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LAND ACKNOWLEDGMENT

The North Central Appalachian region is on and within the lands of many Indigenous Communities, Peoples, and Tribes. By recognizing the continued presence of Indigenous Communities in the region who have survived attempted genocide and broken promises, and who still hold ties to the land spiritually and culturally, we acknowledge this complex history and commit to continued learning toward the healing that can be done.

As part of a community-driven project, we hope to understand the histories, names, territories, and lands on which we live and recreate.



From Native Land Digital:

Indigenous wisdom highlights a deeper relationship with the land, recognizing it as a living entity and a teacher. We often view lands as a provider of resources essential for our survival, shaping our ecosystems and livelihoods. Environmental discourse underscores the need to protect and nurture the land to sustain these resources. Viewing land through an Indigenous lens fosters a deeper connection, prompting reflection on our interactions and treatment of it. Utilizing the land as an educational tool enriches our understanding and appreciation, fostering meaningful conversations about its significance.







Introduction

The Pennsylvania Environmental Council (PEC) will facilitate a discussion with communities concerning the surge in outdoor recreation and tourism. The **North Central Appalachia Mountain Bike Summit on April 30, 2024** will bring a diverse group of communities and organizations together to collectively ensure that opportunities to grow mountain biking are community-driven and of greatest benefit to localized economies.

The Summit will spark discussions on the sustainable growth of mountain biking, prioritizing community needs, and deepening our connections and access to the mountains we all share. Through community engagement, empowerment of local decision-making, and ensuring equitable access to outdoor recreation, PEC aims to gain insight into regional challenges and opportunities.

The geographic area of focus includes communities within a half day's drive of Pittsburgh International Airport that may be experiencing (or are interested in) increased mountain biking opportunities. The multi-state Summit will take place April 29-30, 2024. PEC has enlisted the expertise of Cycle Forward, in collaboration with Julie Judkins of Just-Trails, to plan, facilitate, and lead the Summit, write this preliminary report, and subsequently, produce a recommendations report following the Summit.

The **purpose** of this pre-report is to explore the growing interest and opportunities in mountain biking and outdoor recreation in North Central Appalachia, highlighting the economic, social, and environmental benefits while addressing challenges and strategies for sustainable development and community engagement.



The "Dig-In" icons found throughout the report provide links to further the learning journey.



THE ORIGIN & EVOLUTION OF MOUNTAIN BIKING

In the early days of mountain biking (MTB), trails often followed natural paths through the wilderness or old roads. In the 1970s, mountain biking emerged as a response to the desire for adventure and exploration in rugged, off-road terrain. Riders, often using modified cruiser bikes, began traversing trails, fire roads, and even mountainsides, pushing the limits of what was previously thought possible on two wheels. Singletrack trails were typically narrow, winding, and challenging, featuring natural obstacles like rocks, roots, and fallen trees. While these trails provided an authentic and adventurous experience, they could also be susceptible to erosion and environmental damage due to heavy use.

As mountain biking grew in popularity through the 90s, there was a demand for trails that offered a more consistent and enjoyable riding experience. Technology advanced and bikes were designed to include suspension systems, disc brakes, and lightweight frame materials like aluminum and carbon fiber. This revolutionized the sport, making bikes more capable and comfortable for riders tackling challenging terrain. Professional trail designers and builders began to apply principles of trail design, such as sustainable grading, drainage, and erosion control, to create trails that were not only fun to ride but also more sustainable.

Mountain biking became an Olympic sport in 1996, further solidifying its status as a mainstream activity. Various disciplines emerged, including cross-country (XC), downhill (DH), enduro, and freeride, each with its own unique set of challenges and requirements.

One significant development in trail construction has been the rise of machine-built flow trails. These trails are meticulously designed and constructed using heavy machinery to sculpt smooth, flowing features like berms, rollers, jumps, and table-tops. Flow trails offer an exhilarating riding experience characterized by a continuous rhythm and minimal braking, making them accessible to a wide range of riders, from beginners to experts.



When flow meets business: A study of mountain biking.
Read more about <u>Gravel Cycling in PA</u>, <u>IMBA's Trail</u> **Development Guidelines**, & Bikepacking.

In recent years, mountain biking has continued to evolve with the rise of new trends such as bikepacking, gravel riding, and electric-assist mountain bikes (e-bikes). These innovations have expanded the sport's appeal to a broader audience and opened up new possibilities for exploration and adventure. Trail managers employ adaptive management strategies to monitor trail usage and environmental impacts continually. By collecting data on trail conditions, user feedback, and ecological health, managers can make informed decisions about trail maintenance, rerouting, or closures to ensure the long-term sustainability of trail networks.



What is a sustainable trail? Modern trail designers employ techniques such as contouring, water diversion, and revegetation to minimize erosion and preserve natural habitats. The use of locally sourced materials and environmentally friendly construction practices helps reduce the carbon footprint of trail building projects. Stewardship and development of trail systems today are developed and maintained through collaborative efforts between land managers, trail advocacy groups, and local communities. Volunteer trail crews contribute their time and expertise to building and maintaining trails, fostering a sense of ownership and stewardship among riders and residents alike.

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The Opportunity

Mountain Biking in North Central Appalachia

The Region: Mountain biking holds potential to transform North Central Appalachia into a thriving hub for outdoor recreation and activate and support more community trails. Consisting of parts of five states - Pennsylvania, Maryland, New York, Ohio, and West Virginia - the region stretches from Lake Erie at the north to the New River Gorge in the south. It includes southwest New York, western Maryland, and large swaths of Ohio, Pennsylvania, and West Virginia. The region hosts diverse landscapes, from lush forests to rugged terrain, providing an ideal playground for riders of all abilities. Notable existing trail systems include the Baileys Trail System, the Trails at Jakes Rocks, Slatyfork, and various trails within Rothrock State Forest. While the origin of this work to coalesce around MTB trails across a broad region had its start in Pittsburgh, the intent is not to center Pittsburgh or even Pennsylvania. Technically, the region under consideration includes the Appalachian Regional Commission's (ARC) designated subregions of Northern and North Central Appalachia, but the term "North Central Appalachia" is being used for purposes of this work. The intent is to hold the boundaries softly, and support multi-state collaboration using MTB as the thread in an effort to build trust and support growth among communities within a half-day's drive.

The Opportunity: Mountain biking is not just a recreational activity; it is a catalyst for economic growth, social connection, and outdoor adventure.

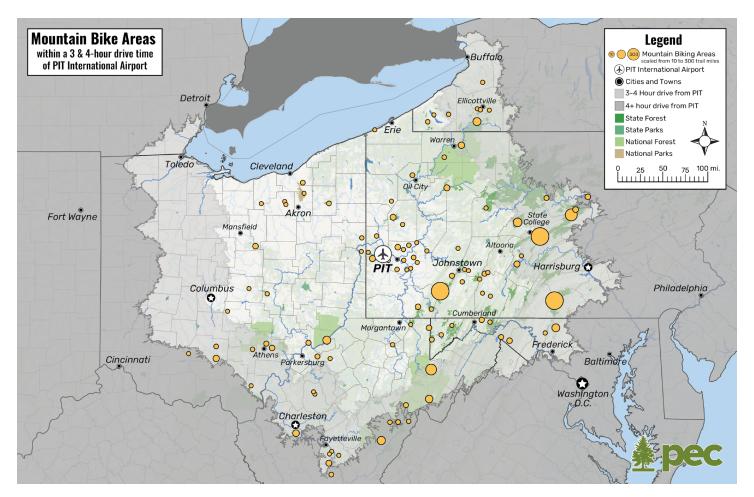
Given the greater Pittsburgh region's potential as a hub for outdoor recreation, especially cycling, PEC recently developed a MTB "Atlas" to quantify existing assets. The region has a strong community of mountain bikers, supporting businesses, and existing trail systems in and adjacent to public lands, with ample opportunities to expand or develop new trails. **PEC's Atlas** serves as a catalog of mountain bike trails, multi-use trails, and some notable gravel cycling areas. A sampling of outdoor recreation "hotspots" are described throughout the region and offer a variety of complementary activities such as skiing, paddling, rock climbing, or long-distance hiking opportunities in addition to mountain bike trails.



Watch: IMBA's How Trails Benefit Communities.

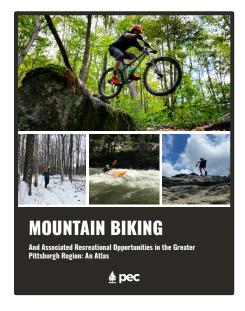


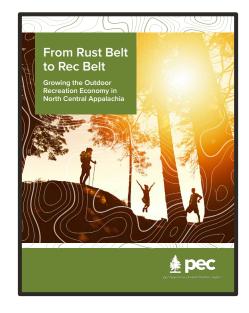
Read: <u>Economic Impact in Duluth</u>, <u>Economic Impact in</u> Chattanooga, & Outdoor Recreation Impacts in PA.

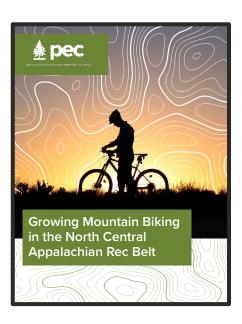




Prior to creating the Atlas and deciding to host the Summit, PEC worked with the planning firm Fourth Economy to publish a report focused on growing the outdoor economy in North Central Appalachia, as well as one specific to opportunities associated with mountain biking. Click the covers below to access each report.







ECONOMIC BENEFITS

Mountain biking is a boon for local economies. From bike shops and gear rentals to hospitality services such as accommodations and dining establishments, the economic ripple effect is abundant. As more riders flock to trails, they bolster communities, which experience growth in small businesses and newly created job opportunities.

Studies show that investing in mountain biking infrastructure can yield significant returns, attracting tourists and stimulating economic growth in both urban and rural areas alike. The Outdoor Industry Association reports that outdoor recreation supports **7.6 million** jobs and generates **\$887 billion** in consumer spending annually in the United States alone.

According to IMBA, 60 million American adults ride a bike each year, and mountain biking specifically:

- Contributes \$133 billion annually to the US economy
- Supports nearly 1.1 million jobs across the US
- Produces \$53.1 billion annually in retail sales and services



SOCIAL BENEFITS

Beyond its economic impact, MTB supports **workforce development**, fosters positive **health impacts**, and **builds community engagement**.



More than 2.6 million people annually use the Trans Canada Trail, making it a significant contribution to both physical and mental health. Using projected per-person healthcare costs, **this study** estimates \$1.7 billion in annual healthcare savings and \$62.6 million in mental healthcare savings from Trail use.

<u>Workforce</u> shares the variety of available career paths in the outdoor industry.

Partnership Example: The WVU Brad and Alys Smith Outdoor Economic Development Collaborative is a partnership involving West Virginia University, educators, state and local officials, and outdoor enthusiasts, aimed at reshaping the state's identity and improving the well-being of its residents. This collaboration encompasses various initiatives such as a remote work program, a science adventure school, exploring the science behind outdoor activities, advancing outdoor infrastructure and community development, as well as conducting research and asset mapping.

These kinds of collaborations are opportunities for enhanced community engagement as well as youth development. Programs such as youth MTB leagues provide opportunities for skill development, leadership training, and positive youth and community development. Some MTB trail organizations employ Youth Conservation Corps, grassroots organizations that involve young adults (typically aged 16 to 25) and veterans (up to age 35). Currently, there are over **230 active member organizations** recognized as part of the 21st Century Conservation Service Corps.

In terms of wellness, research published in the Journal of Environmental Psychology suggests that spending just <u>120 minutes a week</u> in nature can improve mental well-being, reduce stress, and enhance social connections.



ENVIRONMENTAL BENEFITS

Mountain biking promotes environmental conservation by encouraging stewardship of natural areas and promoting sustainable transportation options. Trails designated for mountain biking often overlap with areas of ecological significance, leading to increased awareness and protection of these landscapes. Parks Canada reports trails as ecological corridors, playing a crucial role in conservation efforts. Trail creation and stewardship demonstrate a dedication to safeguarding biodiversity and enhancing ecological resilience.

Mountain biking can also provide an environmentally-friendly alternative to motorized recreation, reducing carbon emissions and preserving fragile ecosystems. The Rails to Trails Conservancy estimates that every mile traveled by bike instead of by car prevents about one pound of carbon dioxide emissions. The Trust for Public Land reports that trails contribute to the preservation of green spaces by providing corridors for wildlife movement and creating buffers against urban development. In the United States alone, trails protect over 47,000 acres of land from development each year.



A Win for Rural Communities

Pathways Between Community & Destination Trails

Centering local communities' interests and assets is a crucial first step in this work together as a region. By leveraging the pathway connections between community-based, beginner-friendly routes to more technical aspects, we can ensure inclusivity and accessibility for individuals of all skill levels. This approach positions communities to meet the needs of local riders while also pursuing non-local riders, creating a "win-win" scenario for those places that want to engage in the outdoor economy.

OUR REGION AS A DESTINATION

Mountain biking presents a golden opportunity for rural communities in North Central Appalachia to thrive and flourish. Beyond the adrenaline rush and scenic vistas, the economic injection brought by mountain biking can rejuvenate rural economies. Case studies abound showcasing how small towns across the country have leveraged their natural landscapes to become vibrant outdoor recreation destinations.



<u>Connected by Communities</u> - a model for stimulating economies of 15 rural California and Nevada communities by trails, improving access and connectivity, and encouraging trail users to explore and recreate on public lands.



CASE STUDIES

Fire Mountain Trails in Cherokee, NC

The Eastern Band of Cherokee Indians (EBCI) have developed the <u>Fire Mountain Trail</u> <u>System</u> with the aim of promoting economic growth and healthier lifestyles within their community. The trail system has quickly become a popular mountain biking destination, showcasing flow trails that offer a unique riding experience in Western North Carolina.



Watch **this video** about the Fire Mountain Trail system and read more on **REI's blog**.

Elkins, WV

Elkins, West Virginia, nestled as a gateway community to the Monongahela National Forest, has embraced mountain biking to revitalize its economy while honoring its identity as a close-knit, outdoor-oriented community. Through strategic trail development and community engagement, Elkins has made significant strides in meeting the community's demand for expanded trail systems, securing grants and forming partnerships to plan and develop bike-optimized trails. In its inaugural year, EAST (Elkins Area Shared Trails) has recognized the economic and recreational benefits of trails, supporting balanced growth that aligns with community needs, positioning Elkins as an appealing destination for residents and visitors alike.

Richfield, UT

Richfield, Utah, is also investing in trail systems and it is proving to be a strategic move for growth. Exemplifying the positive impact of trail development, initiatives like NICA races not only drive economic growth but also foster community engagement and youth development, highlighting the interconnected relationship between outdoor recreation, economic prosperity, and community well-being.

The success of mountain biking in rural communities relies upon community-driven decision-making and involvement. **Residents must have a voice in shaping the future of their towns, ensuring that development aligns with their values and aspirations.** The next section addresses common challenges associated with leveraging the outdoor economy as well as some potential strategies for overcoming them.



Culture Clash

Is the integration of outdoor recreation ethos causing friction in trail towns amidst economic growth? Alongside displacement due to rising housing costs, conflicts may arise over land use, environmental preservation, and community identity. Nonetheless, rural development hubs can mitigate these challenges by facilitating coordinated efforts for equitable economic growth that uplifts entire regions.

Challenge: Increased outdoor recreation poses challenges beyond the tangible, particularly in communities undergoing transition. Not all communities and community members embrace trails and recreation, leading to potential culture clashes and differing opinions on investments.. A culture clash can occur, or – at the very least – differences in opinion concerning trails and related investments. An outdoor recreation ethos cannot be assumed. Rapid or gradual change can cause friction amidst economic growth, including issues like rising housing costs, conflicts over land use and environmental preservation, traffic congestion, and challenges to community identity. Nonetheless, facilitating coordinated efforts for equitable economic growth uplifts entire regions.



Read about <u>Learning to Grow Outdoor Economies</u> and a mountain bike-related culture clash in Vermont.

Solution: Local and regional leaders must take an honest look at how increased trail use can alter communities and impact local ways of life. It is essential to involve everyone in trail-related planning as well as to acknowledge that not all communities are ready or willing to pursue trail-related investments. Without a culture that desires and celebrates trails, culture clash is likely to occur. When communities are open to trail investments, it is important to plan for amenities and services that not only cater to outdoor enthusiasts' expectations, but also improve the life quality of all residents. Improvements such as broadband access, wayfinding signage, public art, trail parking, bike infrastructure, and expanded business hours have the potential to be mutually beneficial for communities and visitors. Above and beyond these changes, communities should commit to building local wealth via the trail economy. An organization that is committed to doing this work well is the Outdoor Recreation Council of Appalachia (a Council of Governments) in southeast Ohio.

Infrastructure

Both recreation-focused (trails) & traditional (road, power lines)

Challenge: In communities with desirable amenities, such as good roads, water systems, education, childcare, public health, and emergency response services, the influx of visitors and new residents can strain these systems. Busier roads, overflowing parking lots, and restaurants with lines out the door are all signs of a growing outdoor economy as well as potential pain points for residents who had previously been accustomed to a quieter version of their community. Besides community members' willingness to invite and bear such changes, local leaders must determine whether community infrastructure can accommodate increased trail use and visitation.

Residents can bear a disproportionate burden of the costs to maintain and upgrade these amenities. Infrastructure needs (and tourism demand) are often regional, but decisions are made locally, which can lead to fragmented responses to challenges.

Solution: To proactively approach this, options include increasing capacity, implementing community benefit agreements, and utilizing scenario planning to mitigate uncertainties that often lead to cost overruns or inadequate investment in infrastructure. Financing mechanisms to explore include sharing costs with visitors through tourism taxes, incorporating infrastructure expenses into municipal budgets, issuing bonds for financing, establishing public-private partnerships, and exploring other innovative solutions. In York County, PA, for example, the community buried 16 miles of fiber beneath the York Heritage Trail, resulting in improved connectivity for both residents and out-of-town visitors.





Outdoor Recreation Roundtable Toolkit

American Association of State Highway and Transportation Officials, **Guide for the Development of Bicycle Facilities** How to accommodate bicycle travel and operations, resulting in facilities that meet the needs of bicyclists and other highway users.

Housing

Challenge: As mentioned in the ethos challenge, housing challenges in destinations stem from limited availability, which leads to increased living costs, making it difficult for residents to afford homes and for businesses to retain employees. Compounded by rapid population growth, limited buildable land, and competition from vacation properties, stories of tourism and outdoor industry seasonals not being able to afford living in the communities in which they work are not uncommon.

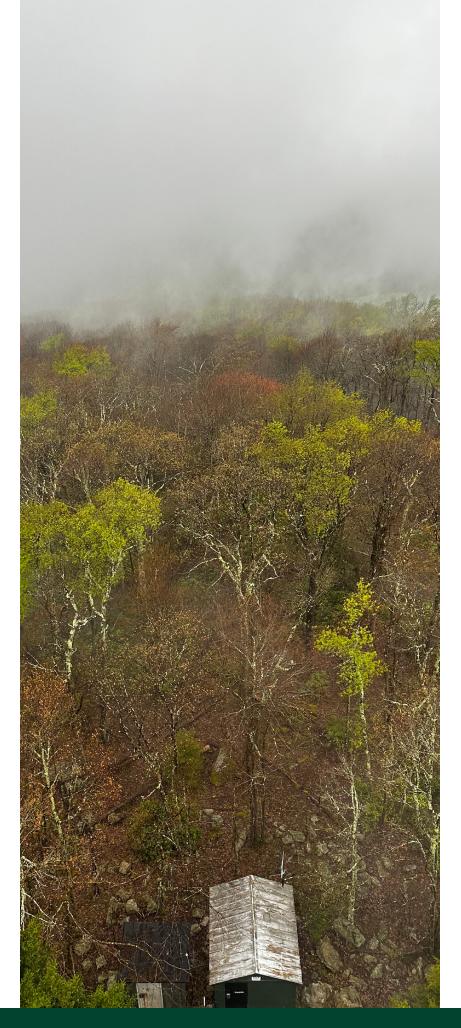
Additionally, increases in short-term rental properties in destination communities can impact not only affordable housing availability, but also community character. In Pittsburgh, a Public Source essayist laments for the days that properties on his street were lived in by neighbors rather than booked for rentals (<u>"Where have all my neighbors gone?"</u>). Certainly, demand for both short-term and permanent housing is a challenge in recreation communities or has the potential to be.

"Show me a community that isn't struggling with affordable, quality housing. I don't think you're going to find it."

-Kim Graziani, Center for Community Progress

Solutions: To tackle rising demand, communities are developing economic and housing strategies simultaneously. They are also exploring ways to optimize existing land use and obtain new land for housing, including utilizing public lands and incentivizing property owners to sell to residents. Modular construction is also a consideration to mitigate labor shortages and implementing regulations and incentives to manage short-term rentals. To keep the short-term rentals balanced, communities around the globe have adopted local policies such as limiting the number permitted per block, requiring licensing, and initiating fees.

Overall, a multifaceted approach involving policy changes, incentives, and community engagement is essential to address the housing affordability crisis in amenity destinations.



Climate & Natural Disasters

Challenge: Climate change is widely recognized as a significant contributor to the increasing frequency and intensity of natural disasters like storms, floods, droughts, and fires. These events can have detrimental effects on trails and greenways, impacting accessibility, safety, and ecological integrity.

Storms can lead to erosion, landslides, and fallen trees, obstructing trails and causing damage to infrastructure like bridges and boardwalks. Increased precipitation and rising sea levels can result in more frequent and severe flooding along trails and greenways, washing out paths, damaging vegetation, and undermining structures. Prolonged periods of drought can lead to reduced water availability, affecting the health of vegetation along trails and increasing the risk of wildfires, which can destroy ecosystems and infrastructure. Warmer temperatures and drier conditions can contribute to the spread of wildfires. which can directly damage trails and greenways, as well as surrounding landscapes. Smoke from wildfires, such as that experienced regionally in June 2023, can also pose health risks to trail users and even necessitate canceling or rescheduling trips.

Solutions: Addressing climate change through mitigation and adaptation strategies is crucial to safeguarding trails and greenways for current and future generations. This may include measures such as building resilient infrastructure, restoring natural buffers, and incorporating climate considerations into trail planning and management practices.

Additional Strategies

To mitigate negative impacts of mountain biking and outdoor recreation tourism:

Embrace Sustainable Practices:

- Encourage waste reduction, water conservation, and energy efficiency in trail infrastructure and accommodations.
- Promote eco-friendly transportation options like electric bikes or shuttles to reduce carbon emissions to the trailhead on a regional loop.



See American Trail's page on **Sustainable Trail Development**.

Manage Visitor Numbers:

- Implement trail use quotas or time-slot reservations to prevent overcrowding at popular biking trails.
- Compensate landowners through indirect means such as offering carbon credits or lobbying to amend state tax laws to include current use designation for recreation.
- Collaboration with universities on managing carrying capacity, measuring use on resources versus facilities, and supporting models of financing to mitigate conflicts with local landowners.
- Promote off-peak biking seasons to distribute visitor traffic more evenly throughout the year.



See the <u>Interagency Visitor Use Management</u> Framework.

Educate Riders:

- Raise awareness among mountain bikers about trail etiquette, environmental conservation, and respect for local communities, initiatives such as <u>Recreate</u> <u>Responsibly</u> and <u>Leave No Trace</u>.
- Encourage responsible behavior, such as packing out trash, yielding to wildlife and equestrians, and supporting local businesses.



See the Kingdom Trails example on <u>"Riding with</u> Gratitude".

Invest in Trail Infrastructure:

- Develop and maintain well-planned trail networks and amenities to accommodate increasing visitor numbers.
- Invest in trailhead facilities, parking areas, and waste disposal systems to minimize environmental impact and enhance visitor experience.
- In fostering the success of mountain biking, community involvement is paramount, ensuring that development aligns with values and aspirations while engaging and celebrating the participation of younger generations. Implementing sustainable practices preserves natural resources and minimizes environmental impact.

Inclusive Planning:

- Historically, people of color, low-income communities, differently-abled people, youth, and seniors have been left out of community development conversations.
- Making sure budgets and agendas are representing those who have been historically marginalized is an important first step in being inclusive.
- PEC's <u>Inclusionary Trail Planning Toolkit</u> offers tangible ways for planners and educators to be more inclusive in their planning and design of trails and green spaces. Using case studies in Atlanta, Washington DC, Camden, and Philadelphia, the report shares best practices for engaging local residents, better understanding their needs, and fostering community ownership over development projects. A toolkit and additional resources related to racial equity and more are included.

The Importance of Assessments:

Mapping community trails and assessing readiness for implementing trail systems are crucial steps in responsible trail development. By conducting comprehensive assessments of existing trails and infrastructure, communities can identify areas for improvement and prioritize investments accordingly. This process also enables communities to evaluate their capacity for managing and maintaining trails, ensuring long-term sustainability and success.

While highlighting key mountain biking destinations is important for attracting visitors and stimulating economic growth, it is equally essential to focus on towns ready to implement their own trail systems without becoming tourist destinations overnight – or at all. This approach emphasizes a path of progression, allowing communities to build trail networks and infrastructure in a way that complements their unique identity and character. By starting small and scaling up over time, if desired, communities can maintain their authenticity and preserve the qualities that make them special, all while reaping the benefits of mountain biking as a catalyst for positive change.



Planning, Technical Assistance, & Resources

Resources are abundant for communities to explore in beginning assessment phase and exploring planning for outdoor recreation. Communities can access grants, and technical assistance for the planning process and ensure a sustainable approach tailored to the community's capacity.

Some of the technical assistance programs and grants available for support to communities inclue:

- The International Mountain Bicycling Association: **Trail Solutions**
- Federal Assistance US Environmental Protection Agency; US Forest Service; US Federal Highway Administration: <u>Recreational Trails Program</u>; US Economic Development Administration: <u>Travel, Tourism, & Outdoor Recreation</u>; US Department of Transportation: <u>Thriving Communities Program</u>
- Appalachian Regional Commission: <u>Recreation Economy for Rural Communities</u>
- National Park Service: Rivers, Trails, Conservation Assistance
- Rails To Trails Conservancy: <u>Trail-Building Toolbox</u>, <u>Unlocking the Economic & Community Development Potential of IHTC Trails Report</u>
- More from the Outdoor Recreation Roundtable
- Climate Corps programs

Once a community commits to leveraging its natural assets for economic development, deliberate processes and resources such as outdoor town toolkits or trail town programs and IMBA's Ride Centers can assist in achieving the vision of vibrant, welcoming communities.



Learn more about **Trail Towns**.

North Central Appalachia Mountain Bike Summit

ACTIVATING & CONNECTING TRAILS & COMMUNITIES

Tuesday, April 30

10 AM - 2 PM

Pittsburgh, PA

This report is an advanced reading material for the April 30 summit. Please join us (registration required, as space is limited) for a discussion on how we can plan for increases in mountain biking throughout the region as well as in YOUR community! Learn more by viewing the event flyer: https://bitly.ws/3icUC













Notes

Notes

References

- American Association Of State Highway And Transportation Officials.

 Guide for the Development of Bicycle Facilities, 2012. 4th ed., Washington, Dc, American Association Of State Highway And Transportation Officials, 2012.
- "As Part of President Biden's American Climate Corps, USDA Launches New Working Lands Climate Corps to Train Future Conservation and Climate Leaders on Climate-Smart Agriculture | Natural Resources Conservation Service." www.nrcs.usda.gov, 12 Feb. 2024, www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/climate/news/as-part-of-president-bidens-american. Accessed 29 Mar. 2024.
- Averill, Graham. "Biggest Buzz ... since the Casino": Cherokee Turning to Mountain Bike Trails to Grow Economy." Uncommon Path an REI Co-Op Publication, REI, 17 May 2018, www.rei.com/blog/cycle/biggest-buzz-since-the-casino-cherokee-turning-to-mountain-bike-trails-to-grow-economy. Accessed 29 Mar. 2024.
- Camp, Amy. Deciding on Trails. Plug and Play Publishing, 29 Dec. 2020.

 Carsten, Jake. Mountain Bike Trail Development: Guidelines for Successfully Managing the Process. International Mountain Biking Association (IMBA), 2023, player.flipsnack. com/?hash=Q0I2REI5RUVGQjUraG04b3M1cGQxag==. Accessed 29 Mar. 2024.
- "Connected Communities." Sierra Buttes Trail Stewardship, 2024, sierratrails.org/connected-communities/#:~:text=The%20Connected%20Communities%20Project%20 is. Accessed 29 Mar. 2024.
- "Economic Impact of Mountain Biking in Chattanooga, TN | IMBA." https://www.imba.com, 2022, www.imba.com/resource/economic-impact-mountain-biking-chattanoogatn. Accessed 29 Mar. 2024.
- "Economic Impact of Off-Road Cycling in Duluth: An Expenditures Approach | IMBA." https://www.imba.com, 2017, www.imba.com/resource/economic-impact-road-cycling-duluth-expenditures-approach. Accessed 29 Mar. 2024.
- "Framework and Guidebooks." visitorusemanagement.nps.gov, visitorusemanagement.nps. gov/VUM/Framework. Accessed 29 Mar. 2024.
- From Rust Belt to Rec Belt Growing the Outdoor Recreation Economy in North Central Appalachia. Fourth Economy and Pennsylvania Environmental Council (PEC).
- "Go Connected. DIG EP2 Fire Mountain Trails." www.youtube.com, www.youtube.com/watch?v=Ch5lq5tSfLQ. Accessed 29 Mar. 2024.
- "Gravel Riding." Pennsylvania Environmental Council, pecpa.org/gravel/. Accessed 29 Mar. 2024.

- Growing Mountain Biking in the North Central Appalachian Rec Belt. Pennsylvania Environmental Council (PEC).
- Hansman, Heather. "In Northern Vermont, Trying to Smooth the Ride for Mountain Biking." The New York Times, 23 May 2022, www.nytimes.com/2022/05/23/travel/vermont-mountain-biking.html. Accessed 29 Mar. 2024.
- Hardy, Anne, et al. "When Flow Meets Business: A Study of Mountain Biking." Annals of Tourism Research Empirical Insights, vol. 4, no. 2, Nov. 2023, www.sciencedirect.com/science/article/pii/S2666957923000174.Accessed 29 Mar. 2024.
- "How Trails Benefit Communities | IMBA." https://www.imba.com/resource/how-trails-benefit-communities. Accessed 29 Mar. 2024.
- "IMBA Trail Solutions | IMBA." https://www.imba.com, www.imba.com/programs/trail-solutions. Accessed 29 Mar. 2024.
- Inclusionary Trail Planning Toolkit. Pennsylvania Environmental Council (PEC).
- Kelemen, Andy. "Where Have All My Neighbors Gone? How Short-Term Rentals Are Shrinking My Community." PublicSource, 27 Oct. 2023, www.publicsource.org/lawrenceville-airbnb-squirrell-hill-neighbors-community-tourism-pittsburgh/?fbclid=lwAR1uGbAjwpiARKIcB97-T2WDpRjXTYf28HwS3VbSrKXw5A4Zi7Pry2r6-2s. Accessed 29 Mar. 2024.
- "Learning to Grow Equitable Outdoor Recreation Economies." The Aspen Institute, 13 June 2023, www.aspeninstitute.org/blog-posts/learning-to-grow-equitable-outdoor-recreation-economies/. Accessed 29 Mar. 2024.
- "Leave No Trace Center for Outdoor Ethics." Int.org, 2024, Int.org.
- Mountain Biking and Associated Recreational Opportunities in the Greater Pittsburgh Region: An Atlas. Pennsylvania Environmental Council (PEC).
- Native Land Digital. "NativeLand.ca." Native-Land.ca Our Home on Native Land, 2024, native-land.ca. Accessed 29 Mar. 2024.
- Outdoor Rec Drives Jobs: Careers in the Recreation Economy. Outdoor Recreation Roundtable (ORR), 2022.
- "Outdoor Rec Resources." Google Docs, Outdoor Recreation Roundtable, docs.google. com/document/d/10UBvkggTD9tHAk0-O8w5YbW3umko1rW2UngHwVlmyFo/edit. Accessed 29 Mar. 2024.
- "Sustainable Trail Development: A Guide to Designing and Constructing Native-surface Trails." https://www.americantrails.org/resources/sustainable-trail-development. Accessed 29 Mar. 2024.

- "Recreate Responsibly." #RecreateResponsibly, 2022, www.recreateresponsibly.org. Accessed 29 Mar. 2024.
- "Recreation Economy for Rural Communities." www.epa.gov, 8 Apr. 2019, www.epa.gov/smartgrowth/recreation-economy-rural-communities. Accessed 29 Mar. 2024.
- "Rivers, Trails, and Conservation Assistance Program (U.S. National Park Service)." www.nps.gov/orgs/rtca/apply.htm. Accessed 29 Mar. 2024.
- The Corps Network. corpsnetwork.org/find-a-corps/. Accessed 29 Mar. 2024.
- "Thriving Communities Program (TCP)." Rails to Trails Conservancy, 2024, www. railstotrails.org/policy/funding/tcp/. Accessed 29 Mar. 2024.
- "Trans Canada Trail | How the Trans Canada Trail Is Bolstering Canada's Environment, Economy and Health." Tctrail.ca, 19 Sept. 2023, tctrail.ca/news/impact-study-2023/. Accessed 29 Mar. 2024.
- Watts, Logan. "The Rise of Bikepacking, a Manifesto." BIKEPACKING.com, 7 Nov. 2017, bikepacking.com/plog/manifesto/. Accessed 29 Mar. 2024.
- White, Mathew P., et al. "Spending at Least 120 Minutes a Week in Nature Is Associated with Good Health and Wellbeing." Scientific Reports, vol. 9, no. 1, 13 June 2019, www. nature.com/articles/s41598-019-44097-3.

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