# LANTA Transit First









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# **Abbreviations**

EBS	Enhanced Bus Service
LANTA	Lehigh and Northampton Transportation Authority
PCIT	Pennsylvania Crash Information Tool
PennDOT	Pennsylvania Department of Transportation
TIRe	Traffic Information Repository
TSAMS	Traffic Signal Asset Management System
LVPC	Lehigh Valley Planning Commission
TSP	Transit Signal Priority
BRT	Bus Rapid Transit
RRFB	Rectangular Rapid Flashing Beacon
HAWK	High Intensity Activated CrossWalk
BAT	Business Access and Transit



# **1. Existing Conditions**

### Introduction

The LANTA Transit First Corridor Plan is an agency plan for the Lehigh and Northampton Transportation Authority (LANTA) that identifies high-value projects for corridor segments along the Blue Line and Green Line corridors that could increase ridership, travel speed, safety, and/or rider comfort and convenience. The LANTA Transit First Corridor Plan is comprised of several components including existing conditions resarch, identifying project inventory & development, and stakeholder outreach. This plan is intented to facilitate coordination between LANTA. PennDOT. municipalities, and other stakeholders as parties move forward on potentially related improvement projects ensuring that they include these key transit investments. The project inventory and recommended next steps can help all parties to incorporate transit-friendly designs in a resourceefficient manner.

### **Overview**

LANTA (Lehigh and Northampton Transportation Authority) serves the metropolitan area within the Counties of Lehigh and Northampton. The agency provides fixed-route service for all, and more than 380,000 people live within walking distance of a LANTA bus route.

LANTA was created in March of 1972 by Lehigh and Northampton Counties – where the authority was responsible for the transit system formerly owned and operated by Lehigh Valley Transit Company.

LANTA provides 30 fixed-route bus services spanning from 5:30 AM – 12:30 AM Monday through Saturday and 9:00 AM – 6:00 PM on Sunday. The majority of LANTA bus routes are concentrated in Allentown, Bethlehem, Easton, and surrounding boroughs and townships.

### **Previous Studies**

Several planning studies completed in recent years concerning LANTA were consulted and reviewed for relevant recommendations, future projects, and potential constraints. The previous studies provide valuable context for the Transit First Corridor Plan and will help inform later recommendations.

The following planning documents were evaluated as part of this study. The published date and responsible agency are also included.

- Moving LANTA Forward Lehigh Valley Regional Public Transportation Plan (2010) *Lehigh and Northampton Transportation Authority*
- Lehigh Valley Enhanced Bus/BRT Study (2014) Lehigh and Northampton Transportation Authority
- FutureLV: The Regional Plan (August 2019) Lehigh Valley Planning Commission and Lehigh Valley Transportation Study
- Activate Broad Street An Active Transportation Plan for Broad Street (September 2021) *City of Bethlehem*

#### Moving LANTA Forward (2010)

The 2010 Moving LANTA Forward plan combines Lehigh and Northampton counties' aim to develop a regional public transportation plan. The 2010 Moving LANTA Forward report was updated in 2014 and is detailed in the subsequent section.

The report contains three major regional transportation guides: (1) operating and capital plan guide LANTA's growth over the short, to intermediate, and long term, (2) development of land use policy and recommendations that would encourage transit investments, and (3) key marketing strategies for the future. The findings and recommendations were developed through a comprehensive public outreach process. Δ significant tenant of the plan is to align transportation planning alongside strategic land use and economic development plans.

#### Recommendations

The regional public transportation plan outlines four service plans that aim to align transit services to regional land use development. The first service plan recommends enhancing LANTA's fixed routes servicing in its core service area by providing shorter headways, expansions of service duration, and stronger intermodal and regional connections. The second service plan recommends the expansion of LANTA service into more suburban and rural areas that are not currently served by the system. This will be accomplished by establishing a network of satellite hubs at major employment locations to traditional urban centers.

The third service plan recommends identifying potential BRT corridors, which was developed and addressed in the Lehigh Valley Enhanced Bus/BRT Study (see below). Finally, the fourth service plan recommends the ongoing support for commuter rail service in the Lehigh Valley. The plan outlines how the implementation of these recommendations would impact operating/maintenance cost, revenue, and funding in the short, intermediate, and long term.

# Lehigh Valley Enhanced Bus/BRT Study (2014)

Building upon the Moving LANTA Forward report, the Lehigh Valley Enhanced Bus/BRT study identifies two productive corridors for development, the Green and Blue lines, that are the subject of this Transit First Corridor Plan. The goals of the of Enhanced Bus Service (EBS) in the Lehigh Valley area are to benefit current riders, expand the transit market, promote the revitalization of the Valley's urban core, maximize riders per hour, and be financially feasible. In accordance with these goals, the study identifies two important corridors that connect major destinations within the Lehigh Valley region.

#### Recommendations

The study specifies a transit service plan that recommends the two routes operate seven days a week and for a maximum possible span of service. The EBS study is separated into six phasing approaches. Currently, LANTA is in Phase IV which would include frequency improvements on EBS 1 (Green) and EBS 2 (Blue), reaching a full build-out of the system in terms of both coverage and level of service.

A list and map of stop/station treatments were provided on the Green and Blue lines, including bus bulbouts, queue jumps, Transit Signal Priority (TSP), and moving existing stop locations. The report suggested bus lanes as a long-term option on 6<sup>th</sup> and 7<sup>th</sup> Streets in Allentown.

The EBS stations would feature branded shelters, with benches, trash cans, a bus system map, a bus schedule for each route serving the stop, and a branded bus stop sign. The Transportation Centers in Allentown, Bethlehem, and Easton as well as the Lehigh Valley Mall and Walmart stations would also include ticket vending machines for additional passenger convenience. The stations would be served by 42' low-floor hybrid vehicles with EBS branding.

Additionally, the plan recommended that EBS be broken out into six phases, where each phase would last approximately one to two years. Various running way treatments were considered in order to improve the pedestrian environment or allow buses to more easily and quickly navigate routes and increase overall reliability. The study includes detailed recommendations for land use conditions and practices along the corridor.

Similar to previous studies, the Enhanced Bus/BRT study places a strong emphasis on the need to align transit-supportive land use plans and zoning districts in locations that induce ridership. The report reviews various examples of types of a mix of uses that are compatible with existing development types, scale, and intensity in the valley. Given the significant increase in residential growth and commercial development, the plan identifies types of urban, suburban, and rural transit development opportunities.

#### Future LV: The Regional Plan (2019)

The 2019 Future LV is the regional transportation plan from Lehigh Valley Planning Commission (LVPC) and the Lehigh Valley Transportation Study. It establishes goals and policies to plan for future land use and population shifts for an efficient, sustainable, and affordable transportation system. The goals of the plan are five-fold: efficient, coordinated development patterns, connected mixed-transportation region, protected and vibrant environment, competitive creative and sustainable regional environment, and safe, healthy, inclusive, livable communities.

In addition, the report includes a list of transportation projects that have been planned and funded and the wish lists of unfunded projects that will help satisfy the goals and policies laid out in the plan.

#### Recommendations

The report recommends and budgets for a number of bus improvements including new rolling stock, station and stop enhancements/replacements (that are being evaluated as part of this plan), and moving forward with planning and implementing enhanced bus routes/ bus rapid transit. An express bus stop location was suggested on MacArthur Road (see Figure 1). Improvements include a transit stop island, designated bus lane, pedestrian crossings, a green infrastructure buffer, and a two-way separated bike lane. These projects and programs are in line with the goals and policies outlined in the regional plan.

#### Figure 1: MacArthur Road Concept



#### Activate Broad Street (2021)

This study examines multimodal transportation improvements on Broad Street through the City of Bethlehem. Currently, Broad Street is a major corridor leading to downtown Bethlehem with a steady stream of high-speed traffic and a pedestrian crossing distance nearly sixty feet. With the rise of several redevelopment projects that are anticipated to generate additional foot traffic in the downtown area, the plan aims to enhance the corridor with transit stops improvements, separated bike lanes, and more trees and green spaces.

#### Recommendations

The report recommends several enhanced bus stop locations which would include modern bus shelters. real-time schedule information. and other amenities The plan recommends these enhancements applied be to the following intersections:

- Broad Street & Pennsylvania Avenue/Market Street
- Broad Street & 8<sup>th</sup> Avenue (see Figure 2)
- Broad Street & 3<sup>rd</sup> Avenue
- Bethlehem Transit Center
- Broad Street & Linden Street

Additionally, the report recommends the extension or the addition of landscaped medians throughout Broad Street. Additionally, the plan suggests that roadway median extensions should be applied to the following segments:

- Broad Street from Guetter Street to New Street (landscaped median)
- Broad Street from Center Street to Penn Street (extend landscaped median)

Finally, the report recommends pedestrian refuge islands be applied at the following intersections:

- Broad Street and Maple Street
- Broad Street and Elm Street

The study suggests bike lanes be added on Broad Street from Pennsylvania Avenue to Main Street. The rendering below shows a bike lane located between a bus island/floating parking and the curb. The roadway on Broad Street would be reduced to two lanes in either direction with a left turn lane at intersections. The proposed configuration would allow LANTA buses to stop directly adjacent to the bus stop without having pull into the stop and then merge back into vehicular traffic. This could result in smoother and faster operations for LANTA.

#### Figure 2: Broad Street and 8th Avenue Rendering



### **Roadway Characteristics**

An overview of roadway characteristics along the Blue and Green corridors was collected from PennDOT's Traffic Signal Asset Management System (TSAMS), Pennsylvania Crash Information Tool (PCIT), Traffic Information Repository (TIRe), and Google Earth. Due to the length of the corridors and the large number of future stops/stations, only intersections, stops/stations, or segments highlighted by LANTA staff as needing further investigation were included for evaluation. Table 1 summarizes various existing attributes of potential improvement locations. See Appendix A for information on existing roadway characteristics, collected in September 2021.

#### Table 1: Roadway Characteristics\*

\* Data for Roadway Characteristics were collected September 2021

Proposed Improvement Location	Roadway Name(s)	Roadway (Seg/Off)	Roadway Length (Feet)	Roadway Cross Section Description & Measurements	AADT	Crash Comparison (2015 to 2019)
MacArthur Rd/Mickley Rd (Northern Intersection)	MacArthur Road	SR 0145 (0130/0000)		Six-lane road 80' cartway width 12' lanes Divided by concrete median	20,268	
	Mickley Road	Non-State Roadway	Intersection	Two-lane road 46' cartway width 12' lanes Both approaches have separate left and right turn lanes	No Data Available	15 crashes
MacArthur Rd/Schadt Ave	MacArthur Road	SR 0145 (0140/0000)		Six-lane road 81' cartway width 12' lanes Divided by concrete median	20,268	
	Schadt Avenue	SR 1008 (0020/2539)	Intersection	Two-lane road 46' cartway width 12' lanes Both approaches have separate left and right turn lanes	9,587	30 crashes
MacArthur Rd/Fairmount Ave	MacArthur Road	SR 0145 (0110/0000)	Intersection	Four-lane road 64' cartway width 12' lanes Divided by concrete median	25,599	50 crashes
	Fairmont Avenue	Non-State Roadway		Two-lane road 40' cartway width	3,465	
MacArthur Rd/Jordan Creek	MacArthur Road	SR 0145 (0100/2047)	Intersection	Four-lane road 66' cartway width 12' Lanes Divided by concrete median	25,599	25 crashes

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	Jordan Parkway	Non-State Roadway		Two-lane road 36' cartway width	No Data Available	
Columbia/2nd St/Adams	2nd Street	Non-State Roadway		Two-lane road 34' cartway width		
St	Columbia Street	Non-State Roadway	Intersection	Two-lane road 34' cartway width	No Data Available	2 crashes
	Adams St	Non-State Roadway	-State Two-lane road dway 24' cartway width			
Wind Creek Blvd/Daly	Daly Avenue	SR 0412 (0134/0592 to 0134/1058)	Intersection	Four-lane road 90' cartway width 12' lanes Divided by concrete median	11,774	19 crashes
	Wind Creek Boulevard	Non-State Roadway		Split inbound and outbound entrances to private facility (2-18' and 1-30')	No Data Available	
Chew St (7th to 17th St)	Chew Street	Non-State Roadway	6,070	Two-lane one-way westbound road 35' cartway width Notable Intersections: 7th Street: three-lane one- way southbound road, 50' cartway width 17th Street: two-lane road, 38' cartway width	4,865	14 crashes
	7th Street	SR 0145 (0087/2722)	Intersecting Roadway	7th Street: 3-lane one-way southbound road 50' cartway width	19,603	
	17th Street	Non-State Roadway	Intersecting Roadway	17th Street: 2-lane road 38' cartway width	7,714	
Turner St (7th to 17th St)	Turner Street	Non-State Roadway	6,070	Two-lane one-way eastbound road 35' cartway width Notable Intersections: 7th Street: three-lane one- way southbound road, 50' cartway width 17th Street: two-lane road, 38' cartway width	5,033	13 crashes
	Union Boulevard	SR 1002 (0280/0000)		Two-lane road 50' cartway width	11,212	10
Union/Plymouth	Plymouth Street	Non-State Roadway	Intersection	Two-lane road 30' cartway width	N/A	IU crashes
Linion/Club	Union Boulevard	SR 1002 (0290/0000)	Intersection	Four-lane road 60' cartway width	12,212	7 crashos
	Club Avenue	Non-State Roadway	intersection	Two-lane road 48' cartway width	4,481	
Union between Club and Eaton	Union Boulevard	SR 1002 (0290/0000 to 0290/1171)	1,360	Four-lane road 60' cartway width Divided by concrete median Notable Intersections: Club Avenue: two-lane road, 48' cartway width Eaton Avenue: four-lane road, 50' cartway width, divided by concrete median	12,212	2 crashes
	Club Avenue	Non-State Roadway	Intersecting Roadway	Club Avenue: 2-lane road 48' cartway width	4,481	
	Eaton Avenue	Non-State Roadway	Intersecting Roadway	Eaton Avenue: 4-lane road 50' cartway width Divided by Concrete Median	9,391	



W Broad/Main St	West Broad Street	Non-State Roadway	Intersection	Two-lane road 60' cartway width Divided by landscaped median	6,745	12 crashes	
	Main Street	Non-State Roadway		Two-lane road 50' cartway width	5,803		
W Dreed/Custter St	West Broad Street	Non-State Roadway	latanastian	Two-lane road 60' cartway width	6,745	2 arachas	
W Broad/Guetter St	Guetter Street	Non-State Roadway	Intersection	Two-lane road 45' cartway width	No Data Available	z crasnes	
	East Broad Street	Non-State Roadway		Two-lane road 56' cartway width	6,745		
E Broad/Linden St	Linden Street	Non-State Roadway	Intersection	Two-lane one-way southbound road 45' cartway width	9,645	10 crashes	
	East Broad Street	Non-State Roadway	Intersection	Two-lane road 58' cartway width	6,745	10 crashes	
E Broad/Stefko Blvd	Stefko Boulevard	Non-State Roadway		Four-lane one-way southbound road 55' cartway width	20,911		
25th St/Butler/William Penn Hwy	William Penn Highway/Butler Street	SR 2020 (0170/0000)	Intersection	Butler Street: two-lane road, 50' cartway width William Penn Highway: two- lane road, 65' cartway width	10,702	20 crashes	
	South 25th Street	SR 2012 (0180/2530)		Four-lane Road 75' cartway width	13,412		
Northampton/Walnut/6th	Northampton Street	Non-State Roadway		Two-lane road 48' cartway width	3,726		
	Walnut Avenue	Non-State Roadway	Intersection	Two-lane road 30' cartway width	1,763	4 crashes	
	6h Street	Non-State Roadway		Two-lane road 35' cartway width	No Data Available		

### **Ridership Characteristics**

The ridership at a particular stop helps guide the selection of the appropriate size and scale of the improvements and amenities. Table 2 includes the full list of proposed EBS stops along the Blue and Green routes. Table 3 outlines the ridership along the Blue and Green corridors – prior to COVID-19 and 2021 monthly ridership. Table 4 outlines the monthly ridership by stop.

Station Name	Route Line
Trexlertown	Blue Line Station Stops
Mill Creek (EB & WB)	Blue Line Station Stops
Hamilton Crossings (EB & WB)	Blue Line Station Stops
Wescosville (Alignment to be determined)	Blue Line Station Stops

Table 2:	Proposed	EBS	Station	Name	and Ro	oute

Dorneyville (Exact Location to be Determined)	Blue Line Station Stops
Cedar Crest (EB & WB)	Blue Line Station Stops
Muhlenberg College (EB & WB)	Blue Line Station Stops
Fairgrounds (EB & WB)	Blue Line Station Stops
13th & Turner (EB & WB)	Blue Line Station Stops



Old Allentown (EB & WB)	Blue Line Station
	Stops
ATC - Allentown	Blue Line Station
Iransportation Center	Stops
Allen Street (EB & WB)	Blue Line Station
	Stops
Jordan Heights (EB & WB)	Blue Line Station
0	Stops
6th Ward (EB & WB)	Blue Line Station
	Stops
Ballpark (FB & WB)	Blue Line Station
	Stops
Irving (FB & WB)	Blue Line Station
1111g (22 4 112)	Stops
Diverse (EP & WP)	Plue Line Station
Flymouth (EB & WB)	Stone
	Stops
Gateway (EB & WB)	Blue Line Station
	Stops
Pennsylvania (EB & WB)	Blue Line Station
	Stops
Rose Garden (EB & WB)	Blue Line Station
	Stops
West Broad Street (FB &	Rlue Line Station
WB)	Stons
	Blue Line Chatien
BIC - Betnienem	Blue Line Station
	Stops
Linden (EB & WB)	Blue Line Station
	Stops
Stefko & Broad (EB & WB)	Blue Line Station
	Stops
Dutko Memorial Park (EB &	Blue Line Station
WB)	Stops
Pembroke Village (FB &	Blue Line Station
WB)	Stops
Stofka & Eastan (ER & WR)	Blue Line Station
Sterko & Easton (ED & WD)	Stone
Butztown (EB & WB)	Blue Line Station
	Slops
Bethlehem Twp/NCC (EB &	Blue Line Station
WBJ	Stops/Bethlehem Twp
William Penn P&R (EB &	Blue Line Station
WB)	Stops
Stones Crossina (EB & WB)	Blue Line Station
······································	Stops
25th & Butler (FR & WR)	Blue Line Station
	Stons
Easten Hagnital (ED 9 MD)	Dlug Ling Ctation
Easion Hospital (EB & WB)	Dive Line Station
	Stops

15th & Northampton (EB & WB)	Blue Line Station Stops
Easton Downtown West (EB & WB)	Blue Line Station Stops
EITC - Easton Intermodal Transportation Center	Blue Line Station Stops
Whitehall Center	Green Line Station Stops
LVM - Lehigh Valley Mall Transportation Center	Green Line Station Stops
Jordan Parkway (NB & SB)	Green Line Station Stops
Greenleaf (NB & SB)	Green Line Station Stops
Allen Street (NB & SB)	Green Line Station Stops
ATC - Allentown Transportation Center	Green Line Station Stops
Jordan Heights (NB & SB)	Green Line Station Stops
6th Ward (NB & SB)	Green Line Station Stops
Ballpark (NB & SB)	Green Line Station Stops
Irving (NB & SB)	Green Line Station Stops
Plymouth (NB & SB)	Green Line Station Stops
Gateway (NB & SB)	Green Line Station Stops
Pennsylvania (NB & SB)	Green Line Station Stops
Rose Garden (NB & SB)	Green Line Station Stops
West Broad Street (NB & SB)	Green Line Station Stops
BTC - Bethlehem Transportation Center (NB & SB)	Green Line Station Stops
Payrow Plaza (NB & SB)	Green Line Station Stops
Southside New Street (NB & SB)	Green Line Station Stops
Bethlehem Southside Station (NB & SB)	Green Line Station Stops
Daly at Hill (NB & SB)	Green Line Station Stops
Casino (NB & SB)	Green Line Station Stops



Lynn Ave (NB & SB)	Green Line Station Stops
Shimersville SB (potential ommission)	Green Line Station Stops

Commerce Center (NB & SB)	Green Line Station Stops
412 P&R - Hellertown	Green Line Station Stops

#### Table 3: Ridership Along the Blue and Green Corridors\*

\*Monthly ridership was collected between January 2021 to October 2021

Corridor & Route	Pre-COVID Monthly Ridership	2021 Monthly Ridership*	Estimated Post-EBS Monthly Ridership
Blue Line – 101, 220, 322, 102, 107	106,805	70,491	121,949
Green Line – 102, 107, 105, 104, 103	141,932	93,675	162,058

#### Table 4: Monthly Ridership by Stop\*

\*Monthly ridership was collected between January 2021 to October 2021

Station Name	Route Line	Monthly Ridership at Stop*
Trexlertown	Blue Line	109
Mill Creek (EB & WB)	Blue Line	177
Hamilton Crossings (EB & WB)	Blue Line	209
Dorneyville (Exact Location to be Determined)	Blue Line	587
Cedar Crest (EB & WB)	Blue Line	94
Muhlenberg College (EB & WB)	Blue Line	94
Fairgrounds (EB & WB)	Blue Line	237
13th & Turner (EB & WB)	Blue Line	520
Old Allentown (EB & WB)	Blue Line	422
ATC - Allentown Transportation Center	Blue/Green	2,195
Allen Street (EB & WB)	Blue/Green	290
Jordan Heights (EB & WB)	Blue/Green	42
6th Ward (EB & WB)	Blue/Green	507
Ballpark (EB & WB)	Blue/Green	156
Irving (EB & WB)	Blue/Green	972
Plymouth (EB & WB)	Blue/Green	316
Gateway (EB & WB)	Blue/Green	722
Pennsylvania (EB & WB)	Blue/Green	70
Rose Garden (EB & WB)	Blue/Green	58
West Broad Street (EB & WB)	Blue/Green	-
BTC - Bethlehem Transportation Center (EB & WB)	Blue/Green	1,543
Linden (EB & WB)	Blue Line	96
Stefko & Broad (EB & WB)	Blue Line	230
Dutko Memorial Park (EB & WB)	Blue Line	150
Pembroke Village (EB & WB)	Blue Line	115
Stefko & Easton (EB & WB)	Blue Line	57



Butztown (EB & WB)	Blue Line	-
Bethlehem Twp/NCC (EB & WB)	Blue Line	56
William Penn P&R (EB & WB)	Blue Line	95
Stones Crossing (EB & WB)	Blue Line	51
25th & Butler (EB & WB)	Blue Line	272
Easton Hospital (EB & WB)	Blue Line	-
15th & Northampton (EB & WB)	Blue Line	254
Easton Downtown West (EB & WB)	Blue Line	195
EITC - Easton Intermodal Transportation Center	Blue Line	5,186
Whitehall Center	Green Line	3,441
LVM - Lehigh Valley Mall Transportation Center	Green Line	23,798
Jordan Parkway (NB & SB)	Green Line	138
Greenleaf (NB & SB)	Green Line	125
Payrow Plaza (NB & SB)	Green Line	107
Southside New Street (NB & SB)	Green Line	5
Bethlehem Southside Station (NB & SB)	Green Line	-
Daly at Hill (NB & SB)	Green Line	209
Casino (NB & SB)	Green Line	94
Lynn Ave (NB & SB)	Green Line	46

### **Field Visit**

A field visit to the LANTA service area was conducted on September 21 and 22, 2021. Members of the project team were able to observe local traffic conditions, signal operations, bus operations, lane configurations, roadway characteristics, sidewalk with, and land use along the Blue and Green corridors. To focus the field visit on the most relevant areas, the project team met with LANTA staff who identified the stops and segments needing further investigation. Current stop conditions and future potential stops were observed, photographed (see example photographs below), and visually assessed for stop improvement suitability.

Major observations included:

- Significant levels of school traffic and heavy congestion from 3-4 PM in the vicinity of Chew and 17<sup>th</sup> Streets.
- Major delay and congestion westbound on 3<sup>rd</sup> Street during PM rush hours.
- No significant congestion or delay noted at:
  - o Broad Street and Guetter Street
  - Union Avenue and Club Avenue

- Union Avenue/Pennsylvania Avenue/Eaton Avenue
- Serving MacArthur Road directly (rather than along Mickley Road to Mickley Avenue to Royal Avenue), would create a more direct, productive route that would bring riders closer to their destinations. Lack of pedestrian crossings and sidewalk infrastructure are significant challenges.
- Consolidation of stops at Northampton Street/Walnut Street/South 6<sup>th</sup> Street to two stops on Northampton Street seems desirable and feasible.
- Adding bus stops and bike lanes on Broad Street seems feasible, depending on proposed design on bike lanes and roadway configuration.
- Columbia Street and 2<sup>nd</sup> Street intersection poses pedestrian safety and unsupportive land use concerns.
- A midblock crossing on Union Avenue between Club Avenue and Eaton Avenue near the Giant seems desirable and feasible.



• The eastbound stop on Daly has no current ADA access and is located adjacent to a local park. Future improvements or

relocation might require additional coordination/review if parkland is impacted.

#### Figure 3: Union Avenue near Giant



Figure 4: Union Avenue and Plymouth Road



# 2. Project Inventory & Development



#### Figure 5: Overall Project Area Map





Project Number	#1 – MacArthur Rd (Royal Ave to W Whitehall St)
Location	Whitehall Burner St Allentown
Municipality	Whitehall Township and City of Allentown
Station Name/ Corridor	No Existing Stops - Green Line
Project Type	Bus lanes
Project Description	Install bus lanes from Royal Ave to W Whitehall St
Benefits	<ul> <li>Reduces travel times and delays and increases reliability</li> <li>Reduces transit delays due to traffic congestion</li> </ul>
Action Items	<ul> <li>Develop conceptual design alternatives and a preferred alternative for bus lanes</li> <li>Determine bus lane markings paint type</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Conduct traffic analysis to determine feasibility of bus lane configurations (e.g., repurposing travel lanes, widening, or mixed-flow operations)</li> <li>Identify environmental "red flag" issues</li> <li>Conduct detailed survey for base map and utilities</li> <li>Determine project financial feasibility and implementation plan</li> <li>Coordinate with PennDOT on the diverging diamond interchange project to ensure the selected bus lane concepts can be integrated into the project</li> <li>Conduct a study to evaluate the feasibility for different bus lane options</li> </ul>
Capital Cost Estimate	<ul> <li>Side Running Bus Lane Option: \$2,467,353.00</li> <li>Center Running Bus Lane Option: \$28,799,614.00</li> <li>Assumptions: Pavement markings only</li> </ul>
Benefit Estimate	• \$4,264,998/year in Travel Time Savings



Project Number	#2 – MacArthur Rd and Mickley St (Northern Intersection)
Existing Condition	
Location	Whitehall Balling Ball
Municipality	Whitehall Township
Station Name/ Corridor	No Existing Stop - Green Line
Project Type	<ul><li>New Bus Stops</li><li>Pedestrian Crossing</li></ul>



Project Number	#2 – MacArthur Rd and Mickley St (Northern Intersection) – Continued	
Project Description	<ul> <li>Install new bus stops on MacArthur Rd         <ul> <li>Northbound – Far side stop</li> <li>Southbound – Near side stop</li> </ul> </li> <li>For the northbound and southbound stops, install full size shelter with all amenities including the following:             <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bicycle Parking</li> </ul> </li> <li>Install concrete pads</li> <li>Install high visibility crosswalk                 <ul> <li>On the northern side across MacArthur Rd</li> </ul> </li> <li>Install pedestrian countdown timers, pushbuttons, and accessible signals</li> <li>Install curbs and curb ramps adjacent to crossing</li> <li>Modify signal timing to accommodate pedestrian crossing</li> <li>Remove concrete median</li> </ul>	
Benefits	<ul> <li>Increases walkability, connectivity, safety across MacArthur Rd</li> <li>Increases rider convenience and comfort</li> </ul>	
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Coordinate with PennDOT planned signal and pedestrian improvements</li> <li>Coordinate with PennDOT on bus lanes options</li> </ul>	
Capital Cost Estimate	<ul> <li>Side Running Bus Lane Option: \$471,038.02</li> <li>Center Running Bus Lane Option: \$1,636,800.00</li> <li>Assumptions: Only one crosswalk proposed across MacArthur Rd</li> </ul>	
Benefit Estimate	• N/A	



Project Number	#3 – MacArthur Rd & Jordan Pkwy
Existing Condition	
Location	Whitehall Particular Turner St Allentown
Municipality	Whitehall Township
Station Name/ Corridor	Jordan Parkway - Green Line
Project Type	Bus Stop Enhancement
Project Description	<ul> <li>Install smaller-scale shelters/benches or SolStops at existing stop locations with:         <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Lighting</li> <li>Bench</li> </ul> </li> <li>Install concrete pads</li> </ul>



Project Number	#3 – MacArthur Rd & Jordan Pkwy - Continued
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Develop preliminary engineering cost estimate based on bus stop siting, architecture/amenities, horizontal station base elements</li> <li>Acquire permit for any change in access to traffic</li> <li>Coordinate with PennDOT on bus lane options</li> </ul>
Capital Cost Estimate	<ul> <li>Side Running Bus Lane Option: \$52,884.61</li> <li>Center Running Bus Lane Option: \$1,636,800.00</li> <li>Assumptions: Minimal impact on privately owned property</li> </ul>
Benefit Estimate	• N/A
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Develop preliminary engineering cost estimate based on bus stop siting, architecture/amenities, horizontal station base elements</li> <li>Acquire permit for any change in access to traffic</li> <li>Coordinate with PennDOT on bus lane options</li> </ul>
Capital Cost Estimate	<ul> <li>Side Running Bus Lane Option: \$52,884.61</li> <li>Center Running Bus Lane Option: \$1,636,800.00</li> <li>Assumptions: Minimal impact on privately owned property</li> </ul>
Benefits	Increases rider convenience and comfort



Project Number	#4 – Tilghman St and 7th St
Existing Condition	
Location	Whitehall Remuted St Jurner St Allentown
Municipality	City of Allentown
Stop/Station Name/ Corridor	Blue Line/Green Line
Project Type	<ul><li>Transit Signal Priority</li><li>Dedicated Left Turn Signal</li></ul>
Project Description	<ul> <li>Install or upgrade existing signal controller that is compatible with transit signal priority at the following signal:         <ul> <li>Tilghman St and 7<sup>th</sup> St</li> </ul> </li> <li>Install a signal head with a dedicated left turn signal</li> <li>Update signal timing to include a dedicated left turn signal phase to protect left hand turns from Tilghman St onto 7<sup>th</sup> St</li> </ul>
Benefits	<ul> <li>Reduces transit travel times</li> <li>Improves schedule adherence</li> <li>Improves transit efficiency</li> <li>Increases road network efficiency</li> <li>Increased safety and reduces crashes</li> </ul>



Project Number	#4 – Tilghman St and 7th St – Continued
Action Items	<ul> <li>Develop TSP Concept of Operation (Con-Op) and feasibility analysis of opportunities and constraints relating to signal controller, traffic/multimodal operations, and bus stop locations</li> <li>Conduct market research for TSP vendors (e.g., Request for Information, vendor outreach/interview) based on Con-Op</li> <li>Develop Request for Proposal for TSP vendor and additional contractor in support of design and installation</li> </ul>
Capital Cost Estimate	<ul> <li>Side Running Bus Lane Option: \$52,884.61</li> <li>Center Running Bus Lane Option: \$1,636,800.00</li> <li>Assumptions: Minimal impact on privately owned property</li> </ul>



Project Number	#5 – Chew St and Turner St from 7 <sup>th</sup> St to 17 <sup>th</sup> St
Location	Whitehall Barrier St Jumer St Allentown
Municipality	City of Allentown
Stop/Station Name/ Corridor	Corridor – Blue Line
Project Type	Transit Signal Priority
Project Description	<ul> <li>Install transit signal priority at the following signals: <ul> <li>Chew St and 7<sup>th</sup> St</li> <li>Chew St and 8<sup>th</sup> St</li> <li>Chew St and 9<sup>th</sup> St</li> <li>Chew St and 10<sup>th</sup> St</li> <li>Chew St and 12<sup>th</sup> St</li> <li>Chew St and 12<sup>th</sup> St</li> <li>Chew St and 13<sup>th</sup> St</li> <li>Chew St and 15<sup>th</sup> St</li> <li>Chew St and 15<sup>th</sup> St</li> <li>Chew St and 7<sup>th</sup> St</li> <li>Chew St and 7<sup>th</sup> St</li> <li>Chew St and 7<sup>th</sup> St</li> <li>Turner St and 7<sup>th</sup> St</li> <li>Turner St and 9<sup>th</sup> St</li> <li>Turner St and 10<sup>th</sup> St</li> <li>Turner St and 10<sup>th</sup> St</li> <li>Turner St and 11<sup>th</sup> St</li> <li>Turner St and 13<sup>th</sup> St</li> <li>Turner St and 13<sup>th</sup> St</li> <li>Turner St and 13<sup>th</sup> St</li> <li>Turner St and 14<sup>th</sup> St</li> <li>Turner St and 15<sup>th</sup> St</li> <li>Turner St and 14<sup>th</sup> St</li> </ul></li></ul>
Benefits	<ul> <li>Reduces transit travel times</li> <li>Improves schedule adherence</li> <li>Improves transit efficiency</li> <li>Increases road network efficiency</li> </ul>



Project Number	#5 – Chew St and Turner St from 7th St to 17th St – Continued
Action Items	<ul> <li>Develop TSP Concept of Operation (Con-Op) and feasibility analysis of opportunities and constraints relating to signal controller, traffic/multimodal operations, and bus stop locations</li> <li>Conduct market research for TSP vendors (e.g., Request for Information, vendor outreach/interview) based on Con-Op</li> <li>Develop Request for Proposal for TSP vendor and additional contractor in support of design and installation</li> </ul>
Capital Cost Estimate	• \$ 596,422.63



Project Number	#6 – Chew St and 17 <sup>th</sup> St
Existing Condition	
Location	Whitehall Burner St Allentown
Municipality	City of Allentown
Stop/Station Name/ Corridor	Fairgrounds – Blue Line
Project Type	<ul><li>Bus Stop Enhancement</li><li>Bus Stop Relocation</li></ul>



Project Number	#6 – Chew St and 17th St – Continued
Project Description	<ul> <li>For the eastbound stop, reconfigure small parking area into concrete plaza waiting area for customers</li> <li>Relocate westbound stop further back from intersection</li> <li>For the eastbound and westbound stops, install full size shelter with all amenities including the following (see rendering on page 28):         <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bicycle Parking</li> </ul> </li> <li>Install concrete pads</li> <li>Coordinate with the City of Allentown on the future mobility hub concept, including potential bike share station</li> </ul>
Benefits	<ul> <li>Increases rider convenience and comfort</li> <li>Increases waiting area capacity during fairgrounds events</li> </ul>
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipality outreach</li> <li>Coordinate with Allentown on future mobility hub concept</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Investigate drainage to determine treatment needed for existing inlet in parking lot</li> <li>Contact property owner (hospital) about acquisition of land or lease arrangement for bus stop</li> </ul>
Capital Cost Estimate	<ul> <li>\$594,481.47</li> <li>Assumptions: new bus plaza will use the entire existing parking lot, minimal impact to drainage, new ADA curb ramps at all four corners, hospital is willing to have bus stop on grounds</li> </ul>
Benefit Estimate	• N/A





Project Number	#7 – W. Union Blvd between Club Ave and Eaton Ave
Location	7 8 9 10 11 Union Blvd Broad St 12 13 3rd St
Municipality	City of Allentown and City of Bethlehem
Stop/Station Name/ Corridor	Corridor/ Gateway – Blue Line
Project Type	<ul> <li>New Bus Stop</li> <li>Enhanced Bus Stop</li> <li>Pedestrian Crossing</li> </ul>
Project Description	<ul> <li>Install new bus stop on W. Union Blvd         <ul> <li>Eastbound, across from existing stop at Giant</li> </ul> </li> <li>Install full size shelters with all amenities, including the following:         <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bicycle parking</li> </ul> </li> <li>Install high visibility crosswalk near existing westbound stop on W. Union Blvd between Club Ave Eaton Ave</li> <li>Connect crosswalk to existing bus stop with new sidewalk</li> <li>Install pedestrian crossing treatment, signals, and signage recommended by study (rectangular rapid flashing beacon (RRFB), pedestrian hybrid beacon, or other potential treatment such as a HAWK signal if it becomes legally permissible in Pennsylvania)</li> </ul>
Benefits	<ul> <li>Increases walkability, connectivity, and safety crossing W. Union Blvd</li> <li>Increases rider convenience and comfort</li> </ul>



Project Number	#7 – W. Union Blvd between Club Ave and Eaton Ave – Continued
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Identify final bus stop location/crosswalk location based on stopping sight distances for midblock crossings, including possibly extending median island for pedestrian refuge.</li> <li>Contact property owner (gas station) about acquisition of land for bus stop</li> <li>Further studies on types of pedestrian crossing treatment</li> </ul>
Capital Cost Estimate	<ul> <li>\$381,360.46</li> <li>Assumptions: Retrofit existing median with pedestrian facilities, minimal impact to privately owned property</li> </ul>
Benefit Estimate	• N/A





Project Number	#8 – W. Union Blvd from Sherman St to W. Broad St/Pennsylvania Ave
Location	7     8     9     10     11       Union Blvd     Broad St     12     13       3rd St     3rd St
Municipality	City of Bethlehem and City of Allentown
Stop/Station Name/ Corridor	Corridor – Blue Line/Green Line
Project Type	<ul><li>Transit Signal Priority</li><li>Signal Optimization</li></ul>
Project Description	<ul> <li>Install transit signal priority at the following signals:         <ul> <li>W. Union Blvd and Sherman St</li> <li>W. Union Blvd and Club Ave</li> <li>Eaton Ave and Pennsylvania Ave</li> <li>W. Union Blvd and Pennsylvania Ave</li> <li>Pennsylvania Ave and W. Broad St</li> </ul> </li> </ul>
Benefits	<ul> <li>Reduces transit travel times</li> <li>Improves schedule adherence</li> <li>Improves transit efficiency</li> <li>Increases road network efficiency</li> </ul>
Action Items	<ul> <li>Develop TSP Concept of Operation (Con-Op) and feasibility analysis of opportunities and constraints relating to signal controller, traffic/multimodal operations, and bus stop locations</li> <li>Conduct market research for TSP vendors (e.g., Request for Information, vendor outreach/interview) based on Con-Op</li> <li>Develop Request for Proposal for TSP vendor and additional contractor in support of design and installation</li> </ul>
Capital Cost Estimate	\$304,474.38
Benefit Estimate	• \$435,186/year in Travel Time Savings



Project Number	#9 – W. Broad St and Guetter St
Existing Condition	
Location	7 8 9 10 11 Union Blvd Broad St 12 3rd St
Municipality	City of Bethlehem
Stop/Station Name/ Corridor	Bethlehem Transportation Center (BTC) – Blue Line
Project Type	<ul><li>New Bus Stops</li><li>Roadway Repurposing</li></ul>



Project Number	#9 – W. Broad St and Guetter St – Continued
Project Description	<ul> <li>Install bus stops on W. Broad St, near BTC to allow EBS to remain on W. Broad St         <ul> <li>Eastbound – Near side stop</li> <li>Westbound – Far side stop</li> </ul> </li> <li>Install full size shelter with all amenities, including the following:         <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bicycle parking</li> </ul> </li> <li>Install concrete pads</li> <li>Repurpose existing roadway to accommodate the following:             <ul> <li>Bis Bulbouts/Curb Extensions</li> </ul> </li> </ul>
Benefits	<ul> <li>Increases rider convenience and comfort</li> <li>Reduces transit travel times</li> <li>Improves schedule adherence</li> <li>Improves transit efficiency</li> </ul>
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Coordinate with City on design and construction of bike lanes and bus bulbouts/curb extensions to reduce costs</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> </ul>
Capital Cost Estimate	<ul> <li>\$446,282.77</li> <li>Assumptions: Minimal impact to privately owned property</li> </ul>
Benefit Estimate	• N/A



Project Number	#10 – W. Broad St and Linden St
Existing Condition	
Location	7 Bethlehem 7 Blvd Broad St 12 13 3rd St
Municipality	City of Bethlehem
Stop/Station Name/ Corridor	Linden St – Blue Line
Project Type	Bus Stop Enhancement
Project Description	<ul> <li>Install full size shelters with all amenities, including the following:         <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bicycle parking</li> </ul> </li> <li>Install concrete pads</li> <li>Coordinate with median extension to Broad and Linden St</li> </ul>



Project Number	#10 – W. Broad St and Linden St – Continued
Benefits	Increases rider convenience and comfort
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Coordinate with City on planned signal improvements</li> </ul>
Capital Cost Estimate	<ul> <li>\$ 450,852.27</li> <li>Assumptions: Proposed bus facilities will not block existing driveway on northwest corner, minimal impact to privately owned property</li> </ul>
Benefit Estimate	• N/A



Project Number	#11 – W. Broad St and Stefko Blvd
Existing Condition	
Location	7 8 9 10 11 Union Blvd Broad St 12 13 3rd St
Municipality	City of Bethlehem
Stop/Station Name/ Corridor	Stefko Blvd and Broad St – Blue Line
Project Type	<ul> <li>Bus Stop Enhancement (east bound only)</li> <li>Pedestrian Improvements</li> </ul>
Project Description	<ul><li>For eastbound stop, install SolStop</li><li>Install accessible pedestrian signals</li></ul>
Benefits	<ul> <li>Increases rider convenience and comfort</li> <li>Increases walkability, connectivity, and safety across Broad St and Stefko Blvd</li> </ul>
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> </ul>



Project Number	#11 – W. Broad St and Stefko Blvd – Continued
Capital Cost Estimate	<ul> <li>\$57,250.91</li> <li>Assumptions: Minimal impact to privately owned property</li> </ul>
Benefit Estimate	• N/A



Project Number	#12 – Columbia St and Polk to 3 <sup>rd</sup> St and Daly Ave
Location	7 Bethlehem 9 10 11 Union Blvd Broad St 12 13 3rd St
Municipality	City of Bethlehem
Station Name/ Corridor	Corridor - Green Line
Project Type	Transit Signal Priority
Project Description	<ul> <li>Install transit signal priority at the following signals         <ul> <li>Columbia St, 2<sup>nd</sup> St, and Adams St</li> <li>3<sup>rd</sup> and Polk St</li> <li>3<sup>rd</sup> St and Filmore St</li> <li>3<sup>rd</sup> between Pierce St and Buchanan St</li> <li>3<sup>rd</sup> St and Founders Way</li> </ul> </li> </ul>
Benefits	<ul> <li>Reduces transit travel times</li> <li>Improves schedule adherence</li> <li>Improves transit efficiency</li> <li>Increases road network efficiency</li> </ul>
Action Items	<ul> <li>Develop TSP Concept of Operation (Con-Op) and feasibility analysis of opportunities and constraints relating to signal controller, traffic/multimodal operations, and bus stop locations</li> <li>Conduct market research for TSP vendors (e.g., Request for Information, vendor outreach/interview) based on Con-Op</li> <li>Develop Request for Proposal for TSP vendor and additional contractor in support of design and installation</li> </ul>
Capital Cost Estimate	\$342,649.25
Benefit Estimate	• \$240,085/year in Travel Time Savings



Project Number	#13 – Daly Ave and Wind Creek Blvd/Sands Blvd
Existing Condition	
Location	Pethlehem 9 10 11 Union Blvd Broad St 12 13 3rd St
Municipality	City of Bethlehem
	Wind Creek – Green Line
Project Type	<ul><li>Bus Stop Relocation</li><li>Bus Stop Enhancement</li></ul>



Project Number	#13 – Daly Ave and Wind Creek Blvd/Sands Blvd – Continued
Project Description	<ul> <li>Relocate westbound bus stop at Daly Ave and Stefko Blvd to Daly Ave and Wind Creek Blvd/Sands Blvd for closer access to Wind Creek Bethlehem Hotel and additional ROW area</li> <li>Relocate eastbound bus stop in front (near side) of South Bethlehem Greenway to connect to existing sidewalk</li> <li>Install SolStop at eastbound stop and extend concrete sidewalk to create a small waiting area between existing sidewalk and curb to provide ADA accessibility</li> <li>Install full size shelter for westbound stop with all amenities, including the following:         <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bicycle parking</li> </ul> </li> </ul>
Benefits	<ul><li>Increases rider convenience and comfort</li><li>Provides ADA accessibility</li></ul>
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> </ul>
Capital Cost Estimate	<ul> <li>\$255,655.34</li> <li>Assumptions: Can install a SolStop in park, bus stop in middle of intersection will not impact traffic flow more than typical bus stop</li> </ul>
Benefit Estimate	• N/A



Project Number	#14 – 25 <sup>th</sup> St and Butler St
Existing Condition	
Location	Palmer Northampton St Butter, St Butter, St Wilson
Municipality	Wilson Borough
Stop/Station Name/ Corridor	• 25 <sup>th</sup> St and Butler St – Blue Line
Project Type	<ul> <li>Bus Stop Relocation</li> <li>Bus Stop Enhancement</li> <li>Roadway Repurposing</li> <li>Transit Signal Priority</li> </ul>



Project Number	#14 – 25 <sup>th</sup> St and Butler St – Continued
Project Description	<ul> <li>Relocate bus stop on Butler St/William Penn Hwy         <ul> <li>Eastbound – Far side stop</li> </ul> </li> <li>Install bus bulbout/curb extension for westbound stop</li> <li>Install full size shelter for westbound stop with all amenities including the following:             <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bicycle parking</li> </ul> </li> <li>Install concrete pads</li> <li>For westbound approach, remove striping pavement markings and install left turn and through lane pavement markings adjacent to each other to repurpose roadway for bus bump out. Consider adding narrower bump out for each direction to reduce impact to intersection alignment</li> <li>Install transit signal priority at 25<sup>th</sup> and Butler St</li> </ul>
Benefits	<ul> <li>Increases rider convenience and comfort</li> <li>Reduces transit travel times</li> <li>Improves schedule adherence</li> <li>Improves transit efficiency</li> <li>Increases road network efficiency</li> </ul>
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> <li>Identify environmental "red flag" issues</li> <li>Develop TSP Concept of Operation (Con-Op) and feasibility analysis of opportunities and constraints relating to signal controller, traffic/multimodal operations, and bus stop locations.</li> <li>Conduct market research for TSP vendors (e.g., Request for Information, vendor outreach/interview) based on Con-Op</li> <li>Develop Request for Proposal for TSP vendor and additional contractor in support of design and installation</li> </ul>
Capital Cost Estimate	<ul> <li>\$582,358.40</li> <li>Assumptions: bump outs will not impact geometry of the intersection beyond the eastern leg, minimal impact to privately owned property</li> </ul>
Benefit Estimate	• N/A



Project Number	#15 – Northampton St/Walnut St/6 <sup>th</sup> St
Existing Condition	
Location	Palmer Northampton St NJ Butter St Easton Wilson
Municipality	City of Easton
Stop/Station Name/ Corridor	• Northampton St/Walnut St/6 <sup>th</sup> St - Blue Line
Project Type	<ul> <li>Bus Stop Relocation</li> <li>Bus Stop Consolidation</li> <li>Bus Stop Enhancement</li> <li>Roadway Repurposing</li> <li>Install curb extension</li> </ul>



Project Number	#15 – Northampton St/Walnut St/6 <sup>th</sup> St – Continued
Project Description	<ul> <li>Relocate bus stops on Northampton St         <ul> <li>Eastbound – Far side stop</li> <li>Westbound – Near side stop</li> </ul> </li> <li>Consolidate bus stops on Walnut St to Northampton St stops</li> <li>Install full-size shelters with all amenities, including the following:             <ul> <li>Realtime signage</li> <li>Unique branding</li> <li>Ticket vending machines</li> <li>Lighting</li> <li>Benches</li> <li>Bike parking</li> </ul> </li> </ul> <li>Install concrete pads</li> <li>Repurpose existing roadway (parking lanes) to accommodate bus bulbouts/curb extensions</li>
Benefits	<ul> <li>Increases rider convenience and comfort</li> <li>Reduces transit travel times</li> <li>Improves schedule adherence</li> <li>Improves transit efficiency</li> <li>Improves pedestrian safety</li> </ul>
Action Items	<ul> <li>Identify preferred bus stop design concept through engineering as well as community/stakeholder/municipal outreach</li> <li>Complete maintenance agreement with PennDOT District 5 during design process</li> </ul>
Capital Cost Estimate	<ul> <li>\$459,757.27</li> <li>Assumptions: Minimal impact to privately owned property combining bus stops will not impact bus route timing</li> </ul>
Benefit Estimate	• N/A



# 3. Stakeholder Engagement



### Stakeholder Engagement Summary

As a part of the Transit First Corridor Plan process, engagement efforts were organized to inform stakeholders of the project and obtain feedback for consideration and incorporation into the plan. The outreach efforts were also tailored to uphold the Pennsylvania Department of Public Health and local health protocols during the COVID-19 pandemic, which spanned the duration of the Transit First Corridor Plan project.

LANTA and PennDOT BPT identified the list of relevant stakeholders to include in engagement efforts. Engagement methods include two virtual stakeholder meetings, an opportunity for participants to review the draft plan and provide feedback in-real time or by email, and a separate coordination meeting with PennDOT District 5. Information gathered from stakeholders informed and refined the recommendations presented in this chapter. See Appendix E for a detailed stakeholder comment/response matrix.

### List of Stakeholders

- City of Allentown
- City of Bethlehem
- Bethlehem Township
- City of Easton
- Whitehall Township
- Wilson Borough
- Palmer Township
- PennDOT (District 5)

# Stakeholder Meetings and Communication

The first virtual stakeholder meeting was held in March 2022 to inform various municipal leaders in the region of the 15 proposed projects that would enhance bus corridors, improve transit experience, and improve roadway efficiency in each of their municipalities. Stakeholders were provided an opportunity to share their concerns and comments about the preliminary projects and any information about related upcoming projects. Shortly after the first meeting, the team shared the project list with stakeholders to collect any additional feedback for two weeks.

The second stakeholder meeting was held towards the end of the project in June 2022 and provided project updates to municipalities and presented and reviewed the Draft Final Plan with stakeholders for final comments and feedback. This second stakeholder meeting offered an opportunity to identify an upcoming project in municipalities or by PennDOT district 5 that may require coordination with LANTA. Stakeholders were encouraged to coordinate with LANTA on their upcoming projects and assured that LANTA will continue to coordinate with all municipalities and PennDOT District 5 as these projects develop. The project continued to express that on-going coordination between all municipalities and PennDOT 5 will continue as these projects develop.

See Appendix E for a detailed stakeholder comment/response matrix to see how stakeholder comments were incorporated into the Final Plan. See Appendix C and D for PowerPoint presentations for each stakeholder meeting.

### PennDOT District 5 Coordination

Following Stakeholder Meeting #1, a subsequent meeting was held with PennDOT District 5 members to discuss (1) curbside versus center running bus lane options and (2) how these transit options could be incorporated into any upcoming or envisioned project near MacArthur Rd. The coordination meeting with PennDOT District 5 specifically informed some of the MacArthur Rd recommendations on pages 17-22.



# **Appendix A: Roadway Characteristics**



# **Appendix B: Cost Estimates**



# Appendix C: Stakeholder Outreach Meeting Presentation #1



# Appendix D: Stakeholder Outreach Meeting Presentation #2



# Appendix E: Stakeholder Comment/Response Matrix



# Appendix F: Left-Turn Signalization Analysis