

# TUNNEL VISIONARIES

CLAUDIUS CROZET'S 1858 CIVIL  
ENGINEERING MARVEL GETS  
TRANSFORMED INTO A UNIQUE  
RECREATIONAL DESTINATION

PHOTOGRAPHY BY JACK LOONEY

**T**he Blue Ridge Tunnel, located at Rockfish Gap in Central Virginia's Blue Ridge, originally opened in 1858 to allow rail access through Afton Mountain. The Blue Ridge Mountains had been a natural barrier to commerce and travel between the capital of Richmond and the city of Staunton. The 4,273-foot passage took nearly nine years to construct and was the longest tunnel in the United States at the time. The Tunnel was in use for 86 years. In 1944, the Chesapeake & Ohio Railway completed an adjacent tunnel to accommodate larger freight trains. The Blue Ridge Tunnel has not hosted rail service since.

In 2012, representatives from Albemarle, Augusta, and Nelson Counties and the City of Waynesboro, as well as several organizations and community leaders from throughout the Central Virginia region, formed The Claudius Crozet Blue Ridge Tunnel Foundation, a non-profit organization. The mission of the Foundation is the restoration, preservation, and reinterpretation of the Blue Ridge Tunnel. Its restoration and reopening is a very unique historic preservation project that will also provide tourism and recreational opportunities within the Commonwealth.

The Tunnel Foundation envisions the Blue Ridge Tunnel as a true national treasure that will be restored to a new era of historic reuse, prominence, and community value. The tunnel project will incorporate a universal access trail through the restored tunnel, including new trailheads on both sides of the Blue Ridge providing access for trail hikers, walkers, bicyclists, and other visitors. Ultimately, the Foundation envisions this project linking to existing local trails, long-distance trail systems, and the historic communities on both sides of the Blue Ridge Mountains. The Blue Ridge Tunnel is located at the convergence of Interstate 64, Route 250, the Blue Ridge Parkway, Shenandoah National Park's Skyline Drive, the Appalachian Trail, and US Bicycle Route 76.

Phase I of the Blue Ridge Tunnel Project was completed in June 2015. This phase encompassed construction of a parking area and trailhead near the old Afton Depot and the construction of a pedestrian and bicycle trail along the original rail bed for approximately 3,400 feet to the east portal of the 1850s tunnel.

*Will the tunnel have lights?*

At this time, plans are for the tunnel to not have lights, so walkers and bikers are urged to bring headlamps and/or flashlights to aid vision.





The west portal of the tunnel as it looked in 1917



The west portal as it currently appears

In June 2016, The Commonwealth Transportation Board (CTB) approved \$1.3 million in funding for the Blue Ridge (Crozet) Tunnel restoration through the Transportation Alternatives Program (TAP). The CTB's action provided full funding for the project, which included rehabilitation of the historic train tunnel as well as parking and a walking-and-biking trail to its western portal near Waynesboro. The TAP funding was granted to Nelson County and the city of Waynesboro. These grants cover the project's second and third phases. A previous TAP grant allowed Nelson County to build a parking area and trail to the eastern portal near the community of Afton.

The Transportation Alternatives Program is intended to help local sponsors fund community based projects that expand non-motorized travel choices and enhance the transportation experience by improving the cultural, historical and environmental aspects of the transportation infrastructure. The Program does not fund traditional roadway projects or provide maintenance for these facilities;

instead it focuses on providing pedestrian and bicycle facilities, community improvements and mitigating the negative impacts of the highway system.

#### BUILDING THE TUNNEL

Constructed between 1850 and 1858, the Blue Ridge Tunnel project was led by the French engineer Claudius Crozet (1789–1864). Among his many accomplishments, Crozet was a professor at the US Military Academy at West Point, NY, founded and was the first President of the Board of Visitors of the Virginia Military Institute in Lexington, and was the Chief Engineer for the Virginia Board of Public Works. Crozet's professional expertise and visionary leadership were essential to the establishment of a railroad infrastructure across Virginia.

There had long been a great need to establish a transportation link between Virginia's Piedmont region and the Shenandoah Valley, but the Blue Ridge Mountains created extreme physical, economic, and technological barriers. The Blue Ridge Tunnel project was a major engineering feat. The tunnel was

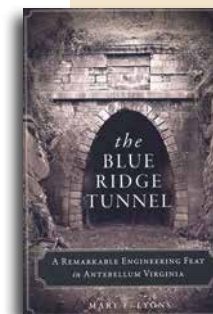
constructed at a depth of 700' below the ridgeline at Rockfish Gap.

The geology of the Blue Ridge at Rockfish Gap—especially on the eastern (Piedmont) side—consists of greenstone that is, “as hard as can well be conceived,” in Crozet's words. Several of Crozet's letters to the Board of Public Works referenced the rock's “excessive hardness.”

The construction of the tunnel was an incredible accomplishment by the contractors and laborers who hand drilled and blasted their way through each side of the mountain, meeting in the middle. The contracting firm of Kelley & Larguey utilized construction crews comprised of Irish laborers as well as rented African American slaves over an eight-year period. Clann Mhór, (Clann Mhór—Gaelic for the Great Family), a small non-profit research organization, is studying the history of the Blue Ridge Railroad in Central Virginia, and particularly the Irish immigrants and slaves who did the work under Claudius Crozet's supervision.

### THE BLUE RIDGE TUNNEL

#### A REMARKABLE ENGINEERING FEAT IN ANTEBELLUM VIRGINIA



Proceeds from the purchase of Mary Lyon's book *The Blue Ridge Tunnel: A Remarkable Engineering Feat in Antebellum Virginia* will be donated to the Blue Ridge Tunnel Foundation. Illustrated in color and black and white, this 191 page paperback

book focuses on the life of the workers and is based on exhaustive research by the author. Hand drilled and blasted with black powder, Irish workers and African American slaves worked for nearly a decade to complete the 4,273 foot tunnel.

Averaging 26.5' of progress per month, the crews simultaneously excavated the tunnel from each end using only hand tools and black powder. The work was difficult and dangerous; many workers were injured or killed by explosions, falling rock, or other accidents.

Crozet implemented innovative solutions for the tunnel's construction, including smoke-removal ventilation systems powered by mules on treadmills. He devised a horse-powered air pump to bring fresh air into the depths of the tunnel and push the smoke from the black powder blasts out. He also employed a similar siphon pump to pull water through a 2,000' iron pipe and out of the tunnel.

In late December 1856, laborers from the east end and the west end “holed through” either side, meeting within inches of Chief Engineer Claudius Crozet's carefully-engineered centerline alignment.

With a length of 4,273 linear feet, it was the longest railroad tunnel in North America at the time. The shape of tunnel is a partial ellipse. It measures 20' tall

and 16' wide. Most of the tunnel length is raw exposed rock, but some portions of the tunnel towards the western portal were brick-arched where the natural rock was loose.

The tunnel was designed for early steam engine trains to travel the Blue Ridge Mountains, providing safe and economical transport of freight and passengers.

During the American Civil War, the infantry under Confederate General Stonewall Jackson earned the nickname “foot cavalry” by traveling very quickly across the Blue Ridge Mountains, to the consternation of the Union leaders opposing them. To do this, Jackson used his detailed knowledge of the gaps in the Blue Ridge and also utilized the Blue Ridge Tunnel as a passageway for his troops. It was also used strategically by Confederate forces during the Civil War, providing a valuable tactical advantage over Union troops.

#### AN ABANDONED LANDMARK

The tunnel was in use for 86 years. When the Chesapeake & Ohio Railway



## Tunnel FAQ's

### *Why do a restoration project to reopen the Blue Ridge Tunnel?*

The restoration and reopening of the Blue Ridge Tunnel would provide the opportunity for a wide variety of users to experience a unique and unforgettable piece of American history. This project has tremendous value for hikers and cyclists of every level, wildlife watchers, history enthusiasts, railroad buffs, heritage tourists, school children on field trips, and nearby residents. This project will bring an abandoned, neglected, and increasingly vandalized resource back to new life for a new generation. This underutilized community asset is truly amazing—and the concept of restoring it as a trail for public use, enjoyment, and education is an idea that practically sells itself.

### *When will the Blue Ridge Tunnel restoration project be finished?*

Nelson County completed Phase I of its Blue Ridge Tunnel Project in late June 2015, which included a substantial completion of the eastern trail and parking lot, and fencing the length of the trail as a barrier to the active rail line next to it. Ultimately, Phase II and Phase III of the project will complete the restoration of the tunnel, the construction of the pedestrian/biking trail within the tunnel, and final construction of trailheads and trails to both the east portal (Phase I) and the west portal (Phases II-III) of the Blue Ridge Tunnel. The overall project could be completed as early as 2017.

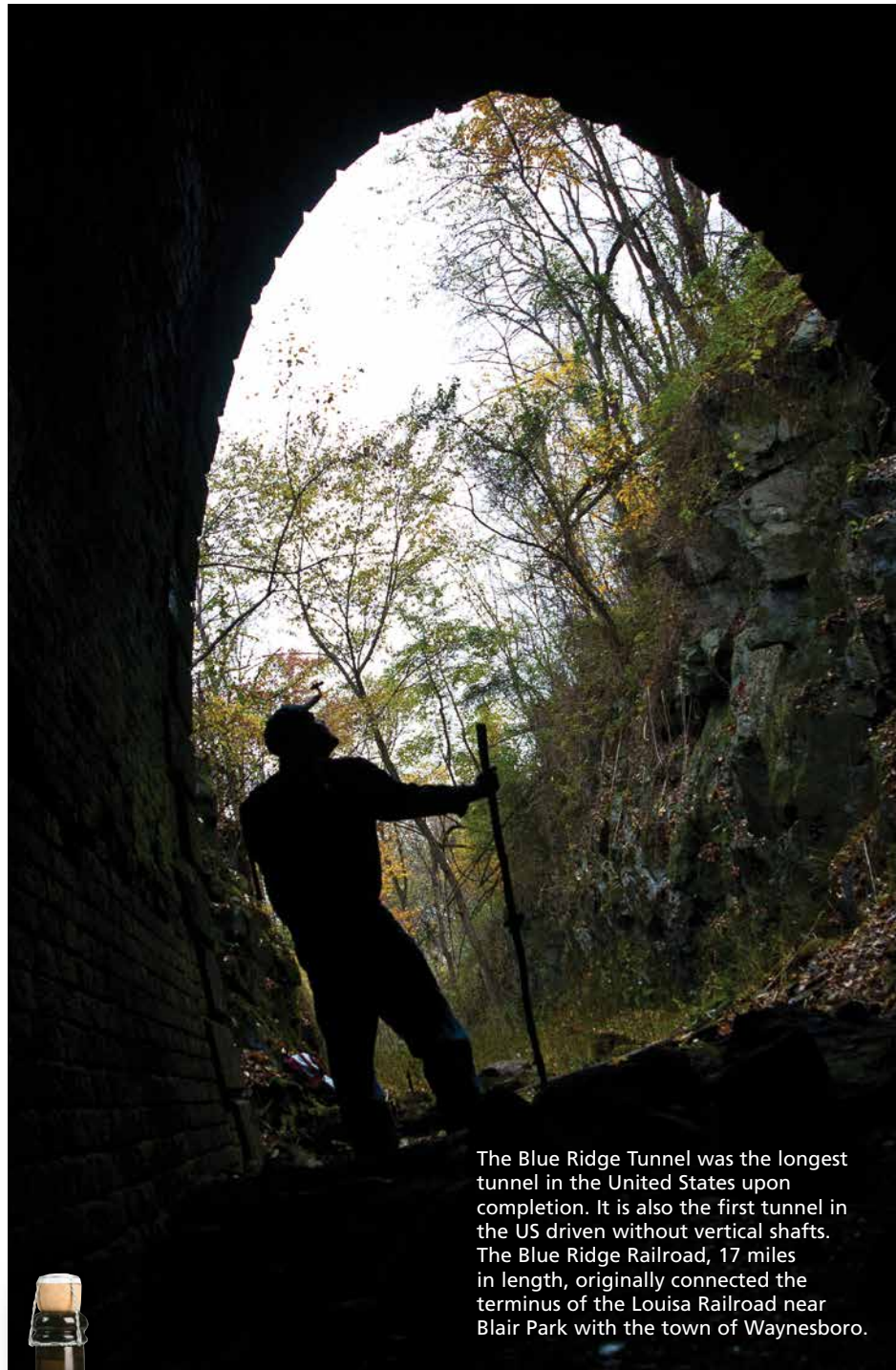
### *Where are the entrances to the Blue Ridge Tunnel?*

For the purposes of ensuring safety and eliminating liability, there is currently NO public access to either the west portal or east portal (including no access into the Blue Ridge Tunnel itself) during the reconstruction phases of the tunnel. "No Trespassing" signs have been posted on both the Nelson County and Augusta County sides of the project, and a gate now blocks entrance to the eastern trail's parking lot. Violators are subject to prosecution.

The Eastern Entrance of the tunnel is located in Afton, Nelson County, and the Western Entrance is in Augusta County near the City of Waynesboro.

### *Is the tunnel currently open to the public?*

For now, the tunnel remains closed to the public unless they want to pay a small fee for a scheduled tour. Dwayne Jones, director of Waynesboro Parks and Recreation, said he has never seen more public excitement surrounding a project.



The Blue Ridge Tunnel was the longest tunnel in the United States upon completion. It is also the first tunnel in the US driven without vertical shafts. The Blue Ridge Railroad, 17 miles in length, originally connected the terminus of the Louisa Railroad near Blair Park with the town of Waynesboro.



### NELSON COUNTY'S BLUE MOUNTAIN BREWERY PAYS HOMAGE TO THE BLUE RIDGE TUNNEL

Blue Mountain Brewery's **Dark Hollow** Bourbon Barrel-Aged Imperial Stout is a dark, low-roast imperial stout with notes of bourbon and vanilla from extended barrel aging in charred American oak bourbon barrels, gaining complexity, depth and character.

Matt Nucci and Taylor Smack of Blue Mountain Brewery came up with the name **Dark Hollow** as an ode to Dark Hollow Falls in Shenandoah National Park. The label design reflects the Gothic, haunting look of the western entrance of the old Blue Ridge Tunnel. The Brewery sits in its shadow.

[www.bluemountainbrewery.com](http://www.bluemountainbrewery.com)

completed an adjacent tunnel to accommodate larger freight trains in 1944, the Blue Ridge Tunnel was retired.

In the 1950s, a specialized project was initiated to use the Blue Ridge Tunnel for large-scale storage of propane. Two concrete bulkheads, or plugs, were constructed within the tunnel, but the interior space was never successfully used for propane storage. The bulkheads still remain inside the tunnel; one is approximately 1,956 feet from the western portal and the other is approximately 750 feet from the eastern portal.

The American Society of Civil Engineers designated the Blue Ridge Tunnel as a National Historic Civil Engineering Landmark in 1976, and efforts are currently underway for the tunnel to be designated on the National Register of Historic Places.

The Claudius Crozet Blue Ridge Tunnel Foundation will transform the railway tunnel into a universal access trail, including new trailheads on both sides of the Blue Ridge, providing access for trail hikers, walkers, bicyclists, and other visitors. The Tunnel Foundation envisions the successful realization of the tunnel's incredible potential to advance numerous community goals.

The Tunnel Foundation envisions this project as being valuable, interesting, and exciting to a rich variety of future users. Local school children on educational field trips, families and groups, and history buffs, railroad enthusiasts, and Civil War battlefield visitors will all benefit from the history and experience. Bird watchers, wildlife spectators, and photographers will return to the tunnel area to experience Virginia throughout the seasons.

The tunnel will attract hikers and bicyclists, visitors from the Blue Ridge Parkway and Shenandoah National Park, long-distance travelers on US Bicycle Route 76 and the Appalachian Trail, and local cycling clubs such as Milepost Zero.

Tourists of all niches: heritage; agriculture enthusiasts; breweries and wineries samplers; nature lovers; outdoor recreationalists; and more will find the tunnel a must-see destination.

The Tunnel Foundation envisions the Blue Ridge Tunnel as a true National Treasure, that will be transformed for a new era of historic reuse, prominence, and community value. Strengthening the region's position as a "Gateway Community" to the Blue Ridge Parkway and Shenandoah National Park. *a*



### RESOURCES AND HELPFUL LINKS

#### CLAUDIUS CROZET BLUE RIDGE TUNNEL

[www.blueridgetunnel.org](http://www.blueridgetunnel.org)

#### Nelson County

[www.nelsoncounty-va.gov](http://www.nelsoncounty-va.gov)

#### City of Waynesboro

[www.waynesboro.va.us](http://www.waynesboro.va.us)

#### Augusta County

[www.co.augusta.va.us](http://www.co.augusta.va.us)

#### Albemarle County

[www.albemarle.org](http://www.albemarle.org)

#### Clann Mhór

[www.clannmhor.org](http://www.clannmhor.org)

#### Crozet Trails Crew

[www.crozettrailscrew.org](http://www.crozettrailscrew.org)

#### Augusta Historical Society

[www.augustacountyhs.org](http://www.augustacountyhs.org)

#### National Park Service—Rivers, Trails, and Conservation Assistance Program

[www.nps.gov/orgs/rtca](http://www.nps.gov/orgs/rtca)

#### University of Virginia

[www.virginia.edu](http://www.virginia.edu)

