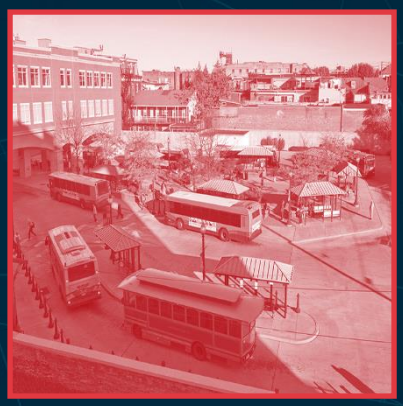
South Central Transit Authority

Transit Development Plan

March 2024



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WBA

TDP '23

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CHAPTER 1

Introduction

Introduction

BACKGROUND

In 2014, Berks County Regional Transit Authority (BARTA) and Red Rose Transit Authority (RRTA) consolidated their administrative, management, and planning functions into a single entity called South Central Transit Authority (SCTA). SCTA oversees the operations of BARTA and RRTA, which still operate as separate transit system serving Berks Couty and Lancaster County, PA, respectively.

Together as SCTA, the two systems cover a service area of 1,848 square miles with a population of 949,401 residents. This population is concentrated in each county's largest city — Lancaster, in Lancaster County, and Reading, in Berks County. BARTA and RRTA are organized as radial hub-and-spoke networks connecting Lancaster and Reading with less populous outlying areas and neighboring towns. BARTA and RRTA each also operate demand-response paratransit services that provide shared rides to populations who can't access fixed-route service.

SCTA completed its last Transit Development Plan (TDP) in 2018, its first TDP conducted since BARTA and RRTA merged. The 2018 TDP sought to identify service enhancements, improve the overall efficiency of the system, and attract more riders. The COVID-19 pandemic forced SCTA to refocus its priorities; since the end of the pandemic SCTA faces new dynamics, such as a tight labor market and changing commuting patterns.

PLAN OVERVIEW

This TDP Update provides an opportunity to take a fresh look at the strengths, weaknesses, and opportunities facing BARTA and RRTA. Recommendations emerged from a process that included detailed analyses of each BARTA and RRTA route, as well as a comprehensive assessment of the overall market for transit service in the region. In addition, the TDP Update included several opportunities for public and stakeholder involvement at key points throughout the study.

The recommended networks for both systems aim to simplify service by designing each route to be bi-directional to the greatest extent possible. Bi-directional service allows passengers to travel more directly from their homes to key activity centers, and then back again along the same alignment (or a similar alignment, in the case of one-way street pairs), as opposed to riding out-of-direction along one-way loops.

The recommended networks also concentrate fixed-route services where they can be most effective (i.e., areas with higher density and transit-supportive land use). This means the elimination of a few lower performing route segments in both systems. On-demand microtransit services are recommended in the long-term, pending available funding, to supplement BARTA and RRTA's fixed-route networks. These microtransit services can more effectively serve lower-density, automobile-oriented areas than fixed-route transit.

The recommendations presented in this document are divided into three phases: a cost-neutral short-range phase, a mid-range phase that is not cost-constrained, and a long-range phase that is also not cost-constrained. However, this document will ultimately serve as a guide for SCTA as it looks to improve service in the future, the actual composition and timing of implementation may differ based on available resources, community outreach, and political considerations.

ORGANIZATION

This document consists of 10 chapters that follow this introduction. Each corresponds to the major phases of the study:

- **Chapter 2 – Strategic Vision**: An overview of the TDP's vision, goals, and objectives as well as guiding principles for service planning.
- **Chapter 3 – Inventory of Existing Services:** An overview of existing transit services in the study area, including current operating characteristics.
- **Chapter 4 – Budget and Funding:** A description of current fare policies and funding sources.
- **Chapter 5 – Fleet and Facilities:** A description of SCTA assets related to the provision of service including vehicles, bus waiting areas, and customer information.
- **Chapter 6 – Market Analysis:** An assessment of both the need and potential for transit service in the region based on density and demographic characteristics, as well as regional travel patterns.
- **Chapter 7 – Initial Public and Stakeholder Input:** A summary of public and stakeholder input, collected in meetings and surveys at the start of the study and used to inform the development of preliminary service scenarios.
- **Chapter 8 – Service Assessment:** A diagnostic assessment of the existing systems' strengths, weaknesses, and opportunities, as identified through the combination of technical analyses and industry best practices.
- **Chapter 9 – Preliminary Service Scenarios and Stakeholder Reactions:** A review of the two preliminary service redesign scenarios and the feedback received from stakeholders in response to each scenario.
- **Chapter 10 – Final Recommendations:** A detailed set of recommendations presented route-by-route, including an assessment of the impacts of the recommendations.
- **Appendices**: A set of appendices providing details on Title VI, planning documents in the region, public outreach, and the market analysis.

CHAPTER 2

Strategic Vision

Strategic Vision

SCTA established a vision statement, as well as goals and objectives to guide development and implementation of the plan. This vision statement and accompanying goals and objectives are based on the previous TDP; goals and objectives from relevant county and regional plans; and input from SCTA staff, stakeholders, and the public. The vision statement expresses what SCTA continually aims to achieve while the goals and objectives provide specific desired outcomes and the actions needed to bring them to fruition. The vision statement along with the goals and objectives lay the groundwork for the recommendations developed for this TDP and position the recommendations in SCTA's TDP within SCTA's agencywide vision and goals. In addition to the vision, goals, and objectives, a set of guiding principles also helped guide TDP development. These guiding principles provide a framework for transit service planning.

Vision

SCTA provides safe, effective, efficient, and customer focused public transportation services by using resources responsibly and exploring innovative ways to better serve existing customers, meet future demand, and increase the use of public transit in its service areas.

Goals and Objectives

GOALS	OBJECTIVES
SAFE	
Provide a safe, secure, and comfortable experience for all customers and transit employees.	■ Implement and update SCTA's Safety Plan and Safety Performance Targets. ■ Improve passenger comfort at stops, transit centers, and on-board vehicles. ■ Continue to improve security with technology and bus enhancements.
EFFECTIVE	
Offer a network that links people to the places they need and want to go.	■ Connect people to jobs, community services, healthcare, and educational institutions. ■ Extend span of service on weekends, evenings, and early mornings for the highest ridership routes. ■ Develop hubs or transfer points throughout the network, in addition to downtown transit centers.
EFFICIENT	
Make riding transit reliable and efficient.	■ Improve on-time performance. ■ Modify the network to provide routes and schedules that are direct and easy to understand. ■ Expand service to new areas where demand is strongest.
CUSTOMER FOCUSED	
Maintain and improve customer amenities for a positive customer experience.	■ Install and maintain signs to identify all bus stops. ■ Expand signage and information available at transit centers. ■ Ensure bus stops and transit facilities are accessible to all users and have adequate sidewalks, benches, lighting, and other amenities.

GOALS	OBJECTIVES
FISCALLY SUSTAINABLE	
Operate a service that maximizes available funds and remains well-positioned financially into the future.	■ Increase operating revenue by attracting more riders and building pass partnerships. ■ Track and manage operating costs. ■ Engage in marketing and promotion campaigns that increase awareness and encourage use of transit service. ■ Present timely and thorough information regarding the agency's budget and use of public funds.
INNOVATIVE	
Explore new tools and operating models to maximize service quality and efficiency.	■ Make transit information readily available online and in mobile applications. ■ Continue to enhance fare payment technologies to make payments as seamless as possible for customers. ■ Investigate new service models, such as microtransit service, for areas that have lower transit demand.

Guiding Principles

Transit service is most successful when it is easy to use and intuitive to understand. The following principles describe the characteristics of such a transit system.

SERVICE SHOULD OPERATE AT REGULAR INTERVALS

In general, people can easily remember repeating patterns, but have difficulty remembering irregular sequences. Transit routes that operate less frequently than every 15 minutes should utilize clockface scheduling to the greatest extent possible. With a clockface schedule, each bus arrives at the same time or times each hour. For example, a bus route with 30-minute frequency might arrive at a stop at :00 and :30 each hour throughout a service period. Clockface scheduling significantly enhances transit service usability, as it allows passengers to easily remember when their bus will come without having to rely on paper or online schedules.

ROUTES SHOULD OPERATE ALONG A DIRECT PATH

The fewer directional changes a route makes, the easier it is to understand. Circuitous alignments are disorienting and difficult to remember. Some deviations from the most direct path of travel are necessary and justifiable given that major destinations are sometimes located off major arterial roadways. However, frequent deviations from the most direct path of travel will increase travel times for the majority of passengers, and thus should be avoided unless there is a strong justification.

ROUTES SHOULD BE SYMMETRICAL

Routes should operate along the same alignment in both directions to make it easy for riders to know where to catch the bus for their return trip. Providing service on different streets, depending on direction, is sometimes unavoidable due to one-way traffic patterns, but to the extent possible, bus stops for service in opposite directions should be across from one another on opposite sides of the same street. Large one-way loops can also frustrate riders by forcing out-of-direction travel on either the outbound or return leg of

their trip. In most circumstances, transit riders prefer bi-directional services that they have to walk somewhat further to access, over a closer but one-way route.

ROUTES SHOULD SERVE WELL-DEFINED MARKETS

The purpose of a transit route should be clear. Each route should include strong anchors and serve a robust mix of the types of destinations that tend to generate transit ridership. These include multi-family housing, grocery and retail centers, medical facilities, educational institutions, community and civic centers, and job centers.

CHAPTER 3

Inventory of Existing Services

Inventory of Existing Services

South Central Transit Authority Services

SCTA is comprised of two constituent transit systems, BARTA and Red Rose Transit. BARTA operates throughout Berks County, PA, with service concentrated in and around the city of Reading, PA. Red Rose Transit provides service in Lancaster County, PA. Both agencies operate fixed-route and paratransit services, which are described below. SCTA submits consolidated service data to the National Transit Database (NTD) (**Table 1**).

Table 1: SCTA Fixed-Route Service, 2017-2021

	2018	2019	2020	2021	2022
Passenger Trips	4,660,772	4,534,323	3,847,195	2,793,144	2,862,184
Revenue Miles (VRM)	3,124,119	3,138,121	3,061,992	3,152,462	3,261,988
Revenue Hours (VRH)	243,451	245,563	239,829	244,777	254,919
Peak Vehicles (VOMS)	76	76	75	75	75

Source: NTD

RED ROSE TRANSIT

Red Rose Transit provides service between the City of Lancaster and outlying towns including Elizabethtown, Mount Joy, Columbia, Lititz, Ephrata, New Holland, and Gap. All numbered routes stop at the Queen Street Station in Downtown Lancaster. Red Rose Transit also contracts with Millersville University to operate two routes, the MU Xpress, an on-campus shuttle, and the MU Park City Xpress, which provides service between the campus and Park City. Millersville University service only operates during the fall and spring semesters, when school is in session. The Millersville routes are operated as open door service to the public, not just university students. **Table 2** displays RRTA's fixed-route service data for 2023, while **Table 3** visualizes RRTA's routes, span of service, and frequency for weekday peak service.

Table 2: RRTA Fixed-Route Service, 2023

	2023
Passenger Trips	1,147,150
Revenue Miles (VRM)	1,683,744
Revenue Hours (VRH)	116,977

Source: SCTA

Table 3: RRTA Routes

ROUTE	NAME	SERVICE DESCRIPTION	SERVICE SPAN	WEEKDAY PEAK SERVICE FREQUENCY (MINUTES)
1	Park City A-Southeast	Park City to Clermont Apartments via Downtown Lancaster	**Mon-Fri:** 6:05 a.m. to 10:50 p.m. **Sat:** 6:05 a.m. to 10:50 p.m. **Sun:** 11:10 a.m. to 6:40 p.m.	30
2	Park City B-6th Ward	LGH Health Campus to Grandview Shopping Center via Downtown Lancaster	**Mon-Fri:** 6:30 a.m. to 10:35 p.m. **Sat:** 7:10 a.m. to 10:35 p.m. **Sun:** 11:05 a.m. to 6:25 p.m.	35
3	Park City C-8th Ward	Park City to Kensington Court via Downtown Lancaster	**Mon-Fri:** 5:55 a.m. to 10:35 p.m. **Sat:** 7:45 a.m. to 10:35 p.m. **Sun:** 10:50 a.m. to 6:50 p.m.	35
5	Grandview/ Rossmere	Lancaster County Courthouse to Golden Triangle Shopping Center via Grandview and Downtown Lancaster	**Mon-Fri:** 6:15 a.m. to 6:05 p.m. **Sat:** 8:35 a.m. to 6:00 p.m. **Sun**: None	35
6	Downtown Lancaster Loop	Downtown Lancaster Loop	**Mon-Fri:** 5:20 a.m. to 6:10 p.m. **Sat:** None **Sun:** None	20
10	Lititz	Downtown Lancaster to Lititz	**Mon-Fri:** 5:10 a.m. to 6:40 p.m. **Sat:** 6:45 a.m. to 6:40 p.m. **Sun:** None	35
11	Ephrata	Ephrata to Lancaster	**Mon-Fri:** 5:00 a.m. to 7:00 p.m. **Sat:** 7:50 a.m. to 6:45 p.m. **Sun:** None	55
12	New Holland	New Holland to Lancaster	**Mon-Fri:** 5:05 a.m. to 7:20 p.m. **Sat:** 6:15 a.m. to 6:55 p.m. **Sun:** None	45
13	White Horse	White Horse to Lancaster	**Mon-Fri:** 5:30 a.m. to 6: 35 p.m. **Sat:** 6:30 a.m. to 5:15 p.m. **Sun:** None	60
14	Rockvale Outlets	Downtown Lancaster to Rockvale Outlets	**Mon-Fri:** 5:40 a.m. to 10:40 p.m. **Sat:** 6:30 a.m. to 10:40 p.m. **Sun:** 7:15 a.m. to 7:10 p.m.	25
15	Willow Street	Willow Street to Lancaster	**Mon-Fri:** 5:50 a.m. to 6:10 p.m. **Sat:** 8:20 a.m. to 4:20 p.m. **Sun:** None	40
16	Millersville	Millersville to Lancaster	**Mon-Fri:** 5:40 a.m. to 11:10 p.m. **Sat:** 7:20 a.m. to 11:10 p.m. **Sun:** 11:40 a.m. to 7:00 p.m.	25
17	Columbia	Columbia to Downtown Lancaster	**Mon-Fri:** 4:50 a.m. to 10:05 p.m. **Sat:** 6:15 a.m. to 8:50 p.m. **Sun:** 10:15 a.m. to 7:15 p.m.	30
18	Elizabethtown	Elizabethtown to Downtown Lancaster	**Mon-Fri:** 4:55 a.m. to 7:15 p.m. **Sat:** 6:30 a.m. to 3:10 p.m. **Sun:** None	40
19	Manheim	Downtown Lancaster to Manheim	**Mon-Fri:** 5:50 a.m. to 6:10 p.m. **Sat:** 8:20 a.m. to 4:20 p.m. **Sun:** None	55
20	Greenfield	Downtown Lancaster to PA College of Health Sciences	**Mon-Fri:** 5:20 a.m. to 6:10 p.m. **Sat:** None **Sun:** None	45
21	Gap	Downtown Lancaster to Gap Shopping Center	**Mon-Fri:** 5:05 a.m. to 5:35 p.m. **Sat:** 6:00 a.m. to 6:30 p.m. **Sun:** None	45
MU Express	Millersville University Xpress	Millersville University ON-Campus Shuttle	**Mon-Fri:** 7:30 a.m. to 9:50 p.m. **Sat:** None **Sun:** None	20

ROUTE	NAME	SERVICE DESCRIPTION	SERVICE SPAN	WEEKDAY PEAK SERVICE FREQUENCY (MINUTES)
MU Park City Xpress[1]	Millersville University Park City Xpress	Millersville University to Park City	**Mon-Fri:** 2:05 p.m. to 10:15 p.m. **Sat:** 2:05 p.m. to 10:15 p.m. **Sun:** 1:10 p.m. to 6:35 p.m.	55

Source: SCTA

BARTA BUS SERVICES

BARTA provides fixed-route bus and paratransit service in Berks County. All BARTA bus routes connect to the BARTA Transportation Center in downtown Reading, PA. **Table 4** shows BARTA's fixed-route service data for 2022, while **Table 5** displays BARTA's routes, span of service, and weekday peak frequency.

Table 4: BARTA Fixed-Route Service, 2023

	2023
Passenger Trips	2,081,069
Revenue Miles (VRM)	1,564,470
Revenue Hours (VRH)	136,116

Source: SCTA

[1] In January 2024, the MU Park City Express service was eliminated; currently only the MU Express and Route 16 serve Millersville University.

Table 5: BARTA Routes

ROUTE	NAME	SERVICE DESCRIPTION	SERVICE SPAN	WEEKDAY PEAK SERVICE FREQUENCY (MINUTES)
1	Temple via 5th Street	North Reading Plaza to BARTA Transportation Center	**Mon-Fri:** 5:30 a.m. to 12:00 a.m. **Sat:** 6:30 a.m. to 12:00 a.m. **Sun:** 10:00 a.m. to 7:00 p.m.	20
2	Fairgrounds Square Market	Fairgrounds Square Market to BARTA Transportation Center	**Fri:** Single run: 10:55 a.m. **Sat:** Single run: 10:55 a.m. **Sun:** None	N/A
3	Temple via Kutztown Road	Temple via Kutztown Road to BARTA Transportation Center	**Mon-Fri:** 5:15 a.m. to 6:45 p.m. **Sat:** 6:15 a.m. to 5:45 p.m. **Sun:** None	30
4	10th/11th Street	BARTA Transportation Center to 10th Street and Exeter Street	**Mon-Fri:** 4:45 a.m. to 10:40 p.m. **Sat:** 4:45 a.m. to 10:40 p.m. **Sun**: 11:15 a.m. to 6:30 p.m.	25
5	Albright College	Albright College to BARTA Transportation Center	**Mon-Fri:** 5:20 a.m. to 6:20 p.m. **Sat:** 6:15 a.m. to 6:15 p.m. **Sun:** None	15
7	Pennside	Stony Creek Towne Houses to BARTA Transportation Center	**Mon-Fri:** 5:30 a.m. to 6:30 p.m. **Sat:** 6:30 a.m. to 6:30 p.m. **Sun:** None	30
8	Reiffton / Shelbourne Square / Birdsboro	Birdsboro to BARTA Transportation Center	**Mon-Fri:** 5:00 a.m. to 11:00 p.m. **Sat:** 7:00 a.m. to 11:00 p.m. **Sun:** None	30
9	Grill via Kenhorst	Kenhorst Plaza (Redners) to BARTA Transportation Center	**Mon-Fri:** 5:45 a.m. to 6:45 p.m. **Sat:** 6:45 a.m. to 6:45 p.m. **Sun:** None	60
10	Brookline	Wyomissing Blvd and Margaret St to BARTA Transportation Center	**Mon-Fri:** 5:30 a.m. to 10:10 p.m. **Sat:** 6:30 a.m. to 10:10 p.m. **Sun:** 11:30 a.m. to 7:00 p.m.	30
11	Mohnton via Shillington	Mohnton - Church St and Main St to BARTA Transportation Center	**Mon-Fri:** 5:30 a.m. to 6:45 p.m. **Sat:** 6:30 a.m. to 6:30 p.m. **Sun:** None	30
12	Lincoln Park via Reading Hospital	Berkshire Hills to BARTA Transportation Center	**Mon-Fri:** 5:30 a.m. to 7:00 p.m. **Sat:** 6:15 a.m. to 7:00 p.m. **Sun:** None	45
14	Wernersville via Sinking Spring	Wernersville State Hospital to BARTA Transportation Center	**Mon-Fri:** 5:00 a.m. to 8:00 p.m. **Sat:** 6:30 a.m. to 7:00 p.m. **Sun:** None	30
15	Berkshire Mall	Berkshire Mall to BARTA Transportation Center	**Mon-Fri:** 5:30 a.m. to 11:00 p.m. **Sat:** 5:30 a.m. to 11:00 p.m. **Sun:** 10:00 a.m. to 6:30 p.m.	30
16	Broadcasting Square	Broadcasting Square to BARTA Transportation Center	**Mon-Fri:** 5:45 a.m. to 11:15 p.m. **Sat:** 5:45 a.m. to 11:15 p.m. **Sun:** 11:00 a.m. to 7:00 p.m.	30
17	Glenside / Airport / Berks Heim	Airport Industrial Park to BARTA Transportation Center	**Mon-Fri:** 5:45 a.m. to 6:45 p.m. **Sat:** 6:15 a.m. to 6:45 p.m. **Sun:** None	30
18	Schuylkill Avenue	Windsor St and Schuylkill Ave to BARTA Transportation Center	**Mon-Fri:** 5:52 a.m. to 11:10 p.m. **Sat:** 6:40 a.m. to 11:00 p.m. **Sun:** 11:00 a.m. to 6:30 p.m.	20
19	Riverside / First Energy / Cotton St.	FirstEnergy Stadium (Park-N-Ride) to 19th St and Cotton St	**Mon-Fri:** 5:30 a.m. to 9:40 p.m. **Sat:** 6:30 a.m. to 9:45 p.m. **Sun:** 11:30 a.m. to 6:55 p.m.	30

ROUTE	NAME	SERVICE DESCRIPTION	SERVICE SPAN	WEEKDAY PEAK SERVICE FREQUENCY (MINUTES)
20	RT 61/Hamburg	Leesport/Hamburg to BARTA Transportation Center	**Mon-Fri:** 5:00 a.m. to 12:00 a.m. **Sat:** 5:00 a.m. to 12:00 a.m. **Sun:** None	60
22	Lyon Station/East Penn-Deka	Lyon Station/East Penn-Deka to BARTA Transportation Center	**Mon-Fri:** 5:00 a.m. to 12:00 a.m. **Sat:** None **Sun:** None	N/A

Source: SCTA

PARATRANSIT

BARTA Special Services and Red Rose Access are shared-ride, door-to-door paratransit services available to senior citizens and persons with disabilities who are unable to use fixed-route bus services. Reduced or fare-free rides are available to seniors and persons with disabilities who complete an application and qualify for the service. Individuals may also use the counties' paratransit services to travel to work when fixed-route service is unavailable.

BARTA Special Services also provides access to the Boyertown Multi-Service Senior Center from locations in Montgomery County within 10 miles of Berks County. **Table 6** shows SCTA's demand response ridership from 2018 to 2022.

Table 6: SCTA Demand Response Service

	2018	2019	2020	2021	2022
Paratransit Trips (Directly Operated only)	171,139	177,759	145,595	101,417	111,482

Source: NTD

Other Regional Providers

AMTRAK

Lancaster's Amtrak station, located on the border of the City of Lancaster and Manheim Township, is a stop for two intercity train routes, the Keystone and Pennsylvanian. The Keystone runs from New York City to Harrisburg via Philadelphia. The Pennsylvanian continues west to Pittsburgh. RRTA Routes 3, 10,11, 19, and the Downtown Lancaster Loop serve the station. The Elizabethtown Amtrak station, located in Lancaster County, is also a stop for the Keystone and Pennsylvanian routes. RRTA Route 18 serves this station.

OURBUS

Private bus operator Ourbus operates two intercity routes that stop in Lancaster and Berks Counties:

- **Douglassville, PA to New York,** with local stops in Downtown Reading and at Fairground Square Mall, as well as on the campus of Kutztown University. The Downtown stop is 0.4 miles from the BARTA Transportation Center, which is served by all BARTA routes. The Fairgrounds Square Mall stop is also served by BARTA Routes 1 and 2.
- **Lancaster to New York**, with local stops in Downtown Lancaster and east of downtown at the Wingate by Wyndham hotel. The Ourbus stop in Downtown Lancaster is less than a block from the Queen Street Station, where most RRTA routes originate. The stop at the Wingate by Wyndham hotel is served by RRTA Routes 14 and 21.

CHAPTER 4

Budget and Funding

Budget and Funding

SCTA's fiscal year (FY), as well as the fiscal years of BARTA and RRTA runs from July to June.

Revenues and Expenses

RRTA and BARTA rely on a mix of external funding and directly generated revenue for funding (**Table 7**). Like many transit operators in Pennsylvania, state funding accounts for the largest share of funds. Both agencies receive a significant share of funds from the federal sources as well. Local funding and other sources account for a small share of external funding. Finally, directly generated revenues such as fares, parking, real estate, concessions, and advertising are an important revenues stream for both systems.

Table 7: FY 2023 Revenue and Expenses

	BARTA	RRTA
Revenue		
Federal	$3,083,309	$6,194,810
State	$10,511,282	$9,053,954
Local	$420,451	$635,365
Sub-Total: External Funding	$14,015,042	$15,884,129
Sub-Total: Fares and Other Direct Sources	$2,640,688	$2,691,351
Total Operating Revenue:	$16,655,730	$18,575,480
Operating Costs		
Total Operating Costs	$12,028,668	$12,145,560

Fares

The base fare for both BARTA and RRTA fixed-route service is $1.80 for adults, with reduced fares for students and persons with disabilities, as shown in **Table 8**. Fares can be paid in cash or via a mobile phone or smart card. All pass purchases can be made online via the RRTA and BARTA websites, through the agencies' mobile applications, or at BARTA and RRTA transit and operations centers. Fares for BARTA Special Services and Red Rose Access are mileage based and range from $2.40 up to $50.00, depending on the type and length of ride.

Table 8: Fixed-Route Fares

FARE TYPE	FARE	
	BARTA	RRTA
Single Trip Cash Fares		
Adult	$1.80	$1.80
Student	$1.00	$1.00
1/2 Fare[2]	$0.90	$0.90
Passes and Transfers		
All Day Pass	$3.70	$3.70

[2] Persons with disabilities qualify for ½ fare.

FARE TYPE	FARE	
	BARTA	RRTA
Adult 10 Ride Pass	$13.50	$13.50
Student 10 Ride Pass	$9.00	$9.00
½ Fare 10 Ride Pass	$6.75	$6.75
Adult 31 Day Pass	$45.00	$42.00
Student 31 Day Pass	$20.00	$20.00
Transfer	Free	Free

CHAPTER 5

Fleet and Facilities

Fleet and Facilities

Transit Centers

Both RRTA and BARTA services operate in a hub-and-spoke system to provide service between each county's urban centers (the cities of Lancaster and Reading, respectively) and outlying areas. The 'hubs' of the systems are the downtown transportation centers.

Queen Street Station

RRTA's transit center, in downtown Lancaster, is served by twelve routes, with four other routes connected to the transit center property underneath the Queen Street Parking Garage. The outdoor waiting area contains bus shelters and benches; inside, there is a restroom and a sales counter as well as vending machines, an ATM, and LED screens displaying route information and bus status.

The Queen Street Station is open Monday to Friday from 8:00 a.m. to 5:30 p.m. and is closed on weekends.

BARTA Transportation Center (BTC)

All BARTA bus routes serve the Transportation Center in downtown Reading. Amenities include indoor and outdoor waiting areas, a service counter, LED screens displaying route information and bus status, and cases providing paper materials with system information.

The BTC is open from 4:00 a.m. to midnight Monday through Saturday and from 9:30 a.m. and 7:30 p.m. on Sundays. The customer service sales window is open from 8:00 a.m. to 5:30 p.m. Monday through Friday and is closed on weekends.

Administrative and Maintenance Buildings

RRTA's administrative and operations activities are housed in the Erick Road Maintenance Facility, which underwent a complete renovation in 2010. BARTA's administrative and operations activities are located at the Readings Operation Center. In 2020, SCTA expanded and renovated the bus storage area and upgraded HVAC systems throughout the facility. SCTA's 2021 Transit Asset Management Plan found the condition of both facilities to be "good."

Bus Stops and Amenities

Within the RRTA and BARTA service areas, SCTA maintains the bus stop signs and bus shelters. The RRTA system has 1,165 bus stop signs that were all replaced in 2017 and 48 bus shelters. There are also several bus shelters that are privately owned and maintained, but RRTA does provide service at these stops. BARTA has 470 bus stop signs and 40 bus shelters. There are several municipally owned shelters in Berks County.

Bus riders are encouraged to stand at a signed bus stop location to be picked up. Within the Cities of Lancaster and Reading, the majority of bus stops are located approximately every other block so that riders can easily locate a stop. If a signed bus stop is not nearby, riders may stand at any safe location along the route and flag or wave down a bus to be picked up.

Passenger Information

Schedule information is available on the RRTA and BARTA websites. Paper Ride Guides are available for pick-up at both agencies' transportation centers and operations centers and at approximately 300 businesses and other public locations throughout the two counties. Ride guides are also mailed to individuals upon request.

One channel for distributing schedule information that SCTA has not taken advantage of is Google Transit, which allows customers to take advantage of the trip planning functionality of Google Maps. SCTA's current transit scheduling platform, Avail, permits integration with Google Transit. Since integration with Google Transit would improve the accessibility of information about SCTA without additional cost or substantial effort, the agency should prioritize adding this functionality to its suite of customer information tools.

Fleet

According to SCTA's 2021 Transit Asset Management Plan, SCTA's rolling stock consists of the following:

RRTA

RRTA's fixed-route service is provided by a fleet of 42 Gillig buses. The fleet includes 30-, 35-, and 40-foot models. The agency's buses are 4.5 years old, on average. The agency's 73 paratransit vehicles are a combination of Dodge Grand Caravans and Ford Challenger, Senator, and Phoenix models, and average 3.4 years old.

BARTA

BARTA's fleet consists of 50 Gillig buses (35- and 40- foot models)) and 63 paratransit vehicles (a combination of Dodge Grand Caravans and Ford Challenger, Senator, and Phoenix models). The average age of the agency's buses is 7.7 years; the average age of shared ride vehicles is 3.3 years.

CHAPTER 6

Market Analysis

Market Analysis

This Market Analysis identifies corridors in the region with the greatest demand and need for transit service. The Market Analysis begins with two key metrics: Transit Potential and Transit Need. Transit Potential is a measure of population and employment density. Transit Need focuses on socio-economic characteristics such as income, automobile availability, age, and disability status that are indicative of a higher propensity to use transit.

More than any other factor, density determines the effectiveness and efficiency of public transportation. Places with higher concentrations of people and/or jobs tend to have higher transit ridership. At the same time, most transit agencies have a mandate to provide comprehensive service in the communities they serve and to provide mobility for residents with no other means of transportation.

In addition to density and demographics, transit use is also influenced by the built environment. Certain land uses—such as retail centers, civic buildings, multifamily housing, educational institutions, medical facilities, and major employment centers—tend to generate transit trips at a relatively higher rate than other land uses. These ridership-generating land uses are highlighted, for context, in county and city maps presented in this chapter.

Transit Potential

POPULATION DENSITY

Public transportation is most efficient when it connects population and employment centers where people can easily walk to and from bus stops. Transit's reach is generally limited to within one-quarter mile of a transit line, or a 10-minute walk. For this reason, the size of a transit travel market is directly related to an area's population density. Typically, a density greater than five people per acre is needed to support base-level (hourly) fixed-route transit service. Within Berks and Lancaster counties, the areas of greatest population density are concentrated around the cities of Lancaster and Reading, with smaller pockets of greater density in the towns of Columbia, Ephrata, Mohnton, and Kutztown (**Figure 1**-**Figure 5**).

Figure 1: Population Density, SCTA Service Area

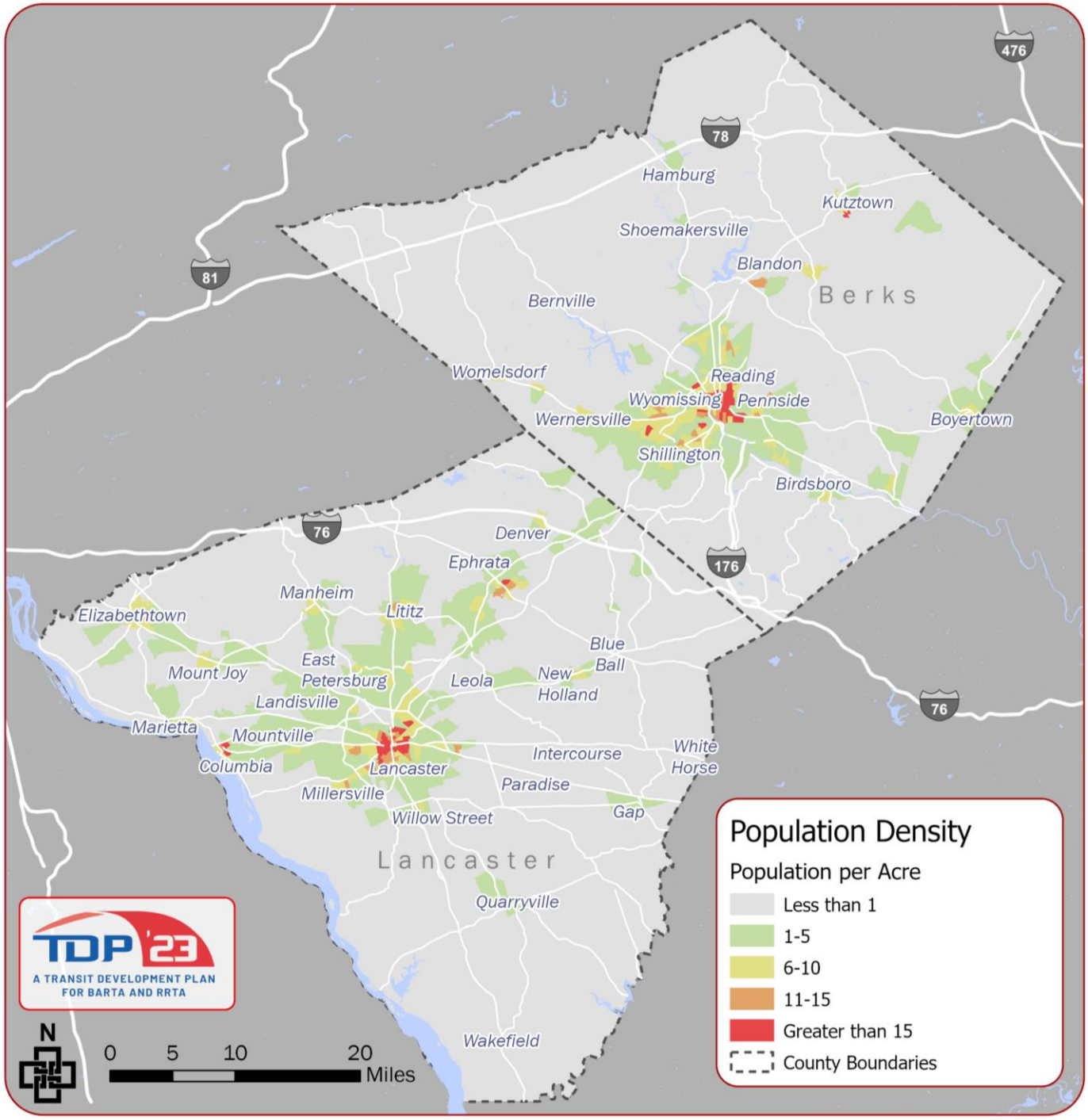


Figure 2: Population Density, Berks County

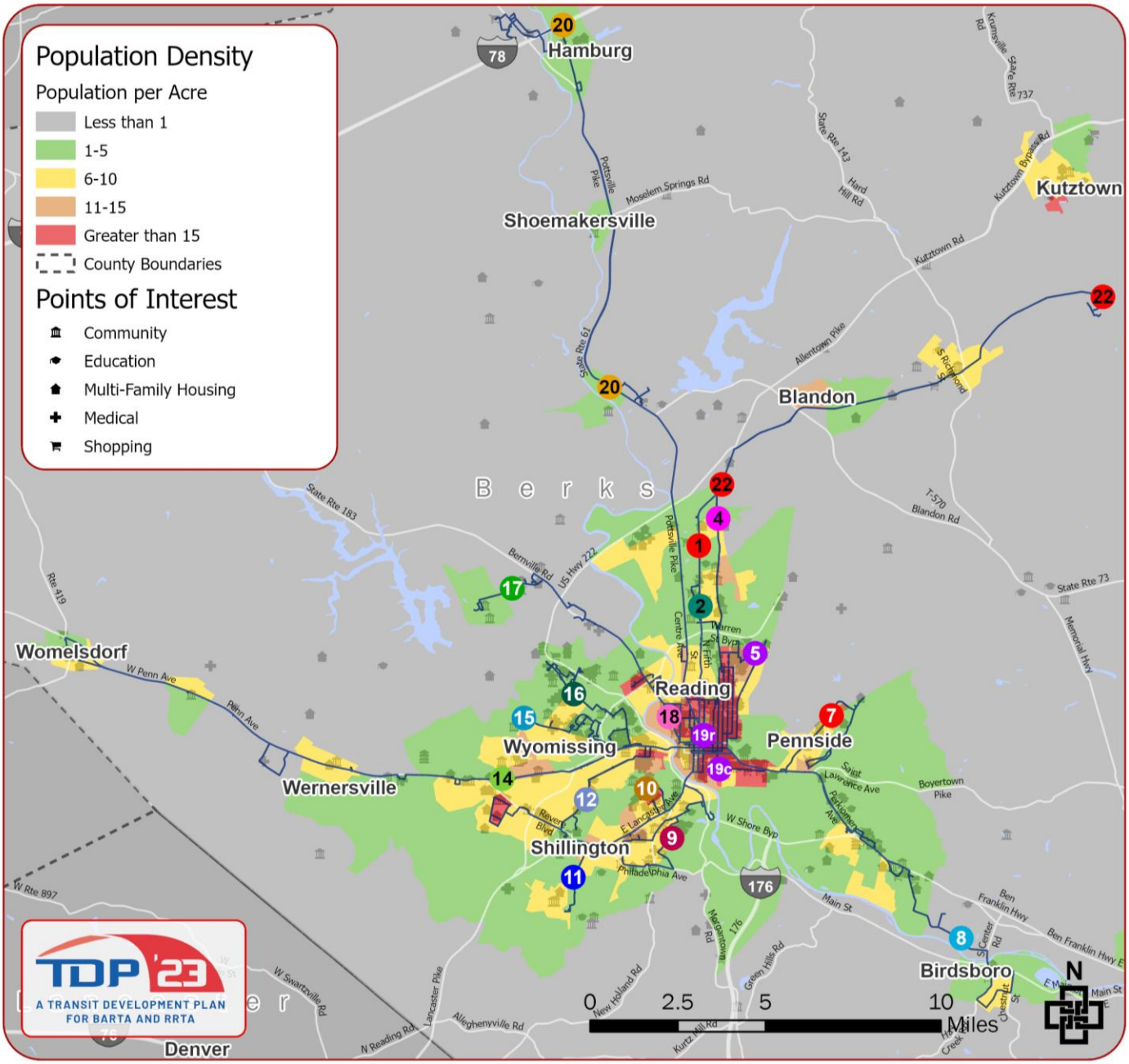


Figure 3: Population Density, Reading

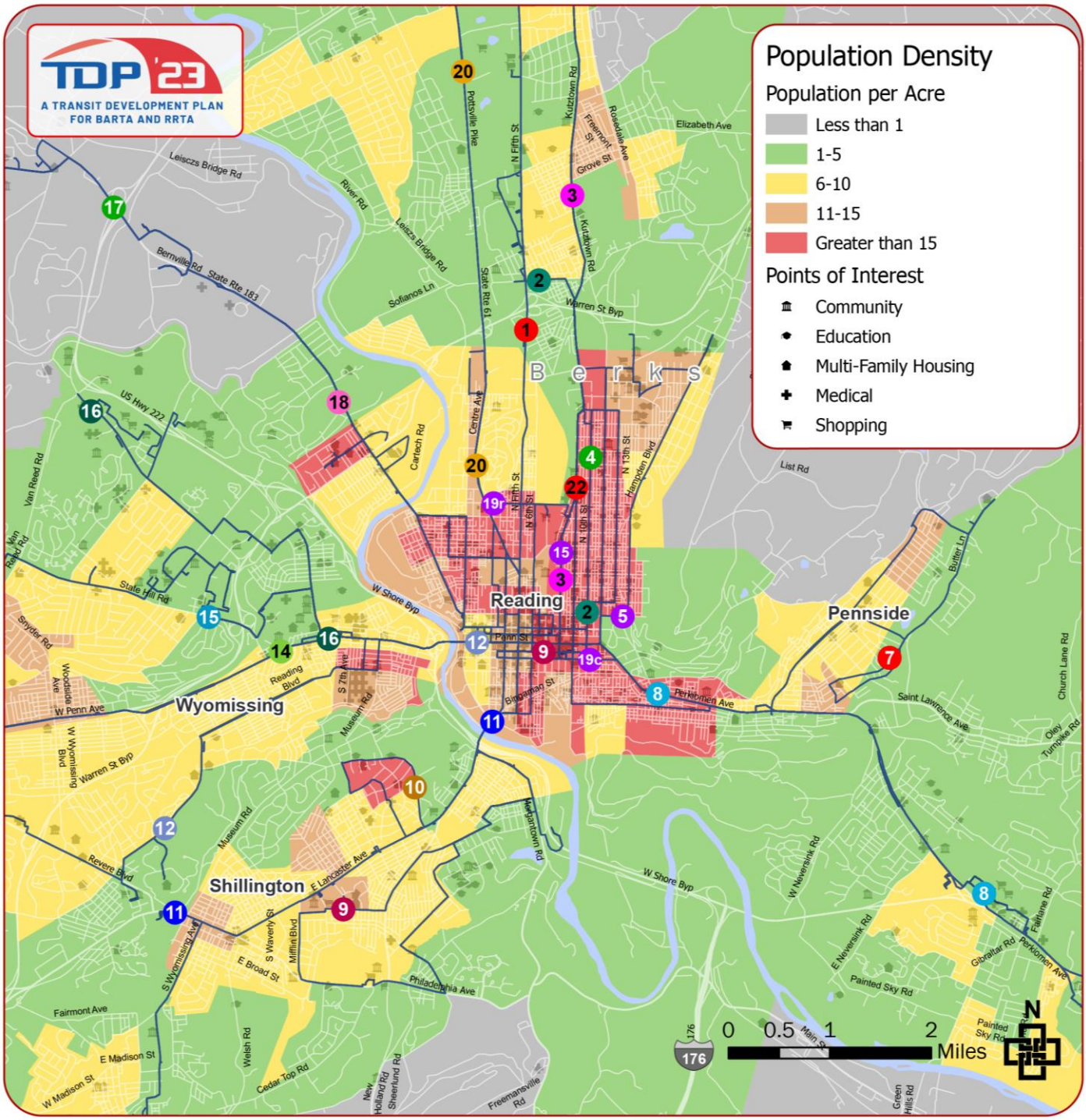


Figure 4: Population Density, Lancaster County

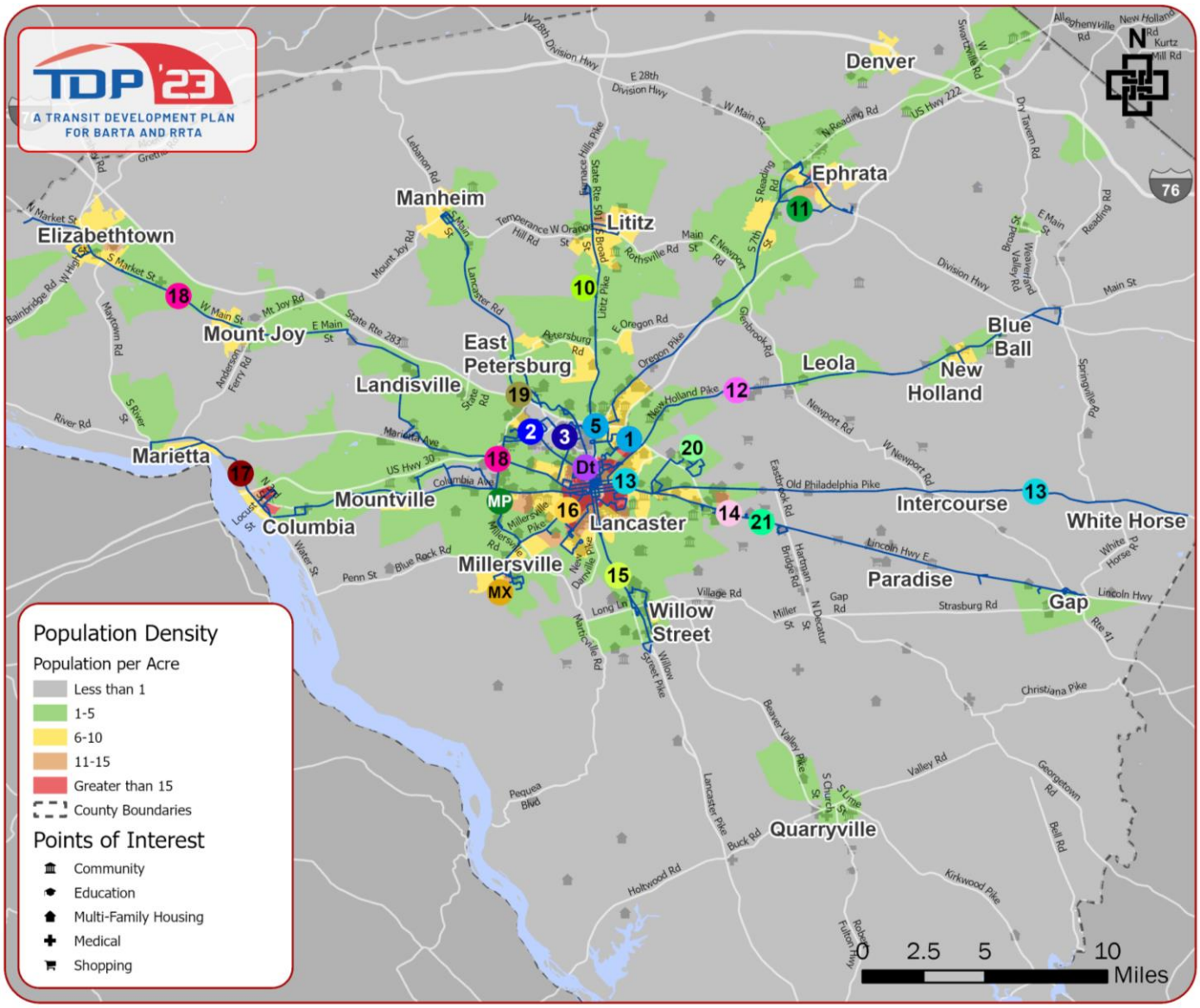
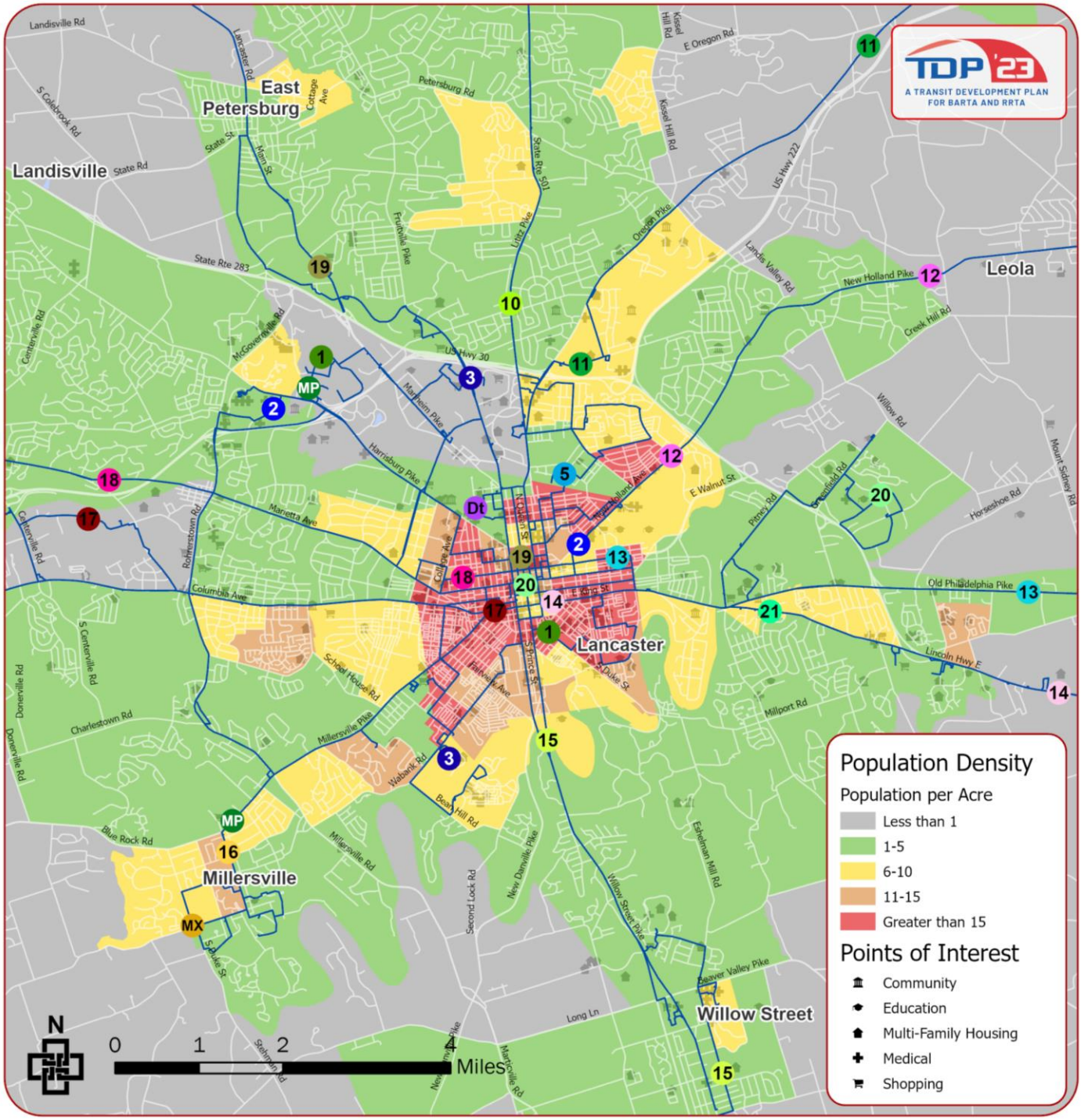


Figure 5: Population Density, City of Lancaster



EMPLOYMENT DENSITY

The number of jobs per acre is the other component of transit potential, as many employees must travel from their homes to their places of employment (**Figure 6**-**Figure 10**). Employment density is also a proxy for the presence of services which may attract customers as well as workers.

Figure 6: Employment Density, SCTA Service Area

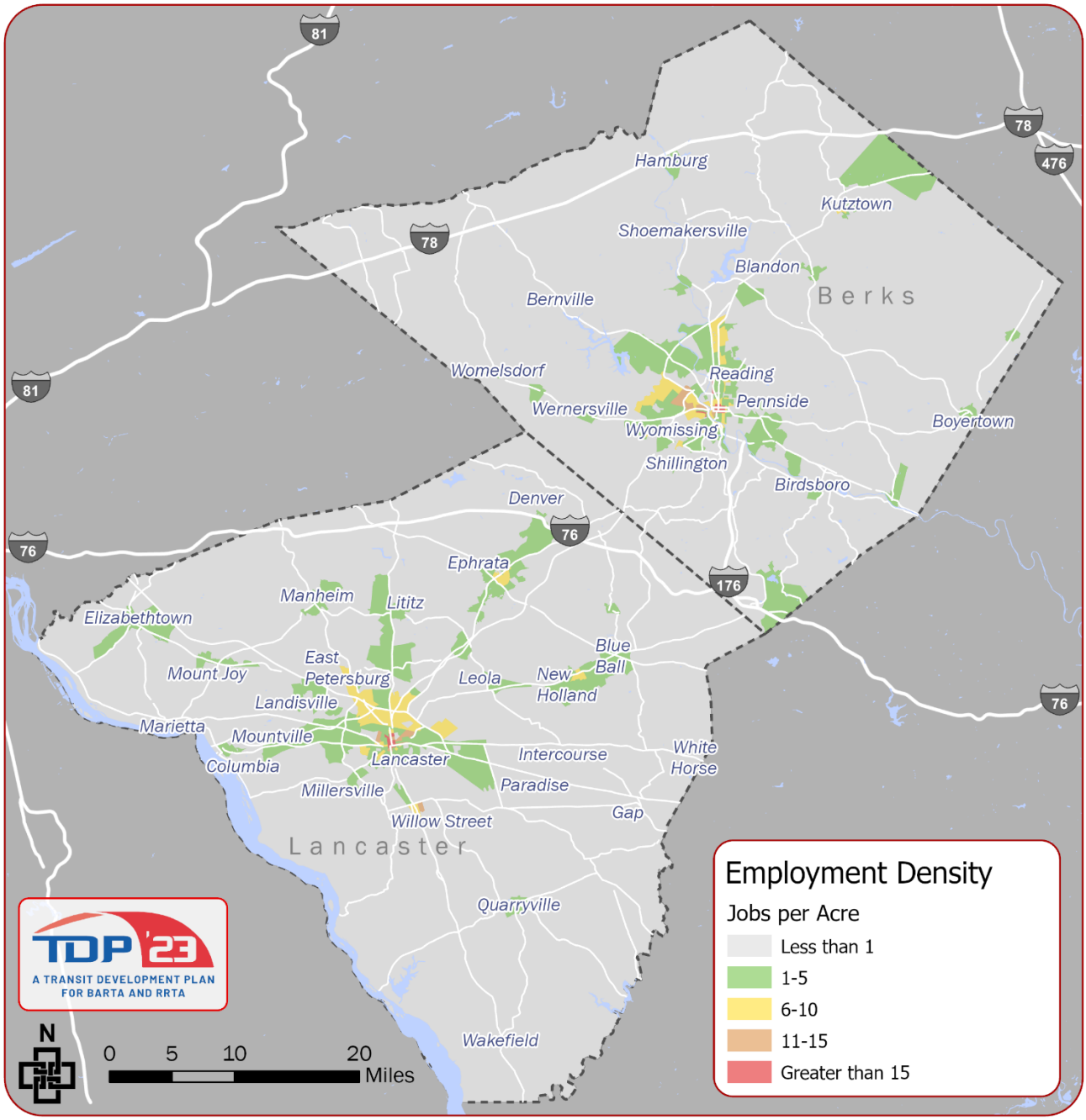


Figure 7: Employment Density, Berks County

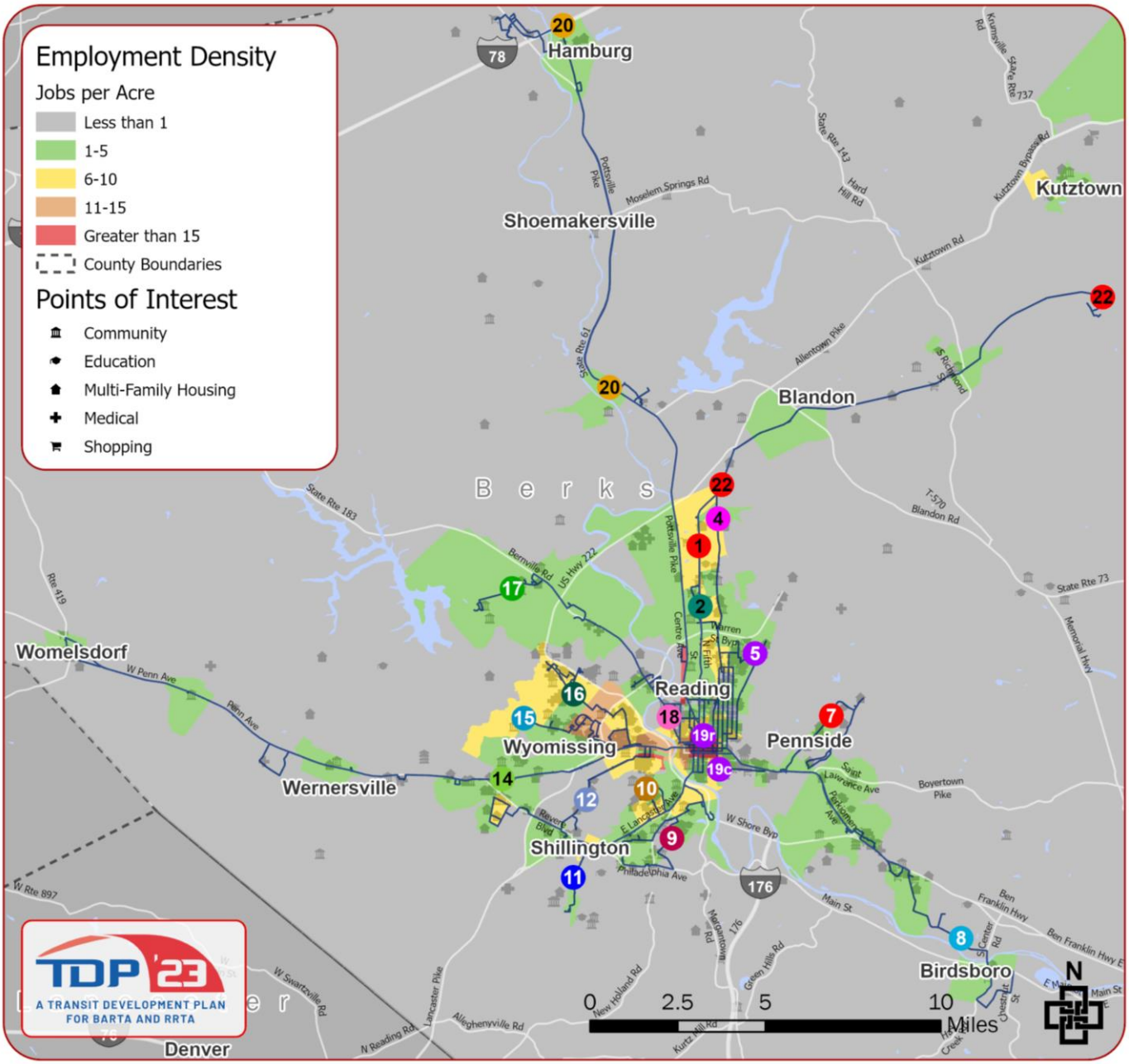


Figure 8: Employment Density, Reading

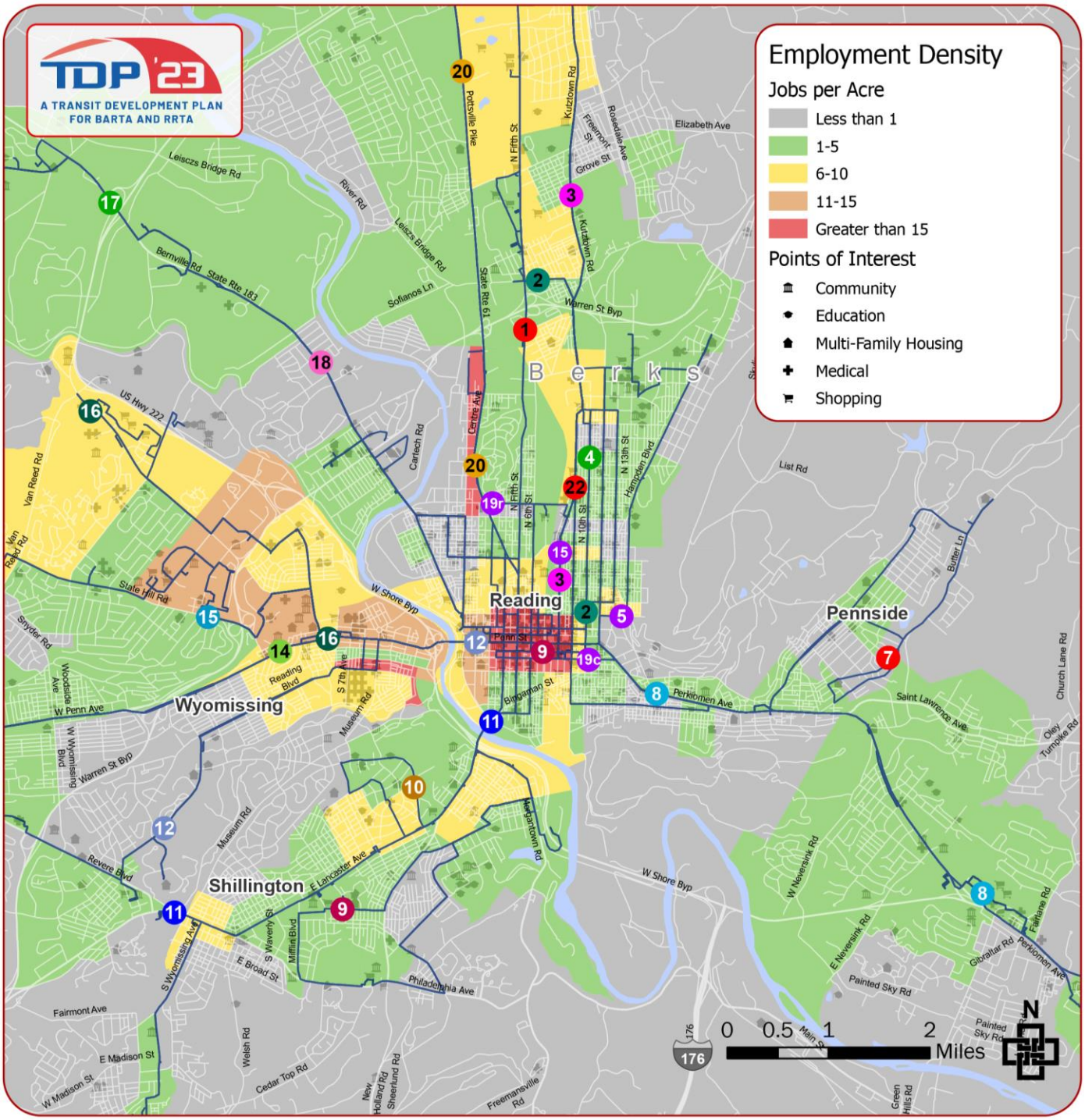


Figure 9: Employment Density, Lancaster County

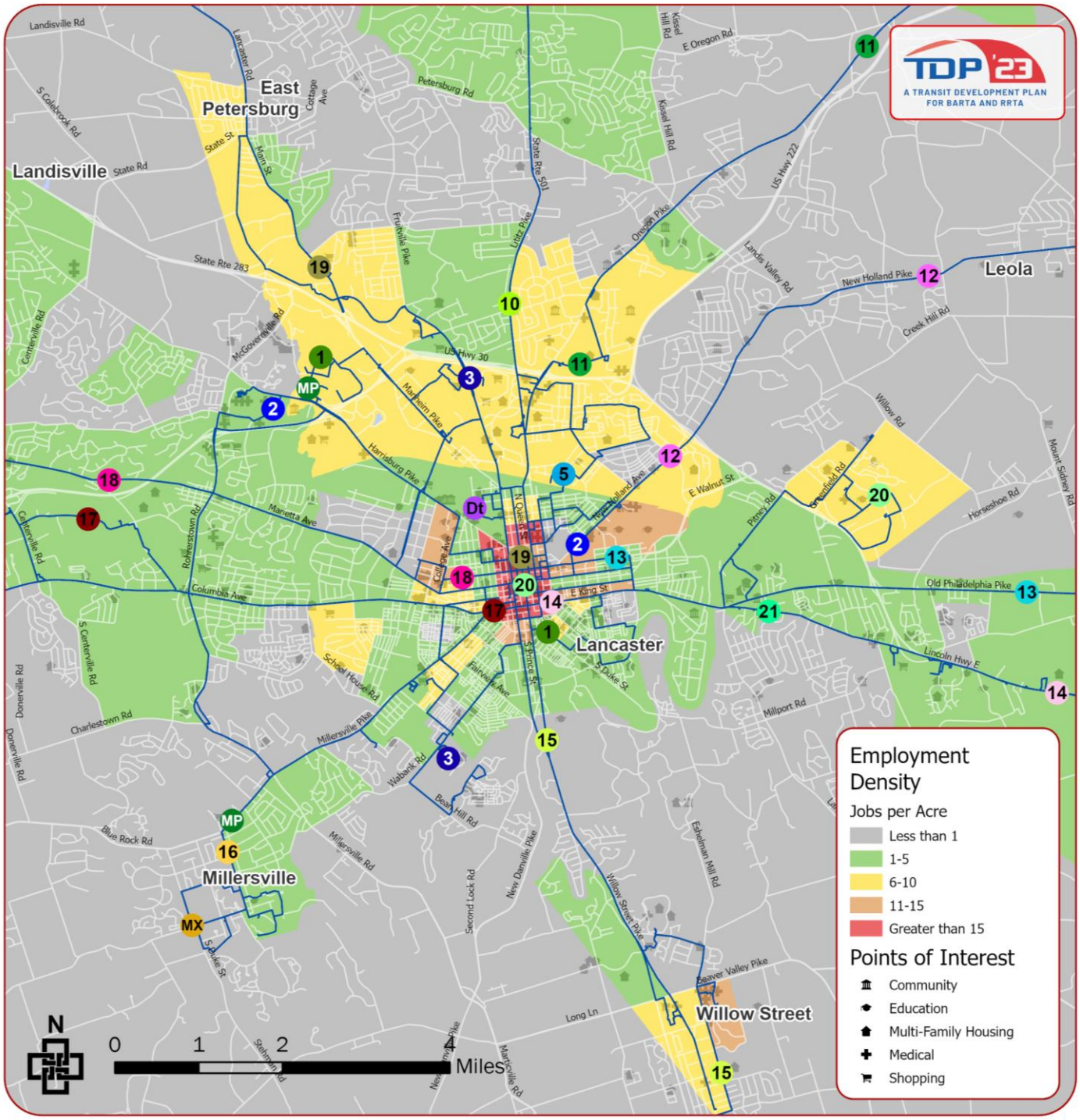
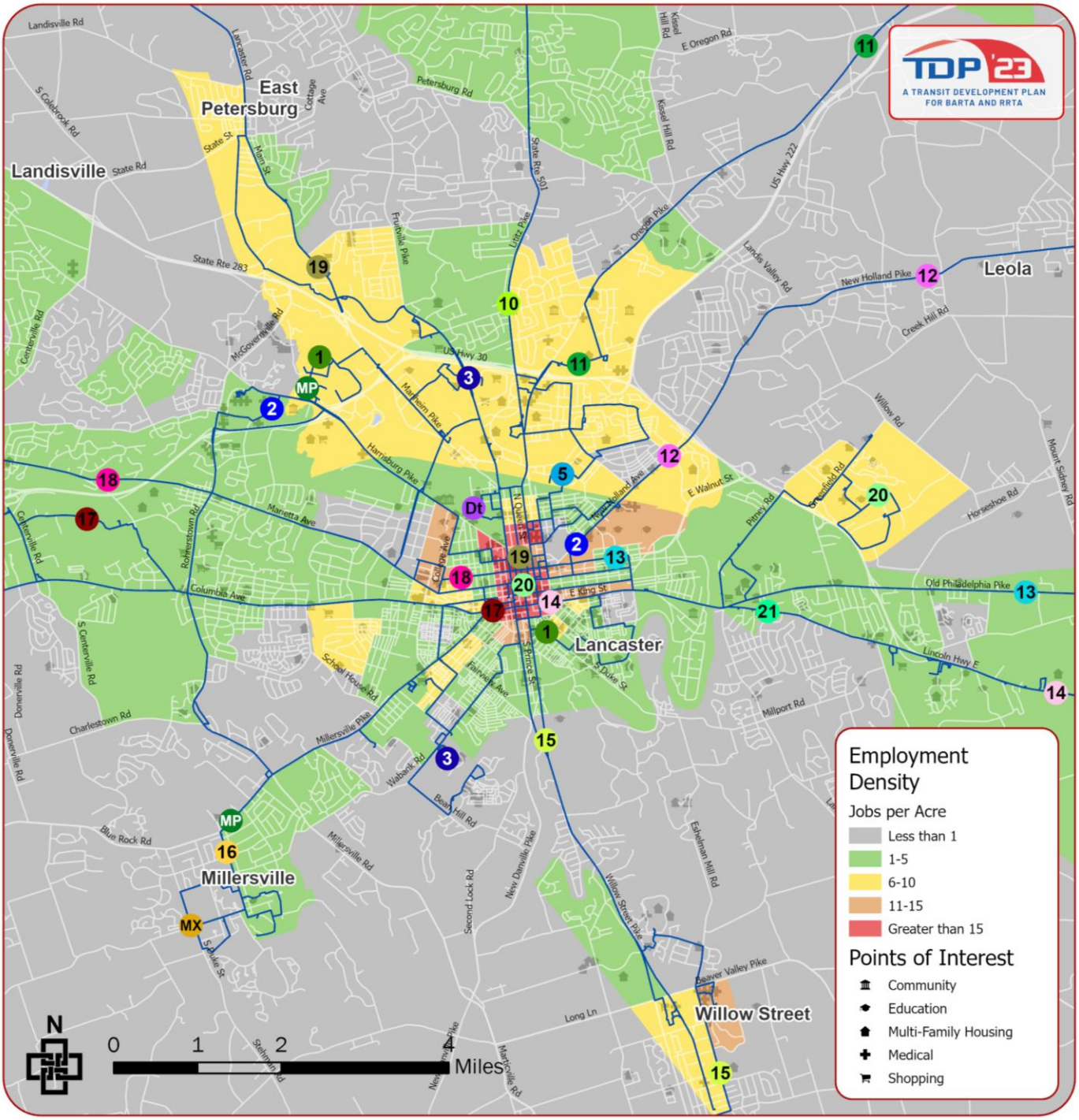


Figure 10: Employment Density, City of Lancaster



TRANSIT POTENTIAL RESULTS

Population density and employment density can be combined into a single Transit Potential index, which indicates the areas where there may be sufficient demand to support fixed-route transit. In addition to the downtowns of Reading and Lancaster, a few areas stand out as potentially viable for transit when employment and population are combined (**Figure 11**-**Figure 15**):

- Ephrata
- New Holland
- Columbia
- Southeast Reading
- Boyertown
- Kutztown

Figure 11: Transit Potential, SCTA Service Area

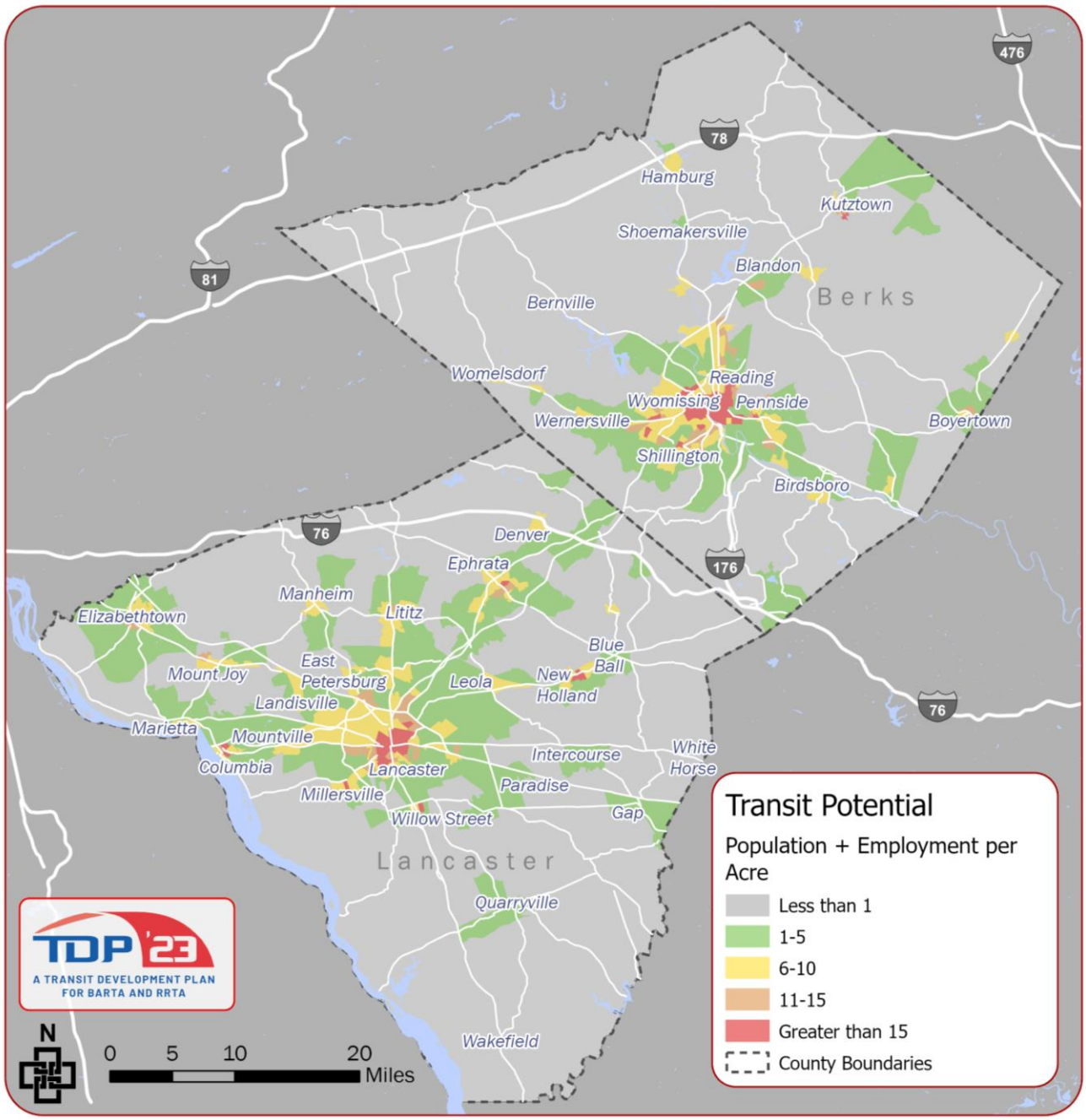


Figure 12: Transit Potential, Berks County

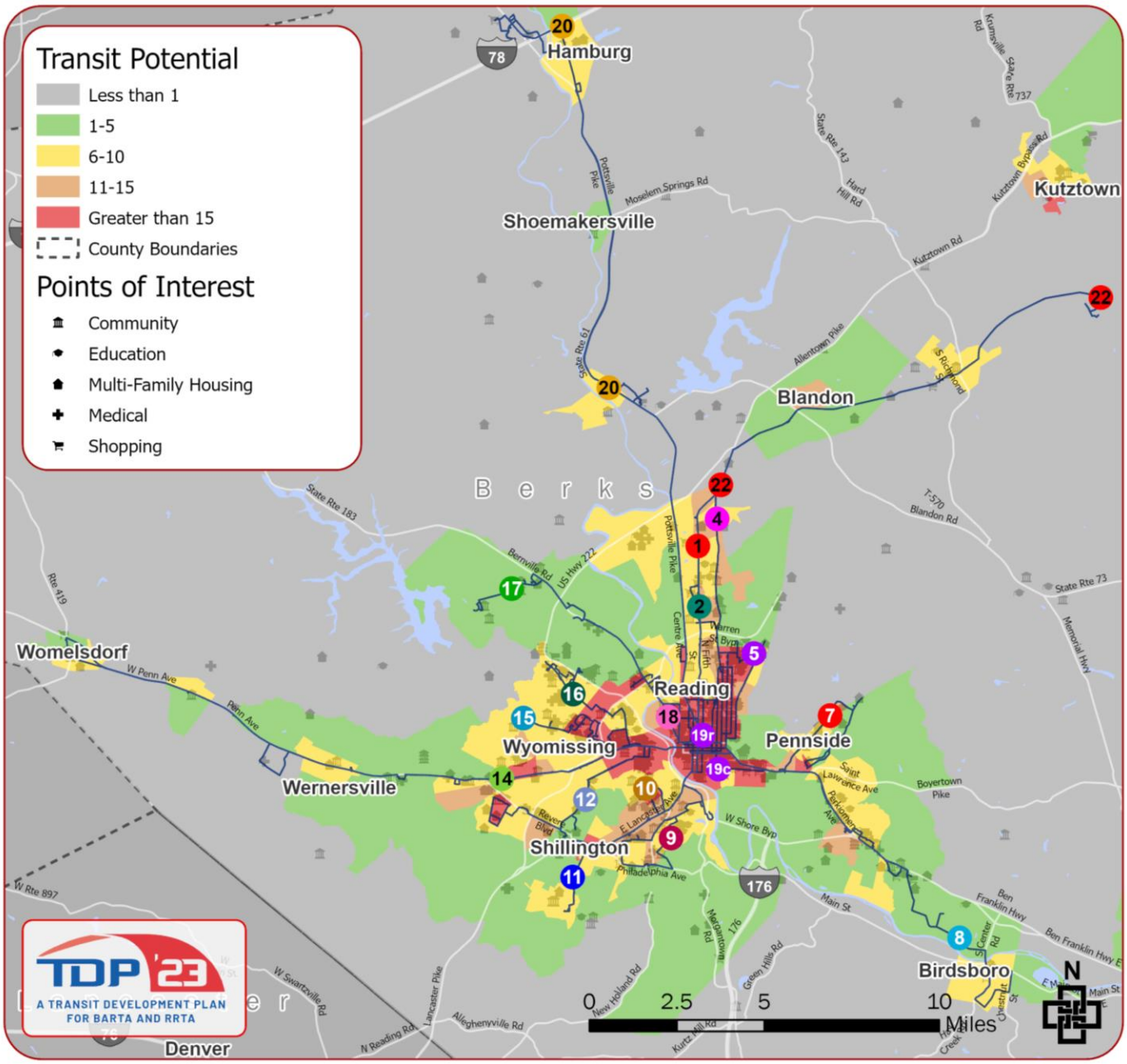


Figure 13: Transit Potential, Reading

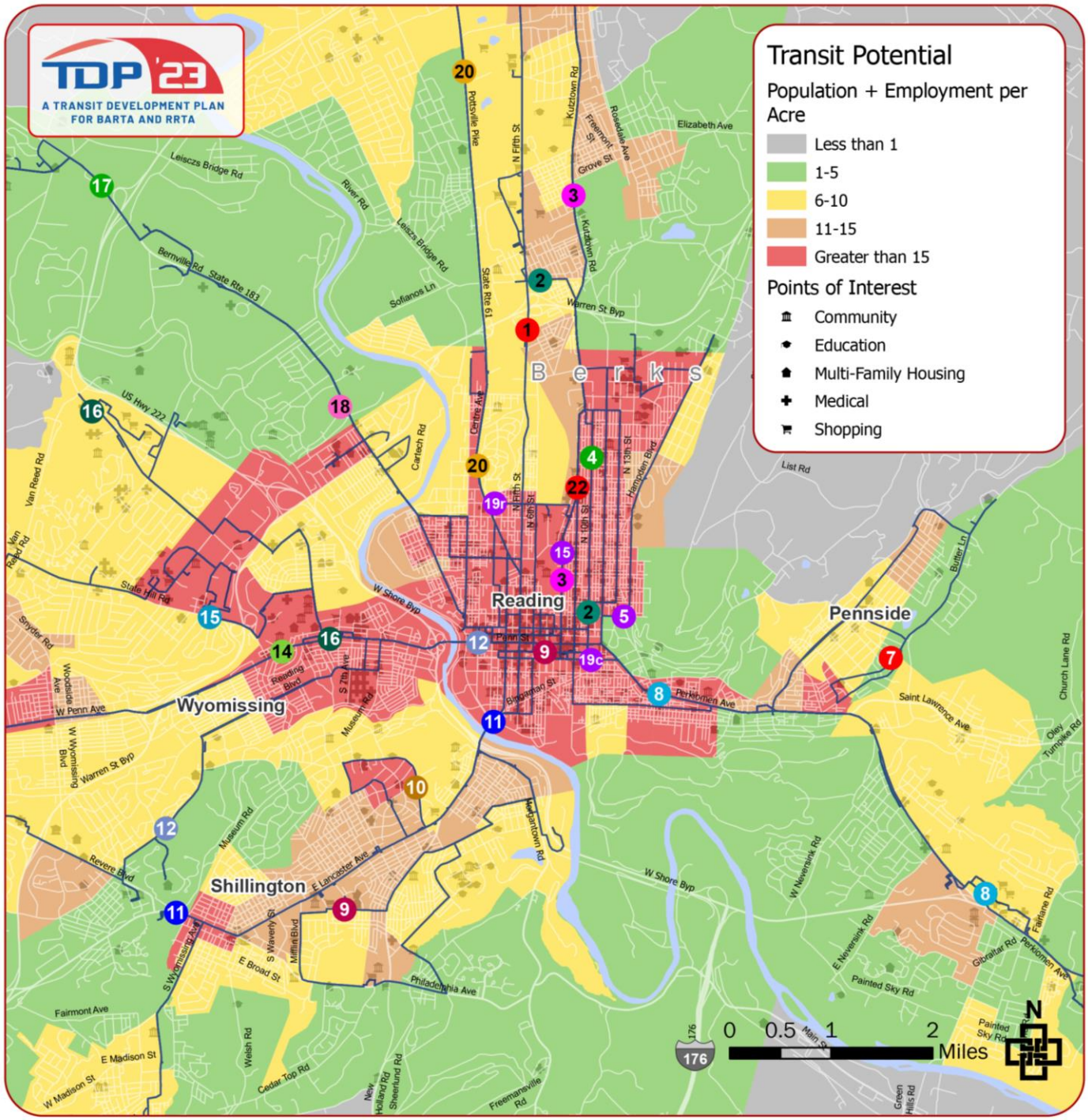


Figure 14: Transit Potential, Lancaster County

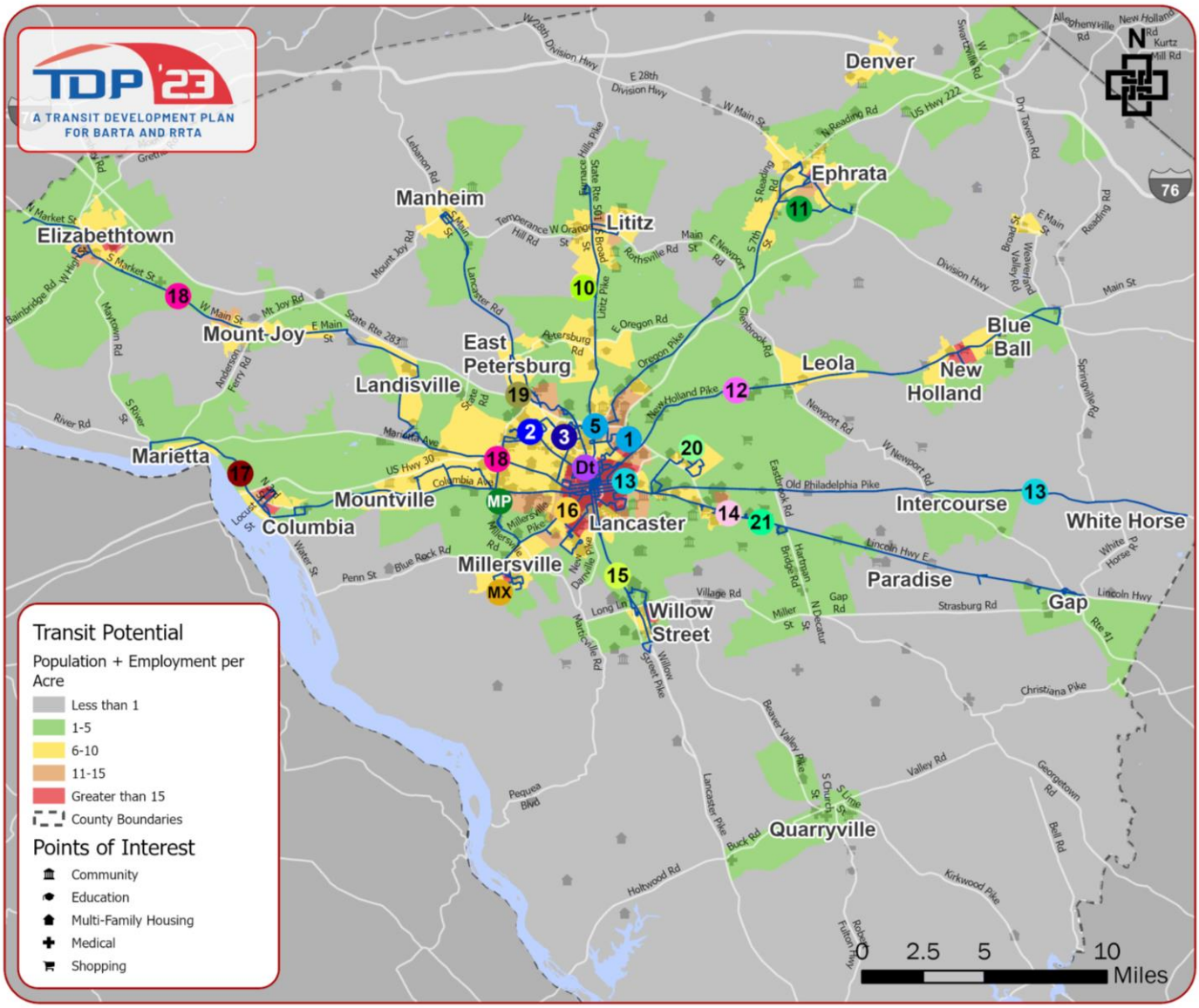
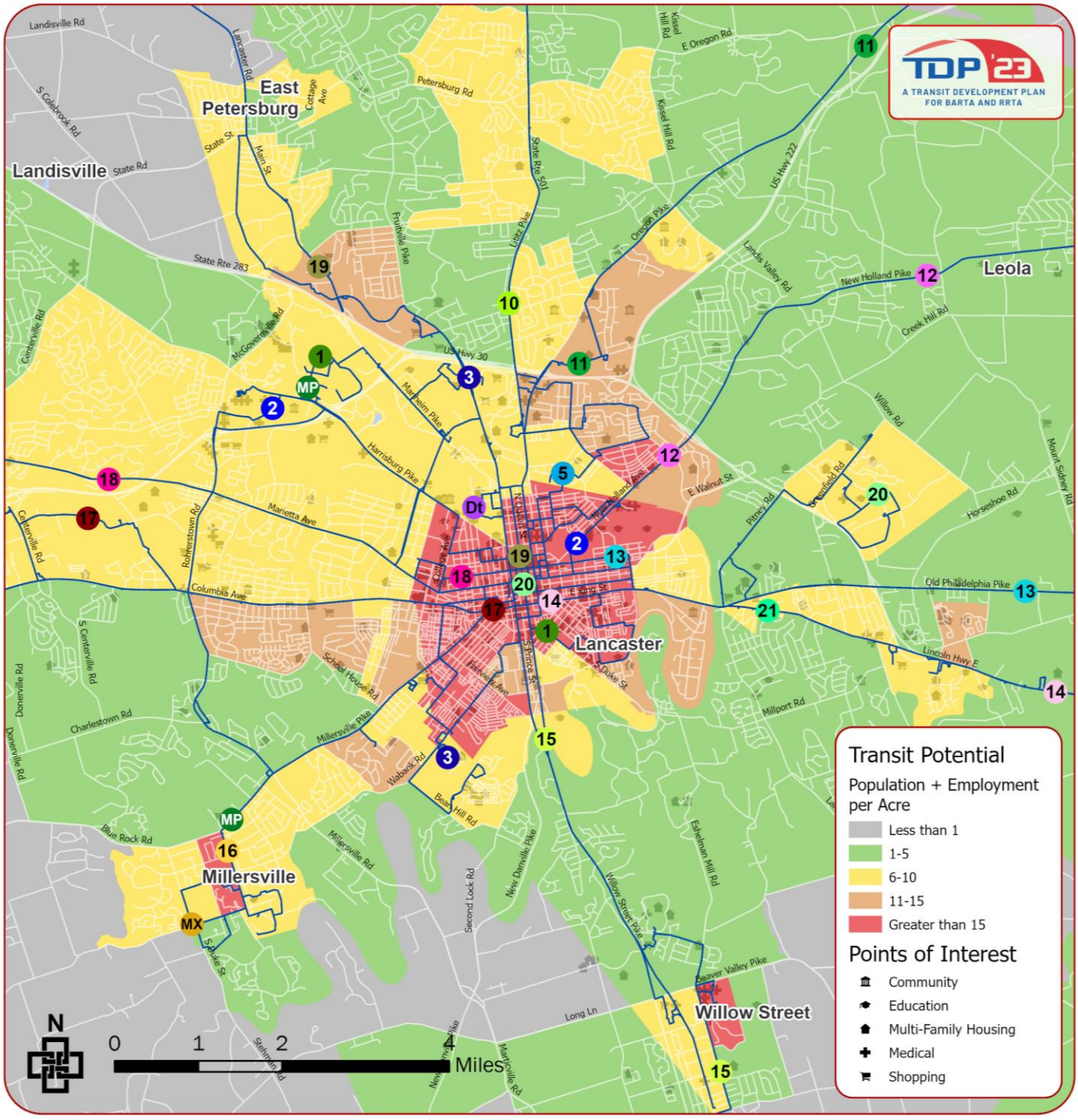


Figure 15: Transit Potential, City of Lancaster



Transit Need

Above all, public transportation is a mobility tool. Certain population subgroups have a relatively higher propensity to use transit as their primary means of local and regional transportation. These groups include:

- **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.
- **Persons with disabilities**, many of whom cannot drive and/or have difficulty driving.
- **Low-income individuals**, typically because transit is less expensive than owning and operating a car.
- **Youth**, defined as persons between the ages of 15 and 24 years of age. This group has in recent years shown an increasing interest in transit, walking, and biking, rather than driving.
- **Older adults**, who as they age, often become less comfortable or less able to operate a vehicle.

The maps in this section show the relative densities of each of these five high-transit-propensity population subgroups by Census block groups in Lancaster and Berks Counties to help determine where the need for transit service is greatest.

With density ranges differing for each demographic analysis, the maps utilize a Jenks Natural Breaks classification method to assign each block group to one of five density categories. For each analysis, depending on the natural break category into which it falls, a score from 1 (lowest density) to 5 (highest density) is assigned to each block group. Following the analysis of each individual factor, the Transit Need Index map shows the composite Transit Need score for each block group based on the sum of its scores in each preceding analysis. For example, if a block group falls in the highest density category for each of the five demographic analyses, it will end up with a Transit Need Index value of 25 (5+5+5+5+5). The lowest possible Transit Need Index score is 5 (1+1+1+1+1).

While the Transit Potential analysis highlights areas of Berks and Lancaster Counties with actual densities to support fixed-route service, Transit Need is a relative measure that estimates the need for transit compared to other block groups. There is not, however, a specific Transit Need Index score or value that represents a threshold for supporting fixed-route service. Instead, Transit Need should be considered alongside Transit Potential. If two areas have similar and sufficient Transit Potential, the area with higher Transit Need should be prioritized for service. Conversely, in some locations, while the density of transit-dependent population groups may be relatively high, if the total population and/or employment density are still quite low, the potential to generate substantial fixed-route transit ridership will also remain low.

Figure 16 through **Figure 20** presents the composite transit need index for Berks and Lancaster Counties. Maps showing the individual transit need measures (people without access to an automobile, persons with disabilities, low-income individuals, youth, and older adults) are presented in **Appendix I**.

The map of the transit need index suggests that in Berks County a few routes serve areas where few riders may rely upon their services. In particular, after leaving downtown Route 17 and Route 18 pass through areas with low transit need. Those same areas have low transit potential. Additionally, long stretches of Route 20 and Route 22 cover areas with low transit need, and some areas of medium-high transit need, along Lancaster Avenue southwest of downtown Reading, are more than a half-mile from the nearest bus route.

In Lancaster County, Route 13 and Route 21, after they leave the City of Lancaster, travel exclusively through areas of low transit need. This contrasts with Routes 10, 11, 12, 17 and 18, which terminate in or near areas with low-moderate transit need.

The Transit Need Analysis suggests that Denver and Quarryville, which have moderate transit potential, may not be viable candidates for new service due to low transit need. The areas of the City of Lancaster with high transit need are in and immediately surrounding downtown Lancaster.

Figure 16: Transit Need, SCTA Service Area

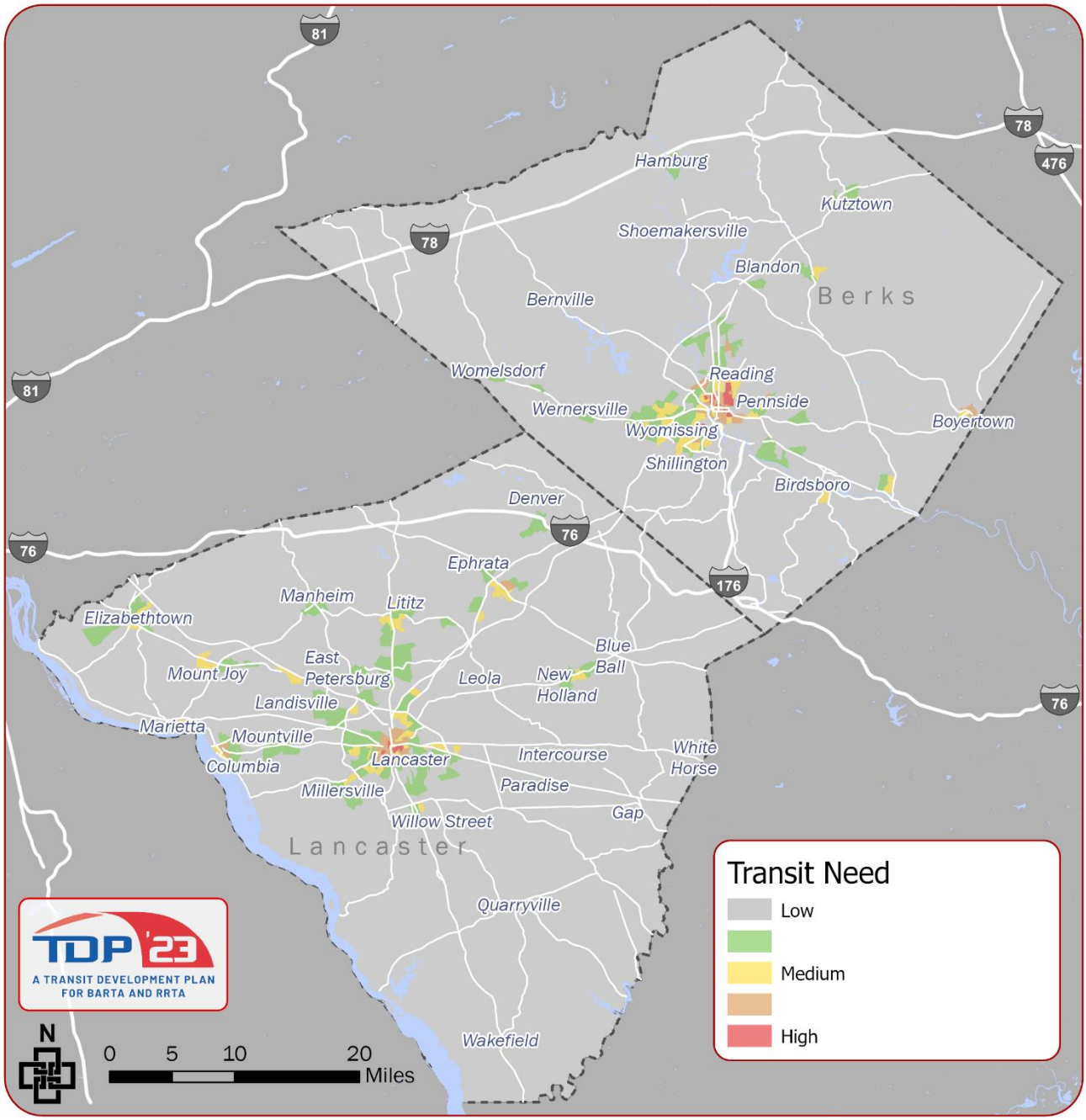


Figure 17: Transit Need, Berks County

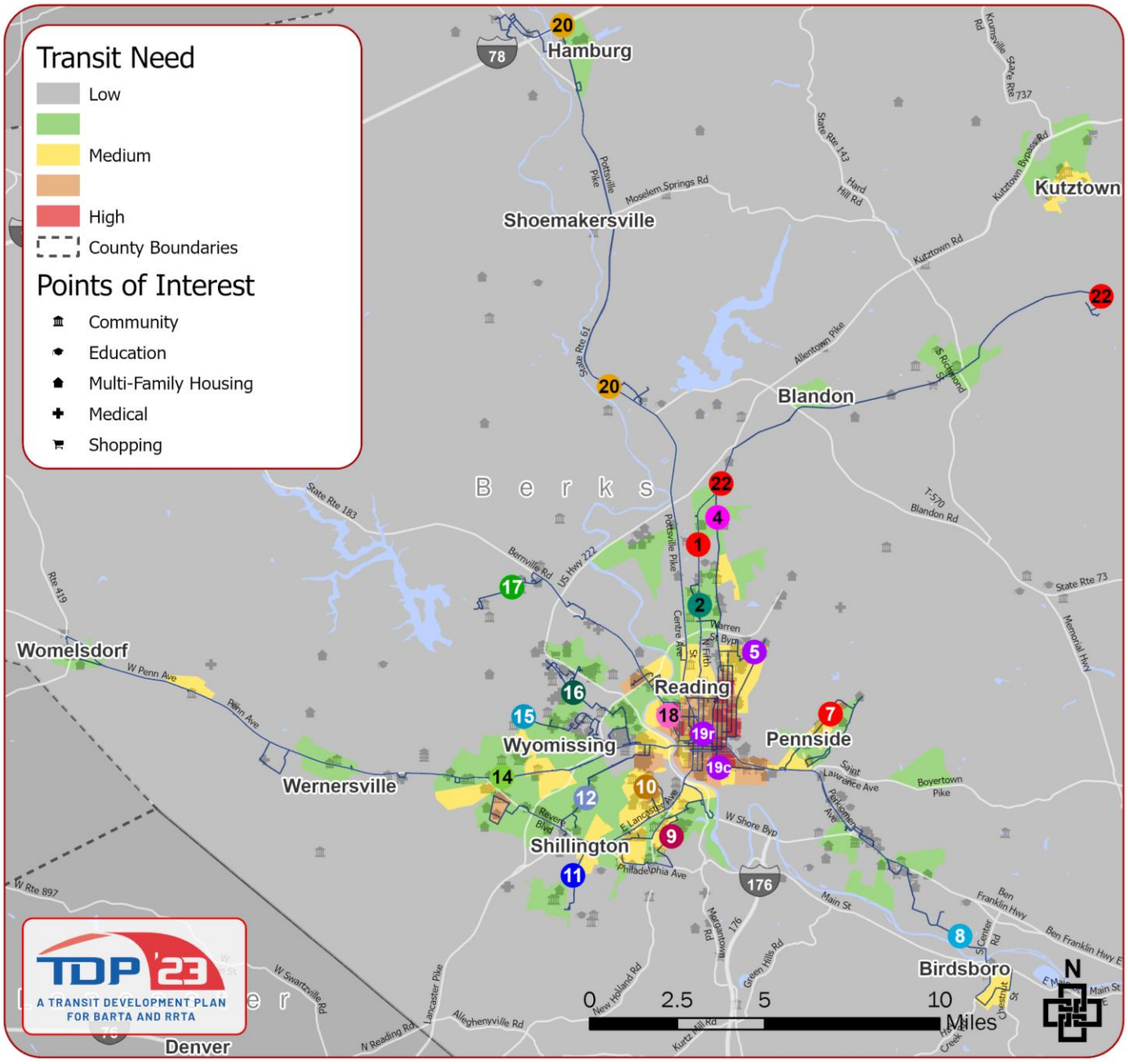


Figure 18: Transit Need, Reading

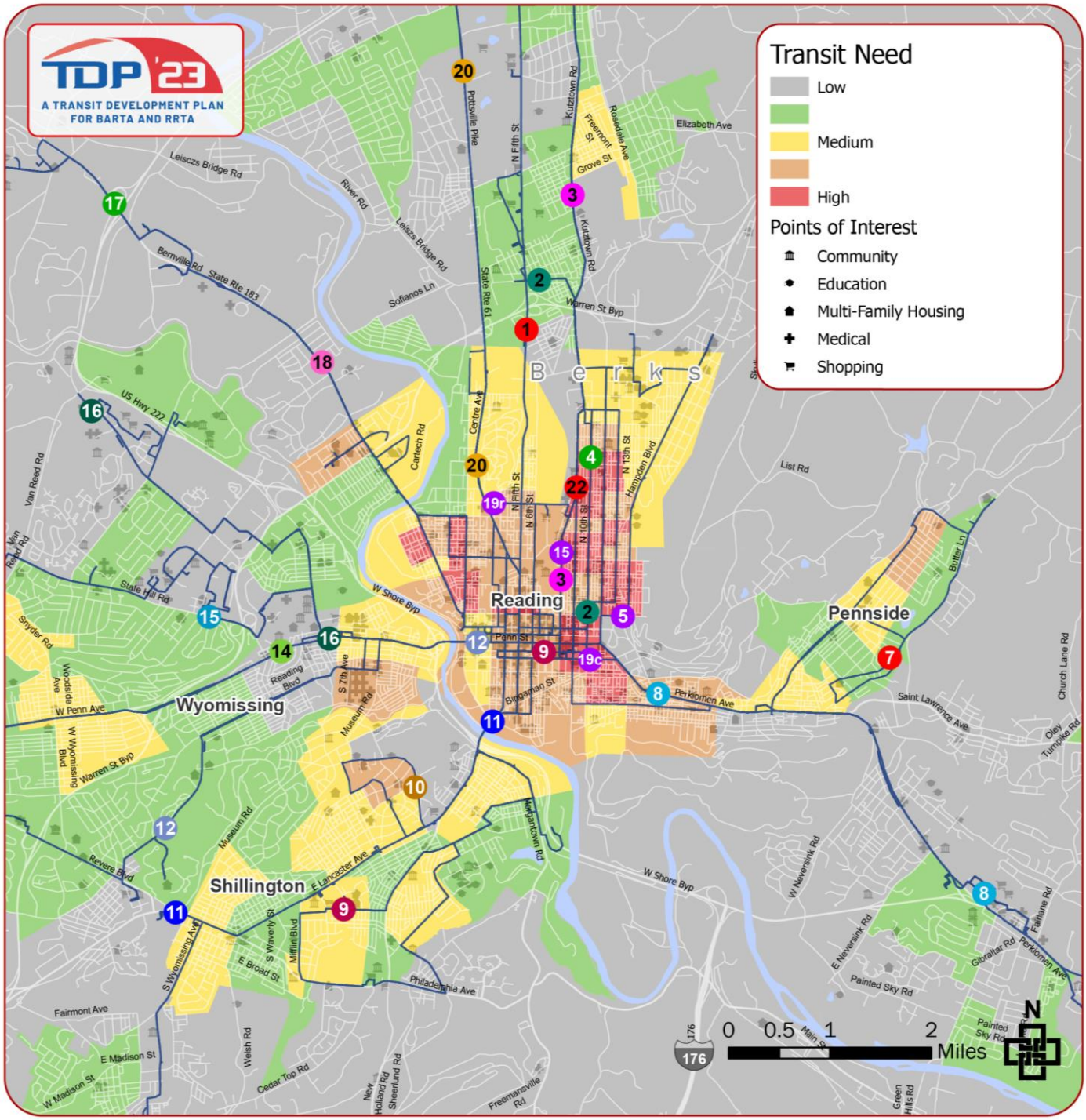


Figure 19: Transit Need, Lancaster County

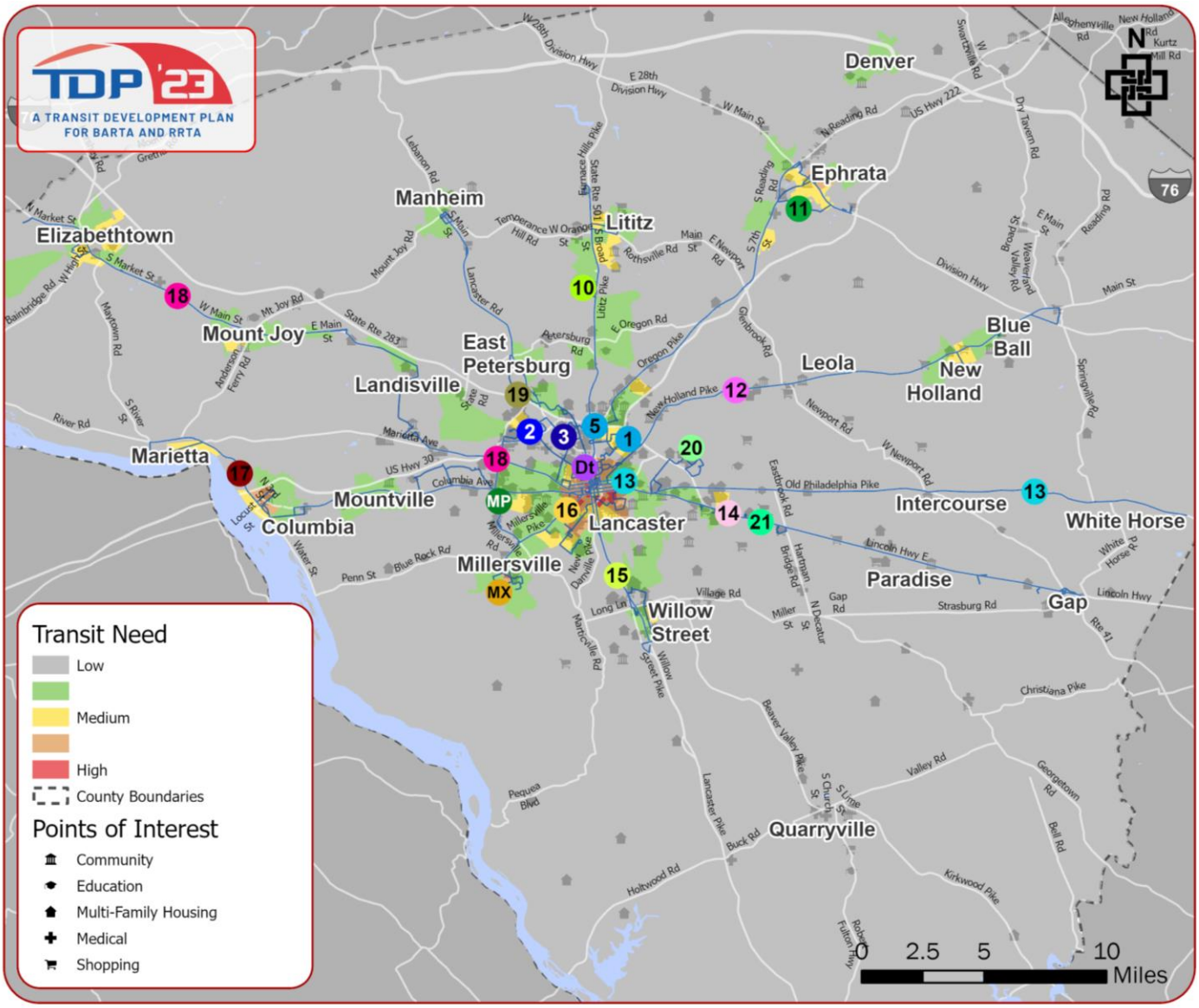
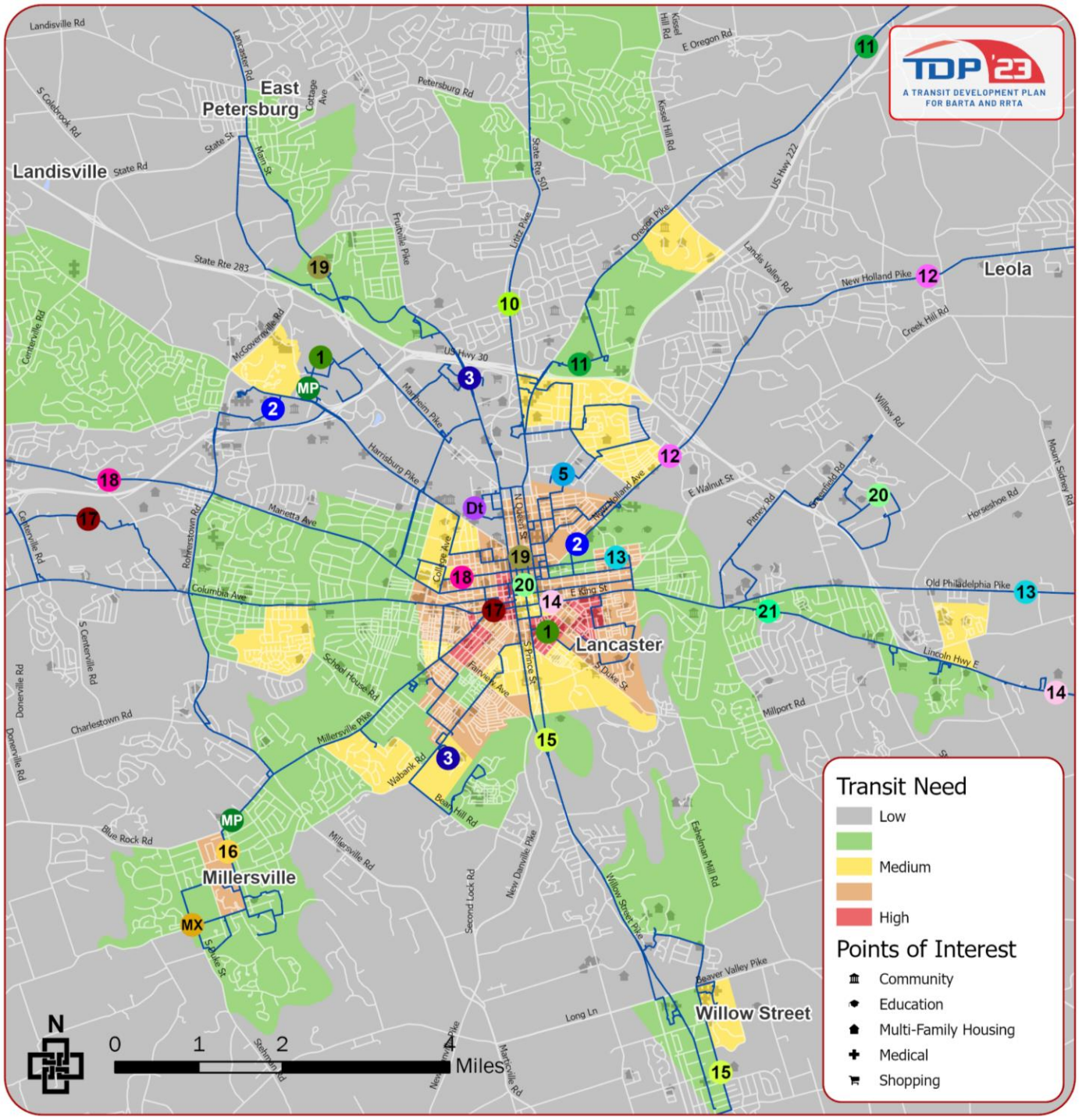


Figure 20: Transit Need, City of Lancaster



Future Growth and Development

Building on the analysis of transit potential and transit need, the future growth and development of Berks and Lancaster counties are also important indicators to help guide transit investments in the region. Examining future growth and development helps ensure the recommendations in this TDP are forward looking and will be useful in the years to come.

LAND USE VISION

In their respective comprehensive plans, Berks and Lancaster counties identified areas to which future growth should be directed. In turn, each county also identified significant land areas in which preservation and conservation are the primary goals rather than growth and development. Such areas contain natural and/or agricultural resources that the counties and their municipalities do not want to see disturbed by development. These designations are based on considerations that include, but are not limited to, the vision and goals of the counties' municipalities as expressed through comprehensive planning that is guided by public input, and the presence or absence of existing infrastructure to support development.

POPULATION AND EMPLOYMENT PROJECTIONS

Both counties developed projections, using statistical modeling, that estimate population growth in each of their municipalities over several different time horizons. In Lancaster County, between 2020 and 2035, population is estimated to grow the most in Manheim, West Lampeter, Manor, Warwick, and East Hempfield. In Berks County, the greatest growth is anticipated in Reading, Spring, Exeter, Muhlenberg, and Cumru Township between 2020 and 2035.

Berks County also projected population growth between 2020 and 2035. High growth areas for employment in the county include West Reading, Spring, Bern, Wyomissing, and Bethel. Employment projections were unavailable for Lancaster County.

Regional Travel Patterns

Transit systems should provide service between destinations that many people want to travel to and should prioritize serving areas where people are particularly likely to use transit. Another way to think about where transit should run is to examine actual travel behavior in the region, regardless of mode. Corridors with a high number of trips may be good candidates for transit service.

Figure 21 shows vehicle trips between traffic analysis zones (TAZs) in Berks County. The greatest density of travel occurs between Reading and Mohnton. Another heavily travelled corridor extends from Reading west through Wernersville to Womelsdorf, which is served by BARTA Route 14. North of Reading, there is a concentration of travel along the Pottsville Pike corridor served by BARTA Route 20, which connects Reading to Shoemakersville and Hamburg. There also appears to be a concentration of travel between TAZs in the area to the southeast of Shillington, an area that features a few golf courses, the Nolde Forest Sawmill, and the Penske Truck Leasing Corporate Headquarters.

Figure 22 shows trips between TAZs in Lancaster County. Note that while the pattern of trips is similar to the pattern in Berks County, with the largest concentration of trips in the central city and smaller concentrations elsewhere, the map of Lancaster includes fewer TAZ pairs with more than 600 vehicles

trips per day (visualized with orange and red lines). TAZ data for the two counties was prepared by separate planning agencies who may have used different methodologies for preparing the data; therefore, direct comparisons between the datasets is not advised. While it is reasonable to compare general travel patterns between the two, deeper comparisons would be require a robust review of the travel demand models.

The greatest density of travel in Lancaster County occurs in Lancaster and the nearby areas, with a corridor of continuous travel density extending north to Lititz and east to Gap. Those corridors are served by RRTA bus routes 10 and 21, respectively. Route 14 begins in Lancaster and extends east to Blue Ball; most trips involving New Holland appear to be to points further east, which potentially has implications for transit service.

Figure 21: Daily Vehicle Trips: Berks County

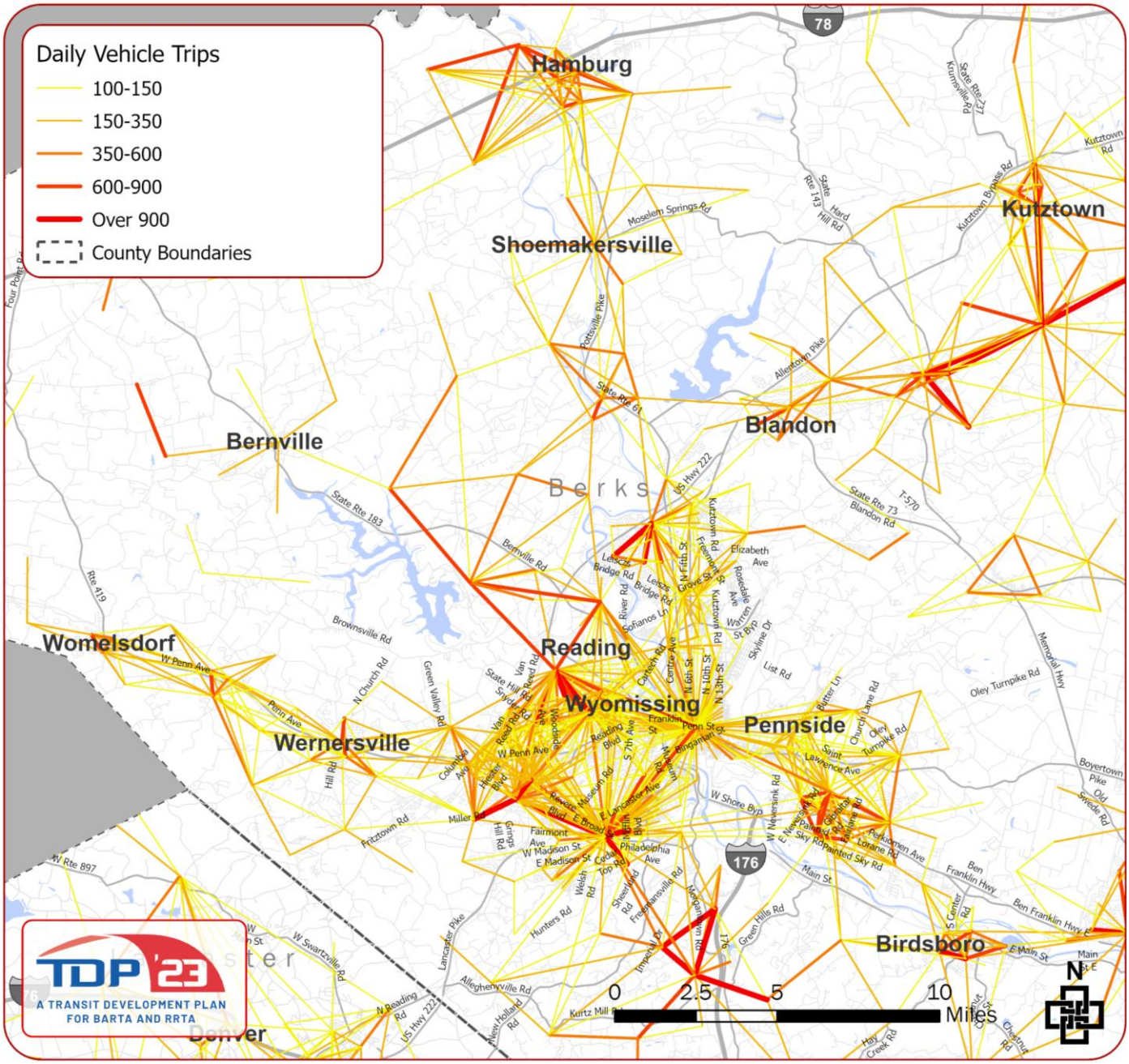
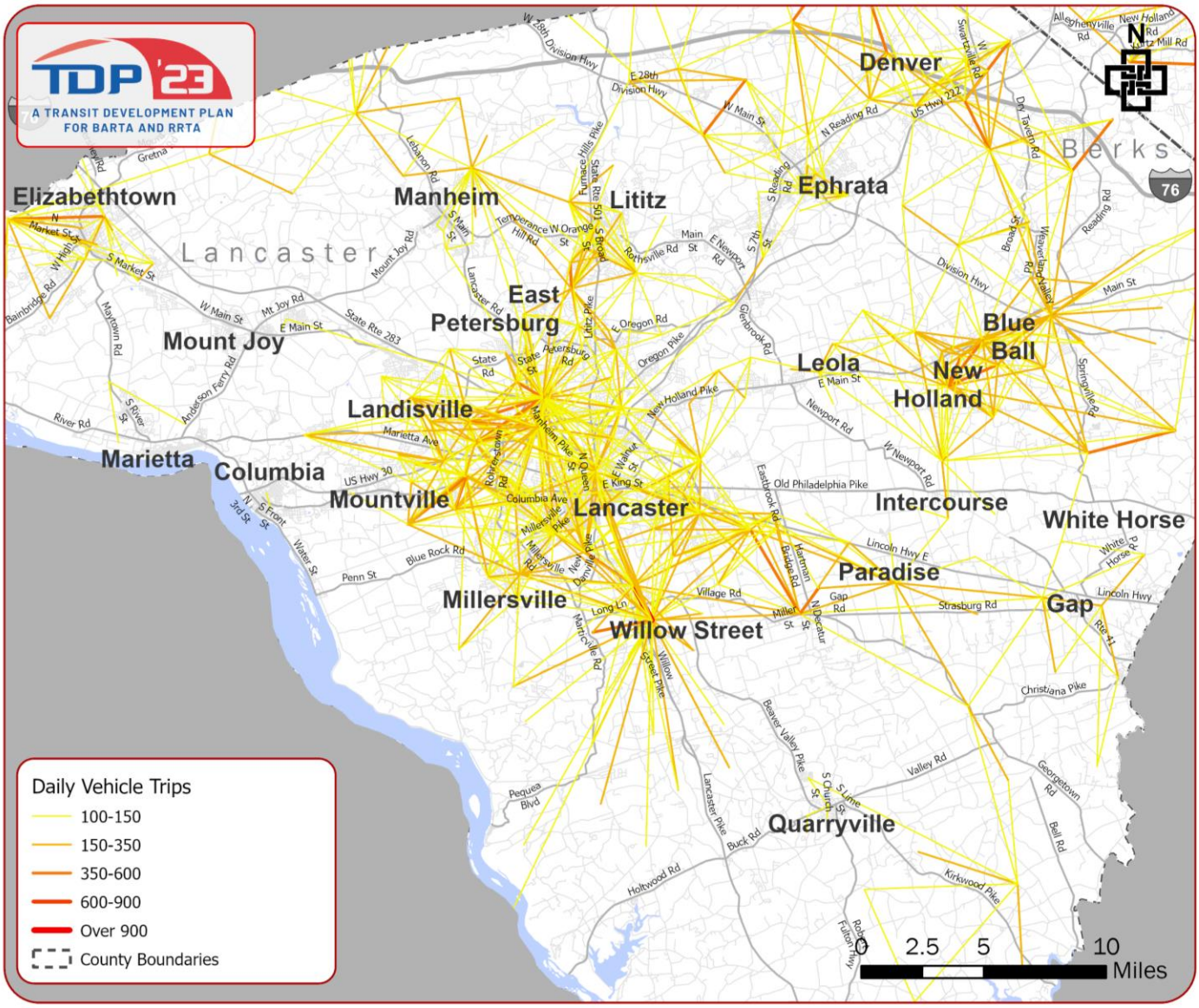


Figure 22: Daily Vehicle Trips: Lancaster County



CHAPTER 7

Initial Public and Stakeholder Input

Initial Public and Stakeholder Input

Three rounds of outreach and engagement activities were held over the course of the Transit Development Plan Update study. Each round corresponded to a key inflection point in the project. The first round of outreach and engagement began in January 2023 with a focus on gathering input from current riders and BARTA/RRTA stakeholders on the ways they use transit, reasons for riding, opinions on current service, and priorities for future service. The first round of outreach and engagement included the following elements:

- Two in-person public meetings held in Reading and Lancaster, and two virtual public meetings held via Microsoft Teams but focused on the BARTA and RRTA service areas, respectively.
- In-person focus-group meetings held with BARTA and RRTA stakeholders, respectively. Attendees included representatives from local planning departments, universities, and other city and county staff members.
- Listening sessions with BARTA and RRTA drivers and operations staff.
- A community survey distributed online and at public meetings.
- An on-board passenger survey for BARTA and RRTA customers.
- A shared-ride survey and agency interviews for BARTA and RRTA shared-ride customers and service providers.

The input collected in the first round of outreach and engagement helped inform the assessment of current service and the development of preliminary service improvement scenarios for BARTA and RRTA. Full summaries from the Phase 1 engagement activities are included in **Appendix E** and **Appendix F**.

Public Meetings

To solicit feedback from the public about BARTA and RRTA services, SCTA held four public meetings in Phase 1 of engagement: one in-person and one virtual meeting for each agency. Overall, 23 individuals participated in public meetings for BARTA and 41 individuals participated in public meetings for RRTA **(Table 9**).

Table 9: Public Meetings Held for TDP Development

MEETING NAME	DATE AND TIME	NUMBER OF PARTICIPANTS
BARTA in-person meeting	January 25, 2023: 5:30 p.m. to 7:00 p.m.	6
BARTA virtual meeting	February 1, 2023: 5:30 p.m. to 7:00 p.m.	17
RRTA in-person meeting	January 26, 2023: 5:30 p.m. to 7:00 p.m.	23
RRTA virtual meeting	February 2, 2023 5:30 p.m. to 7:00 p.m.	18

Several key themes emerged from the public meetings, such as the need for:

- Improvements in information for customers, including more accurate real-time location information and integration with Google Transit.
- More service on nights and weekends.
- Consistent application of the system's flag stop policy.
- Additional options for traveling to, and between, outlying areas on SCTA buses.

SUMMARY OF FINDINGS FROM PUBLIC MEETINGS

Comments made at the meetings are summarized below, grouped by agency.

BARTA

Overall, participants approved of the way the system serves riders with disabilities. They also appreciated the friendliness and professionalism of BARTA drivers.

Although BARTA received some positive feedback during the meetings, participants also indicated areas for growth. While some participants praised BARTA's mobile app and customer information, others reported that the system was difficult for visitors from out of town to understand and noted that agency information is not available via Google Transit. Participants also suggested that BARTA conduct additional marketing to attract riders by emphasizing cleanliness and types of service that are available. In addition, meeting participants said that additional late night and weekend service would be valuable and requested additional passenger amenities like bus shelters. Attendees also said they'd like to see improved coordination between BARTA and other entities, such as municipalities and government agencies, on issues such as stop placement, land use coordination, and service expansion.

Several meeting participants also expressed interest in improved service to outlying areas, including potentially creating new transfer sites outside of downtown Reading. Some service recommendations from meeting participants included:

- New service to Kutztown.
- Direct service between Sinking Spring and Spring Ridge.
- Service to Laureldale (to provide access to Yuasa Battery).
- Service to Douglassville, Boyertown, and Pottstown, to provide connections to Pottstown Area Rapid Transit (PART) in neighboring Montgomery County, PA.

RRTA

Meeting attendees said they appreciated the simplification of transit fares and expressed appreciation for the friendliness of operators and the cleanliness of vehicles. Participants were split on the reliability of RRTA service, while some expressed concerns about how often buses arrive early.

Participants said they'd like to see improvements in customer information systems, including integration with Google Transit. Some meeting participants also noted that the MyStop app does not provide accurate bus arrival time information. Others expressed concern that some riders may not be able to use the app; for example, the app is not accessible to people with visual impairments, as the text does not resize.

In addition, meeting attendees suggested additional service on nights and weekends, to the Amtrak station, as well as to and between outlying areas, in particular to Elizabethtown, Manheim, Lititz, and eastern Lancaster County. Participants also expressed a desire for more customer amenities like shelters and benches at bus stops. One meeting attendee also indicated that information at bus stops is posted too high, making it difficult for people in wheelchairs to read.

Meeting attendees also reported that bus operators disagree about what locations are acceptable for flag stops, which has produced uncertainty about how and where to pick up the bus in rural areas. Further, one participant suggested RRTA adopt clockface headways on routes to improve the legibility of the service, and several participants expressed interest in microtransit to provide some transit service to outlying areas.

In addition to comments about RRTA's fixed-route service, some meeting participants provided feedback on Red Rose Access, RRTA's service for seniors and customers with disabilities. Meeting participants said that operators and dispatchers do not always provide a positive customer experience. In addition, meeting participants noted that Red Rose Access customers sometimes wait one or two hours for a pick-up.

Stakeholder Meetings

In addition to public meetings, SCTA conducted meetings with institutional stakeholders to solicit input on how to improve transit service in Berks and Lancaster counties. The main themes that emerged from those meetings were:

- A need to improve access to employment sites and educational institutions via fixed-route bus service or microtransit service.
- A desire to increase connections between outlying areas and to other parts of the region.
- A concern over the limitations of SCTA's customer information systems.

BARTA STAKEHOLDER MEETING SUMMARY

The stakeholder engagement meeting for BARTA was held on January 25, 2023, from 9:00 a.m. to 11:00 a.m. The institutions represented at the meeting included:

- Abilities in Motion
- Berks County Planning Commission/RATS
- Berks County Workforce Investment Board
- City of Reading
- Commuter Services of Pennsylvania
- Gage Personnel
- Reading Area Community College (RACC)
- Reading School District
- Sinking Spring Borough

Participants reported that BARTA does a good job maintaining a functional and clean fleet of vehicles and is perceived as safe and competent; however, attendees also noted a few opportunities for improvement. These opportunities include:

- New and increased service, including potentially microtransit service, to employment sites in lower-density and non-residential areas such as the Amazon Fulfillment Center in Shartlesville, East Penn Manufacturing in Lyons, the I-78 corridor, the US-222 corridor west of Kutztown, and Morgantown.
- More frequent and direct service to serve students in the Reading School District, including transportation for students with internships and "courtesy students" who live less than two miles from school and are not provided bus transportation by the district.
- Expanded service to additional educational facilities, such as the Reading Muhlenberg Career and Technology Center and the Reading Area Community College, and recreation sites.
- Connections to transit service in neighboring jurisdictions, like RRTA in Lancaster, Lebanon County Transit, Pottstown Area Rapid Transit (PART), Southeastern Pennsylvania Transportation Authority (SEPTA), and Lehigh and Northampton Transportation Authority (LANTA).
- Improvements to customer information, including a more user-friendly and accessible mobile app.
- Improvements to bus shelters and other passenger amenities.

In addition, one meeting participant noted that Sinking Spring Borough is interested in the development of a new bus hub as part of its redevelopment plan to help address chronic congestion.

RRTA STAKEHOLDER MEETING SUMMARY

The stakeholder engagement meeting for RRTA was held on January 26, 2023, from 9:00 a.m. to 11:00 a.m. The institutions represented at the meeting included:

- Eurofins
- Sauder's Eggs
- Elizabethtown College
- City of Lancaster
- Lancaster City Alliance
- Lancaster County
- Lancaster Chamber
- Commuter Services of Pennsylvania
- Millersville University
- Elizabethtown Borough
- Lancaster County Planning Department

Participants praised RRTA for providing a valued service with limited funds, and for effectively partnering with other entities in the community. Suggestions for improvements to service included:

- Providing additional service to and between outlying areas to reduce the need to transfer at the system's hub in Downtown Lancaster.
- Improving bus stops by providing new benches, shelters, sidewalks, and lighting, and more effectively maintaining, repairing, and cleaning existing facilities.
- Refining the system for employer-provided transit benefits.
- Improving customer information, including integration with Google Transit and improving RRTA's mobile app for trip planning, monitoring, and fare payment.
- Launching a new marketing campaign to attract new riders and change the perception; attendees suggested using social media.
- Improving coordination between parking, transit, bike share, and microtransit to help boost ridership.

Participants also requested new or additional service to several locations, including Hershey, Elizabethtown, Millersville, and the Ware Center.

Listening Sessions

The project team held listening sessions with BARTA and RRTA front-line staff to gain feedback on each system's service from operators, shift leads, and dispatchers. The BARTA listening session was held at BARTA headquarters on January 25, 2023 from 12:00 p.m. to 4:00 p.m., and the RRTA listening session was held at RRTA headquarters on January 26, 2023 from 12:00 p.m. to 4:00 p.m.

While operators noted challenges specific to the service they operate, some key themes emerged across both listening sessions.

- Maintaining route schedules is difficult given the limited number of buses and drivers available and tight schedules.
- Improving communication between operators and transit center staff is needed to ensure the correct information goes out to passengers.
- Existing scheduling of routes makes transfers difficult for passengers.

BARTA OPERATOR LISTENING SESSION SUMMARY

BARTA Operators and other operations staff brought up several key issues during the listening session.

- Pulse periods are too short for passengers to find and make connections.
- Sunday service is difficult for operators; there are too few buses and not enough time to stay on schedule.
- Maintaining schedules is difficult on some routes.
  - Route 8 (Reiffton/Shelbourne Square/Birdsboro) and Route 19 (Riverside/First Energy/Cotton St.) are challenging on trips with variants.
  - Some Route 18 (Schuylkill Avenue) trips are scheduled for 30 minutes instead of 40.
- Unmarked bus stops create conflict and confusion. It is not always clear to operators if a pedestrian on the street is waiting for the bus, and passengers ask to be let off the bus in places operators are

uncomfortable stopping.

- Keeping marked stops free of parked cars is difficult.
- Operating in retail centers is challenging for drivers due to conflicts with cars and difficult pedestrian conditions.
- Pigeons pose a health threat to passengers and employees at the transit center.
- Information provided to passengers at ticket windows at the transit center is not always accurate.
- Passengers are interested in service to the casino.

BARTA operators also noted that there is a shortage of paratransit operators. In addition, the software used by BARTA's paratransit service will push trips to drivers that are not logical or realistic. The geographic location of the operator and the realistic time it takes to travel from one location to another are not well considered in the software.

RRTA OPERATOR LISTENING SESSION SUMMARY

Key issues brought up by RRTA operators and operations staff regarding fixed-route service include:

- Information provided to passengers at ticket windows at the transit center is not always accurate.
- On-time performance is difficult to maintain on Sundays for all routes.
- Queen Street Station does not have sufficient amenities for operators, including an adequate number of bathrooms or parking spaces for operators to use.
- Shifts do not always start and end at the same location.
- Queen Street Station would benefit from enhanced security at night.
- Ephrata requires more transit coverage and could possibly serve as a connection point to BARTA.
- Passengers are interested in north/south service on Centerville Road.
- Some routes have confusing and/or inefficient routing.
  - Route 1 (Park City A-Southeast) operates both north and south of Queen Street Station, so passengers often board the bus in the wrong direction.
  - Route 3 (Park City C-8th Ward) is very circuitous and serves too many stops, making it difficult to stay on schedule and forcing out-of-direction travel for passengers.
- Some routes could benefit from service and alignment changes.
  - Route 2 (Park City B-6th Ward) should operate closer to the Wegman's to provide a better connection to a grocery store.
  - Route 6 (Downtown Lancaster Loop) has very low ridership.
  - Route 10 (Lititz) would benefit from Sunday service and later weekday spans to accommodate new development along the alignment.
  - Route 14 (Rockvale Outlets) has a hard time serving the farside stop at Greenland Drive on Lincoln Highway because cars in the turn lane often go straight through the intersection. In addition, crossing from Lincoln Highway into East Town Centre is very dangerous. Buses have to cross

without a signal over a highway exit ramp to enter the shopping center and cross-traffic moves fast.

- Route schedules could be improved to facilitate transfers.

Community Survey

In addition to targeted stakeholder meetings and public outreach, an online survey collected feedback about transit service from the public. Separate surveys were created in English and Spanish for BARTA and RRTA; however, the questions across the two surveys remained consistent. The surveys were available online from January to February 2023 and received a total of 525 responses. About 31 percent of the responses were from regular riders, who ride transit at least weekly; 24 percent from occasional riders, who ride transit less than weekly; and 45 percent from non-riders, who reported never riding transit. Throughout this report, the term "riders" includes regular riders and occasional riders.

The surveys asked respondents to provide basic demographic information, details about their transit usage, information about their most common transit trip (if applicable), opinions about existing service, preferences for future service, and demographics.

KEY SURVEY FINDINGS

Several key themes and findings emerged from the summary and analysis of the community survey responses, including the following. A full summary of the survey findings are available in **Appendix E**.

- Survey participants who are transit riders typically do not have access to a car and mostly use BARTA and RRTA services to commute to work.
- Survey respondents are generally satisfied with RRTA and BARTA service but expressed the greatest dissatisfaction with telephone customer service and the availability of service on nights and weekends.
- Survey participants said they'd prioritize increasing frequency of buses during peak periods over expanding weekday service or running buses on more streets.

FREE RESPONSES

The survey also asked respondents for other comments regarding BARTA and RRTA service. The most-commonly mentioned issues and concerns raised by respondents are summarized here.

Increase in frequency of buses and span of service

Respondents requested an increase in weekend and late-night bus service as well as an increase in bus frequency.

Requests for specific new routes

Many responses included suggestions for new routes and destinations, including:

- Strasburg
- Denver
- Oregon Dairies

- Quarryville
- Kutztown
- Bethel
- Pottstown, PA
- Oley
- Allentown
- Lebanon
- Service between Reading and Lancaster

Concerns about behavior of SCTA employees

Survey respondents expressed concern about the behavior of BARTA and RRTA operators and customer service representatives, complaining of rudeness and unsafe driving.

Improved bus stops and shelters

A common theme of the survey responses was the need for improved bus stops. Commenters requested additional shelters for protection from the elements as well as better signage to make it easier to find stops. Several respondents said they had difficulty flagging down stops in outlying areas.

Additional service between outlying areas

Commenters said they would appreciate being able to travel between areas of Berks and Lancaster Counties without needing to travel downtown to transfer between buses.

Improved rider information

Riders said they would appreciate additional information, including notifications about missed trips and delays, as well as improved trip planning functionality like Google transit.

Increased access to jobs

Both employees and employers said they'd like to see more access to job centers, like the Amazon warehouse in Hamburg.

Reliability of bus service

Several riders said they'd missed their bus because the buses were running ahead of schedule. Others expressed frustration about late service and missed trips.

Access to medical institutions

Providing access to medical facilities, in particular Penn State Lancaster Medical Center, was a priority of multiple commenters.

On-board Survey

SCTA conducted a paper survey onboard buses on each system asking riders about their satisfaction with the services offered by BARTA and RRTA, respectively, as well as basic demographic information for Title VI analysis. SCTA ran the on-board survey from January 17, 2023 through February 3, 2023 and collected 1,097 complete surveys, 582 from RRTA riders and 485 from BARTA riders. Of these surveys, 39 BARTA riders and 38 RRTA riders completed the survey in Spanish. The following provides an overview of results of the survey. A detailed summary of the survey is available in **Appendix C**.

HIGH-LEVEL RESULTS

Rider Satisfaction

In the survey, rider satisfaction was measured across a series of several metrics. More than 75 percent of RRTA riders are satisfied with RRTA service overall. RRTA Riders are most satisfied with the safety from accidents, the availability of bus schedules, safety from crime while riding, and the availability of seats on the bus, while they are least satisfied with the frequency of weekend service and the time the service ends at night.

Close to 80 percent of all BARTA riders are satisfied with BARTA service overall. BARTA riders are most satisfied with their safety from accidents, the availability of bus schedules, the safety from crime while riding, and the ease of understanding bus schedules. BARTA riders were least satisfied with the frequency of weekend service and the time the service ends at night.

Service Improvement Preferences

Like in the online community survey, riders were asked a series of tradeoff questions to identify their preferences for service improvements. Riders were asked about five different scenarios:

- Fewer bus stops along a route for faster bus travel versus more bus stops along a route for shorter walking distances to/from destinations
- Expanded service to new areas versus improved service/schedules and reliability in the existing service area
- More weekend service versus improved weekday service schedules
- Longer service hours versus more frequent service

Buses running more frequently on fewer streets versus buses running less frequently on more streets.

Overall, RRTA riders favored longer service hours over more frequent bus service and having more bus stops and shorter walk times compared to fewer stops and a faster ride. BARTA riders are also generally in favor of having more bus stops along a route with shorter walk times over fewer bus stops and faster trips. In addition, BARTA riders favored having higher frequency service on fewer streets as opposed to lower frequency service on more streets.

Trip Characteristics

The survey also asked riders about their typical trip. Overall, the majority of RRTA riders accessed the bus by walking to the stop and, after alighting the bus, most walked from the bus stop to their destination. Over 30 percent of RRTA riders needed to transfer buses at least once during the trip they were surveyed on to make their journey. Close to 65 percent of RRTA trips were for either work or school purposes.

Overall, the majority of BARTA riders also accessed the bus by walking to the stop and, after alighting the bus, walked to their final destination. Close to half of BARTA riders needed to transfer buses at least once during the trip they were surveyed on to make their journey. Like with RRTA riders, over 60 percent of BARTA trips were for either work or school purposes. Other frequent trip purposes include shopping and medical visits.

Rider Profile

In addition to questions about typical trips and travel preferences, the survey asked some demographic questions. The responses to these questions will help inform Title VI analyses produced by SCTA. Fifty percent of RRTA riders identify as white. About 25 percent of riders identify as Hispanic or Latino and about 20 percent of riders identify as Black or African American. The average age of RRTA riders is 41 years old and 25 percent of riders are between the ages 25 to 34. In addition, Spanish is the second most common language (after English) spoken at home among RRTA riders; a small percentage of riders also speak German or Pennsylvania Dutch at home. Finally, almost 70 percent of riders are employed. Employed riders are more likely to work on a Saturday than a Sunday; about half of employed riders start work before 7:00 a.m. or work after 9:00 p.m. In addition, almost 100 percent of riders use a cell phone and over 80 percent of riders have access to internet on their cell phone.

Close to 50 percent of BARTA riders identify as white, while about 33 percent of riders identify as Hispanic or Latino, and about 20 percent of riders identify as Black or African American. The average age of BARTA riders is 44 years old and about 20 percent of riders are between the ages of 25 to 34. In addition, Spanish is the second most common language (after English) spoken at home among BARTA riders. Finally, about 60 percent of riders are employed. Employed riders are more likely to work on a Saturday than a Sunday; close to 50 percent of employed riders start work before 7:00 a.m. or work after 9:00 p.m. In addition, almost 100 percent of riders use a cell phone and over 80 percent of riders have access to internet on their cell phone.

Paratransit Survey and Agency Interviews

PARATRANSIT SURVEY

SCTA conducted a mail survey of riders of both paratransit systems the agency oversees, BARTA Special Services and Red Rose Access. The survey asked questions about rider satisfaction with the services offered by BARTA and RRTA as well as basic demographic information for Title VI.

SCTA ran the survey from March 23, 2023 through May 12, 2023. In sum, SCTA collected 246 competed surveys, 160 from BARTA Special Services and 86 from Red Rose Access. The following provides a high-level overview of results of the survey. A detailed summary of the survey is available in **Appendix D**.

High-Level Results

RIDER SATISFACTION

In the survey, rider satisfaction was measured across a series of several metrics. Over 65 percent of Red Rose Access customers are satisfied with the service overall. They are most satisfied with the cleanliness inside the vehicle, the driver courtesy and friendliness, and the driver help boarding and exiting the vehicle. Red Rose Access customers were least satisfied with the time it takes to make their most

frequent trip, the vehicles arriving for pickup within their 30-minute pickup window, and the ease of making a reservation.

Eighty percent of BARTA Special Services customers are satisfied with the service overall. They are most satisfied with driver courtesy and friendliness, the cleanliness inside the vehicle, and the help drivers provide boarding and exiting the vehicle. They are least satisfied with the time it takes to get to their destination and the vehicles arriving within their 30-minute pickup window.

TRIP CHARACTERISTICS

The survey also asked riders about their typical trip. The majority of Red Rose Access customers use the service to travel to and from medical appointments. Just four percent of Red Rose Access customers have used an Uber/Lyft ride to replace a Red Rose Access trip. Three percent of Red Rose Access customers have used Uber/Lyft as part of a Red Rose Access trip.

Like with Red Rose Access customers, the majority of BARTA Special Services customers are most likely to use the service to travel to and from medical appointments. Seven percent of customers have used Uber/Lyft to replace a BARTA Special Services trip, and five percent of customers have used Uber/Lyft as part of a BARTA Special Services trip.

RIDER PROFILE

In addition to questions about typical trips, the survey asked some demographic questions. Two-thirds of Red Rose Access customers identify as White; the remaining 33 percent identify as Black or African American or Hispanic or Latino. The average age of Red Rose Access customers is 70 years old and over three-quarters of customers are 75 years or older.

About one half of BARTA Special Services customers identify as White; approximately one-third identify as Hispanic or Latino, and about nine percent identify as Black or African American. The average age of BARTA Special Services customers is 70 years old, and over seventy percent of customers are 60 years or older.

AGENCY INTERVIEWS

In addition to a survey, SCTA conducted in-depth interviews with representatives of agencies who partner with SCTA to operate BARTA Special Services and Red Rose Access. The goal of these interviews was to better understand the capabilities of these partner agencies and their satisfaction with their partnership with SCTA. In total eight interviews were conducted, four with Lancaster County agencies and four with Berks County agencies. The following presents the results of the interview findings. A detailed summary is presented in **Appendix D**.

High Level Results

Overall, the agencies interviewed recognize that BARTA Special Services and Red Rose Access are important services that many depend on, and interviewees expressed satisfaction with the administration of and the staff of both Red Rose Access and BARTA Special Services. Interviewees also noted that the application process for both systems does not pose a significant barrier for those who use it, indicating that signing up for specialized transportation services in Lancaster and Berks Counties does not present a major barrier.

While interviewees were overall satisfied with Red Rose Access and BARTA Special Services, they did note some specific areas for improvement. For both services, interviewees indicated there is demand for more ability to create regular schedules, especially when the same customers are required to make regular

trips, such as to dialysis clinics. Further, interviewees working with both services noted a desire for better real-time information, especially regarding delays. Interviewees working with Red Rose Access also noted that outside the City of Lancaster, service often require long wait times and very full vehicles. Similarly, interviewees working with BARTA Special Services indicate issues with on-time performance for clients located outside of Reading.

Beyond on-time performance and real-time data tracking, another key challenge among some interviewees was cost of the service. The cost of service for Red Rose Access and BARA Special Services varies and not all agencies interviewed reported cost as an issue. However, for some clients, cost is a major barrier to using both Red Rose Access and BARTA Special Services.

CHAPTER 8

Service Assessment

Service Assessment

The stakeholder input summarized in the previous chapter, together with the findings of the market analysis discussed in **Chapter 5 Market Analysis** provide context for the assessment of the strengths, weaknesses, and opportunities of each BARTA and RRTA route. Using these analyses as a starting point, the study team developed detailed, diagnostic profiles for each route. The profiles, presented in this chapter, describe each route's service characteristics, ridership patterns, productivity, and on-time performance. At the conclusion of each route profile is a list of potential service improvement options for the route, based on the quantitative findings of the profile; a set of qualitative guiding principles, representing industry best practices; and the vision, goals, and objectives of the SCTA TDP, as described in **Chapter 2 Strategic Vision**.

Service Profiles

Each service profile includes a series of quantitative and qualitative measures. Quantitative measures on the profiles covered the following metrics:

- Ridership
  - By day
  - By trip
  - By stop
- Productivity
  - Passengers per hour
  - Passengers per mile
  - Passengers per trip
- On-time performance
  - Percentage of early trips
  - Percentage of late trips
  - Percentage of on-time trips

Additionally, the profiles answered the following questions; answers to these questions represented the qualitative measures covered on the service profile for each route:

- Is the service simple?
  - Do schedules have clockface frequencies?
  - Are routes direct rather than circuitous?
  - Are routes symmetrical in the inbound and outbound directions?
  - Do routes serve well defined markets?
  - Is service well-coordinated at transfer hubs?

KEY FINDINGS

The results of the service analysis for both RRTA and BARTA were similar. RRTA and BARTA each have a mix of high- and low-productivity routes. In both counties, there is also a close correlation between transit ridership and transit potential. That is, ridership is tied to density, and in areas with a higher density of people and jobs, transit ridership was consistently higher. Ridership and productivity in both counties are strongest in the central cities (Reading and Lancaster); as routes extend into more suburban and rural areas, ridership declines.

Additionally, transit ridership potential in both systems is limited by service design. In Lancaster County, for example, limited and irregular service frequencies, circuitous alignments, and one-way service segments are also likely causes of lower ridership and productivity. In Berks County, circuitous alignments and one-way service segments limit ridership and productivity.

The route profiles for each route in the existing BARTA and RRTA networks are available in **Appendix J**.

CHAPTER 9

Preliminary Service Scenarios and Stakeholder Reactions

Preliminary Service Scenarios and Stakeholder Reactions

The opportunities identified at the end of each diagnostic route profile present a range of possible options for improving the performance of the respective route. In some cases, the options that are presented are contradictory, because there is almost always more than one way to improve service. For example, if a route has poor productivity, its frequency can be reduced to achieve a better ratio between service supply and demand. Alternatively, the route could be replaced with an on-demand service that only serves an area upon request.

Overview of Scenarios

Using the opportunities from the route profiles as a starting point, the study team developed two preliminary service redesign scenarios for the BARTA and RRTA networks. The scenarios for each transit network incorporated a subset of service improvement ideas that emerged from the route profiles. The scenarios were also built upon the notion that an effective transit network consists of strong individual routes. A strong route is one that is easy to access, intuitive to understand, and serves a robust mix of destinations that tend to generate high transit ridership, such as multi-family housing dwellings, grocery stores, retail centers, medical facilities, and academic institutions.

The scenarios developed for both BARTA and RRTA were intended to generate feedback and clarify the specific elements that are most popular with stakeholders and the public. The feedback received on the two scenarios during public and stakeholder engagement activities helped form the basis for the final recommendations, presented in **Chapter 9 Final Recommendations.**

BARTA SCENARIOS

BARTA's Scenario 1 and Scenario 2 incorporate microtransit in addition to fixed-route transit services. Microtransit is an app-based on-demand service that operates much like Uber and Lyft, but it uses transit specific vehicles and serves a designated geographic area (or zone). Microtransit can be an effective tool for serving lower-density and automobile-oriented environments. Microtransit vehicles are smaller than a typical fixed-route transit bus, making it easier to navigate suburban areas. Where it is available, microtransit can provide both local circulation within a designated zone and fist-/last-mile connections to fixed-route services.

In Scenario 1, microtransit service is limited to outlying boroughs surrounding Reading. In Scenario 2, microtransit is used to provide connections both within and between boroughs to the north, east, and west of Reading. In addition to the introduction of microtransit service, the two scenarios propose alignment changes to nearly every route in the system, as well as the addition of some new routes and the elimination of others. These modifications are meant to address the strengths, weaknesses, and opportunities identified through a comprehensive assessment of each current route and the markets it

serves, presented in **Chapter 5 Market Analysis** and **Chapter 7 Service Assessment**. A map of the proposed system for Scenario 1 is shown in **Figure 23** and **Figure 24**. Descriptions of the proposed alignment changes for BARTA Scenario 1 are displayed in **Table 9.** Changes to the BARTA system for Scenario 2 are visualized in and described **Figure 25** and **Figure 26** in **Table 10**.

Figure 23: Proposed BARTA System - Scenario 1

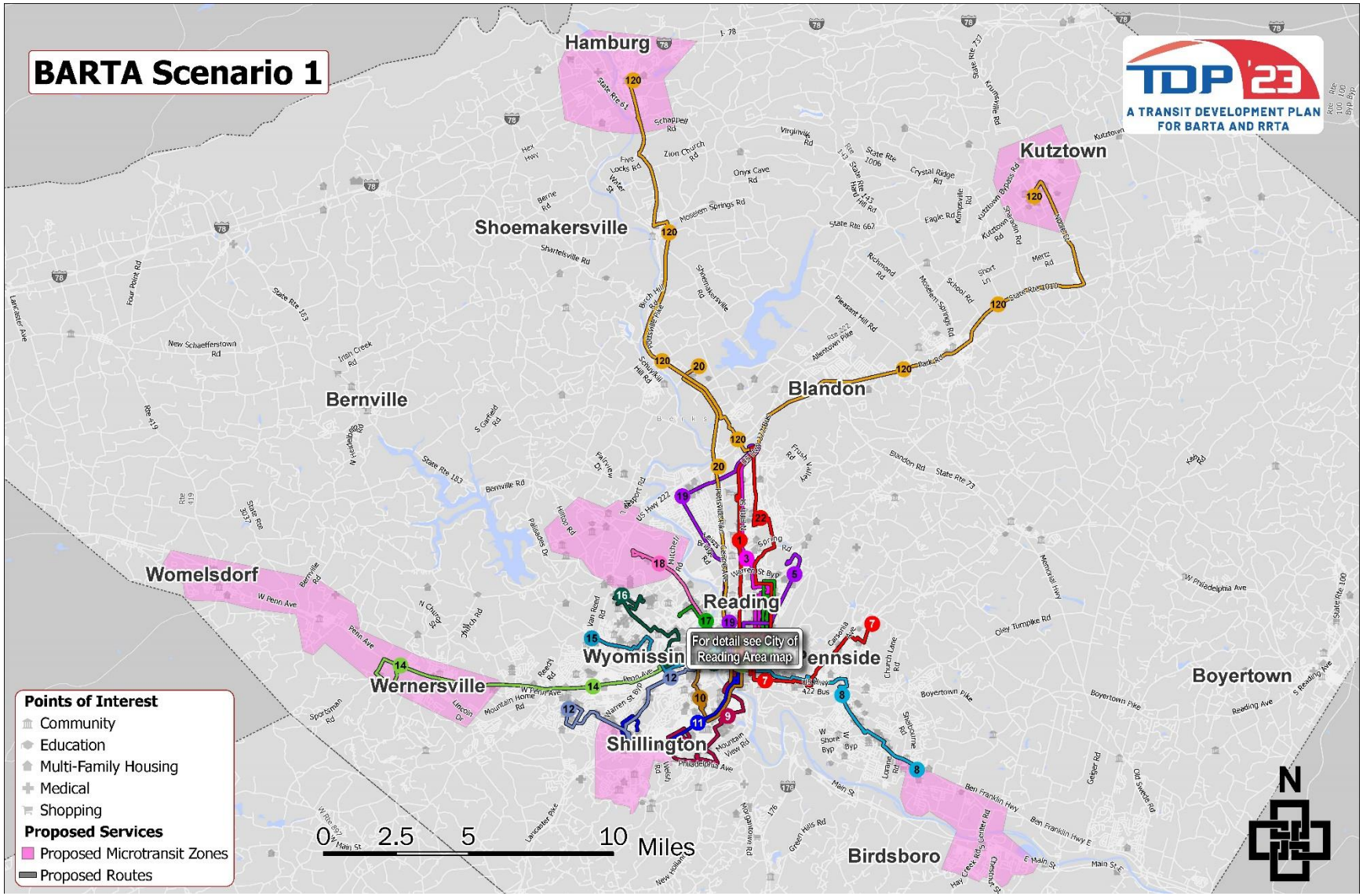


Figure 24: Proposed BARTA Scenario 1 – Reading Area

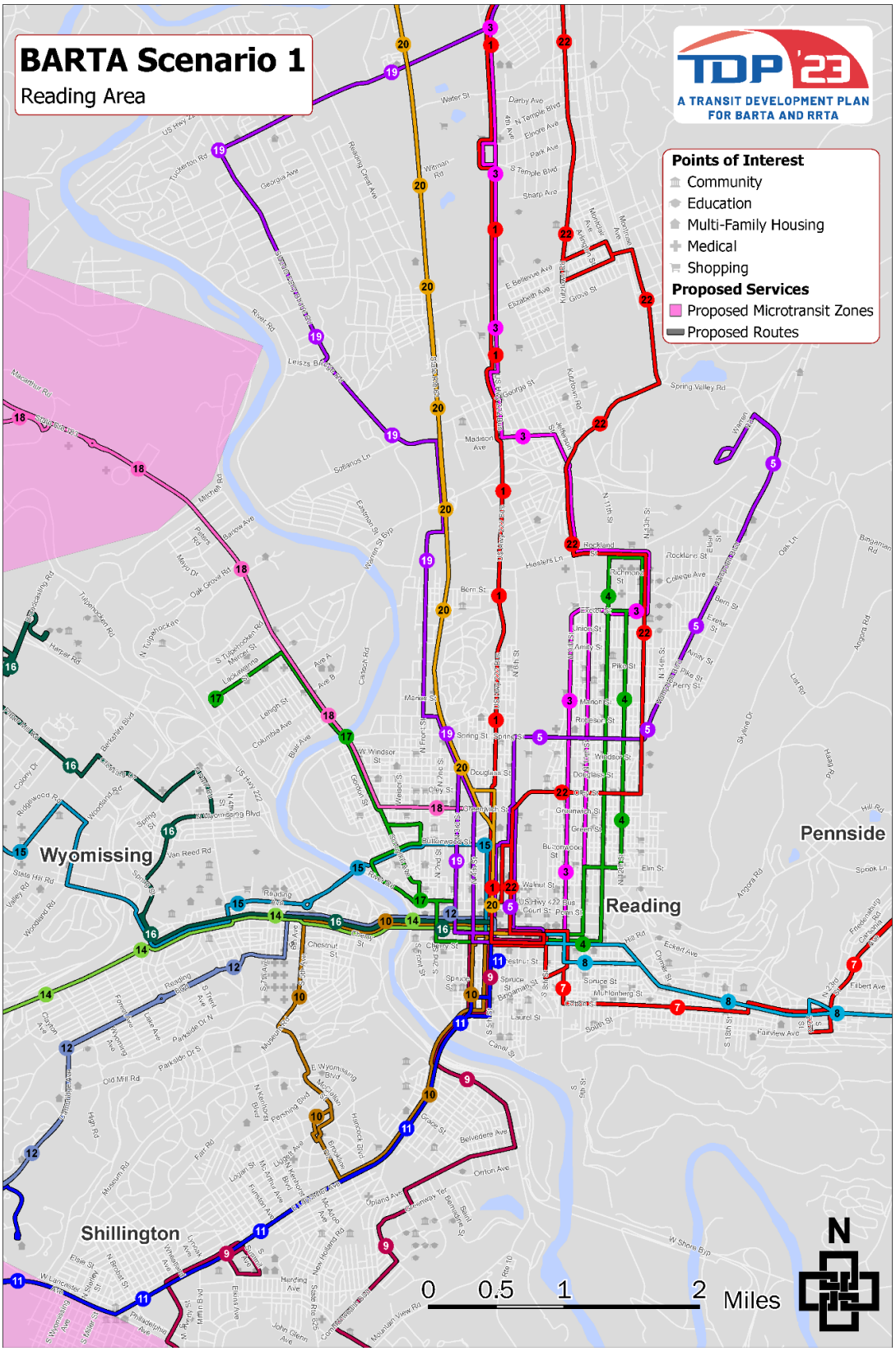


Table 10: BARTA Scenario 1

ROUTE	START OF LINE	END OF LINE	CHANGES FROM EXISTING SERVICE
1	BARTA Transportation Center (BTC)	North Reading Plaza (Walmart)	N/A, Route 1 would be similar to the current route alignment.
2	BTC	Fairgrounds Square Market	Eliminated due to low ridership. Connections between east side neighborhoods and Fairgrounds Square Market would be picked up by restructured Route 3.
3	BTC	North Reading Plaza (Walmart)	East of downtown Reading, Route 3 southbound service would be shifted from 8th Street to 10th Street to improve access for more residents. Service would be added to Weis Market and Albright College via 13th Street. Service would also be shifted from Kutztown Road to 5th Street Highway to serve more regional destinations.
4	BTC	Rockland Street and Kutztown Road	East of downtown, Route 4 southbound service would be shifted from 10th Street to 12th Street to reduce duplication with Route 3 recommendations. Service would be added to Weis Market and Albright College via 13th Street.
5	BTC	Albright College	Route 5 would be restructured to provide simplified bi-directional service between downtown Reading and Reading Muhlenberg Career and Technology Center via Albright College and Reading High School. Service would also be shifted to Spring Street to link east side neighborhoods to grocery destinations near 6th Street.
7	BTC	Stony Creek Towne Houses	Route 7 would be restructured to provide simplified bi-directional service between downtown Reading and Stony Creek Towne Houses via Carsonia Avenue, where ridership potential is higher than Butter Lane. Service would also be shifted from Perkiomen Avenue to Cotton Street to reduce duplication with Route 8 recommendations.
8	BTC	Birdsboro	Route 8 service would be truncated at Walmart to focus on areas with the highest ridership potential. Birdsboro coverage would be picked up by a proposed microtransit service.
9	BTC	Kenhorst Plaza (Redners) and Alvernia University	Route 9 would be restructured to provide simplified bi-directional service between downtown Reading and Giant on Lancaster Avenue, via Alvernia University, Redner's, and Governor Mifflin High School.
10	BTC	Wyomissing Boulevard (Reading Housing Authority - Oakbrook Homes)	Route 10 would be restructured to provide bi-directional circulation between downtown Reading, the Lancaster Avenue corridor, Reading Housing Authority - Oakbrook Homes, Reading Hospital, and the Penn Avenue corridor.
11	BTC	Mohnton	Route 11 would be restructured to operate between downtown Reading and The Highlands at Wyomissing via Lancaster Avenue and Grocery Outlet on Revere Boulevard.
12	BTC	Berkshire Hills in Sinking Spring	Route 12 would be similar to the current route alignment, but with service to The Highlands at Wyomissing shifted to proposed Route 11 to reduce out-of-direction deviations.
14	BTC	Wernersville State Hospital and Womelsdorf Park-and-Ride	Route 14 service would be truncated at Wernersville State Hospital, with Robesonia and Womelsdorf coverage picked up by a proposed microtransit service.

ROUTE	START OF LINE	END OF LINE	CHANGES FROM EXISTING SERVICE
15	BTC	Berkshire Mall and Giant on State Hill Road	In the vicinity of Berkshire Mall, Route 15 service would be simplified and streamlined. Service would also be shifted from Penn Street to Buttonwood Street to reduce duplication with Route 16 recommendations. Wyomissing and Spring Street coverage would be picked up by a restructured Route 16.
16	BTC	Penn State Berks and Broadcasting Square (Target)	Route 16 would be restructured to serve Penn State Berks after Broadcasting Square to allow for bi-directional service between the campus and retail center. Service would also be shifted from Park Road to Spring Street and Wyomissing Boulevard to help streamline Route 15.
17	BTC	Airport Industrial Park and Berks Heim	Route 17 service would be streamlined to reduce parking lot operations and unprotected left turns. Direct service to key destinations would be provided by a proposed microtransit service. Service would also be shifted from Greenwich Street to Schuylkill Avenue to add Fine Fare Supermarket and Reading Housing Authority to the route.
18	BTC	Windsor Street and St. Joseph Medical Center	Route 18 service would be extended to St. Joseph Medical Center on all trips for simplicity and consistency. Service would also be shifted from Front Street to Greenwich Street to pick up coverage from Route 17.
19	19th and Cotton Street	FirstEnergy Stadium	The Cotton Street branch of Route 19 would be eliminated to reduce duplication with proposed routes 7 and 8. The northern branch of Route 19 would be restructured to operate between downtown Reading and Walmart via Stoudts Ferry Bridge Road and Tuckerton Road. Service would be shifted from 6th and 8th Street to 3rd and 4th Street to reduce duplication with proposed Route 5 and to improve functionality of the route. Service would also be shifted from Centre Avenue to Front Street to improve job-access opportunities.
20	BTC	Leesburg and Hamburg	Route 20 service would be truncated at Ashley Furniture. Destinations further north would be picked up by proposed Route 120 and a proposed microtransit service.
22	BTC	Lyon Station and East Penn - Deka	Route 22 service would be truncated at Walmart. Destinations further northeast, including new service to Kutztown, would be picked up by proposed Route 120.
120	Walmart – Allentown Pike	Kutztown	Route 120 would operate as a new commuter route anchored at the Walmart on Allentown Pike. Its western leg would serve Leesport, Mohrsville, Shoemakersville, and Hamburg. Its eastern leg would serve Blandon, Fleetwood, Lyons, and Kutztown.
Microtransit Service			In Scenario 1, microtransit service is primarily used to provide coverage in outlying boroughs surrounding Reading.

Figure 25: Proposed BARTA System - Scenario 2

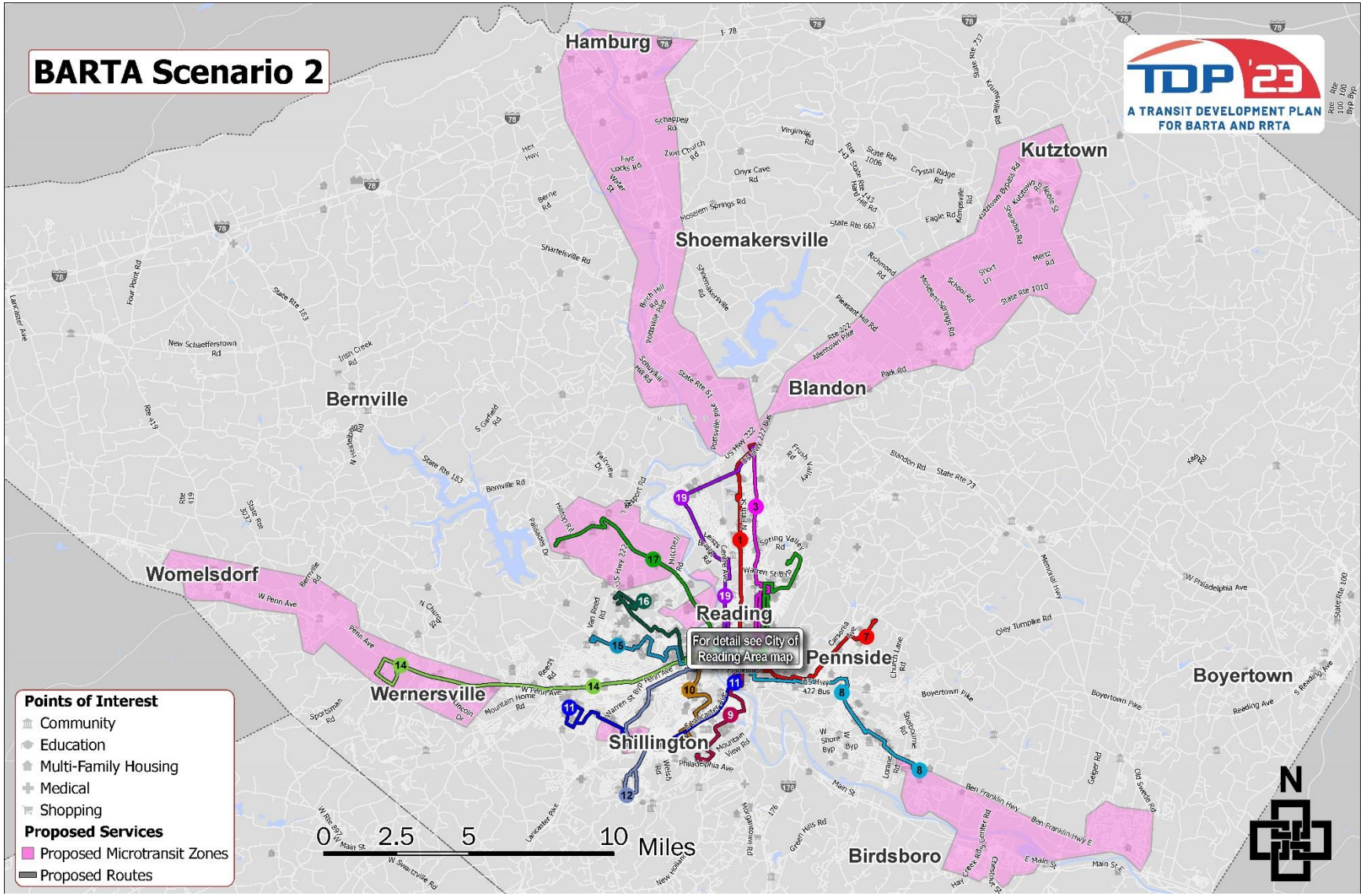


Figure 26: Proposed BARTA Scenario 2 - Reading Area

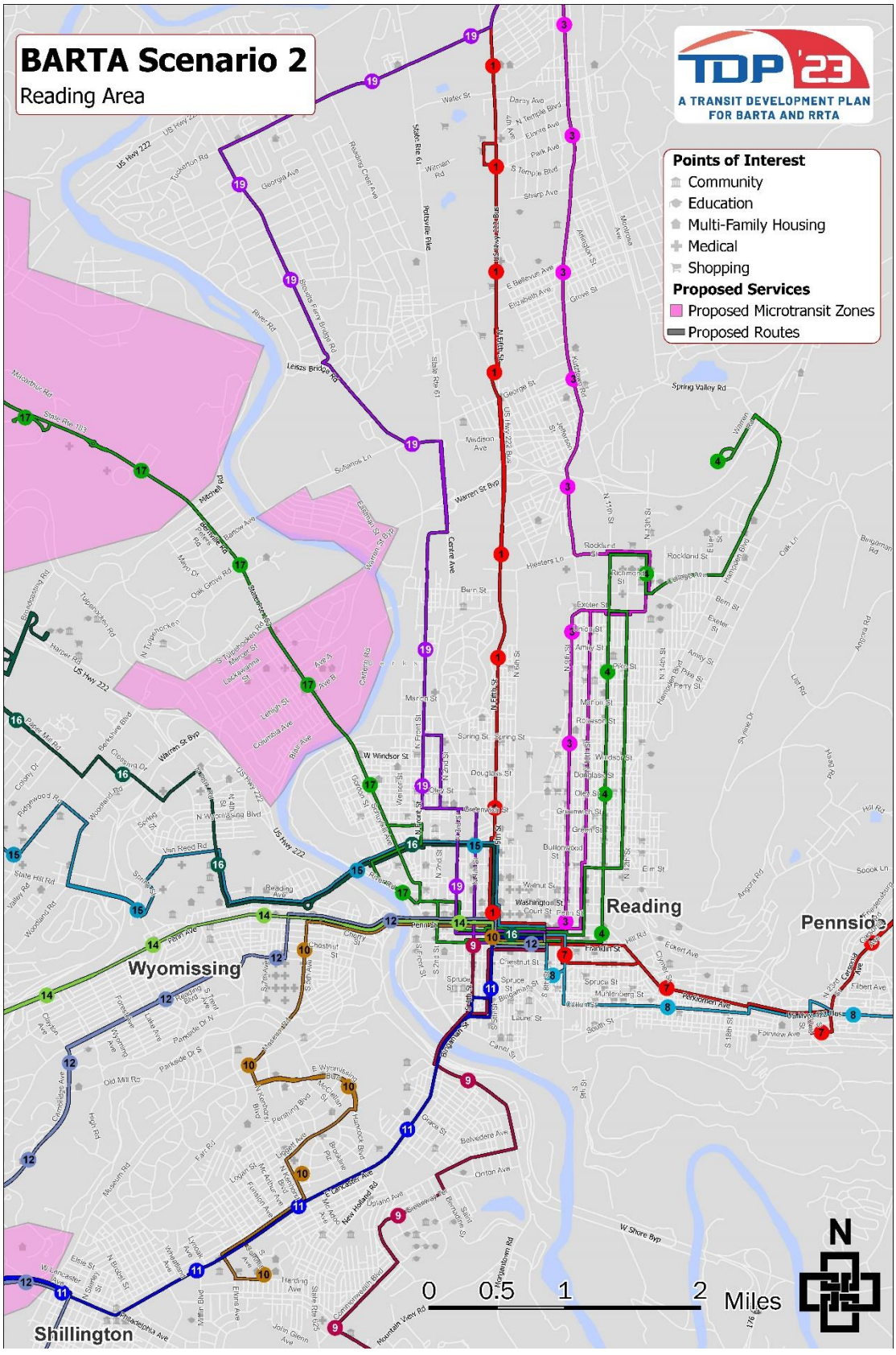


Table 11: BARTA Scenario 2

ROUTE	START OF LINE	END OF LINE	CHANGES FROM EXISTING SERVICE
1	BTC	North Reading Plaza (Walmart)	N/A, Route 1 would be similar to the current route alignment.
2	BTC	Fairgrounds Square Market	Eliminated due to low ridership. Connections between east side neighborhoods and Fairgrounds Square Market would be available via Route 3 and a transfer to Route 1 at the BARTA Transportation Center or Walmart on Allentown Pike.
3	BTC	North Reading Plaza (Walmart)	East of downtown Reading, Route 3 southbound service would be shifted from 8th Street to 10th Street for greater ridership potential. Service would be added to Weis Market via 13th Street.
4	BTC	Rockland Street and Kutztown Road	East of downtown, southbound service would be shifted from 10th Street to 12th Street to reduce duplication with Route 3 recommendations. North of downtown, service would be added to Weis Market and Albright College, and extended to Reading Muhlenberg Career and Technology Center via Hampden Boulevard.
5	BTC	Albright College	Route 5 would be eliminated, with much of its coverage picked up by proposed Route 4.
7	BTC	Stony Creek Towne Houses	Route 7 would be restructured to provide simplified bi-directional service between downtown Reading and Stony Creek Towne Houses via Carsonia Avenue, where ridership potential is higher than Butter Lane.
8	BTC	Birdsboro	Route 8 service would be truncated at Walmart to focus on areas with the highest ridership potential. Birdsboro coverage picked up by a proposed microtransit service. Service would also be shifted to Cotton Street to reduce duplication with Route 7 recommendations.
9	BTC	Kenhorst Plaza (Redners) and Alvernia University	Route 9 would be restructured to provide simplified bi-directional service between downtown Reading and Redner's via Alvernia University.
10	BTC	Wyomissing Boulevard (Reading Housing Authority - Oakbrook Homes)	Route 10 would be restructured to provide bi-directional service between downtown Reading and Giant on Lancaster Avenue, via Reading Hospital and Reading Housing Authority - Oakbrook Homes.
11	BTC	Mohnton	Route 11 would be restructured to operate between downtown Reading and Berkshire Hills in Sinking Spring to better link multifamily housing with grocery and retail destinations.
12	BTC	Berkshire Hills in Sinking Spring	Route 12 would be restructured to operate between downtown Reading and Mohnton via Reading Boulevard and Cambridge Avenue. Service to Berkshire Hills would be picked up by proposed Route 11. Service to The Highlands at Wyomissing would be picked up by a proposed microtransit service.
14	BTC	Wernersville State Hospital and Womelsdorf Park-and-Ride	Route 14 service would be truncated at Wernersville State Hospital, with Robesonia and Womelsdorf coverage picked up by a proposed microtransit service.
15	BTC	Berkshire Mall and Giant on State Hill Road	In the vicinity of Berkshire Mall, Route 15 service would be simplified and streamlined. Service would also be shifted from Penn Street to Buttonwood Street to reduce duplication with Route 16 recommendations.
16	BTC	Penn State Berks and Broadcasting Square (Target)	Route 16 would be restructured to serve Penn State Berks after Broadcasting Square to allow for bi-directional service between the campus and retail center. Service would also be shifted from Penn Street to Buttonwood Street to reduce duplication with Route 15 recommendations.

ROUTE	START OF LINE	END OF LINE	CHANGES FROM EXISTING SERVICE
17	BTC	Airport Industrial Park and Berks Heim	Route 17 service would be streamlined to reduce parking lot operations and unprotected left turns. Direct service to key destinations would be provided by a proposed microtransit service. Service would also be shifted from Greenwich Street to Schuylkill Avenue to add Fine Fare Supermarket and Reading Housing Authority to the route.
18	BTC	Windsor Street and St. Joseph Medical Center	Route 18 would be eliminated, with its coverage picked up by Route 17 .
19	19th and Cotton Street	FirstEnergy Stadium	The Cotton Street branch of Route 19 would be eliminated to reduce duplication with proposed routes 7 and 8. The norther branch of Route 19 would be restructured to operate between downtown Reading and Walmart via Stoudts Ferry Bridge Road and Tuckerton Road. Service would be shifted from 6th and 8th Street to 3rd and 4th Street to reduce duplication with proposed Route 5 and to improve functionality of the route. Service would also be shifted from Spring Street to Front and 2nd Streets to pick up coverage from Route 18. Service would be shifted from Centre Avenue to Front Street to improve job-access opportunities.
20	BTC	Leesburg and Hamburg	Route 20 would be eliminated, with its coverage picked up by a proposed microtransit service.
22	BTC	Lyon Station and East Penn - Deka	Route 22 would be eliminated, with its coverage picked up by a proposed microtransit service.
120	N/A	N/A	Route 120 does not operate in Scenario 2, but its coverage is picked up by a proposed microtransit service.
Microtransit Service			Route 120 does not operate in Scenario 2, but its coverage is picked up by a proposed microtransit service.

BARTA SCENARIO FEEDBACK

To solicit feedback about the two different proposed scenarios for updating BARTA service, SCTA conducted an online survey and held three engagement meetings. Full summaries of the feedback received during the stakeholder meeting and public meetings are available in **Appendix G**.

Participants in the engagement events and online survey provided feedback on the proposed service scenarios, including feedback about the potential changes to the following routes:

- Participants noted that Route 1 experiences overcrowding and suggested additional service, particularly later in the day.
- Attendees expressed concerns regarding pedestrian access to stops on Route 4.
- Some participants worried that the reduction of service to the Mohnton area proposed in Scenario 1 would decrease access to employment sites, schools, and community resources (Routes 11 and 12).
- Many survey respondents expressed concern about the reduction of service to outlying areas, including:
  - Birdsboro (via Route 8)
  - Womelsdorf (via Route 14)
  - Hamburg (via Route 20, in Scenario 2)
- While a few people said they prefer the existing service pattern of Route 22, which extends from Reading to Lyons, many more said they would prefer either Scenario 1 (which includes fixed-route service to Kutztown via Route 122), or the replacement of Route 22 with a microtransit zone.

- One participant lamented that neither existing service nor either scenario would provide fixed-route service to Glenside Apartments, or Jamestown Village, although new microtransit zones proposed as part of both Scenario 1 and Scenario 2 would cover those destinations and provide a connection to routes 17 and 18.
- Some participants opposed the proposal to reduce service along Cotton St on Route 19.
- Attendees also had suggestions for destinations that were not served by either proposed scenario, including the City of Lancaster, Pottstown, and the casino in Morgantown.

Participants at all three meetings had questions and concerns about the proposal to introduce new microtransit service in Berks County. Some attendees worried that microtransit service would not adequately replace the fixed route service that it would be intended to replace. Some participants worried that using microtransit to facilitate access to the reduced fixed-route system would inconvenience riders by forcing them to transfer multiple times. Others worried that BARTA would rely on contractors to provide microtransit service, or that the introduction of microtransit would reduce the funding available for fixed-route service. Other participants saw the proposed microtransit service as an opportunity to increase access. Community college students, for example, currently use taxis to get to class; a microtransit service, one participant suggested, could be a cost-effective substitute.

Those in attendance at the three engagement meetings also provided feedback about BARTA service beyond the proposed scenarios themselves. Participants suggested the agency improve its information for customers who are visually impaired and provide integration with Google Transit.

RRTA SCENARIOS

Like with the BARTA scenarios, the RRTA scenarios include both microtransit and fixed-route service recommendations. In Scenario 1, microtransit service is limited to outlying boroughs surrounding Lancaster. In Scenario 2, microtransit is used to provide connections both within and between boroughs to the north, east, and west of Lancaster. In addition to the introduction of microtransit service, the two scenarios propose alignment changes to nearly every route in the system, as well as the addition of some new routes and the elimination of others. These modifications are meant to address the strengths, weaknesses, and opportunities identified through a comprehensive assessment of each current route and the markets it serves, as presented in **Chapter 5 Market Analysis** and **Chapter 7 Service Assessment**. The proposed changes to RRTA in Scenario 1 are visualized in **Figure 27** and **Figure 28** and described in **Table 11**. The proposed changes to RRTA in Scenario 2 are visualized in **Figure 29** and **Figure 30** and described in **Table 12**.

Figure 27: Proposed RRTA Scenario 1

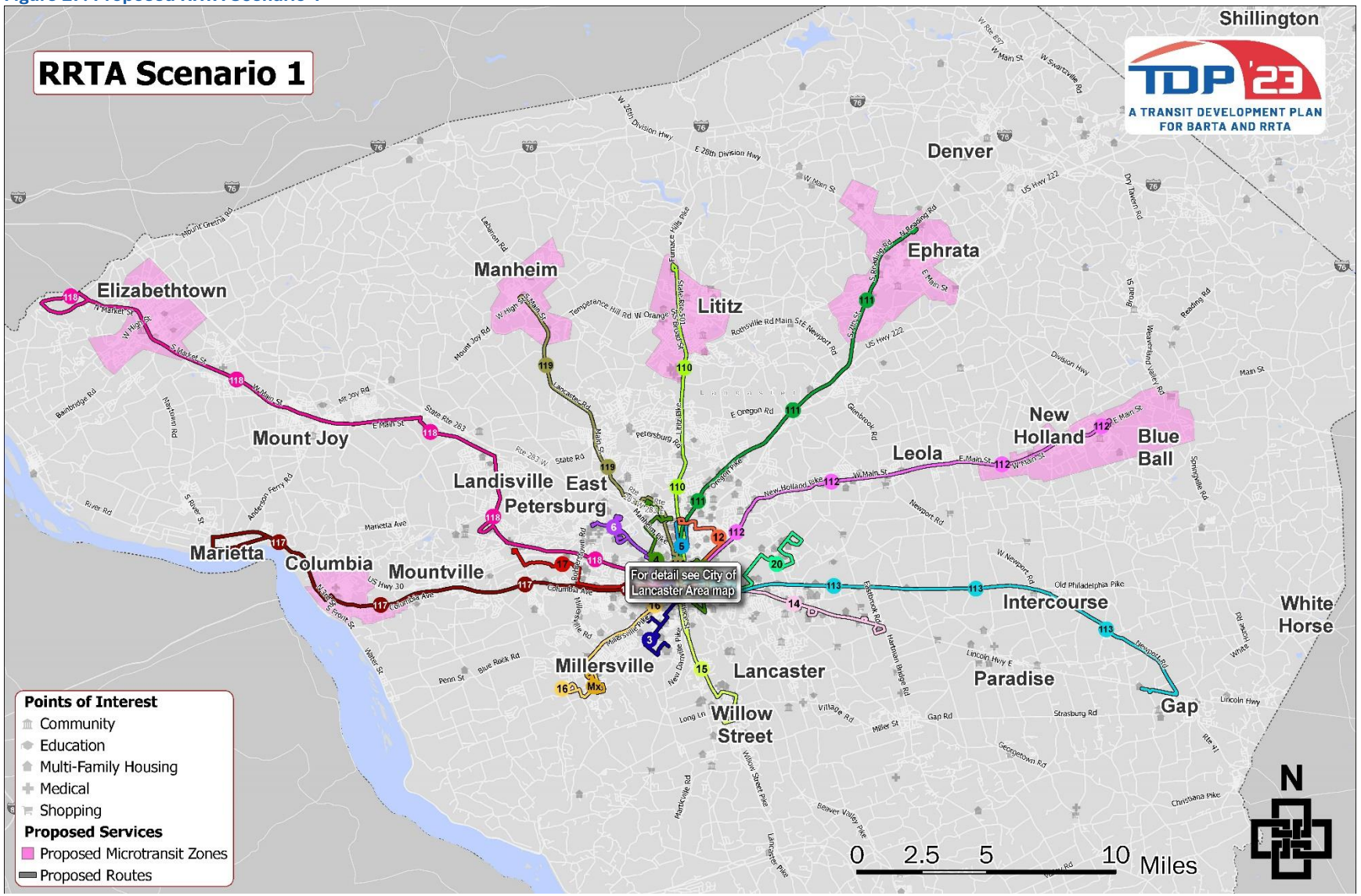


Figure 28: Proposed RRTA Scenario 1 - Lancaster Area

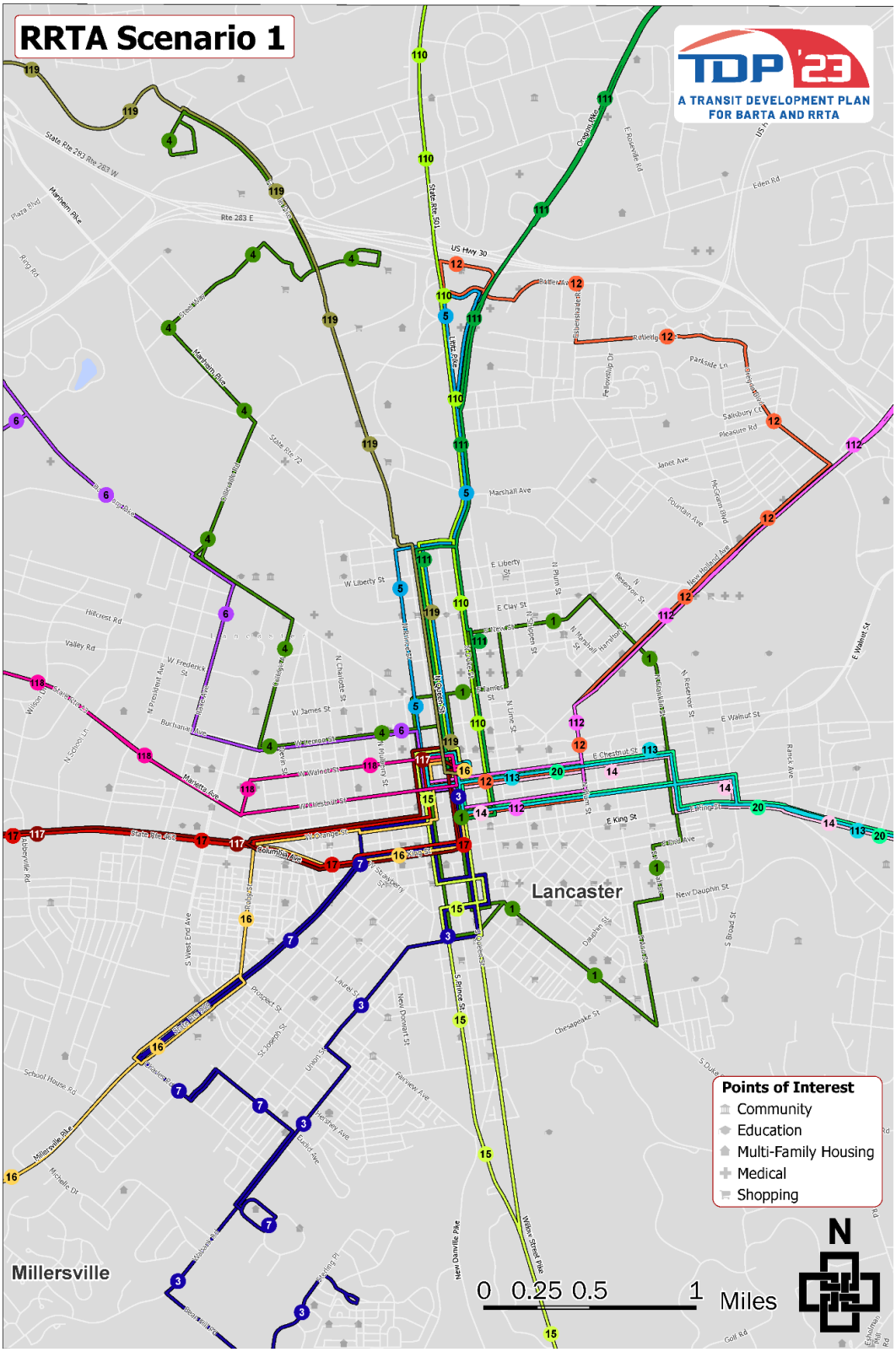


Table 12: RRTA Scenario 1

ROUTE	END OF LINE 1	END OF LINE 2	CHANGES FROM EXISTING SERVICE
1	Park City Center	S. Broad Street (Southeast Lancaster)	The coverage currently provided by Route 1 would be picked up by three separate routes. East of downtown Lancaster, Route 1 would serve areas currently served by Route 1 and Route 2, and operate as a bi-directional circulator, linking downtown, LGH, McCaskey High School, Thaddeus Stevens College, Brothers Foodmax, Save-A-Lot, and several multi-family housing communities. Route 1 service west and north of downtown would be picked up by proposed Route 4 and Route 8.
2	LGH Health Campus	E. Ross Street (6th Ward)	Route 2 would be eliminated, with its coverage picked up by two other routes. East of downtown Lancaster, Route 2 coverage would be picked up by proposed Route 1. Route 2 service west of downtown would be picked up by proposed Route 8.
3	Park City Center	Warbank Road (8th Ward)	The coverage currently provided by Route 3 would be picked up by four separate routes. Route 3 would operate between downtown and Sterling Place Apartments via Wabank Street. Kensington Court service will be picked up by the proposed Route 7. Fruitville Pike service would be partially picked up by proposed Route 4. Park City Center service would be picked up by proposed Route 8.
4	Downtown Lancaster	Walmart on Fruitville Pike	New Route 4 would connect downtown Lancaster and Franklin and Marshall College to the Shoppes at Belmont (Whole Foods/Target) and Walmart on Fruitville Pike via Lemon Street
5	Downtown Lancaster	Golden Triangle Shopping Center	The coverage currently provided by Route 5 would be picked up by two separate routes. Route 5 would be restructured to provide simplified bi-directional service between downtown and retail/grocery destinations along Lititz Pike south of US-30 via Queen Street / Prince Street and Lititz Pike. Grandview Heights coverage would be provided by Route 12.
6	Downtown Lancaster	Downtown Lancaster	Route 6 would be eliminated due to low-ridership and redundancy with other proposed routes, including Route 5.
7	Downtown Lancaster	Manor Street	New Route 7 would operate between downtown Lancaster and Kensington Court via Walnut Street and Manor Street (Weis Market).
8	Downtown Lancaster	Park City Center	New Route 8 would connect downtown Lancaster and Franklin and Marshall College to Wegman's, Park City Center, and the LGH Health Campus.
10	Downtown Lancaster	Lititz	Route 10 would be replaced by proposed regional Route 110 and a proposed local microtransit service in Lititz.
11	Downtown Lancaster	Ephrata	Route 11 would be replaced by proposed regional Route 111 and a proposed local microtransit service in Ephrata.
12	Downtown Lancaster	New Holland	Route 12 would be restructured to provide bi-directional service between downtown and Giant on Lititz Pike, via New Holland Avenue and Grandview Heights. Service along New Holland Pike replaced by proposed regional Route 112 and proposed local microtransit service in New Holland.
13	Downtown Lancaster	White Horse	Route 13 would be replaced by proposed regional Route 113.
14	Downtown Lancaster	Rockvale Outlets	Route 14 would be similar to the current route alignment.

ROUTE	END OF LINE 1	END OF LINE 2	CHANGES FROM EXISTING SERVICE
15	Downtown Lancaster	Willow Street	Route 15 would be truncated to serve Kendig Square via Willow Valley and the VA Outpatient Clinic. Service south of Kendig Square would be eliminated due to low ridership.
16	Downtown Lancaster	Millersville	Route 16 would be extended to Knollwood Road. The Villages of Lancaster Green would be served from Millersville Pike only.
17	Downtown Lancaster	Columbia	Route 17 would be truncated to serve Giant on Centerville Road. Service in Columbia would be picked up by proposed local microtransit service and proposed regional Route 117.
18	Downtown Lancaster	Elizabethtown	Route 18 would be replaced by proposed regional Route 118 and proposed local microtransit service in Elizabethtown.
19	Downtown Lancaster	Manheim	Route 19 would be replaced by proposed regional Route 119 and proposed local microtransit service in Manheim.
20	Downtown Lancaster	PA College of Health and Sciences	Route 20 would be restructured to provide simplified bi-directional service in the Greenfield area, with service to HACC-Lancaster, the Social Security Administration office, and the PA College of Health Sciences.
21	Downtown Lancaster	Gap	Route 21 would be eliminated, with its coverage partially picked up by two other routes. Service between downtown Lancaster and Rockvale Outlets would be picked up by Route 14. Gap coverage would be picked up by proposed Route 113.
MU Xpress	Millersville University	Village Suites/Stayer Hall	The MU Xpress Route would be simplified to provide faster connections across the core Millersville University Campus, between Centennial Drive (Village Suites) and Lyte Road (Stayer Hall), via George Street. Hillview Avenue would be served by Route 16.
MU Park City Xpress	Millersville University	John Herr's Market/Park City Center	The MU Park City Xpress Route would be eliminated due to low ridership. Connections to John Herr's Village Market would be provided by Route 16. Park City Center would be accessible via downtown and a Route 8 transfer.
Micro-transit Service			In Scenario 1, microtransit service is limited to outlying boroughs surrounding Lancaster.

Figure 29: Proposed RRTA System - Scenario 2

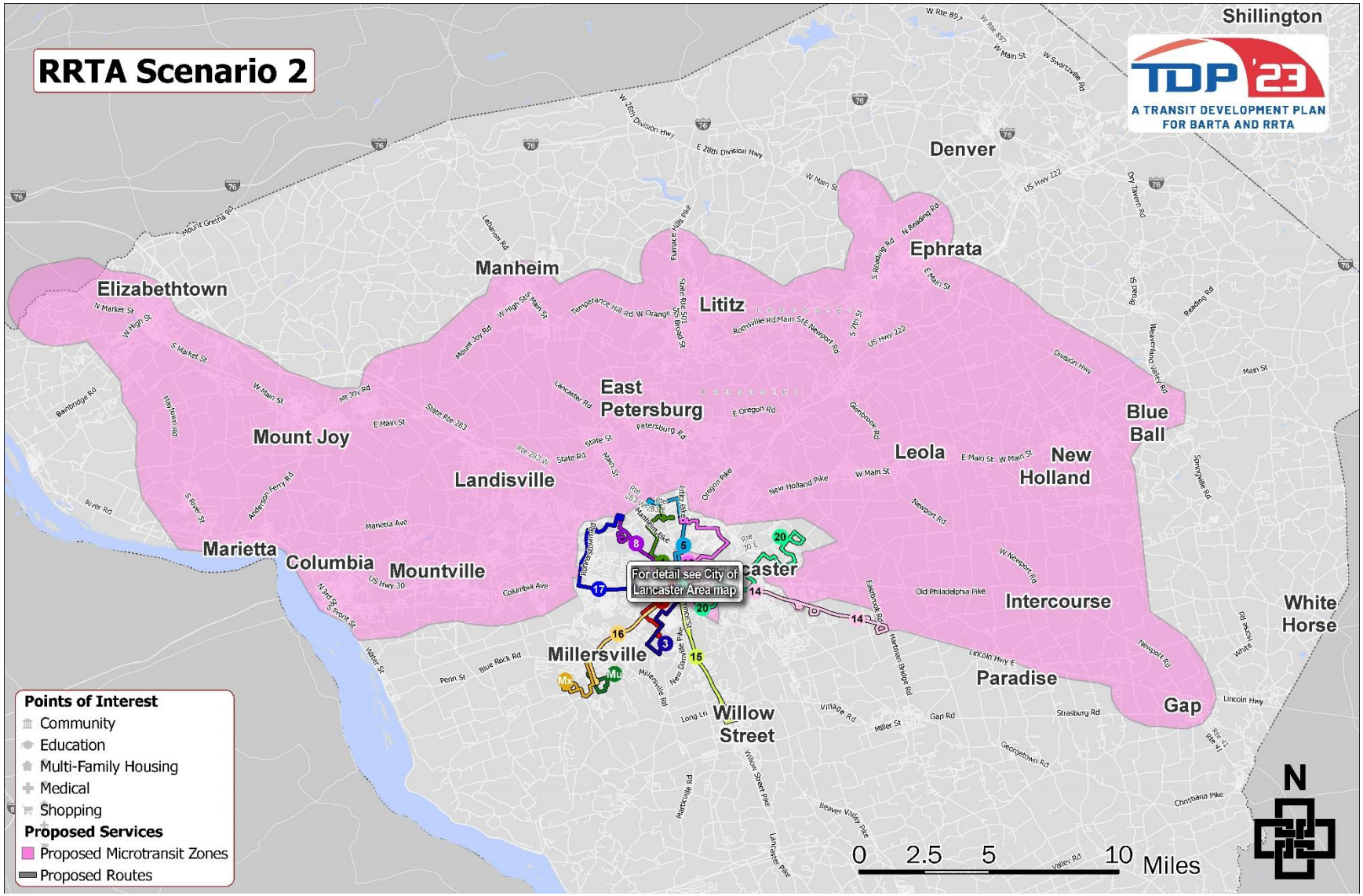


Figure 30: Proposed RRTA Scenario 2 - Lancaster Area

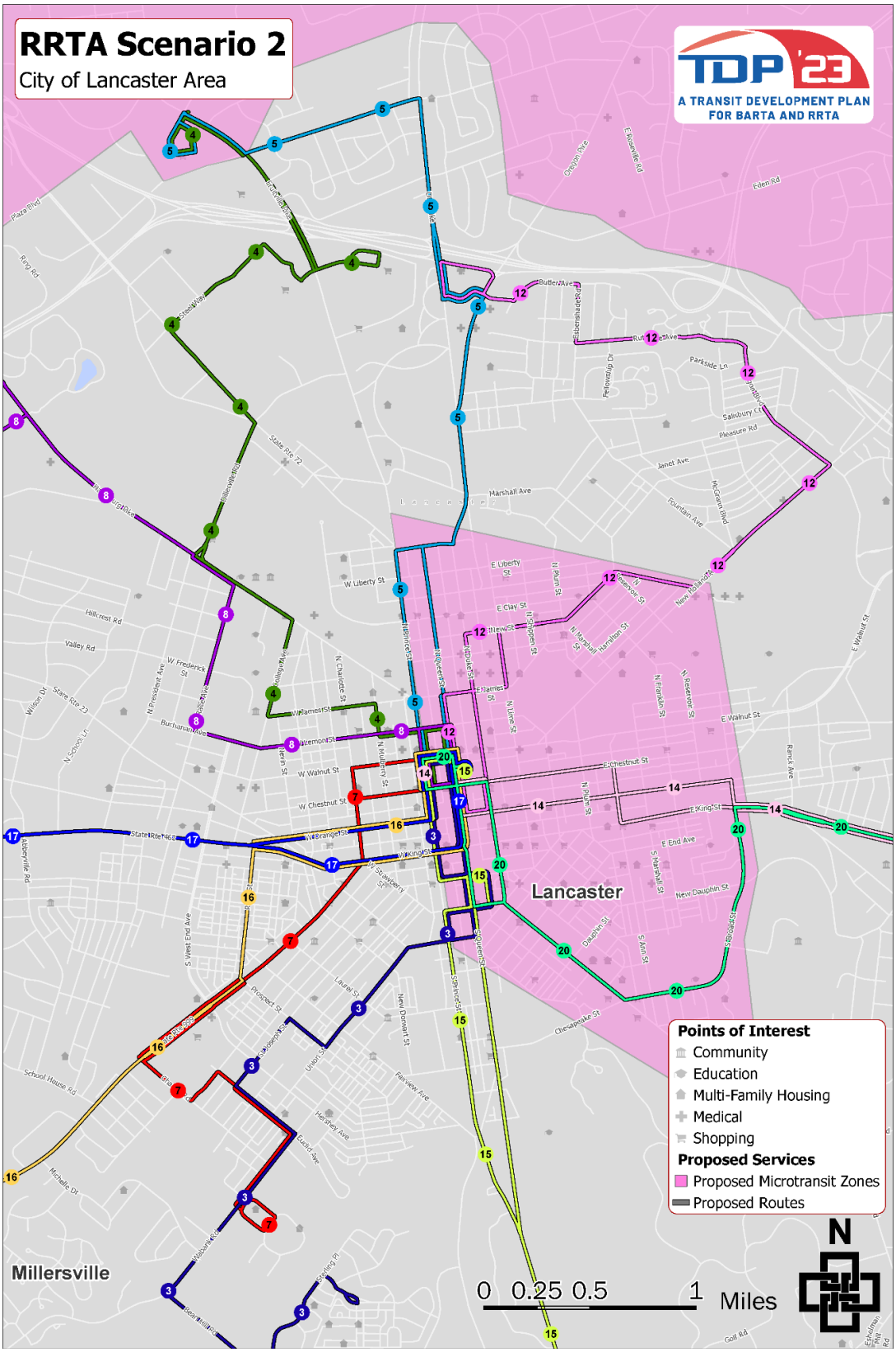


Table 13: RRTA Scenario 2

ROUTE	END OF LINE 1	END OF LINE 2	CHANGES FROM EXISTING SERVICE
1	Park City Center	S. Broad Street (Southeast Lancaster)	The coverage currently provided by Route 1 would be picked up by two separate routes and a proposed microtransit zone. East of downtown Lancaster, coverage would be provided by a proposed east Lancaster microtransit zone. Route 1 service west and north of downtown would be picked up by proposed Route 4 and Route 8.
2	LGH Health Campus	E. Ross Street (6th Ward)	Route 2 would be eliminated, with its coverage picked up by another route and a proposed microtransit zone. East of downtown Lancaster, Route 2 coverage would be picked up by a proposed east Lancaster microtransit zone. Route 2 service west of downtown would be picked up by proposed Route 8.
3	Park City Center	Warbank Road (8th Ward)	The coverage currently provided by Route 3 would be picked up by three separate routes. Route 3 would operate between downtown and Sterling Place Apartments via St. Joseph Street and Euclid Avenue. Kensington Court service will be picked up by the proposed Route 7. Fruitville Pike service would be partially picked up by proposed Route 4. Park City Center service would be picked up by proposed Route 8.
4	Downtown Lancaster	Walmart on Fruitville Pike	New Route 4 would connect downtown Lancaster and Franklin and Marshall College to the Shoppes at Belmont (Whole Foods/Target) and Walmart on Fruitville Pike via James Street.
5	Downtown Lancaster	Golden Triangle Shopping Center	The coverage currently provided by Route 5 would be picked up by two separate routes. Route 5 would be restructured to provide simplified bi-directional service between downtown and Walmart on Fruitville Pike via Golden Triangle Shopping Center. Grandview Heights coverage would be provided by Route 12.
6	Downtown Lancaster	Downtown Lancaster	Route 6 would be eliminated due to low-ridership and redundancy with other proposed routes, including Route 5.
7	Downtown Lancaster	Manor Street	New Route 7 would operate between downtown and Sterling Place Apartments via Orange Street and Manor Street (Weis Market).
8	Downtown Lancaster	Park City Center	New Route 8 would connect downtown Lancaster and Franklin and Marshall College to Wegman's and Park City Center.

ROUTE	END OF LINE 1	END OF LINE 2	CHANGES FROM EXISTING SERVICE
10	Downtown Lancaster	Lititz	Route 10 would be replaced by a regional microtransit zone covering boroughs north, east, and west of Lancaster.
11	Downtown Lancaster	Ephrata	Route 11 would be replaced by a regional microtransit zone covering boroughs north, east, and west of Lancaster.
12	Downtown Lancaster	New Holland	Route 12 would be restructured to provide bi-directional service between downtown and Giant on Lititz Pike, via LGH and Grandview Heights. Service along New Holland Pike would be replaced by a regional microtransit zone covering boroughs north, east, and west of Lancaster.
13	Downtown Lancaster	White Horse	Route 13 would be replaced by a regional microtransit zone covering boroughs north, east, and west of Lancaster.
14	Downtown Lancaster	Rockvale Outlets	Route 14 would be similar to the current route alignment.
15	Downtown Lancaster	Willow Street	Route 15 would be truncated to serve Kendig Square via Willow Valley and the VA Outpatient Clinic. Service south of Kendig Square would be eliminated due to low ridership.
16	Downtown Lancaster	Millersville	Route 16 would be truncated at Millersville University. Hillview Avenue service would be picked up by the proposed MX Route.
17	Downtown Lancaster	Columbia	Route 17 would be restructured to serve Park City Center. Service west of Rohrerstown Road would be picked up by a regional microtransit zone covering boroughs north, east, and west of Lancaster.
18	Downtown Lancaster	Elizabethtown	Route 18 would be replaced by a regional microtransit zone covering boroughs north, east, and west of Lancaster.
19	Downtown Lancaster	Manheim	Route 19 would be replaced by a regional microtransit zone covering boroughs north, east, and west of Lancaster.
20	Downtown Lancaster	PA College of Health and Sciences	Route 20 would be restructured to provide simplified bi-directional service in the Greenfield area, with service to HACC-Lancaster, the Social Security Administration office, and the PA College of Health Sciences via Chesapeake and Duke Street.
21	Downtown Lancaster	GAP	Route 21 would be eliminated with its coverage picked up by Route 14 and a regional microtransit zone covering boroughs north, east, and west of Lancaster.

ROUTE	END OF LINE 1	END OF LINE 2	CHANGES FROM EXISTING SERVICE
MU Xpress	Millersville University	Village Suites/Stayer Hall/Pucillo Drive	The MU Xpress Route would be simplified to provide faster connections across the core Millersville University Campus, between Centennial Drive (Village Suites), Lyte Road (Stayer Hall), and Pucillo Drive. Hillview Avenue would be served by the proposed MX Route.
MU Park City Xpress	Millersville University	John Herr's Village Market/Hillview Avenue/Knollwood Road	The MU Park City Xpress route would be restructured (and renamed MX Route) to connect the Millersville University campus to key off-campus destinations including John Herr's Village Market and housing along Hillview Avenue and Knollwood Road.
Microtransit Service			Scenario 2, microtransit is used to provide connections both within and between boroughs to the north, east, and west of Lancaster. It is also used to provide local circulation in east Lancaster.

RRTA SCENARIO FEEDBACK

RRTA conducted an online survey and held three meetings to solicit feedback about the two proposed scenarios for service changes in Lancaster County. Full summaries of the feedback received during the stakeholder and public meetings is available in **Appendix G**.

Participants in the engagement events and online survey provided feedback on the proposed service scenarios, including feedback about the potential changes to the following routes:

- A meeting attendee requested that Route 4 be adjusted to connect the Shoppes at Belmont to the shopping center near Wal-Mart.
- One participant noted that new development on Charles Road may support a higher level of service on Route 7.
- Some participants expressed concern about the degree to which Scenario 2 would reduce fixed-route service in the outlying areas of the county, in particular, on routes 12 and 118.
- Another participant noted that, as proposed in scenario 1, Route 12 would travel on Rutledge Avenue, which is a busier street. Additionally, the participant noted that in scenario 1, Route 12 would not serve the Calvary Homes apartment complex or Lancaster Catholic High School.
- One attendee expressed the need for more frequent service in the southern part of the county, and in the South Prince Street area specifically, and suggested increasing frequency along Route 15.
- Attendees also had suggestions for destinations that were not served by either proposed scenario, including Adamstown and Denver.

Many participants had comments and questions about the proposal to launch a microtransit service to supplement or replace fixed route service. Some worried that microtransit would have lower ridership than the existing bus service. Others noted that microtransit offers benefits to riders but doesn't help alleviate congestion along busy arterial roads. One participant asked whether it would it be possible to add a microtransit zone that would include Penn State Health Lancaster Medical Center.

CHAPTER 10

Final Recommendations

Final Recommendations

Based on the feedback received online and at public meetings held in Summer 2023, the study team developed a final set of service recommendations that incorporate the best aspects from the preliminary scenarios as well as public feedback. These recommendations are based upon conditions and data provided at the time of analysis. Final route alignments or schedules may vary slightly upon implementation.

The final recommendations for BARTA and RRTA aim to address several key themes the study team heard through public and stakeholder engagement efforts and discovered through the market and service analyses, including:

- Providing more consistent span of service and frequencies across all routes.
- Reallocating services to be less concentrated during peak periods and provide additional service during off-peak periods and weekends.
- Interlining routes for efficiency gains.
- Simplifying route alignments and eliminating one-way loops.

While these changes may have resulted in the elimination of under-performing route segments, resources in the plan are concentrated in the areas that offer the greatest transit potential and aim to address known challenges with the system. The changes in travel apparent following the COVID-19 pandemic make clear that the typical peak-hour, commute-focused service is not as desirable as consistent all-day service on weekdays and weekends. This plan is intended to fill service gaps and improve mobility for transit-dependent populations in the BARTA and RRTA service areas.

BARTA Service Recommendations

The final recommendations for the BARTA system are primarily concentrated on fixed-routes service, with three phases of implementation strategies (**Figure 31** and **Figure 32**). Phase 1 of implementation focuses on service alignment changes with only minor improvements to level of service; Phase 2 and Phase 3 focus on improving headways and expanding the service span of realigned routes.

Each BARTA route is impacted in some way by the recommended changes in the proposed network. Each route will retain its current route number, with the exception of Route 20 and Route 22, which will be changed to Route 120 and Route 122, respectively, to reflect their route type as long, regional connector routes. The proposed system aims to provide bi-directional service to the greatest extent possible to facilitate more direct travel between origins and destinations, rather than necessitating out-of-direction travel on one-way loops.

The proposed BARTA network concentrates fixed-route service in high-density, transit-supportive locations where it can be most effective. Some route segments that have performed poorly in Birdsboro, Robesonia, and Womelsdorf have been eliminated. In the future, these routes could have microtransit zones to complement the fixed-route network, pending available resources.

Figure 31: BARTA Fixed-Route Service Recommendations

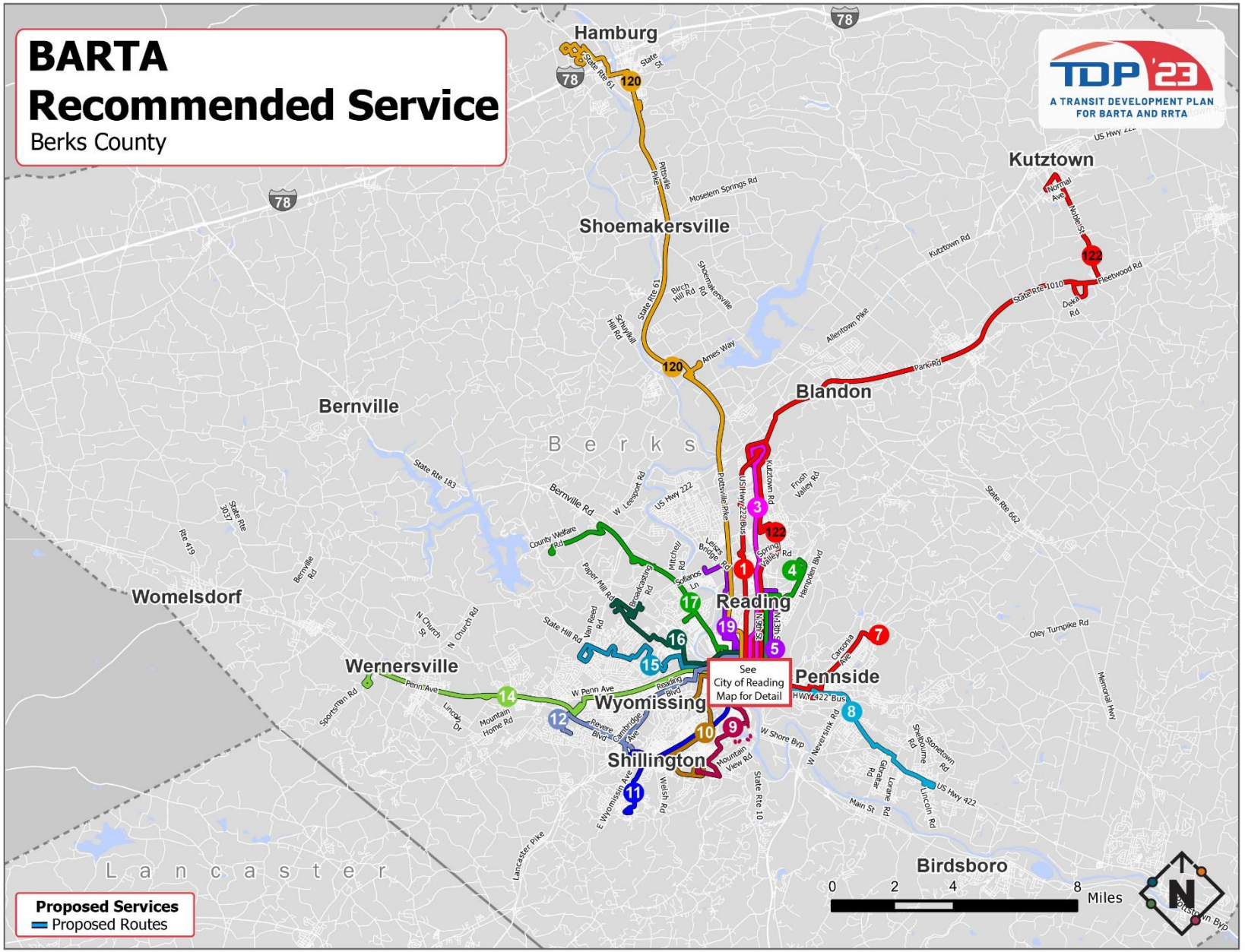
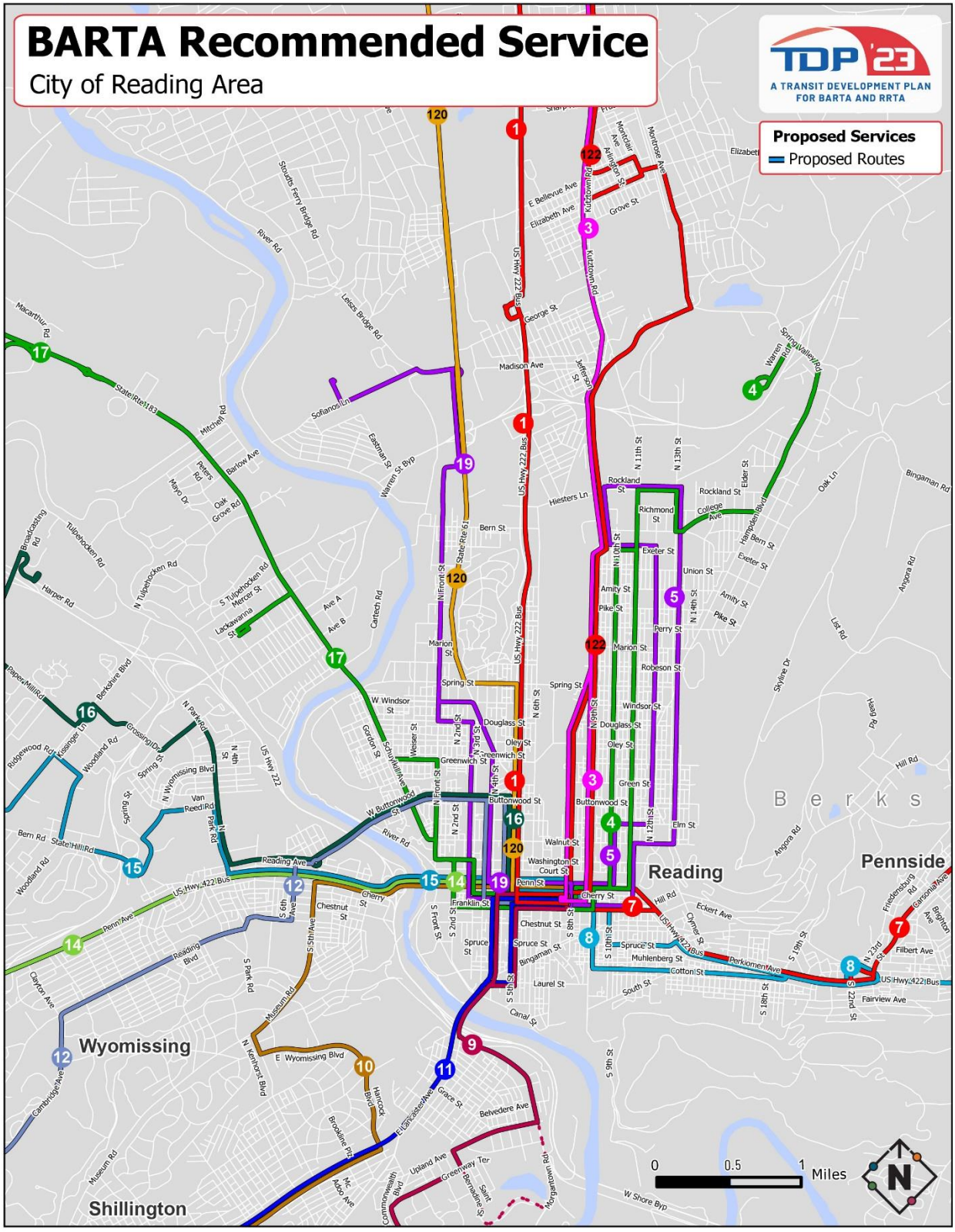


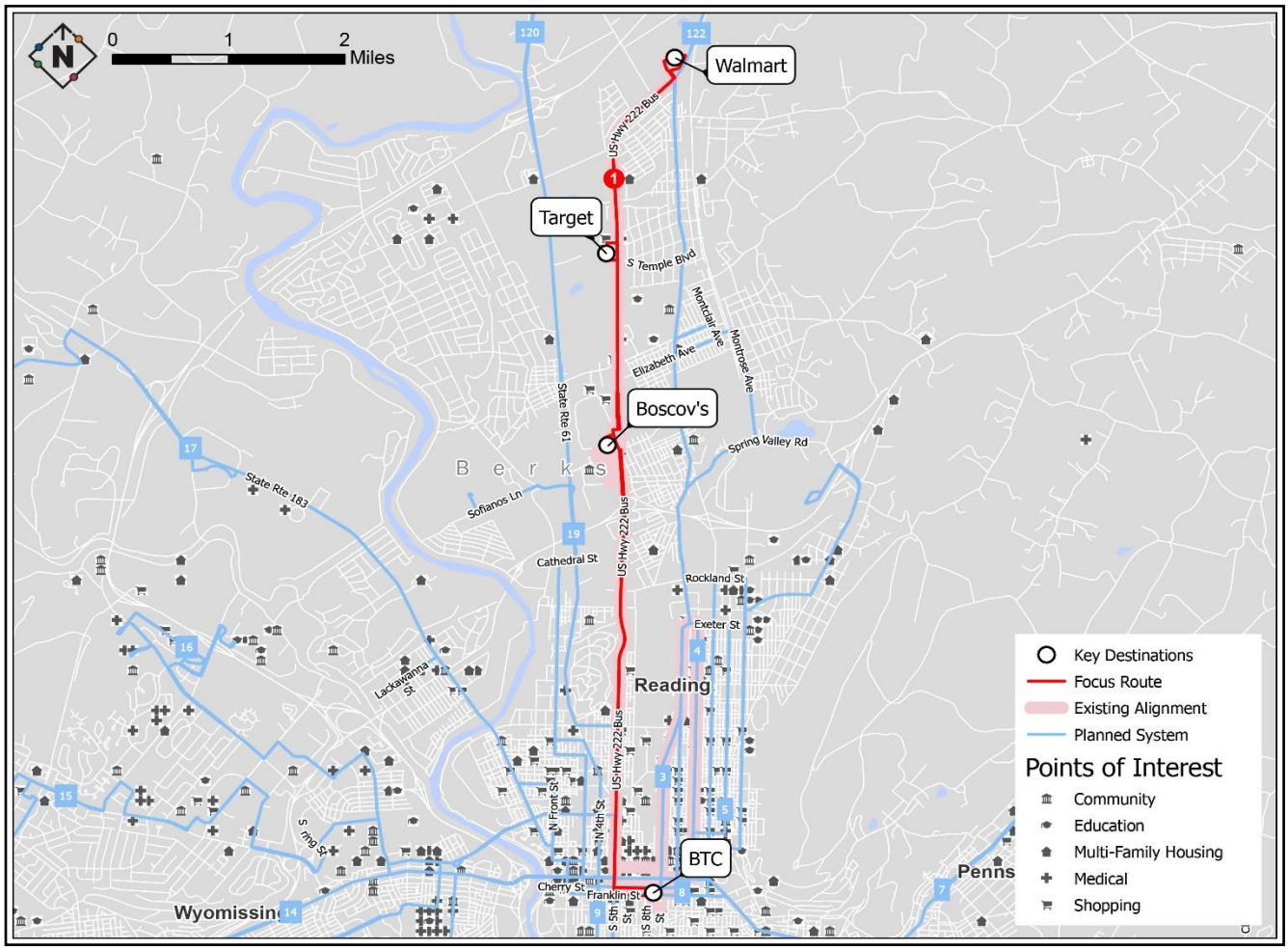
Figure 32: BARTA Fixed-Route Service Recommendations - Reading Area



BARTA CHANGE SHEETS

The service recommendations for each route are presented in a series of change sheets. These route-by-route change sheets highlight service frequency changes by phase and include current service information (as of January 2024) for comparison. The changes in level of service (span and frequency) respond to the results of the market analysis and service analysis as well as feedback received during public and stakeholder engagement. While the tables on the change sheets include specific proposed spans, these spans can be adjusted based on observed demand. If a route is proposed to operate 12 hours a day, so long as the number of hours it operates does not change, the cost of the service will not change.

Route 1/Temple Alignment



SERVICE RECOMMENDATIONS

Route 1's alignment will be similar to the current route alignment serving BTC in downtown Reading and Walmart at Temple via N 5th Street where it creates a connection opportunity with the proposed Routes 3 and proposed Route 122. Other key destinations being served by Route 1 are Target and Boscov's. To improve operating efficiency, this route has been interlined with Route 15.

Route 1 performs well overall compared to other BARTA routes and thereby does not warrant major alignment changes. The proposed earlier start of service on weekends is to address pent-up demand. The reduction of span of service on weekdays and Saturdays reflects a decline in ridership after 10:00 p.m., based on existing ridership data.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 12:00 a.m.	20	30
Saturday	6:30 a.m. to 12:00 a.m.	20	30
Sunday	10:00 a.m. to 7:00 p.m.	30	30

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 10:00 p.m.	60	60
Sunday	8:00 a.m. to 8:00 p.m.	60	60

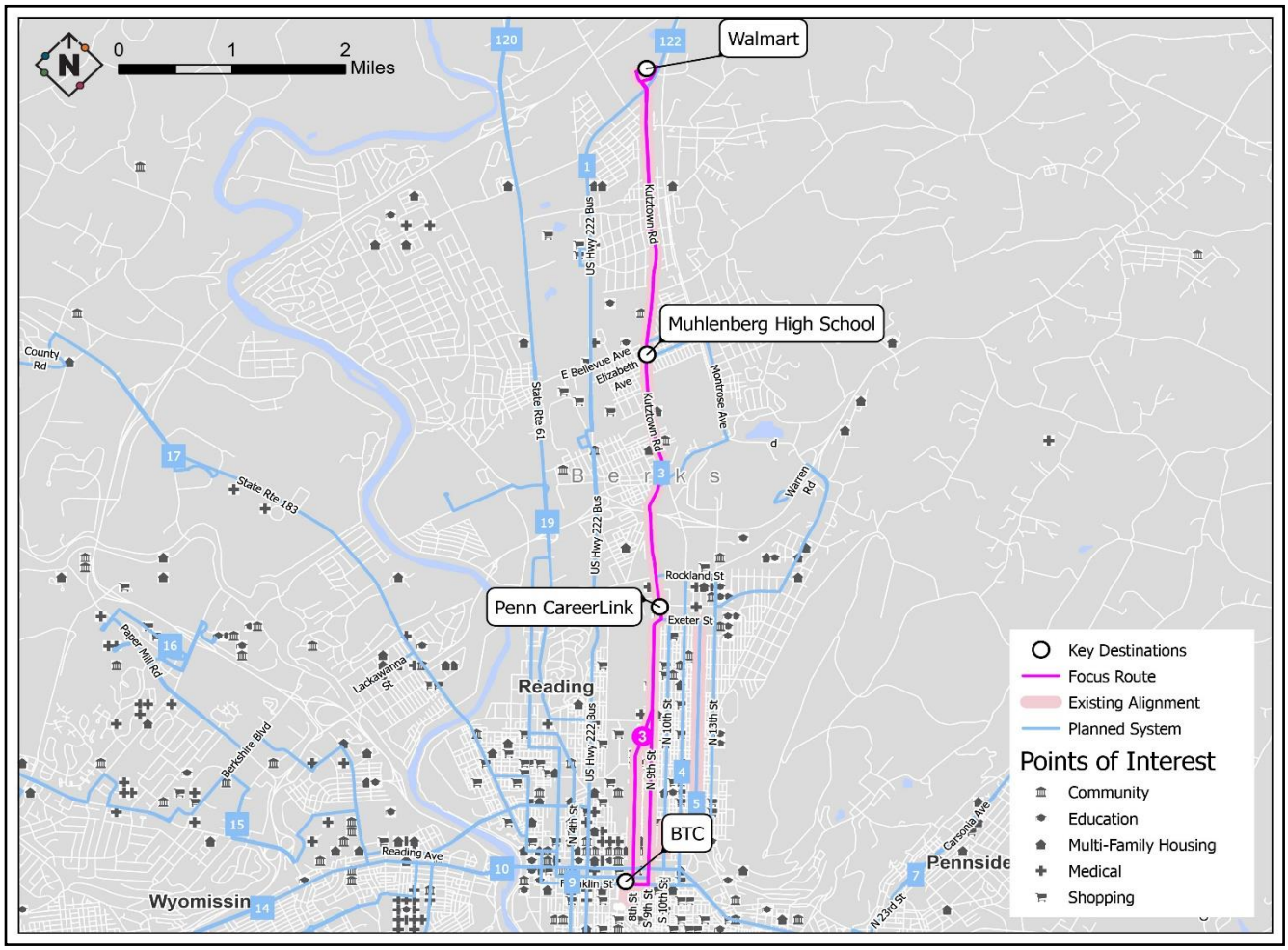
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:00 a.m. to 11:00 p.m.	30	60
Saturday	7:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 8:00 p.m.	30	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:00 a.m. to 11:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 8:00 p.m.	30	60

Route 3/ Temple Via Kutztown Rd Alignment



SERVICE RECOMMENDATIONS

Route 3's alignment will be similar to the current route alignment connecting BTC in downtown Reading and Walmart at Temple via Kutztown Rd where it creates a connection opportunity with the proposed Route 1. Furthermore, Route 3 will serve the same alignment as the proposed Route 122 from Laureldale to Temple creating potential for connections along the way. Other key destinations being served by this route are Muhlenberg High School and Penn CareerLink.

Route 3 performs well overall compared to other BARTA routes and thereby does not warrant major alignment changes. The proposed Sunday service is to address demand on weekends. Relatively low and inconsistent ridership per trip during the weekday peak periods warrants an increase in peak headways.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:15 a.m.to 6:45 p.m.	30	60
Saturday	6:15 a.m.to 6:15 p.m.	60	60
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

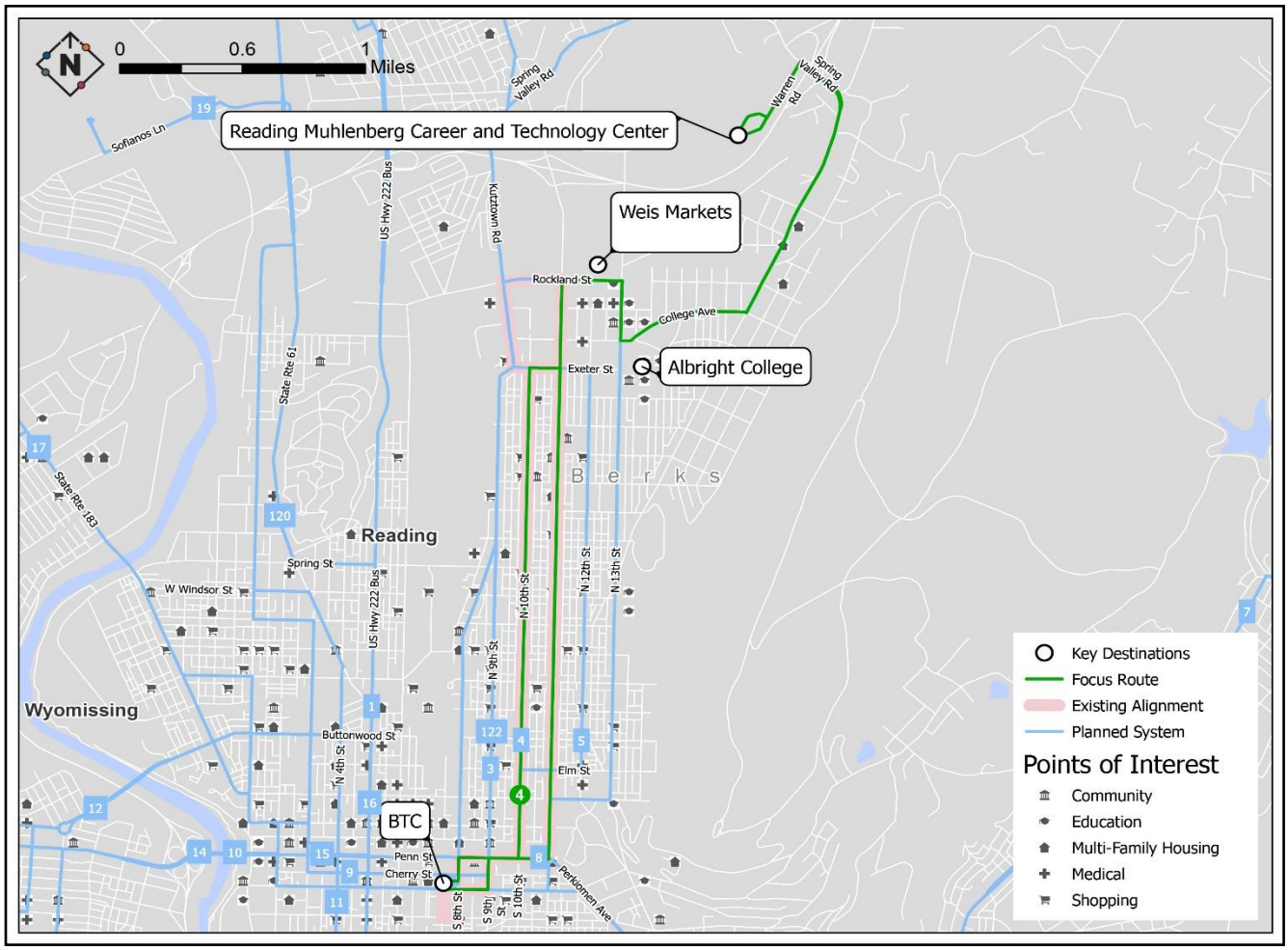
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 4/ Reading Muhlenberg Career & Technology Center Alignment



SERVICE RECOMMENDATIONS

Route 4's alignment will be similar to the current route alignment between downtown and Rockland Street. From Rockland Street, the route will turn east to serve Weis Market, Albright College, and Reading Muhlenberg Career and Technology Center via Hampden Boulevard. Service to Pennsylvania CareerLink on Kutztown Road would be picked up by the proposed Route 5. This route has been interlined with the proposed Route 14, and will have similar peak and off-peak frequencies.

Route 4 performs well overall compared to other BARTA routes and thereby does not warrant major alignment changes. The proposed alignment changes will ensure direct service to a full-service grocery store (Weis Market) on the northern end of the route. The proposed earlier start of service on Sundays is to address weekend demand. The reduction of span of service on Saturdays reflects low ridership per trip before 7:00 a.m. and after 8:00 p.m. Additionally, service during the peak periods is inconsistent; headways range from 20 minutes to 45 minutes, thereby warranting a change to 30-miniute weekday peak headways in the short term.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	4:45 a.m. to 11:00 p.m.	20	40
Saturday	4:45 a.m. to 10:40 p.m.	40	40
Sunday	11:15 a.m. to 6:30 p.m.	60	60

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

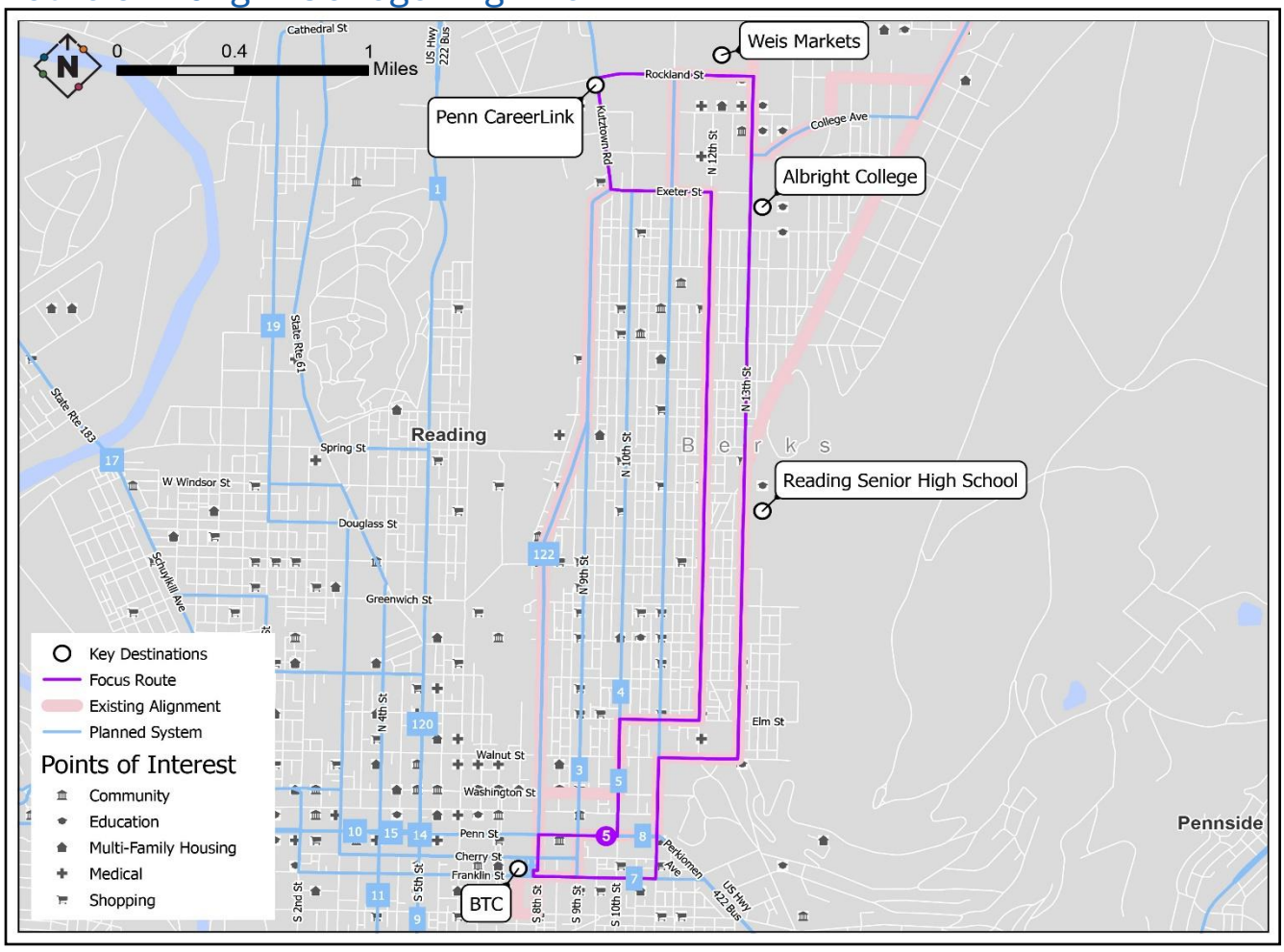
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 9:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 5/Albright College Alignment



SERVICE RECOMMENDATIONS

Route 5 will continue to provide service between Albright College and downtown Reading; however, service will shift from Hampden Boulevard to 13th Street to serve Pennsylvania CareerLink on Kutztown Road. Hampden Road service would partially be picked up by the proposed Route 4. This route has been interlined with the proposed Route 16 and will have similar peak and off-peak frequencies.

Route 5 warrants some alignment changes due to its performance; eliminating the one-way service and extending service to the Pennsylvania CareerLink is expected to expand ridership and productivity. The reduction of span of service on weekdays and Saturdays reflects low ridership per trip before 6:00 a.m. and 7:00 a.m. respectively. Furthermore, relatively low and inconsistent ridership per trip during the weekday off-peak periods warrants a reduction in peak headways. However, Saturdays show higher ridership in peak hours as compared to the off-peak hours and hence warrant improved peak headways and reduced off-peak headways. Additionally, service during the weekday peak periods varies from 30-minutes to 45-minutes. The service recommendations will make headways more consistent throughout the service day.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:20 a.m. to 6:20 p.m.	30	45
Saturday	6:15 a.m. to 6:15 p.m.	45	45
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m.to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

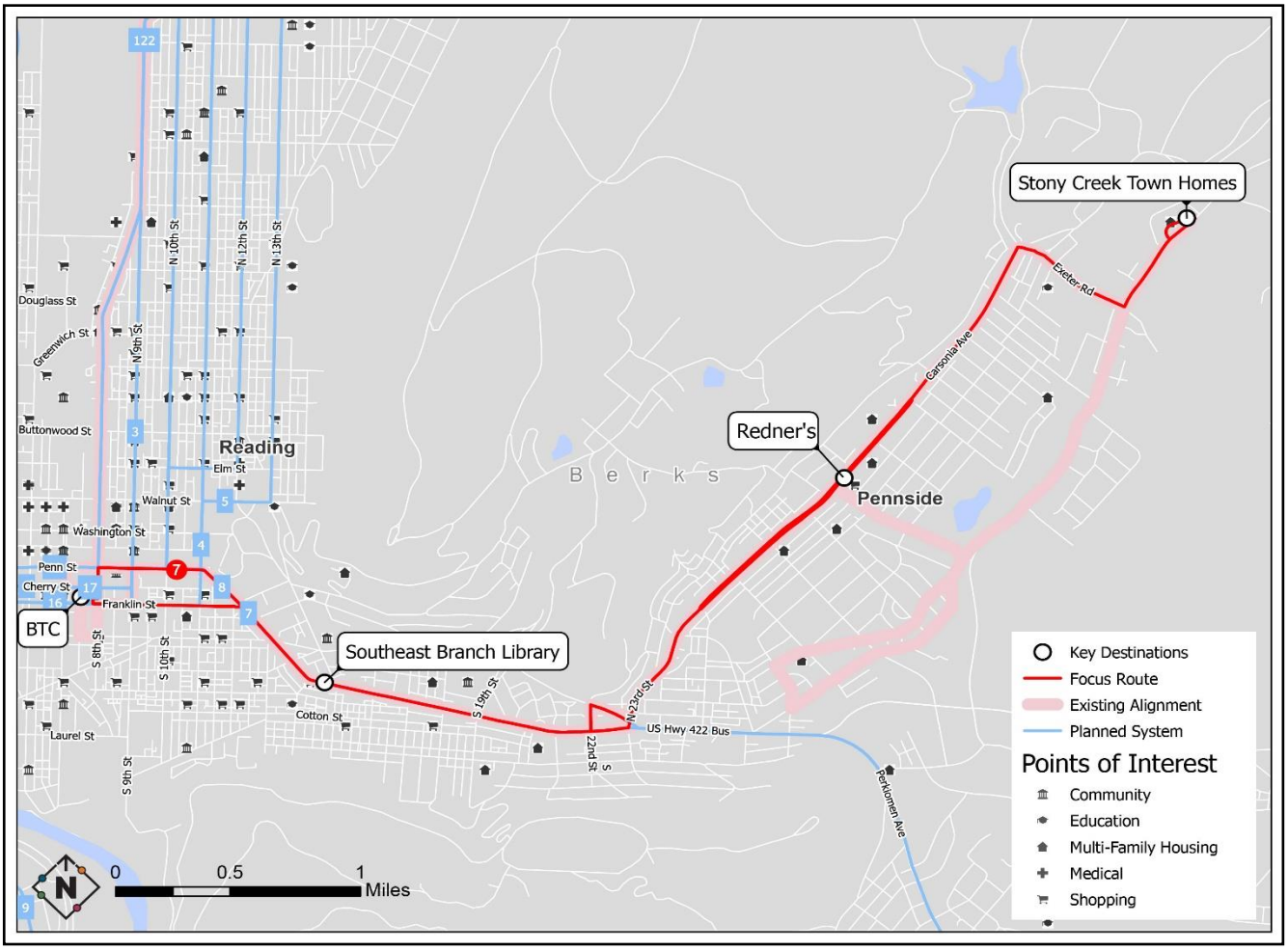
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 7/Pennside Alignment



SERVICE RECOMMENDATIONS

Route 7 will be simplified to follow the same alignment in both directions. The route will operate between downtown Reading and Stony Creek Town Houses via Carsonia Avenue. Service along Butter Lane would be eliminated due to low ridership. In downtown Reading, inbound service would operate along Penn Street while outbound service would operate on Franklin Street to Perkiomen. This route has been interlined with the proposed Route 11 and will have similar peak and off-peak frequencies.

Route 7 warrants alignment change due to low productivity and ridership compared to other BARTA routes. Removing service along the Butler Lane corridor to limit one-way service loops will make the service easier for customers to understand; shifting transit out of areas with low transit need and potential will help focus transit service on areas more likely to generate ridership. Service span for both weekdays and Saturdays have been moved half an hour forward due to low ridership at the start of service.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 6:30 p.m.	30	60
Saturday	6:30 a.m. to 6:30 p.m.	60	60
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	30	60
Saturday	7:00 a.m.to 7:00 p.m.	60	60
Sunday	8:00 a.m.to 6:00 p.m.	60	60

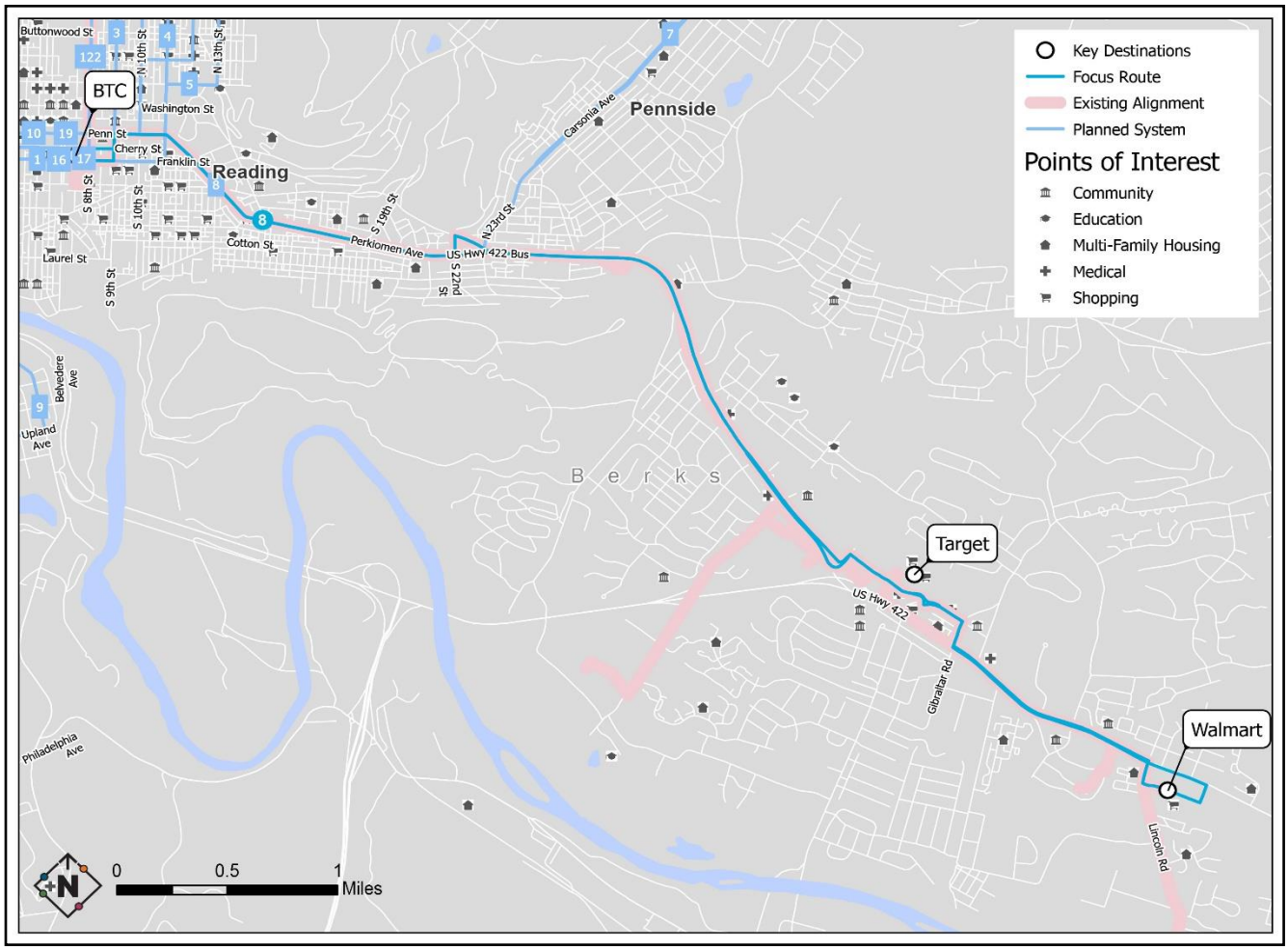
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 8/Reiffton/Shelbourne Square Alignment



SERVICE RECOMMENDATIONS

Route 8 service will be realigned to operate between downtown Reading and the Walmart at Exeter Square Mall to focus on areas with the highest ridership potential. Service to Birdsboro will be cut due to low ridership. In addition, this route has been interlined with the proposed Route 19, and will have similar peak and off-peak frequencies.

Route 8 warrants major alignment changes in the form of removing service between Walmart at Exter and Birdsboro, which is a low ridership area. Eliminating this unproductive segment will allow BARTA to concentrate resources in areas with higher demand. The expanded span of service for the route, especially on Sundays, will address pent up ridership demand. The reduction of span of service on weekdays and Saturdays reflects a decline in ridership after 07:00 p.m., based on existing ridership data. Additionally, service on weekdays is inconsistent during the peak and off-peak periods. This coupled with low ridership per trip warrants reduced headways during the peak and off-peak periods.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:00 a.m. to 11:00 p.m.	30	60
Saturday	7:00 a.m. to 11:00 p.m.	75	75
Sunday	11:00 a.m. to 7:00 p.m.	75	75

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

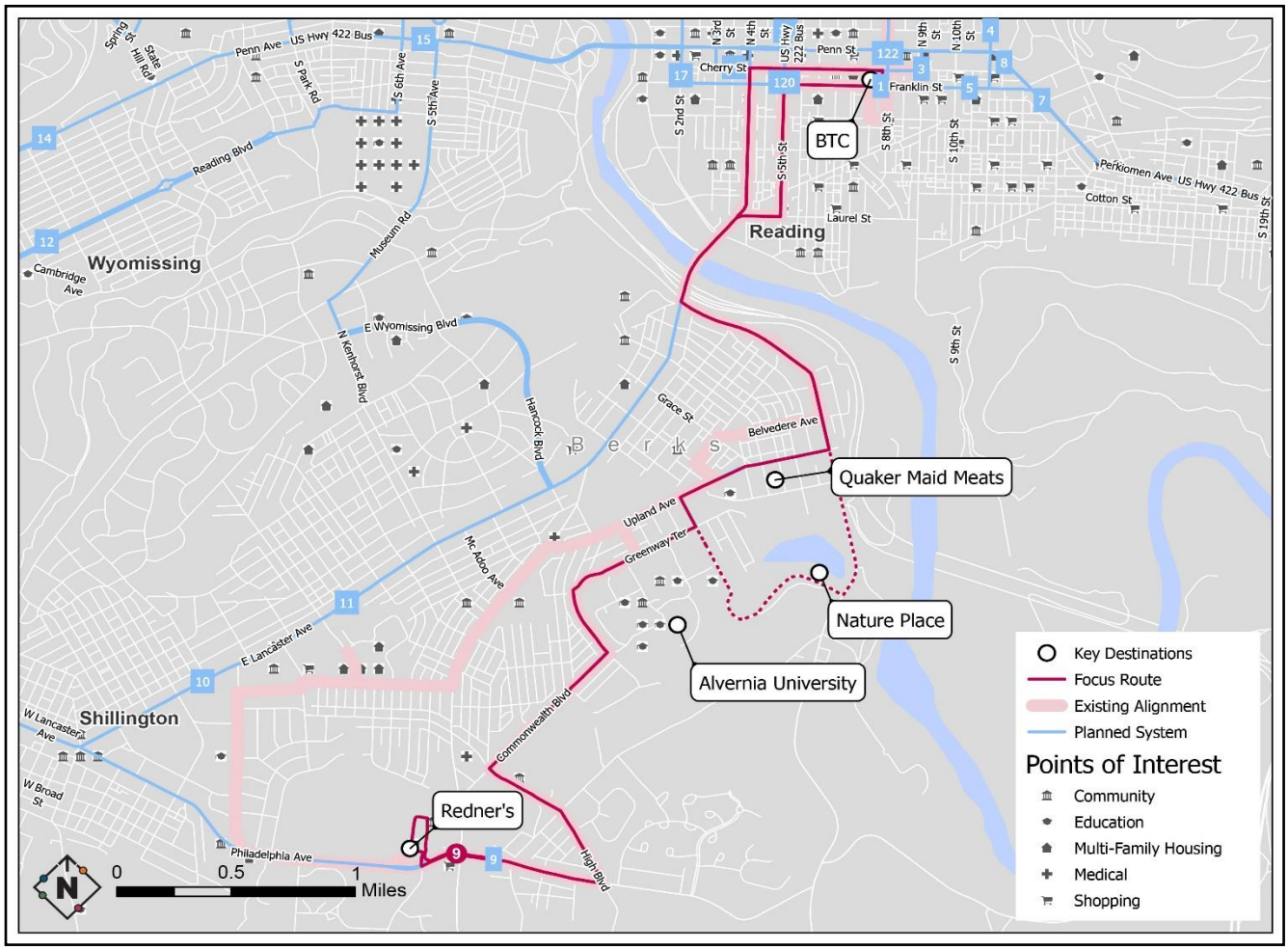
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	60	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 9/Grill Via Kenhorst Alignment



SERVICE RECOMMENDATIONS

Route 9 will be simplified to follow the same alignment in both directions. The route will operate between downtown Reading and Redner's at Kenhorst Plaza via Alvernia University. Connections to the proposed Route 10 could be made at Kenhorst Plaza. Service along New Holland Road would be eliminated due to low ridership. This route will be interlined with the proposed Route 10 and will have similar peak and off-peak frequencies.

Route 9 warrants alignment changes due to poor productivity compared to other BARTA routes. The realignment to provide more bi-directional service to Alvernia University, Quacker Maid Meats and nearby multi-family housing developments will make the service easier to understand for customers. Relatively inconsistent ridership per trip during the weekday peak periods warrants a reduction in peak headways. Service span for both weekdays and Saturdays have been moved a quarter of an hour forward due to low ridership at the start of service.

This route will operate with a deviation to The Nature Place at Berks Nature located in Angelica Creek Park three times a day.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:45 a.m. to 6:45 PM	60	60
Saturday	6:45 a.m. to 6:45 PM	60	60
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 PM	30	60
Saturday	7:00 a.m. to 7:00 PM	60	60
Sunday	8:00 a.m. to 6:00 PM	60	60

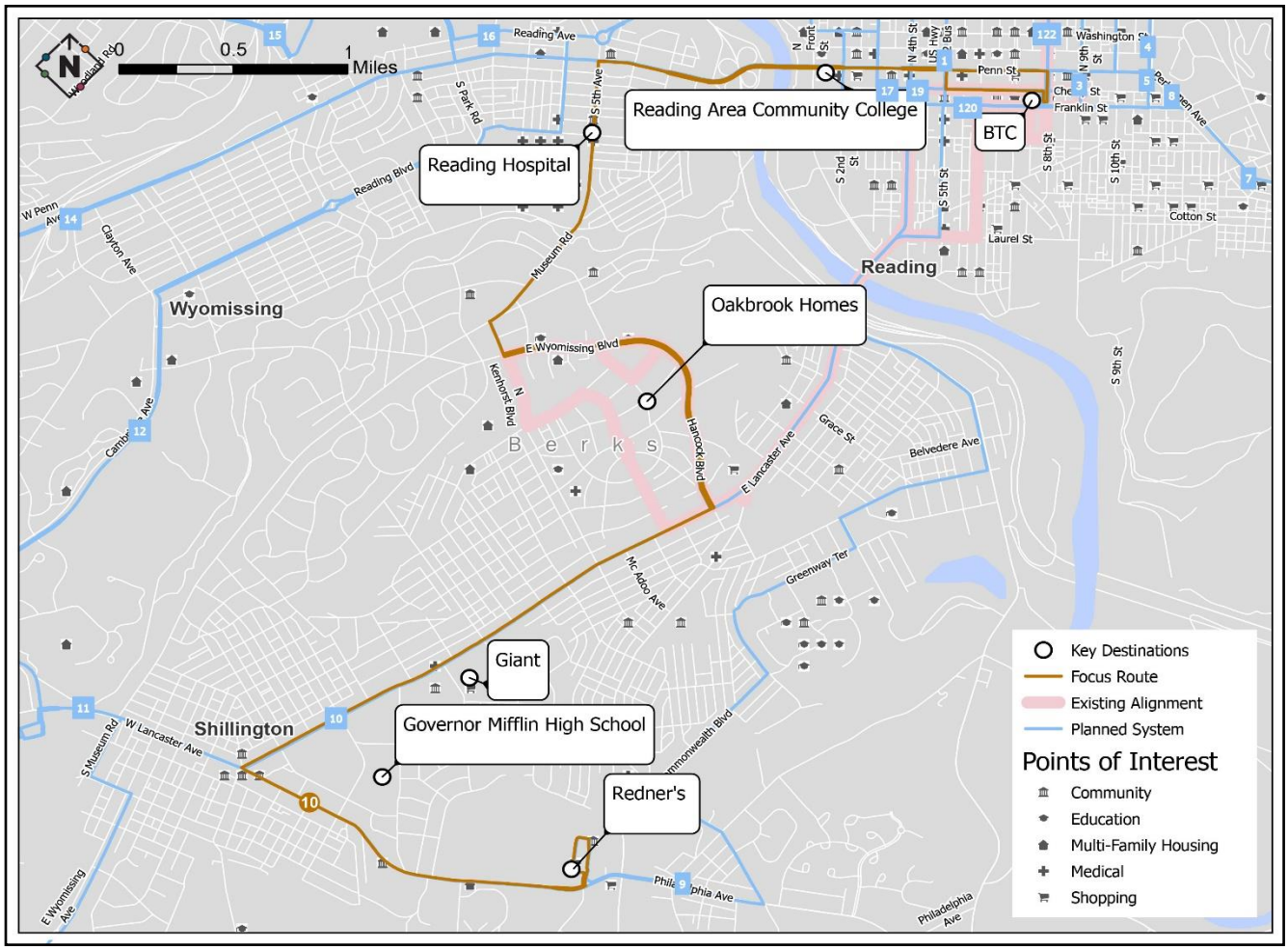
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 10/Kenhorst Plaza Via Shillington Alignment



SERVICE RECOMMENDATIONS

Route 10 will be simplified to follow the same alignment in both directions. The route will operate between downtown Reading and Redner's at Kenhorst Plaza, via Penn Avenue, Reading Hospital, Reading Housing Authority - Oakbrook Homes, Lancaster Avenue, and Philadelphia Avenue. Connections to the proposed Route 9 could be made at Kenhorst Plaza. This route has been interlined with the proposed Route 9, and will have similar peak and off-peak frequencies.

Route 10 performs poorly overall compared to other BARTA routes and thereby warrants major alignment changes to provide bi-directional service south of downtown. The reduction of span of service on weekdays and Saturdays reflects a relatively low ridership after 07:00 p.m., based on existing ridership data. Furthermore, relatively low and inconsistent ridership per trip during the weekday and Saturday off-peak periods warrants an increase in off-peak headways.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 10:10 p.m.	30	45
Saturday	6:30 a.m. to 10:10 p.m.	45	45
Sunday	11:30 a.m. to 7:00 p.m.	60	60

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

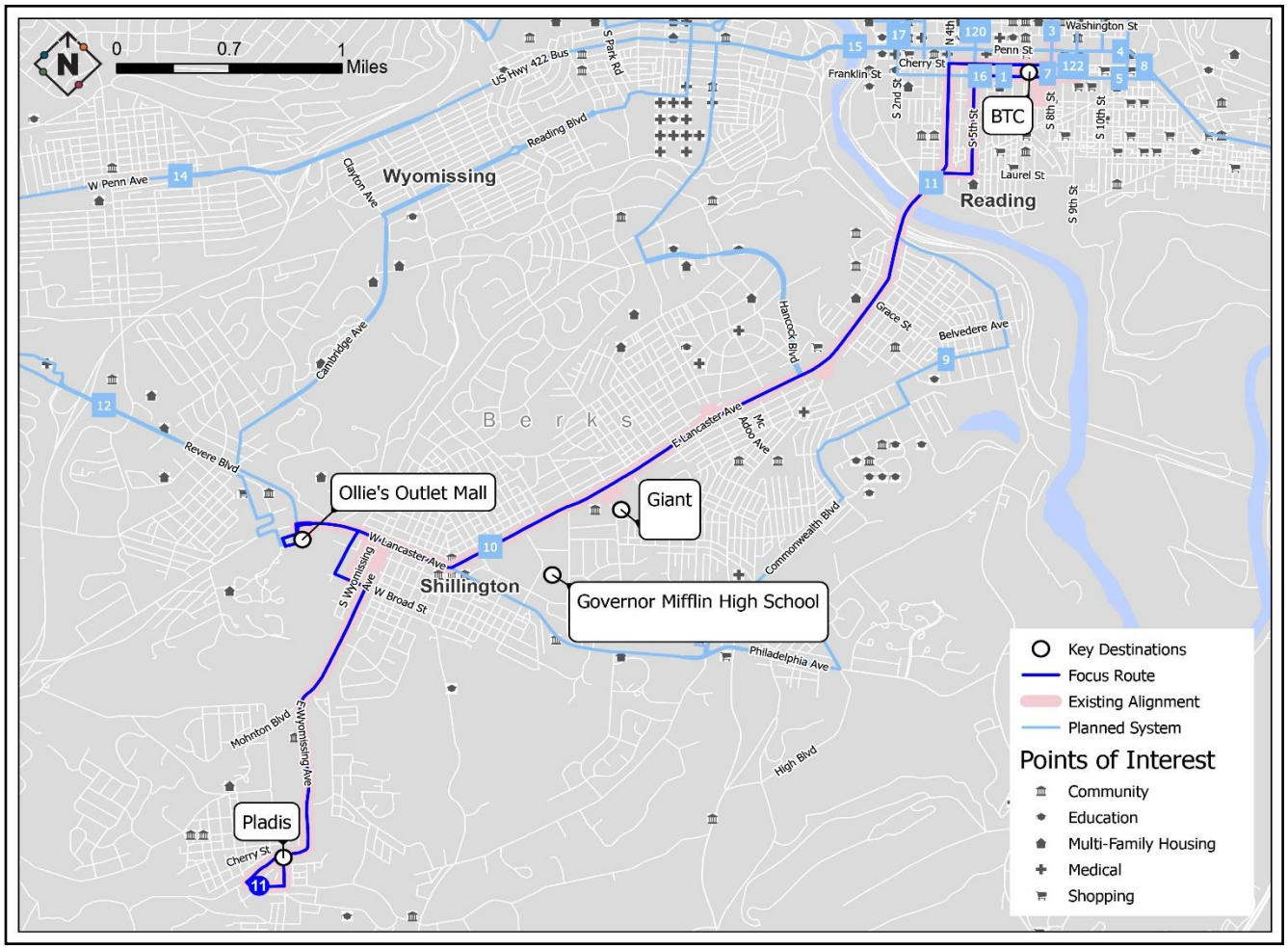
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 11/Mohnton Via Shillington Alignment



SERVICE RECOMMENDATIONS

Route 11's alignment will be similar to the current Route 11 alignment, connecting downtown Reading to Mohnton via E Lancaster Ave. This alignment will also serve Ollie's Outlet Mall where transfers will be available to the proposed Route 12. This route will be interlined with the proposed Route 7, and will have similar peak and off-peak frequencies.

Route 11 performs well overall compared to other BARTA routes and thereby does not warrant major alignment changes. The proposed changes reduce out-of-direction travel while simplifying the schedule will make the service easier for customers to follow.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 6:45 p.m.	30	75
Saturday	6:30 a.m. to 6:30 p.m.	60	60
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

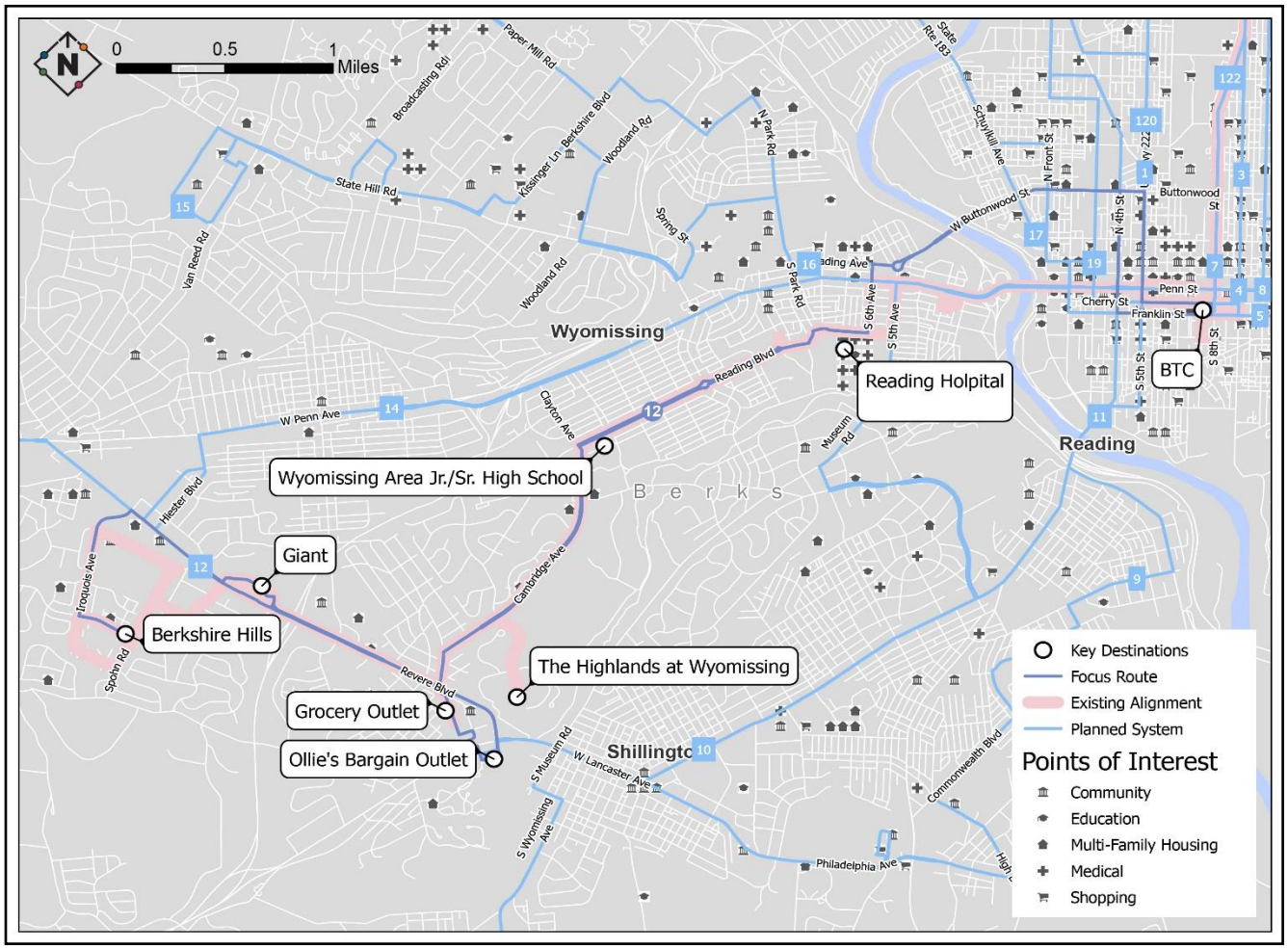
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 12/Lincoln Park Vian Kenhorst Alignment



SERVICE RECOMMENDATIONS

Route 12 will operate between downtown Reading and Berkshire Hills. Service will be shifted from Penn Street to Buttonwood Street to expand east-west service coverage northwest of downtown Reading. In addition, due to low ridership, The Highlands at Wyomissing will not be served directly from Parkview Lane. Instead, Route 12 buses will stop on Revere Boulevard near Sheetz to allow for accesses to the Highlands from Brae Circle. This alignment would also add service to Ollie's Bargain Outlet and allow for connections to the proposed Route 11. Finally, service to Berkshire Hills will be simplified to operate along Iroquois Avenue in both directions. This will create a connection opportunity to the proposed Route 14. Route 12 will be interlined with the proposed Route 17 and will have similar peak and off-peak frequencies.

Route 12 has the lowest weekday ridership overall compared to other BARTA routes and ranks in the bottom three routes on several productivity measures, which warrants some alignment changes. Eliminating one-way loops and providing transfer opportunities are expected to improve ridership on the route. The service span for both weekdays and Saturdays have been moved to 06:00 a.m. and 07:00 a.m. respectively due to extremely low ridership at the start of service based on the existing ridership data. Furthermore, the peak and off-headways have been changed to 30-minutes and 60-minutes to simplify the schedules.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 7:00 p.m.	45	90
Saturday	6:15 a.m. to 7:00 p.m.	45	90
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

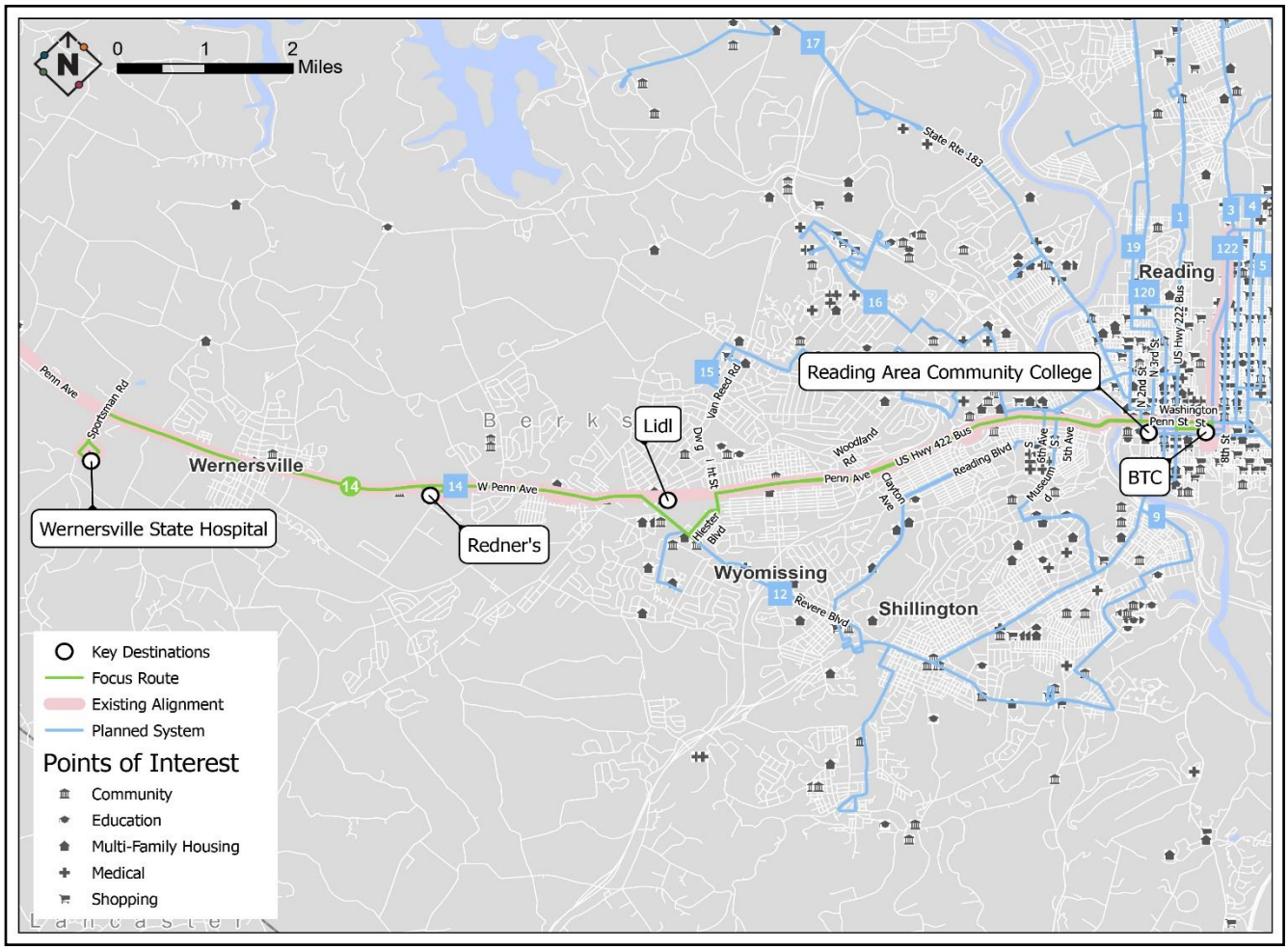
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 14/Wernersville Via Sinking Spring Alignment



SERVICE RECOMMENDATIONS

Route 14 will operate between downtown Reading and Wernersville via US-422 and Penn Avenue. Route 14 will terminate at Wernersville State Hospital to focus service on areas with the highest ridership potential. Service to Robesonia and Womelsdorf will be eliminated due to low ridership. In addition, in the Sinking Spring/West Lawn area, service will be shifted south from US-422 to serve current destinations and planned developments along the Shillington Road corridor. This would also create a connection opportunity to the proposed Route 12 near Iroquois Avenue. Furthermore, this route has been interlined with the proposed Route 4 and will have similar peak and off-peak frequencies.

Route 14 performance is weaker compared to other BARTA routes which warrants some alignment changes. In particular, ridership declines precipitously west of Wernersville, which negatively impacts the route's productivity. To provide a more consistent service across the service day, the weekday service span has been modified to serve from 6:00 a.m. to 9:00 p.m.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:30 a.m. to 7:00 p.m.	30	60
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

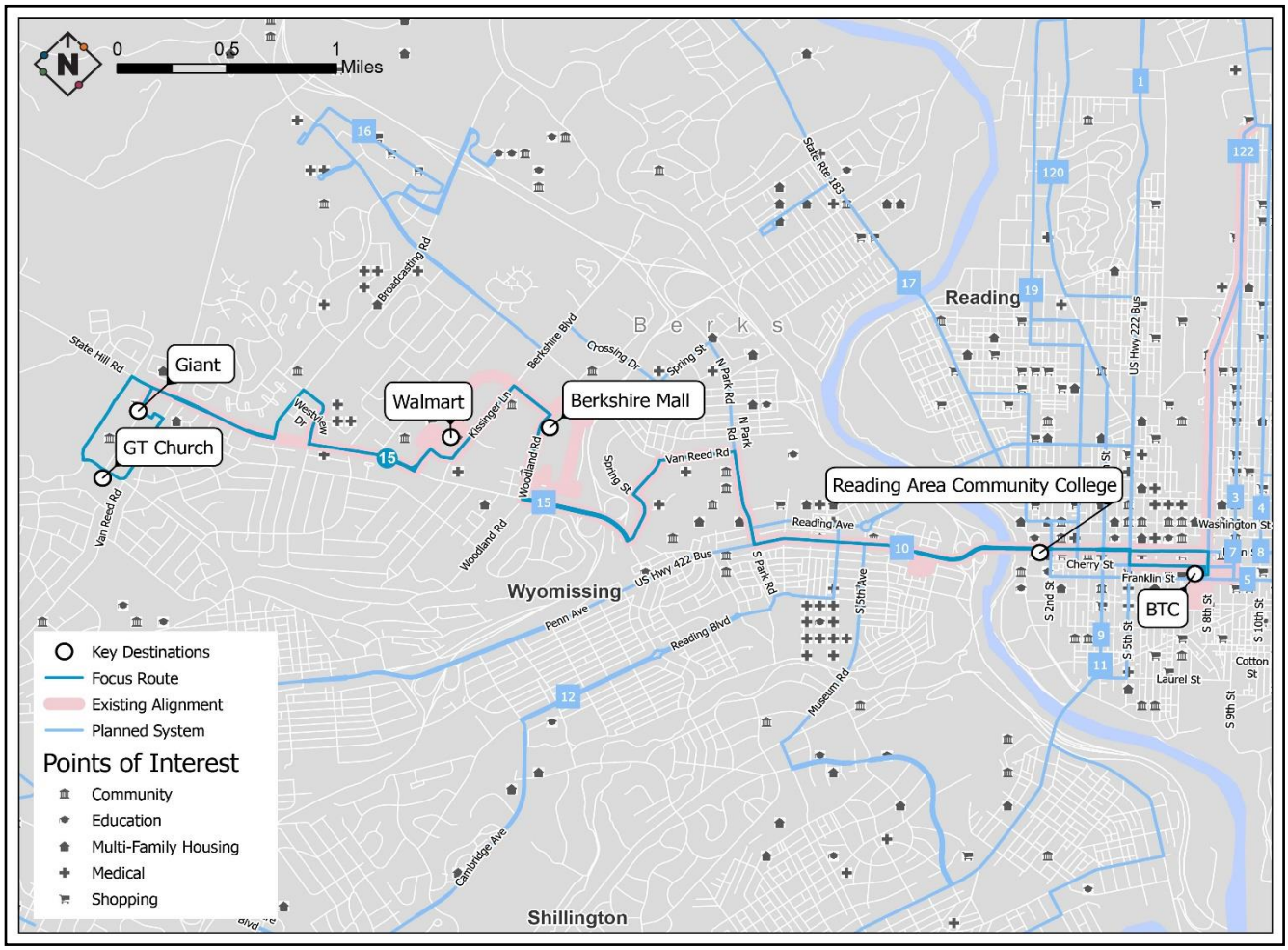
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 9:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 15/ Berkshire Mall Alignment



SERVICE RECOMMENDATIONS

Route 15 will remain largely unchanged from existing service and will provide a connection between downtown Reading and the Giant at State Hill Road. The route will continue to serve the Berkshire Mall property; however, instead of entering the Berkshire Mall property, Route 15 will serve the mall from Woodland Road in both directions. This will help simplify and speed up service, and improve access to destinations on both sides of Woodland Road. This route will be interlined with proposed Route 1 and will have similar peak and off-peak frequencies.

Route 15 performs well overall compared to other BARTA routes and thereby does not warrant major alignment changes. The proposed earlier start of service on Sunday will address pent-up demand. Relatively low and or inconsistent ridership per trip during the weekend peak periods warrant a change in headways form 30-minutes to 60-minutes.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 11:00 p.m.	30	60
Saturday	5:30 a.m. to 11:00 p.m.	30	60
Sunday	10:00 a.m.to 6:30 p.m.	30	30

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 10:00 p.m.	60	60
Sunday	8:00 a.m. to 8:00 p.m.	60	60

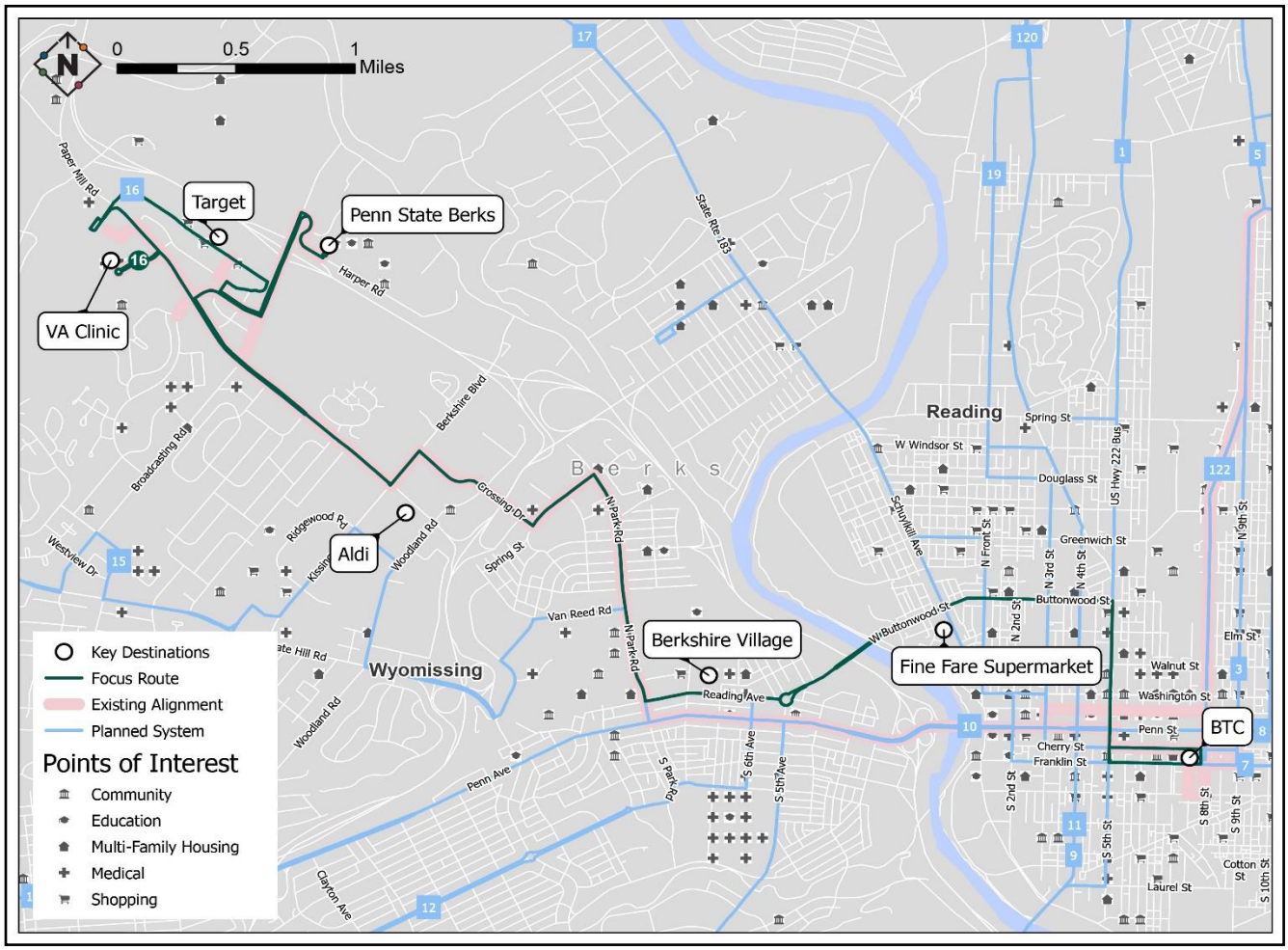
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 11:00 p.m.	30	60
Saturday	7:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 8:00 p.m.	30	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 11:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 8:00 p.m.	30	60

Route 16/Broadcasting Square Alignment



SERVICE RECOMMENDATIONS

To reduce travel time for most riders, Route 16 buses will serve Penn State Berks after Broadcasting Square and the VA Clinic on outbound trips. Inbound trips from Penn State Berks will also serve Broadcast Square and the VA. This will eliminate the need for riders who are traveling to retail and medical destinations to travel out of their way to Penn State Berks first. It will also allow for more direct and convenient service between Broadcasting Square and Penn State Berks. Service will also be shifted from Penn Street to Buttonwood Street to expand east-west service coverage northwest of downtown Reading. Moreover, this route will be interlined with the proposed Route 5 and will have similar peak and off-peak frequencies.

Route 16 performs relatively well overall compared to other BARTA routes and thereby does not warrant major alignment changes. The proposed changes will reduce one-way service segments and make travel more convenient for customers. The proposed changes to service span focus service to the times of day when demand is greatest, based on existing ridership data. The reduction of span of service on weekdays and Saturdays reflects a decline in ridership after 9:00 p.m. and 7:00 p.m. respectively. Furthermore, the Sunday span of service is modified to provide a more consistent service across the service day.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:45 a.m. to 11:15 PM	30	60
Saturday	5:45 a.m. to 11:15 PM	30	60
Sunday	11:00 a.m. to 7:00 PM	60	60

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

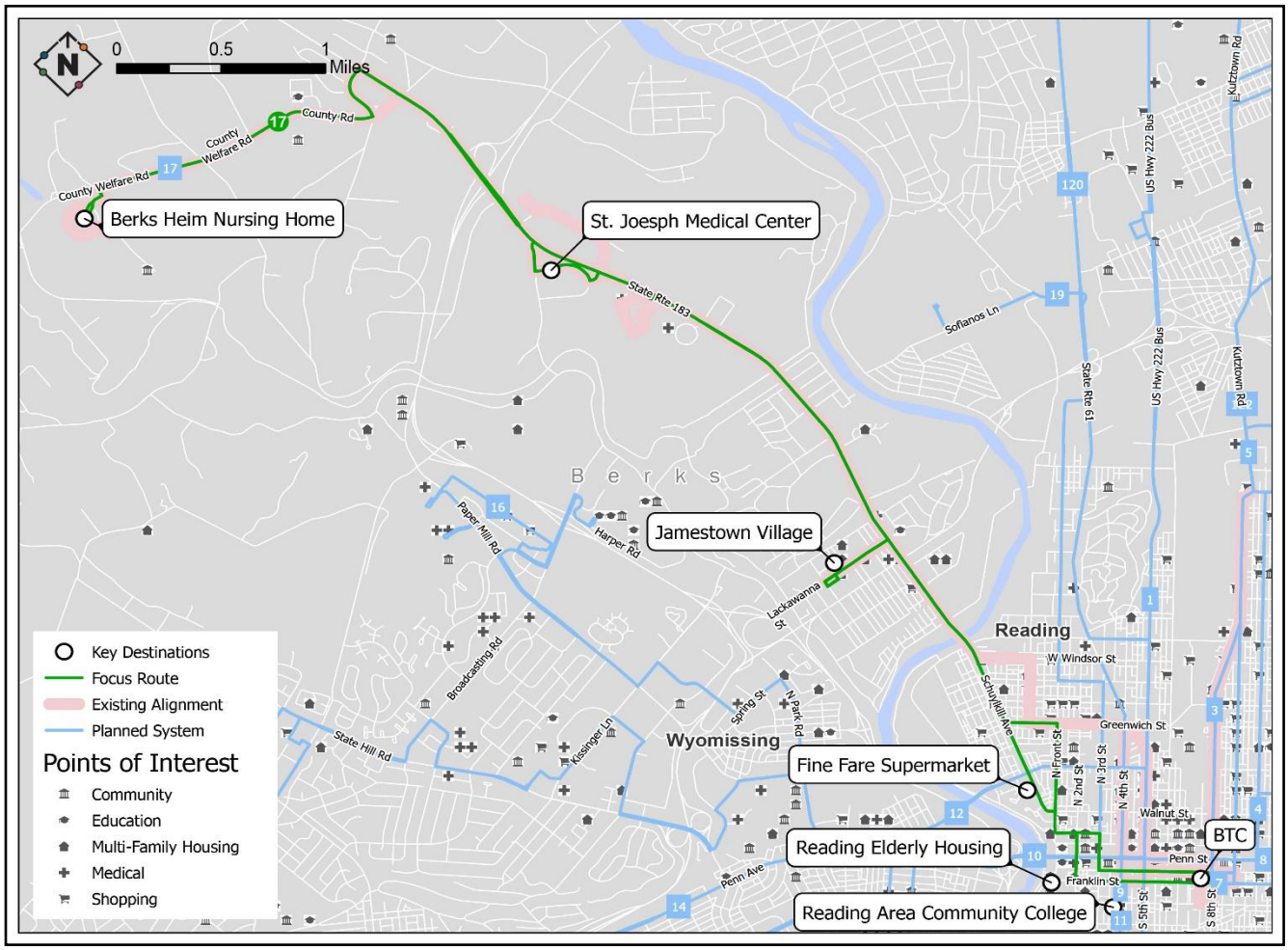
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 17/Glenside/Airport/Berks Heim Alignment



SERVICE RECOMMENDATIONS

Route 17 will be combined with Route 18 to provide consistent service throughout the service day. The proposed route will be most similar to the current Route 18 but will operate as far west as Berks Heim Nursing Home. This route will be interlined with route 12 and will have similar peak and off-peak frequencies.

Route 17 currently operates with a limited span of service and covers similar areas to those served by the current Route 18; however, Route 18 performs better across a variety of productivity metrics and has more consistent ridership. As such, adjustments are warranted on Route 17 to more efficiently and effectively serve the northwestern Berks County. Relatively high ridership per trip during the weekday peak periods warrants an improvement in peak headways.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:45 a.m. to 6:45 p.m.	60	60
Saturday	6:15 a.m. to 6:45 p.m.	60	60
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

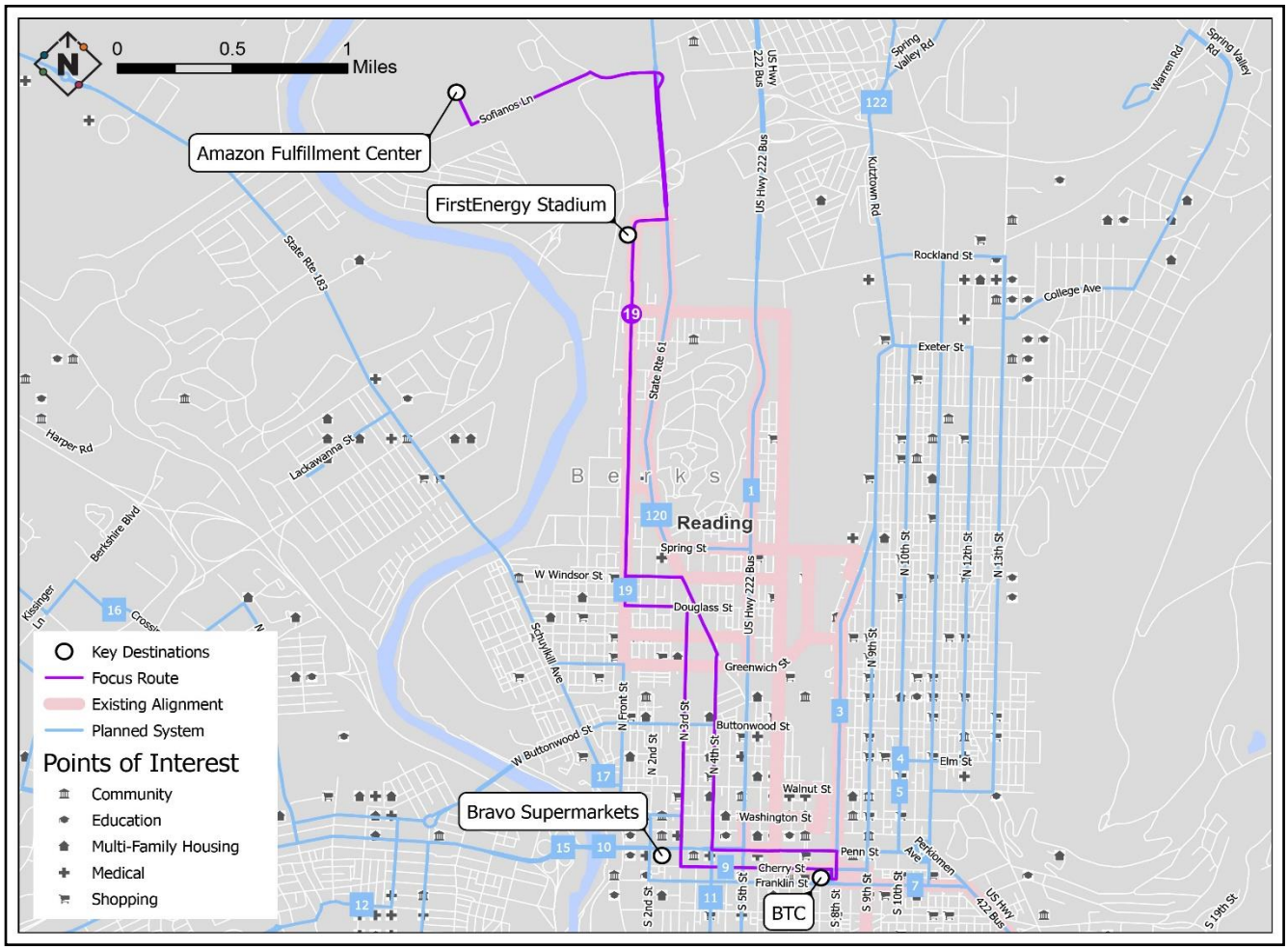
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 19/Riverside/First Energy Alignment



SERVICE RECOMMENDATIONS

The Cotton Street branch of Route 19 will be eliminated. Service to the area will instead be provided by the proposed Routes 7 and 8. The northern branch of Route 19 will have several changes, including adding service to the Amazon Fulfillment Center near Leiszs Bridge Road. Service will also be shifted from 6th and 8th Street to 3rd and 4th Street to provide more two-way service northwest of downtown Reading. Finally, between downtown Reading and FirstEnergy Stadium, service would shift from Centre Street to Front Street to improve job-access opportunities along the corridor. Moreover, this route will be interlined with the proposed Route 8 and will have similar peak and off-peak frequencies.

Route 19, due its redundancies, does not perform well overall compared to other BARTA routes and thereby warrants major alignment changes. Relatively low and inconsistent ridership per trip during the weekday peak periods warrants a reduction in peak headways.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 09:40 p.m.	30	60
Saturday	6:30 a.m. to 09:45 p.m.	60	60
Sunday	11:30 a.m. to 06:55 p.m.	60	60

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

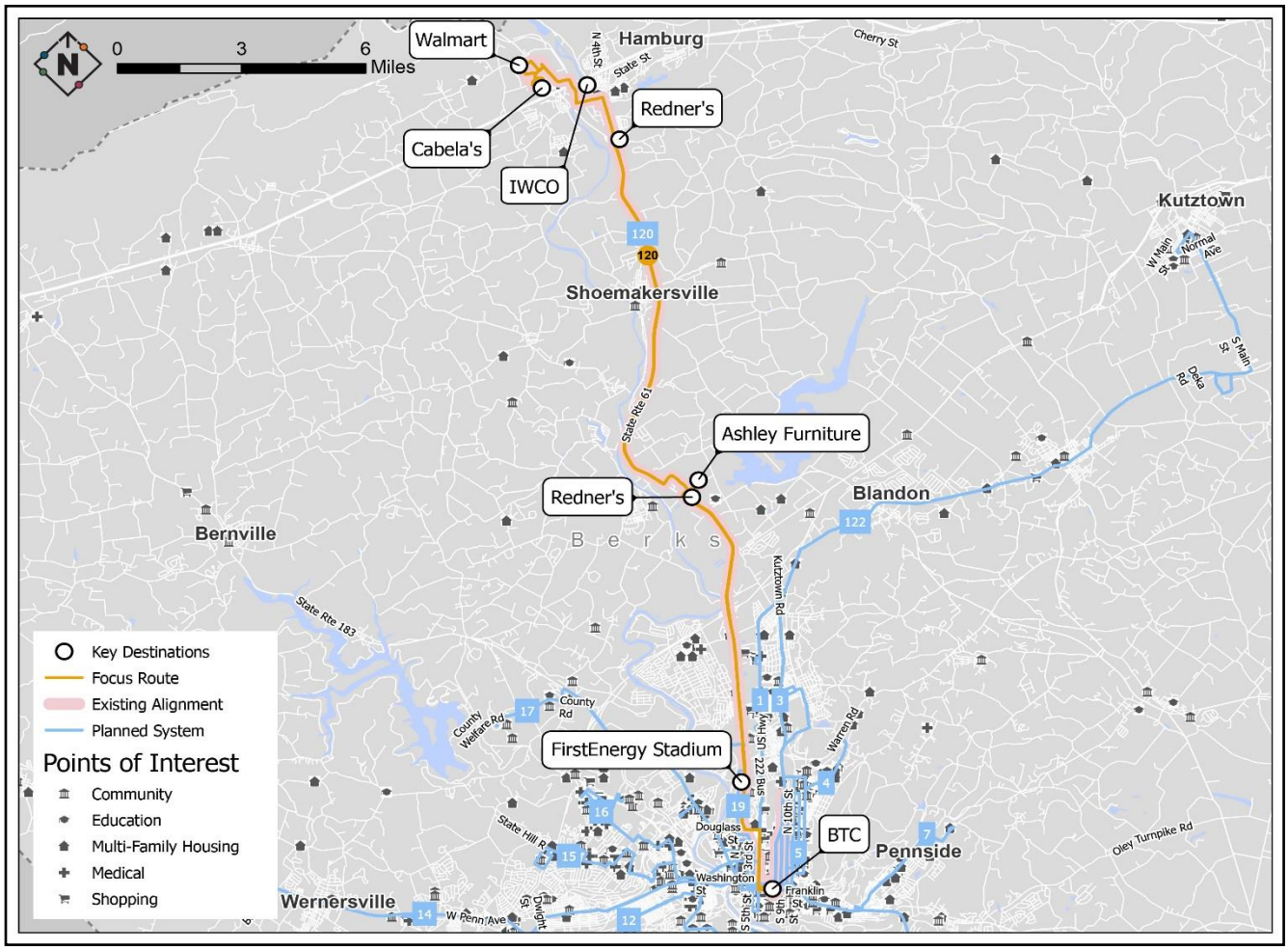
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	60	60
Saturday	7:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 120/Hamburg Alignment



SERVICE RECOMMENDATIONS

Route 20 will be renumbered as Route 120 to highlight that it is a long-distance regional route. In Reading, service will be simplified to operate along 5th Street in both directions. Service in Hamburg would also be simplified to operate along State Street and Industrial Drive in both directions.

Route 20 has lower productivity overall compared to other BARTA routes and thereby warrants some service span changes. The weekday and Saturday span of service has been divided into two segments to provide a more consistent service across the peak period, where ridership per trip is most consistent. Further, existing ridership declines sharply after 6:00 p.m. on weekdays and Saturdays, warranting a reduced span of service.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:00 a.m. to 12:00 a.m.	60	65
Saturday	5:00 a.m. to 12:00 a.m.	60	65
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Sunday	-	-	-

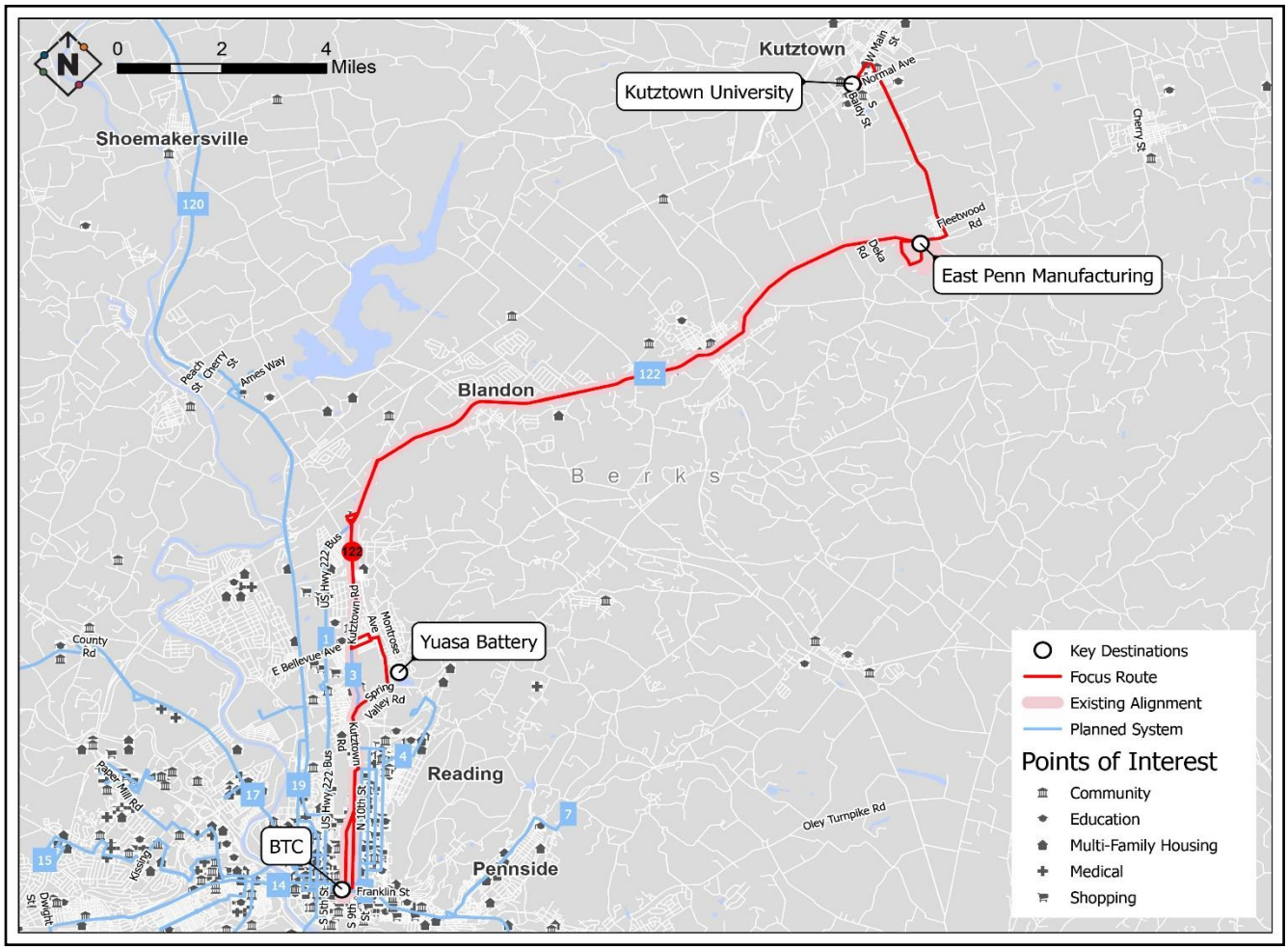
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 8:00 p.m.	60	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 122/Kutztown Alignment



SERVICE RECOMMENDATIONS

Route 22 will be renumbered as Route 122 to highlight that it is a long-distance regional route. North of Reading, service will be shifted from Kutztown Road to Spring Valley Road and Montrose Avenue to serve employment destinations including Yuasa Battery. In addition, service will be extended north from East Penn Manufacturing in Lyons to also serve downtown Kutztown and Kutztown University.

Route 22 has lower productivity overall compared to other BARTA routes and thereby warrants some service span and alignment changes. Due to an overall low ridership, the weekday span of service has been divided into two segments to provide a more consistent service across the peak periods. Currently the route only operates a few trips a day thereby justifying the reduction in service span; consistent headways during the peak period will represent additional trips compared to current service.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:15 a.m. to 12:05 a.m.	4 trips	4 trips
Saturday	-	-	-
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM[3]

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	2 trips	4 trips
Saturday	-	-	-
Sunday	-	-	-

PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	60	60
Saturday	-	-	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	60	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

[3] In Phase 1, Route 122 will operate six trips a day to match the shift times at East Penn/Deka. There are three shifts, the first starting between 5:45 a.m. and 7:00 a.m., the second starting between 1:45 p.m. and 3:00 p.m., and the third starting between 9:45 p.m. and 11:000 p.m.

BARTA SERVICE CHARACTERISTICS

INTERLINING

The recommended fixed-route network makes extensive use of interlining to optimize cycle times and ensure one-seat rides to key destinations. This practice can also reduce the total number of vehicles needed to operate a service, thereby reducing the total revenue hours and miles operated systemwide. Interlining is the practice of operating a single bus or a group of buses on more than one route. For example, if Route 1 is interlined with Route 15, then once a bus operator completes a trip on Route 1, they would proceed to Route 15, and alternate between the two routes throughout their shift. **Table 13** shows how interlining is used to optimize cycle times and ensure sufficient recovery times. Routes that are interlined are indicated with a plus (+) sign between them.

REVENUE HOURS, VEHICLE NEEDS, AND FINANCIAL ANALYSIS

Phase 1 of the recommended service scenario is designed to be cost-neutral, meaning that it can be implemented within the constraints of BARTA's current financial resources. However, as this TDP is intended to serve as a guide for service improvement, and the medium- and long-term recommendations go beyond BARTA's existing financial resources, the impacts of the recommendations are quantified in terms of revenue hours, peak vehicle needs, and dollars. Over time operating costs may fluctuate because of inflation and other factors; however, annual revenue hours and peak vehicle should remain constant over time. The cost of service improvements in each phase are based off the estimated cost per hour as presented in **Chapter 3 Budget and Funding**, which estimated BARTA's operating cost per hour as $88.

The recommendations presented provide one option for phasing in new service, as proposed in this TDP; however, the recommendations are intended to be flexible and can be implemented based on availability of resources and ridership demand. The service recommendations are broken into packages, as laid out in **Table 14**. Packages are individual routes or groups of routes that are linked to one another. Changes on routes in a package must happen simultaneously to ensure that coverage is maintained as routes are realigned. Further, realigning routes that are interlined simultaneously will ensure that SCTA will see the operational efficiencies of interlining immediately, even if span and frequencies are not improved.

Table 14: BARTA Recommendations Packages

RECOMMENDATION PACKAGE	ROUTES INCLUDED
Package 1	Route 1 and Route 15
Package 2	Route 3
Package 3	Route 4, 5, 12, 14, 16, 17
Package 4	Route 7 and Route 11
Package 5	Route 9 and Route 10
Package 6	Route 8 and Route 19
Package 7	Route 120
Package 8	Route 122

Revenue hours refers to the cumulative hours of service that all buses operating on a route provide to a community. One bus operating for ten hours will result in ten revenue hours of service. Ten buses operating for one hour each will also result in ten revenue hours of service. Revenue hours is a unit of measure used for budgeting purposes, as multiplying the annual revenue hours of a route by an hourly operating cost will produce the annual operating cost for the route.

Table 15 shows the annual revenue hours, peak vehicle needs, and the estimated annual cost associated with each route or route pair in each of the three implementation phases. In FY 2023, BARTA operated 136,115 annual revenue hours for a total operating cost of $12,028,668 and a peak vehicle need of 52 buses. These FY 2023 totals served as the baseline from which the recommendations were built.

Overall, the Phase 1 improvements increase annual revenue hours and the estimated cost of the service by less than two percent. The Phase 2 recommendations increase revenue hours and operating cost by 15 percent compared to FY 2023 service. In Phase 3 annual revenue hours and annual operating cost will increase by 46 percent.

Table 15: Revenue Hours and Vehicle Needs by Phase - BARTA

ROUTES	ANNUAL REVENUE HOUR	WEEKDAY PEAK VEHICLE NEED	ESTIMATED ANNUAL COST ($1000s)
Phase 1 - Short Range			
Route 1 + 15	27,820	5	$2,458
Route 3	4,524	1	$400
Route 4 + 14	26,052	6	$2,302
Route 5 + 16	14,352	4	$1,268
Route 7 + 11	12,688	4	$1,121
Route 9 + 10	12,688	4	$1,121
Route 12 + 17	19,032	6	$1,682
Route 19 + 8	9,048	2	$800
Route 120	6,396	3	$565
Route 122	5,460	3	$483
Total	**138,060**	**38**	**$12,200**
Phase 1 Change from Existing	1,945	-	$172
Phase 1 % Change from Existing	1.43%	-	1.43%
Phase 2 - Mid Range			
Route 1 + 15	30,420	5	$2,688
Route 3	6,604	2	$584
Route 4 + 14	26,052	6	$2,302
Route 5 + 16	14,352	4	$1,268
Route 7 + 11	13,208	4	$1,167
Route 9 + 10	13,208	4	$1,167
Route 12 + 17	19,812	6	$1,751
Route 19 + 8	9,568	2	$846
Route 120	11,856	3	$1,048
Route 122	10,920	3	$965
Total	**156,000**	**39**	**$13,786**
Phase 2 Change from Existing	19,885	-	$1,757
Phase 2 % Change from Existing	14.61%	-	14.61%
Phase 3 - Long Range			
Route 1 + 15	30,680	5	$2,711
Route 3	7,228	2	$639
Route 4 + 14	31,044	6	$2,743

ROUTES	ANNUAL REVENUE HOUR	WEEKDAY PEAK VEHICLE NEED	ESTIMATED ANNUAL COST ($1000s)
Route 5 + 16	16,224	4	$1,434
Route 7 + 11	15,184	4	$1,342
Route 9 + 10	14,456	4	$1,277
Route 12 + 17	21,684	6	$1,916
Route 15	2,886	0	$255
Route 19 + 8	14,456	4	$1,277
Route 120	15,444	3	$1,365
Route 122	15,444	3	$1,365
Total	**198,250**	**41**	**$16,325**
Phase 3 Change from Existing	62,135	-	$4,295
Phase 3 % Change from Existing	45.65%	-	35.72%

PUBLIC AND STAKEHOLDER FEEDBACK

BARTA held three sessions to engage the community regarding the recommended service changes. Full summaries of the feedback received during the stakeholder meeting and public meetings are available in **Appendix H**.

Attendees provided feedback on the proposed service changes, including the following comments on specific routes:

- One attendee worried about the decision to decrease service to Fairgrounds market; the facilitators responded that ridership at the Fairgrounds is low; however, service to the market will be maintained on another route.
- A participant suggested that Route 14 should serve the new apartment complex on Penlynn Drive; facilitators noted that it was unclear whether that street, still under construction, would be a public roadway or a private one, and whether it would be maneuverable by buses.
- Some participants expressed approval for the decision to retain service to Mohnton, which had been cut in earlier proposals.
- Several attendees expressed concerns about the proposed changes on Route 16. One person wondered if the change from Penn Street to Buttonwood Street would increase travel time; another worried that buses may have difficulty turning left from 5th Street onto Buttonwood Street.
- Another person requested that service on Route 19 be retained along Cotton Street and shared concerns about the impacts of the realignment on parking. The facilitators responded that Cotton Street will be served by Route 8 in the proposed scenario, and the agency is in discussion with the City of Reading about improvements to Cotton Street. Participants expressed support for shifting Route 19 to 3rd and 4th Streets.

Beyond questions about service along individual routes, multiple participants had questions about the implementation of the proposed service and advocated for availability of the service on nights and weekends.

RRTA Service Recommendations

Like with BARTA, the final recommendations for the RRTA system is focused on fixed-routes service, with three phases of implementation strategies (**Figure 33** and **Figure 34**). Phase 1 of implementation focuses on service alignment changes with only minor improvements to level of service; Phase 2 and Phase 3 focus on improving headways and expanding the service span of realigned routes.

In the proposed final recommendations for the RRTA network, most routes keep their current route number. Route 1, Route 2, and Route 3 are separated into two routes each, creating a new Route 4, Route 7, and Route 8. Route 10, Route 11, and Route 21 have each been updated to Route 110, 111, and 121, respectively, to reflect their route type as long, regional connector routes.

The proposed system attempts to provide more direct service by operating bi-directionally, instead of in one-way loops. Bi-directional service allows for direct travel to and from destinations without additional travel that takes passengers out of the way. The proposed final recommendations focus service on denser areas where more people are likely to take transit trips, while reducing service in places that have seen low ridership numbers. Microtransit service may operate in these areas instead of fixed-route service.

Figure 33: RRTA Service Recommendations

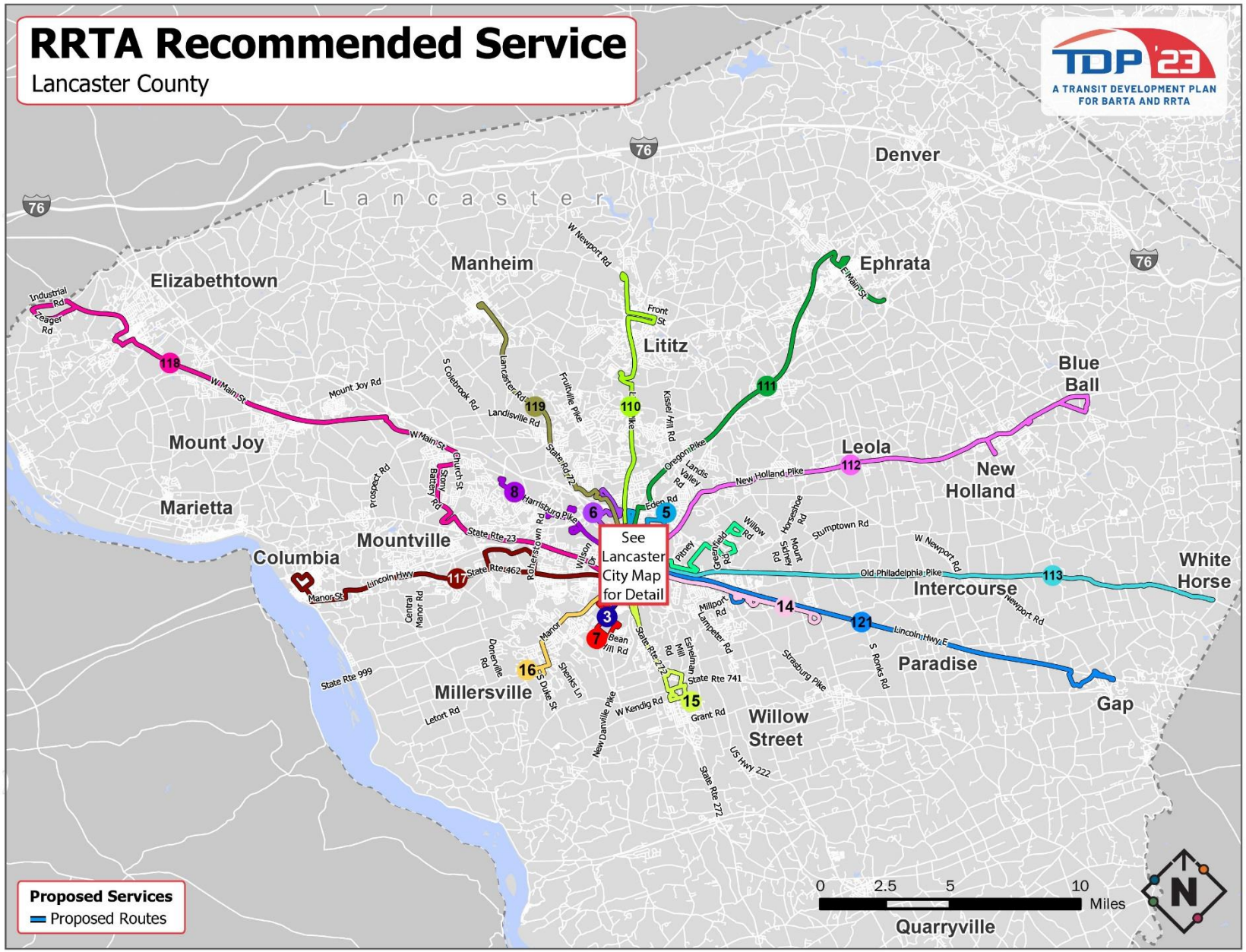
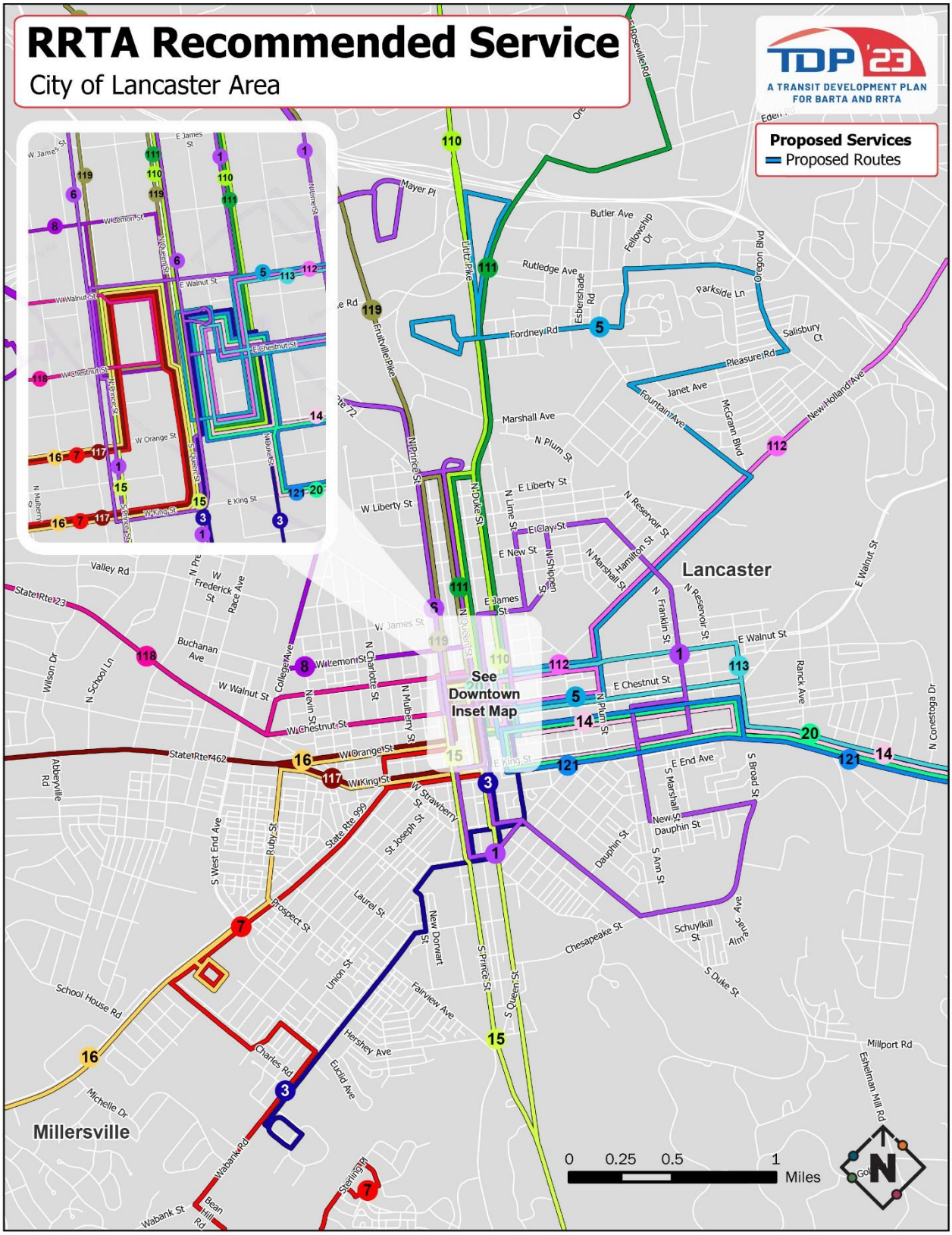


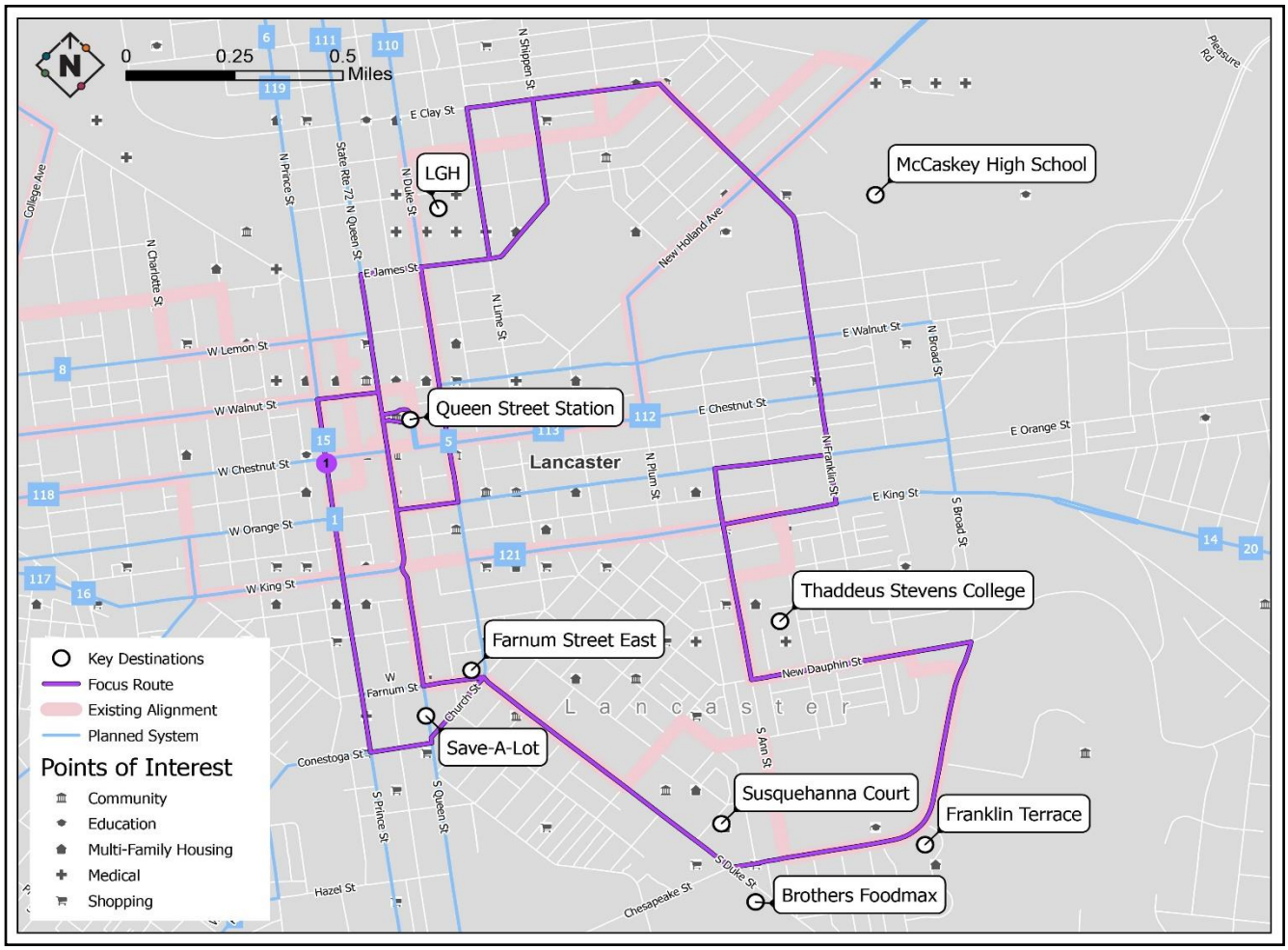
Figure 34: RRTA Recommended Service - Lancaster Area



CHANGE SHEETS

The service recommendations for each route are presented in a series of change sheets. These route-by-route change sheets highlight service frequency changes by phase and include current service information (as of January 2024) for comparison. The changes in level of service (span and frequency) respond to the results of the market analysis and service analysis as well as feedback received during public and stakeholder engagement. While the tables on the change sheets include specific proposed spans, these spans can be adjusted based on observed demand. If a route is proposed to operate 12 hours a day, so long as the number of hours it operates does not change, the cost of the service will not change.

Route 1 Southeast Alignment



SERVICE RECOMMENDATIONS

Route 1 will combine parts of the current Routes 1 and 2 to create a new downtown and eastside circulator. The new route would travel clockwise and counterclockwise from the Queen Street Station to serve destinations including the Lancaster General Hospital (LGH), McCaskey High School, CTown Supermarkets, Thaddeus Stevens College, Brothers Foodmax, Save-A-Lot, and several large apartment communities. Route 1 will no longer serve Franklin & Marshall College, the Salvation Army Thrift Store, or Park City Center. Instead, these destinations would be served by proposed Route 5 and Route 6.[4]

Route 1 fills a need in downtown Lancaster, but the one-way service loop limits the route's effectiveness. The route's poor performance on some productivity measures, including passengers per trip warrant alignment and service changes. The reduction of span on Saturdays reflects low ridership per trip before 7:00 a.m. and after 10:00 p.m. The increase in span of service on Sundays is to facilitate weekend shopping trips.

[4] SCTA is working with its local partners and other stakeholders to confirm the proposed route alignment for Route 1 is feasible. Slight modifications to the route alignment may be made prior to implementation.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	6:05 a.m. to 10:50 p.m.	30[5]	45
Saturday	6:50 a.m. to 10:50 p.m.	30	60
Sunday	11:10 a.m. to 6:40 p.m.	65	60

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. –to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	30	60

PHASE 2: MID-TERM

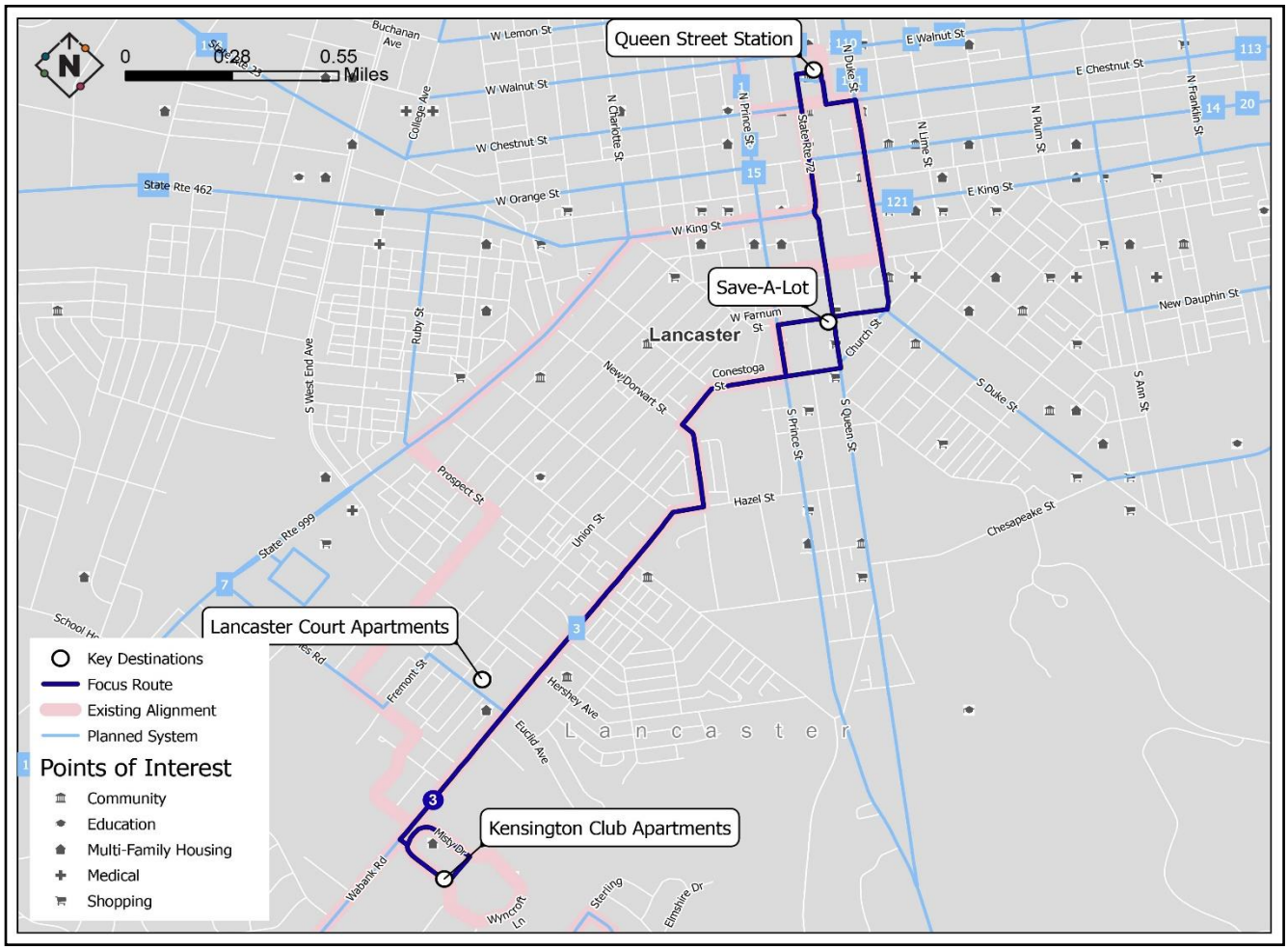
DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	30	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 11:00 p.m.	30	30
Saturday	6:00 a.m. to 10:00 p.m.	30	30
Sunday	8:00 a.m. to 6:00 p.m.	30	30

[5] Service during the peak and off-peak periods on weekdays and Saturdays is inconsistent; headways range from 25 minutes to 55 minutes.

Route 3/Kensington Ct Alignment



SERVICE RECOMMENDATIONS

Route 3 will be simplified to operate between downtown Lancaster and the Kensington Club apartments via Wabank Road in both directions. Manor Street (including Weis Market) and Sterling Place service will instead be provided by the proposed Route 7. Fruitville Pike service will be partially provided by proposed Route 6. Park City Center service will be provided by proposed Route 8. This route will be interlined with proposed Route 8 and will have similar peak and off-peak frequencies.

Route 3 performs well compared to other RRTA routes in terms of several productivity measures and serves strong anchors, which justifies maintaining much of the current alignment. Simplifying the route will make it easier for customers to use. The reduced span on all service days reflects low ridership per trip at the end of the service day.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:55 a.m. to 10:35 p.m.	35	50
Saturday	7:45 a.m. to 10:35 p.m.	45	80
Sunday	10:50 a.m. to 6:50 p.m.	55	55

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 p.m.	60	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

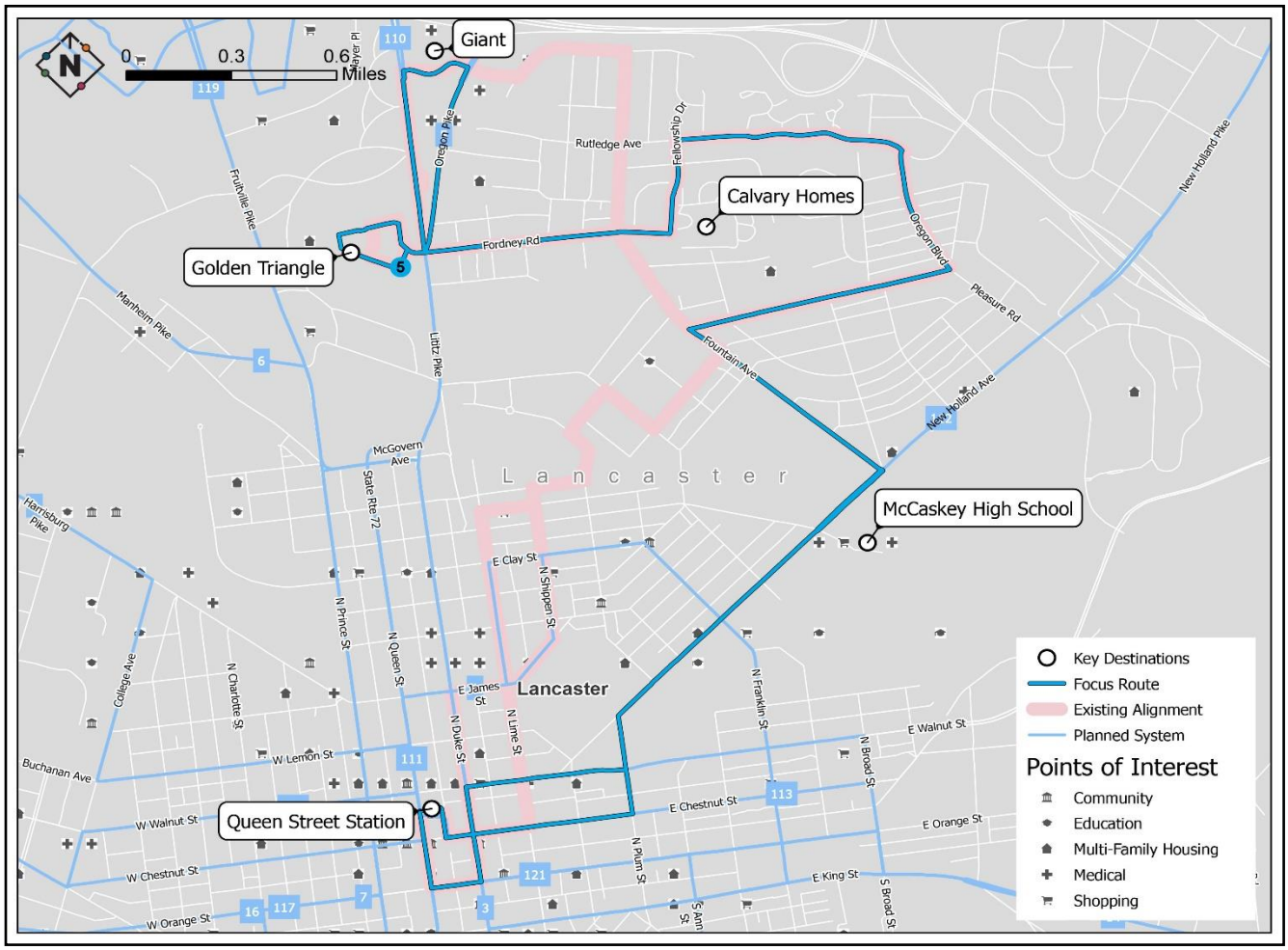
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	60	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 5/Golden Triangle Alignment



SERVICE RECOMMENDATIONS

Route 5 will operate between downtown Queen Street Station and Golden Triangle. Route 5 will be simplified to reduce areas of one-way service. Service will be shifted from Janet Avenue and Park Avenue to New Holland Avenue to pick up areas served by the current Route 2. This alignment will also include service to Lancaster Shopping Center and allow for connections to proposed Route 110 on Lititz Pike and proposed Route 111on Oregon Pike on both sides of the shopping center. This route will also serve Calvary Homes as well as McCaskey High School on New Holland Ave where it will allow for connections to the proposed Route 112. Furthermore, this route will be interlined with the proposed Route 16 and will have similar peak and off-peak frequencies.

Route 5 performs poorly compared to other RRTA routes and thereby warrants alignment and span changes. Simplifying the alignment and implementing bi-directional service will make the route easier for customers to use.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	6:15 a.m. to 6:05 p.m.	35	50
Saturday	8:35 a.m. to 6:00 p.m.	45	240
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

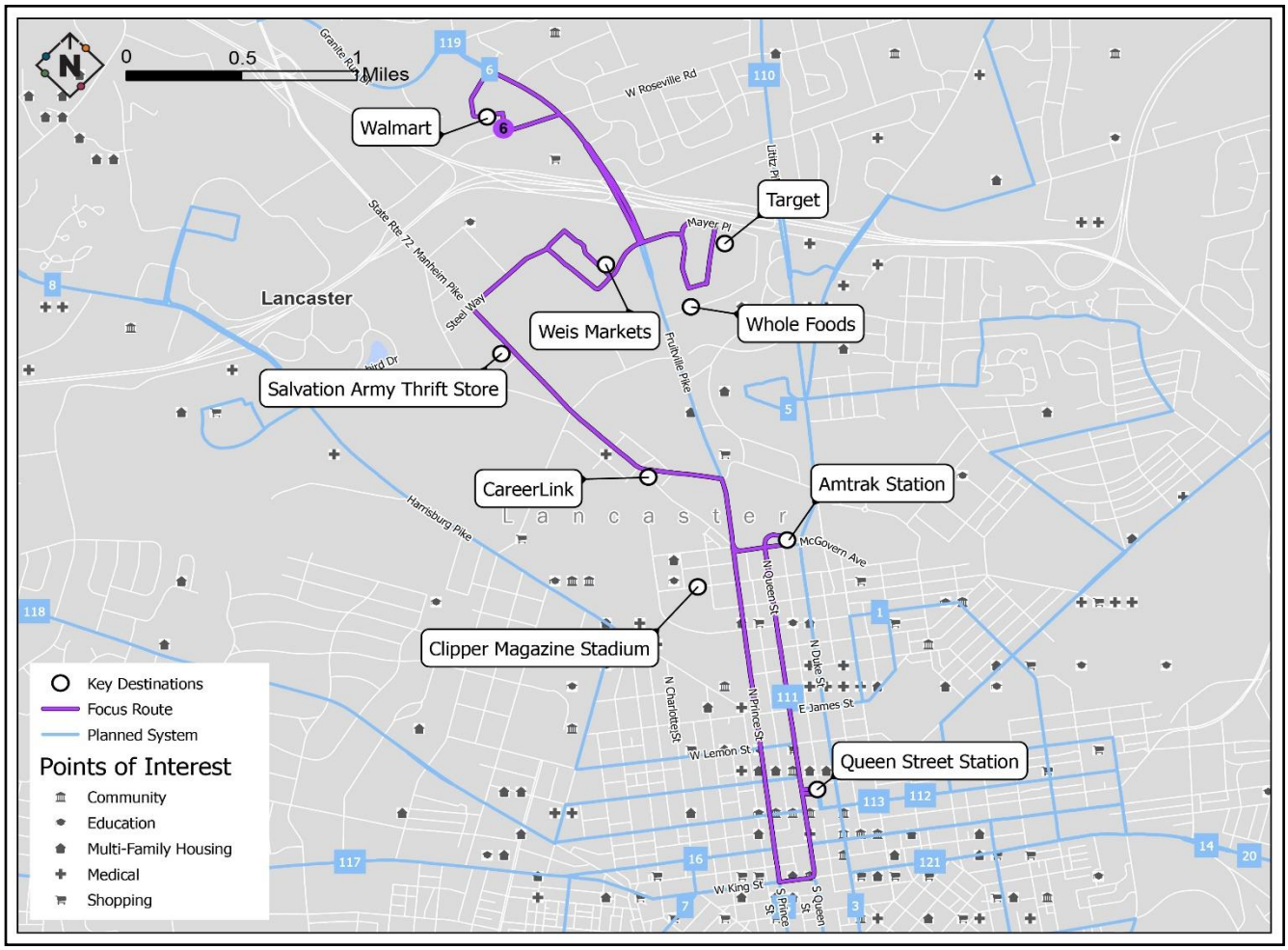
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m.to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 6/Walmart Alignment



SERVICE RECOMMENDATIONS

Route 6 will operate between downtown Queen Street Station and Walmart on Fruitville Pike. Route 6 will be extended north to serve the Lancaster Amtrak station and retail destinations including the Salvation Army Thrift Store, Red Rose Commons (Weis Markets), The Shoppes at Belmont (Target / Whole Foods), and Walmart on Fruitville Pike.

Route 6 performs poorly compared to other RRTA routes and thereby warrants major alignment and span changes. Simplifying the alignment and implementing weekend service aim to improve ridership and productivity on Route 6. The route's ridership by trip is low compared to other RRTA routes, indicating that the route's performance does not justify the higher service frequencies. Reducing the peak and off-peak headways on this route will help to better much the supply and demand of service on this route.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:20 a.m.to 6:10 p.m.	20	30
Saturday	-	-	-
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

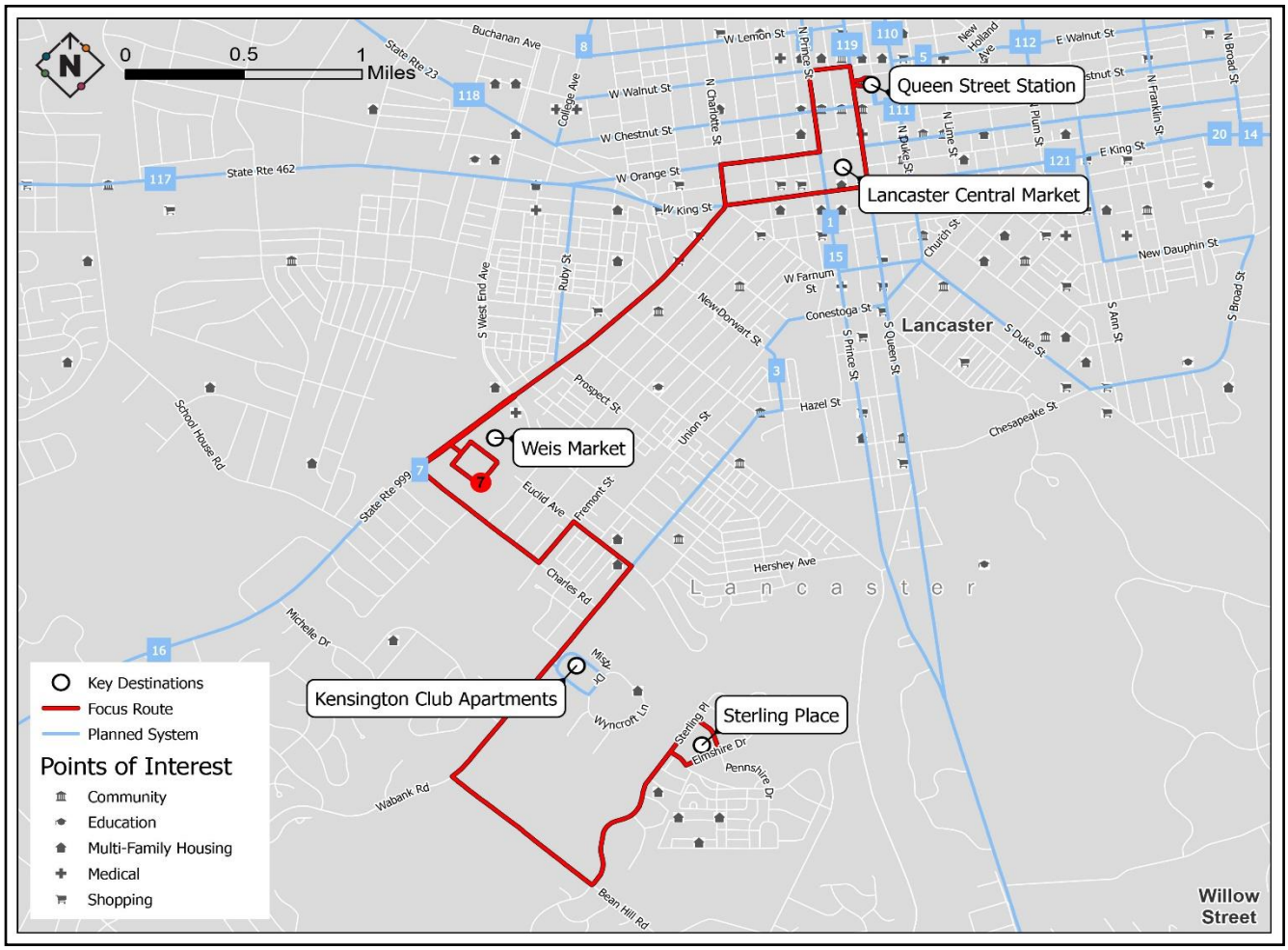
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 7/Sterling Place Alignment



SERVICE RECOMMENDATIONS

Route 7 is a new route that will operate between downtown Lancaster and the Sterling Place apartments via Orange Street, Manor Street (Weis Market), Euclid Street, and Wabank Road, following the same alignment in both directions. This alignment allows for connection with the proposed Route 3 on Wabank St and the proposed Route 16 on Manor St.

This new route will fill a gap in service coverage and connect several points of interest.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	-	-	-
Saturday	-	-	-
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	60	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

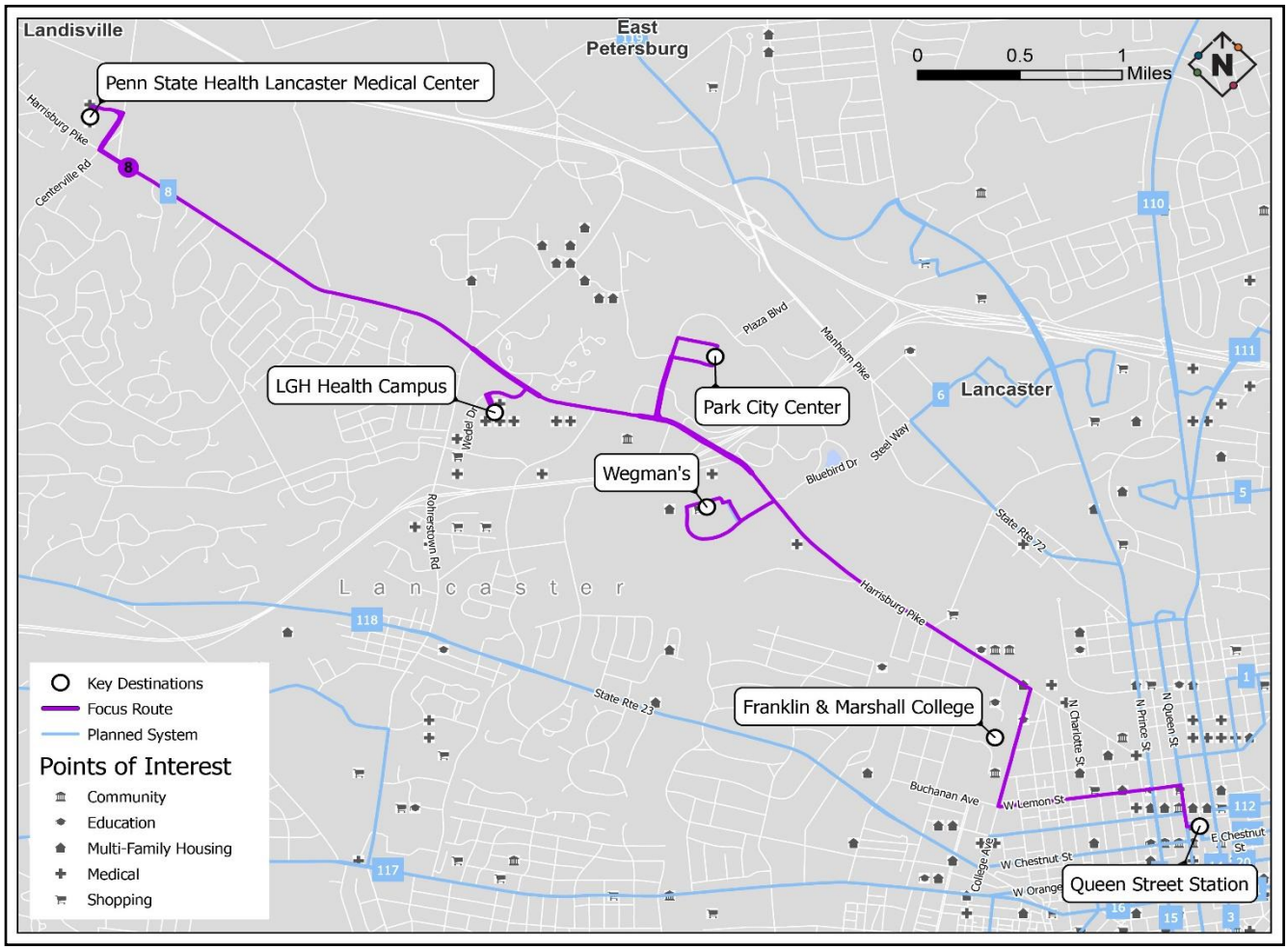
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	60	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 8:00 p.m.	30	60
Saturday	6:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 8/Penn State Health Alignment



SERVICE RECOMMENDATIONS

Route 8 is a new route that will connect downtown Lancaster and Franklin and Marshall College to Wegman's, Park City Center, the Lancaster General Health (LGH) Campus, and the Penn State Health Lancaster Medical Center. Service between downtown and LGH Campus, previously provided by Route 2 is now included as part of Route 8. This route will interlined with the proposed Route 3 and will have similar peak and off-peak frequencies.

This new route will fill a gap in service coverage and connect several points of interest.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	-	-	-
Saturday	-	-	-
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	60	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

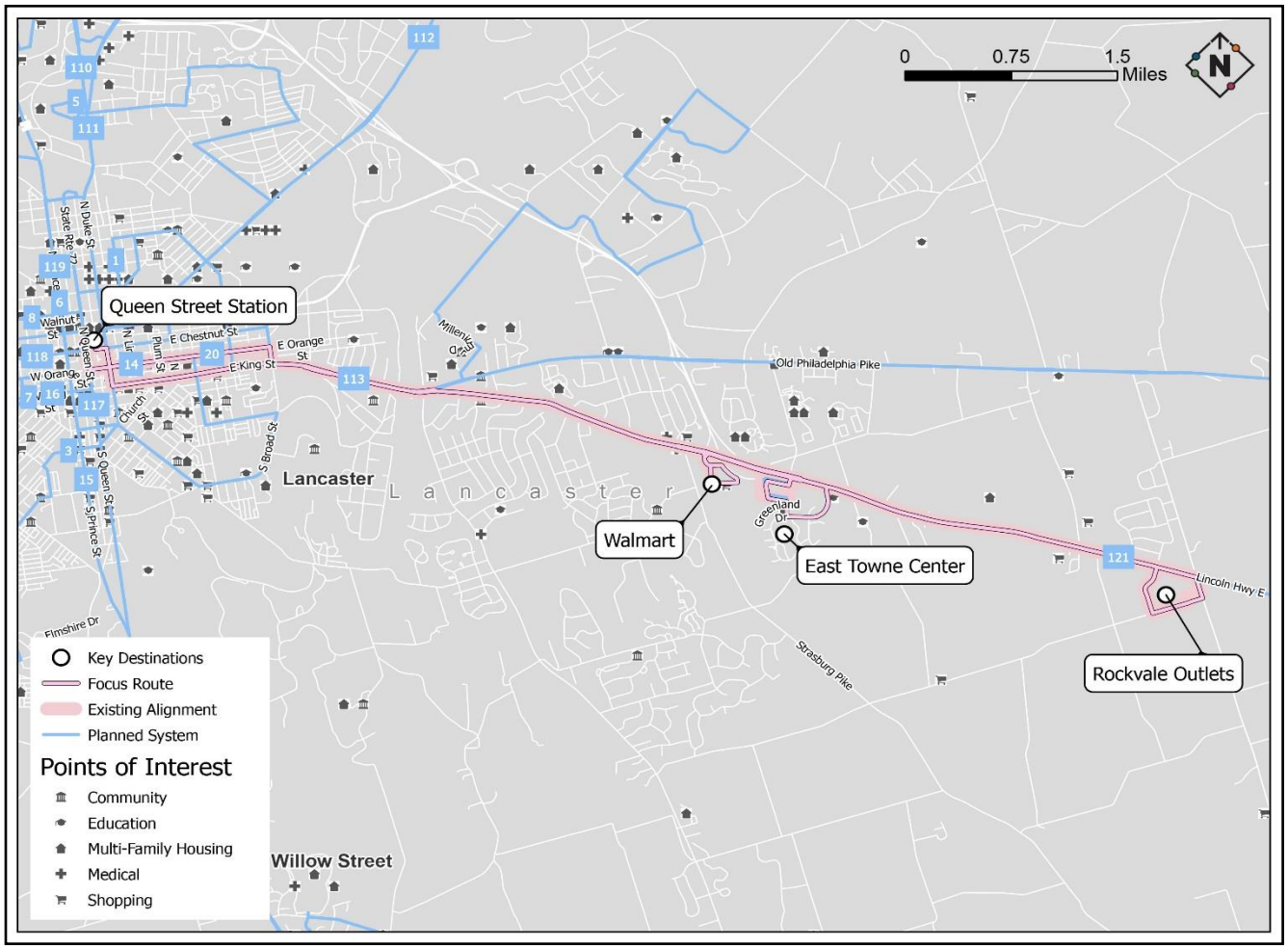
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	60	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 14/Rockvale Outlets Alignment



SERVICE RECOMMENDATIONS

Route 14's alignment will be similar to the current route alignment, providing service between Downtown Lancaster and the Rockvale Outlets. New service on Route 14 would be added along Greenland Drive and S Oakview Road to expand coverage.

Route 14 performs well overall compared to other RRTA routes and thereby does not warrant major alignment changes. The route's ridership by route is varied throughout the day, with higher ridership during the weekday peak periods and very limited ridership after 9:00 p.m. Reducing the service frequency during the off-peak period on weekdays could help make ridership more consistent throughout the service day.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:40 a.m. to 10:40 p.m.	25	25
Saturday	5:40 a.m. to 10:40 p.m.	25	25
Sunday	7:15 a.m. to 7:10 p.m.	30	45

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m.to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 10:00 p.m.	30	60

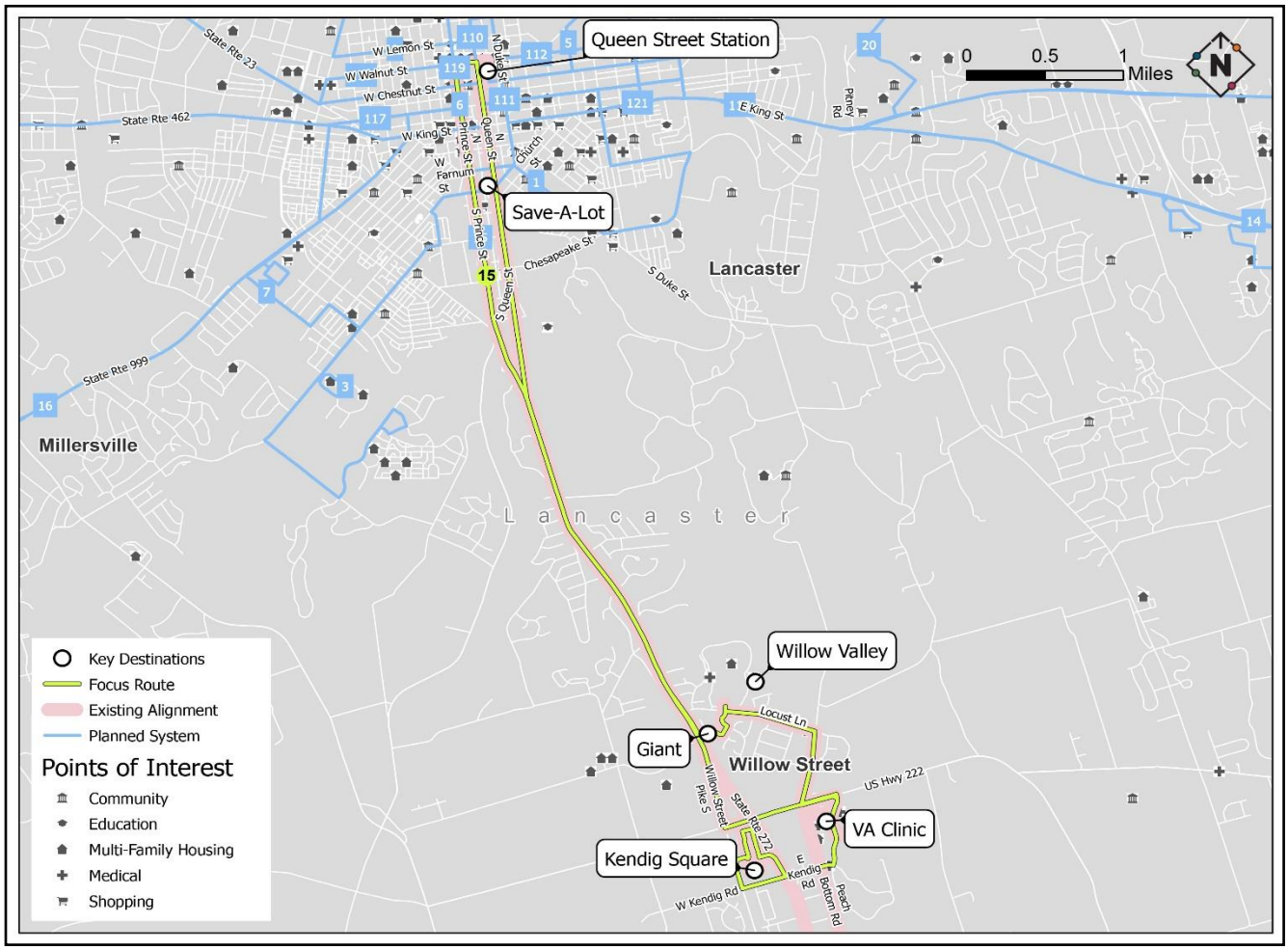
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 10:00 p.m.	30	60
Sunday	8:00 a.m. to 10:00 p.m.	30	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 11:00 p.m.	30	30
Saturday	6:00 a.m. to 10:00 p.m.	30	30
Sunday	8:00 a.m. to 10:00 p.m.	30	30

Route 15/Willow Street Alignment



SERVICE RECOMMENDATIONS

Route 15 will be simplified to operate between downtown Lancaster and Kendig Square via the VA Outpatient Clinic in both directions. The route will continue to serve the Willow Valley Community from Locust Lane. It will not operate south of Kendig Square due to low ridership. This route will be interlined with the proposed Route 20 and will have similar peak and off-peak frequencies.

Route 15 has relatively low ridership overall compared to other RRTA routes and thereby warrants minor alignment and level of service changes. Focusing service on areas with the greatest transit potential, as well as improving off-peak service headways should make the route more appealing to customers. Additionally, weekday peak headways vary, with the service operating every 40 to 60 minutes. Making headways consistent during the peak periods should make the service easier for customers to use.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:50 a.m. to 6:10 p.m.	40	125
Saturday	8:20 a.m. to 4:20 p.m.	60	120
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 5:00 p.m.	60	60
Sunday	-	-	-

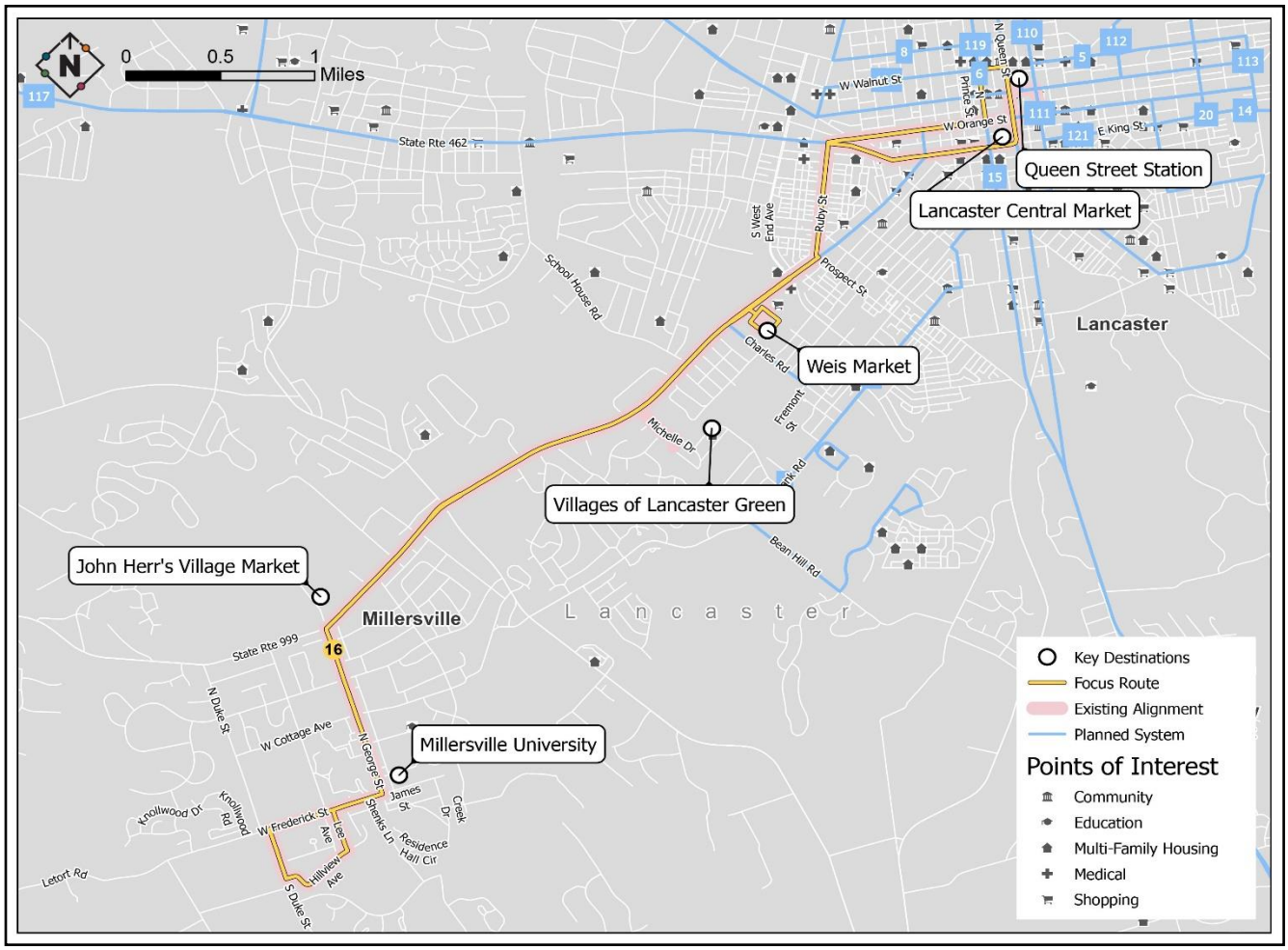
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to7:00 p.m.	60	60
Saturday	7:00 a.m. to 5:00 p.m.	60	60
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 6:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 16/Millersville Alignment



SERVICE RECOMMENDATIONS

Route 16's alignment will be similar to the current route alignment, providing service between downtown Lancaster and Millersville University. However, due to low ridership, buses will no longer directly serve The Villages of Lancaster Green on select trips. This route will be interlined with the proposed Route 5 and will have similar peak and off-peak frequencies.

Route 16 performs well overall compared to other RRTA routes and thereby does not warrant major alignment changes. The proposed earlier start of service on Sundays will address pent-up demand. Weekday ridership declines after 9:00 p.m., and Saturday ridership declines sharply after 5:00 p.m., warranting a reduction in level of service on those days.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:40 a.m. to 11:10 p.m.	35	40
Saturday	5:40 a.m. to 11:10 p.m.	35	40
Sunday	11:15 a.m. to 7:00 p.m.	-	60

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

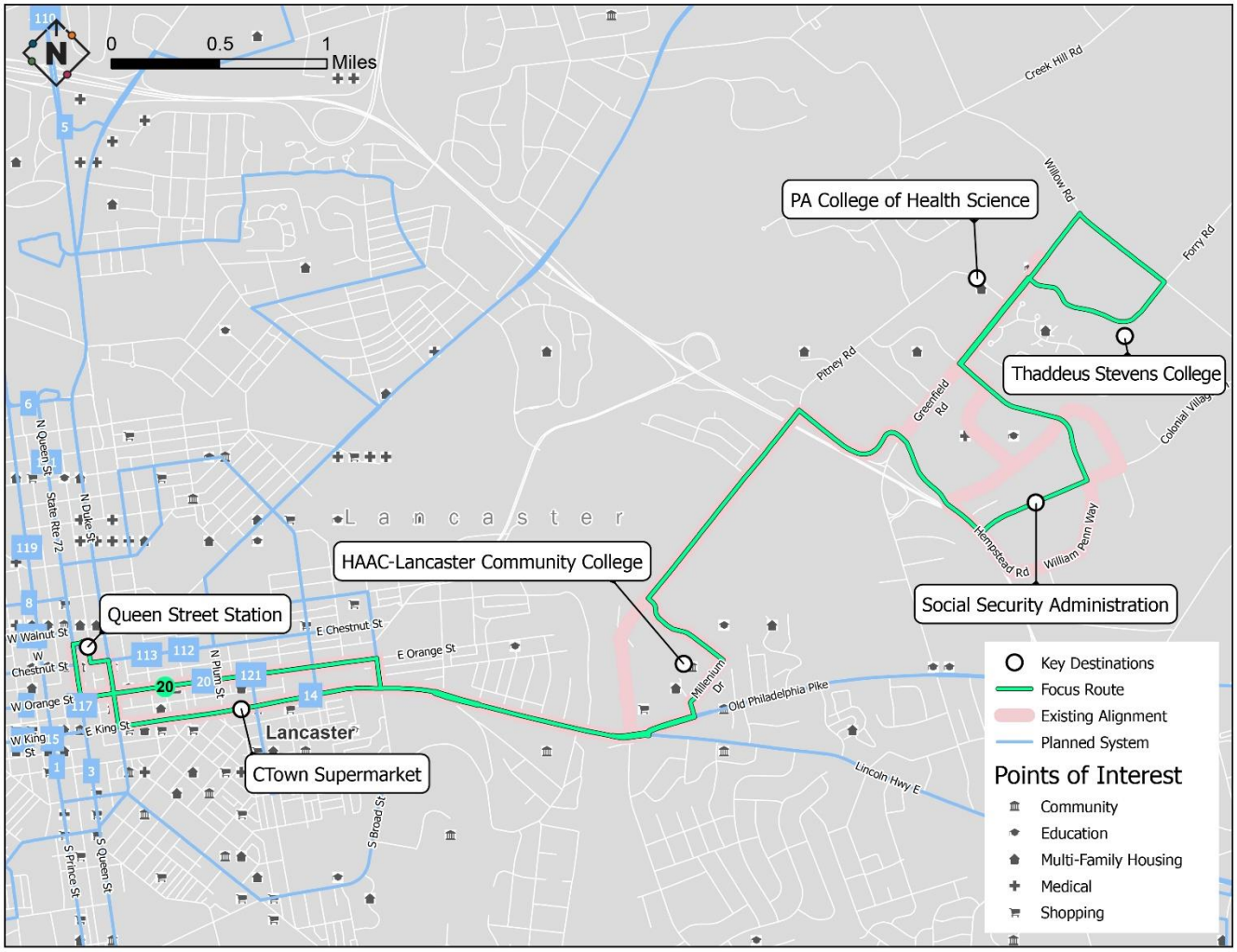
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	7:00 a.m. to 8:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 20/Greenfield Alignment



SERVICE RECOMMENDATIONS

Route 20 will be simplified to reduce one-way service in the Greenfield area. The route will connect downtown Lancaster to Harrisburg Area Community College (HACC-Lancaster), the Social Security Administration office, the PA College of Health Sciences, and the Thaddeus Stevens College Transportation Center. This route will be interlined with the proposed Route 15, and will have similar peak and off-peak frequencies.

Route 20 performs poorly overall compared to other RRTA routes and thereby warrants minor alignment changes. Improvements to the alignment and level of service will make Route 20 more efficient and useful for customers. Ridership on Route 20 is concentrated during the weekday peak periods, which warrants eliminating midday service, at least in the short-term. During the PM Peak period, service is offered every 60 minutes, whereas in the AM Peak period, service is offered every 45 minutes; the recommendations proposes making service consistent during the peak periods. Lower ridership per trip justifies reducing the level of service.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:20 a.m. to 6:10 p.m.	45	55
Saturday	-	-	-
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 5:00 p.m.	60	60
Sunday	-	-	-

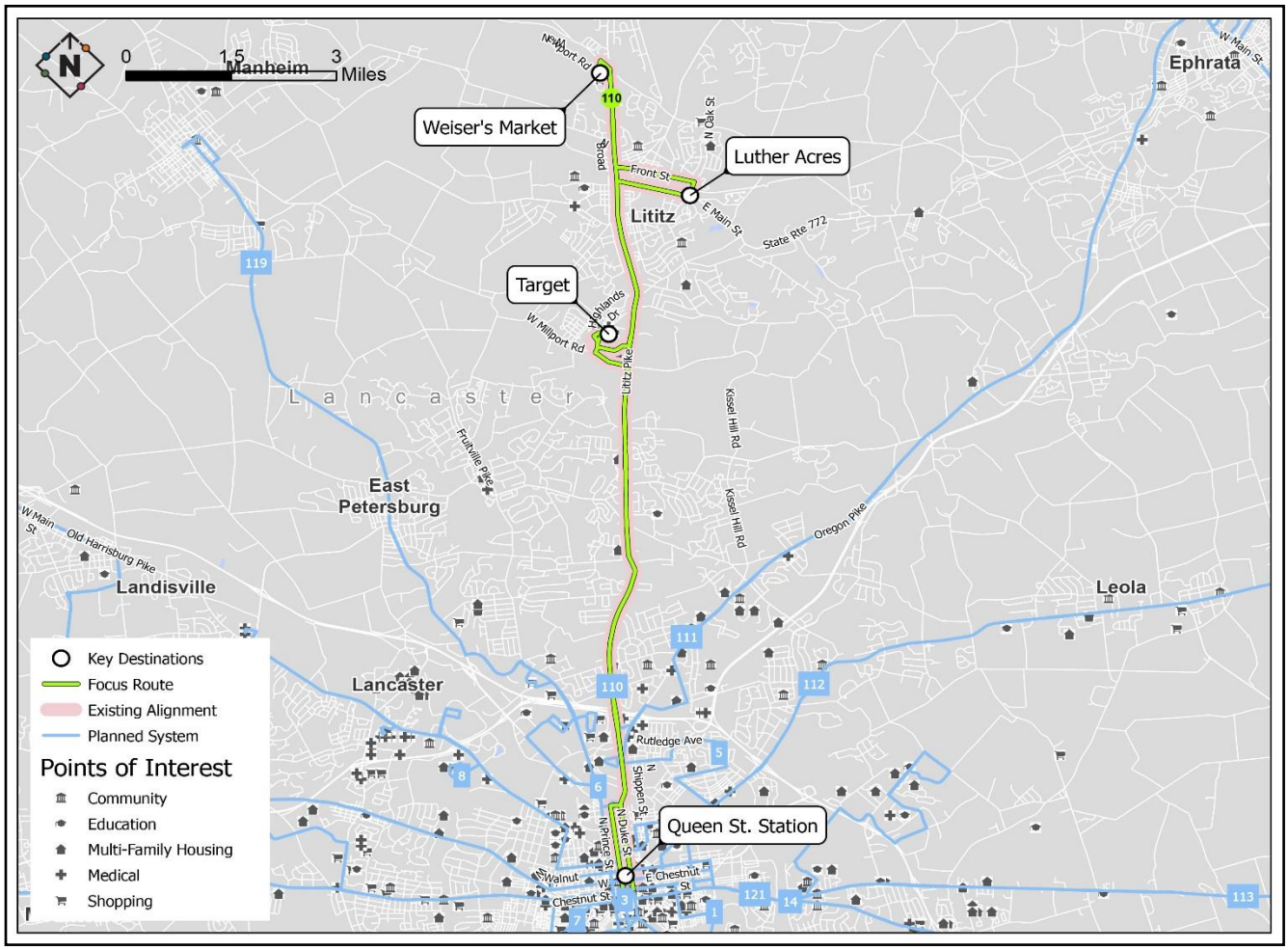
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 5:00 p.m.	60	60
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 6:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 110/Lititz Alignment



SERVICE RECOMMENDATIONS

Route 10 will be renumbered as Route 110 to highlight that it is a long-distance regional route. Otherwise, the route's service coverage remains mostly unchanged and will continue to operate between downtown Lancaster and Lititz via Lititz Pike. This route will be interlined with the proposed Route 111 and will have similar peak and off-peak frequencies.

Route 10 has consistent ridership along the full length of the route, thereby warranting only minor alignment changes. Route 10 performs moderately well on several productivity measures compared to other routes, indicated span and headway changes may be warranted. On weekdays, ridership is concentrated during the peak period, warranting peak-only service, at least in the short-term.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:10 a.m. to 6:35 p.m.	35	85
Saturday	6:45 a.m. to 6:40 p.m.	80	90
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Sunday	-	-	-

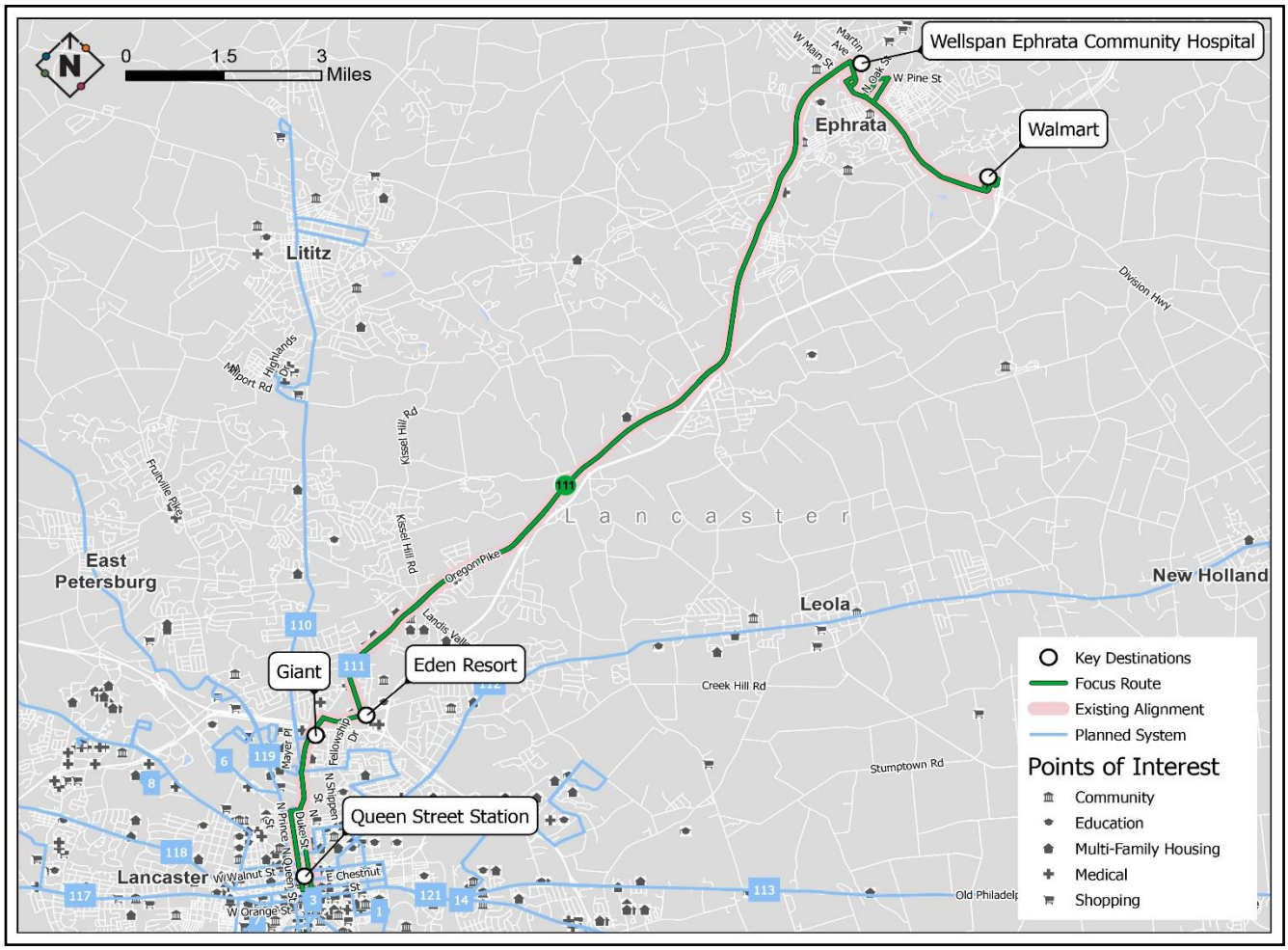
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 7:00 p.m.	60	60

Route 111/Ephrata Alignment



SERVICE RECOMMENDATIONS

Route 11 will be renumbered as Route 111 to highlight that it is a long-distance regional route. Otherwise, the route's service coverage remains mostly unchanged, providing service between downtown Lancaster and Ephrata via Reading Road and Oregon Pike. This route will be interlined with the proposed Route 110 and will have similar peak and off-peak frequencies.

Route 11 has consistent ridership across the full length of the route and thereby does not warrant any major alignment changes. However, the route performs moderately compared to other RRTA routes on several productivity measures, indicating the potential need for level of service changes. On weekdays, service operates infrequently throughout the service day and ridership is largely concentrated in the peak periods, warranting the elimination of midday service in the short term. On Saturdays, the route only runs 10 trips, split between the morning and afternoon, thereby justifying peak only service in the short-term.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:00 a.m. to 7:00 p.m.	60	120
Saturday	7:50 a.m. to 6:45 p.m.	6 trips	4 trips
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 PM to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 PM to 7:00 p.m.	60	-
Sunday	-	-	-

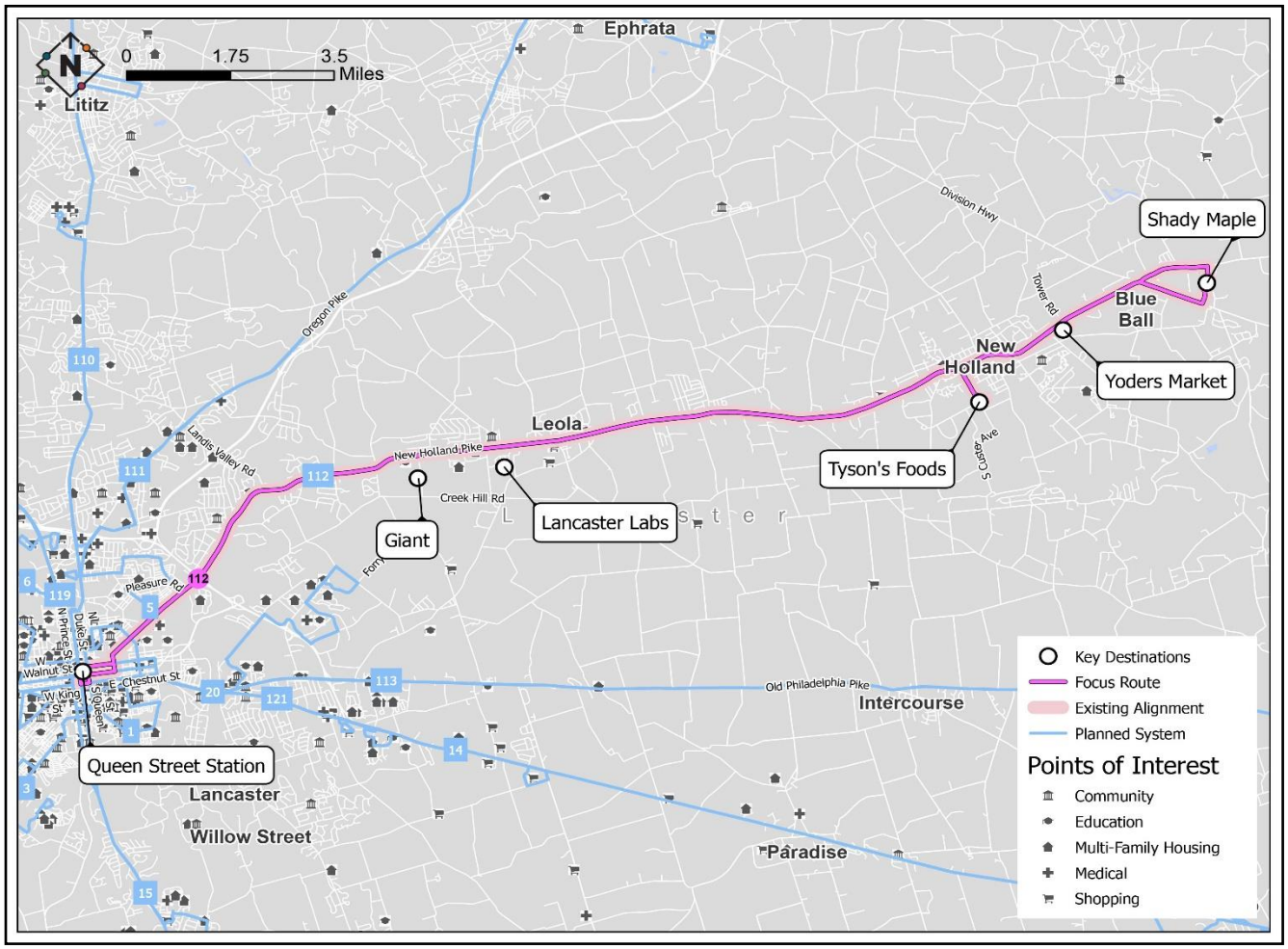
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 7:00 p.m.	60	60

Route 112/New Holland Alignment



SERVICE RECOMMENDATIONS

Route 12 will be renumbered as Route 112 to highlight that it is a long-distance regional route. Otherwise, the route's service coverage remains mostly unchanged, providing service between downtown Lancaster and New Holland via New Holland Pike.

Route 12 performs well overall compared to other RRTA routes and thereby does not warrant major alignment changes. The route operates at inconsistent service frequencies throughout the day on weekdays, with headways ranging from approximately 40-minute headways to 70-minute headways. On Saturdays, the route operates only 10 trips, five in each direction in the morning and afternoon. Relatively low ridership across all service days warrants a reduction in the span of service, at least in the short term; making headways consistent across the service days should make the route easier for customers to use.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:05 a.m. to 7:20 p.m.	45	90
Saturday	6:15 a.m. to 6:55 p.m.	5 trips	5 trips
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

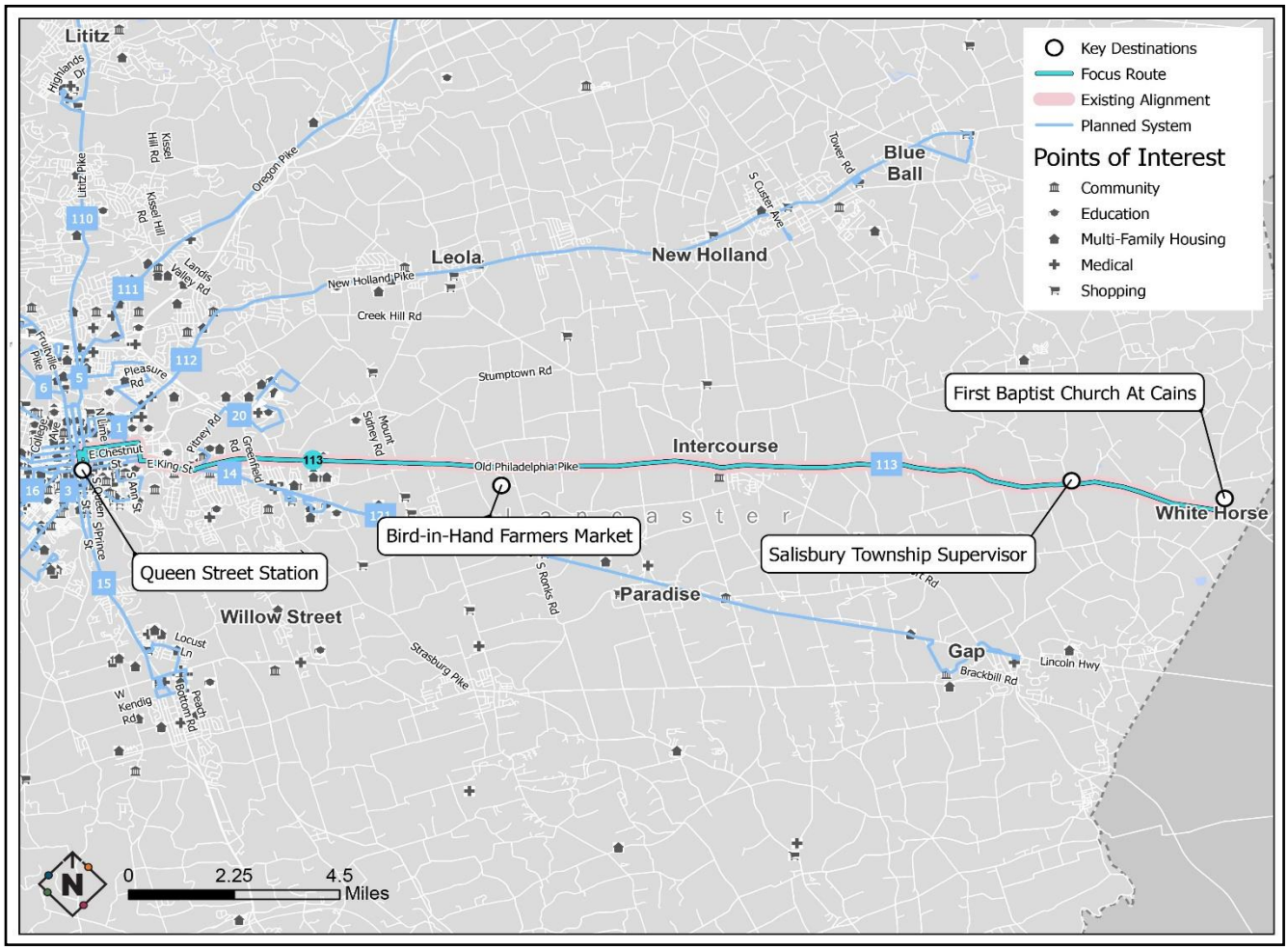
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 7:00 p.m.	60	60

Route 113/White Horse Alignment



SERVICE RECOMMENDATIONS

Route 13 will be renumbered as Route 113 to highlight that it is a long-distance regional route. The route's alignment is similar to existing service. This route will be interlined with proposed Route 121 and will have similar peak and off-peak frequencies.

Route 13 performs moderately overall compared to other RRTA routes; the route has consistent ridership across majority of the route. The route operates at inconsistent service frequencies throughout the day on weekdays, with headways ranging from approximately 70-minute headways to over 120-minute headways. Low ridership per trip outside of the weekday peak periods warrants limiting weekday service to the peak periods only in the short term. On Saturdays, the route operates only six trips, two in each direction in the morning and one in each direction in the afternoon. The route's higher ridership on Saturdays, compared to other RRTA routes, indicates potential for additional weekend service.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:30 a.m. to 6:35 p.m.	60	110
Saturday	6:30 a.m. to 5:15 p.m.	6 trips	-
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

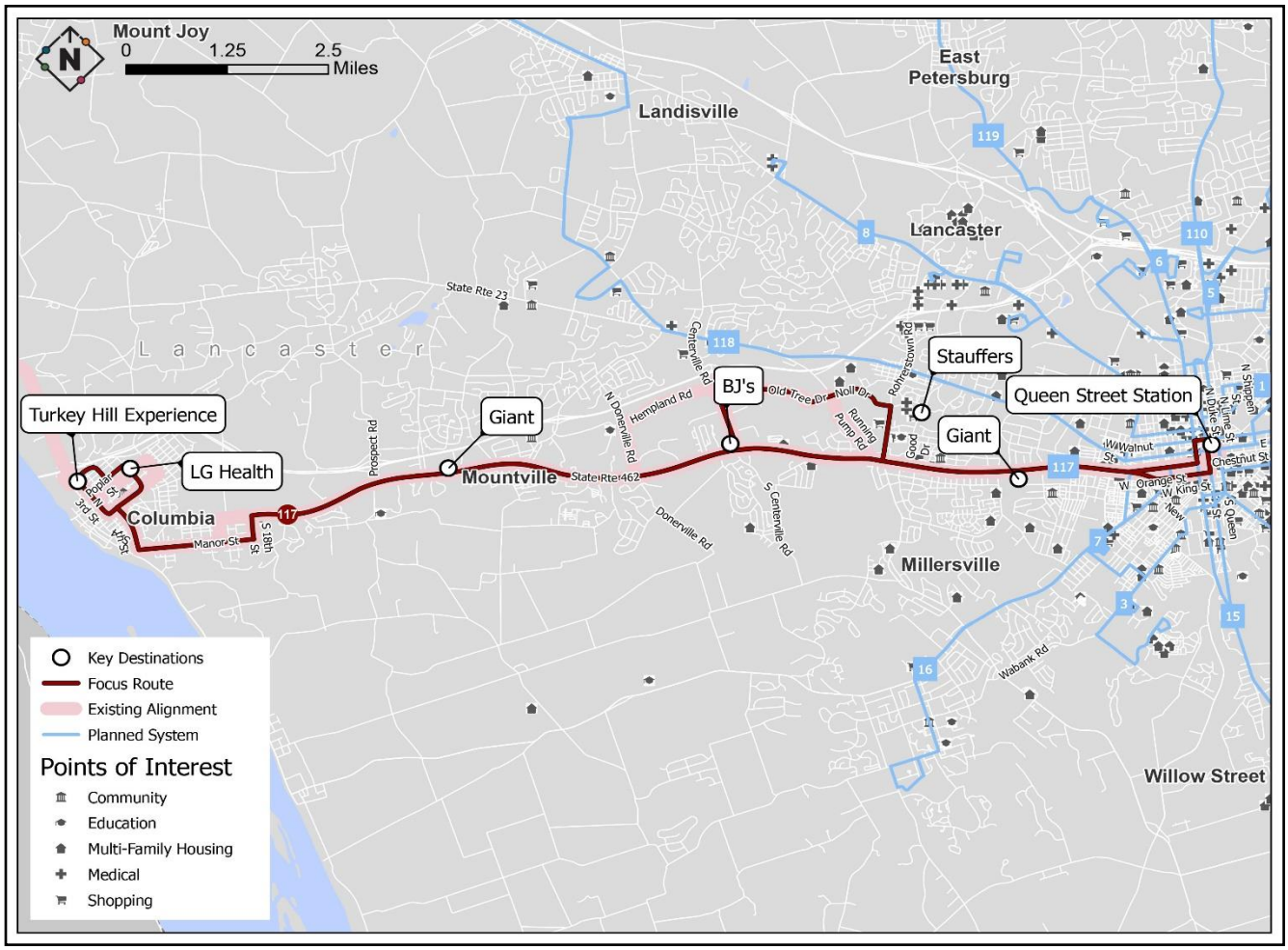
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 7:00 p.m.	60	60

Route 117/Columbia Alignment



SERVICE RECOMMENDATIONS

Route 17 will be renumbered as Route 117 to highlight that it is a long-distance regional route. The route will operate between downtown Lancaster and Columbia via State Route 462. Service between Columbia and Marietta, previously provided from Route 17, could be provided by a pilot microtransit service, pending further study on microtransit feasibility and implementaiton. Service will be added along Rohrerstown Road between Columbia Avenue and Noll Drive connecting back to Columbia Avenue through Centerville Road to serve Aldi, BJ's, and other employment and activity centers.

Route 17 performs well overall compared to other RRTA routes; however, ridership drops off west of Columbia, warranting the elimination of service between Columbia and Marietta. The area between Columbia and Marietta is well suited to microtransit service and could serve as a microtransit pilot area. Additionally, low ridership per trip during the weekday off-peak periods justify reducing headways during the off-peak periods from 30-minutes to 60-minutes.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	4:50 a.m. to 10:05 p.m.	30	30
Saturday	6:15 a.m. to 8:50 p.m.	35	70
Sunday	10:15 a.m. to 7:15 p.m.	45	45

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

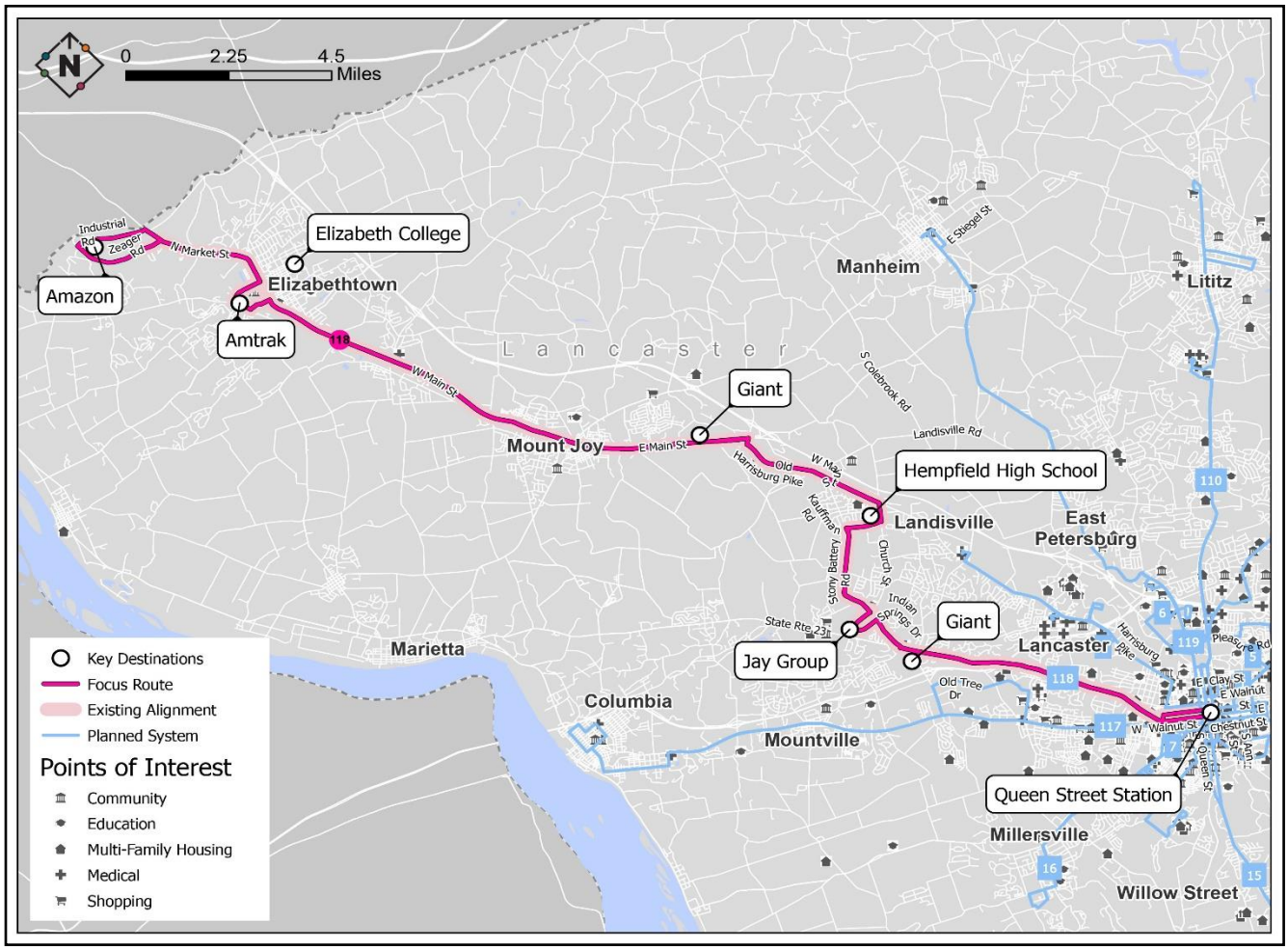
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 10:00 p.m.	30	60
Saturday	6:00 a.m. to 10:00 p.m.	60	60
Sunday	8:00 a.m. to 6:00 p.m.	60	60

Route 118/Elizabethtown Alignment



SERVICE RECOMMENDATIONS

Route 18 will be renumbered as Route 118 to highlight that it is a long-distance regional route. Route 118 will operate along a similar alignment to the existing Route 18, providing service between downtown Lancaster and Elizabethtown. The roue will continue to provide service to the Elizabethtown Amtrak station. The route will extend to Zeager Road and Industrial Road to serve the businesses in the industrial park, including Amazon and Nordstrom. This route will be interlined with the proposed Route 119 and will have similar peak and off-peak frequencies.

Route 18 performs moderately well overall compared to other RRTA routes, but it has relatively consistent ridership along the full length of the route. The route operates at inconsistent service frequencies throughout the day on weekdays, with headways ranging from approximately 60-minute headways to over 120-minute headways. On Saturdays, the route operates only four trips, one in each direction in the morning and afternoon. The connection to the Elizabethtown Amtrak station responds to feedback received during public outreach.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	4:55 a.m. to 7:15 p.m.	90	120
Saturday	6:30 a.m. to 3:10 p.m.	4 trips	-
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. – 7:00 p.m.	60	-
Saturday	7:00 a.m. – 9:00 a.m.; 3:00 p.m. – 5:00 p.m.	60	-
Sunday	-	-	-

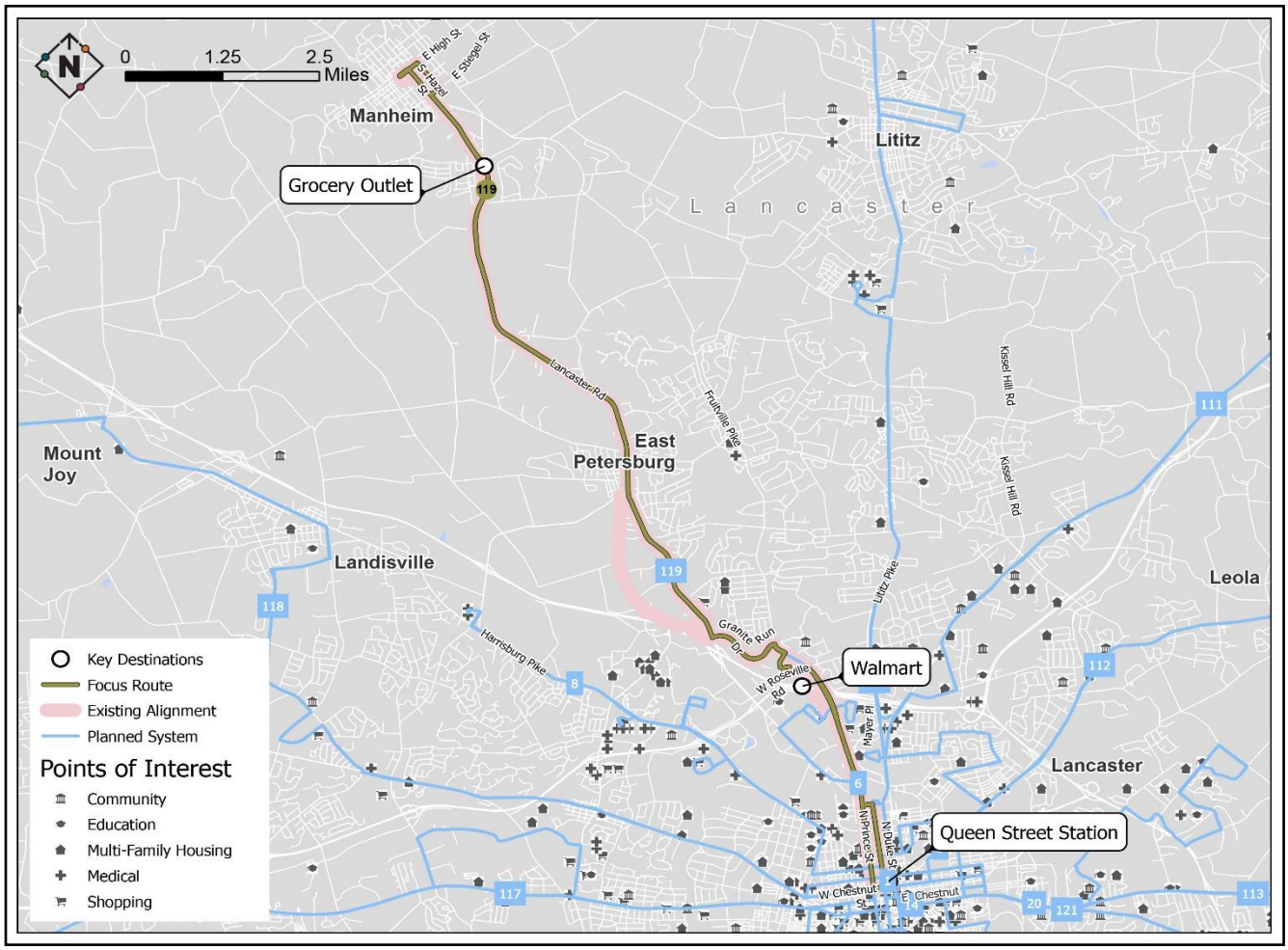
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 p.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 7:00 p.m.	60	60

Route 119/Manheim Alignment



SERVICE RECOMMENDATIONS

Route 19 will be renumbered as Route 119 to highlight that it is a long-distance regional route. The Route 119 alignment will be similar to the existing Route 19 alignment, providing service between downtown Lancaster and Manheim along Lancaster Road. In addition, Hawthorne Centre (Walmart) will be served from Fruitville Pike instead of entering the parking lot. This route will be interlined with the proposed Route 118 and will have similar peak and off-peak frequencies.

Route 19 performs moderately compared to other RRTA routes and thereby warrants minor alignment change as well as level of service adjustments. Service operates inconsistently throughout the day, with large gaps in trips and low ridership during the midday (between 9:00 a.m. and 3:00 p.m.), which warrants elimination of midday service in the short-term. Later start times on weekdays and Saturdays are a result of lower ridership per trip early the morning.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:10 a.m. to 7:15 p.m.	55	125
Saturday	8:20 a.m. to 4:20 p.m.	90	120
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

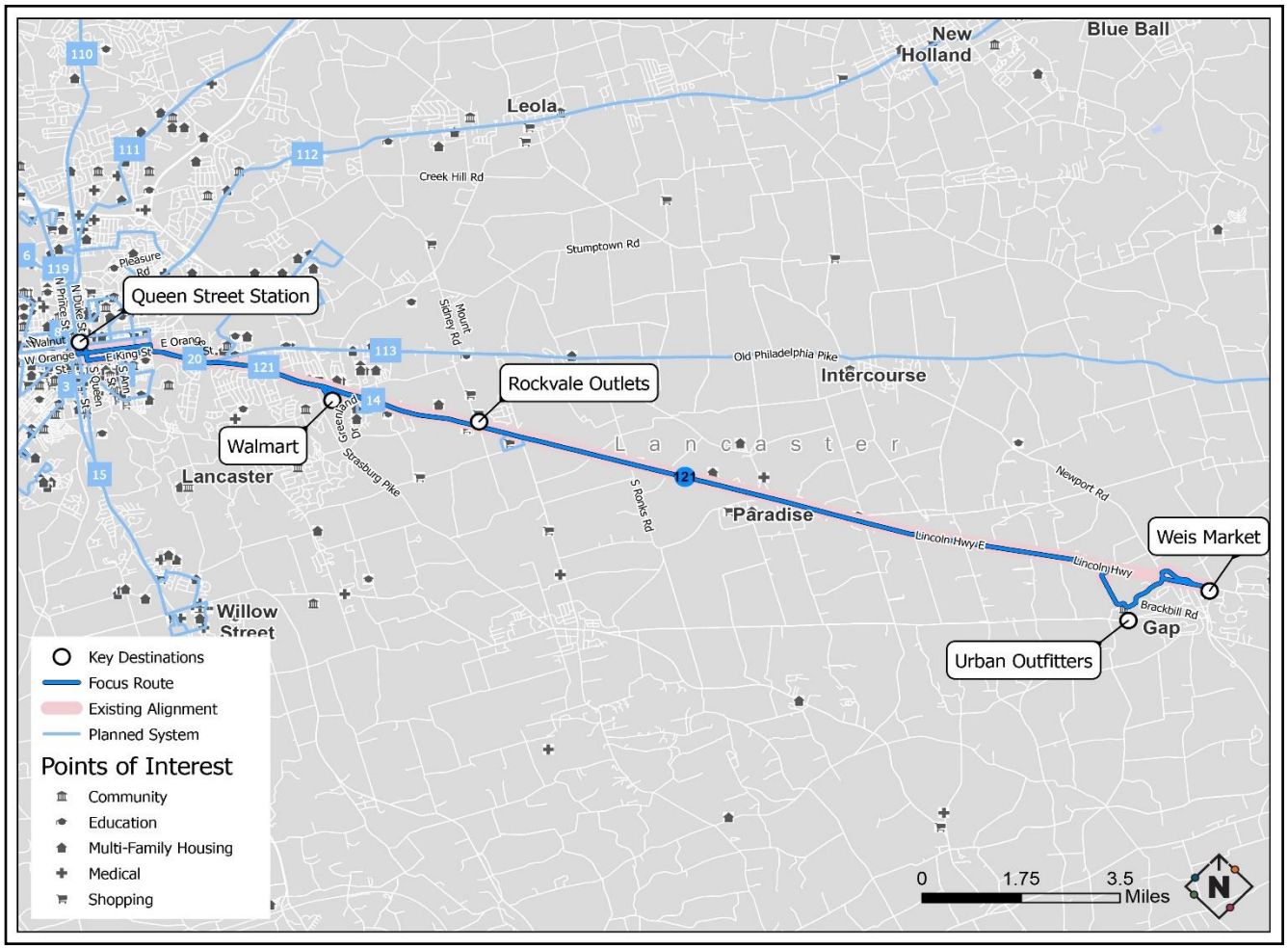
PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 7:00 p.m.	60	60

Route 121/Gap Alignment



SERVICE RECOMMENDATIONS

Route 21 will be renumbered as Route 121 to highlight that it is a long-distance regional route. Otherwise, the route's service coverage remains mostly unchanged, operating between downcast Lancaster and Gap along Lincoln Highway. This route will be interlined with proposed Route 113, which will have similar peak and off-peak frequencies.

Route 21 performs poorly overall compared to other RRTA routes, which warrants level of service adjustments. Service operates inconsistently throughout the day, with large gaps in trips and low ridership during the midday (between 9:00 a.m. and 3:00 p.m.), which warrants elimination of midday service in the short-term. Ridership is consistently strong in Gap, indicating that fixed-route service should be maintained in the area.

EXISTING LEVEL OF SERVICE

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY (MIN)
Weekday	5:05 a.m. to 5:35 p.m.	45	130
Saturday	6:00 a.m. to 6:30 p.m.	45	130
Sunday	-	-	-

PROPOSED LEVEL OF SERVICE

PHASE 1: SHORT-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 9:00 a.m.; 3:00 p.m. to 7:00 p.m.	60	-
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 2: MID-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	6:00 a.m. to 7:00 p.m.	60	60
Saturday	7:00 a.m. to 9:00 a.m.; 3:00 p.m. to 5:00 p.m.	60	-
Sunday	-	-	-

PHASE 3: LONG-TERM

DAY OF WEEK	SERVICE SPAN	PEAK HEADWAY (MIN)	OFF-PEAK HEADWAY
Weekday	5:00 a.m. to 7:00 p.m.	60	60
Saturday	6:00 a.m. to 7:00 p.m.	60	60
Sunday	8:00 a.m. to 7:00 p.m.	60	60

RRTA SERVICE CHARACTERISTICS

Like with the BARTA recommendations, The recommended fixed-route network for RRTA makes extensive use of interlining to optimize cycle times and ensure one-seat rides to key destinations. **Table 14** shows how interlining is used to optimize cycle times and ensure sufficient recovery times. Routes that are interlined are indicated with a plus (+) sign between them.

REVENUE HOURS, VEHICLE NEEDS, AND FINANCIAL ANALYSIS

Phase 1 of the recommended service scenario is designed to be cost-neutral, meaning that it can be implemented within the constraints of RRTA's current resources. However, as this document is intended to serve as a guide for service improvement, and the medium- and long-term recommendations go beyond RRTA's existing financial resources, the impacts of the recommendations are quantified in terms of revenue hours and peak vehicle needs rather than dollars. This approach allows the document to remain relevant over time, even as operating costs may fluctuate.

The recommendations presented provide one option for phasing in new service, as proposed in this TDP; however, the recommendations are intended to be flexible and can be implemented based on availability of resources and ridership demand. The service recommendations are broken into packages, as laid out in **Table 16**. Packages are individual routes or groups of routes that are linked to one another. Changes on routes in a package must happen simultaneously to ensure that coverage is maintained as routes are realigned. Further, realigning routes that are interlined simultaneously will ensure that SCTA will see the operational efficiencies of interlining immediately, even if span and frequencies are not improved.

Table 16: RRTA Recommendations Packages

RECOMMENDATIONS PACKAGE	ROUTES INCLUDED
Package 1	Route 1, Route 3, Route 5, Route 6, Route 7, Route 8, and Route 16
Package 2	Route 14
Package 3	Route 15 and Route 20
Package 4	Route 110 and Route 111
Package 5	Route 112
Package 6	Route 113 and Route 121
Package 7	Route 117
Package 8	Route 118 and Route 119
Package 9	Columbia/Marietta Microtransit Pilot Zone

Table 17 below shows the annual revenue hours, peak vehicle needs, and the estimated annual cost associated with each route or route pair in each of the three implementation phases. In FY 2023, RRTA operated 116,997 annual revenue hours for a total operating cost of $12,145,560, which made the average operation cost of $103.83 per revenue hour. These FY 2023 totals serve as a baseline from which the recommendations are built.

Overall, the Phase 1 improvements increase annual revenue hours and the estimated cost of the service by less than two percent. The Phase 2 recommendations increase revenue hours and operating cost by 12 percent compared to FY 2023 service. In Phase 3 annual revenue hours and annual operating cost will increase by 40 percent.

Table 17: Revenue Hours and Vehicle Needs by Phase - RRTA

ROUTES	ANNUAL REVENUE HOUR	WEEKDAY PEAK VEHICLE NEED	ESTIMATED ANNUAL COST ($1000s)
Phase 1 - Short Range			
Route 1	12,220	2	$1,269
Route 3 + 8	10,192	2	$1,058
Route 5 + 16	14,352	4	$1,490
Route 6	6,916	2	$718
Route 7	4,836	1	$502
Route 14	16,380	3	$1,707
Route 15 + 20	6,760	2	$702
Route 110 + 111	6,084	3	$632
Route 112	7,176	2	$745
Route 113 + 121	8,112	4	$842
Route 117	13,936	4	$1,447
Route 118 + 119	8,112	4	$842
Total	118,716	33	$11,948
Phase 1 Change from Existing	**1,739**	**-**	**$197**
Phase 1 % Change from Existing	**1.49%**	**-**	**1.63%**
Phase 2 - Mid Range			
Route 1	12,220	2	$1,269
Route 3 + 8	10,712	2	$1,112
Route 5 + 16	14,352	4	$1,490
Route 6	7,176	2	$745
Route 7	4,836	1	$502
Route 14	17,004	3	$1,765
Route 15 + 20	4,680	2	$486
Route 110 + 111	10,764	3	$1,118
Route 112	7,176	2	$745
Route 113 + 121	14,352	4	$1,490
Route 117	13,416	4	$1,393
Route 118 + 119	14,352	4	$1,490
Total	137,800	33	$13,606
Phase 2 Change to Existing	**20,823**	**-**	**1,460**
Phase 2 % Change to Existing	**17.80%**	**-**	**12.02%**
Phase 3 - Long Range			
Route 1	12,896	2	$1,339
Route 3 + 8	15,288	4	$1,587
Route 5 + 16	14,664	4	$1,523
Route 6	7,644	2	$794
Route 7	6,708	2	$696
Route 14	18,720	3	$1,944
Route 15 + 20	9,048	2	$940
Route 110 + 111	14,664	3	$1,523

ROUTES	ANNUAL REVENUE HOUR	WEEKDAY PEAK VEHICLE NEED	ESTIMATED ANNUAL COST ($1000s)
Route 112	9,776	2	$1,015
Route 113 + 121	19,552	4	$2,030
Route 117	15,704	4	$1,631
Route 118 + 119	19,552	4	$2,030
Total	170,976	36	$17,050
Phase 3 Change to Existing	**53,999**	**-**	**4,905**
Phase 3 % Change to Existing	**46.16%**	**-**	**40.38%**

PUBLIC AND STAKEHOLDER FEEDBACK

SCTA held three sessions to engage the community regarding the recommended changes to RRTA service. Full summaries of the feedback received during the stakeholder meeting and public meetings are available in **Appendix H**.

Attendees provided feedback on the proposed service changes, including the following comments on specific routes:

- Some participants expressed concern that new routing on Route 1 will increase travel time between Queen Street Station and Amtrak.
- One commenter thanked the planning staff for responding to earlier comments in support of adding service to Lancaster Medical Center.
- Multiple attendees suggested adding stops closer to Willow Valley, a large senior community, on Route 15.
- Some participants disapproved of the decision to eliminate service at the Amtrak station in Elizabethtown on Route 118. The facilitators responded that no ridership activity at the station was recorded; however, as a result of the feedback, service was added back to the Elizabethtown Amtrak station.
- Representatives of Elizabethtown College expressed support for locating bus stops closer to campus. The facilitators noted that the current plan includes for stops within a couple of blocks.
- One attendee observed that some seniors and people with disabilities may have trouble walking the distance needed to cross large parking lots, and consequently lamented the decision to remove the deviation into Red Rose Commons on Route 119.
- Another commenter noted that redevelopment in Manheim Pike east of Fruitvale Pike might increase demand for transit in that area. The facilitators noted that current ridership in that area is low.

Many commenters had questions about the proposed microtransit pilot and potential permanent microtransit zones.

At least seven people at the virtual meeting expressed support for a cross-county route that connects Manheim, Lititz, Akron, and Ephrata without having to transfer downtown. Several commenters said they would like to see increased frequency and additional service at nights and on weekends. Other participants shared concerns about the system's on-time performance.

Microtransit Potential

In Berks County and Lancaster County there are opportunities to leverage technology and implement new types of transit service in the region, including microtransit. While microtransit vehicles are typically smaller and have a lower passenger carrying capacity than traditional fixed-route transit vehicles, the service can provide more coverage than fixed-route service as vehicles are not tied to specific routes. These features fit well with the current market for transit service in the region, where demand is still too low to justify some of the regional routes, leaving some communities without any service at all. In addition, microtransit's flexibility allows it to serve as a market probe, gauging the growth of ridership demand geographically and over time. As service evolves and matures, microtransit service can be adjusted by modifying service zones and/or fleet characteristics (number of vehicles, size of vehicles, percentage of wheelchair accessible vehicles, etc.), or the service can be replaced by fixed-route service where appropriate.

Microtransit can provide new and enhanced transit service that connects townships and provides local circulation to jobs and other destinations throughout both Berks and Lancaster Counties. In particular, the townships located outside of the City of Lancaster and Reading, where transit demand is lower and the road network is auto-oriented, are likely to benefit most from new microtransit service. Based on a high-level microtrnasit feasibility analysis conducted as part of this TDP, several areas arose as having microtransit potential. In Lancaster County, microtransit is recommended for the Columbia/Marietta area as well as along the Route 772 corridor, connecting Mount Joy, Manheim and Lititz, and along the Route 322 corridor, connecting Akron, Ephrata, and New Holland (**Figure 35**). In Berks County, microtransit service could be implemented in the Birdsboro area (**Figure 36**). Before SCTA moves forward with any microtransit implementation, additional analysis is required to confirm where microtransit is most feasible in the region as well as a recommended operating model for the new service.

Microtransit Implementation

This TDP includes recommendations for where microtransit is likely to succeed. If funding is available, microtransit service can be implemented quickly, especially if it is launched as a pilot program. Because microtransit service is a new mode for the region, conducting a pilot first will be beneficial. A microtransit pilot will provide SCTA, RRTA, and BARTA with a better understanding of what may or may not work in the region and strategies for implementing such a service on a larger scale. Based on the high-level analysis, microtrasnit service is estimated to cost between $500,000 and $750,000 annually per zone; however, this estimate should be confirmed through further study.[6]

[6] These cost estimates are high-level estimates; actual costs will depend on expected demand, vehicle need, and the operating model. Additional analysis will be required to determine the exact cost of these additional zones once it is determined that these zones will move forward.

Figure 35: Proposed Microtransit Zones - Lancaster County

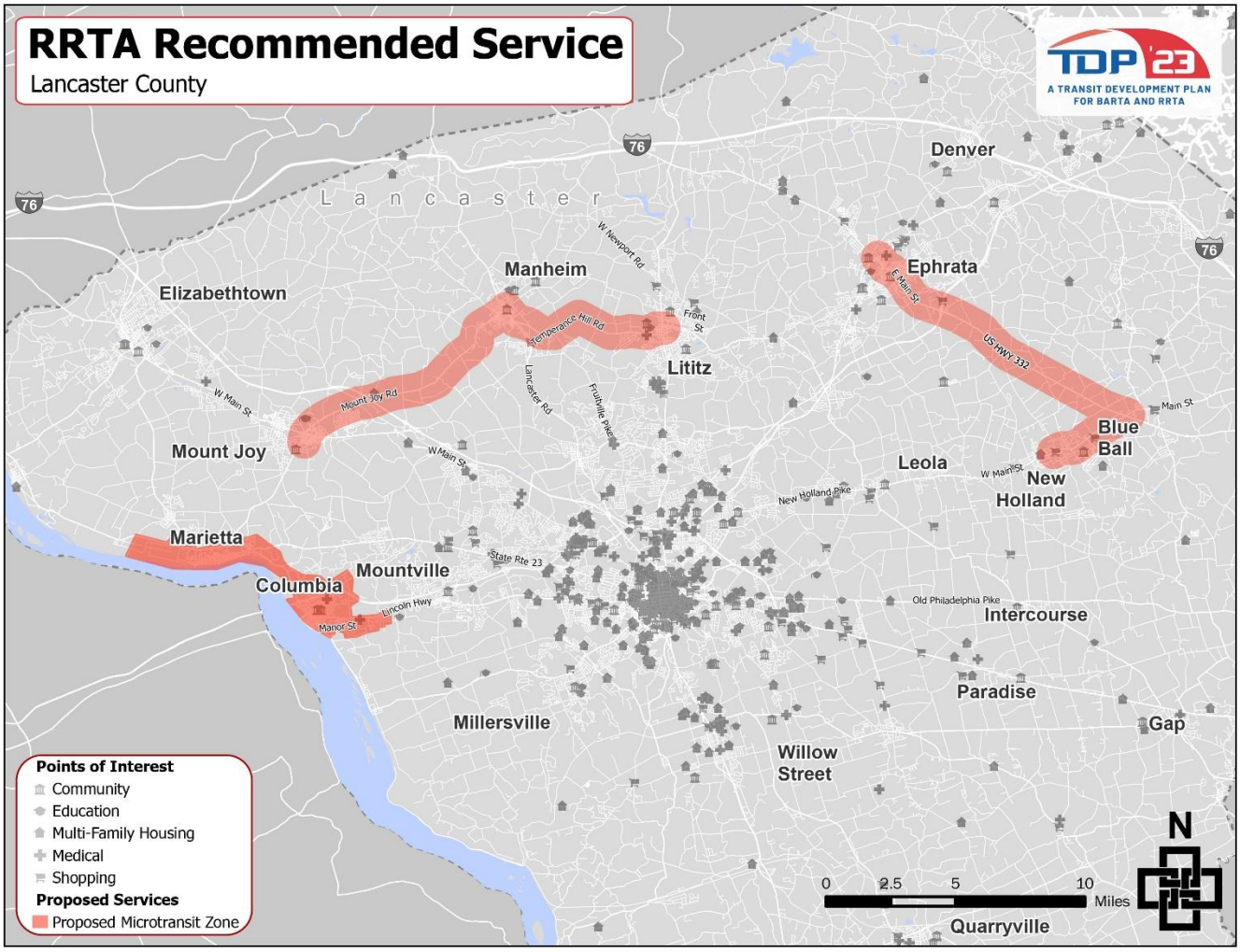
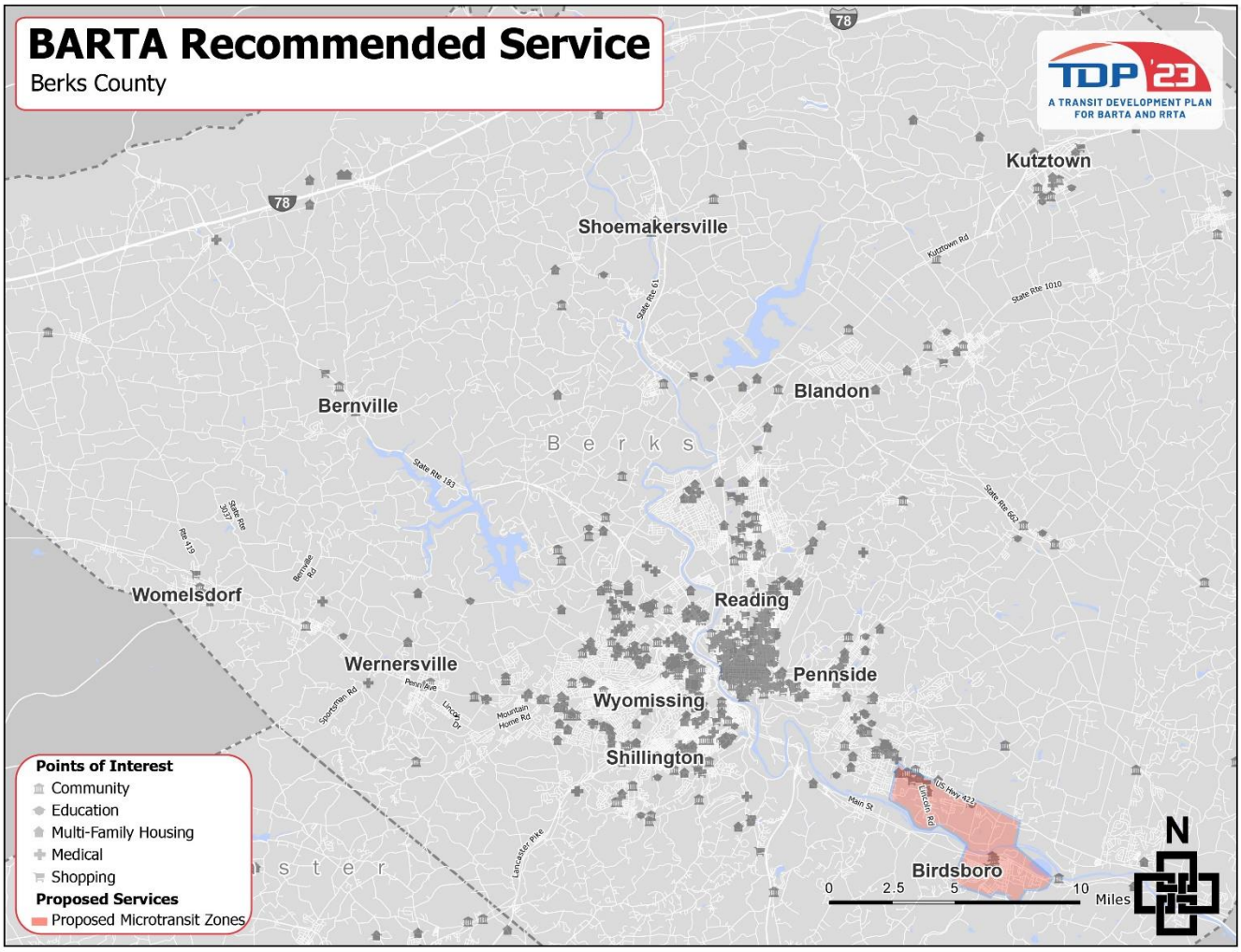


Figure 36: Proposed Microtransit Zones - Berks County



Capital Improvements

Implementing the service recommendations in both Lancaster and Berks Counties will require some capital investments. These investments will take time to implement may require additional study; however, they will enhance the service provided by BARTA and RRTA and improve the customer experience. While all improvements do not need to happen at once, it is important to begin capital investments as part of Phase I, including investing in bus stops and vehicles and beginning studies to design and build new mobility hubs. The only capital investments tied to specific phases are vehicle investments; BARTA and RRTA will need to purchase additional vehicles prior to implementing some service recommendations.

MOBILITY HUBS

BARTA and RRTA networks each include two primary transit hubs: BARTA Transit Center in downtown Reading and Queen Street Station in downtown Lancaster. Due to the hub and spoke nature of both the BARTA and RRTA fixed-route networks, nearly all routes in both systems will terminate or pass through the

transit centers in their respective service areas. The recommendations for both systems envision additional mobility hubs to facilitate transfers between routes as well as between fixed-route and future microtransit services. The recommended mobility hubs include:

- BARTA
  - North Reading Plaza (Walmart): connection to Route 1, Route 3, and Route 122
  - Kenhorst Plaza (Redner's): connection to Route 9 and Route 10
  - Ollie's Bargain Outlet on Lancaster Pike: connection to Route 11 and Route 12
- RRTA
  - Walmart on Fruitville Pike: connection to Route 6 and Route 119
  - Walmart on Lincoln Highway: connection to Route 14 and Route 121

Each of these locations are important regional destinations where riders want to go, regardless of whether they want to transfer to another route that serves that location. By co-locating transit hubs and activity centers, transit riders can be productive and complete shopping and other errands while they wait for their connecting service. As new services are implemented and both the BARTA and RRTA transit networks evolve, additional mobility hubs could be implemented at high ridership locations.

To designate a location as a mobility hub and help support passenger activity, SCTA, BARTA, and RRTA could invest in enhanced shelters and other capital improvements at each location. Key elements to have at each location include a station or sign marker, bus shelter, seating, trash receptacles, and lighting. Other features that could be incorporated include landscaping and bike racks. The cost of installing a mobility hub will vary depending on the elements included. SCTA will collaborate with each municipality on the design of the mobility hub to ensure that it fits with the community characteristics.

BUS STOPS

In addition to mobility hubs, the study team also recommends investing in basic bus stop infrastructure across the system. In particular, both BARTA and RRTA utilize a flag stop model, especially outside of Reading and Lancaster. During the first phase of engagement, the public and stakeholders indicted that the flag stop system can be challenging to understand and can limit customer's ability to easily use the bus. While it is not required that every bus stop have a bench or shelter, especially those that are infrequently used by customers, installing signs at all stop locations could improve a customer's ability to ride the bus. Bus signs along with a post cost approximately $100 each. Installing a shelter would add to costs but could be beneficial at higher use stops. A small shelter costs approximately $11,000, with some additional costs for installation.

PEDESTRIAN ENVIRONMENT

Additionally, SCTA, in partnership with municipalities and counties, could further improve the customer experience by investing in sidewalk infrastructure, sidewalk lighting, and pedestrian crossings. These investments will improve the pedestrian environment overall and will make accessing the bus safter for customers. Most bus riders are pedestrians for some portion of their journey, and a safe and comfortable walking environment can help encourage overall transit use. Investments to pedestrian infrastructure is especially important along some of the major thoroughfares that the proposed BARTA and RRTA networks will operate, where speed limits can exceed 40 miles per hour and pedestrians may be required to cross

five or more lanes of traffic. Depending on the extent of sidewalk investments, the costs could be significant; however, these costs could be shared among multiple public entities.

VEHICLES

The service recommendations will trigger the need for additional vehicles in later phase, a significant capital investment for the agency. While the proposed service includes recommendations to make service more efficient from an operating perspective, the full implementation of recommendations will increase service substantially, which will result in the need for additional vehicles.

Table 18 presents the additional fixed-route vehicle need for expanded BARTA and RRTA by phase. This data does not account for the regular replacement of existing vehicles in BARTA and RRTA's fleets; rather it highlights how many additional vehicles will be needed to operate the proposed fixed-route service. Neither BARTA nor RRTA will require additional fixed-route vehicles to implement the Phase 1 recommendations; however, RRTA will need two additional vehicles to operate microtransit service in the proposed Columbia/Marietta zone. While service does increase substantially over the three phases of implementation, many of the service recommendations focus on weekday off-peak and weekend service improvements, as well as a trimming down of unproductive alignments. As a result the total additional vehicle need by phase is modest. A fixed-route transit bus costs between $800,000 and $900,000.

Table 18: Additional Fixed-Route Vehicle Needs by Phase

PHASE	BARTA	RRTA
Phase 1	-	-
Phase 2	1 vehicle	-
Phase 3	9 vehicles	3 vehicles
Total	**10 vehicles**	**3 vehicles**

Because service is increasing, a vehicle may reach its useful life benchmark for milage faster than it currently does, which could impact replacement schedules. In addition, transitioning the fleet from diesel or propane to a battery electric fleet could also impact vehicle costs and require additional capital investments for charging. Battery electric transit buses can cost over $1 million each; one charger can all cost over $1 million.

Anticipated Impacts of Final Recommendations

When fully implemented, the service recommendations will transform the transit networks for both BARTA and RRTA. While some service will be eliminated in unproductive route segments; increased headways and extended hours of service on multiple routes will improve transit service in areas where it is most likely to succeed. The following presents an analysis of the impacts of the final service recommendations to better gauge how the changes to the transit networks will affect transit riders.

BARTA

Once fully implemented, the service recommendations for BARTA will enhance service frequency on numerous routes, especially during weekday peak periods and on weekends (**Table 19**). Currently, during the weekday peak period, only 12 of BARTA's 19 fixed routes have a peak frequency of 30 minutes or better. Once the recommendations are fully implemented after Phase 3, 15 of the 17 proposed routes will

have peak frequencies of 30 minutes or better on weekdays. On Saturdays, three additional routes will have 30-minute service, and on Sundays, one additional route will have 30-minute service.

Table 19: Number of Routes with Greater Than 30 Minutes Service - BARTA

	WEEKDAY PEAK	SATURDAY PEAK	SUNDAY PEAK
Existing	12	5	2
Proposed	15	8	3

In addition, as **Table 20** shows, the proposed changes would increase the availability of transit service outside weekday peak periods. Currently, the transit service during off-peak periods is not as good as during peak periods, especially on Sundays, when only 6 out of 19 routes provide service. As an improvement, the proposed service would ensure that all 17 proposed routes provide at least 60-minute service on Sundays. Three routes would offer 30-minute service during peak periods on Sundays to enhance accessibility. In addition to improving off-peak service coverage, the proposed service would also provide consistent headways across all routes, as opposed to BARTA's current service, which operates with off peak headways of 45, 75, or 95 minutes. Implementing consistent 30- and 60-minute headways on all routes makes service more reliable and predicable for customers.

Table 20: Number of Routes with Regular 30- or 60-Minutes Service - BARTA

	WEEKDAY PEAK	WEEKDAY OFF-PEAK	SATURDAY PEAK	SATURDAY OFF-PEAK	SUNDAY PEAK	SUNDAY OFF-PEAK
Existing	17	13	15	14	6	6
Proposed	17	17	17	16	17	17

As illustrated in **Table 21** the proposed service improvements would increase the number of people and jobs with access to reliable 30-minute service on weekdays and weekends. The improvements are most noticeable on weekends over 40 percent of people on Saturdays and 80 percent of people on Sundays would be within a 10-minute walk of bus routes that operate every 30-minutes.

Additionally, the service recommendations will ensure several key points of interest in Berks County are served by transit, which are not currently served. This includes Kutztown University, Kutztown Area High School, and Lehigh Valley Health Center. All of these destinations are served by the new Route 122.

Table 21: Additional Accessibility to Frequent Service - BARTA

	POPULATION CHANGE	JOBS CHANGE	SENIOR POPULATION CHANGE	MINORITY POPULATION CHANGE	DISABILITY POPULATION CHANGE	HOUSEHOLD WITH POVERTY CHANGE	LIMITED CAR ACCESS HOUSEHOLD CHANGE
Weekday Peak Periods with Greater Than 30 Minutes Service	0%	2%	0%	3%	2%	2%	0%
Saturday Peak Periods with Greater Than 30 Minutes Service	43%	11%	37%	46%	6%	7%	26%
Sunday Peak Periods with Service	83%	52%	101%	35%	46%	55%	30%

Based on the point of interest analysis, the supplemental points of interest integrated into the BARTA service are predominantly facilitated by the proposed Route 122. This includes coverage of Kutztown University of Pennsylvania, Kutztown Area High School, Lehigh Valley Health Center, as well as various libraries such as Kutztown Community Library and Rohrbach Library. Conversely, the curtailed coverage of points of interest is mainly observed in areas like apartment complexes and recreational spaces such as parks and fitness facilities.

RRTA

Like the improvements on BARTA, the recommendations proposed for RRTA will increase service frequencies and span of service on numerous RRTA routes. Currently, during the weekday peak period, 5 out of 18 routes have service frequencies of 30-minutes or better. Once the service recommendations are fully implemented after Phase 3, 9 out of 18 routes will have service frequencies of 30-minutes or better. When the service recommendations are fully implemented, an additional three routes will have 30-minute frequencies on Saturdays and one additional route will have 30-minute frequencies on Sundays (**Table 22**).

Table 22: Number of Routes with Greater Than 30 Minutes Service - RRTA

	WEEKDAY PEAK	SATURDAY PEAK	SUNDAY PEAK
Existing	5	2	1
Proposed	9	5	2

In addition, RRTA's proposed service plan provides more comprehensive and regular coverage of service overall. Currently, 6 out of 18 RRTA routes provide service less than every 60-minutes during the off-peak period on weekdays. These routes have service frequencies between 85 and 110 minutes. In the proposed service plan, as shown in **Table 23**, these routes all have headways of 60-minutes or better during the off-peak periods.

Table 23: Number of Routes with Regular 30- or 60-Minute Service - RRTA

	WEEKDAY PEAK	WEEKDAY OFF-PEAK	SATURDAY PEAK	SATURDAY OFF-PEAK	SUNDAY PEAK	SUNDAY OFF-PEAK
Existing	16	10	9	2	4	5
Proposed	18	18	18	18	18	18

As illustrated in **Table 24**, the proposed service improvements would increase the number of people and jobs with access to reliable 30-minute service on weekdays and weekends. On weekdays, the number of people within a 10-minute walk to 30-minute or better transit service increases by nearly 25 percent compared to existing. Improvements are even more pronounced on weekends; over 50 percent more people on Saturdays and over 150 percent more people on Sundays will have access to 30-minute service once the recommendations are fully implemented.

Additionally, the service recommendations will ensure key points of interest in Lancaster County are served by transit, which are not currently served. This includes Penn State Health Lancaster Medical Center, Houston Run Community Center, Colebrook Apartments, and Loose Caboose Campground.

Table 24: Additional Accessibility to Frequent Service - RRTA

	POPULATION CHANGE	JOBS CHANGE	SENIOR POPULATION CHANGE	MINORITY POPULATION CHANGE	DISABILITY POPULATION CHANGE	HOUSEHOLD WITH POVERTY CHANGE	LIMITED CAR ACCESS HOUSEHOLD CHANGE
Weekday Peak Periods with Greater Than 30 Minutes Service	23%	17%	27%	27%	10%	19%	7%
Saturday Peak Periods with Greater Than 30 Minutes Service	54%	14%	55%	56%	1%	20%	19%
Saturday Off Peak Periods with Greater Than 30 Minutes Service	48%	49%	29%	57%	29%	57%	33%
Sunday Peak Periods with Service	164%	132%	210%	57%	124%	152%	123%

Conclusions and Next Steps

The recommendations included in this TDP will transform BARTA and RRTA's transit networks by addressing several key challenges that both agencies face. Additionally, they will make transit service in the region more efficient, effective, and useful to those who rely on it.

The transit service recommendations focused on several key themes, including:

- Providing more consistent span of service and frequencies across all routes.
- Reallocating services to be less concentrated during peak periods and provide additional service during off-peak periods and weekends.
- Interlining routes for efficiency gains.
- Simplifying route alignments and eliminating one-way loops.

Once fully implemented, after Phase 3, the proposed transit networks will provide simple and consistent service in Berks and Lancaster Counties. RRTA will operate over 170,000 revenue hours annually across 18 fixed routes; BARTA will operate nearly 200,000 revenue hours annually across 19 fixed routes. Additionally, 15 of the 19 BARTA routes and nine of the 18 RRTA routes will have 30-minute peak period service. Seventeen of the BARTA routes and 18 of the RRTA routes will have consistent 30-minute or 60-minute service during the off-peak periods and on weekends. These service changes are coupled with capital investments that will improve the passenger experience and make walking to and waiting for the bus safer and more convenient for BARTA and RRTA customers.