FAYETTE/RALEIGH METROPOLITAN PLANNING ORGANIZATION

MICROMOBILITY
IMPLEMENTATION FRAMEWORK

JUNE 2025

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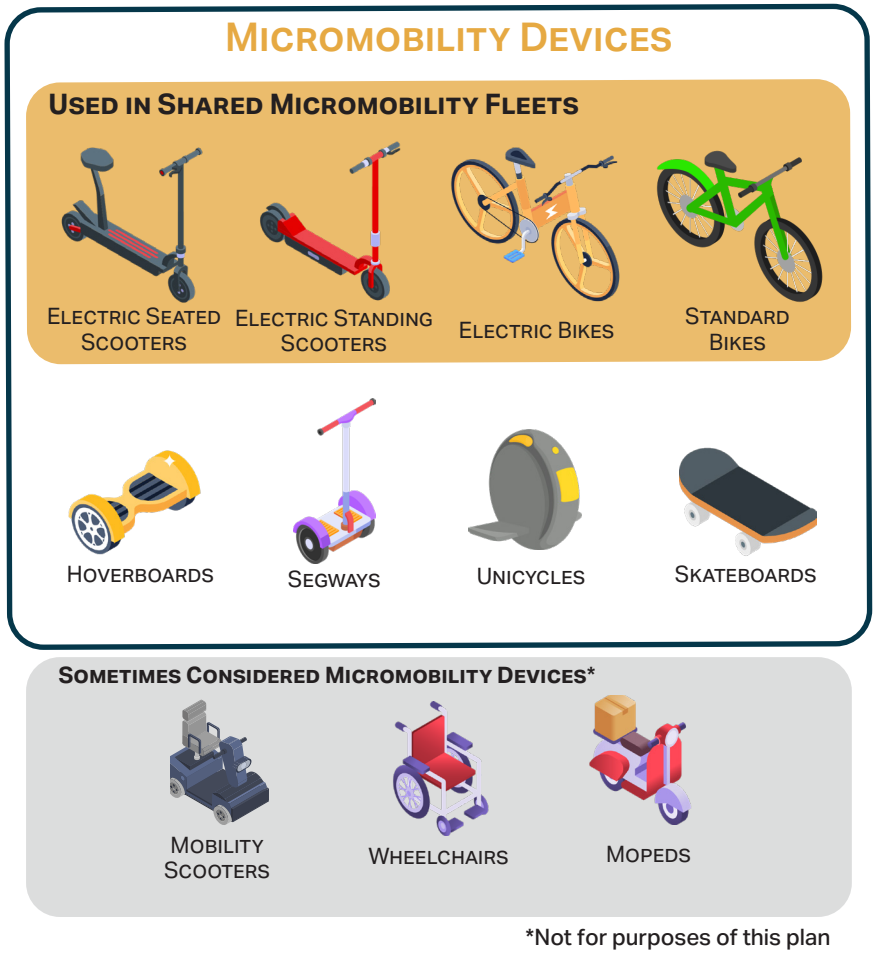
Introduction

What is Micromobility?

Micromobility is an umbrella term referring to low speed, lightweight transportation devices such as bicycles, electric bicycles, and electric scooters. Micromobility devices can be human-powered or powered by electric motors and batteries. Micromobility devices typically operate similarly to regular bicycles within the transportation network – using bike lanes, vehicular lanes, shared use paths, and at times, sidewalks if permitted. Riders are considered vulnerable roadway users (VRUs) just like pedestrians, as they lack the protection of a motor vehicle and are therefore more likely to suffer serious injuries in the case of a collision.

Micromobility has gained popularity across the world in recent decades due to advances in technology and greater interest in active lifestyles. Micromobility devices offer an alternative to driving, walking, and public transit. Whether personally owned or part of a shared micromobility program, in many places, micromobility is more affordable than owning a car, faster than walking, and more convenient than public transit. Additionally, micromobility can be used in combination with other modes to solve the "first-mile, last-mile" problem. For example, you may choose to use public transit for most of your trip and then use a micromobility device to get from the bus stop to your destination.



*Not for purposes of this plan

Figure 1. Micromobility Device Matrix

History of Micromobility

Horace Dediu, a technology industry analyst and podcast host, is credited with popularizing the term micromobility in response to the arrival of private electric scooter rentals in many cities around the world in 2017. However, shared micromobility programs have been around for decades. The first bike share programs began in the 1960s and 70s, but the lack of technology at the time made it challenging to maintain the service. By the 2000s, technology had advanced enough for many cities to introduce more sophisticated bike share systems using electronic locks and computer kiosks.

In 2008, Washington D.C. launched the first bike share pilot in the U.S. Soon after, more cities introduced their own systems. In 2010, there were 321,000 bike share trips in the U.S.—a number that grew to 35 million by 2017.

By the late 2010s, smartphones, GPS, and battery-electric technology had advanced and become widespread, ushering in a new era of micromobility. Starting in 2017, electric scooter rental companies like Bird, Lime, and Spin rapidly deployed their scooters in cities across the country. In just 18 months, electric scooters had overtaken bike share, with 38.5 million trips in 2018. By 2019, that number had grown to 86 million trips.

The popularity of these scooters was immense, but their rapid deployment caught many cities by surprise—and in some cases, was done without municipal approval. The lack of guidance, regulations, and oversight led to issues such as vehicle overcrowding, blocked sidewalks, and crashes.

Though micromobility's popularity waned during the COVID-19 pandemic, by 2023, the number of micromobility trips had recovered to pre-pandemic levels. Since their introduction, most municipalities have developed governance models to manage shared micromobility in their cities. While the future of micromobility remains uncertain, the continued popularity of these devices proves they are here to stay.

Purpose

The purpose of this framework is to lay the groundwork for planning, evaluating, and implementing a micromobility program in the FRMPO region. The framework identifies the region's transportation needs, opportunities, risks, and challenges that could impact the success of a micromobility program. Additionally, key components of a micromobility program such as operations, system design, technology, governance, and funding were evaluated to identify strategies best suited to FRMPO's region.

The framework allows the FRMPO region to incorporate lessons learned from other micromobility programs to avoid common pitfalls and to leverage best practices. At the same time, the framework is customized to reflect the Beckley area's specific needs and goals, recognizing both similarities to and differences from other communities. This ensures that the program is designed to work within the local context rather than relying on a one-size-fits-all approach.

The framework also supports the preparation of a detailed implementation plan and/or request for proposals (RFPs) for a micromobility program. This framework provides recommendations on components of an RFP such as a pilot service area, governance model, and fleet device type. The region's municipalities and public agencies will be able to use these recommendations to fast track the implementation of micromobility in their community.

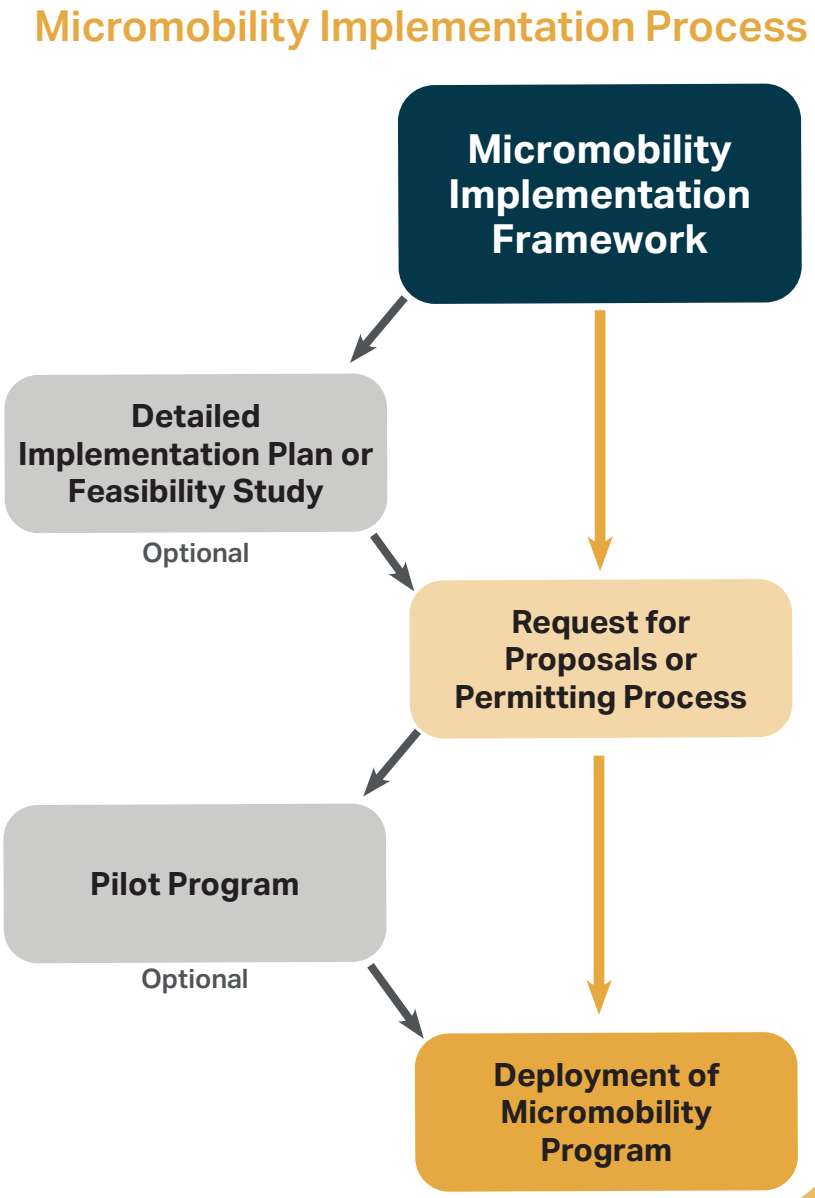


Figure 2. Micromobility Implementation Process Diagram

Study Area

The Fayette/Raleigh Metropolitan Planning Organization (FRMPO) is responsible for providing transportation planning for all of Fayette and Raleigh Counties. However, due to the nature of micromobility, this plan's study area was limited to the urban areas within the counties. Within the study area, the cities of Beckley, Oak Hill, and the town of Fayetteville were the primary areas of focus.

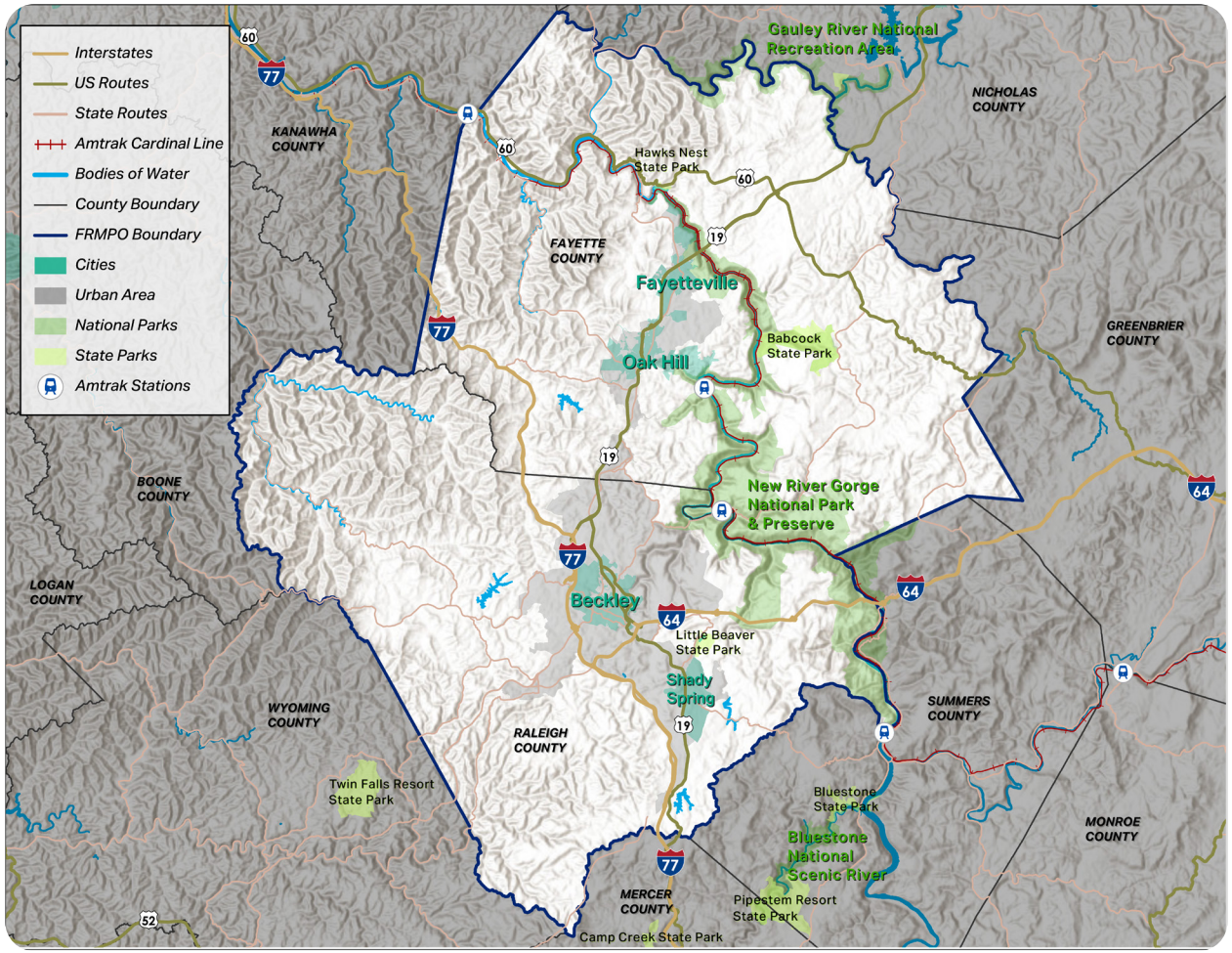


Figure 3. Map of Fayette and Raleigh Counties

Points of Interest

In 2020, the National Park Service designated the New River Gorge as a national park and preserve, leading to a significant increase in tourism to the region. Visitors are drawn to the area's abundant outdoor recreation opportunities, including hiking, rock climbing, and mountain biking.

Fayetteville is home to the New River Gorge Bridge, a historic and significant landmark. Beckley is home to WVU Tech, a branch of West Virginia university as well as the Exhibition Coal Mine, a historic mine and museum.

Planning Process

Process

Figure 4. Planning Process Diagram

The above diagram outlines the structured planning process undertaken to develop recommendations for this framework. The process began with a comprehensive assessment of existing conditions to understand the local planning context, population characteristics, development patterns, and existing infrastructure. This was followed by interviews with representatives of micromobility programs that operate in similar contexts or that face similar challenges to the FRMPO region. Key stakeholders from the FRMPO region were also engaged to establish shared community concerns, issues, and barriers. Micromobility best practices were gathered from policy documents published by established industry organizations such as the National Association of City Transportation Officials (NACTO).

Draft recommendations for program implementation were then developed based on data analysis, stakeholder feedback, peer program research, and best practices. These draft recommendations were presented to a focus group of stakeholders for review and feedback and then refined for the final framework.

Engagement

The engagement process for this plan included several interviews with key stakeholders from the FRMPO region. Local stakeholders were chosen from a wide variety of municipalities and organizations with roles related to active transportation, trails, or economic development. The list of local stakeholders interviewed is below:

Stakeholder Interviews

Name	Organization	Role
Phil Waidner	Arrowhead Bike Farm (Bike Shop)	Owner
Abbie Newell	Fayette Trails Coalition	President
Josh Sapio	City of Oak Hill	Director of Parks & Rec.
Alison Ibarra	City of Oak Hill	Director of Econ. Dev.
Matt Diedrich	Town of Fayetteville	Superintendent
Mitch Lehman	City of Beckley	Director of Outdoor Econ. Dev.
Leslie Baker	City of Beckley	Director of Parks & Rec.
Dr. T. Ramon Stuart	WVU Tech	President
Joshua Roe	WVU Tech	Director of Adventure Management
John Tuggle	FRMPO/Region 4 Planning and Development Council	Executive Director

In addition to stakeholder interviews, a focus group of local stakeholders was brought together to review the project's draft recommendations. The list of focus group attendees is below:

Focus Group Attendees

Name	Organization	Role
Phil Waidner	Arrowhead Bike Farm (Bike Shop)	Owner
Michelle Rotellini	Beckley Raleigh County Chamber of Commerce	President/CEO
Jeff Webb	Trails Edge Cycles	Owner
Lesley Taylor	Region 4 Planning and Development Council	Senior Project Specialist
Andrew Davis	New River Gorge Regional Development Authority	Director of Strategic Redevelopment
Trish Hajash	New River Transit Authority	Operations Manager
Andy Austin	New River Transit Authority	Director
John Tuggle	FRMPO/Region 4 Planning and Development Council	Executive Director
Jason Roberts	FRMPO/Region 1 Planning and Development Council	Executive Director
Gary Morefield	City of Beckley	Trails Specialist
Corey Lilly	Smith WVU Outdoor Economic Development Collaborative	Manager of Outdoor Community Development
Dr. T. Ramon Stuart	WVU Tech	President

The final part of engagement involved identifying peer micromobility programs for interviews. Background research was conducted to identify a list of potential peer programs for interviews. Programs were chosen based on their similarities to the FRMPO region. For example, Shift Bike in Eagle County, Colorado is a program that serves a large region along a highway corridor and sees a high number of tourists for outdoor recreation. These similarities were considered while also ensuring a wide variety of program sizes, governance models, and local contexts were captured.

Peer Programs & Interviewees

Program	Location	Reason	Name	Organization	Role
Beckley Bike Share	Beckley, WV	Program run in the FRMPO region	Lesley Baker	City of Beckley	Director of Parks & Rec.
Shift Bike	Eagle County, CO	Large region with difficult terrain and focus on balancing tourism vs. locals	Beth Markham	Town of Vail	Environmental Sustainability Manager
Allen County Bike Share	Allen County, KS	Rural context with a focus on affordability	Patrick Zirjacks	Thrive Allen County	Community Engagement Specialist
Multiple Private Vendors	Knoxville, TN	Appalachian context with a focus on private vendors	Carter Hall	City of Knoxville	Director of Strategic Policy and Programs
Book-A-Bike	Athens County, OH	Appalachian context with an innovative bike library model	Nick Tepe	Athens Public Library	Executive Director
COGO & Others	Columbus, OH	Experience with multiple governance models and system types	Justin Goodwin	City of Columbus	Transportation Director

Case Studies

System Types

There are three main types of shared micromobility systems: **docked, dockless, and hybrid.**

Docked systems require users to check out and return devices at designated docking stations. These stations can range from simple bike racks to more advanced docks with built-in locking mechanisms, battery charging, and payment kiosks. They are typically placed near destinations such as transit stops, commercial districts, and public parks. Docked systems are most commonly used for bike share programs, especially those with standard bicycles.

Dockless systems allow users to pick up and park devices anywhere within their service area. These systems rely on GPS-enabled devices and are typically accessed through a smartphone app. To manage device placement and prevent clutter, many dockless systems use geofencing technology to guide or restrict where users can end their trips.

Hybrid systems combine elements of both docked and dockless systems. For example, a docked bike share program may allow GPS-enabled e-bikes to be parked at any public bike rack for an additional fee. Conversely, scooters may be restricted to parking in designated parking zones or corrals, sometimes known as virtual docks.

In addition to these primary system types, there are other programs that blur the line between shared micromobility and traditional bike and scooter rentals.

	Docking Stations	Dockless
Strengths	• Availability and dependability • Does not require GPS-enabled devices or apps • Less sidewalk clutter • Less chance of vandalism or theft • More likely to replace a car trip	• More convenient for reaching destinations • Low deployment costs • Scalability and flexibility • More profitable • Often operated by private vendors
Weaknesses	• Higher installation and maintenance costs • System must be frequently rebalanced • Limited flexibility • Takes several stations to create a useful network • Often relies more on public subsidy	• Unpredictable availability • More difficult to manage • Creates sidewalk clutter • Higher chance of vandalism or theft • Requires more technology

Figure 5. Docked vs. Dockless Systems Diagram

Peer Programs

Shift Bike Eagle County, Colorado

Public Agency	**Town of Vail, Eagle County, Other Municipalities**
Private Vendor	**Drop Mobility**
Funding Source	**State Grants, Local Funds, Fares, Memberships**
System Type	**Docked Bike Share**
Device Type	**Electric Bikes**

Shift Bike is a seasonal bike share system in Eagle County, Colorado with 155 bikes at 12 stations across an 18-mile service area. Initially launched in 2020 with a limited pilot, the program expanded with funding from the town council, regional partners, and a CDOT grant. Stations are placed near transit stops, workforce housing, trailheads, and grocery stores. The system prioritizes local use with discounted monthly and seasonal passes for residents, while visitors pay higher per-minute rates to avoid competition with bike rental shops.

Allen County Bike Share Kansas

Public Agency	**Thrive Allen County (Non-profit)**
Private Vendor	**None**
Funding Source	**Corporate Grant**
System Type	**Hybrid Bike Share/Short-Term Rentals**
Device Type	**Standard, Cruiser-style Bikes**

Allen County Bike Share in Allen County, Kansas provides free, cruiser-style bikes to residents of their rural county. Funded by a corporate grant, the system helps people get to work, school, and appointments in a county with limited transit options. The system requires minimal technology and oversight as bikes are loaned out for 24 hours at a time by local businesses. This program emphasizes accessibility, local partnerships, and a low-tech, community-centered approach to program growth and management.

Private Vendors Knoxville, Tennessee

Public Agency	**City of Knoxville (Permitting Only)**
Private Vendors	**Bird, Lime**
Funding Source	**Permitting Fees**
System Type	**Dockless**
Device Type	**Electric Scooters & Electric Bikes**

Rather than contract with a single vendor, the city of Knoxville, TN allows up to two private vendors to operate via two-year permits. Each vendor can deploy up to 300 devices, with seated scooters and dockless e-bikes included. The city manages geofencing, slow zones, and in-street corrals to reduce clutter and improve safety. Low-cost memberships are incentivized but not explicitly required. Requires minimal administrative oversight but not as integrated with the city's broader transportation goals.

Book-A-Bike Athens County, Ohio

Public Agency	**Athens County Public Libraries**
Private Vendor	**None**
Funding Source	**Grants, Library's Operating Funds**
System Type	**Short-Term Rentals**
Device Type	**Bikes, E-Bikes, Youth and Adaptive bikes**

The Athens County Public Library has operated a "bike library" program since 2013. Bikes can be rented for free up to 3 hours from most branches with a library card and signed waiver. The system operates a wide variety of bikes and accessories including e-bikes, youth bikes, tandem bikes, trailers, and more. They partner with a local bike shop to maintain the bikes. Though mostly used for recreation, the bikes are occasionally used for critical transportation and has helped introduce many people to cycling.

COGO & Others Columbus, Ohio

Public Agency	**City of Columbus**
Private Vendors	**Lyft, Spin, Veo, Lime, Bird**
Funding Source	**City Budget**
System Type	**Hybrid Bike Share, Dockless Scooters**
Device Type	**Electric Bikes, Standard Bikes, E-Scooters**

The COGO Bike Share system began in 2013 and had 600 bikes and 80 stations until its closure in 2025. The system used docked standard bikes and e-bikes that could be locked anywhere. The COGO system was funded through fares and city subsidy. In addition to COGO, the city also allowed multiple private scooter vendors to operate with caps on the total number of devices. In 2025, both were replaced when the city signed a contract with a single vendor, VEO, who operates scooters, seated scooters, e-bikes, etc. within one hybrid system.

Beckley Bike Share Beckley, WV

Public Agency	**City of Beckley, Beckley-Raleigh County Chamber of Commerce**
Private Vendor	**On Bike Share**
Funding Source	**City Budget, Grants**
System Type	**Docked Bike Share, Short-Term Rentals**
Device Type	**Standard Bikes**

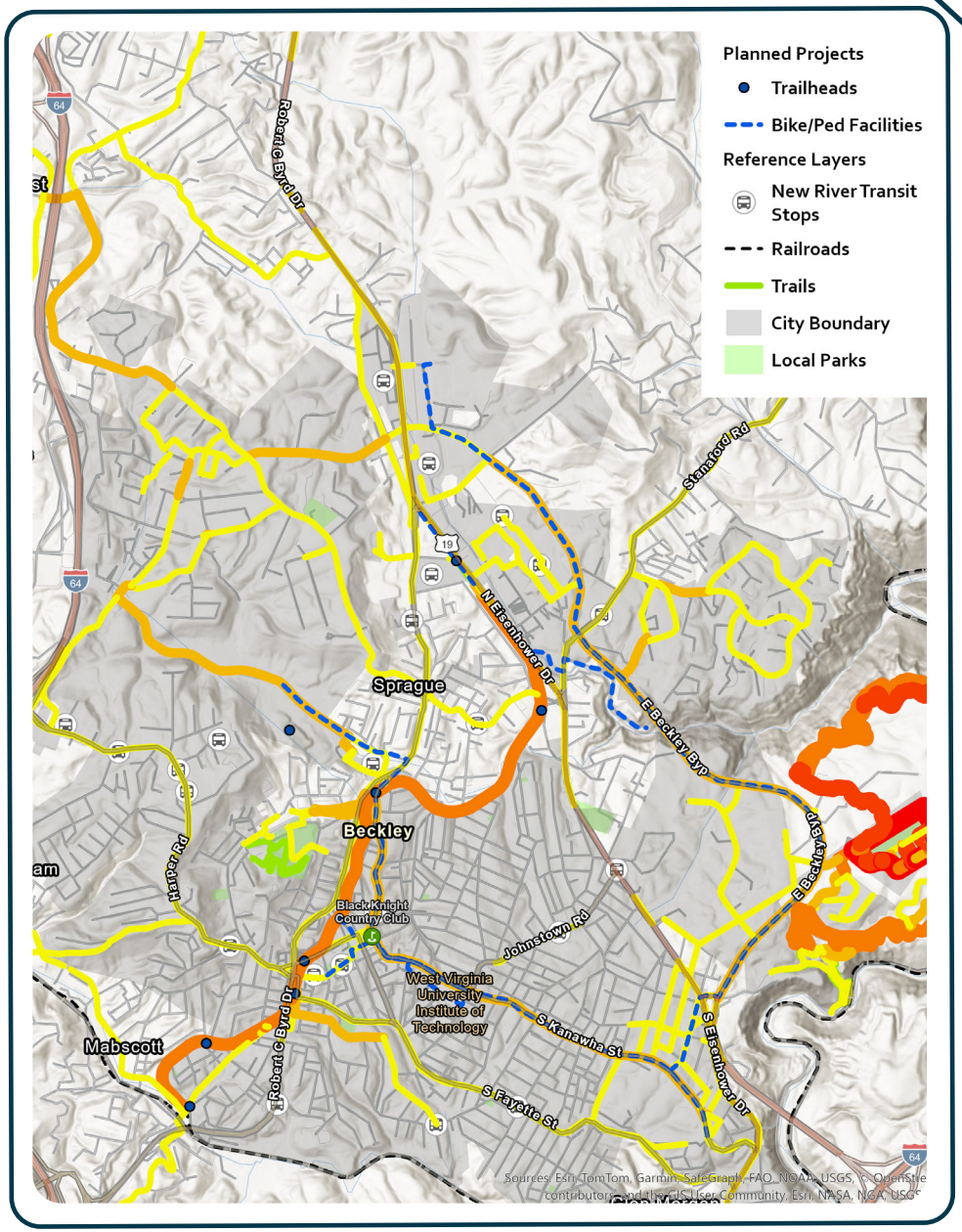
In 2019, the Beckley Welcome Center was opened alongside the city's rail trail with a bike rental hub offering free rentals for a variety of bikes. In 2021, a bike share station was opened at the center with six bikes available to rent for free. Initial funding came from a BRIC grant from FEMA and ongoing costs were funded by the City of Beckley. City funding for the program was ended in 2024 due to rising costs and underutilization.

Demand Assessment

Plan Review

As part of this assessment, several local, regional, and state plans were reviewed to identify planned projects related to active transportation. The Beckley Outdoors Action Plan includes several project ideas to expand trail access and improve pedestrian and bicycle connections between downtown Beckley, local parks, and the Piney Creek Preserve. In Oak Hill, local plans identify sidewalk extensions and streetscape improvements along Main Street and routes connecting to the historic district and nearby schools. In Fayetteville, planned projects include trailhead improvements, shared-use path extensions, and sidewalk repairs to support tourism and local access to the downtown area and national park trailheads. The Fayette-Raleigh Metropolitan Planning Organization's (FRMPO) Long Range Transportation Plan (LRTP) includes projects such as greenway trail expansions, new sidewalk segments in high-traffic areas, and improved bike infrastructure on regional corridors. Statewide plans developed by the West Virginia Department of Transportation (WVDOT), including the Statewide Transportation Improvement Program (STIP), identify upcoming investments in sidewalk upgrades, pedestrian crossings, and shared-use path construction along key corridors throughout the region.

Figure 6. Map of Planned Projects in Beckley



Activity

Understanding where people are currently walking and biking is essential when planning for micromobility. These services should be placed in areas with existing bicycle and pedestrian activity and designed to improve connections between key activity centers. In the absence of permanent bicycle and pedestrian counters in the region, this plan used Strava Metro data and U.S. Census data to estimate active transportation activity.

Strava Metro

Strava Metro offers anonymized GPS data collected from users of the Strava fitness app. Strava allows its users to track their bike rides, runs, walks, and hikes using their phone, watch, or other smart device. The app tracks the user's GPS location, speed, distance, elevation, and more. Since Strava is primarily a fitness app, the trips tracked by Strava are mostly recreational in purpose. Therefore, Strava data may over-represent recreational travel and under-represent commuting trips. Additionally, Strava users are more likely to be middle-aged, male, and higher-income than the rest of the population.

Despite these biases, Strava Metro remains a useful tool for understanding where bicycle trips are occurring. The Colorado Department of Transportation conducted a comparison of Strava Metro data to physical bike counter data and found a strong correlation (.815 to .994) between the number of Strava Trips and the number of detected bike counter trips.

Need and Activity Index

Due to the potential for bias in Strava Metro, we have also integrated the Need and Activity Index from the West Virginia Statewide Vulnerable Road User Plan into our analysis. The Need and Activity Index uses several metrics from the U.S. Census to predict the need for active transportation and the expected amount of activity for every census tract. The need factors include dependent population, educational attainment, income, minority population, and disabled population. The activity factors include business districts, population density, presence of a university, commute mode share, city parks, and transit stops. These factors were scored and weighted for each Census tract to provide composite values for Need and Activity Index. A tract that has a high score in both indexes is predicted to have a high need for active transportation due to its population and high amount of activity due to its existing land use and transportation characteristics. This index will be referenced to ensure any infrastructure recommendations align with the places where active transportation is most needed.

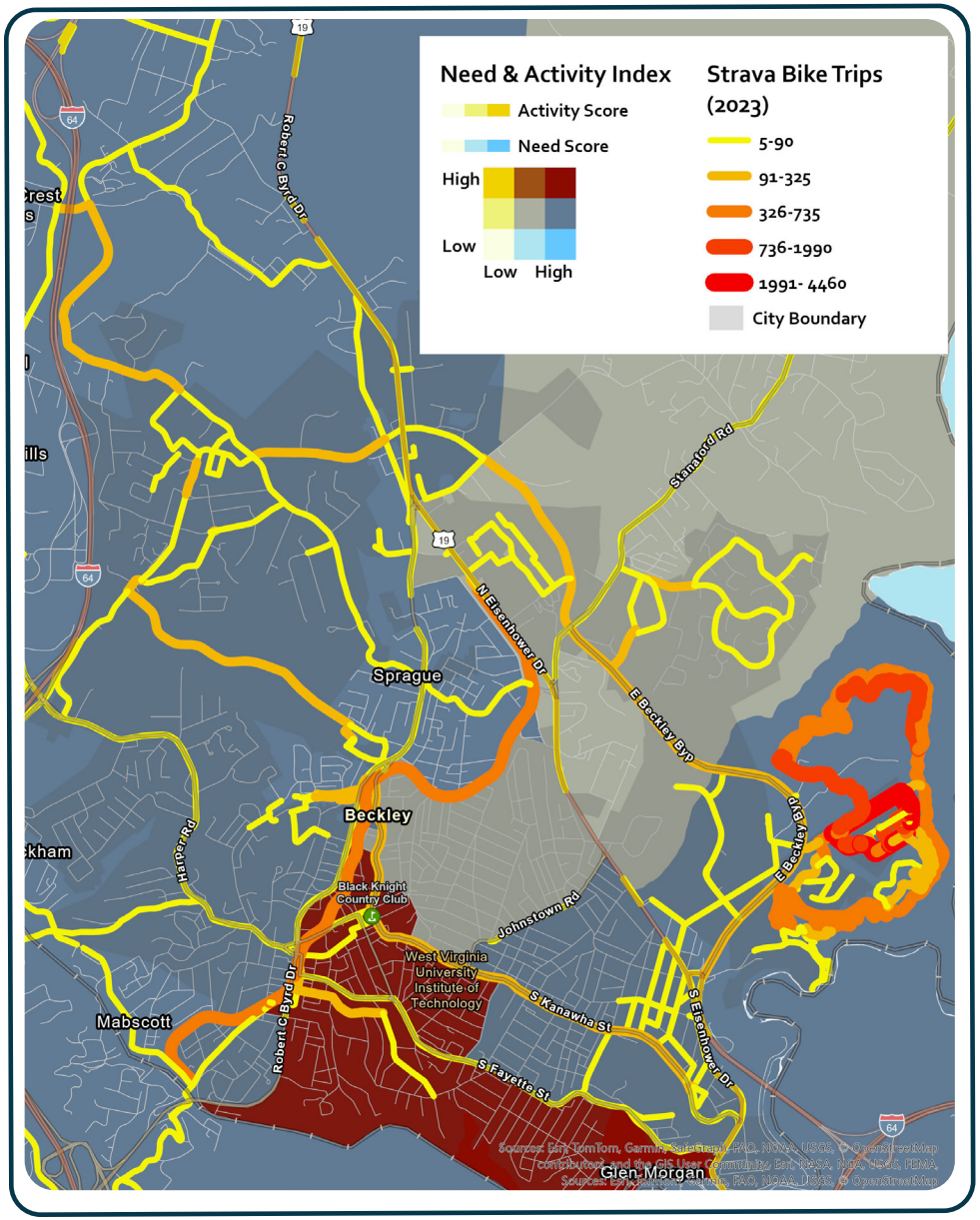
Beckley

Strava Metro ridership in the Beckley area is concentrated in two primary hotspots: the YMCA Complex and Gray Flats Trail System, and the Lewis McManus Rail Trail. Additional areas with notable activity include the E Beckley Bypass, Kanawha Street, New River Drive, and Maxwell Hill Road. The E Beckley Bypass currently includes bike lanes, and Kanawha Street is scheduled to be improved with new bike lanes as well. However, the current network lacks strong connections between the Rail Trail and the YMCA Complex. The Beckley Outdoors Action Plan addresses this gap by proposing a connector from South Kanawha Street to the E Beckley Bypass via Larew Avenue, along with a connection from the McManus Trail to the Gray Flats Trail System using Stanaford Mine Road.

The highest score for both need and activity in the FRMPO region is the census tract for south Beckley. This tract encompasses most of downtown Beckley as well as the WVU Tech campus. Other portions of the Beckley area show a high need for active transportation but only medium levels of activity.

Overall, this data reinforces the need for active transportation infrastructure and highlights several

Figure 7. Map of Need & Activity Index and Strava Metro in Beckley



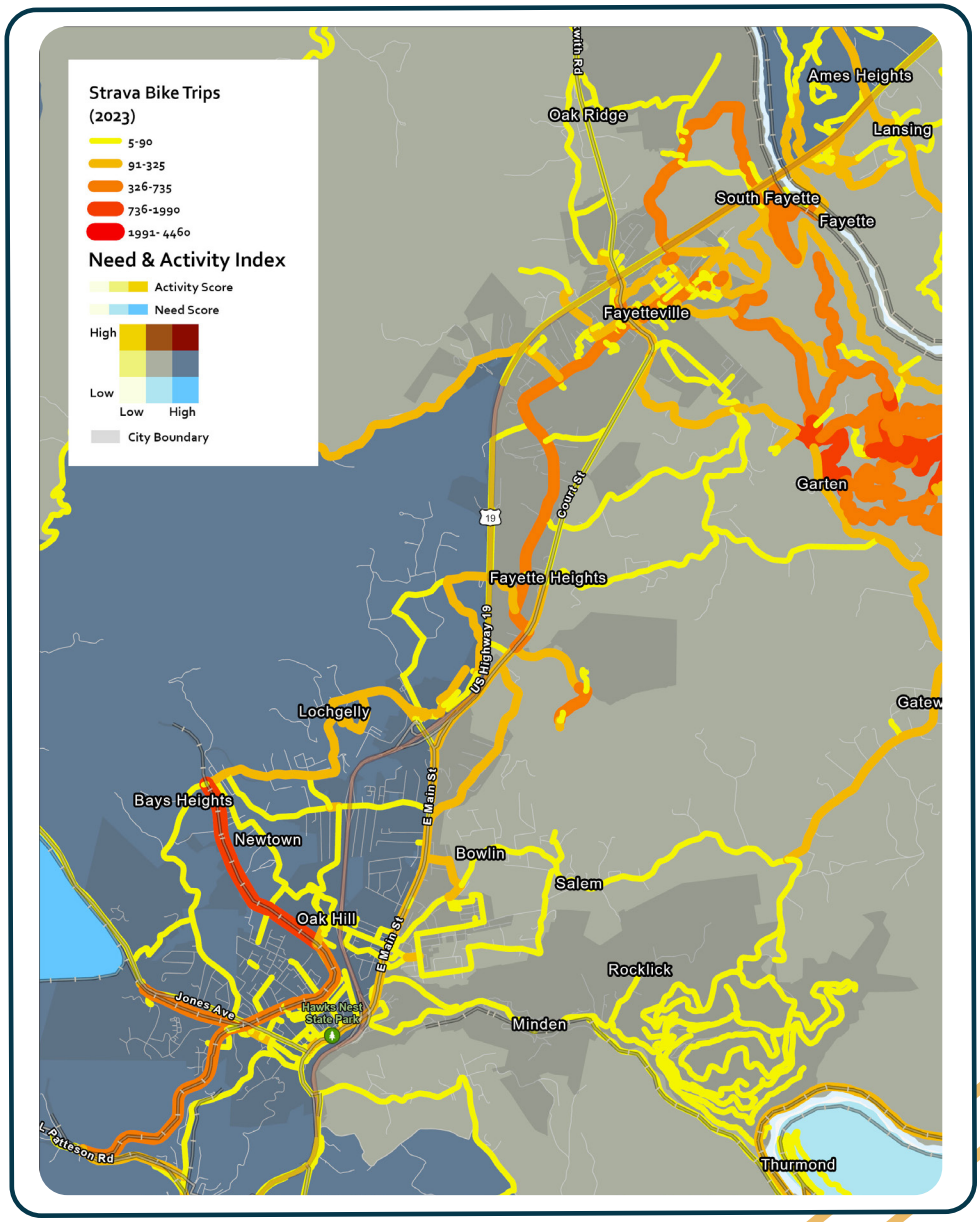
opportunities for micromobility to make a positive impact in Beckley.

Fayetteville & Oak Hill

Bicycle activity in Oak Hill is centered around the White Oak Rail Trail, with regional connections extending toward Fayetteville. Strava data shows that cyclists frequently travel from the rail trail to Maple Avenue using Lochgelly Road, which sees twice as much activity as the alternative route along Main Street, likely due to lower traffic volumes, as neither road has dedicated bike infrastructure. In Fayetteville, the highest levels of activity outside the national park are along Court Street, Maple Avenue, and Fayette Station Road. The Fayetteville Comprehensive Plan proposes a greenway on Maple Avenue that would align with current usage patterns and provide key connections to shopping areas along US 19 and to Oak Hill. Fayette Station Road also presents an opportunity to link downtown Fayetteville with nearby National Park Service trailheads.

The census tract encompassing most of Oak Hill shows a high need for active transportation but only medium activity. Fayetteville has a medium score in both categories. These findings are positive for micromobility even if the need isn't quite as high as in Beckley.

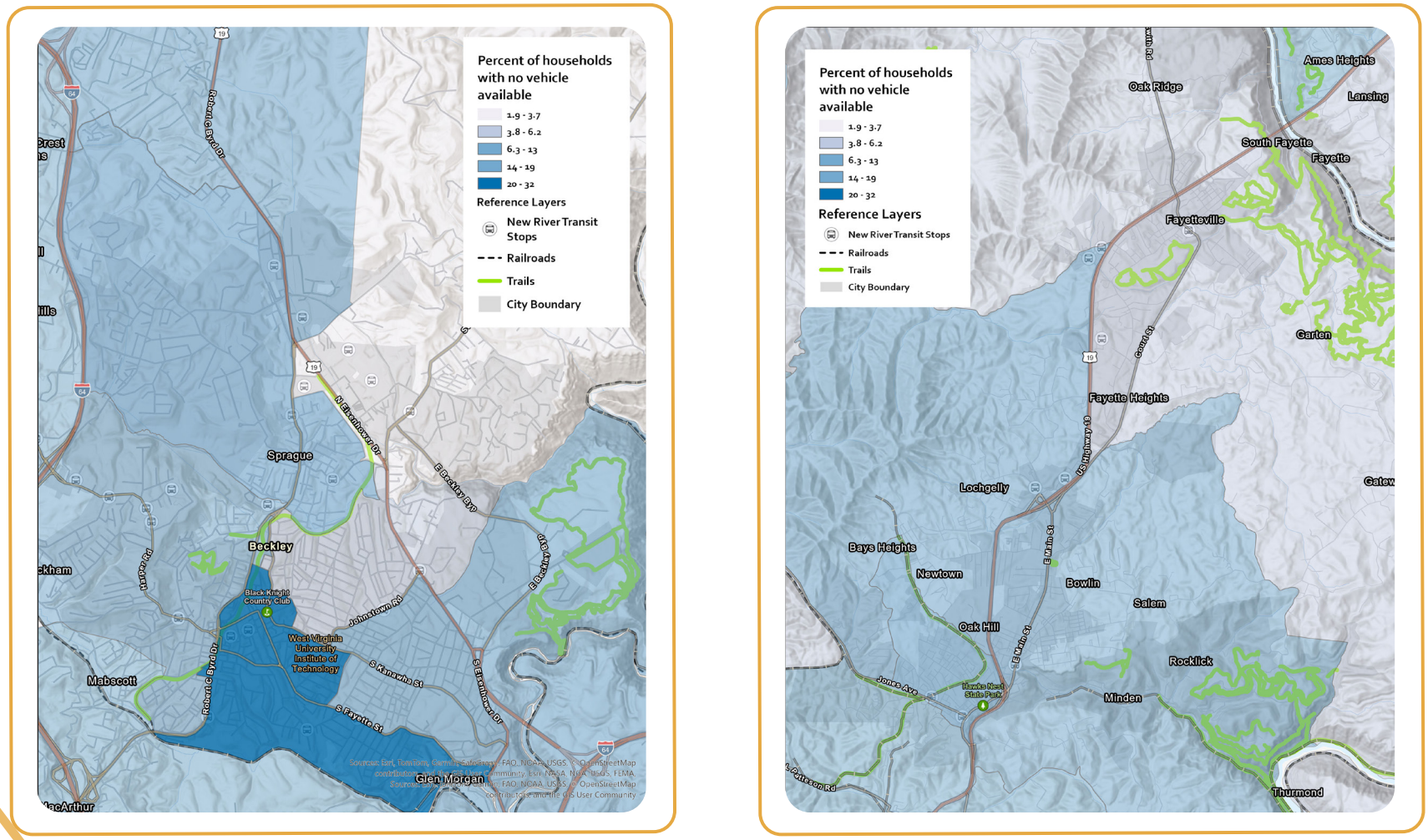
Figure 8. Map of Need & Activity Index and Strava Metro in Oak Hill and Fayetteville



Vehicle Availability

One of the primary functions of micromobility is to provide essential transportation for those without other means. The FRMPO region has a large number of households without access to a vehicle. In the downtown Beckley census tract, 32% of households do not have access to a vehicle. Areas with a high percentage of households without a vehicle will likely benefit from micromobility.

Figure 9. Maps of Zero Car Households



Stakeholder Feedback

As part of the engagement process, interviews were conducted with several key stakeholders from local municipalities, public agencies, and active transportation organizations. In these interviews, the stakeholders were asked about demand in their region as well as barriers to implementation.

Barriers

Across all interviews, stakeholders expressed a shared concern about the lack of safe infrastructure to safely support micromobility, including insufficient sidewalks, bike lanes, and trails. Safety emerged as a central issue, with narrow or dangerous roads, fast-moving traffic, and inadequate crossings making active transportation feel dangerous to many.

Lack of connectivity was also a key barrier cited, especially between walkable destinations such as downtowns, shopping centers, and the National Park. There were concerns this may limit practical use of micromobility until those connections are made.

Several interviewees saw micromobility as beneficial for tourism and economic development but were concerned that micromobility may benefit visitors at the expense of local needs. Many stated that any micromobility program that was seen as serving visitors over local residents would be unpopular and this would negatively impact implementation.

There were also specific concerns about scooters, particularly in Fayetteville and Oak Hill, with regard to clutter, enforcement, and compatibility with narrow sidewalks.

Stakeholders expressed cautious optimism about demand for micromobility. Many have seen a notable increase in personal use of e-bikes, e-scooters and other devices on local trails. In particular, many students at WVU Tech utilize personal devices to commute to campus or to reach jobs after classes.

Most also cited a need to improve transportation options for low-income residents who struggle to reach jobs without access to a vehicle, especially since public transit has limited hours and coverage. Others cited the region's aging population as having demand for micromobility. Micromobility devices often require less fitness and mobility than traditional bicycles and walking. This population also relies more heavily on public transit to reach medical appointments. However, concerns were raised about technological and physical barriers, especially for older populations.

Overall, stakeholders felt that demand existed in certain situations and could grow if micromobility was thoughtfully implemented with community buy-in, education, and proper infrastructure.

Program Implementation Playbook

Purpose

Implementation of a micromobility program requires careful consideration of governance, system design, operations, funding, and public safety. The program implementation playbook addresses these factors with recommendations tailored to the FRMPO region. The recommendations are based on the data presented in the Demand Assessment, industry best practices, and stakeholder feedback. Stakeholder feedback was especially important to ensure the recommendations address local concerns that are vital to earning community buy-in.

Operations

Recommendations for program operations cover the program's scale, hours, service area, system type, and device type.

Scale

Recommendation: Initial Pilot Program followed by Deployment in Phases

A pilot program is a short-term, small-scale deployment that tests the feasibility, usage, and community response to micromobility options like bikes, e-bikes, or scooters. It offers a flexible, low-cost way to gather real-world data, evaluate system performance, and make adjustments before scaling up. This approach allows the program to grow gradually while minimizing risk. Education and communication is critical to ensure the public understands the program and its purpose before implementation.

Hours

Recommendation: Limit operating hours overnight

Limiting micromobility operating hours overnight can help deter theft and vandalism by reducing opportunities for misuse during low-visibility, low-supervision hours. It also gives operators dedicated time to rebalance vehicles, perform maintenance, and ensure equipment is safely and evenly distributed for the next day. This controlled downtime supports both system reliability and long-term asset protection.

System Type

Recommendation: Hybrid system

A hybrid docked and dockless micromobility system offers the best of both models by providing structured parking at designated hubs while still allowing users the flexibility to end rides in approved areas outside of docks. This approach uses physical docks and geofencing to reduce sidewalk clutter and promotes organized vehicle storage, addressing common community concerns, while maintaining the convenience and accessibility that attract users to dockless systems. It also supports better fleet management, data collection, and enforcement.

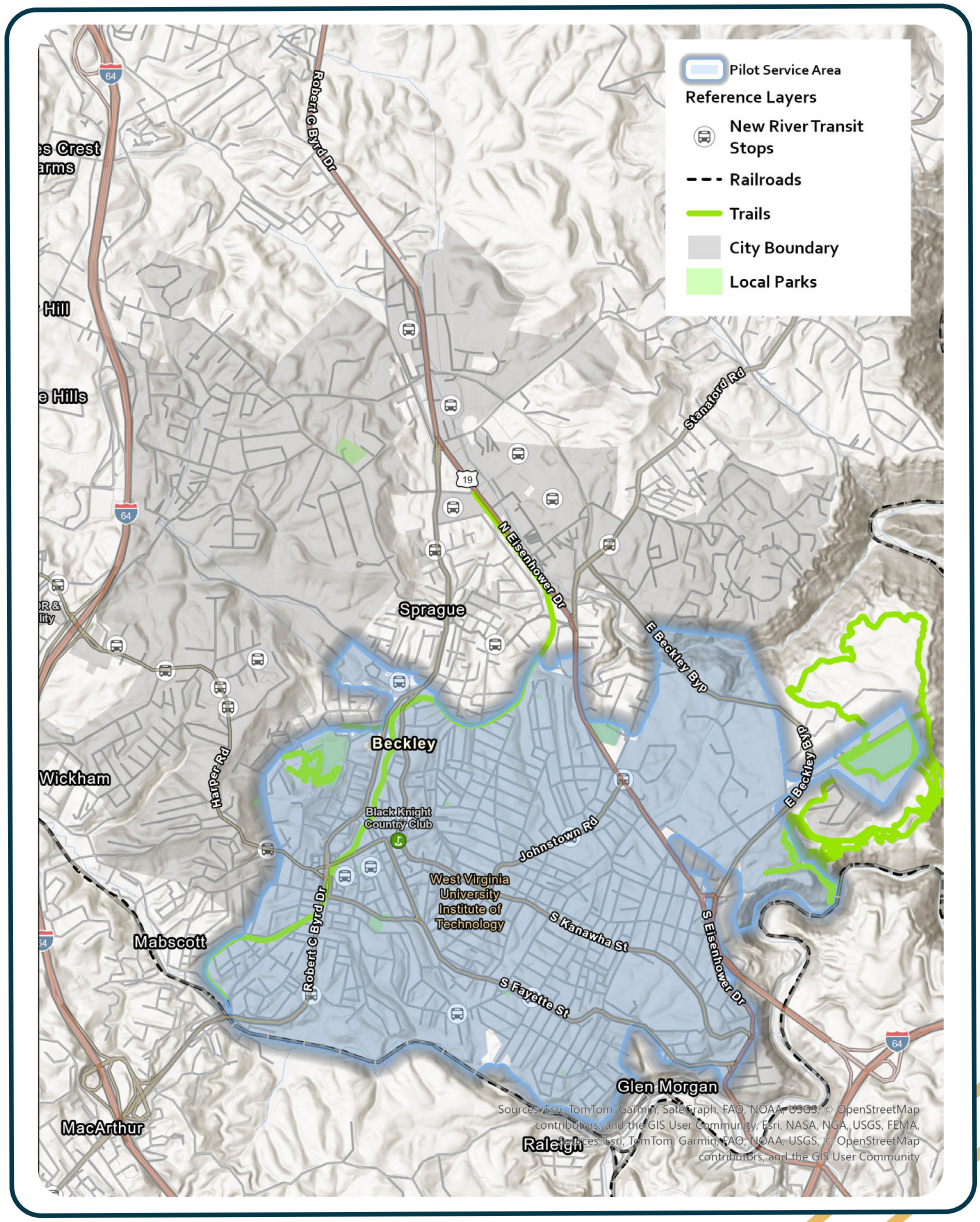
Service Area

Recommendation: Downtown Beckley, WVU Tech and Surrounding Neighborhoods

Downtown Beckley and the WVU Tech area were chosen as the pilot service area for micromobility due to their high concentration of potential users, key destinations, and supportive infrastructure. WVU Tech's student population, many of whom live on or near campus without cars, represents a strong base of likely early adopters. Additionally, existing and planned infrastructure improvements near downtown and campus, such as the Kanawha St bike lane project, make this area well-suited for a pilot. Downtown Beckley is a key commercial destination home to many small businesses. Downtown Beckley is also home to the Lewis McManus Rail Trail and the Intermodal Gateway, a transit hub. The service area includes connections to regional recreational and tourist destinations such as the Exhibition Coal Mine and YMCA Complex.

The pilot service area was limited to the City of Beckley's boundaries to simplify coordination and oversight. However, coordination with neighboring jurisdictions, the county, and FRMPO is needed for future phases.

Figure 10. Map of Pilot Service Area



Device Type

Recommendation: E-bikes, Adaptive Bikes, E-Scooters

E-bikes were selected as the preferred device type for the micromobility pilot due to their versatility, user-friendliness, and suitability for the region's hilly terrain. E-bikes offer a more stable and familiar riding experience compared to e-scooters, making them accessible to a wider range of users, including those less experienced with micromobility. They are also better suited for longer trips, such as commuting between WVU Tech, downtown Beckley, and nearby neighborhoods. E-scooters may be considered as a future expansion once the system is established and community comfort with micromobility increases. To promote accessibility, the program may also incorporate e-trikes or other adaptive bike options, providing additional mobility solutions for older adults and people with disabilities.

Figure 11. Image of E-bike with swappable battery

E-bikes are more expensive than standard bicycles. However, their convenience and utility often offsets the upfront costs with higher ridership. They also require charging but most vendors provide docks that charge the devices and/or bikes with easily hot-swappable batteries.

Pricing

Recommendation: Discounts for residents and qualifying users

Based on the model used by Shift Bike in Eagle County, residents would have the ability to purchase annual and monthly memberships that provide significant savings on the cost of a ride. This was selected as the preferred model because it supports affordability and access for local residents while capturing additional revenue from visitors. Visitors, who are more likely to use the service occasionally, would pay a higher per-minute or per-trip rate, helping to offset operational costs. The program would also offer discounted memberships for individuals who qualify based on participation in public assistance programs, ensuring that cost is not a barrier to access for those who need it most. This tiered pricing model provides transportation for those who need it while ensuring financial sustainability.

Governance

Oversight

Recommendation: City of Beckley with Regional Advisory Committee

The City of Beckley is best positioned to lead the oversight of the micromobility program because it has direct responsibility for local infrastructure, public safety, and community engagement within the recommended pilot service area. As the host community for the pilot, Beckley can ensure that the program aligns with local priorities, integrates with ongoing planning efforts, and responds to resident feedback. FRMPO can provide valuable regional support through data analysis, coordination with neighboring jurisdictions, and technical assistance.

A regional active transportation advisory committee should also be established to allow for coordination of infrastructure throughout the FRMPO region. This committee could work on addressing regional connectivity and lay the groundwork for expansion of micromobility to Oak Hill and Fayetteville.

Operator Selection

Recommendation: Private Operator selected through Request for Proposals Process

A private operator selected through an RFP (Request for Proposals) process was chosen as the best option for implementing a micromobility program because it allows the City of Beckley to maintain greater control over system design, vendor selection, and operational standards. Unlike an open permitting model that allows any private vendor to operate if they meet minimum requirements, an RFP enables the city to set clear expectations around safety, profit and data sharing, fleet size, maintenance, and customer service. This structured approach ensures that the selected vendor aligns with the city's goals, infrastructure limitations, and community needs. It also reduces the risk of vendor volatility, inconsistent service, and public dissatisfaction that can occur with uncoordinated deployments.

This option was also chosen over direct operation by the city to avoid the significant upfront costs, staffing needs, and technical demands associated with owning and managing a system in-house.

Funding

Initial Funding Source

Recommendation: Public and Private Grants

Public and private grants were chosen as the primary funding source for the micromobility program to reduce the upfront financial burden on the city. Grants allow the program to be implemented without relying solely on local tax revenue or user fees, making it more accessible to residents regardless of income. Micromobility programs often qualify for state and federal grants for transportation, public health, and the environment. Occasionally, micromobility programs themselves may not be eligible but funding for planning or supportive infrastructure is eligible. The Athens County Library Book-a-Bike program was initially funded through a state public health grant. Micromobility is also often supported by grants from private foundations or corporate partners looking to support community initiatives. For example, Allen County Bike Share is supported by a grant from a corporate partner. This approach also provides flexibility to pilot the program, evaluate its impact, and make adjustments before committing to long-term local funding.

Potential Grant Opportunities*

Name	Description	Eligibility
Carbon Reduction Program	This formula grant program provides funding to States for projects designed to reduce transportation emissions.	States
Congestion Mitigation & Air Quality (CMAQ) Improvement Program	Provides a flexible funding source to State and Localities for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards.	States, Tribes, Localities. Transportation providers and non-profits if they enter into an agreement with an eligible project sponsor
Transportation Alternatives Program (TAP)	Covers up to 80% of project costs (with a 20% local match) for bike/pedestrian facilities and greenways, including rail-trails	States, Municipalities, Regional Transportation Authorities, Transit Agencies, Public Lands, School Districts and Schools, Tribes, MPOs
Better Bike Share	PeopleForBikes, as part of the Better Bike Share Partnership, will make mini-grants of $2,500 – $10,000 available to non-profit community-based organizations, cities, transit agencies, or shared mobility operators to support small, time-bound programs or events	Varies

Potential Grant Opportunities*

Name	Description	Eligibility
BUILD	Large, competitive federal grants for multimodal, safety-focused surface transportation projects.	States, Municipalities, Tribes, MPOs, Counties, Port authorities, and Transit agencies
Integrated Mobility Innovation	Supports the transit industry's ability to leverage and integrate mobility innovations with existing services, while examining the impact of innovations on agency operations and the traveller experience.	States, Municipalities, Tribes, Transportation Providers
Recreational Trails Program	Provides funding for trail construction, maintenance, amenities, and equipment—available to local governments and nonprofit	Municipalities, Counties, State Agencies, and Nonprofit organizations
Be Active WV	$1K–$5K grants to support bike/pedestrian infrastructure improvements and community wellness efforts	Schools, municipalities, nonprofit organizations, and community groups in West Virginia
AARP Community Challenge	Funding for short-term, high-impact projects that enhance bikeability and walkability—especially for older adults	Nonprofit organizations, Municipalities, and community groups.
Rails-to-Trails Conservancy	National funding for trail development and cycling infrastructure initiatives	Local and regional trail organizations, friends groups, nonprofits, and public agencies.
Appalachian Regional Commission (ARC)	Support for recreational and community infrastructure projects including trails and greenways	Municipalities, school districts, higher education institutions, nonprofits, and public agencies in eligible counties.
New River Gorge Regional Development Authority Technical Assistance Fund	Support for infrastructure assessment and planning across Fayette, Raleigh, Nicholas, and Summers Counties.	Municipalities and nonprofits
Safe Streets and Roads for All (SS4A)	The SS4A grant funds planning and safety improvements to reduce traffic injuries and fatalities. In the FRMPO region, it can support micromobility by identifying high-risk areas and planning safer infrastructure like bike lanes, crossings, and traffic calming to protect cyclists and e-device users	MPOs, Municipalities, Tribes
BRIC	The BRIC (Building Resilient Infrastructure and Communities) grant from FEMA is a pre-disaster mitigation program that funded projects to help states, tribes, and local governments strengthen infrastructure and reduce risks from natural hazards.	States, Tribes, Municipalities, Counties

* Grants were available as of December 2024

Ongoing Funding Source

Recommendation: Local funding, profit sharing, sponsorship

Ongoing funding for the micromobility program can be supported through a combination of local subsidies, profit-sharing agreements with a private vendor, and sponsorships. A modest public subsidy can help ensure the system remains affordable, especially for low-income users or in areas with lower ridership. A profit-sharing model allows the city to receive a portion of the vendor's earnings to reinvest in the program. Additionally, sponsorships from local businesses, health systems, or educational institutions can offset operational costs. This diversified funding approach increases the program's financial sustainability and resilience.

Safety

Theft and Vandalism

Recommendation: GPS tracked devices, designated parking zones, time-restricted use.

GPS tracking, designated parking zones, and time-restricted use were chosen for the micromobility program because they offer proven, practical solutions to prevent theft and vandalism. GPS provides real-time monitoring and enforcement of service boundaries, helping operators quickly locate or disable lost or misused devices. Designated parking zones encourage responsible behavior by placing vehicles in visible, well-lit areas that deter tampering and abandonment. Time-restricted use, particularly limiting overnight access, reduces the likelihood of theft during hours when supervision is minimal. These measures work together to protect system assets, improve operational control, and build community trust in the program.

Device Safety

Recommendation: Age limits, speed limits, restricted locations, helmet reminders

Age limits help ensure that users have the maturity and judgment needed to operate vehicles responsibly, reducing risky behaviors. A 20-mph speed limit was recommended to limit the severity of potential collisions and improve reaction times. Restricting where devices can be used helps prevent conflicts in high-risk zones such as sidewalks, highways, or dense pedestrian areas, improving safety for both riders and

non-riders. Helmet reminders when unlocking a device can encourage better behavior, as helmets are proven to reduce the risk of serious head injuries. Providing helmets with the devices is often too challenging as part of a micromobility program and so is not recommended. Together, these measures are intended to create a safer, more predictable experience for riders and the public.

Other Recommendations

Rent-to-Own Model

Recommendation: Provide a rent-to-own option for qualifying users

The City of Beckley and Beckley Raleigh Chamber of Commerce previously operated a free bike rental service out of the Beckley Welcome Center. It was noted that many were using not returning the bikes on time since they needed them for transportation. Based on Allen County Bike Share, a rent-to-own model would offer aging micromobility devices to frequent users of the system that are low-income.

E-Bike Subsidy or Incentive

Recommendation: Provide a tax incentive or subsidy to those who purchase an e-bike

A tax incentive or subsidy is a proven method for increasing e-bike ownership and encouraging active transportation. The upfront cost of an e-bike is often cost-prohibitive so these can help low-income individuals access these devices. These could be combined with the rent-to-own model to reward frequent users with this incentive.

Next Steps

Detailed Implementation Plan

The recommendations outlined in this micromobility framework represent an important step forward in advancing micromobility implementation. This framework provides guidance for an initial pilot, system type, device, type, funding, and other considerations. However, further planning and coordination will be needed to address infrastructure siting, in-depth community engagement, cost estimating, RFP preparation, and long-term system evaluation.

A regional siting strategy will be essential to identify suitable locations for micromobility amenities such as docking stations, designated parking zones, and no-ride zones. These siting decisions should be guided by land use patterns, transportation demand, and community goals.

Equally important will be additional public engagement to ensure the system reflects the needs of FRMPO's residents. A future plan should engage with transit riders, local businesses, and advocacy organizations through public meetings and online surveys.

A future implementation plan should include a detailed approach to cost estimating. This would involve identifying all potential expenses, such as infrastructure, technology, public outreach campaigns, enforcement, and ongoing maintenance. The plan could also explore funding sources, including federal and state grants, local government budgets, and potential public-private partnerships.

A future implementation plan could support the preparation of a Request for Proposals (RFP) by clearly defining the technical, operational, and safety requirements that micromobility providers must meet. Additionally, the plan could establish a framework for long-term system evaluation, including key performance indicators. By setting up regular data collection, reporting, and analysis protocols, the region can continuously monitor the effectiveness of the micromobility system, identify areas for improvement, and make informed decisions about future investments and policy adjustments.