Civil War, both Union and Confederate armies made attempts to destroy it to prevent the other side from crossing the river. It's now a Virginia Historic Landmark and is on the National Register of Historic Places.

The *2017 Virginia State Parks - Economic Impact Report*<sup>14</sup> estimated the following activities and impacts for High Bridge Trail State Park:

**Table 5. Visitor spending for High Bridge Trail State Park**

Day User Spending	Overnight User Spending	Resident Spending	Non-resident Spending	Total Visitor Spending
\$6.3 million	0	\$3.3 million	\$2.9 million	<b>\$6.3 million</b>

**Table 6. Jobs attributed to High Bridge Trail State Park**

Direct Jobs	Indirect Jobs	Induced Jobs	Total Jobs	FTE Jobs*
75.4	10.7	13.7	99.9	<b>90.9</b>

**Table 7. Employment, labor income, value-added, tax revenue associated with High Bridge Trail State Park**

Impact Type	Employment	Labor Income	Total Value-Added
Total Effect	99.9	\$3.2 million	\$4.9 million
Total state & local taxes	<b>\$583,000</b>		

## At a Glance

**State:** Virginia

**Counties:** Cumberland, Prince Nottoway and Prince Edward

**Length:** 32.4 miles

**Uses:** Year-round hiking, biking, horseback riding and fishing

**Features:** Two tunnels, three major bridges and 30 trestles

**Economic Impact:** \$4.9 million (2017)

**Jobs Supported:** 90.9

<sup>14</sup> See footnote 11

# GREENBRIER RIVER TRAIL



Restored Train Depot at Marlinton along Greenbrier Trail  
©tarheel (used with permission from TrailLink)

The 77-mile Greenbrier River Trail winds along the Greenbrier River through Greenbrier and Pocahontas counties in east-central West Virginia. The trail, operated and managed by West Virginia State Parks, is the longest trail of its kind in the state. It's one of the country's 50 Millennium Legacy Trails, was rated one of the top 10 hiking trails by *Backpacker Magazine*, and has been inducted into the Rail-Trail Hall of Fame.

In 2015, West Virginia State Parks published *The Economic Significance and Impacts of West Virginia's State Parks and Forests*, which estimated the following impacts for the Greenbrier River Trail:

**Table 8. Trail and Demographics<sup>15</sup>**

Resident Spending	Non- Resident Spending	Total Visitor Spending	Economic Significance	Economic Impact
\$2,924,327	\$2,111,672	\$5,035,999	\$4,330,959	\$3,139,608

<sup>15</sup> The Economic Significance and Impacts of West Virginia's State Parks and Forests." West Virginia State Parks, Institute for Service Research, 2015, wvstateparks.com/EconomicResearch2015.pdf

## At a Glance

**State:** West Virginia

**Counties:** Greenbrier and Pocahontas

**Length:** 77 miles

**Uses:** Year-round hiking, biking, horseback riding, fishing and cross-country skiing

**Features:** Two tunnels and 35 bridges

**Economic Impact:** \$3.1 million (2015)

# NORTH BEND RAIL TRAIL



**Tunnel 19 on the New Bend Trail**  
Used with permission from TrailLink

West Virginia’s North Bend Rail Trail stretches 72 miles long the former main line of the Baltimore & Ohio railway. The trail, operated by West Virginia State Parks, is part of the 5,500-mile, coast-to-coast American Discovery Trail.

The West Virginia State Parks economic impacts and significance study included the following estimates for North Bend Trail State Park:

**Table 9. Economic Impact of the North Bend Rail Trail (2015)<sup>16</sup>**

Resident Spending	Non- Resident Spending	Total Visitor Spending	Economic Significance	Economic Impact
\$2,924,327	\$2,111,672	\$5,035,999	\$4,834,559	\$3,425,027

<sup>16</sup> See footnote 7

## *At a Glance*

**State:** West Virginia

**Counties:** Doddridge, Harrison, Ritchie and Wood

**Length:** 72 miles

**Uses:** Year-round hiking, biking, horseback riding, and cross-country skiing

**Features:** Thirteen tunnels and 36 bridges

**Economic Impact:** \$3.4 million (2015)



# HERITAGE RAIL TRAIL



Heritage Rail Trail County Park  
©tarheel (used iwth permission from TrailLink)

Established in 1992, the Heritage Rail Trail runs 21 miles between the city of York and the Maryland state line. It connects to Maryland's 20-mile long Torrey C. Brown Trail.

In 2017, the Pennsylvania Department of Conservation and Natural Resources conducted a user survey and economic impact analysis of the Heritage Rail Trail County Park to monitor trail user characteristics and evaluate economic impact along the trail. More than 44% of respondents indicated that they use the trail several times each week and over 68% of trail users noted that they utilize the trail for health, exercise, and fitness training. Infrared counter and survey data estimates over 263,800 annual visits to Heritage Rail Trail County Park, and a total economic impact in 2017 of \$3.5-4.4 million to the local economy<sup>17</sup>.

## *At a Glance*

**State:** Pennsylvania

**Counties:** York

**Length:** 24.9 miles

**Annual Users:** 263,856 (2017)

**Uses:** Year-round hiking, biking, horseback riding, fishing, and cross-country skiing

**Features:** Three historic structures and an operational railway

**Annual Users:** 263,856 (2017)

**Economic Impact:** \$3.5 million - \$4.4 million (2004)

<sup>17</sup> [http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr\\_20033678.pdf](http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20033678.pdf)



Kayakers from Adventure Mendota on the North Fork of the Holston River, Mendota  
© Eva Beaulé

# ASSESSING THE ECONOMIC IMPACT

The potential economic impact of Mendota Trail development and use of the completed trail is calculated using available estimates of trail development costs and the likely expenditures in the region by non-local visitors. Although local residents will continue to use the trail, spending by non-locals represents new money brought into the regional economy, spurring economic growth. We assume residents would spend money elsewhere in the region if not on trail use; such expenditures would not represent an increase in spending prompting additional economic growth.

We use the Bureau of Economic Analysis' Regional Input-Output Modeling System (BEA RIMS II) multipliers to estimate the potential impact of expenditures on the region, defined as the city of Bristol; Washington, Russell, and Scott Counties, Virginia; and Sullivan County Tennessee. Economic impact is expressed in terms of gross output (sales), value added (gross domestic product), earnings, and employment (full- and part-time jobs). These terms are defined as<sup>18</sup>:

- **Gross output:** The total market value of industry output (sales). It equals intermediate inputs plus value added.

<sup>18</sup> Bureau of Economic Analysis, 2013, "RIMS II: An essential tool for regional developers and planners", [https://apps.bea.gov/regional/pdf/rims/rimsii\\_user\\_guide.pdf](https://apps.bea.gov/regional/pdf/rims/rimsii_user_guide.pdf)

- **Value added:** The total value of income generated from production. This income consists of payments to labor (employee compensation), payments to government (taxes on production and imports), and returns on investment (gross operating surplus). It is equivalent to gross domestic product.
- **Earnings:** The compensation of employees plus the net earnings of sole proprietors and partnerships. In RIMS II, earnings exclude personal contributions to social insurance programs, such as Social Security and Medicare, and employee pension plans.
- **Employment:** The number of full-time and part-time workers.

## ESTIMATED IMPACTS OF TRAIL DEVELOPMENT

The Mendota Trail will extend 12.5 miles, of which one mile is completed and five miles are under construction. There are 17 rail trestles along the Trail, one of which has been refurbished. The activities and costs of developing the remaining 6.5 miles of the Mendota Trail include:

- Clear and gravel the trail at \$20 per linear foot for a 10-foot trail width;
- Refurbish the 16 remaining trestles at \$500 per foot;
- Purchase and install four hand-activated caution signals at \$7,500 each;
- Purchase and install 50 metal signs (24”) at \$320 each;
- Purchase and install 100 directional signs at \$50 each;
- Professional services, legal, and engineering for \$100,000;
- Bristol trailhead land purchase, parking, bathrooms, and changing facilities for \$400,000; and
- Mendota trailhead, gravel parking; purchase, haul, and install century-old depot and equip with bath and changing rooms for \$250,000.

It is also anticipated that educational signage and exercise/ fitness stations may be installed along the Trail. Adjoining landowners may offer wayside food, beverages, and lodging (Kilgore, personal communication, July 27, 2018).

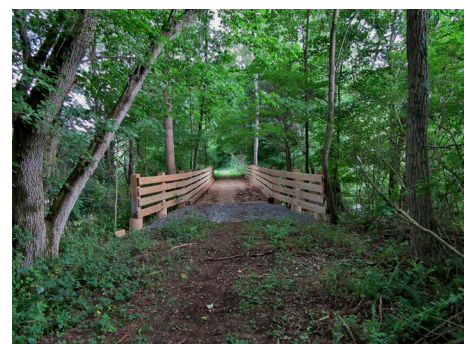
We estimate economic impacts per trail mile and per trestle (with each trestle averaging 100 feet); the trail clearing and graveling costs above are thus equivalent to \$105,600 per trail mile and trestle refurbishing \$50,000 each. On average, labor and permitting comprises 40% of the estimated cost and materials comprise 60% (Kilgore, personal communication, July 27 & October 29, 2018).

The magnitude of regional economic impacts depends on whether or not the gravel and other materials are produced, transported, and/or sold by local companies, and whether labor is provided by workers within or outside the region. The trail gravel is from a quarry within our study region<sup>19</sup> so revenue from its production, transport, and sale represents an

<sup>19</sup> Kilgore, personal communication, November 22, 2018



Ribbon Cutting for the “first mile” of the Mendota Trail  
©Frank Kilgore



The Mendota Trail contains 17 trestles. Trestle refurbishing costs are estimated at \$500 per foot.

©Bob Mueller

increase in regional spending. We assume the gravel and both the metal and directional signs are also produced within the region, while the trestle materials and caution signals are sold and transported to the Mendota Trail by local firms and produced elsewhere<sup>20</sup>. Therefore, the increase in regional expenditures as a result of trail development is calculated as the total cost of the gravel and metal and directional signs, plus the cost of the trestle materials and caution signals multiplied by their transportation, wholesale, and retail margins, obtained from BEA's National Cost Distribution Tables<sup>21</sup> (Table 10). Note that these margins are 0% for signage so signal purchases do not increase regional spending<sup>22</sup>.

**Table 10. Potential Increase in Regional Spending, Materials Produced or Purchased Locally (2016 dollars)**

	Cost	Transportation, Retail & Wholesale Margins	Increase in Regional Spending
Trail Gravel	\$63,360 per mile	-	\$63,360 per mile
Trestle Wood	\$30,000 per trestle	0.15	\$4,500 per trestle
Metal & Directional Signs	\$12,600	-	\$12,600
Caution Signals	\$18,000	0	\$0

Sources: Kilgore, personal communication, October 29, 2018 & November 22, 2018; Bureau of Economic Analysis. National Distribution Costs, Table F. Composition of Intermediate Inputs. 2018. Increase in Regional Spending (column 3) equals Cost (column 1) times Transportation, Retail & Wholesale Margins (column 2).

Furthermore, we conservatively assume labor and professional services would be provided by the local workforce and that if workers were not so employed they would be earning the same wage in another job in the region. This means that wages for trail-related work would not represent an increase in local wage income.

**Table 11. Potential Economic Impact of Trail Development**

	Output	Value Added	Earnings	Employment
Trail Gravel (6.5 miles)	\$579,747	\$378,646	\$148,757	2.6
Trestle Wood (16 Trestles)	\$101,779	\$66,474	\$26,115	0.4
Metal & Directional Signs	\$18,678	\$8,486	\$4,087	0.1
<b>Total</b>	<b>\$ 667,017</b>	<b>\$ 407,535</b>	<b>\$ 111,932</b>	<b>2.4</b>

Source: Bureau of Economic Analysis, RIMS II, Type II final-demand multipliers for Mendota Trail region. The Bureau of Economic Analysis does not endorse any resulting estimates and/or conclusions about the economic impact of a proposed change on an area.

The increase in regional spending for graveling the remaining 6.5 miles of trail and refurbishing 16 additional rail trestles is estimated to result in an increase in regional gross output (sales) of \$667,017 (this value includes the purchase of materials) (Table 11) using RIMS II multipliers. The value-added portion of this output, which is equivalent to gross domestic product, is \$407,535; the earnings portion of this value added is

<sup>20</sup> Mountain Heritage Inc., personal communications, November & December, 2018

<sup>21</sup> Bureau of Economic Analysis, 2018

<sup>22</sup> An itemized list of all land, building materials, and labor costs for the last two cost components above, trailhead land purchases and facilities, would be necessary to estimate economic impacts so is not included herein.



Before/After photos of a now-refurbished trestle on the "first mile" of the Mendota Trail ©Frank Kilgore (1) & Rick Heppert (2)



A portion of the Mendota Trail ©Bob Mueller

\$111,932. Employment, which includes both full- and part-time workers, is expected to increase by 2.4 jobs.

These potential impacts rely on the material cost estimates and assumptions regarding whether materials are produced, transported, and/or sold within or outside of the region, as noted earlier. If more of the materials purchased for the Mendota Trail are produced within the region, the increase in regional spending and economic impact estimates would be greater. Similarly, if the workers developing the Trail are from outside the region and spend their wages within the region — representing new wage income — this increase in regional spending would result in greater economic impact estimates.

## ESTIMATED IMPACTS OF NON-LOCAL TRAIL VISITOR SPENDING

Calculating the potential economic impact of Mendota Trail use requires estimates of non-local visitor purchases within the region by spending category. We reviewed the studies described in sections 4 and 5 to obtain such estimates for rail trails considered to be comparable to the Mendota Trail<sup>23</sup>. The Virginia Creeper and High Bridge Trails were the only comparable trails for which we located data on expenditures per non-local day-user; the High Bridge Trail study uses spending estimates based on those for the Virginia Creeper Trail (Table 12).

**Table 12. Average Expenditures within 25 miles by Non-local Virginia Creeper Trail Day-User**

	2003 Dollars	2016 Dollars
Food in restaurants	\$6.37	\$8.36
Carry-out food	\$0.79	\$1.04
Transportation	\$3.42	\$4.49
Bike rentals	3.49	4.58
Shuttle/guide	\$2.74	\$3.60
Use fees	\$0.04	\$0.05
Other	\$0.26	\$0.34
<b>Total</b>	<b>\$17.11</b>	<b>\$22.46</b>

Sources: Bowker, J.M., et al. "The Virginia Creeper Trail: An Assessment of User Demographics, Preferences, and Economics." Southern Forest Research Station, USDA Forest Service, 2004. 2003 dollars adjusted to 2016 dollars using CPI-U for southern US from Bureau of Labor Statistics.

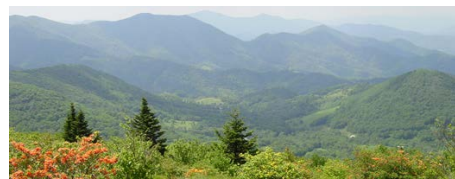
To supplement this study we searched for additional data on non-local day-use spending by visitors to areas near the Mendota Trail. We located average expenditures by visitors to the Cherokee or Jefferson National Forest, portions of which are in the study region (Table 13).

We use the average per-person Cherokee and Jefferson National Forests day-user expenditures above to represent potential spending by non-local visitors to the Mendota Trail because the data are more recent than those in the Virginia Creeper Trail study and total spending is similar to that expected in the region, based on studies reviewed in Sections 4 and 5. Excluding the other transportation and entry fee categories, which would not apply to the Mendota Trail, brings the average total expenditure per

<sup>23</sup> Comparability is determined based on factors such as the proximity to a major highway, historical significance, unconnected/ destination trail, and trail length



**A rider on the Mendota Trail**  
©Rick Heppert



**Over 600 miles of non-motorized trails traverse the Cherokee National Forest, including nearly 150 miles the Appalachian National Scenic Trail.**

Source: U.S. Forest Service

non-local day-user to \$23.82.

**Table 13. Average Expenditures within 50 miles of the Cherokee or Jefferson National Forest by Non-Local Day-Users**

	2009 Dollars	2016 Dollars
Restaurant	\$4.98	\$5.58
Groceries	\$3.45	\$3.87
Gas and oil	\$8.92	\$9.99
Other transportation	\$0.34	\$0.38
Entry fees	\$1.84	\$2.06
Recreation & entertainment	\$1.93	\$2.16
Sporting goods	\$1.13	\$1.27
Souvenirs & other	\$0.85	\$0.95
<b>Total</b>	<b>\$23.44</b>	<b>\$26.26</b>

Source: White, E.M., Goodding, D.B., & Stynes, D.J. "Estimation of National Forest Visitor Spending Averages from National Visitor Use Monitoring: Round 2." Pacific Northwest Research Station, USDA Forest Service, 2013 (Table 14; dollars per party per trip divided by average party size). 2009 dollars adjusted to 2016 dollars using CPI-U for southern US from Bureau of Labor Statistics.

As was the case with trail development, the magnitude of local economic impacts from some expenditures depends on the portion of new spending that occurs within the region. Because some products are sold but not manufactured in the region, only the retail margin affects local economic activity. We therefore multiply retail expenditures by their retail margin to estimate the increase in local expenditures (Table 14).

**Table 14. Average Regional Expenditures by Non-local Trail Day-User (2016 dollars)**

	Expenditures per Day	Retail Margin	Increase in Regional Expenditures
Restaurant	\$5.58	-	\$5.58
Groceries	\$3.87	-	\$3.87
Gas and oil	\$9.99	0.16	\$1.60
Recreation & entertainment	\$2.16	-	\$2.16
Sporting goods	\$1.27	0.37	\$0.47
Souvenirs & other	\$0.95	0.44	\$0.42
<b>Total</b>	<b>\$23.82</b>	<b>-</b>	<b>\$14.10</b>

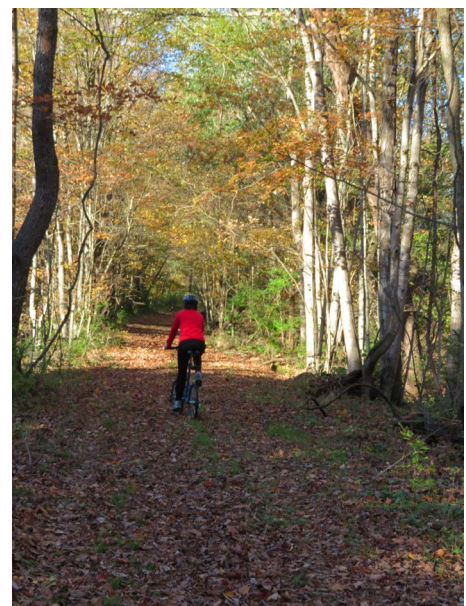
Sources: White, E.M., Goodding, D.B., & Stynes, D.J. "Estimation of National Forest Visitor Spending Averages from National Visitor Use Monitoring: Round 2." Pacific Northwest Research Station, USDA Forest Service, 2013; Bureau of Economic Analysis. National Distribution Costs, Table D. Commodity Composition of PCE. 2018. Increase in Regional Expenditures (column 3) is equal to Expenditures per Day (column 1) times the Retail Margin (column 2).

Using BEA RIMS II multipliers, gross output (sales) is expected to increase by \$203,814 for every 10,000 non-local visitors to the Mendota Trail (Table 15). This estimate includes the \$140,877 increase in local spending by these visitors. The value-added portion of this output (gross domestic product) is \$119,366; the earnings portion of value added is \$55,580. Employment, which includes both full- and part-time workers, is expected to increase by 3.5 jobs per 10,000 non-local visitors.



Non-local trail day users are expected to increase regional expenditures including those related to recreation & entertainment and sporting goods.

©Eva Beaulé



A rider on the Mendota Trail

©Bob Mueller

**Table 15. Potential Economic Impact of Non-Local Day Use Visitors to Mendota Trail**

# of Non-Local Visitors	Output	Value-Added	Earnings	Employment
1,000	\$20,381	\$11,937	\$5,558	0.3
5,000	\$101,907	\$59,683	\$27,790	1.7
10,000	\$203,814	\$119,366	\$55,580	3.5
15,000	\$305,720	\$179,049	\$83,370	5.2
20,000	\$407,627	\$238,732	\$111,160	7.0
25,000	\$509,534	\$298,415	\$138,950	8.7

*Source: Bureau of Economic Analysis, RIMS II, Type II final-demand multipliers for Mendota Trail region.*

These potential economic impacts rely on the estimates of average non-local visitor spending by category and associated BEA RIMS II multipliers. If actual expenditures are greater or less than those modeled, and/or the type of purchases are different (which affects the margins and multipliers used), potential economic impacts will also differ. Nevertheless, we expect that spending associated with completion of the Mendota Trail will boost and help diversify the economies of Bristol and Mendota, and communities nearby.

**Wild Geranium**  
©Rick Heppert





Fall colors from the overlook near  
Marion, Virginia  
©Bob Mueller

## RECOMMENDATIONS & CONCLUSIONS

Our findings reveal that the Mendota Trail project would help bring new jobs and economic opportunities to the area. At just 10,000 non-local visitors, the economic impact to the local economy would be approximately \$119,366 in value added and result in 4 jobs. With additional amenities and programming efforts to increase visitor use, the economic impact from non-residents could increase to as much as \$298,415 and result in 9 jobs. Across all scenarios, this study concludes the Mendota Trail project would have a positive impact on the local economies as well as benefit residents of the region.

### FROM MINIMALIST TO WORLD-CLASS TRAIL

Trail amenities such as directional or educational signage, bike rentals, restroom facilities, access to water, and/or a midway rest area would increase the attraction of the Mendota Trail for a wider variety of users. Robust programming and promotional activities as well as special events could further broaden user constituencies and ultimately generate greater economic impact. Special events may include trail races, craft festivals, bicycling rides and events, geocaching, and bio-blitzes. A full special-events program calendar could attract an additional tens of thousands of visitors

*Trail users surveyed by the Virginia Department of Conservation and Recreation cited bathrooms (74%), trailhead parking (54%), and drinking water (48%) as the amenities most important to them. Connectivity between trails was also an important factor in trail usage.*

**Virginia Department of Conservation and Recreation, 2017 Virginia Outdoors Demand Survey (2017)**



annually. And by scheduling these events in association with other, more established programming such as Damascus' annual Trails Day and the Bristol Rhythm & Roots Reunion, Mendota Trail could increase that impact and foster greater community economic development.

## LINKING TO OTHER REGIONAL ASSETS

Attracting and retaining non-resident visitors for multiple-day, multiple-attraction experiences should be considered an integral part of the overall potential economic impact of Mendota Trail development.

The nearby Virginia Creeper Trail serves as an important local and regional asset, significantly influencing the economy and character of the surrounding communities. Each year nearly 300,000 people come to Damascus, Virginia to use the Creeper Trail and other trails in the area. In 2010, over half of Damascus businesses surveyed attributed 61% of their business to trail user spending. One business owner stated, "there is not a business in the community that is not impacted by the trail users."<sup>24</sup>

To increase the community-level economic impacts of the Mendota Trail, the Virginia Creeper Trail and other local trails, stakeholders should jointly market their local and regional assets. Likewise, they should identify missing or desired assets, and encourage their development.

## ADDITIONAL COMMUNITY BENEFITS

The economic impacts are based on available estimates of construction costs and visitor spending and RIMS II multipliers. However, the potential economic impacts that could not be captured are still relevant to the overall economic impact of the proposed Mendota Trail. These potential impacts, some not easily measured, should not be overlooked and include the opening of new businesses and community health impacts.

Healthcare costs represent one of the nation's fastest-growing costs to the public. The Mendota Trail could help alleviate some of these costs by providing another option for outdoor recreation and physical activity.

According to the 2017 Ballad Health Population Improvement Plan, northeast Tennessee and southwest Virginia are experiencing a health crisis driven by the issues of obesity, physical inactivity, tobacco use, and substance abuse. Researchers found that as of 2013, 31% of the adult populations in the region were obese. When surveyed about physical activity in the last 30 days of 2011, 40% of adults in northeast Tennessee and 33% in southwest Virginia reported engaging in no physical activity or exercise – other than their regular job<sup>25</sup>.

Trails encourage an active lifestyle. As has been documented at other sites<sup>26</sup>, people with access to trails exercise more regularly than those without access to similar recreational opportunities, suggesting the Mendota Trail could be considered part of Ballad Health's multi-pronged effort

<sup>24</sup> Cox, Stephen et al. Building Connectivity Through Recreation Trails. Economic Development Studio @ Virginia Tech, 2011. [http://www.visitdamascus.org/wp-content/uploads/2016/06/Final-Report\\_Impact-of-Trails\\_Fall2011Studio\\_VT.pdf](http://www.visitdamascus.org/wp-content/uploads/2016/06/Final-Report_Impact-of-Trails_Fall2011Studio_VT.pdf)

<sup>25</sup> Conduent Community Health Solutions. "Ballad Health Population Health Improvement Plan Capacity and Preparedness Assessment and Recommendations". 2017. [https://www.tn.gov/content/dam/tn/health/documents/Healthy\\_Communities\\_Institute\\_4.7.17.pdf](https://www.tn.gov/content/dam/tn/health/documents/Healthy_Communities_Institute_4.7.17.pdf)

<sup>26</sup> See for example the Forks Area Trail System described on the sidebar of page 10



### Bristol Rhythm & Roots Reunion

A 2015 Economic Impact Study showed that visitors to the annual Rhythm & Roots Reunion music festival from outside the region had a \$16.1 million impact on the region. The Festival generally hosts over 130 bands on 20 stages in downtown Bristol during the third weekend in September. Attendance has grown to approximately 45,000. The Festival has been named as one of Rolling Stone's "Top 20 Tours and Festivals".

Source: <https://www.birthplaceofcountrymusic.org/about/>

*"Organized rides and races are often major events, drawing thousands of people to the host communities. Once there, riders need food and lodging, and often need ride-related supplies. All of these purchases, by people who wouldn't otherwise be there, boost the local economy."*

**League of American Bicyclists & Alliance for Biking & Walking, Bicycling Means Business: The Economic Benefits of Bicycle Infrastructure (2012)**

to improve population health outcomes related to obesity and physical inactivity.

These health benefits are one of many ways the completed Mendota Trail will improve the quality of life in nearby communities. While offering a venue to enjoy nature and engage in active pursuits, it has the potential to become a destination, multi-purpose trail that provides residents and visitors with a variety of outdoor recreational opportunities. And investments in the Mendota Trail will generate economic and other benefits across the region.

**Southwest Virginia is home to some of the best wild trout rivers and creeks in the entire Southeast.**

©Rick Heppert



