

MAY 2023



# BCRTA TRANSIT PLAN

## *FINAL REPORT*





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## Executive Summary

The Butler County Regional Transit Authority (BCRta) Transit Plan is BCRta's first ever transit plan. This plan outlines recommendations to grow and improve BCRta's system based on the changing demographics and transportation needs within Butler County. This plan makes immediate and near-term recommendations for the following aspects of BCRta's service:



New or improved bus routes



Identification of needed bus stop enhancements



Transit funding and financing strategies



Support for existing and future BCRta operations at transit facilities

BCRta started this plan in January 2022 and began this process by analyzing data and transit performance to establish a baseline of BCRta's existing conditions. BCRta engaged the public stakeholder throughout the development of this plan, with two main phases of public engagement. In the first phase of engagement, BCRta listened to the public and stakeholders to learn what is and is not working well with BCRta's service. The outcomes of this engagement, along with findings from the existing conditions analysis, were the basis of a preliminary set of recommendations. In the second phase of engagement, BCRta shared these draft recommendations with the public to gather feedback. Based on the outcomes of the second phase of engagement, BCRta revised the recommendations outlined in the final BCRta Transit Plan.

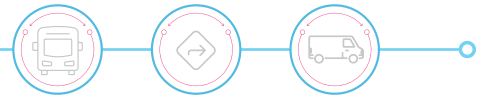
## MARKET ANALYSIS

The market analysis identified the strongest transit corridors in Butler County and highlighted areas with relatively high transit need. This analysis consisted of two components: Transit Potential, which analyzes population and employment density, and Transit Need, which evaluates socio-economic characteristics. The analysis of Transit Potential and Transit Need was complemented by an analysis of regional travel patterns. The Transit Potential component of the market analysis found that the areas of highest transit potential in Butler County are concentrated in the City of Oxford. There are areas of moderate concentrations in Hamilton, Middletown, and north of Springdale. The Transit Need analysis combined demographic characteristics that measure transit propensity, or the likelihood that someone will take a trip on transit over a different mode, into a Transit Need Index. The Transit Need Index reveals that the populations most likely to need transit services are most prevalent in Oxford, Trenton, Middletown, Hamilton, and Fairfield. The project team conducted an analysis of travel patterns in Butler County using the 2019 regional travel demand model maintained by the Ohio-Kentucky-Indiana Regional Council of Governments (OKI). This model was used to simulate the travel patterns of all individual travelers in the region between traffic analysis zones (TAZ). Key results from this analysis were that high concentrations of trips occur between two locations in the same city, there are high concentrations of trips between Oxford and Hamilton, and the most significant travel flow between Butler County and Cincinnati is between West Chester and Uptown Cincinnati.



### Existing Conditions Analysis

The project team conducted an existing conditions analysis to serve as the baseline for the recommendations made throughout the BCRta Transit Plan. The existing conditions analysis included a market analysis, a service analysis, and a facilities analysis.



## SERVICE ANALYSIS

The project team conducted a service analysis to identify the strengths and weaknesses of each BCRTA route and to highlight possible opportunities to improve services in the context of the market analysis and feedback from public and stakeholder engagement. As part of this analysis, the project team created a high-level route profile that describes each route's alignment and service patterns, major markets served, service and operational characteristics, productivity and performance characteristics, along with the route's strengths, weaknesses, and potential opportunities. Strengths of the system include the destinations served, intuitive service schedules, transfer potential, high frequency and ridership in Oxford, and the facilitation of regional travel. Weaknesses of the system include a lack of bidirectional service, poor on-time performance, low ridership/productivity, infrequent service, and unintuitive routing. Opportunities identified included targeted microtransit service, on-time performance improvements, consolidating routes, bidirectional service, and year-round service for key destinations.

## FACILITIES ASSESSMENT

In addition to assessing the existing conditions of BCRTA service, the project team completed an assessment of BCRTA facilities. This assessment included the Operations and Maintenance Facility at Moser Court, as well as passenger facilities in Hamilton, Oxford, and West Chester. Some of the key observations at the operations and maintenance facility is that several elements of the facility do not have the capacity to support existing operations, the vehicle storage building at the BCRTA facility was constructed with a short-term vision, which has led to challenges with lighting, drainage, traffic flow, and circulation, and the facility currently lacks some infrastructure, such as a loading dock, laydown space, and bus fueling, which impact BCRTA operations. Key findings related to the passenger facilities are that there are very few of them, those that exist are not currently placed based on a distribution policy and have varying levels of amenities provided, and riders desire more benches, shelters, and real-time transit information. BCRTA's Market Street Station is a passenger facility with some specific challenges due to the location of the facility, such as having the appearance and feel of a dimly lit tunnel and having little ongoing activity in the area and a lack of public restrooms, which has led to some undesirable behavior, such as public urination.

## Public and Stakeholder Engagement

Two rounds of engagement were conducted as part of the BCRTA Transit Plan process. The goal of public engagement for the BCRTA Transit Plan was to build and strengthen relationships in the community while gathering stakeholder and public input, responding to comments and concerns, and keeping decision-makers and other stakeholders informed throughout the process.

### ROUND 1 ENGAGEMENT

The first round of engagement was done in the spring of 2022 and was intended to be an opportunity for BCRTA to listen to the public and stakeholders regarding what is and is not working well with BCRTA's current service. In this round of engagement, BCRTA conducted surveys and held meetings that were tailored to each stakeholder group and collected comments through an interactive map on the project website. Table 1 summarizes the number of people engaged in Round 1 through each method.

Table 1: Round 1 Engagement Participation by Method

Method	Number of people engaged
Public Survey	308
Operator Survey	20
Decision Maker Survey	13
Business/Employer Survey	12
Interactive Map	10
Focus Groups	21

## Round 1 Engagement Takeaways

Several common themes were identified through this round of engagement:

- » BCRTA's strengths
  - » Fare-free system
  - » Generally reliable and on-time service
  - » Bus operators' friendliness and knowledge of routes and riders
- » Areas for improvement for BCRTA service
  - » Focus on serving residents (not just students)
  - » Expanding service to neighborhoods and having the same level of service available during the school year available year-round
  - » More service to cities across the county and to Cincinnati vs. within cities
  - » More service outside of typical commute hours – early mornings, nights, midday, and on weekends
  - » Bi-directional routes so customers do not have to ride the full loop
  - » Increased capacity on certain routes/during certain times of day
  - » Finding more drivers to limit service cuts
  - » Matching schedules, rider app, and operator tablet programming
- » Areas of improvement for BCRTA facilities
  - » Real-time transit information
  - » More shelters
  - » More benches, particularly around apartment complexes and shopping centers
- » Areas of improvement for customer information and customer experience
  - » More accessible/easy-to-understand transit information (e.g., more accuracy on bus tracking app, better information at shelters and online)
  - » Robust advertising around driver positions, routes, and services that BCRTA offers (e.g., BGo, paratransit)
  - » Robust education around how to ride transit (e.g., "learn how to ride days", info panels inside buses, presentations at Miami Freshmen orientation)

## ROUND 2 ENGAGEMENT

During the second round of engagement the study team gathered feedback from the public and stakeholders on initial service improvement ideas for BCRTA fixed-route service. This phase of engagement took place during the fall of 2022. Feedback during the second phase of engagement was gathered through surveys, meetings, and comment forms. Table 2 provides a count of participants by method for Phase 2.

**Table 2:** Phase 2 Public Engagement Participation by Method

Method	Number of people engaged
Public Survey	760
Interactive Map	110
Focus Groups	9
Miami University Discussions	56
Comment Cards	10
Focus Groups	21

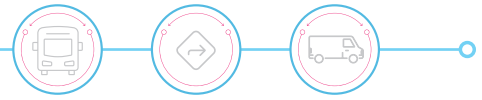
## Round 2 Engagement Takeaways

Several common themes were identified through this round of engagement.

- » Preference for bi-directional, more direct routing
- » Desire for service directly to Farmer School of Business (from student housing, High Street, the recreation center)
- » Concern about removal of regional service between Oxford and Hamilton and Middletown and Hamilton (service between cities is essential)
- » Support for express service from Middletown to Cincinnati, with some trips direct to downtown and some stopping in Uptown first
- » Would like a direct route from other cities to Cincinnati (71 people expressed this desire, with the most interest expressed from Oxford and Hamilton)
- » Desire for more frequent service and expanded service hours (e.g., early mornings, weekends)

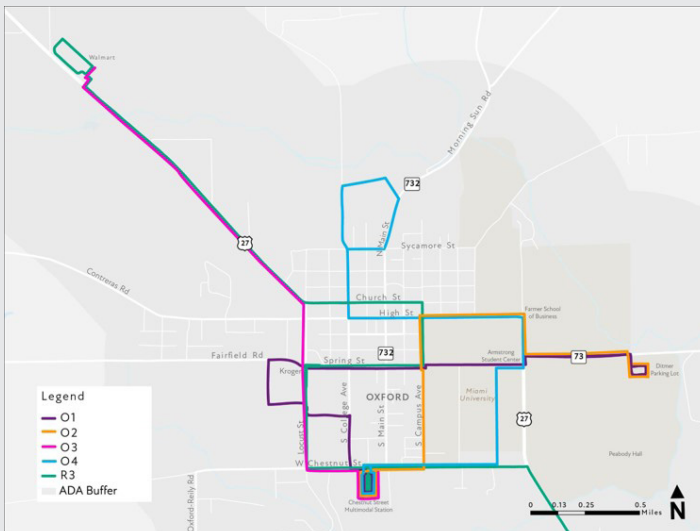




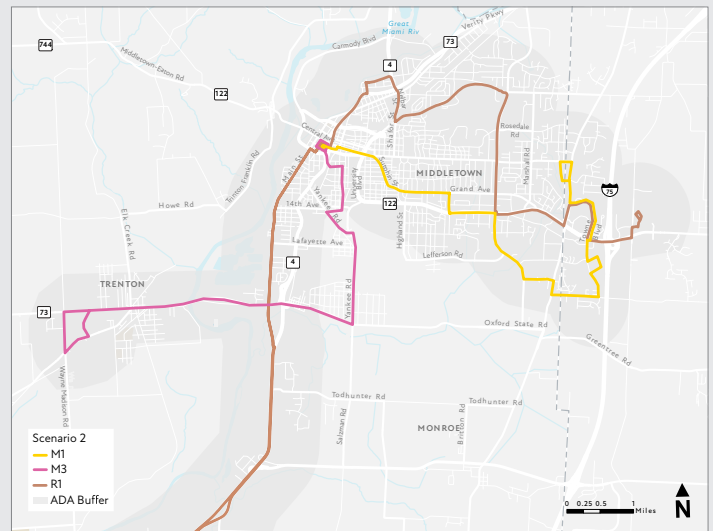


## Service Recommendations

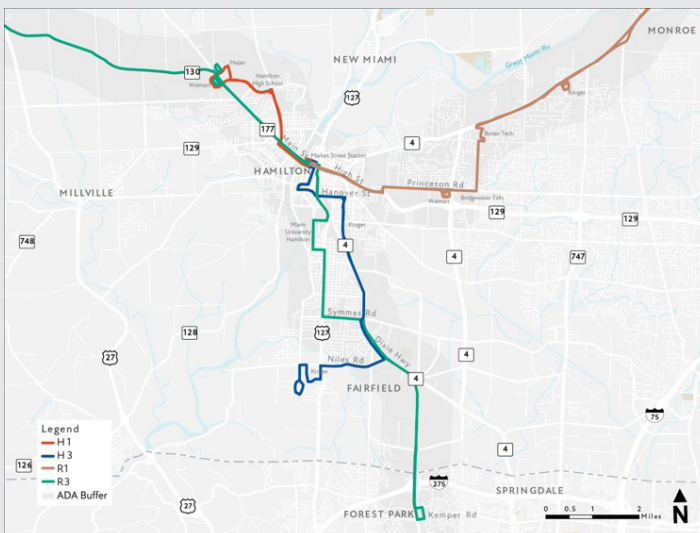
The project team developed service recommendations for BCRTA based on the public and stakeholder feedback received during the second round of engagement. These recommendations were also based on travel time information from test driving the route ideas and how the routes could be shortened, lengthened, combined, or modified to make most efficient use of BCRTA resources.



**Figure 1:** Oxford Proposed Service Recommendations



**Figure 3:** Middletown Proposed Service Recommendations



**Figure 2:** Hamilton/Fairfield Proposed Service Recommendations

**Table 3:** Proposed Service Recommendation Route Descriptions

Route	Description
<b>O1</b>	Would operate between the Ditmer and Chestnut Fields parking lots in Oxford, via Spring Street and the Miami University campus
<b>O2</b>	Would operate between the Ditmer and Chestnut Fields parking lots in Oxford, via the Farmer School of Business, High Street, and S. Campus Avenue, including fraternity houses and other off-campus housing
<b>O3</b>	Would operate between the Chestnut Fields Parking Lot/Future Chestnut Street Multimodal Station and Walmart on College Corner Pike (US 27)
<b>O4</b>	Would operate between the Chestnut Fields parking lot and Kelly Drive in north Oxford via Maple Street, Patterson Avenue, and High Street
<b>R3</b>	Would provide regional bi-directional service between Oxford and Forest Park, via Miami University, Hamilton, and Fairfield
<b>H1</b>	Would provide bi-directional service between Market Street Station in downtown Hamilton and Walmart on Main Street, via Kettering Health Hamilton, Hamilton High School, and Meijer
<b>H3</b>	Would provide bi-directional service between Market Street Station in downtown Hamilton and Southgate Boulevard in Fairfield, via the Erie Boulevard/Dixie Highway corridor
<b>R1</b>	Would provide regional bi-directional service between Hamilton and Middletown, via several Butler Tech Campuses located along the Hamilton Middletown Road (Route 4) corridor
<b>M1</b>	Would provide bi-directional service between Middletown Transit Station and Central Avenue in Middletown, via Walmart and Meijer on Towne Boulevard
<b>M3</b>	Would provide bi-directional service between Middletown Transit Station and Wayne Madison Road in Trenton, via the Baltimore Street, Yankee Road, and Oxford State Road (Route 73) corridors
<b>42X/42XU</b>	The proposed modifications to this route include extending the route further north to Meijer in Middletown and adding a second variant called 42XU that would operate between Butler County and downtown Cincinnati via Martin Luther King Drive in order to provide more direct service to the University of Cincinnati and hospitals near the university

## MICROTRANSIT RIDESHARE PARTNERSHIP POTENTIAL

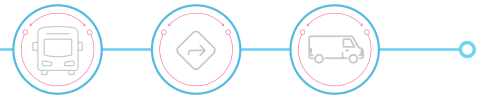
BCRTA's BGo service provides curb-to-curb microtransit service throughout Butler County. This service can be expensive to provide and is constrained by the number of BCRTA drivers available, so project team explored the potential for BCRTA to partner with rideshare companies to provide this service and the financial impacts of these potential partnerships.

### Microtransit Rideshare Partnership Examples

The project team looked at other transit agencies that currently have partnerships with rideshare companies to gather insight on the operations and finances of these partnerships. These include Pinellas Suncoast Transit Authority, Greater Dayton Regional Transit Authority, and Dallas Area Rapid Transit. Each of these agencies operates their partnership differently and has a different fare structure.

### Benefits and Drawbacks of Microtransit Rideshare Partnerships

There are both benefits and drawbacks of partnering with rideshare organization to provide microtransit service. Some of the benefits include providing more capacity for microtransit service, potentially being more cost-effective, and being relatively easy to implement. Some of the drawbacks include that the supply of drivers is not guaranteed and may be limited, there may be some loss of control with pricing, data or communications, and it may be confusing or less comfortable to some riders.



## Potential Rideshare Partnership and Payment Options

There are various ways that transit agencies can partner with rideshare companies to provide microtransit service. Some example of partnership options include:

- » Have all microtransit service operated by BCRTA
- » Have microtransit service operated by BCRTA and supplemented by rideshare companies
- » Have microtransit service operated by BCRTA and supplemented by rideshare companies during existing hours of service and operated by rideshare companies outside of currently operated hours
- » Have microtransit service operated by BCRTA during existing hours of service and operated by rideshare companies outside of currently operated hours
- » Have all microtransit service operated by rideshare companies

Similarly, there are various payment options that transit agencies implement with their microtransit rideshare partnerships. Example of these include:

- » A promo code is provided for a discounted rideshare trip
- » The rider pays the transit fare, and the transit agency pays for any additional cost of rideshare trip
- » A promo code is provided for the full cost of the rideshare trip

It will be advantageous as BCRTA coordinates with the other transit agencies involved with NEORide to discuss rideshare partnerships and payment options that the agencies can explore and implement together.

## Facilities Recommendations

The project team developed recommendations for BCRTA's operations and maintenance facility and passenger facilities to address the challenges identified in the existing conditions analysis.

### OPERATIONS AND MAINTENANCE FACILITY RECOMMENDATIONS

The project team explored four potential concepts to address the existing operations and maintenance facility challenges.

These options included:

- » **Option 1:** Construct separate materials storage building
- » **Option 2:** Add 2nd floor to administration building
- » **Option 3:** Construct new maintenance facility and expand the administration area
- » **Option 4:** Expand administration to existing maintenance area and construct separate maintenance and materials storage buildings

Based on the benefits and drawbacks of these options, the project team recommends BCRTA explore Option 3 further. While this option likely more expensive than Option 1 and Option 2, it is better aligned with current expansion work underway at the location and would lead to a more effective and functional use of the site.

### PASSENGER FACILITY RECOMMENDATIONS

The project team developed passenger facility recommendations for BCRTA at a high-level as well as recommendations specific to the Market Street Station.

### Passenger Facility Distribution

The Federal Transit Administration requires that transit agencies develop a policy regarding the distribution and siting of transit amenities, including seating (benches), shelters, provision of information (signs, maps, schedules, real-time signage), and waste receptacles. Based on natural breaks in BCRTA ridership by stop as well as the distribution policies of similar sized systems, the following thresholds are recommended for distribution of transit amenities within the BCRTA system:

- » Benches at stops with 15 or more boardings per day
- » Shelters with waste receptacles at stops with 25 or more boardings per day
- » Real-time signage and bicycle parking at stops with 100 or more boardings per day

Given that these would require much more infrastructure than BCRTA currently provides, it may be beneficial to set the thresholds higher and work towards these levels as resources are available.

### Market Street Station Recommendations

The project team identified several opportunities for improving the environment at Market Street Station. They included additional signage, lighting and light colored materials, activating the space, adding restrooms, and placemaking at the station.

## Economic and Fiscal Impact

### ECONOMIC IMPACT

The University of Cincinnati Economics Center completed an economic impact analysis to measure the effect of an BCRTA's expenditures on its surrounding community. The total economic impact is the sum of the direct and indirect impacts. The direct impact is the amount spent directly by the organization that is retained within the local economy. The indirect impact is the additional economic impact resulting from the increased demand, income, and jobs within other industries, or the inter-industry linkages. The direct impact has ripple effects due to increased household income and spending, which are referred to as induced impacts. Induced impacts are reported within indirect impacts for the entirety of this report.

Between 2023 and 2033, BCRTA will directly generate \$67.2 million in economic output in Butler County, which will lead to further indirect economic output of \$30.0 million. The capital and operations expenditures of BCRTA will directly support 1,158 jobs with earnings of \$39.7 million. On average, 105 jobs with earnings of \$3.6 million will be directly supported by BCRTA each year. Indirectly, the capital and operations expenditures of BCRTA will support an additional 217 jobs with \$11.7 million in earnings in Butler County. Over this 11-year period, the capital and operations expenditures of BCRTA will generate \$97.2 million in economic output and support 1,375 jobs with earnings of \$51.4 million. This equates to an average annual impact in Butler County of more than \$8.8 million in economic output, 125 jobs, and \$4.7 million in earnings.

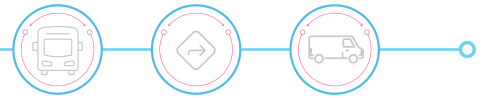
### FISCAL IMPACT

The fiscal impact analysis estimates the subsequent impacts on state and local tax revenue of the capital and operations expenditures of BCRTA. State and local earnings tax revenue were calculated for the earnings, directly and indirectly, supported, as well as the state and local sales tax revenue resulting from the spending of those earnings. It was assumed that the current tax rates would remain unchanged in the future.

The planned capital and operations expenditures of BCRTA will generate a total of \$2.6 million in state and local tax revenue between 2023 and 2033. The capital and operations expenditures of BCRTA will directly generate more than \$692,000 in state earnings tax revenue, nearly \$784,500 in local earnings tax revenue, approximately \$457,000 in sales tax revenue for the State of Ohio, and an estimate \$59,600 in sales tax revenue for Butler County. The operations and capital expenditures of BCRTA will indirectly lead to an additional \$253,800 in state earnings tax revenue, \$214,600 million in local earnings tax revenue, \$97,000 in state sales tax revenue, and 12,700 in sales tax revenue for Butler County. On average, the capital and operations expenditures of BCRTA will have an annual fiscal impact of approximately \$233,800 between 2023 and 2033.







## Financial Plan

### FUNDING ANALYSIS

A variety of different funding sources are available to BCRTA at the federal, state, and local levels. The project team completed a funding analysis that documented the funding sources that BCRTA currently leverages and other potential funding sources that BCRTA could seek in the future as it looks to expand its system.

#### Current BCRTA Funding

Federal and state funding make up the majority of BCRTA's current operating revenue. BCRTA relies on federal funding for approximately 50 percent of its operating revenues and state funding for approximately four percent of its operating revenue. BCRTA secures additional funding through local sources, with the top two sources being the Transit Development Program (Miami University) and Partnership Transit Revenue (City of Middletown), which comprise 32 percent of the total operating revenue.

#### Future Funding and Financing Options

The project team inventoried potential federal, state, local, and direct revenue options that BCRTA could pursue in the future. The project team applied two evaluation criteria to these sources to define the general applicability of each funding and financing option to BCRTA:

- » **Revenue** – A measure of the magnitude of funding possible under each option
- » **Stability** – The likelihood that revenues under each option stay consistent year-to-year

Identifying potential local transit funding sources was of particular importance for the project team because additional local funding is required to leverage any additional federal funding. This is because federal funding requires a local match, and BCRTA is already leveraging all of its existing local funding as local match. Permissive sales and use tax was found to be the optimal potential local funding source based on the magnitude of funding it can provide and its stability. Another benefit of funding transit with permissive sales and use tax is that the burden of the tax does not solely fall on residents, since those visiting the county for shopping or sporting events also pay sales tax. Eleven transit agencies in Ohio already leverage the benefits of sales tax for transit revenue.

### BUTLER COUNTY SALES TAX

Currently, BCRTA is not able to obtain additional federal funding to support existing or increased service until the agency secures additional local funding. Without additional local funding, BCRTA will not be able to maintain its existing service as the costs of service are outpacing the growth in funding. One of the mechanisms available to BCRTA to generate increased local funding that can be leveraged for additional federal funding is an increase to the local sales tax rate. An increase to the local sales tax rate would enable BCRTA to collect revenue from all spending subject to sales tax, including from non-County residents.

The University of Cincinnati Economics Center conducted a sales tax forecast of Butler County's monthly and annual sales tax revenues including estimated impacts on collections based on two scenarios. The baseline county rate is 0.75 percent, or three-quarters of one percent, and represents the baseline scenario. The alternative scenario models a marginal increase of 0.25 percentage points, resulting in a total local rate of 1.00 percent. An increase to the Butler County sales tax rate of 0.25 percentage points will result in additional sales tax revenues ranging from \$19.16 million in 2023 to \$20.45 million in 2032. In total, increasing the local sales tax rate from 0.75 percent to 1.00 percent will generate approximately \$198.40 million in additional revenue.

### FINANCING RECOMMENDATIONS

Partnership between BCRTA staff, the BCRTA board, and local policymakers will be critical in discussions regarding the availability of BCRTA service and the local funding required to pay for it. If these partners further explore the potential of a sales tax to support transit in Butler County, it would be beneficial to engage the public and stakeholders regarding if this funding option is supported, what percentage sales tax is most supported, and if the sales tax should benefit roads in addition to transit.



## Introduction

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Identification of needed bus stop enhancements

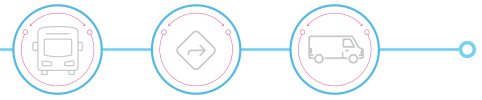


Transit funding and financing strategies



Support for existing and future BCRTA operations at transit facilities

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# Existing Conditions Analysis

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## Market Analysis

The market analysis identified the strongest transit corridors in Butler County and highlighted areas with relatively high transit need. This analysis consisted of two components: Transit Potential, which analyzes population and employment density, and Transit Need, which evaluates socio-economic characteristics. This analysis of Transit Potential and Transit Need was complemented by an analysis of regional travel patterns.

### TRANSIT POTENTIAL

Through an evaluation of population and employment density, the Transit Potential component of the market analysis found that the areas of highest transit potential in Butler County are concentrated in the City of Oxford. There are areas of moderate concentrations in Hamilton, Middletown, and north of Springdale. These places also stood out as areas with high concentrations of jobs or population. When combining the two metrics, however, many more places appear to be potentially supportive of fixed-route transit services, most notably West Chester Township along US-75, where there are high concentrations of medical services, community services, and housing. While West Chester does not have a sufficiently high Transit Potential to accommodate high-frequency service, microtransit or limited trips to connect other regions in Butler County to this area can provide connectivity and increase mobility.

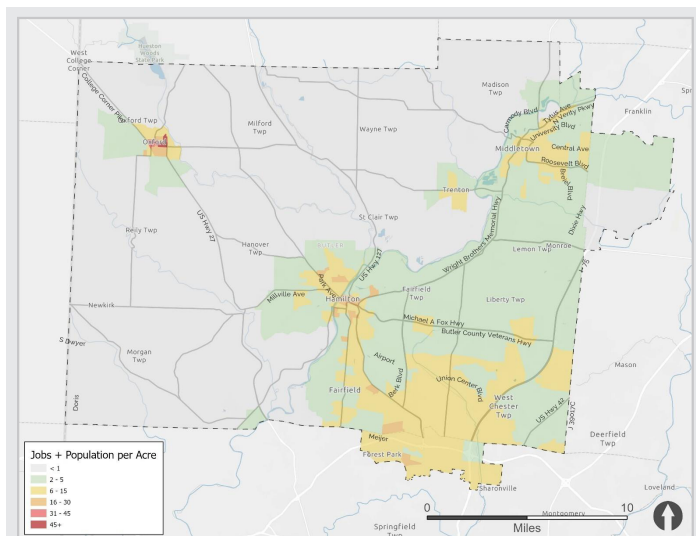


Figure 4: Countywide Transit Potential

### TRANSIT NEED

The Transit Need analysis combined the following demographic characteristics that measure transit propensity, or the likelihood that someone will take a trip on transit over a different mode, into a Transit Need Index:

- » People without access to an automobile, whether it be by choice or due to financial or legal reasons, often have no other transportation options besides using transit
- » People with disabilities, many of whom cannot drive and/or have difficulty driving
- » People with low incomes, typically because transit is less expensive than owning and operating a car.
- » Youth and young adults, defined as persons from age 15 to 24. This group has in recent years shown a greater interest in transit, walking, and biking than in driving
- » Older adults, who as they age, often become less comfortable or less able to operate a vehicle

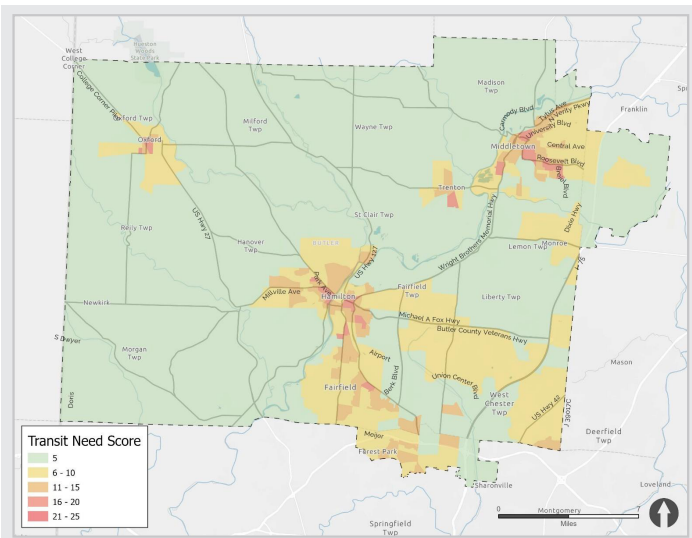
The Transit Need Index reveals that the populations most likely to need transit services are most prevalent in the following areas:

- » Hamilton, neighborhoods just east and west of downtown, along High Street and Main Street; neighborhoods southeast of downtown, along Hancock Avenue; neighborhoods along Pleasant Avenue, south and east of Miami University – Hamilton.
- » Oxford, neighborhoods west of Miami University, north of Chestnut Street, south of Withrow Street, and east of McGuffey Avenue
- » Trenton, along State Route 73 and South 1st Street
- » Middletown, neighborhoods along South Main Street, south of 8th Avenue and north of Buena Avenue; neighborhoods northeast of downtown,

between Route 4 and University Boulevard; neighborhoods east of University Boulevard, along Sutphin Street; and neighborhoods west of Breiel Boulevard, north of Lefferson Road and south of Grand Avenue

» **Fairfield**, near Nilles Road and Dixie Highway

The map in Figure 5 shows this Transit Need Index at the county-level, with green representing the lowest score on the index and red representing the highest score.



**Figure 5:** Countywide Transit Need Index

## REGIONAL TRAVEL PATTERNS

An assessment of regional travel patterns was the final step of the market analysis. In general, transit users want to access the same regional destinations as travelers who use other modes of transportation. Thus, to understand the overall market for transit service, it is helpful to identify the most prevalent travel patterns in the region, regardless of mode. The project team conducted this analysis of travel patterns in Butler County using the 2019 regional travel demand model maintained by the Ohio-Kentucky-Indiana Regional Council of Governments (OKI). This model was used to simulate the travel patterns of all individual travelers in the region between traffic analysis zones (TAZ). Key results from this analysis were:

» **Oxford** – The highest concentration of significant travel patterns in and around Oxford is focused on Miami University, with particularly

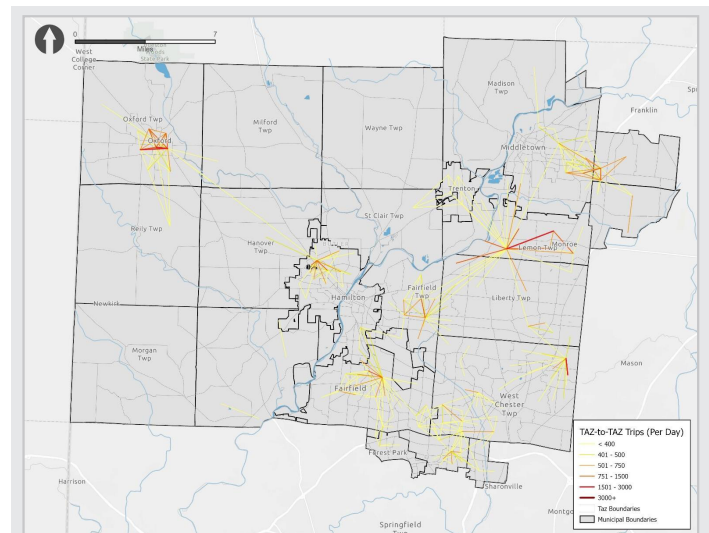
high travel volumes between the university area and western Oxford, where there are several apartment complexes.

» **Middletown** – There is a high volume of trips in Middletown between Hamilton Middletown Road, near Lemon and Madison, and a TAZ south of Middletown Road along Route R1. This TAZ has a shopping center, grocery store, and medical services. There are also high concentrations of significant travel patterns between Middletown and Franklin. Franklin is outside of Butler County but within an area served by existing BCRTA routes.

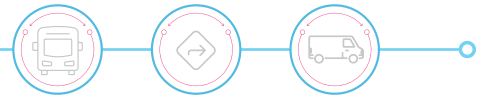
» **Hamilton** – The most significant travel volumes in Hamilton are concentrated in clusters to the northwest, south, and near Fairfield.

» **Countywide** – In addition to the travel patterns noted above, there are also concentrations of significant TAZ-to-TAZ travel volumes north of Springdale, around West Chester, and between Oxford and Hamilton.

» **Butler County to Cincinnati** – An assessment of how well the existing express Route 42X facilitates commuter trips to Cincinnati found that the most significant travel flow between Butler County and Cincinnati is between West Chester and Uptown Cincinnati, a travel pattern that is not currently served by Route 42X.



**Figure 5:** Countywide Transit Need Index



## Service Analysis

The project team conducted a service analysis to identify the strengths and weaknesses of each BCRTA route and to highlight possible opportunities to improve services in the context of the market analysis and feedback from public and stakeholder engagement. As part of this analysis, the project team created a high-level route profile that describes each route's alignment and service patterns, major markets served, service and operational characteristics, productivity and performance characteristics, along with the route's strengths, weaknesses, and potential opportunities.

### STRENGTHS, WEAKNESSES, AND OPPORTUNITIES

A summary of common strengths, weaknesses, and opportunities for BCRTA routes is included below. A full list of strengths, weaknesses, and opportunities by route is included in the route profiles.

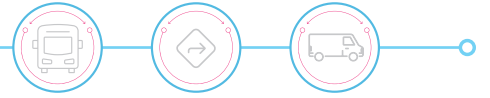
<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>
<ul style="list-style-type: none"> <li>» <b>Destinations served</b> – Most BCRTA routes serve some type of regionally significant destination, essential service (e.g., grocery stores, medical facilities), employment/ educational center, or other strong anchor/activity generator</li> <li>» <b>Intuitive service schedules</b> – Many routes have easy-remember service frequencies (e.g., every 15 minutes)</li> <li>» <b>Transfer potential</b> – Most routes have multiple transfer opportunities to other BCRTA routes</li> <li>» <b>High frequency service and high ridership on Oxford routes</b> – The Oxford routes serving the Miami University area operate high frequency service and have high ridership and productivity relative to other BCRTA routes</li> <li>» <b>Facilitation of regional travel</b> – Routes R1, R3, and R6 provide transit connections across the region</li> </ul>	<ul style="list-style-type: none"> <li>» <b>Lack of bidirectional service</b> – The lack of bidirectional service necessitates out-of-direction travel for riders and contributes to overcrowding on some routes</li> <li>» <b>Poor on-time performance</b> – All but two routes have poor on-time performance. For some routes, this may be related to very frequent stop spacing</li> <li>» <b>Low ridership/productivity</b> – Many routes have low ridership at stops other than their primary anchors. Many routes have low ridership per trip</li> <li>» <b>Infrequent service</b> – Many routes have infrequent service</li> <li>» <b>Unintuitive routing</b> – Multiple routes were identified to have routing characteristics that likely cause customer confusion (e.g., routes that serve multiple, distinct markets on one route)</li> </ul>	<ul style="list-style-type: none"> <li>» <b>Microtransit</b> – Microtransit could be a potential service option to replace low-performing segments of some routes</li> <li>» <b>On-time performance improvements</b> – Streamlining routes and reducing stop spacing could help to improve on-time performance</li> <li>» <b>Consolidate routes</b> – Consolidating the highest ridership segments of the Blue, Gold and Red Lines into one or two strong-performing routes could reduce redundancy</li> <li>» <b>Bidirectional service</b> – Restructuring one-way loop routes to provide bidirectional service could simplify routing</li> <li>» <b>Year-round service for key destinations</b> – Some destinations in Oxford, including a hospital and shopping center, are currently served by U routes. Serving these destinations with non-university routes would provide more consistent service and may be more welcoming to non-student riders who may not feel comfortable using university-branded routes</li> </ul>

## Route Profiles

Profiles for each of the existing BCRTA routes are provided on the following pages.







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## ROUTE: R1 | R1 - Hamilton/Middletown Shuttle

### DESCRIPTION:

R1 operates between the Hamilton German Village Historic District and the Middletown Historic District via Excello

### KEY POINTS OF INTEREST

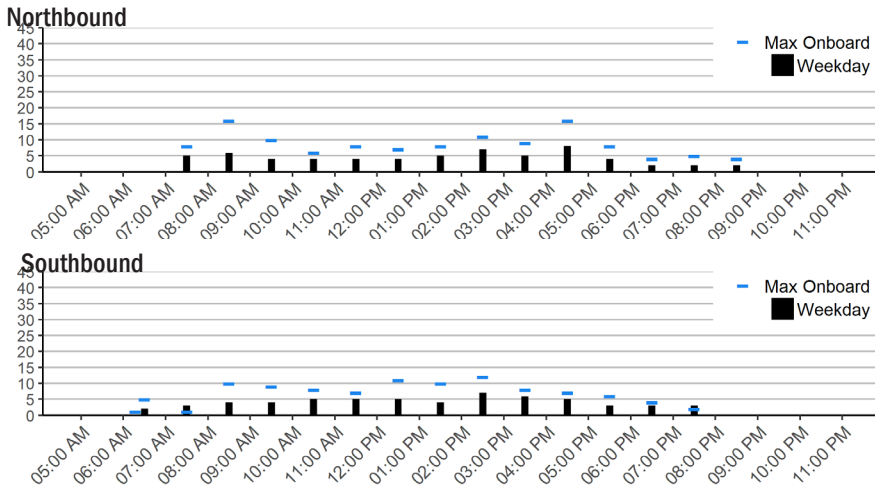
Bridgewater Falls, Butler Tech: Fairfield Township Campus – Central Campus, Butler Tech Liberty Township Campus, Butler Tech LeSourdsville Campus, and Kohl's E-Commerce Distribution Center, Kroger

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
<b>Weekday</b>	86.4	9/13	3.2	10/13	0.2	11/13	5.8	10/13
<b>Saturday</b>	No Service	-/7	No Service	-/7	No Service	-/7	No Service	-/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)

Route only operates Weekday service.

### Operating Characteristics\*

<b>Weekday</b>	
<b>Span</b>	6:17 a.m. - 9:24 p.m.
<b>Frequency</b>	60 min Peak / 60 min Off-Peak
<b>Saturday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min Peak / - min Off-Peak
<b>Sunday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min Peak / - min Off-Peak

### On-Time Performance



### Annual Statistics

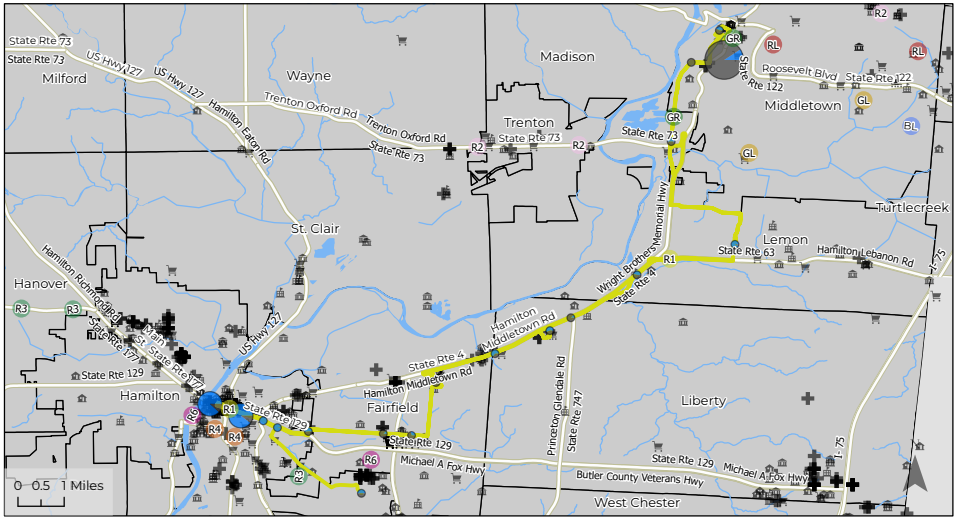
		Rank
Revenue Hours	6,885	3/13
Revenue Miles	141,270	1/13
Ridership	22,029	9/13

\*Please note that the trip times in trip ridership charts reflect data from the February 2022 APC exports, while the the span and frequency of service to the right reflect January 2022 GTFS service data.

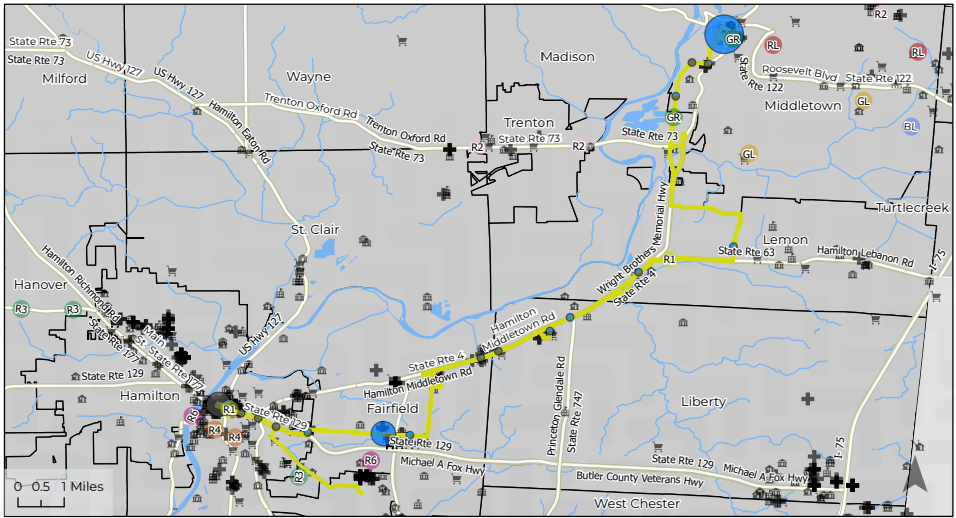
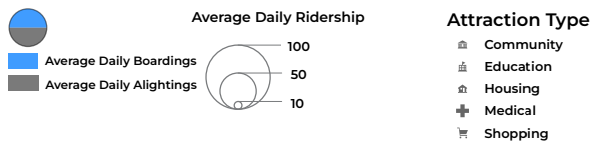


# Weekday Ridership by Stop

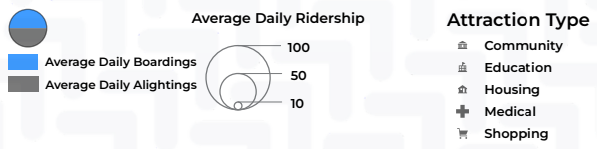
(February 2022)



**R1 - MTS to Market Street Station - Northbound**



**R1 - Market Street Station to MTS Transit - Southbound**



## Route Analysis

### Strengths

- Facilitates regional travel as only BCRTA route linking Hamilton and Middletown
- Provides job and education access opportunities with connections to several Butler Tech campuses and a Kohl's distribution center
- Offers easy-to-remember hourly service frequency on weekdays. Provides multiple connection opportunities to other BCRTA services in Hamilton and Middletown

### Weaknesses

- Very poor on-time performance with fewer than 30% of timepoints served on time
- Five or fewer passengers on most trips
- Low ridership at most stops outside of Hamilton and Middletown
- Some redundancy with Route R2 in Middletown and R4 in Hamilton
- Limited coverage in Monroe, despite ridership opportunities like Kroger, Monroe High School, Butler Tech Monroe Campus, and employers in the Garver Road corridor.

### Opportunities

- Consider streamlining route to improve on-time performance
- Eliminate deviation to Kohl's distribution center to help streamline route
- Serve Monroe (including Kohl's distribution center) with microtransit service to provide local circulation and first/last mile connections to Route R1

## ROUTE: R2 | R2 - Oxford/Middletown Shuttle

### DESCRIPTION:





This route is currently suspended - R2 connects Oxford and Middletown via route 73

*Service performance shown from FY 2021 statistics.*

### KEY POINTS OF INTEREST

Miami Station, Miami University - Oxford, Miami University - Middletown, MTS Station

### Daily Statistics

	 Average Daily Boardings	Rank	 Passengers per Hour	Rank	 Passengers per Mile	Rank	 Passengers per Trip	Rank
<b>Weekday</b>	40.6	11/13	2.9	11/13	0.1	12/13	5.1	12/13
<b>Saturday</b>	No Service	-/7	No Service	-/7	No Service	-/7	No Service	-/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3



### Weekday\* Ridership by Trip (February 2022)

Ridership data unavailable due to suspended service


### Operating Characteristics\*

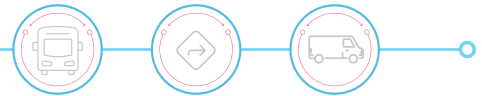
Weekday			
<b>Span</b>	6:22 a.m. - 8:20 p.m.		
<b>Frequency</b>	120 min	120 min	
	Peak	Off-Peak	
Saturday			
<b>Span</b>	No Service		
<b>Frequency</b>	- min	- min	
	Peak	Off-Peak	
Sunday			
<b>Span</b>	No Service		
<b>Frequency</b>	- min	- min	
	Peak	Off-Peak	

### On-Time Performance

Timepoint Observations		
Early	On-Time	Late

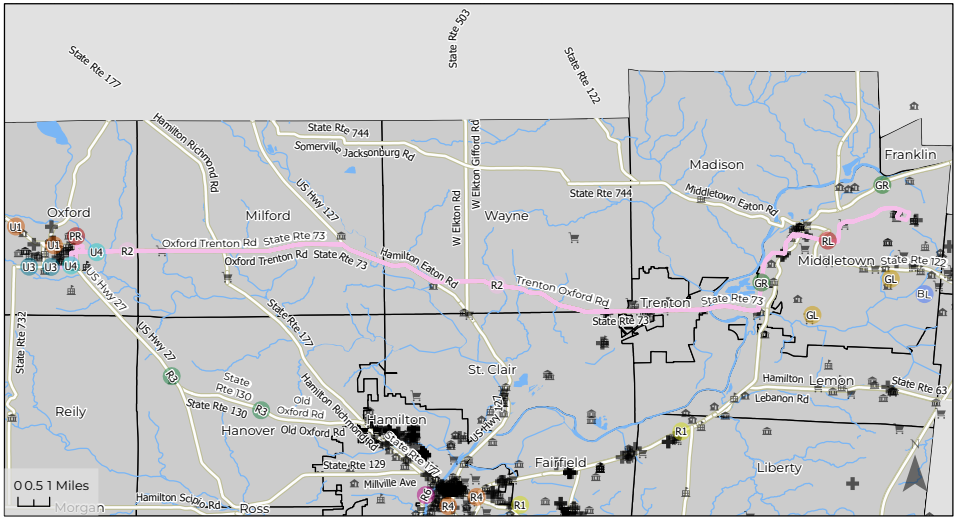
### Annual Statistics

		Rank
 Revenue Hours	3,570	7/13
 Revenue Miles	95,625	3/13
 Ridership	10,359	11/13

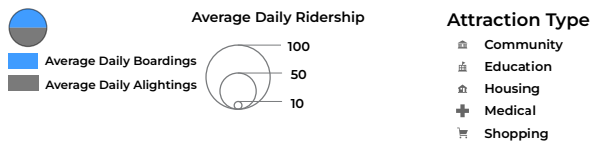


# Weekday Ridership by Stop

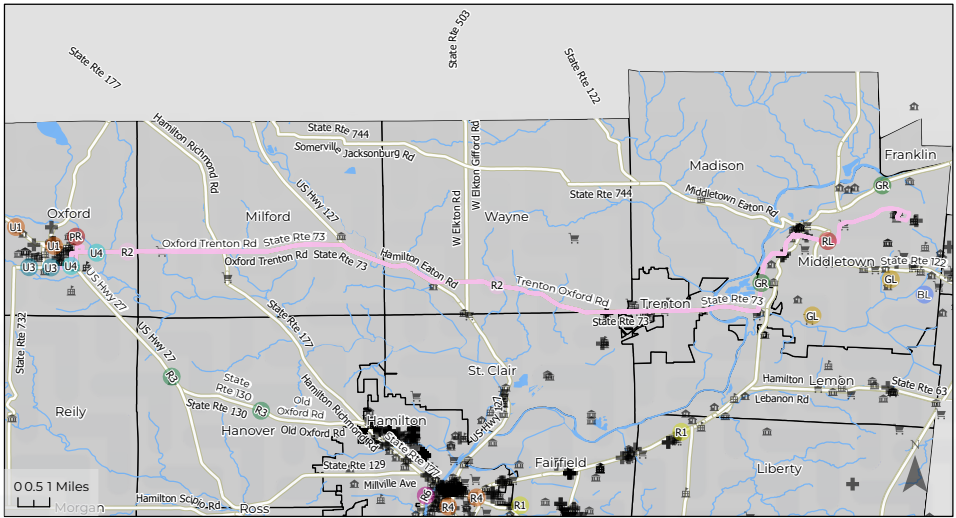
(February 2022)



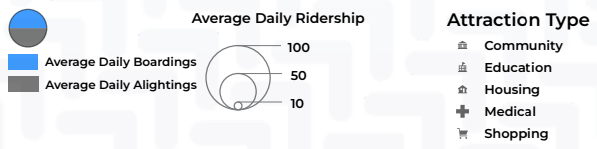
**R2 - Oxford to Middletown - Inbound**



Ridership data unavailable due to suspended service



**R2 - Oxford to Middletown - Outbound**



## Route Analysis

### Strengths

- Facilitated (service suspended) regional travel as only BCRTA route linking Oxford and Middletown
- Linked Miami University campuses in Oxford and Middletown
- Provided multiple connection opportunities to other BCRTA services in Oxford and Middletown

### Weaknesses

- Service currently suspended
- Few ridership opportunities between Trenton and Oxford due to low density environment
- Some redundancy with Route R1 in Middletown

### Opportunities

- Consider operating on-demand service between Oxford and Middletown using microtransit vehicles - if no trips are requested between cities, vehicles can continue to support local microtransit service within Middletown or Oxford



## ROUTE: R3 | R3 - Hamilton/Oxford Connector

### DESCRIPTION:

R3 operates between Fairfield and Oxford via the Hamilton German Village Historic District, McGonigle, and Edgewood

### KEY POINTS OF INTEREST

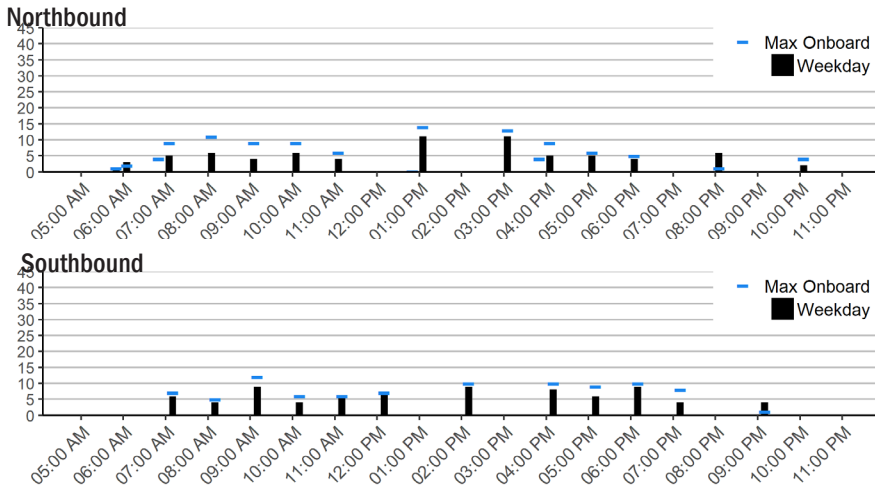
Miami University Western Campus, Miami University Hamilton, Plaza West Shopping Center, Ohio Bureau of Motor Vehicles, TriHealth Bethesda Butler Hospital, Meijer Park and Ride, and Ohio Means Jobs

*\* On-Time Performance and Ridership data from February 2022  
Other figures from FY 2021 statistics.*

### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
<b>Weekday</b>	155.6	6/13	4.9	9/13	0.3	9/13	9.2	7/13
<b>Saturday</b>	No Service	-/7	No Service	-/7	No Service	-/7	No Service	-/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)

Route only operates Weekday service.

### Operating Characteristics\*

<b>Weekday</b>	
<b>Span</b>	5:50 a.m. - 11:55 p.m.
<b>Frequency</b>	60 min Peak / 60 min Off-Peak
<b>Saturday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min Peak / - min Off-Peak
<b>Sunday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min Peak / - min Off-Peak

### On-Time Performance

Timepoint Observations		
Early	On-Time	Late
14%	25%	60%

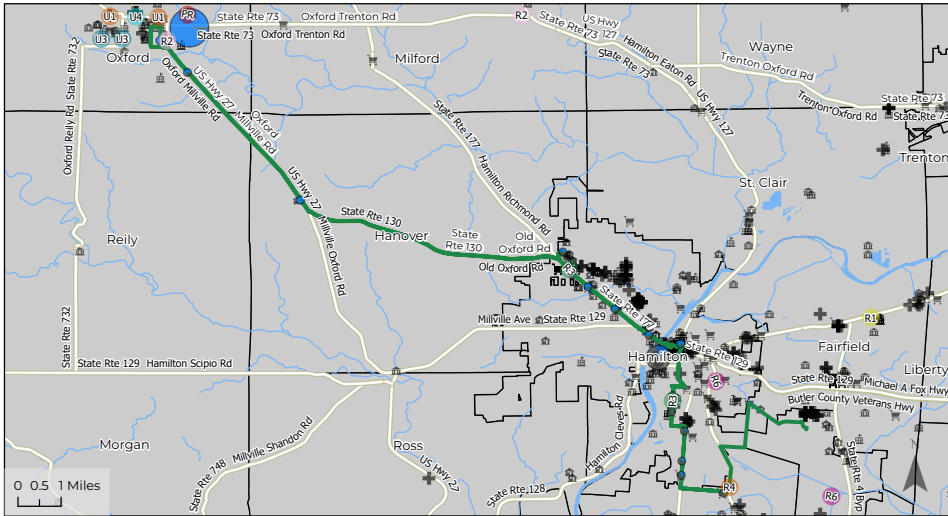
### Annual Statistics

		Rank
Revenue Hours	8,160	2/13
Revenue Miles	127,755	2/13
Ridership	39,672	6/13

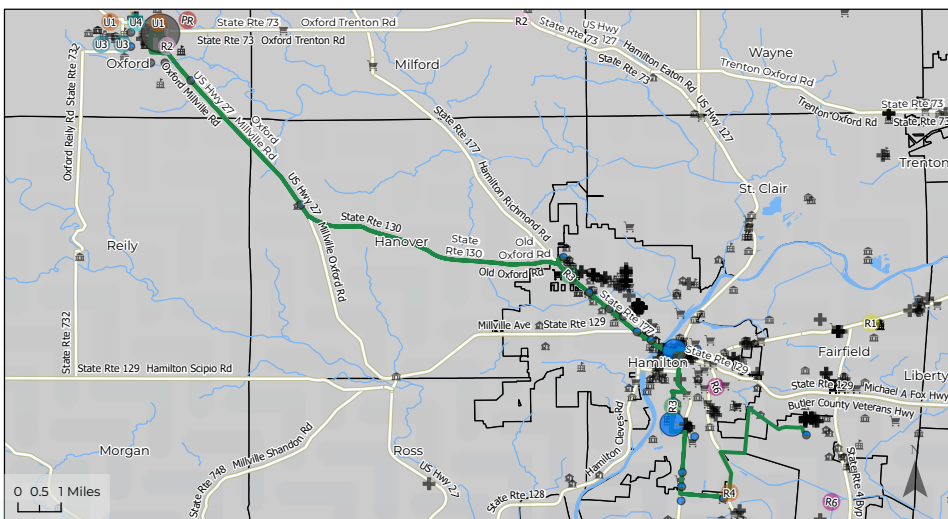
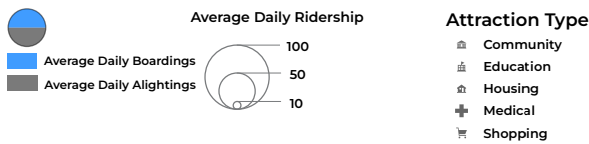


## Weekday Ridership by Stop

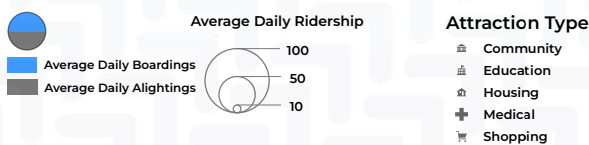
(February 2022)



**R3 - Fairfield to Miami Station - Northbound**



**R3 - Miami Station to Fairfield - Southbound**



## Route Analysis

### Strengths

- Facilitates regional travel as only BCRTA route linking Oxford and Hamilton
- Serves several regionally significant destinations including TriHealth Bethesda Butler Hospital, Walmart, and Miami University campuses in Oxford and Hamilton
- Provides multiple connection opportunities to other BCRTA services in Oxford and Hamilton
- Extensive span of service on weekdays
- Relatively strong ridership on the Miami University campuses and at Market Street Station

### Weaknesses

- Very poor on-time performance with fewer than 30% of timepoints served on time
- Extended service gaps (more than one hour) at several points during the service day
- Low ridership at most stops outside of Hamilton and Oxford
- No weekend service

### Opportunities

- Consider truncating route at Miami University Hamilton Campus to improve on-time performance
- Introduce local fixed-route or microtransit service in Hamilton to allow Route R3 to focus on regional service
- Provide more consistent service by restructuring schedule to eliminate excessive time gaps.

## ROUTE: R4 | R4 - Tri-County Shuttle

### DESCRIPTION:

This route is currently suspended - R4 operates between Hamilton and Springfield to the Tri-County Mall, via Gilmore Road

*\* On-Time Performance and Ridership data from February 2022  
Other figures from FY 2021 statistics.*

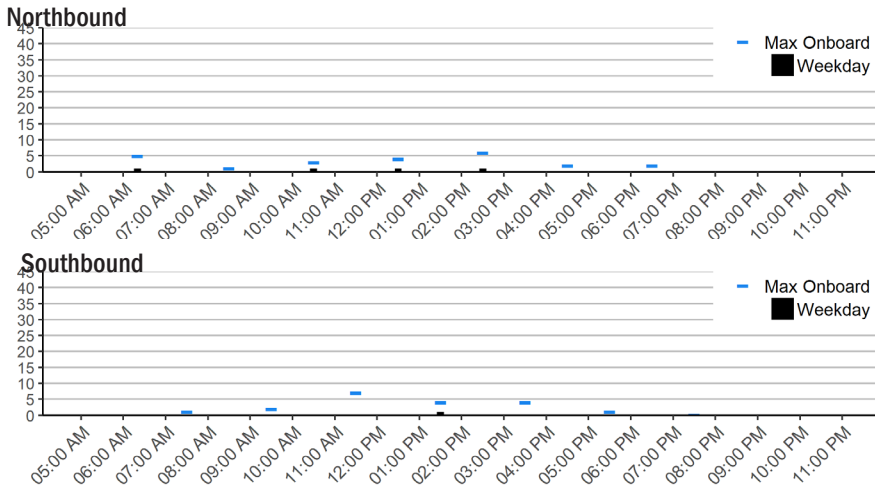
### KEY POINTS OF INTEREST

BCRTA Headquarters, Market Street Station, Erie Blvd Shopping Center, Symmes Rd. Shopping Center, Winton Kemper Plaza, Tri-County Mall

### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
<b>Weekday</b>	37.7	12/13	2.9	12/13	0.2	10/13	5.4	11/13
<b>Saturday</b>	No Service	-/7	No Service	-/7	No Service	-/7	No Service	-/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)

Route only operates Weekday service.

### Operating Characteristics\*

<b>Weekday</b>	
<b>Span</b>	6:20 a.m. - 8:23 p.m.
<b>Frequency</b>	120 min (Peak) / 120 min (Off-Peak)
<b>Saturday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)
<b>Sunday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)

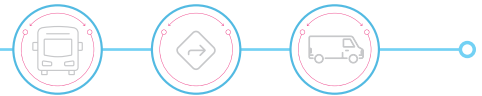
### On-Time Performance

#### Timepoint Observations

Early	On-Time	Late
14%	32%	54%

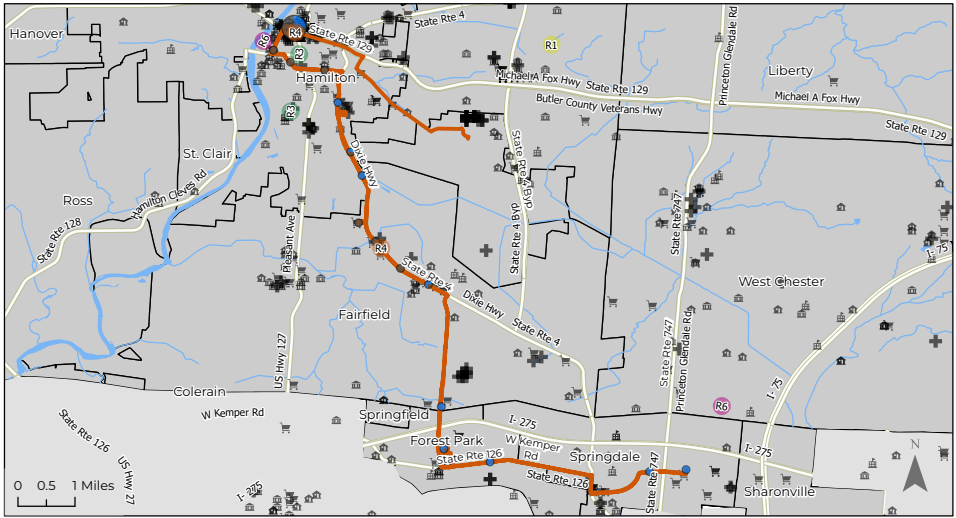
### Annual Statistics

		Rank
Revenue Hours	3,315	12/13
Revenue Miles	47,430	10/13
Ridership	9,613	12/13

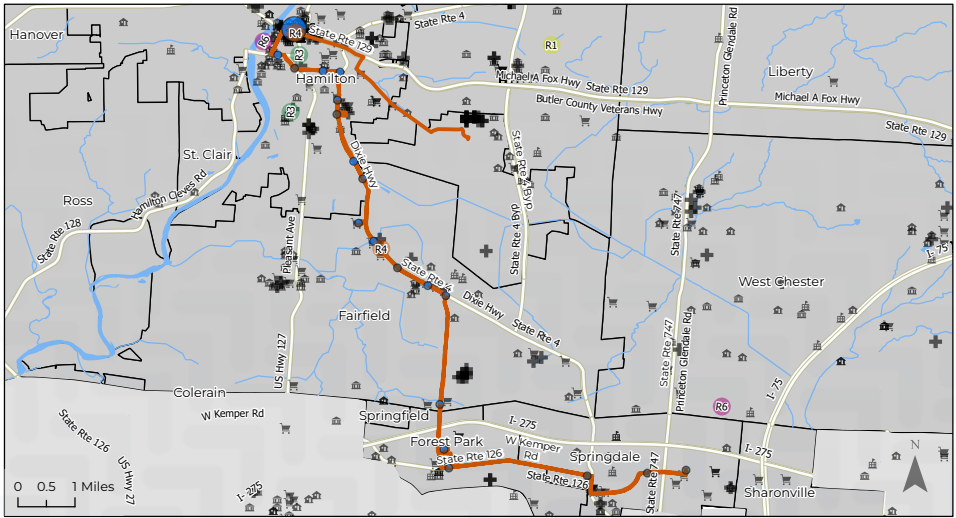
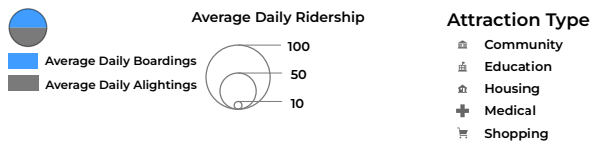


# Weekday Ridership by Stop

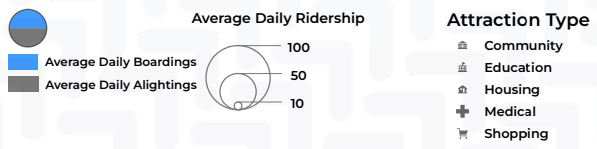
(February 2022)



**R4 - Tri-County Shuttle - Inbound**



**R4 - Tri-County Shuttle - Outbound**



## Route Analysis

### Strengths

- Facilitated (service suspended) regional travel by linking Springdale and Hamilton
- Provided multiple connection opportunities to other BCRTA services in Hamilton
- Served several retail and medical centers, including Mercy Health Fairfield Hospital, Tri-County Mall, and Kroger

### Weaknesses

- Very poor on-time performance with fewer than 30% of timepoints served on time
- Five or fewer passengers on all trips
- Low ridership Low ridership at all stops other than Market Street Station in Hamilton and Tri-County Mall
- Infrequent 120 minute headways throughout day.

### Opportunities

- Consider integrating Hamilton coverage into a restructured local network in Hamilton
- Replace service outside of Hamilton with microtransit service focused primarily on local coverage in Springdale, but combined with on-demand trips at given times to Hamilton, reserved through the microtransit app.

## ROUTE: R6 | R6 - Job Connector

### DESCRIPTION:

R6 operates between Hamilton and Springfield to the Tri-County Mall, via route 747

### KEY POINTS OF INTEREST

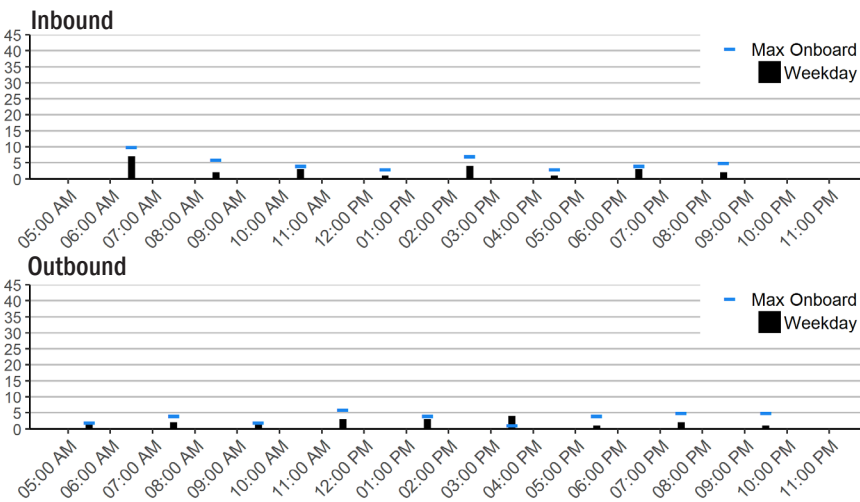
Vora Technology Park, Fairfield Crossing, Fairfield High School, Princeton Crossing, Jungle Jim's International Market, Habitat for Humanity, Hamilton Enterprise Park, Koch Foods, AstraZeneca, Tyson Foods, and Tri-County Mall

*\* On-Time Performance and Ridership data from February 2022  
Other figures from FY 2021 statistics.*

### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
<b>Weekday</b>	28.9	13/13	1.8	13/13	0.1	13/13	3.2	13/13
<b>Saturday</b>	No Service	-/7	No Service	-/7	No Service	-/7	No Service	-/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)

Route only operates Weekday service.

### Operating Characteristics\*

<b>Weekday</b>	
<b>Span</b>	4:45 a.m. - 9:53 p.m.
<b>Frequency</b>	120 min (Peak) / 120 min (Off-Peak)
<b>Saturday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)
<b>Sunday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)

### On-Time Performance

#### Timepoint Observations

Early	On-Time	Late
15%	24%	61%

### Annual Statistics

		Rank
Revenue Hours	4,080	4/13
Revenue Miles	68,595	5/13
Ridership	7,361	13/13

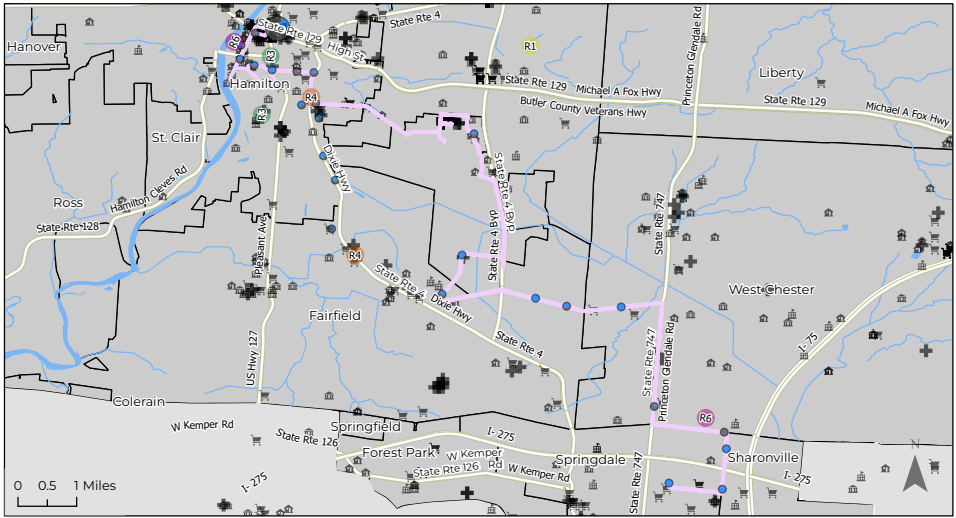
\*Please note that the trip times in trip ridership charts reflect data from the February 2022 APC exports, while the the span and frequency of service to the right reflect January 2022 GTFS service data.



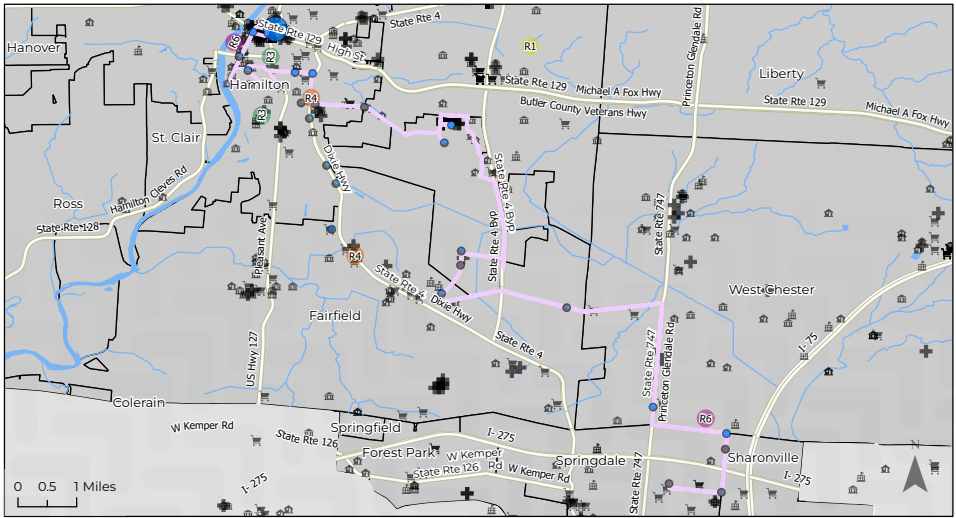
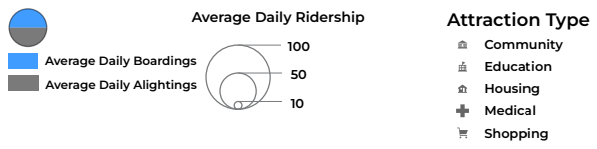


# Weekday Ridership by Stop

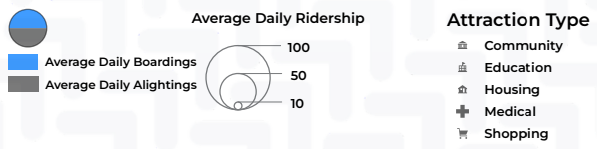
(February 2022)



**R6 - Tri-County Mall to Market Street Station - Inbound**



**R6 - Market Street Station to Tri-County Mall - Outbound**



## Route Analysis

### Strengths

- Facilitates regional travel by linking Springdale and Hamilton
- Provides bi-directional service
- Serves several regionally significant destinations including Tri-County Mall
- TriHealth Bethesda Butler Hospital, Fairfield High School, and the BMV office in Hamilton
- Multiple connection opportunities to other BCRTA services in Hamilton

### Weaknesses

- Very poor on-time performance with fewer than 30% of timepoints served on time
- Five or fewer passengers on most trips
- Low ridership at all stops other than Market Street Station in Hamilton and Tri-County Mall
- Infrequent 120 minute headways throughout day.

### Opportunities

- Consider integrating Hamilton coverage into a restructured local network in Hamilton
- Replace service outside of Hamilton with microtransit service focused primarily on local coverage in Springdale, but combined with on-demand trips at given times to Hamilton, reserved through the microtransit app.

## ROUTE: U1 | U1 - Campus Core

### DESCRIPTION:





Miami University to Walmart Supercenter Oxford via College Corner Pike

### KEY POINTS OF INTEREST

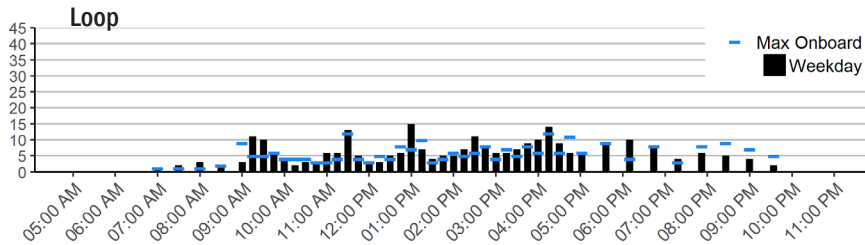
McCullough-Hyde Memorial Hospital and Wonderful International Market

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

### Daily Statistics

	 Average Daily Boardings	Rank	 Passengers per Hour	Rank	 Passengers per Mile	Rank	 Passengers per Trip	Rank
Weekday	529.4	3/13	24	2/13	2.7	2/13	14.7	3/13
Saturday	294.8	2/7	29.5	2/7	2.6	2/7	16.4	2/7
Sunday	178.6	2/3	17.9	2/3	1.6	2/3	9.9	2/3

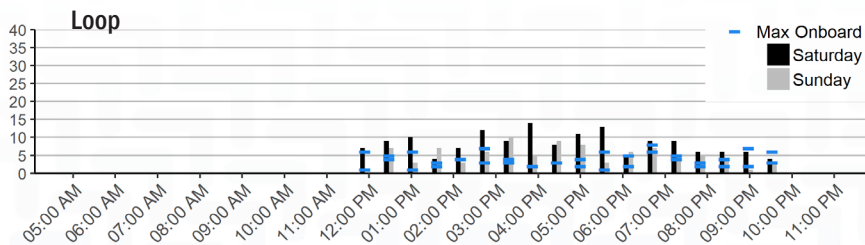
### Weekday\* Ridership by Trip (February 2022)



### Operating Characteristics\*

Weekday	
<b>Span</b>	7:00 a.m. - 10:05 p.m.
<b>Frequency</b>	35 min (Peak) / 35 min (Off-Peak)
Saturday	
<b>Span</b>	11:54 a.m. - 10:03 p.m.
<b>Frequency</b>	35 min (Peak) / 35 min (Off-Peak)
Sunday	
<b>Span</b>	11:54 a.m. - 10:03 p.m.
<b>Frequency</b>	35 min (Peak) / 35 min (Off-Peak)

### Weekend Ridership by Trip (February 2022)




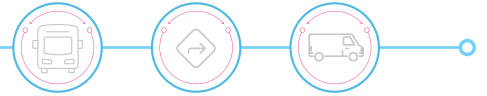
### On-Time Performance

#### Timepoint Observations

Early	On-Time	Late
12%	63%	25%

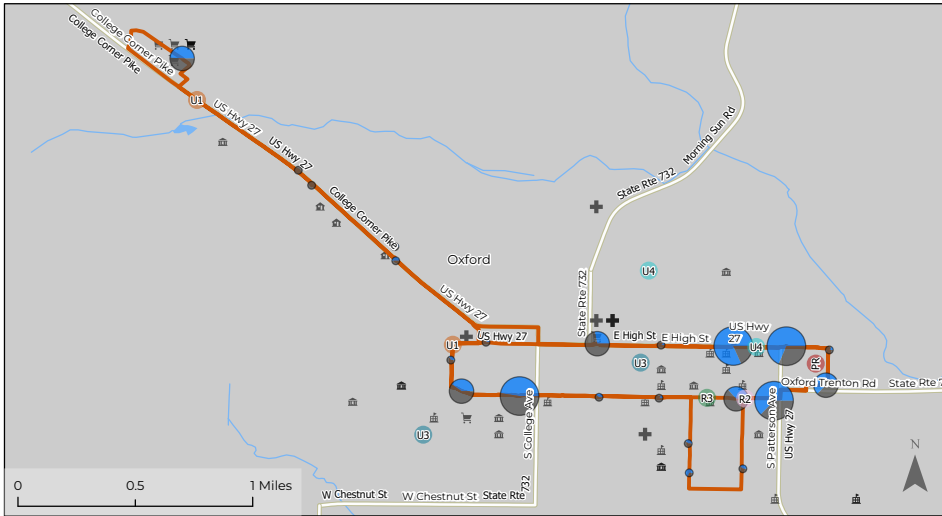
### Annual Statistics

		Rank
 Revenue Hours	4,060	5/13
 Revenue Miles	36,342	11/13
 Ridership	97,491	3/13

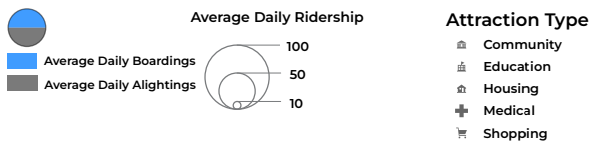


## Weekday Ridership by Stop

(February 2022)



**U1 - Campus Core - Loop**



## Route Analysis

### Strengths

- Frequent 15-minute circulator service for much of the service day on weekdays
- High ridership and productivity
- Provides campus circulation and campus with off-campus housing
- Provides key link to retail and grocery destinations for University community.

### Weaknesses

- 35 minute headway prevents route from having clockface frequencies
- Walmart extension breaks the route's fairly compact loop and takes riders out of direction before completing the loop
- Some Oxford residents may not feel comfortable utilizing "U" route associated with Miami University
- Confusing and inconsistent schedule information shown online - for example, online map shows service on Oak Street while PDF map shows South Campus Avenue

### Opportunities

- Consider shifting Walmart service to a non-University route to provide all-day service and a more inclusive rider environment
- Restructure route to provide more bi-directional service between Walmart and multi-family housing in Oxford
- Review route and schedule information published online to ensure accuracy and consistency

## ROUTE: U3 | U3 - Tollgate Loop

### DESCRIPTION:

Miami University circulator

### KEY POINTS OF INTEREST

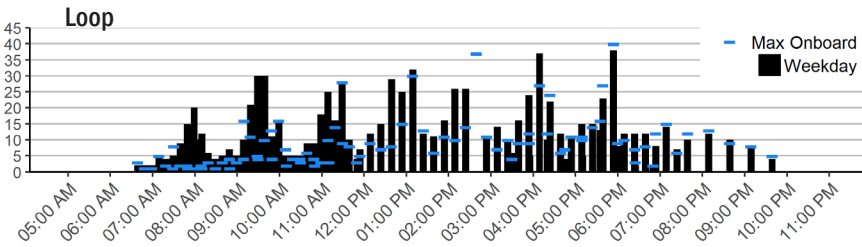
Miami Station, Miami University, Chestnut Place Apartments, and Oxford West Apartments

\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.

### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
Weekday	903.3	1/13	20.9	4/13	2.4	3/13	13.5	5/13
Saturday	321.6	1/7	32.2	1/7	4.1	1/7	15.3	3/7
Sunday	272.9	1/3	27.3	1/3	3.5	1/3	15.2	1/3

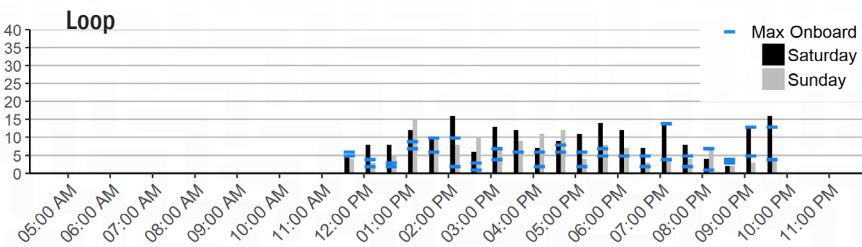
### Weekday\* Ridership by Trip (February 2022)



### Operating Characteristics\*

Weekday	
<b>Span</b>	6:39 a.m. - 10:02 p.m.
<b>Frequency</b>	30 min (Peak) / 30 min (Off-Peak)
Saturday	
<b>Span</b>	11:39 a.m. - 10:02 p.m.
<b>Frequency</b>	30 min (Peak) / 30 min (Off-Peak)
Sunday	
<b>Span</b>	11:39 a.m. - 10:02 p.m.
<b>Frequency</b>	30 min (Peak) / 30 min (Off-Peak)

### Weekend Ridership by Trip (February 2022)



### On-Time Performance

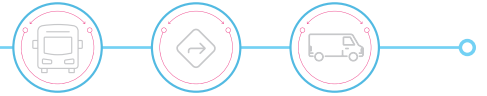
#### Timepoint Observations

Early	On-Time	Late
14%	62%	24%

### Annual Statistics

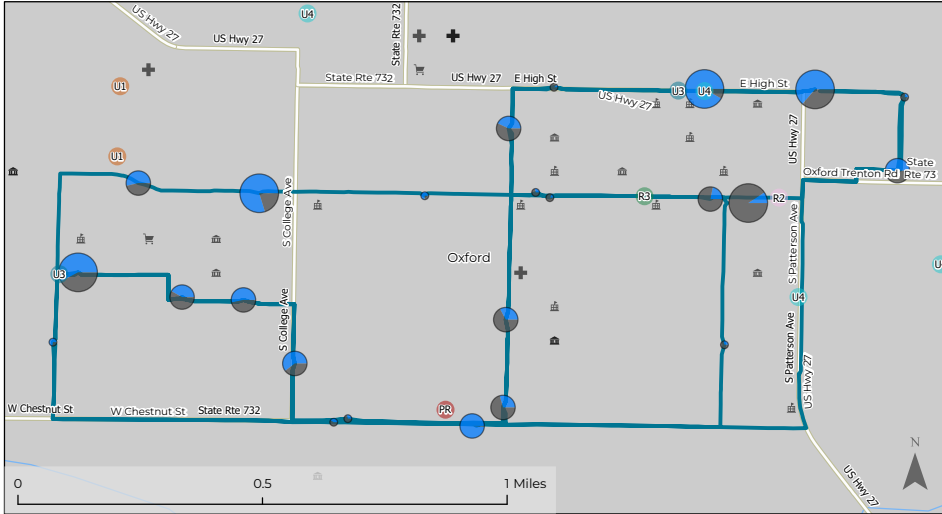
		Rank
Revenue Hours	10,995	1/13
Revenue Miles	94,737	4/13
Ridership	230,330	1/13

\*Please note that the trip times in trip ridership charts reflect data from the February 2022 APC exports, while the the span and frequency of service to the right reflect January 2022 GTFS service data.

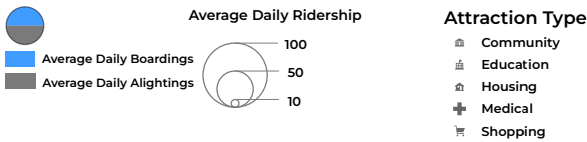


# Weekday Ridership by Stop

(February 2022)



**U3 - Tollgate - Loop**



## Route Analysis

### Strengths

- Very frequent service
- Provides on-campus circulation, and links to off-campus housing and retail/groceries seven day a week

### Weaknesses

- One-way service design results in overcrowding on some trips as passengers stay on buses traveling out-of-direction to reach final destinations
- Multiple service variants may cause confusion among riders
- Relatively low ridership on non-primary service variant
- Poor on-time performance with just over 60% of timepoints served on time

### Opportunities

- Simplify route by operating single consistent and bi-directional variant connecting key activity generators
- Review route and schedule information published online to ensure accuracy and consistency



## ROUTE: U4 | U4 - Western Campus/North Loop

### DESCRIPTION:





This route is currently suspended - Miami University to Miami Station

### KEY POINTS OF INTEREST

Uptown Park

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

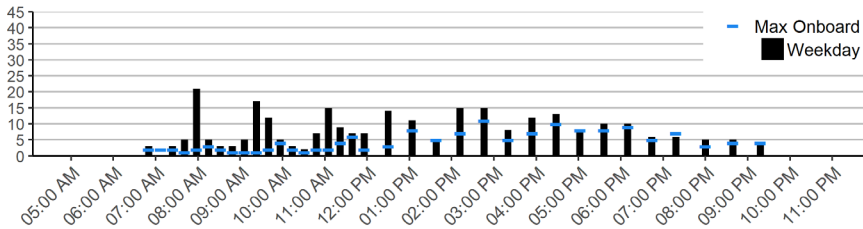
### Daily Statistics

	 Average Daily Boardings	Rank	 Passengers per Hour	Rank	 Passengers per Mile	Rank	 Passengers per Trip	Rank
Weekday	452.1	4/13	21	3/13	2.3	4/13	14.1	4/13
Saturday	110.8	4/7	11.1	4/7	1.1	4/7	6.9	6/7
Sunday	115.2	3/3	11.5	3/3	1.1	3/3	5.5	3/3

### Weekday\* Ridership by Trip

(February 2022)

#### Loop



### Operating Characteristics\*

#### Weekday

**Span** 6:50 a.m. - 9:52 p.m.

**Frequency** 30 min (Peak) / 30 min (Off-Peak)

#### Saturday

**Span** 11:36 a.m. - 9:55 p.m.

**Frequency** 45 min (Peak) / 45 min (Off-Peak)

#### Sunday

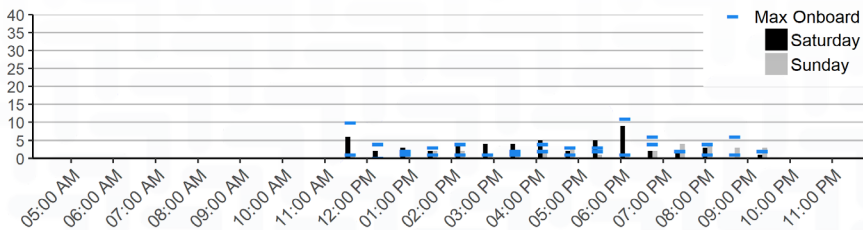
**Span** 11:36 a.m. - 9:55 p.m.

**Frequency** 40 min (Peak) / 40 min (Off-Peak)

### Weekend Ridership by Trip

(February 2022)

#### Loop






### On-Time Performance

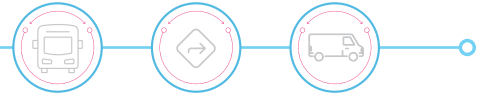
#### Timepoint Observations

Early	On-Time	Late
13%	62%	25%

### Annual Statistics

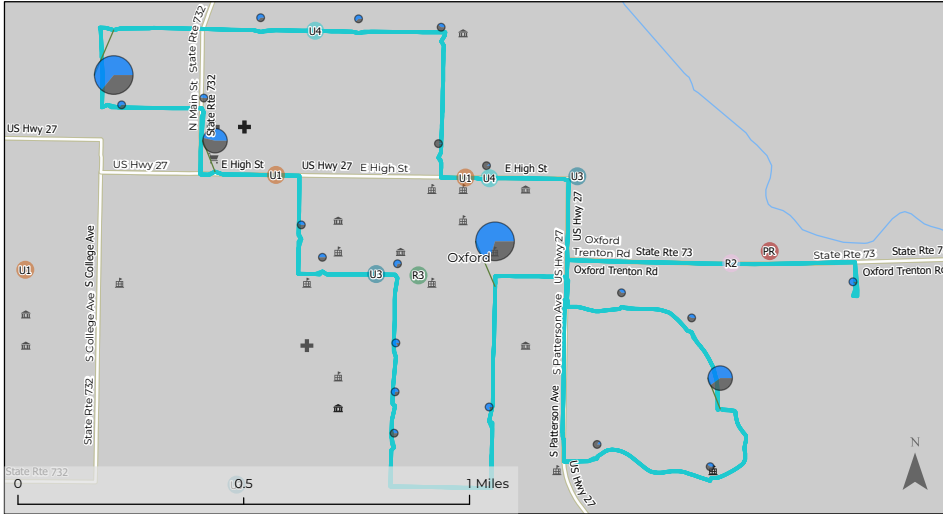
		Rank
 Revenue Hours	3,740	6/13
 Revenue Miles	34,254	12/13
 Ridership	78,445	4/13

\*Please note that the trip times in trip ridership charts reflect data from the February 2022 APC exports, while the the span and frequency of service to the right reflect January 2022 GTFS service data.

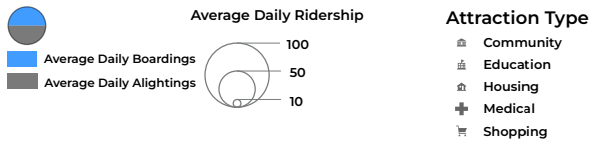


# Weekday Ridership by Stop

(February 2022)



**U4 - Western Campus/North - Loop**



## Route Analysis

### Strengths

- Only route serving neighborhoods north of High Street
- Only route serving Western College Drive
- Provides key connection to McCullough-Hyde Memorial Hospital
- Relatively frequent service
- Operates seven days per week
- Fairly strong ridership and productivity

### Weaknesses

- Operates as one-way loop, which forces out-of-direction travel for most riders on either their outbound or return trip
- Some Oxford residents accessing McCullough-Hyde Memorial Hospital may not feel comfortable utilizing “U” route associated with Miami University
- Poor on-time performance with just over 60% of timepoints served on time
- Non-clockface frequencies make schedule difficult to remember
- Lack of online schedule information suggests that route may be tied to the academic calendar

### Opportunities

- Consider operating a version of the route year-round to ensure uninterrupted service to McCullough-Hyde Memorial Hospital
- Serve hospital with a non-University route
- Restructure U4 Route, along with other Oxford routes, into a network of mostly bi-directional routes
- Revise schedule to provide clockface frequencies.

## ROUTE: PR | Park and Ride

### DESCRIPTION:

This route only operates part of the year when Miami University is in service - Miami University to Chestnut Field Park & Ride

### KEY POINTS OF INTEREST

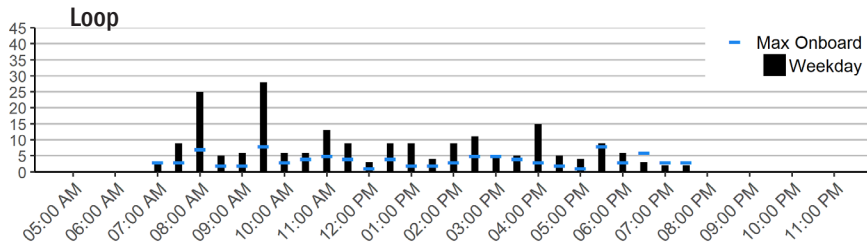
Campus parking lots (Chestnut Fields Lot and Ditmer Lot), Armstrong, Farmer School of Business, and Miami Station

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
<b>Weekday</b>	652.6	2/13	50.2	1/13	5.8	1/13	25.1	1/13
<b>Saturday</b>	No Service	-7	No Service	-7	No Service	-7	No Service	-7
<b>Sunday</b>	No Service	-3	No Service	-3	No Service	-3	No Service	-3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)

Route only operates Weekday service.

### Operating Characteristics\*

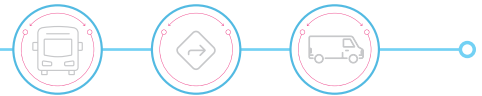
<b>Weekday</b>	
<b>Span</b>	7:00 a.m. - 6:55 p.m.
<b>Frequency</b>	30 min (Peak) / 30 min (Off-Peak)
<b>Saturday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)
<b>Sunday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)

### On-Time Performance

Timepoint Observations		
Early	On-Time	Late
13%	61%	26%

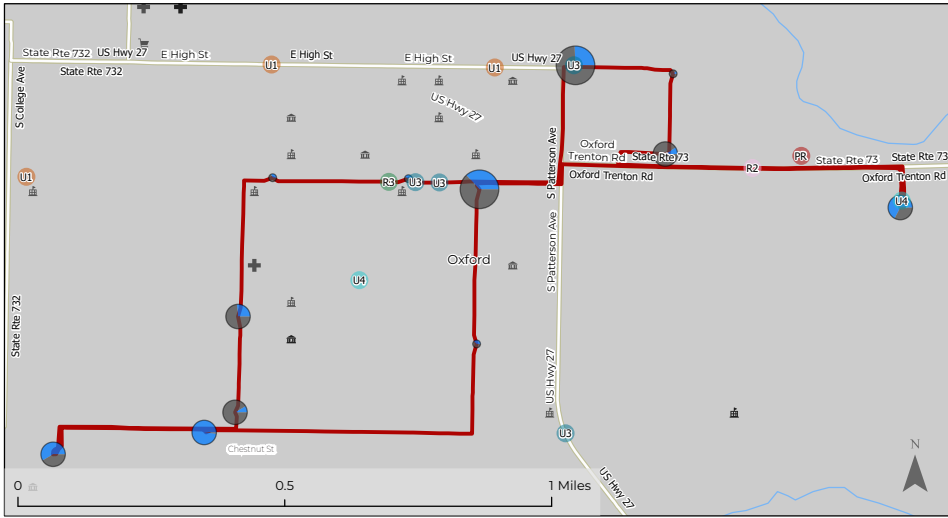
### Annual Statistics

		Rank
Revenue Hours	2,080	13/13
Revenue Miles	17,920	13/13
Ridership	104,422	2/13

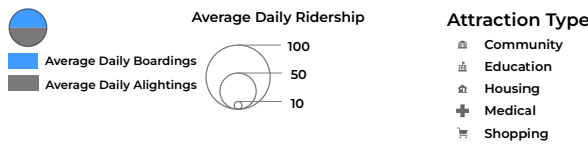


# Weekday Ridership by Stop

(February 2022)



**Park and Ride - Loop**



## Route Analysis

### Strengths

- Provides easy-to-remember half-hour frequency throughout the service day on weekdays
- Links peripheral parking lots and South Campus Garage to core of campus, including Miami Station
- High ridership and productivity

### Weaknesses

- Poor on-time performance with just over 60% of timepoints served on time
- Relatively infrequent service for a parking shuttle
- Inconsistent alignments between eastbound and westbound service, meaning destinations like the South Campus Garage and Farmer School are served in one direction only and require out-of-direction travel to access
- Somewhat duplicative with other Oxford Routes
- Confusing and inconsistent schedule information shown online - for example online schedule shows more frequent departures from Chestnut Field Park & Ride than every 30 minutes, while PDF schedule shows 30-minute service. PDF schedule also shows timepoints with no arrival times and non-timepoints with arrival times listed

### Opportunities

- Restructure routes in Oxford so that routes serve unique markets or corridors, and are complementary rather than redundant with one another
- Operate PR Route along a consistent alignment in both directions to reduce forced out-of-direction travel
- Increase service frequency during peak commuting periods
- Review route and schedule information published online to ensure accuracy and consistency

## ROUTE: RL | Red Line

### DESCRIPTION:

The Red Line operates between the Middletown Historic District to east Middletown via Eldorado

### KEY POINTS OF INTEREST

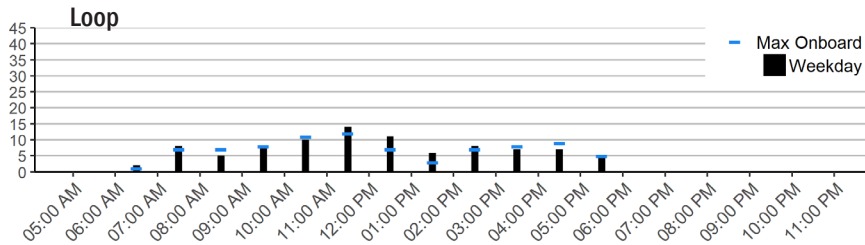
Miami University of Middletown, Middletown Middle and High School, Atrium Medical Center, Access Counseling, and Towne Blvd Social Security Administration

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

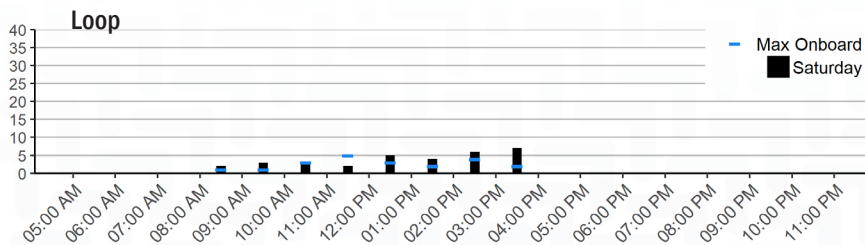
### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
<b>Weekday</b>	81.4	10/13	6	8/13	0.4	8/13	6.8	9/13
<b>Saturday</b>	33.6	7/7	4.2	7/7	0.3	7/7	4.2	7/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)



### Operating Characteristics\*

<b>Weekday</b>	
<b>Span</b>	6:30 a.m. - 6:24 p.m.
<b>Frequency</b>	60 min Peak / 60 min Off-Peak
<b>Saturday</b>	
<b>Span</b>	8:30 a.m. - 4:24 p.m.
<b>Frequency</b>	60 min Peak / 60 min Off-Peak
<b>Sunday</b>	
<b>Span</b>	No Service
<b>Frequency</b>	- min Peak / - min Off-Peak

### On-Time Performance

Timepoint Observations		
Early	On-Time	Late
16%	59%	25%

### Annual Statistics

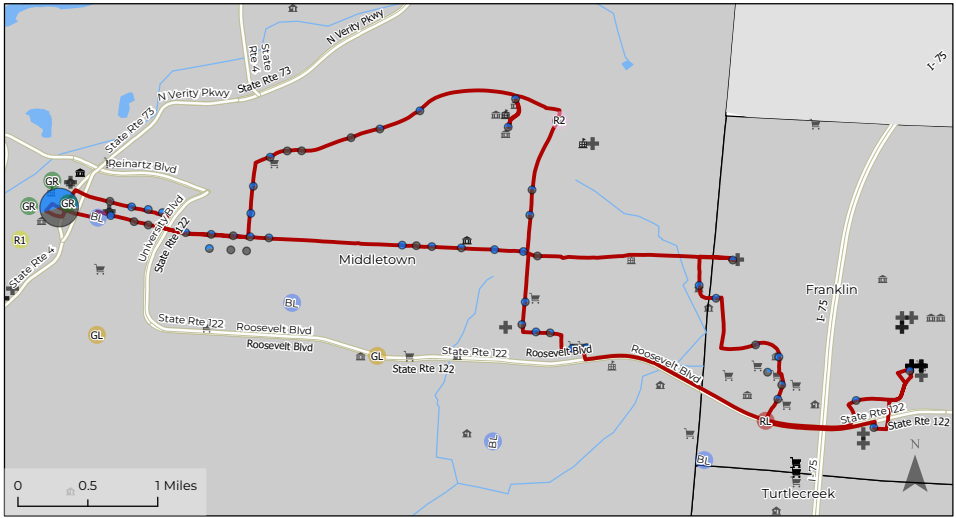
		Rank
Revenue Hours	3,452	8/13
Revenue Miles	55,693	6/13
Ridership	20,751	10/13



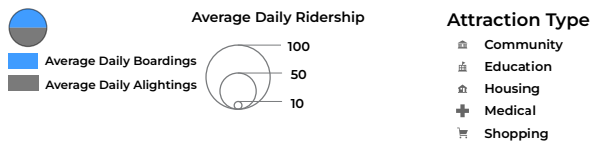


# Weekday Ridership by Stop

(February 2022)



**Red Line - Loop**



## Route Analysis

### Strengths

- Provides numerous local and regional connection opportunities at Middletown Transit Station
- Provides easy-to-remember hourly service frequency on weekdays and Saturdays
- Serves several potentially strong anchors and ridership generators including Middletown High School, Miami University Middletown Campus, Atrium Medical Center, and several grocery stores

### Weaknesses

- Very frequent stop spacing, potentially contributing to poor on-time performance (less than 60% of timepoints served on time)
- Low ridership at most stops other than Middletown Transit Station
- Relatively infrequent service, especially for a route with so many potential ridership generators
- One-way service on most route segments, forcing out-of-direction travel for many riders

### Opportunities

- Consolidate highest ridership segments of Blue, Gold, and Red lines into one or two strong-performing routes
- Reduce stop spacing to speed up route and potentially improve on-time performance
- Serve lower-density / automobile-oriented areas of Middletown with microtransit service

## ROUTE: BL | Blue Line

### DESCRIPTION:





The Blue Line operates between the Middletown Historic District and Blue Ball via South Highlands

### KEY POINTS OF INTEREST

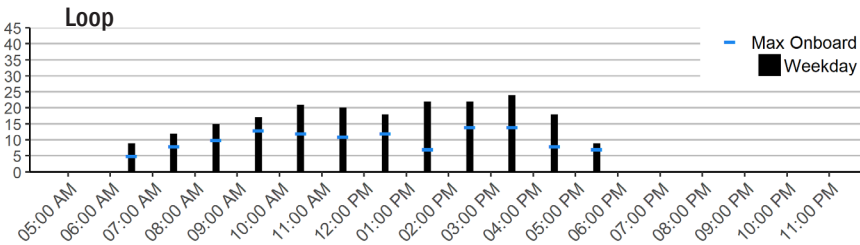
Middletown Shopping Center, Towne Shopping Mall, Social Security Administration, and Walmart Middletown

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

### Daily Statistics

	 Average Daily Boardings	Rank	 Passengers per Hour	Rank	 Passengers per Mile	Rank	 Passengers per Trip	Rank
<b>Weekday</b>	195.3	5/13	14.4	5/13	1	5/13	16.3	2/13
<b>Saturday</b>	131.2	3/7	16.4	3/7	1.1	3/7	16.4	1/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

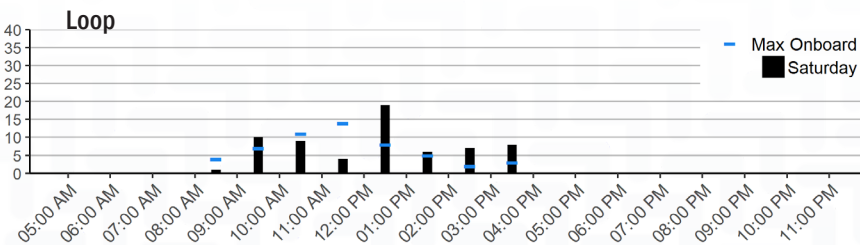
### Weekday\* Ridership by Trip (February 2022)



### Operating Characteristics\*

Weekday	
<b>Span</b>	6:30 a.m. - 6:30 p.m.
<b>Frequency</b>	60 min (Peak) / 60 min (Off-Peak)
Saturday	
<b>Span</b>	8:30 a.m. - 4:30 p.m.
<b>Frequency</b>	60 min (Peak) / - min (Off-Peak)
Sunday	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)

### Weekend Ridership by Trip (February 2022)






### On-Time Performance

#### Timepoint Observations

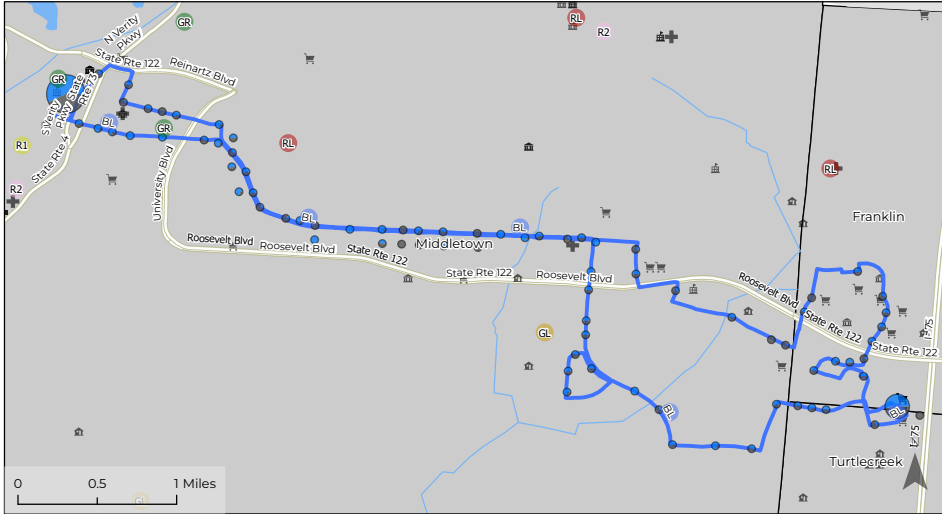
Early	On-Time	Late
16%	59%	25%

### Annual Statistics

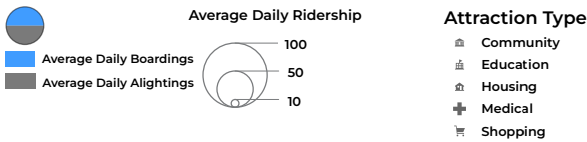
		Rank
 Revenue Hours	3,452	8/13
 Revenue Miles	49,848	8/13
 Ridership	49,791	5/13

## Weekday Ridership by Stop

(February 2022)



**Blue Line - Loop**



## Route Analysis

### Strengths

- Provides easy-to-remember hourly service frequency on weekdays and Saturdays
- Strong anchors at Middletown Transit Station and Walmart on Towne Blvd.
- Facilitates connection opportunities to Gold, Red, and Green lines, as well as Route R2
- Provides connections to shopping centers and grocery stores
- Steady weekday ridership

### Weaknesses

- Low ridership at most stops other than the two primary anchors
- Relatively infrequent service
- Large one-way loop east of Breiel Blvd., making travel between destinations within the loop very difficult and time-consuming
- One way service in downtown Middletown forces out-of-direction travel for many riders
- Low ridership on Saturdays with most trips carrying fewer than 10 passengers
- Poor on-time performance with less than 60% of timepoints served on time

### Opportunities

- Restructure route to provide primarily bi-directional service along corridors with highest ridership potential
- Consolidate highest ridership segments of Blue, Gold, and Red lines into one or two strong-performing routes

## ROUTE: GL | Gold Line

### DESCRIPTION:

The Gold Line operates South Middletown and Mayfield via Middletown, Oakland, South Highlands

### KEY POINTS OF INTEREST

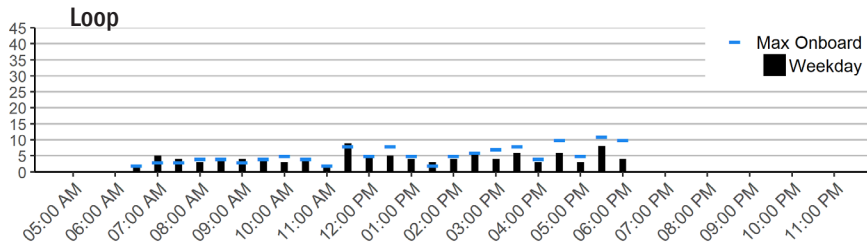
Middletown Transit Station, Middletown License Agency, Middletown Middle School, and Mayfield Elementary School

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

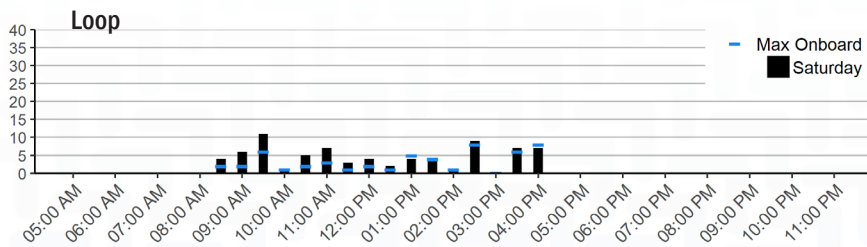
### Daily Statistics

	Average Daily Boardings	Rank	Passengers per Hour	Rank	Passengers per Mile	Rank	Passengers per Trip	Rank
Weekday	107.8	8/13	8	7/13	0.6	7/13	9	8/13
Saturday	62.1	6/7	7.8	6/7	0.6	6/7	7.8	5/7
Sunday	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)



### Operating Characteristics\*

Weekday	
Span	6:30 a.m. - 6:30 p.m.
Frequency	30 min Peak / 30 min Off-Peak
Saturday	
Span	8:30 a.m. - 4:30 p.m.
Frequency	30 min Peak / - min Off-Peak
Sunday	
Span	No Service
Frequency	- min Peak / - min Off-Peak

### On-Time Performance

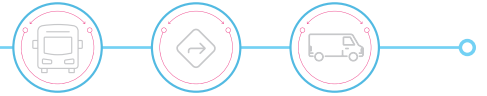
#### Timepoint Observations

Early	On-Time	Late
15%	60%	25%

### Annual Statistics

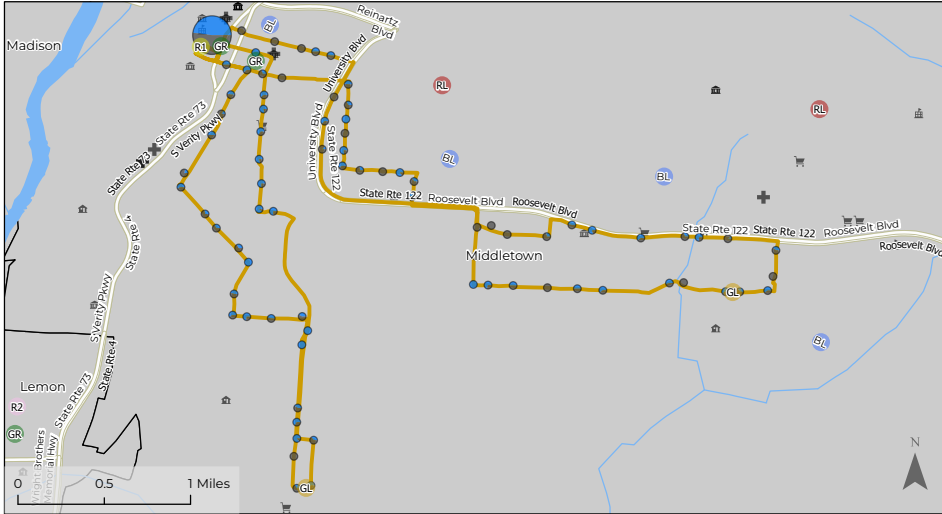
		Rank
Revenue Hours	3,452	8/13
Revenue Miles	48,387	9/13
Ridership	27,501	8/13

\*Please note that the trip times in trip ridership charts reflect data from the February 2022 APC exports, while the the span and frequency of service to the right reflect January 2022 GTFS service data.

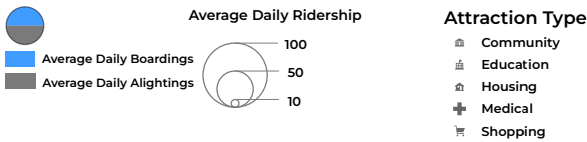


# Weekday Ridership by Stop

(February 2022)



**Gold Line - Loop**



## Route Analysis

### Strengths

- Provides numerous local and regional connection opportunities at Middletown Transit Station
- Provides easy-to-remember 30-minute service frequency on weekdays and Saturdays
- Serves large industrial employers including AK Steel and Air Products
- Serves Roosevelt Boulevard Corridor, which includes many potential ridership generators including the BMV and several multi-family housing communities

### Weaknesses

- Very frequent stop spacing, potentially contributing to poor on-time performance (60% of timepoints served on time)
- Low ridership at most stops other than Middletown Transit Station
- Fewer than five passengers per trip on most weekday trips
- One-way service on most route segments
- Service to multiple distinct markets on one route may cause confusion with passengers potentially boarding a bus with the right route number but heading in the wrong direction

### Opportunities

- Restructure route to provide primarily bi-directional service along corridors with highest ridership potential
- Consolidate highest ridership segments of Blue, Gold, and Red lines into one or two strong-performing routes
- Serve lower-density / automobile-oriented areas of Middletown with microtransit service



## ROUTE: GR | Green Line

### DESCRIPTION:





The Green Line operates between Exello and North Middletown via Middletown

### KEY POINTS OF INTEREST

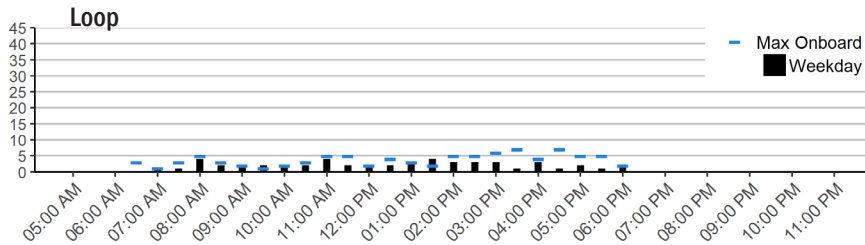
MidPointe Middletown Library, Canal Museum, Middletown Middle School, Robert Sonny Hill Jr. Community Center, and Sheltering Pines Apartments

*\* On-Time Performance and Ridership data from February 2022. Other figures from FY 2021 statistics.*

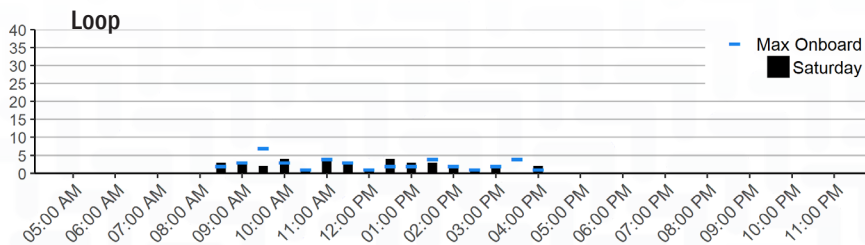
### Daily Statistics

	 Average Daily Boardings	Rank	 Passengers per Hour	Rank	 Passengers per Mile	Rank	 Passengers per Trip	Rank
<b>Weekday</b>	138.2	7/13	10.2	6/13	0.7	6/13	11.5	6/13
<b>Saturday</b>	80.5	5/7	10.1	5/7	0.7	5/7	10.1	4/7
<b>Sunday</b>	No Service	-/3	No Service	-/3	No Service	-/3	No Service	-/3

### Weekday\* Ridership by Trip (February 2022)



### Weekend Ridership by Trip (February 2022)






### Operating Characteristics\*

Weekday	
<b>Span</b>	6:30 a.m. - 6:30 p.m.
<b>Frequency</b>	30 min (Peak) / 30 min (Off-Peak)
Saturday	
<b>Span</b>	8:30 a.m. - 4:30 p.m.
<b>Frequency</b>	30 min (Peak) / - min (Off-Peak)
Sunday	
<b>Span</b>	No Service
<b>Frequency</b>	- min (Peak) / - min (Off-Peak)

### On-Time Performance

Timepoint Observations		
Early	On-Time	Late
15%	59%	26%

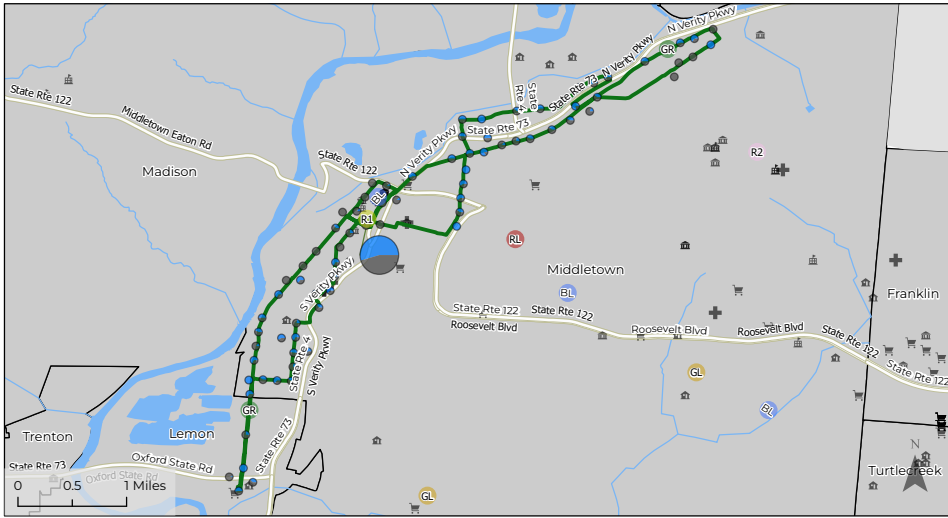
### Annual Statistics

		Rank
 Revenue Hours	3,452	8/13
 Revenue Miles	51,672	7/13
 Ridership	35,250	7/13

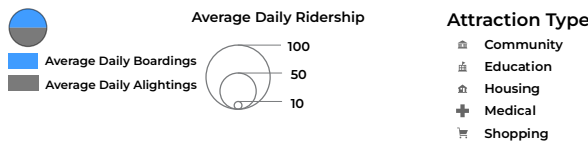


# Weekday Ridership by Stop

(February 2022)



**Green Line - Loop**



## Route Analysis

### Strengths

- Provides numerous local and regional connection opportunities at Middletown Transit Station
- Provides easy-to-remember 30-minute service frequency on weekdays and Saturdays
- Strong anchors at Kroger and MTS
- Serves a number of healthcare, community, and social services destinations

### Weaknesses

- Very frequent stop spacing, potentially contributing to poor on-time performance (less than 60% of timepoints served on time)
- Low ridership at most stops other than Middletown Transit Station
- Fewer than five passengers per trip on nearly all trips
- One-way service on most route segments
- Extensive travel through lower density residential areas
- not many connections to activity generators
- Service north and south of MTS on one route may cause confusion with passengers potentially boarding a bus with the right Route number but heading in the wrong direction

### Opportunities

- Restructure route to provide primarily bi-directional service along corridors with highest ridership potential
- Reduce stop spacing to speed up route and potentially improve on-time performance
- Realign to provide service to employment locations such as along Clark Street
- Simplify routing to focus service on areas of highest ridership and need
- Split into two routes serving markets north and south MTS to reduce opportunities for confusion

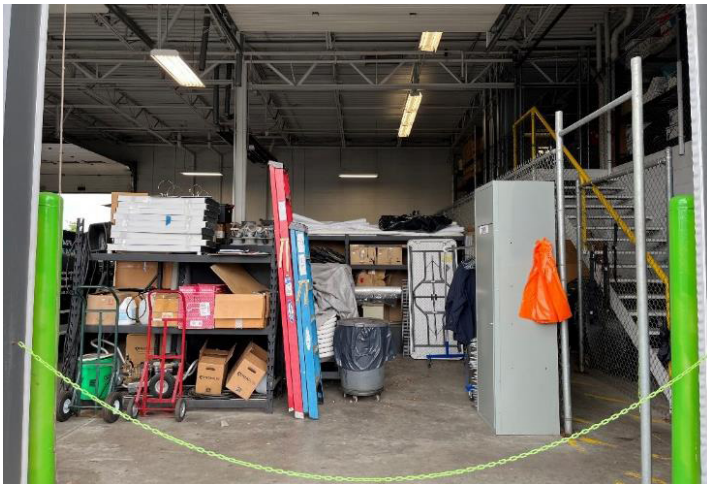
## Facilities Assessment

The project team completed a facilities assessment based on site visits to BCRTA facilities conducted in the summer of 2022. This assessment included the Operations and Maintenance Facility at Moser Court, as well as passenger facilities in Hamilton, Oxford, and West Chester. It is worth noting that most of the passenger facilities are not owned by BCRTA but function as transit facilities (i.e., stops, shelters, park & ride, etc.) to serve its customers. As such, BCRTA is concerned about the safety, effectiveness, state of repair, and functionality of these facilities.

### OPERATIONS & MAINTENANCE FACILITY

The BCRTA Operations and Maintenance Facility is located at 3045 Moser Court, Hamilton, Ohio on a 9.8-acre parcel. While BCRTA has made the most of facilities on this site, there are some existing challenges that could be addressed with improvements over time.

The BCRTA system has grown since the existing operations and maintenance facility was built in 2000. As a result, several elements of the facility do not have the capacity to support existing operations (Figure 7). One example of this is the administration space, which is small for the current number of employees and does not have a board room large enough to host a meeting with all BCRTA employees. The facility also does not have enough storage space, which has led to one of the maintenance spaces being used for storage, and there is not sufficient bus parking currently available on site. Further, the vehicle storage building at the BCRTA facility was constructed with a short-term vision, which has led to challenges with lighting, drainage, traffic flow, and circulation. In addition to capacity constraints, the facility currently lacks some infrastructure, such as a loading dock, laydown space, and bus fueling, which impact BCRTA operations.



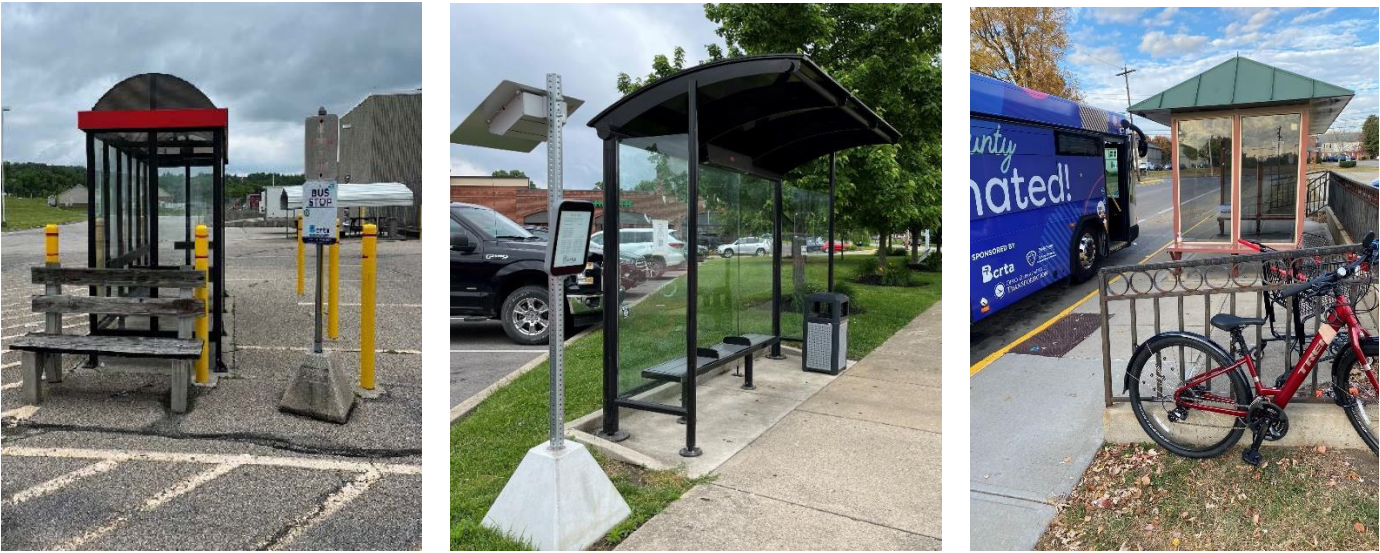
**Figure 7:** Existing Facility Spaces with Capacity Constraints (Maintenance Space Used as Storage on the Left; Administrative Space on the Right)

### PASSENGER FACILITIES

BCRTA provides passenger facilities throughout the system to give riders a place to wait for the bus with some protection from the weather elements. While there are currently some passenger facilities available throughout the BCRTA system, these facilities could be improved, and additional facilities are desired by riders.

One of the existing challenges with BCRTA passenger facilities is that there are very few of them. As a result, a desire for more benches, shelters, and real-time transit information was expressed by riders throughout the public and stakeholder engagement for this project. The existing passenger facilities are not currently placed based on a distribution policy and have varying levels of amenities provided.

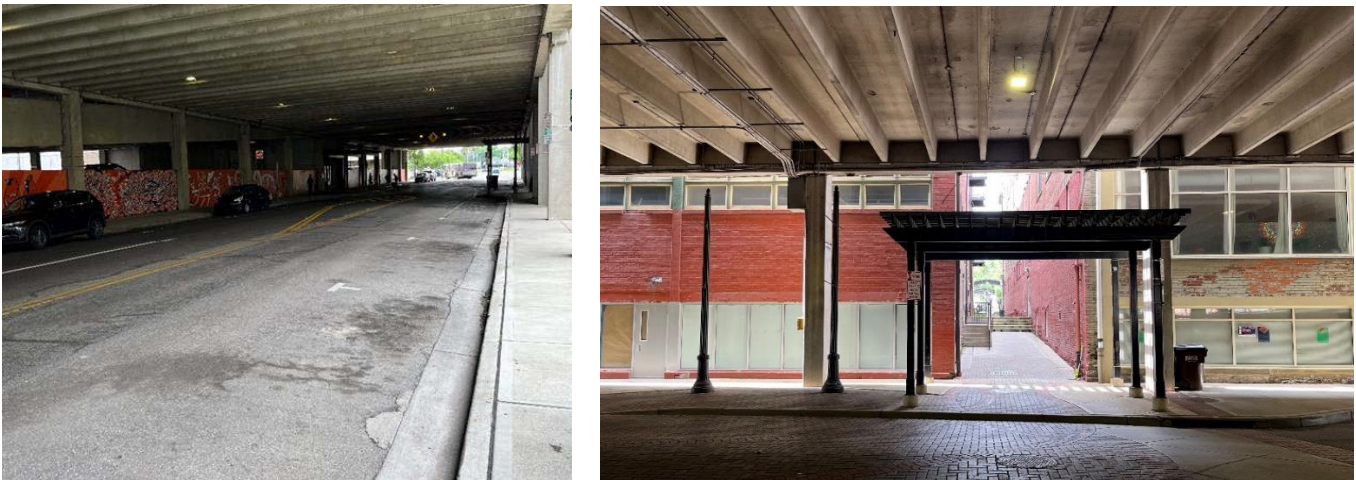




**Figure 8:** Various Existing BCRTA Passenger Facilities

## MARKET STREET STATION CHALLENGES

BCRTA's Market Street Station faces some specific challenges due to the location of the facility. Market Street traverses under the second story of a parking structure and has the appearance and feel of a dimly lit tunnel. There is some natural lighting from the south, but the bus stops are in an area abutting several commercial buildings, which block the natural light. There is also a lack of signage at the station, as well as directional signage to provide guidance to transit users. There is little ongoing activity in the area and a lack of public restrooms, which has led to some undesirable behavior, such as public urination.



**Figure 9:** Existing Conditions at Market Street Station

# Public and Stakeholder Engagement Round 1

Two rounds of engagement were conducted as part of the BCRTA Transit Plan process. The goal of public engagement for the BCRTA Transit Plan is to build and strengthen relationships in the community while gathering stakeholder and public input, responding to comments and concerns, and keeping decision-makers and other stakeholders informed throughout the process.

The first round of engagement was done in the spring of 2022 and was intended to be an opportunity for BCRTA to listen to the public and stakeholders regarding what is and is not working well with BCRTA's current service. In this round of engagement, BCRTA conducted surveys and held meetings that were tailored to each stakeholder group and collected comments through an interactive map on the project website. Table 4 summarizes the number of people engaged in Round 1 through each method.

**Table 4:** Round 1 Engagement Participation by Method

Method	Number of people engaged
Public Survey	308
Operator Survey	20
Decision Maker Survey	13
Business/Employer Survey	12
Interactive Map	10
Focus Groups	21

## Round 1 Engagement Takeaways

Several common themes were identified through this round of engagement:

- » BCRTA's strengths
  - » Fare-free system
  - » Generally reliable and on-time service
  - » Bus operators' friendliness and knowledge of routes and riders
- » Areas for improvement for BCRTA service
  - » Focus on serving residents (not just students)
  - » Expanding service to neighborhoods and having the same level of service available during the school year available year-round
  - » More service to cities across the county and to Cincinnati vs. within cities
  - » More service outside of typical commute hours – early mornings, nights, midday, and on weekends
  - » Bi-directional routes so customers do not have to ride the full loop
  - » Increased capacity on certain routes/during certain times of day
- » Finding more drivers to limit service cuts
- » Matching schedules, rider app, and operator tablet programming
- » Areas of improvement for BCRTA facilities
  - » Real-time transit information
  - » More shelters
  - » More benches, particularly around apartment complexes and shopping centers
- » Areas of improvement for customer information and customer experience
  - » More accessible/easy-to-understand transit information (e.g., more accuracy on bus tracking app, better information at shelters and online)
  - » Robust advertising around driver positions, routes, and services that BCRTA offers (e.g., BGo, paratransit)
  - » Robust education around how to ride transit (e.g., "learn how to ride days", info panels inside buses, presentations at Miami Freshmen orientation)





## Round 1 Engagement Methods

Phase 1 engagement methods fell in to two primary categories: surveys and meetings.

The project team tailored the surveys and meeting information to each stakeholder group..

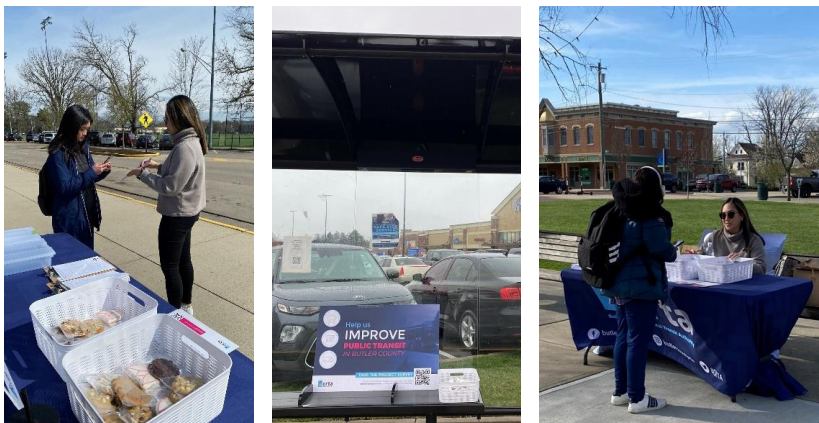
## SURVEYS

### Public Survey

The public survey was live March – August 2022 and was administered to both current riders of the system and as well as those who do not ride today. The questions asked respondents what was working well and not working well, what changes could better serve their travel needs, as well as basic demographic information.

The project team made a special effort to reach people who are traditionally underrepresented in planning processes by engaging organizations that directly serve students, senior citizens, people

with low-incomes, people with disabilities, and people of color. To further promote the survey, BCRTA staff placed posters inside buses, at key transit stops, and popular destinations around Butler County. Paper surveys were also distributed on the buses and locations such as social service organizations. The project team also rode buses and engaged riders at strategic transit stops to raise awareness about the project and the survey.



**Figure 10:** The project team connecting with riders during the Round 1 of engagement

### Operator Survey

Transit operators know the system better than most due to their daily interaction with customers and experience driving the routes. An operator survey was facilitated to gain insight about the system and give operators an opportunity to voice existing issues with the system. These surveys were available at the garage for operators to complete either before or after their shifts.

### Decision Makers Survey

The study team distributed a survey to decision-makers representing the service area, including elected and appointed government officials and staff at the Cities of Oxford, Hamilton, Middletown, Fairfield, West Chester Township, and partner agencies. The survey collected information about issues with the existing transit system as well as priorities for the system.

### Business/Employer Survey

The study team distributed a survey to businesses and employers in Butler County to understand more about their employees' transportation needs. The survey was live June – August 2022.

### Interactive Map

The project team developed an interactive map to gather feedback about important destinations and to identify where there are areas that need improvement or change. Map users could select a pin and drop it in a location where they wanted to provide feedback. Pin categories included: Add bus service, Places I Go, and Needs Improvement. The map was prominently advertised on the project website.

## FOCUS GROUP MEETINGS

The study team held four focus group discussions with the goal of hearing from businesses, non-profit organizations, and current riders of BCRTA. The study team gathered interest for the rider focus groups through the public survey. Focus group discussions were leveraged for this planning process to create intentional opportunities for experience-sharing and more detailed discussions regarding strengths and challenges to the system. To increase access and accessibility, focus groups were held virtually.

## Preliminary Service Scenarios

The project team developed a preliminary set of service scenarios based on the results of the existing conditions analysis and feedback received through the first round of public and stakeholder engagement. These preliminary service scenarios were:

- » **Cincinnati Express Service** – Reroute some trips on Route 42X serve Uptown Cincinnati near the University of Cincinnati and medical centers before serving downtown Cincinnati.
- » **Oxford Routes** – Modify Routes U1, U3, U4, and the Park and Ride route to replace one-way loops with bidirectional service. In these scenarios, Routes U4 and the Park & Ride route would be combined into one bidirectional route. Two routing scenarios were developed for the changes to these four routes.
- » **Hamilton Routes** – Implement new routes that only operate within Hamilton. Two routing scenarios were developed for the proposed new routes within Hamilton
- » **Middletown Routes** – Restructure/replace existing Blue Line, Green Line, Gold Line, and Red Line with three bidirectional routes. Two routing scenarios were developed for the changes to these four routes.
- » **Regional Routes** – Reroute R1 between Hamilton and Middletown to make the route more direct and extend R3 northwest of Oxford to Walmart and south of Hamilton to Springdale to connect with express service to Cincinnati. One routing scenario was developed for the changes to these two regional routes.

## Public and Stakeholder Engagement Round 2

During the second round of engagement the study team gathered feedback from the public and stakeholders on initial service improvement ideas for BCRTA fixed-route service. This phase of engagement took place during the fall of 2022. Feedback during the second phase of engagement was gathered through surveys, meetings, and comment forms. Table 5 provides a count of participants by method for Phase 2.

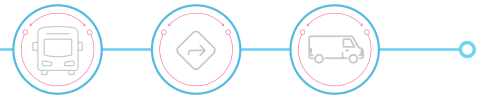
*Table 5: Phase 2 Public Engagement Participation by Method*

Method	Number of people engaged
Public Survey	760
Interactive Map	110
Focus Groups	9
Miami University Discussions	56
Comment Cards	10
Focus Groups	21

## Round 2 Engagement Takeaways

Several common themes were identified through this round of engagement.

- » Preference the bi-directional, more direct routing
- » Desire for service directly to Farmer School of Business (from student housing, High Street, the recreation center)
- » Concern about removal of regional service between Oxford and Hamilton and Middletown and Hamilton (service between cities is essential)
- » Support for express service from Middletown to Cincinnati, with some trips direct to downtown and some stopping in Uptown first
- » Would like a direct route from other cities to Cincinnati (71 people expressed this desire, with the most interest expressed from Oxford and Hamilton)
- » Desire for more frequent service and expanded service hours (e.g., early mornings, weekends)



## Round 2 Engagement Methods

Similar to the first phase of engagement, the methods used in the second phase of engagement fell in to two primary categories: surveys and meetings.

### SURVEYS

#### Service Ideas Survey

The service ideas survey was available from October 24 to November 24, 2022 online and in paper format. The questions asked respondents about the service improvement ideas as well as demographic and socioeconomic information.

The project team made a special effort to reach people who are traditionally underrepresented in planning processes by engaging organizations that directly serve students, senior citizens, people with low-incomes, people with disabilities, and people of color. To further promote the project and survey, the study team placed posters inside BCRTA transit shelters, provided paper versions of the surveys on buses, and passed out paper surveys while riding buses and engaging riders at strategic transit stops and community locations. The project team and BCRTA staff presented to various groups at Miami University and during city council and community organization meetings. They also ran social media ads and posted regularly on BCRTA's Facebook page to promote sharing feedback on the service improvement ideas.



**Figure 11:** The project team connecting with riders during the Round 2 of engagement

#### Interactive Map

The project team developed an interactive map to gather feedback on what people like or dislike about the service improvement ideas. The interactive map platform featured four map layers: one with existing BCRTA bus routes, two with the new service ideas for the BCRTA system (Scenario 1 and Scenario 2), and one with a new idea for the Cincinnati express service. Map users could select a pin and drop it in a location where they wanted to provide feedback. The map was advertised through social media and made available on the project website.

### MEETINGS

#### Focus Groups

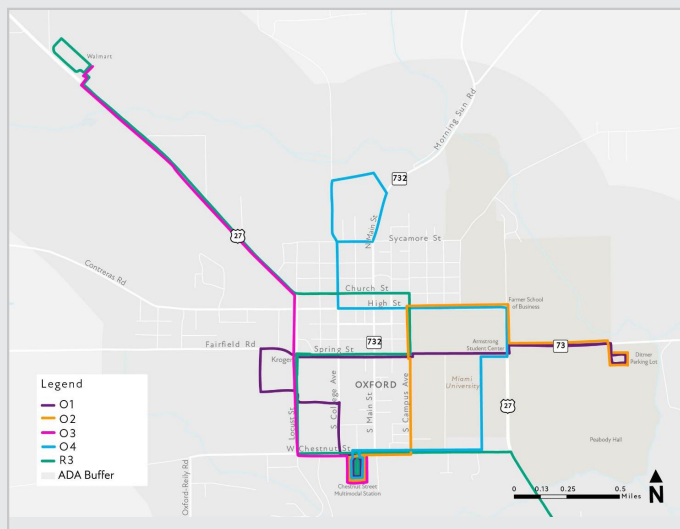
The study team held four virtual focus group discussions. The purpose of these focus groups was to have more in-depth discussion with businesses, non-profit organizations, agency staff, and current riders of BCRTA about the service improvement ideas, answer their questions, and hear their feedback. The study team promoted the focus groups through social media and by emailing businesses, non-profits, and agencies in addition to riders that attended previous focus group meetings.

#### Miami University Discussions

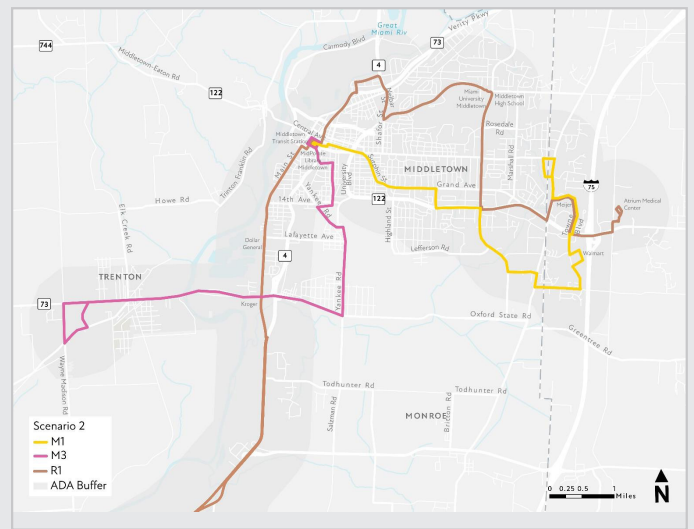
The project team was invited to give presentations and discuss the BCRTA service improvement ideas with various groups at Miami University, including the Associated Student Government, Commuter Center, and Regional Campus Leadership. These groups provided feedback that was beneficial for improving the service ideas.

# Service Recommendations

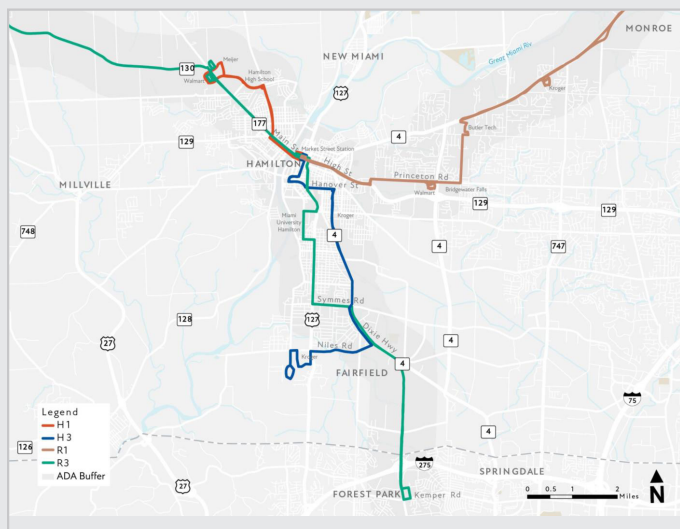
The project team developed service recommendations for BCRTA based on the public and stakeholder feedback received during the second round of engagement. These recommendations were also based on travel time information from test driving the route ideas and how the routes could be shortened, lengthened, combined, or modified to make most efficient use of BCRTA resources.



**Figure 12: Oxford Proposed Service Recommendations**

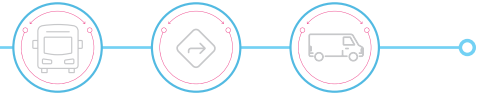


**Figure 14: Middletown Proposed Service Recommendations**



**Figure 13: Hamilton/Fairfield Proposed Service Recommendations**





# Route O1

The proposed Route O1 would operate between the Ditmer and Chestnut Fields parking lots in Oxford, via Spring Street and the Miami University campus. The route would provide frequent bi-directional service linking the Miami University campus with off-campus housing and retail destinations along the Spring Street and Locust Street corridors, as well as with remote park-and-ride locations. Route O1 is proposed to interline with Route O2 to provide one-seat service to more campus destinations.

## Key destinations along the proposed alignment include:

- » Ditmer Parking Lot
- » Cook Field
- » Armstrong Student Center
- » Central Quad
- » Academic Quad
- » Kroger
- » TJ Maxx
- » Oxford West Apartments
- » Chestnut Fields Parking Lot/Future Chestnut Street Multimodal Station

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
Weekday	14	20	30	15	15	20	16	15	20
Saturday	8	NA	30	12	NA	30	12	NA	30
Sunday	8	NA	30	12	NA	30	12	NA	30

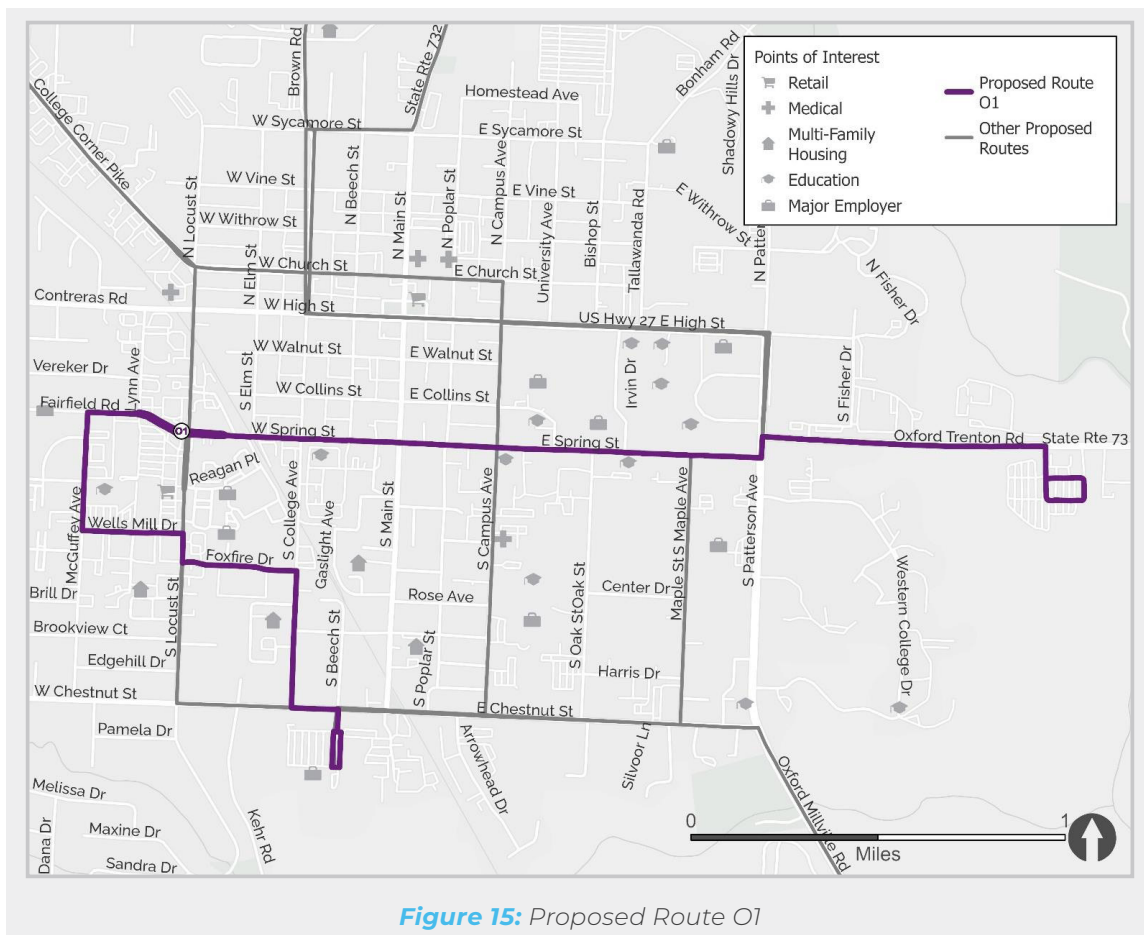


Figure 15: Proposed Route O1

## Route O2

The proposed Route O2 would operate between the Ditmer and Chestnut Fields parking lots in Oxford, via the Farmer School of Business, High Street, and S. Campus Avenue, including fraternity houses and other off-campus housing. The route would be interlined with the proposed Route O1 to provide one-seat service to more campus destinations.

### Key destinations along the proposed alignment include:

- » Ditmer Parking Lot
- » Cook Field
- » Farmer School of Business
- » East Quad
- » Engineering Building
- » North Quad
- » Academic Quad
- » Hall Auditorium
- » Uptown Oxford
- » Recreational Sports Center
- » Chestnut Fields Parking Lot/Future Chestnut Street Multimodal Station

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
<b>Weekday</b>	14	20	30	15	15	20	16	15	20
<b>Saturday</b>	8	NA	30	12	NA	30	12	NA	30
<b>Sunday</b>	8	NA	30	12	NA	30	12	NA	30

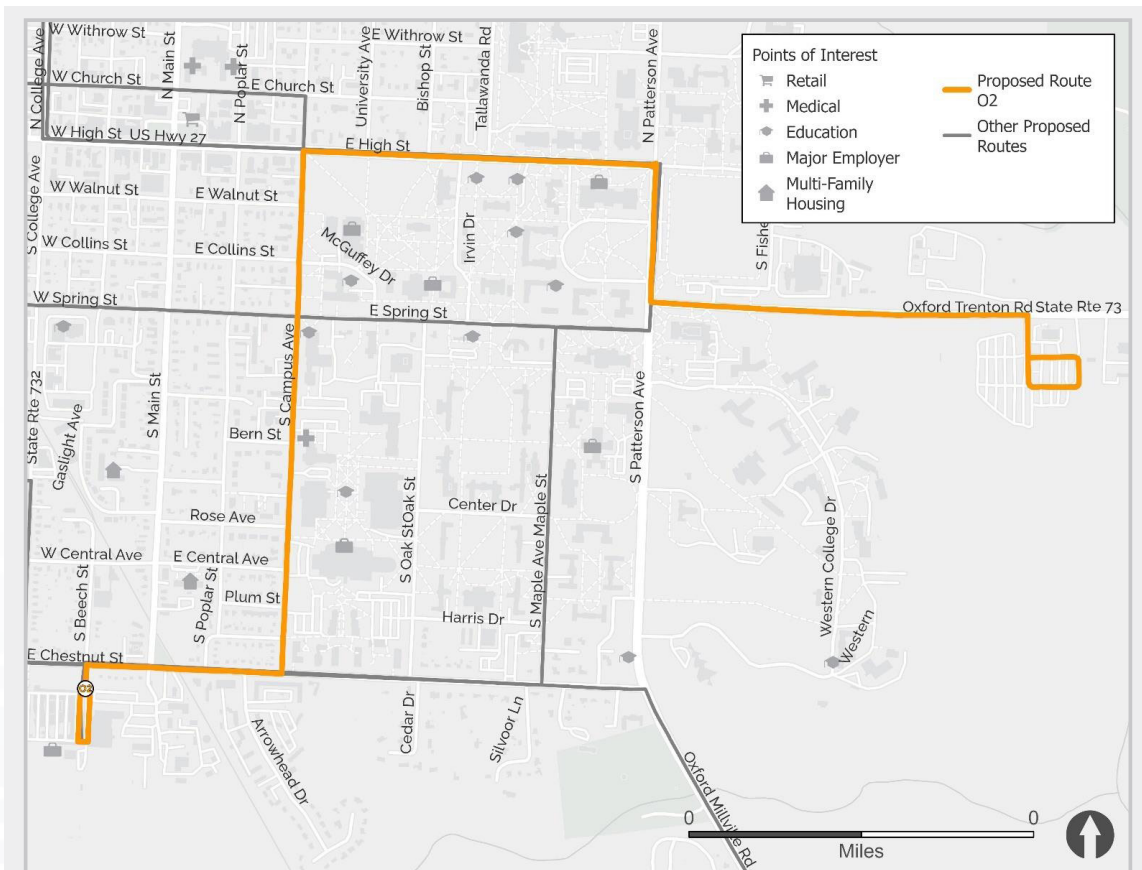
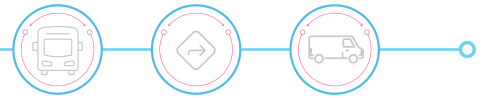


Figure 16: Proposed Route O2





## Route O3

The proposed Route O3 would operate between the Chestnut Fields Parking Lot/Future Chestnut Street Multimodal Station and Walmart on College Corner Pike (US 27). Initially, the route would operate on weekday evenings and weekends only to complement the proposed R3 Route, which would service Walmart on weekdays only. If additional funding becomes available, O3 is envisioned as an all-day route operating seven days a week. The O3 would connect to the O1, O2, and O4 at Chestnut Fields, to provide a convenient connection to/from Walmart for those living throughout campus.

### Key destinations along the proposed alignment include:

- » Chestnut Fields Parking Lot/Future Chestnut Street Multimodal Station
- » Oxford West Apartments
- » TJ Maxx
- » Kroger
- » Mobile home parks along US 27 corridor
- » Walmart

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
<b>Weekday</b>	4	0	30	12	30	30	12	30	30
<b>Saturday</b>	8	NA	30	12	NA	30	12	NA	30
<b>Sunday</b>	8	NA	30	12	NA	30	12	NA	30



Figure 17: Proposed Route O3

## Route O4

The proposed Route O4 would operate between the Chestnut Fields parking lot and Kelly Drive in north Oxford via Maple Street, Patterson Avenue, and High Street. The route would provide mostly bi-directional service (with the exception of a turn-around loop on the northern end) Chestnut Fields Parking Lot/Future Chestnut Street Multimodal Station with the Miami University campus, Uptown, and multi-family housing north of Sycamore Street.

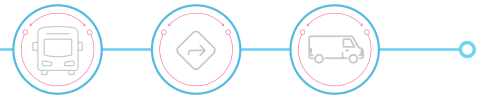
### Key destinations along the proposed alignment include:

- » Chestnut Fields Parking Lot/Future Chestnut Street Multimodal Station
- » South Quad
- » Academic Quad
- » Armstrong Student Center
- » Cook Field
- » Farmer School of Business
- » Engineering Building
- » Uptown Oxford
- » Hawks Landing Apartments

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
<b>Weekday</b>	14	30	30	15	15	30	16	15	30
<b>Saturday</b>	8	NA	30	12	NA	30	12	NA	30
<b>Sunday</b>	8	NA	30	12	NA	30	12	NA	30



Figure 18: Proposed Route O4



## Route R3

The proposed Route R3 would provide regional bi-directional service between Oxford and Forest Park, via Miami University, Hamilton, and Fairfield. The service would initially operate on weekdays only, allowing commuters to make connections to Metro routes in Forest Park and Miami University students to travel between campuses in Oxford and Hamilton. If additional funding is available, Route R3 would add Saturday service and offer later and more frequent service hours on weekdays.

### Key destinations along the proposed alignment include:

- » Oxford Walmart
- » McCullough-Hyde Memorial Hospital
- » Miami University Oxford Campus
- » Oxford Kroger
- » Future Chestnut Street Multimodal Station
- » Hamilton Meijer
- » Hamilton Walmart
- » Market Street Station
- » Miami University Hamilton Campus
- » Mercy Health Fairfield Hospital
- » Promenade Plaza in Forest Park (connection point to Metro routes)

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
Weekday	10	60	60	14	60	60	16	30	60
Saturday	NA	NA	00	12	NA	60	12	NA	60
Sunday	NA	NA	NA	NA	NA	NA	NA	NA	NA

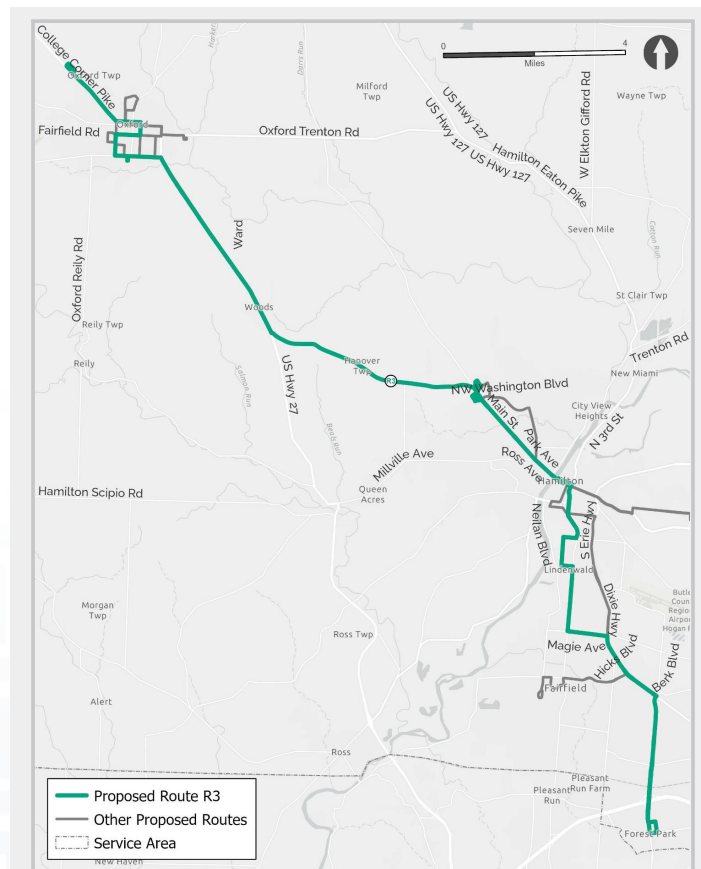


Figure 19: Proposed Route R1

## Route H1

The proposed Route H1 would provide bi-directional service between Market Street Station in downtown Hamilton and Walmart on Main Street, via Kettering Health Hamilton, Hamilton High School, and Meijer. Route H1 is proposed to interline with Route H3 to provide one-seat service to more destinations in Hamilton and Fairfield.

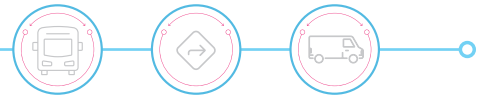
### Key destinations along the proposed alignment include:

- » Market Street Station
- » Armstead Park
- » Kettering Health Hamilton
- » Hamilton High School
- » Fitton Family YMCA
- » Meijer
- » Ohio Bureau of Motor Vehicles
- » Walmart

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
Weekday	NA	00	00	14	30	60	16	15	30
Saturday	NA	NA	00	12	NA	60	12	NA	30
Sunday	NA	NA	NA	NA	NA	NA	NA	NA	NA



Figure 20: Proposed Route H1



## Route H3

The proposed Route H3 would provide bi-directional service between Market Street Station in downtown Hamilton and Southgate Boulevard in Fairfield, via the Erie Boulevard/Dixie Highway corridor. Route H3 is proposed to interline with Route H1 to provide one-seat service to more destinations in Hamilton and Fairfield.

### Key destinations along the proposed alignment include:

- » Market Street Station
- » Riverside Homes (Metro Housing Authority)
- » Kroger (Erie Boulevard)
- » Ohio Bureau of Motor Vehicles
- » Hamilton VA Clinic
- » Fairfield Crossings Goodwill Store
- » Fairfield Family YMCA
- » Kroger (Wessel Drive)
- » Village Green Townhomes

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
<b>Weekday</b>	NA	00	00	14	30	60	16	15	30
<b>Saturday</b>	NA	NA	00	12	NA	60	12	NA	30
<b>Sunday</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA

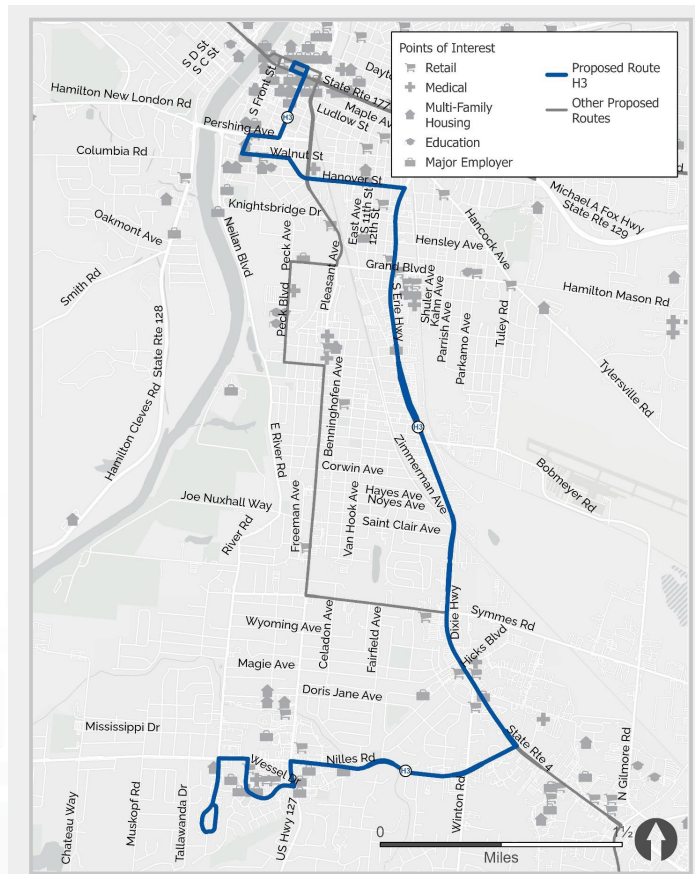


Figure 21: Proposed Route H3



## Route R1

The proposed Route R1 would provide regional bi-directional service between Hamilton and Middletown, via several Butler Tech Campuses located along the Hamilton Middletown Road (Route 4) corridor. The service would initially operate on weekdays only, allowing commuters to make connections in Middletown to proposed variants of the Route 42X with service to Cincinnati and Miami University students to travel between the Middletown, Hamilton, and Oxford campuses with a single connection in downtown Hamilton. If additional funding becomes available, Route R1 would add Saturday service and offer later and more frequent service hours on weekdays.

### Key destinations along the proposed alignment include:

- » Market Street Station
- » Walmart (Princeton Road)
- » Butler Tech Fairfield Township Campus
- » Lakota Family YMCA
- » Kroger (Hamilton Middletown Road)
- » Butler Tech Liberty Township Campus
- » Kroger (S. Main Street, Middletown)
- » Middletown Transit Station
- » Middletown Regional Flight Training Institute (via stop on Verity Parkway)
- » Miami University Middletown Campus
- » Middletown High School
- » Meijer (Town Boulevard, connection point to 42X service to Cincinnati)
- » Social Security Administration
- » Kroger (Towne Boulevard, Middletown)
- » Kettering Health Middletown
- » Atrium Medical Center

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
<b>Weekday</b>	10	60	60	14	60	60	16	30	60
<b>Saturday</b>	NA	NA	00	12	NA	60	12	NA	60
<b>Sunday</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA

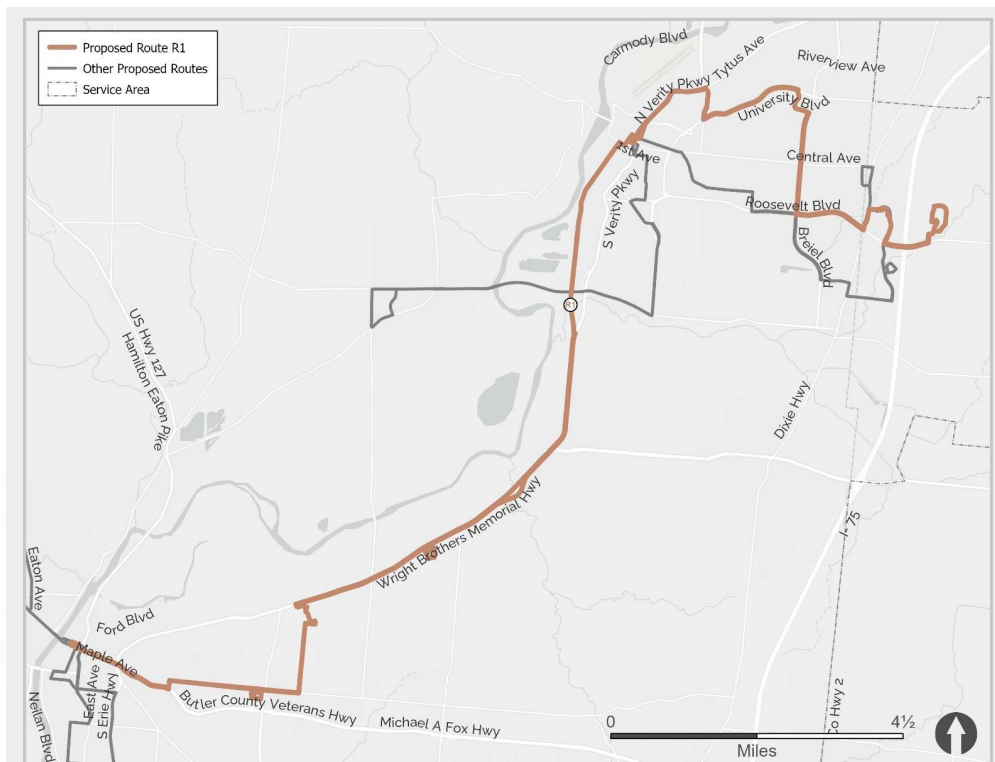
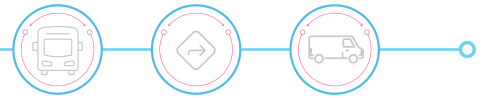


Figure 22: Proposed Route R1





## Route M1

The proposed Route M1 would provide bi-directional service between Middletown Transit Station and Central Avenue in Middletown, via Walmart and Meijer on Towne Boulevard. At Meijer, the route would provide connection opportunities to proposed variants of the Route 42X with service to Cincinnati. Route M1 is proposed to interline with Route M3 to provide one-seat service to more destinations in Middletown and Trenton.

### Key destinations along the proposed alignment include:

- » Middletown Transit Station
- » Butler County Board of Health
- » Liberty Manor Apartments
- » Metropolitan Housing Authority
- » Nicholas Place Apartments
- » Walmart (Town Boulevard)
- » Meijer (Town Boulevard, connection point to 42X service to Cincinnati)
- » Bavarian Woods Apartments

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
Weekday	12	60	60	14	30	60	16	15	30
Saturday	8	NA	60	12	NA	60	12	NA	30
Sunday	NA	NA	NA	NA	NA	NA	NA	NA	NA

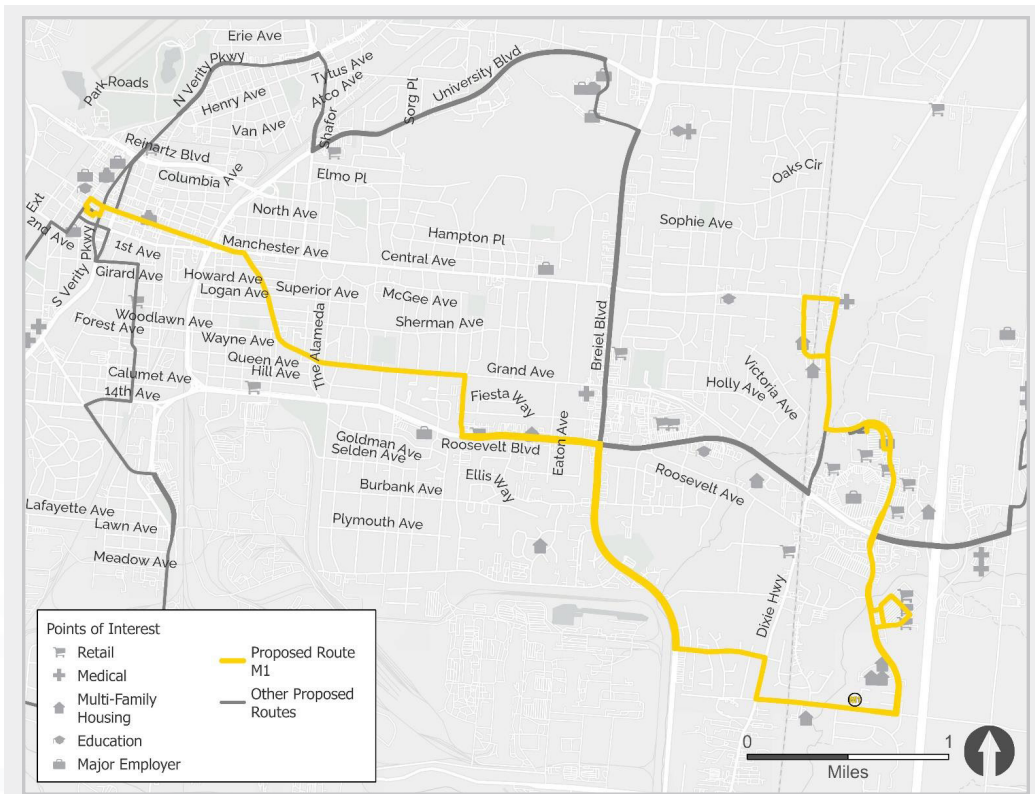


Figure 23: Proposed Route M1

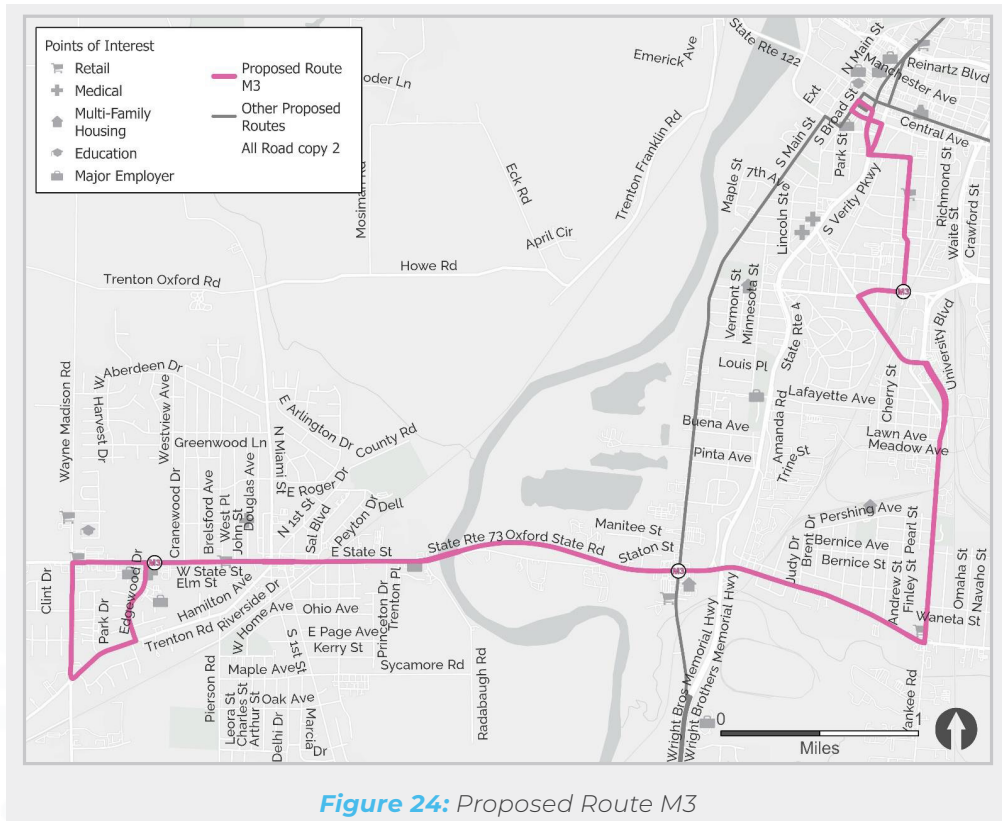
## Route M3

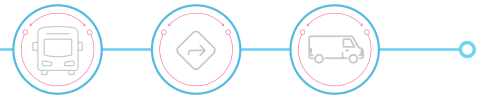
The proposed Route M3 would provide bi-directional service between Middletown Transit Station and Wayne Madison Road in Trenton, via the Baltimore Street, Yankee Road, and Oxford State Road (Route 73) corridors. Route M3 is proposed to interline with Route M1 to provide one-seat service to more destinations in Middletown and Trenton.

### Key destinations along the proposed alignment include:

- » Middletown Transit Station
- » Middletown Early Learning Center
- » Hope House Mission (via stops on Baltimore Street)
- » Dollar General (Oxford State Road)
- » Kroger (Oxford State Road)
- » Tamarind Square Apartments
- » Trenton Apartments

	Cost Neutral			\$1-3 Million Expansion			Greater than \$3 Million Expansion		
	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak	Daily Service Span (Hours)	Peak	Off-Peak
Weekday	12	60	60	14	30	60	16	15	30
Saturday	8	NA	60	12	NA	60	12	NA	30
Sunday	NA	NA	NA	NA	NA	NA	NA	NA	NA





## Route 42X and 42XU

Route 42X is a jointly branded BCRTA/Metro commuter express service operating between West Chester and downtown Cincinnati during weekday peak periods only. The proposed modifications to this route include extending the route further north to Meijer in Middletown and adding a second variant called 42XU that would operate between Butler County and downtown Cincinnati via Martin Luther King Drive in order to provide more direct service to the University of Cincinnati and hospitals near the university. Buses would alternate between the two variants, preserving service to and from downtown Cincinnati, while also introducing direct service to the University area.

### Key destinations along the proposed alignment include:

- » Meijer (Town Boulevard, Middletown - connection point to BCRTA services)
- » Meijer (Tylersville Road, West Chester)
- » University of Cincinnati (via stops on Martin Luther King Drive)
- » Uptown Cincinnati hospitals (via stops on Martin Luther King Drive)
- » Downtown Cincinnati

	Cost Neutral		\$1-3 Million Expansion		Greater than \$3 Million Expansion	
	Southbound Trips	Northbound Trips	Southbound Trips	Northbound Trips	Southbound Trips	Northbound Trips
Weekday	7	8	TBD	TBD	TBD	TBD
Saturday	NA	NA	NA	NA	NA	NA
Sunday	NA	NA	NA	NA	NA	NA

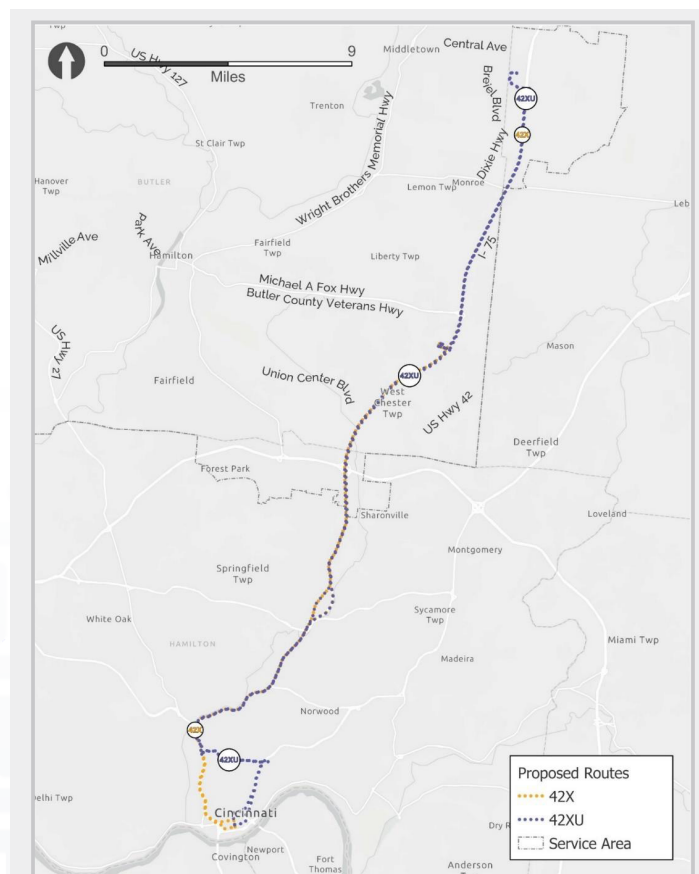


Figure 25: Proposed Routes 42X and 42XU

## Microtransit Rideshare Partnership Potential

BCRTA's BGo service provides curb-to-curb microtransit service throughout Butler County. This service can be expensive to provide and is constrained by the number of BCRTA drivers available, so project team explored the potential for BCRTA to partner with rideshare companies to provide this service and the financial impacts of these potential partnerships.

### MICROTRANSIT RIDESHARE PARTNERSHIP EXAMPLES

The project team looked at other transit agencies that currently have partnerships with rideshare companies to gather insight on the operations and finances of these partnerships. These include Pinellas Suncoast Transit Authority, Greater Dayton Regional Transit Authority, and Dallas Area Rapid Transit. Each of these agencies operates their partnership differently and has a different fare structure.

#### Pinellas Suncoast Transit Authority

Pinellas Suncoast Transit Authority's microtransit service is operated exclusively by Uber, Lyft, and taxis, and the agency does not operate any microtransit service themselves. Riders can utilize the service to/from 26 locations throughout the county that are strategically located near important destinations in the county or transit transfer points. The transit agency provides a \$5 discount promo code for riding with Uber, Lyft, or taxi and a \$25 discount promo code for riding with an accessible taxi for people with disabilities.

#### Greater Dayton Regional Transit Authority

The Greater Dayton Regional Transit Authority (Dayton RTA) has partnered with Uber and Lyft to provide microtransit service. The microtransit service operates within zones specified by Dayton RTA, and riders must request to be picked up and dropped at locations within one of the specified zones. Riders may not request a trip from one zone to another zone. Dayton RTA provides riders with a promo code that pays for the entire cost of the microtransit trip, thus the service is free to the rider.

#### Dallas Area Rapid Transit

Dallas Area Rapid Transit (DART) partners with Uber to supplement their in-house microtransit capacity. Riders request a curb-to-curb ride within a specified zone, and DART automatically matches riders with the best available option to provide their ride (whether this is a transit vehicle or Uber vehicle) each time they request a microtransit ride. The cost to ride DART's microtransit service is the same fare as its fixed-route service.

### BENEFITS AND DRAWBACKS OF MICROTRANSIT RIDESHARE PARTNERSHIPS

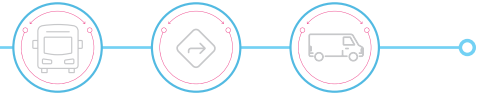
#### Benefits

One of the benefits of a transit agency partnering with a rideshare company for microtransit service is that it provides additional service capacity beyond what transit agency staff can provide. Providing additional capacity can then allow the transit agency to have its staff focus more on its fixed-route service that serves more people. Depending on the availability of rideshare and the trips taken by riders, rideshare partnerships may be a more cost-effective way to provide service. Lastly, given the established precedents of other transit agencies partnering with rideshare companies to provide microtransit service, these partnerships are now relatively easy to implement.

#### Drawbacks

One of the drawbacks of a transit agency partnering with a rideshare company for microtransit service is that the supply of rideshare drivers is not guaranteed and may be limited. Related to this is that the transit agency cannot control the pricing, including when there is demand pricing from the demand for service being much greater than the supply. There is also some loss of control with microtransit service operated by rideshare companies, such as less ability to communicate with riders and less trip data. When microtransit service is operated by both a transit agency and supplemented by rideshare companies, riders may not know which vehicle to expect to pick them up. Similarly, rideshare partnerships may be less comfortable and approachable for older adults or people with disabilities.





## POTENTIAL RIDESHARE PARTNERSHIP AND PAYMENT OPTIONS

As illustrated by the example transit agencies, there are various ways that transit agencies can partner with rideshare companies to provide microtransit service. Some example of partnership options include:

- » Have all microtransit service operated by BCRTA
- » Have microtransit service operated by BCRTA and supplemented by rideshare companies
- » Have microtransit service operated by BCRTA and supplemented by rideshare companies during existing hours of service and operated by rideshare companies outside of currently operated hours
- » Have microtransit service operated by BCRTA during existing hours of service and operated by rideshare companies outside of currently operated hours
- » Have all microtransit service operated by rideshare companies
- » Similarly, there are various payment options that transit agencies implement with their microtransit rideshare partnerships. Example of these include:
  - » A promo code is provided for a discounted rideshare trip
  - » The rider pays the transit fare, and the transit agency pays for any additional cost of rideshare trip
  - » A promo code is provided for the full cost of the rideshare trip

It will be advantageous as BCRTA coordinates with the other transit agencies involved with NEORide to discuss rideshare partnerships and payment options that the agencies can explore and implement together.



# Facilities Recommendations

The project team developed recommendations for BCRTA's operations and maintenance facility and passenger facilities to address the challenges identified in the existing conditions analysis.

## Operations and Maintenance Facility Recommendations

The project team explored four potential concepts to address the existing operations and maintenance facility challenges.

**These options included:**

- » **Option 1:** Construct separate materials storage building
- » **Option 2:** Add 2nd floor to administration building
- » **Option 3:** Construct new maintenance facility and expand the administration area
- » **Option 4:** Expand administration to existing maintenance area and construct separate maintenance and materials storage buildings

Based on the benefits and drawbacks of these options, the project team recommends BCRTA explore Option 3 further. While this option likely more expensive than Option 1 and Option 2, it is better aligned with current expansion work underway at the location and would lead to a more effective and functional use of the site.

The concept developed for Option 3 is shown in Figure 26 and includes a second access point to the facility, additional parking, an expansion of the existing administrative space (shown in orange), eight new maintenance bays (shown in green), new bus storage (shown in blue), a new receiving and parts storage space (shown in purple), and a potential fueling island. While additional design would be needed to move forward with any of these facility improvements, this concept provides a direction that BCRTA could move in with one large project or incrementally to address the challenges with the existing facility over time.

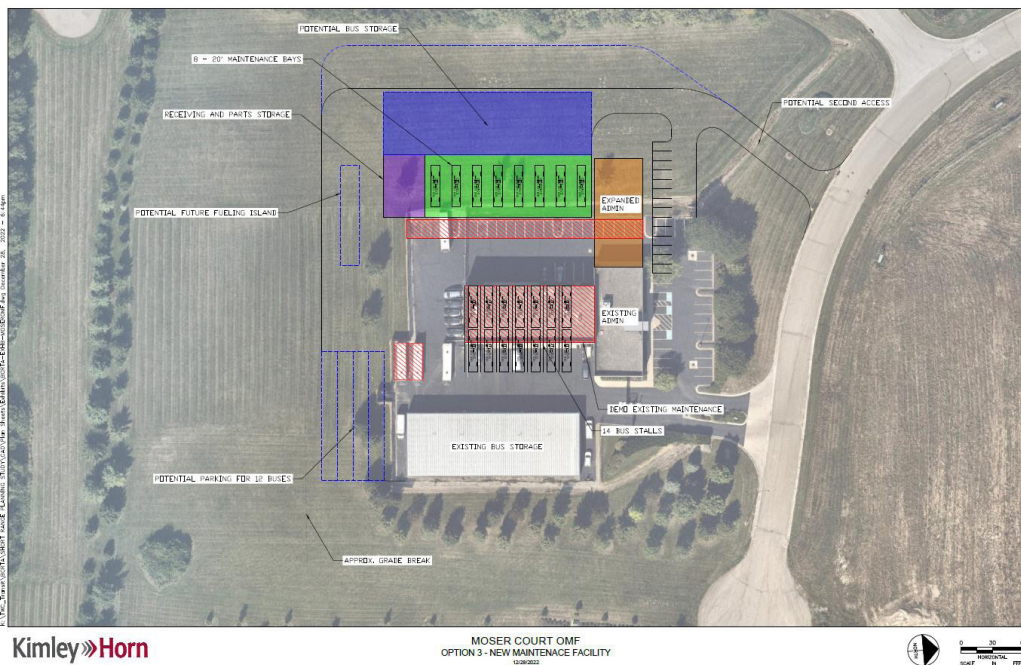
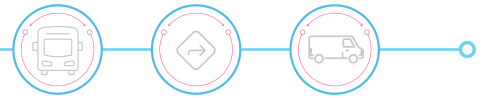


Figure 26: New Maintenance Facility Concept





## Passenger Facility Recommendations

The project team developed passenger facility recommendations for BCRTA at a high-level as well as recommendations specific to the Market Street Station.

### PASSENGER FACILITY DISTRIBUTION

The Federal Transit Administration's Title VI requirements regulate several aspects of transit agencies that receive federal funding, including the distribution of transit amenities. The regulations state that transit agencies develop a policy regarding the distribution and siting of transit amenities, including seating (benches), shelters, provision of information (signs, maps, schedules, real-time signage), and waste receptacles.

Based on natural breaks in BCRTA ridership by stop as well as the distribution policies of similar sized systems, the following thresholds are recommended for distribution of transit amenities within the BCRTA system:

- » Benches at stops with 15 or more boardings per day
- » Shelters with waste receptacles at stops with 25 or more boardings per day
- » Real-time signage and bicycle parking at stops with 100 or more boardings per day

At the time of this plan, 25 stops met the threshold for benches, 15 stops met the threshold for shelters and waste receptacles, and three stops met the threshold for real-time signage and bicycle parking. Given that this is much more infrastructure than BCRTA currently provides, it may be beneficial to set the thresholds higher and work towards these levels as resources are available.

### MARKET STREET STATION RECOMMENDATIONS

The project team identified several opportunities for improving the environment at Market Street Station. They included additional signage, lighting, and light colored materials, activating the space, adding restrooms, and placemaking at the station.

#### Signage

One recommendation for improving Market Street Station is to add additional signage. There is not currently any signage at the intersection of Market Street & 3rd Street or Market Street & 2nd Street to

make it clear that Market Street Station is located at the middle of the block. Adding bold, bright signage (such as that shown in Figure 27) at each end of the block would both make the transit station more attractive and inviting as well as better identify that the station is there.

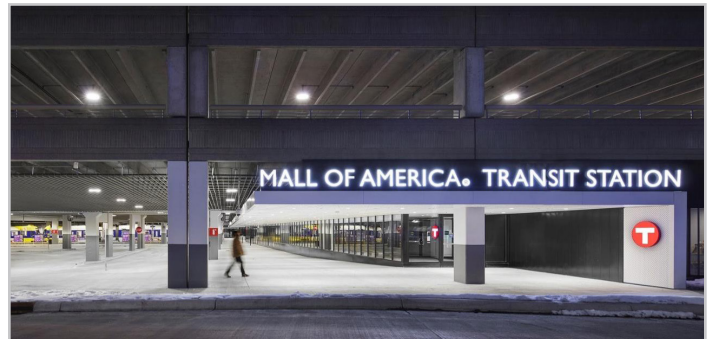


Figure 27: Mall of America Transit Station Signage

#### Lighting and Light Materials

The addition of lighting and light colored materials (such as those in Figure 28) would also benefit Market Street Station. The station is currently dark and uninviting, and light and light materials would both brighten up the space and make it feel warmer and inviting.



Figure 28: Lighting at Mall of America Transit Station

## Space Activation

It is also recommended that BCRTA partner with the City of Hamilton to activate the space surrounding the transit station. There is currently vacant commercial space surrounding the transit station, which provides the opportunity to intentionally fill this space with uses that are transit-supportive and could integrate a public restroom for transit riders to use. Some examples of ways that the space could be activated are a transit customer service center, a social service office, or a food pantry. One creative example of space activation adjacent to transit stations that has been deployed in Atlanta is the addition of soccer facilities at transit stations. This has provided youth and adults with a positive activity to engage in and has also activated space that was previously vacant and uninviting.



**SOURCE:** [HTTPS://WWW.METROSTLOUIS.ORG/MOBILE-FOOD-PANTRY/](https://www.metrostlouis.org/mobile-food-pantry/)

**Figure 29:** A Mobile Food Pantry at a St. Louis Metro Transit Station



**SOURCE:** [HTTPS://WWW.METROSTLOUIS.ORG/MOBILE-FOOD-PANTRY/](https://www.metrostlouis.org/mobile-food-pantry/)

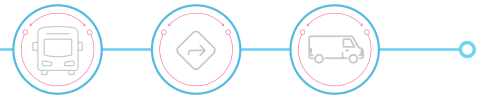
**Figure 30:** Station Soccer in Atlanta

## Placemaking

Placemaking activities would also be beneficial at Market Street Station. Whether that's BCRTA and the City of Hamilton inviting food trucks to locate in the area, having times with music and yard games, or inviting musicians to come play music, placemaking activities would help make Market Street Station more vibrant and bring more people to the area with positive and engaging activities.

## Relocation

In addition to the previously discussed recommendations, another option that may be beneficial for the BCRTA transit station in Hamilton is to move it to another location. Locations on 2nd Street or 3rd Street could have better visibility from High Street as well as opportunities to locate in proximity to supporting businesses or organizations. Relocating the transit station in Hamilton would likely require additional investment and would have less cover.



# Economic and Fiscal Impact

## Overview

### ECONOMIC IMPACT

The University of Cincinnati Economics Center completed an economic impact analysis to measure the effect of an BCRTA's expenditures on its surrounding community. The total economic impact is the sum of the direct and indirect impacts. The direct impact is the amount spent directly by the organization that is retained within the local economy. The indirect impact is the additional economic impact resulting from the increased demand, income, and jobs within other industries, or the inter-industry linkages. The direct impact has ripple effects due to increased household income and spending, which are referred to as induced impacts. Induced impacts are reported within indirect impacts for the entirety of this report.

BCRTA provided expenditure data for the budgeted capital and operations expenditures between 2023 and 2033. All expenditure data from BCRTA are presented in 2023 dollars.

Expenditure data were then factored for economic leakage to represent only the economic impact of money retained in Butler County. Economic leakage refers to the percentage of purchases for products and services that cannot be met immediately within the local economy, and thus must be imported from outside the local economy. Leakage estimates were obtained from Lightcast, a third-party provider of labor market data.

The post-leakage expenditures were used in an input-output model that uses multipliers to represent the inter-industry linkages and household economic relationships. Multipliers are used to determine the total economic impact when applied to the direct impact. This means that multipliers reflect how many additional dollars will be spent in a local economy by other businesses and households for every dollar spent by an organization. These multipliers are location and industry specific and were obtained from Lightcast.

### FISCAL IMPACT

The fiscal impact analysis estimates the subsequent impacts on state and local tax revenue of the capital and operations expenditures of BCRTA. State and local earnings tax revenue were calculated for the earnings, directly and indirectly, supported, as well as the state and local sales tax revenue resulting from the spending of those earnings. It was assumed that the current tax rates would remain unchanged in the future.

#### Earnings Tax

State earnings tax revenue accrues to the state of residence of the worker, whereas local earnings tax revenue accrues to the municipality of the workplace. All workers were assumed to reside in the State of Ohio. All local earnings tax revenue generated from the direct jobs supported accrued to the City of Hamilton. A blended local earnings tax rate for Butler County was estimated and applied to the indirect jobs supported by the capital and operations expenditures of BCRTA.

#### Sales Tax

Sales tax revenue accrues to the State of Ohio as well as to Butler County. The University of Cincinnati Economics Center assumed that the individuals, directly and indirectly, supported by the capital and operations expenditures of BCRTA spend their earnings in the local economy. To estimate the sales tax revenue generated, the Bureau of Labor Statistics' Consumer Expenditure Survey for the Midwest was utilized to determine what portion of average annual earnings were used to make taxable purchases. Taxable spending was then factored for economic leakage, and the applicable sales tax rates were applied.



## Economic Impact of BCRTA Spending

In addition to the benefits created for riders, BCRTA also generates impacts on the Butler County economy through capital and operations expenditures. The economic impact that can be attributed to BCRTA is ascertained by examining the capital and operations expenditures made by BCRTA, as well as examining the employment and earnings generated in Butler County resulting from the spending that occurs in the local economy due to BCRTA.

## Capital Expenditures

Capital expenditures refer to expenses for revenue vehicles, facilities improvements, equipment, and other amenities. These expenditures are associated with a specific project and are generally one-time expenditures as opposed to ongoing. During the 11-year period between 2023 and 2033, BCRTA plans to make \$47.4 million of capital expenditures.

After accounting for economic leakage, approximately \$20.5 million in economic output will directly generated in Butler County between 2023 and 2033 by the capital expenditures of BCRTA. This will result in further indirect economic output of \$9.4 million for the businesses supported by the capital expenditures of BCRTA. The capital expenditures of BCRTA will directly support 80 jobs with earnings of \$5.9 million. Indirectly, the capital expenditures of BCRTA will support 52 jobs with earnings of approximately 3.0 million. As detailed in Table 6, the capital expenditures of BCRTA are projected to generate a total of \$29.9 million in economic output and support 132 jobs with \$8.9 million in earnings in Butler County between 2023 and 2033.

**Table 6:** Economic Impact of Capital Expenditures, 2023-2033 (2023\$)

Impact Type	Output	Employment	Earnings
<b>Direct</b>	\$20,456,348	80	\$5,936,096
<b>Indirect</b>	\$9,394,944	52	\$2,970,087
<b>Total</b>	\$29,852,292	132	\$8,906,183

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS USING DATA FROM BCRTA.

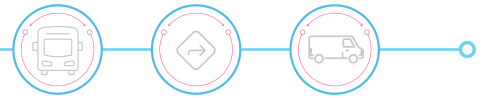
Between 2023 and 2033, the direct earnings supported by the capital expenditures of BCRTA will generate more than \$145,500 in state earnings tax revenue, approximately \$109,000 in local earnings tax revenue, \$46,600 in state sales tax revenue, and \$6,100 in sale tax revenue for Butler County. Additionally, the indirect earnings supported by the capital expenditures of BCRTA are projected to create approximately \$66,000 in state earnings tax revenue, \$54,400 in local earnings tax revenue, nearly \$25,000 in sales tax revenue for the State of Ohio, and \$3,200 in sales tax revenue for Butler County over the 11-year period. As detailed in Table 7, the capital expenditures planned to be made by BCRTA between 2023 and 2033 will support a total of approximately \$455,000 in state and local tax revenue. The total tax revenue generated by the capital expenditures of BCRTA between 2023 and 2033 will be comprised of nearly \$211,500 in state earnings tax revenue, more than \$163,100 in local earnings tax revenue, approximately \$71,200 in state sales tax revenue, and \$9,300 in sales tax revenue for Butler County.

**Table 7:** Fiscal Impact of Capital Expenditures, 2023 – 2033 (2023\$)

Impact Type	State Earnings Tax Revenue	Local Earnings Tax Revenue	State Sales Tax Revenue	County Sales Tax Revenue	Total Tax Revenue
<b>Direct</b>	\$145,553	\$108,727	\$46,632	\$6,082	\$306,994
<b>Indirect</b>	\$65,918	\$54,401	\$24,584	\$3,207	\$148,110
<b>Total</b>	\$211,471	\$163,128	\$71,216	\$9,289	\$455,104

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS USING DATA FROM BCRTA.





## Operations Expenditures

The operations expenditures of BCRTA represent the day-to-day expenses such as salaries, benefits, and administrative expenses, among other items. Between 2023 and 2033, BCRTA plans to spend \$58.3 million on operations. This equates to average annual operations expenditures of \$5.3 million.

After accounting for economic leakage, the operations expenditures of BCRTA will directly generate \$46.7 million in economic output in Butler County between 2023 and 2033, as detailed in Table 8. An additional \$20.6 million in economic output will be indirectly generated in Butler County due to the inter-industry linkages. Between 2023 and 2033, the operations of BCRTA will create a total of \$67.3 million in economic output. BCRTA will directly employ 1,078 individuals in Butler County between 2023 and 2033, or an average of 98 employees per year. The individuals directly employed by BCRTA will have earnings of \$33.8 million between 2023 and 2033. The operations expenditures made by BCRTA during this 11-year period will indirectly support an additional 165 jobs with earnings of \$8.8 million between 2023 and 2033. In total, the operations expenditures of BCRTA, will directly and indirectly, support 1,243 jobs with earnings of \$42.5 million between 2023 and 2033. The average annual impact of the operations expenditures of BCRTA will be approximately \$6.1 million in economic output, 113 jobs, and \$3.9 million in earnings in Butler County.

**Table 8:** Economic Impact of Operations Expenditures, 2023 – 2033 (2023\$)

Impact Type	Output	Employment	Earnings
<b>Direct</b>	\$46,701,516	1,078	\$33,786,076
<b>Indirect</b>	\$20,601,817	165	\$8,745,241
<b>Total</b>	\$67,303,333	1,243	\$42,531,317

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS USING DATA FROM BCRTA.

Table 9 details the tax revenue generated by the operations expenditures of BCRTA between 2023 and 2033. The individuals directly employed by BCRTA will generate approximately \$547,000 in state earnings tax revenue, \$676,000 in local earnings tax revenue, nearly \$411,000 in sales tax revenue for the State of Ohio, and \$53,500 in sales tax revenue for Butler County. An additional \$188,000 in state earnings tax revenue, \$160,000 in local earnings tax revenue, \$72,400 in state sales tax revenue, and approximately \$9,500 in county sales tax revenue will be indirectly generated as a result of the planned operations expenditures of BCRTA between 2023 and 2033. The operations expenditures of BCRTA will, directly and indirectly, create more than \$2.1 million in tax revenue for state and local governments between 2023 and 2033, or an average of approximately \$192,400 annually.

**Table 9:** Fiscal Impact of Operations Expenditures, 2023 – 2033 (2023\$)

Impact Type	State Earnings Tax Revenue	Local Earnings Tax Revenue	State Sales Tax Revenue	County Sales Tax Revenue	Total Tax Revenue
<b>Direct</b>	\$546,544	\$675,722	\$410,477	\$53,541	\$1,686,284
<b>Indirect</b>	\$187,896	\$160,180	\$72,385	\$9,441	\$429,902

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS USING DATA FROM BCRTA.





## Total Economic Impact

Table 10 details the total economic impact of the capital and operations expenditures of BCRTA projected to occur in Butler County between 2023 and 2033. BCRTA will directly generate \$67.2 million in economic output in Butler County, which will lead to further indirect economic output of \$30.0 million. The capital and operations expenditures of BCRTA will directly support 1,158 jobs with earnings of \$39.7 million. On average, 105 jobs with earnings of \$3.6 million will be directly supported by BCRTA each year. Indirectly, the capital and operations expenditures of BCRTA will support an additional 217 jobs with \$11.7 million in earnings in Butler County. Over this 11-year period, the capital and operations expenditures of BCRTA will generate \$97.2 million in economic output and support 1,375 jobs with earnings of \$51.4 million. This equates to an average annual impact in Butler County of more than \$8.8 million in economic output, 125 jobs, and \$4.7 million in earnings.

**Table 10:** Total Economic Impact of BCRTA Expenditures, 2023 – 2033 (2023\$)

Impact Type	Output	Employment	Earnings
<b>Direct</b>	\$67,158,864	1,158	\$39,722,172
<b>Indirect</b>	\$29,996,761	217	\$11,715,328
<b>Total</b>	\$97,155,625	1,375	\$51,437,500

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS USING DATA FROM BCRTA.

The planned capital and operations expenditures of BCRTA will generate a total of \$2.6 million in state and local tax revenue between 2023 and 2033, as shown in Table 11. The capital and operations expenditures of BCRTA will directly generate more than \$692,000 in state earnings tax revenue, nearly \$784,500 in local earnings tax revenue, approximately \$457,000 in sales tax revenue for the State of Ohio, and an estimate \$59,600 in sales tax revenue for Butler County. The operations and capital expenditures of BCRTA will indirectly lead to an additional \$253,800 in state earnings tax revenue, \$214,600 million in local earnings tax revenue, \$97,000 in state sales tax revenue, and 12,700 in sales tax revenue for Butler County. On average, the capital and operations expenditures of BCRTA will have an annual fiscal impact of approximately \$233,800 between 2023 and 2033.

**Table 11:** Fiscal Impact of Operations and Capital Expenditures, 2023 – 2033, (2023\$)

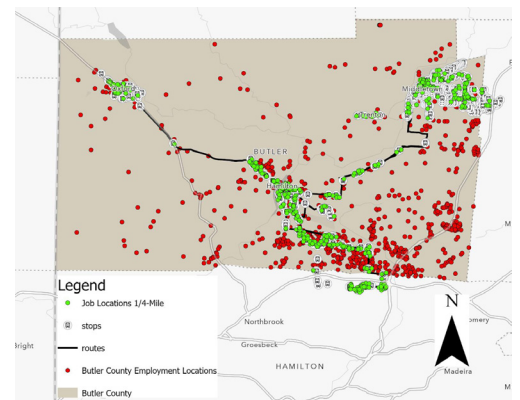
Impact Type	State Earnings Tax Revenue	Local Earnings Tax Revenue	State Sales Tax Revenue	County Sales Tax Revenue	Total Tax Revenue
<b>Direct</b>	\$692,097	\$784,449	\$457,109	\$59,623	\$1,993,278
<b>Indirect</b>	\$253,814	\$214,581	\$96,969	\$12,648	\$578,012

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS USING DATA FROM BCRTA.

## Jobs Access Gap

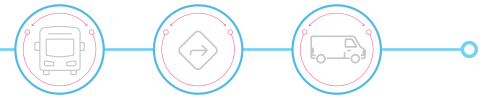
In addition to analyzing BCRTA's economic impact based on its economic and fiscal impact of expenditures, the University of Cincinnati Economics Center looked at job access from the BCRTA bus network. Job access is defined as being within ¼-mile of an existing BCRTA bus stop. Using employment, wage, and location data from the Quarterly Census of Employment and Wages received from the State of Ohio, commonly known as ES-202<sup>1</sup>, a geospatial analysis was conducted to evaluate the proximity of existing BCRTA bus stops to Butler County businesses. For the purposes of calculating proximity, a ¼-mile buffer was generated around existing BCRTA bus stops. The businesses that are within this defined pedestrian-shed, or walking distance, of an existing BCRTA stop fall within the ¼-mile buffer.

When examining the distribution of jobs within a ¼-mile buffer of BCRTA's current stops, the Cities of Hamilton and Middletown are the clear hub of the current network, as shown in Figure 31. The southwest



**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER ANALYSIS USING ES-202 DATA FROM THE STATE OF OHIO AND BCRTA.  
**Figure 31:** BCRTA Job Access ¼-Mile

<sup>1</sup>ES-202 data collected by the State of Ohio does not cover all classes of workers. Certain classifications within the ES-202 data have been omitted from this analysis, including those businesses filing data for multiple establishment locations in the aggregate, and those that filed with the State of Ohio but did not specify the establishment location.



and west portions of Butler County, including West Chester and Liberty Townships display substantial job density, however the majority of these jobs are located outside of the ¼-mile buffer of a stop along the current BCRTA route network.

Under BCRTA's current route system, approximately 20,750 jobs can be accessed within Butler County. The wages associated with these transit-accessible jobs total more than \$1.1 billion, or an average of \$54,663 per job.

Table 12 displays transit-accessible job access by industry in Butler County. The Educational Services Industry has the most jobs that can be accessed, under the current route system, within a ¼-mile of BCRTA stops (6,441 jobs), followed by the Health Care and Social Assistance Industry (2,389 jobs), and the Public Administration Industry (2,256 jobs). It is worth noting that while the most jobs that can be accessed within a ¼-mile of a BCRTA stop occur in the Education Services Industry, it is likely due to BCRTA's service in the City of Oxford and proximity to Miami University. The Real Estate Rental and Leasing and Utilities Industries have the smallest share of the jobs that are transit accessible under BCRTA's current system, each at 0.3 percent.

**Table 12:** *Transit-Accessible Jobs by Industry*

NAICS	Industry	Jobs	Wages (2022\$)	Share of Transit-Accessible Jobs
11	Agriculture, Forestry, Fishing, and Hunting	ins. data	ins. data	ins. data
21	Mining, Quarrying, and Oil and Gas Extraction	ins. data	ins. data	ins. data
22	Utilities	61	\$4,035,715	0.3%
23	Construction	498	\$30,474,360	2.4%
31-33	Manufacturing	1,986	\$138,678,363	9.6%
42	Wholesale Trade	985	\$64,221,654	4.7%
44-45	Retail Trade	1,505	\$51,348,336	7.3%
48-49	Transportation and Warehousing	ins. data	ins. data	ins. data
51	Information	ins. data	ins. data	ins. data
52	Finance and Insurance	469	\$31,395,544	2.3%
53	Real Estate and Rental and Leasing	53	\$2,469,923	0.3%
54	Professional, Scientific, and Technical Services	175	\$13,929,224	0.8%
55	Management of Companies and Enterprises	ins. data	ins. data	ins. data
56	Administrative and Support and Waste Management and Remediation Services	985	\$31,222,892	4.7%
61	Educational Services	6,441	\$414,543,140	31.0%
62	Health Care and Social Assistance	2,389	\$121,771,926	11.5%
71	Arts, Entertainment, and Recreation	386	\$6,585,013	1.9%
72	Accommodation and Food Service	1,588	\$26,129,063	7.7%
81	Other Services, except Public Administration	610	\$16,614,641	2.9%
92	Public Administration	2,256	\$158,980,365	10.9%
	Total	20,752	\$1,134,369,763	100%

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER ANALYSIS OF ES-202 DATA RECEIVED FROM THE STATE OF OHIO.



# Financial Plan

## Funding Analysis

A variety of different funding sources are available to BCRTA at the federal, state, and local levels. The project team completed a funding analysis that documented the funding sources that BCRTA currently leverages and other potential funding sources that BCRTA could seek in the future as it looks to expand its system.

### CURRENT BCRTA FUNDING

Federal and state funding make up the majority of BCRTA's current operating revenue. BCRTA relies on federal funding for approximately 50 percent of its operating revenues. The two main federal sources are the Federal Transit Administration (FTA) Section 5307 Urbanized Area Formula and Section 5339 Bus and Bus Facilities funding. BCRTA relies on state funding for approximately four percent of its operating revenue. State capital grant funds have comprised of Ohio Transit Partnership Program (OTP2) and Urban Transit Program (UTP) sources.

BCRTA secures additional funding through local sources, with the top two sources being the Transit Development Program and Partnership Transit Revenue, which comprise 32 percent of the total operating revenue. Transit Development Program funding is from Miami University as a contract for BCRTA to provide nine months of transit service during the school year and the Partnership Transit Revenue source is from the City of Middletown for operating services.

## FUTURE FUNDING AND FINANCING OPTIONS

The project team inventoried potential federal, state, local, and direct revenue options that BCRTA could pursue in the future. The project team applied two evaluation criteria to these sources to define the general applicability of each funding and financing option to BCRTA:

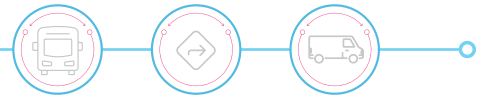
- » **Revenue** – A measure of the magnitude of funding possible under each option
- » **Stability** – The likelihood that revenues under each option stay consistent year-to-year

Identifying potential local transit funding sources was of particular importance for the project team because additional local funding is required to leverage any additional federal funding. This is because federal funding requires a local match, and BCRTA is already leveraging all of its existing local funding as local match. As shown in Figure 32, permissive sales and use tax was found to be the optimal potential local funding source based on the magnitude of funding it can provide and its stability. Another benefit of funding transit with permissive sales and use tax is that the burden of the tax does not solely fall on residents, since those visiting the county for shopping or sporting events also pay sales tax. Eleven transit agencies in Ohio already leverage the benefits of sales tax for transit revenue.

	Revenue	Stability	Capital Expense Eligible	Operating Expense Eligible
<b>Local</b>				
TIF	○	◐	▲	
Local General Funds	◐	◐	▲	▲
Permissive Sales and Use Tax	●	●	▲	
Property and Earnings Tax	◐	◐	▲	▲
<b>Agency-Specific</b>				
Fares	○	◐	▲	▲
Advertising/Agency Revenues	○	◐	▲	▲
Private Contributions/Service Provisions	◐	○		▲

○ low  
◐ medium  
● high

Figure 32: Revenue and stability of potential transit financing options



## Butler County Sales Tax

Currently, BCRTA is not able to obtain additional federal funding to support existing or increased service until the agency secures additional local funding. Without additional local funding, BCRTA will not be able to maintain its existing service as the costs of service are outpacing the growth in funding. One of the mechanisms available to BCRTA to generate increased local funding that can be leveraged for additional federal funding, is an increase to the local sales tax rate. An increase to the local sales tax rate would enable BCRTA to collect revenue from all spending subject to sales tax, including from non-County residents.

### BUTLER COUNTY HOUSEHOLD SALES TAX CONTRIBUTIONS

To understand the portion of Butler County sales tax revenue currently paid by Butler County households, the University of Cincinnati Economics Center utilized data from the 2021 American Community Survey (ACS), 5-year estimates and the Midwest Consumer Expenditure Survey. The 2021 ACS 5-year data provided data on the number of households in Butler County by income range and the Midwest Consumer Expenditure Survey offered household consumption by spending category and household income range. Further, the University of Cincinnati Economics Center controlled for economic leakage, or the portion of household spending in Butler County that is estimated to occur outside of the county. Controlling for economic leakage enabled the University of Cincinnati Economics Center to include only the portion of Butler County household spending that is estimated to be retained within Butler County. Not all household spending is subject to sales tax, and therefore, spending categories such as *Food at home; Shelter; Utilities, fuels, and public services; Health insurance, Medical services; Education; and Personal insurance, and pensions* were excluded from the analysis.

Table 13 details the amount of Butler County sales tax revenue generated by household income ranges. As shown in the Table 10, Butler County households are estimated to have generated approximately \$21.9 million in local sales tax revenue in 2021. Households in the \$100,000 to \$149,999 range provided the most local sales tax to Butler County. These households also comprised the largest group with 26,862 households in the county.

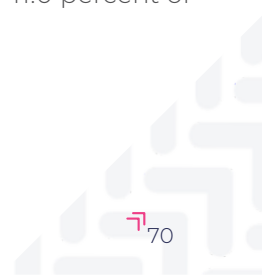
**Table 13:** Butler County Tax Revenue Generated by Butler County Households, (2021\$)

Number of Households	Household Income Range	Share of Household Income Spent on Taxable Purchases in Butler County	Total Taxable Spend in Butler County	Butler County Sales Tax Revenue (0.75%)
12,002	Less than \$15,000	1.2036 <sup>2</sup>	\$112,446,154	\$843,346
10,287	\$15,000-\$29,999	0.4233	\$95,220,882	\$714,157
10,573	\$30,000-\$39,999	0.5723	\$134,558,606	\$1,009,190
16,288	\$40,000-\$49,999	0.3067	\$223,346,314	\$1,675,097
24,718	\$50,000-\$69,999	0.2659	\$389,927,004	\$2,924,453
19,003	\$70,000-\$99,999	0.2423	\$382,884,116	\$2,871,631
26,862	\$100,000-\$149,999	0.2121	\$689,960,356	\$5,174,703
12,288	\$150,000-\$199,999	0.1898	\$398,045,180	\$2,985,339
10,573	\$200,000 and above	0.1517	\$486,499,418	\$3,648,746
<b>142,594</b>				<b>\$21,846,660</b>

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS USING DATA FROM THE 2021 AMERICAN COMMUNITY SURVEY, 5-YEAR ESTIMATES AND THE MIDWEST CONSUMER EXPENDITURE SURVEY.

The amount of sales tax revenue that accrued to Butler County during 2021 totaled approximately \$53.5 million. Considering Butler County households generated \$21.9 million in sales tax revenue for Butler County, it can be concluded that spending subject to sales tax made by local households represent approximately 41.0 percent of Butler County's local sales tax revenue.

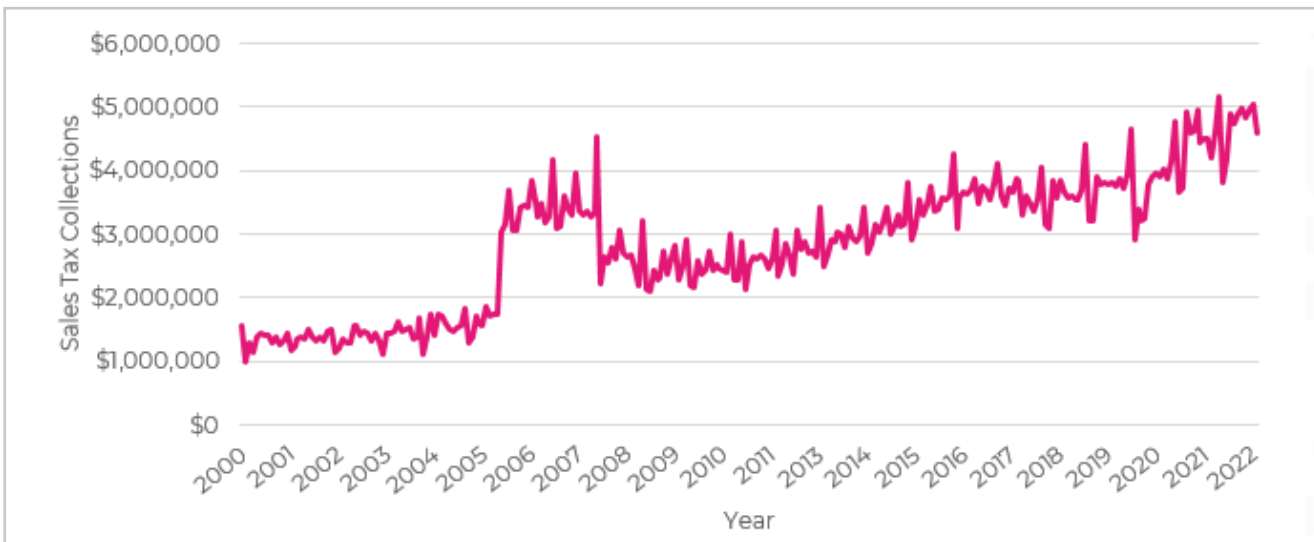
<sup>2</sup>The Share of household income spent on taxable purchases exceeds 100 percent due to households in this income range accessing and utilizing public assistance benefits.



## SALES TAX FORECAST

The University of Cincinnati Economics Center conducted a sales tax forecast of Butler County's monthly and annual sales tax revenues including estimated impacts on collections based on two scenarios. The baseline county rate is 0.75 percent, or three-quarters of one percent, and represents the baseline scenario. The alternative scenario models a marginal increase of 0.25 percentage points, resulting in a total local rate of 1.00 percent.

Figure 33 shows the historical monthly sales tax collections in Butler County from January 2000 to November 2022. During this time period, Butler County's rate of collections changed twice, once in October 2005 from 0.50 percent to 1.00 percent and again in January 2008 from 1.00 percent to 0.75 percent.



**SOURCE:** OHIO DEPARTMENT OF TAXATION.

**Figure 33:** Butler County Monthly Sales Tax Collections, 2000 – 2022 (Nominal\$)

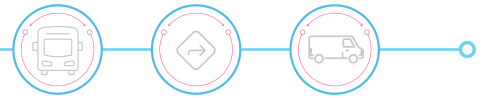
The change in tax rate from 0.50 percent to 1.00 percent in 2005 contributed to a large increase in monthly collections followed by a decrease when the rate moved down from 1.00 percent to 0.75 percent in 2008. However, as Figure 34 demonstrates, the average taxable monthly spend per capita largely remained consistent throughout this time period.



**SOURCE:** OHIO DEPARTMENT OF TAXATION AND UNIVERSITY OF CINCINNATI ECONOMICS CENTER CALCULATIONS.

**Figure 34:** Butler County Per Capita Monthly Taxable Spend, 2000 – 2022 (Nominal\$)





Notable variances in the per capita monthly taxable spend<sup>3</sup> data at first seem to be associated with the changes in the tax rate. However, this could result from either a lag or collections or revisions to the amount disbursed to Butler County from the State of Ohio. The University of Cincinnati Economics Center also controlled for changes in County revenues regarding the Medicaid Health Insurance Corporation changes from 2010 to 2017.

Table 14 shows the baseline in tax collections historically as well as the forecasted collection for the baseline rate and the proposed rate changes through 2032. The monthly data used in the forecast is from January 2000 through November 2022. The forecasted 0.75 percent column includes the current tax rate with forecasted values throughout the remainder of 2022. The forecast scenarios utilized actual collections through November 2022 and supplemented the month of December. The University of Cincinnati Economics Center applied an autoregressive integrated moving average (ARIMA) model to the historical data. This model evaluates the historical growth patterns of collections and then considers contributing factors such as natural trends in the data (increases in collections due to, but not limited to, population changes, inflation, and spending habits) as well as seasonality of spending over time (month-to-month differences in spending due to holiday spending, for example).

**Table 14:** Annual Butler County Sales Tax Collections, 2000 – 2032 (Nominal\$)

Year	Historical Collections (\$M)	Forecast, 0.75% (\$M)	Forecast, 1.0% (\$M)
2000	\$15.91		
2001	\$16.33		
2002	\$16.62		
2003	\$17.11		
2004	\$18.41		
2005	\$22.61		
2006	\$40.66		
2007	\$41.32		
2008	\$33.11		
2009	\$29.77		
2010	\$29.59		
2011	\$30.75		
2012	\$32.59		
2013	\$35.15		
2014	\$37.45		
2015	\$41.39		
2016	\$44.07		
2017	\$43.65		
2018	\$43.19		
2019	\$45.17		
2020	\$45.01		
2021	\$53.53		
2022	\$56.87 <sup>4</sup>		
2023		\$58.07	\$77.23
2024		\$58.53	\$77.85
2025		\$59.02	\$78.50
2026		\$59.51	\$79.14
2027		\$59.97	\$79.76
2028		\$60.41	\$80.35
2029		\$60.83	\$80.91
2030		\$61.23	\$81.44
2031		\$61.61	\$81.94
2032		\$61.96	\$82.41

**SOURCE:** OHIO DEPARTMENT OF TAXATION AND UNIVERSITY OF CINCINNATI ECONOMICS CENTER FORECAST RESULTS.

<sup>3</sup>Per capita spending includes all taxable sales occurring within Butler County, not just those made by Butler County residents. This per capita figure was calculated to allow for the comparison of different tax rates over time so that elasticity, or relationship between different sales tax rates and spending, could be examined within the forecast model.

<sup>4</sup>December sales tax collections data not yet available from the Ohio Department of Taxation. The 2022 tax collections represent actual collections from January through November with December values imputed.

Table 15 shows the forecasted current collections as well as the marginal gains for the increased rate scenario. The forecasted collections at the current county rate of 0.75 percent show the amounts projected to be generated for Butler County between 2023 and 2032. An increase to the Butler County sales tax rate of 0.25 percentage points will result in additional sales tax revenues ranging from \$19.16 million in 2023 to \$20.45 million in 2032. In total, increasing the local sales tax rate from 0.75 percent to 1.00 percent will generate approximately \$198.40 million in additional revenue.

**Table 15:** Butler County Forecasted Sales Tax Collections, 2023-2032)

Year	Forecasted Current Collections, 0.75% (\$M)	Forecast Marginal Collections, 1.0% (\$M)
2023	\$58.07	\$19.16
2024	\$58.53	\$19.32
2025	\$59.02	\$19.48
2026	\$59.51	\$19.64
2027	\$59.97	\$19.79
2028	\$60.41	\$19.94
2029	\$60.83	\$20.08
2030	\$61.23	\$20.21
2031	\$61.61	\$20.33
2032	\$61.96	\$20.45
<b>TOTAL</b>	\$601.14	\$198.40

**SOURCE:** UNIVERSITY OF CINCINNATI ECONOMICS CENTER FORECAST RESULTS AND CALCULATIONS.

## Financing Recommendations

Partnership between BCRta staff, the BCRta board, and local policymakers will be critical in discussions regarding the availability of BCRta service and the local funding required to pay for it. If these partners further explore the potential of a sales tax to support transit in Butler County, it would be beneficial to engage the public and stakeholders regarding if this funding option is supported, what percentage sales tax is most supported, and if the sales tax should benefit roads in addition to transit.



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 **Bcrta**

