

An Active Transportation Plan for Broad Street

# ACTIVATE BROAD STREET

City of Bethlehem, PA

September 2021

# DRAFT

**TPD** Est. 1989  
TRAFFIC PLANNING  
AND DESIGN, INC.

*Intentionally blank to facilitate double-sided printing*

# Acknowledgments

## *Board Street Active Transportation Plan*

This Active Transportation Plan provides a long-term planning blueprint for safely accommodating all users of Broad Street in the City of Bethlehem, Lehigh and Northampton Counties, PA. This plan is intended to serve as a resource to guide the improvement and transformation of Broad Street.

Funding is provided by the Pennsylvania Department of Health through the State Physical Activity and Nutrition Grant and Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention.

### **PROJECT SPONSOR**

**City of Bethlehem**  
10 E. Church Street  
Bethlehem, PA 18018

### **FUNDING PROVIDED BY**

**Pennsylvania Department of Health**

### **STEERING COMMITTEE MEMBERS**

Kevin F. Danyi, *Community Representative*  
Scott Effting, *Community Representative*  
Bruce Haines, *Community Representative*  
Darlene L. Heller, *City of Bethlehem*  
Elliot Nolter, *Community Representative*  
Sherri L. Penschishen, *City of Bethlehem*  
Lorne Possinger, *Pennsylvania Department of Conservation & Natural Resources*  
Kathy Ramson, *St. Luke's University Health Network*  
Geoffrey A. Reese, PE, *Lehigh Valley Planning Commission*  
Gretchen Rice, *Community Representative*  
Charles H. Richards, *PE PennDOT District 5-0*  
Christine Roysdon, *Community Representative*

Scott Slingerland, *Coalition for Appropriate Transportation*  
Tiffany Wells, *City of Bethlehem*  
Tammy Wendling, *Downtown Bethlehem Association*  
Molly Wood, *LANTA*



*Intentionally blank to facilitate double-sided printing*

# Table of Contents

Crafting a Plan for Broad Street .....	6
Benefits of Non-Motorized Transportation .....	7
Knitting Together Multiple Parties and Projects .....	9
A Plan for Improving Multimodal User Safety .....	10
Broad Street - Today / Existing Conditions .....	13
Existing Conditions .....	14
Transit Ridership .....	25
The Public Pulse / Feedback from the Public .....	27
Community Engagement .....	28
A Refined Vision for Board Street / Corridor Improvement Plan .....	41
Corridor Vision .....	42
Conceptual Improvement Plan .....	44
Assembling the Puzzle Pieces / Implementation Plan .....	57
Assembling the Puzzle Pieces - Implementation Plan .....	58
Implementing the Corridor Plan .....	59
Opinion of Probable Cost .....	60
Appendices .....	63

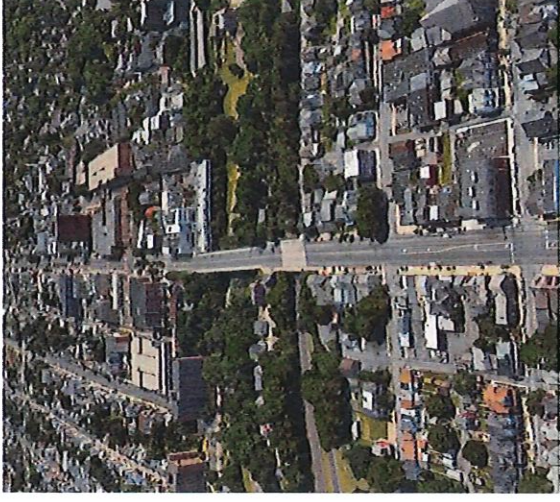
# Crafting a Plan for Broad Street

## CRAFTING A PLAN FOR BROAD STREET

Broad Street is a major multimodal transportation corridor through the City of Bethlehem, serving as a primary route to Downtown Bethlehem for people walking, biking, driving, or riding the bus. East and west of downtown, Broad Street is also home to smaller business districts serving the surrounding neighborhoods.

Today, the eastern and western ends of Broad Street are difficult to cross, with a steady stream of high-speed traffic and a crossing distance of nearly sixty feet. Residents trying to catch their bus, children walking to school, and senior citizens walking to the YMCA may experience Broad Street as a barrier on their daily trip. However, this width also provides an opportunity to reimagine the corridor with enhanced transit stops, separated bike lanes, and more trees and green space.

The future of Broad Street is bright. There are several redevelopment projects in the planning process that will bring new foot traffic and energy to the downtown area and the surrounding neighborhoods. LANTA's plans for Enhanced Bus Service will provide frequent, direct transit service from Broad Street to the Valley's major employment hubs. With these changes, the City has an opportunity to reimagine the role Broad Street plays in the community. This plan presents a new vision of Broad Street that prioritizes pedestrian safety, quality of life for the surrounding neighborhoods, and reinvigorated business districts that benefit from increased foot traffic.



Source: Google Earth



Pedestrians using midblock crosswalk on East Broad Street



Storefronts on West Broad Street

## BENEFITS OF NON-MOTORIZED TRANSPORTATION

Building walk and bike friendly communities has certainly become more commonplace in the US over the last decade, and for good reason. The return on investment from multimodal programs and infrastructure is significant; walking and biking is great for communities large and small, urban and rural, and everything in between. These benefits are not just at the community level but also for the individual quality of life. In a city like Bethlehem, where the destinations are close by and there is a strong network of sidewalks, these benefits are especially meaningful, and the impacts of future expansion will be significant.

### *Pedestrian Mobility*

A pedestrian is the fundamental transportation user and is the baseline for any transportation system. By planning for people walking, we are planning for all users, including the most vulnerable: young, elderly, and disabled. Walking provides quick and convenient access and is the most affordable transportation mode. In addition, walking is a part of every trip. Whether a person chooses walking, bicycling, transit or personal vehicle as their primary mode of transportation, each trip begins and ends as a pedestrian. Mobility for people walking is essential to any community's transportation system.

### *Bicycle Mobility*

Similar to walking, bicycling provides quick and convenient access to destinations. A bicycle provides a user the option to travel farther than they can on foot, thereby increasing mobility for short trips. A bicycle is more affordable than a vehicle, and bicycling is more accessible in the sense that it does not require a license to use. Efficiencies are gained for people traveling by bicycle while still offering an affordable, accessible option of transportation.

### *Equity: Driving Isn't an Option for Everyone*

Simply put, travel by vehicle isn't an option for everyone. Many people are physically unable to drive a vehicle, cannot afford the onerous

costs of car ownership or choose to not drive for other reasons. Socio-economic factors such as age, disability, race and income all impact transportation choice. Providing transportation options and access for these individuals can mean freedom of movement, which translates as significant benefits to the health of the individual and community.

### *Age*

According to the US Census, by 2035 there will be more people over the age of 65 in the United States than under 18. The 2018 League of American Bicyclists Benchmarking Report reveals that the percentage of walking trips taken by people over the age of 65 in the US rose from 8.8% in 2009 to 13.8% in 2017 – an increase that was greater than the increase in the share of that population. These findings, coupled with the growth of the elderly population, is a reminder that people in this already growing age group are walking more and will become increasingly reliant on this mode of travel.

### *Health*

Streets that are safer for people walking and biking offer inherent health benefits given the reduction of serious injury and fatality. In addition to these positive outcomes, there are several related health outcomes to bicycling and walking. The Centers for Disease Control find that adults reap substantial health benefits from just 20-25 minutes/day of physical activity, and these benefits increase even more with 40-45 minutes a day of activity. However, currently only half of the adults living in the US meet the recommended levels of physical activity. For children, this target should be around 60 minutes/day. Walking is proven to offer numerous health benefits for the brain, heart, and physical health, including a reduction in chronic disease, heart disease and cancer. The CDC offers several strategies that promote healthy living by modifying the built environment to provide walking and biking opportunities. As noted by the CDC: "Ultimately, individuals make the decision to walk. However, the decision to walk can be made easier by improving and connecting routes and destinations in communities. Modifying the built environment makes it easier for people of all ages and abilities to walk, bike, run, or roll."

## CDC Activity Friendly Routes

Activity-friendly routes to everyday destinations is a strategy that improves the design of communities by connecting routes such as sidewalks, trails, bicycle lanes, and public transit to destinations such as grocery stores, schools, worksites, libraries, parks, or health care facilities. This strategy makes it safe and easy to walk, bicycle, or wheelchair roll for people of all ages and abilities. States, local governments, and community organizations use the following approaches to carry out this strategy:

- **Complete Streets Policies:** Complete Streets policies support the routine design and operation of streets and communities that are safe for all pedestrians, regardless of age, ability, or transportation mode. Key features found on Complete Streets include sidewalks, protected bike lanes, special bus lanes, comfortable and accessible transit stops, frequent crossing opportunities, median islands, accessible pedestrian signals, and curb extensions.
- **Comprehensive or Master Plans:** A comprehensive plan, also called the general plan or community master plan, is the official statement of a local government establishing policies for its long-term development. These documents can be created through a collaboration between citizens, planners, and city leaders to include policies that guide investments to improve residents' health outcomes by increasing physical activity opportunities.
- **Zoning Policies:** Zoning policies influence the design of communities and the location of different land use types, such as commercial and residential development. This can influence distances between the two and in turn the feasibility for active travel. Policies outlined in comprehensive or master plans often guide zoning codes and other land development regulations.
- **Safe Routes:** Safe routes is a comprehensive approach to improve safety and security for everyone walking, bicycling, and wheelchair rolling. Safe Routes approaches such as Safe Routes to School and Safe Routes to Parks include infrastructure improvements for better traffic laws, safety education, and incentives to encourage walking and bicycling to community destinations.

Source: Centers for Disease Control and Prevention. (2020, June 9). Activity Friendly Routes to Everyday Destinations. (2020, August 24). <https://www.cdc.gov/nccphp/dnpao/features/walk-friendly-communities/index.html>



## KNITTING TOGETHER MULTIPLE PARTIES AND PROJECTS

In recent years several planning studies have identified the potential for multimodal enhancements on Broad Street. The Lehigh Valley Planning Commission's Walk/Roll LV Plan, LANTA's Enhanced Bus Service plan, and the Northside 2027 Neighborhood Plan each included recommendations for Broad Street. The recommendations of these plans have been incorporated into this plan and refined based on community feedback.

### LANTA Enhanced Bus Service

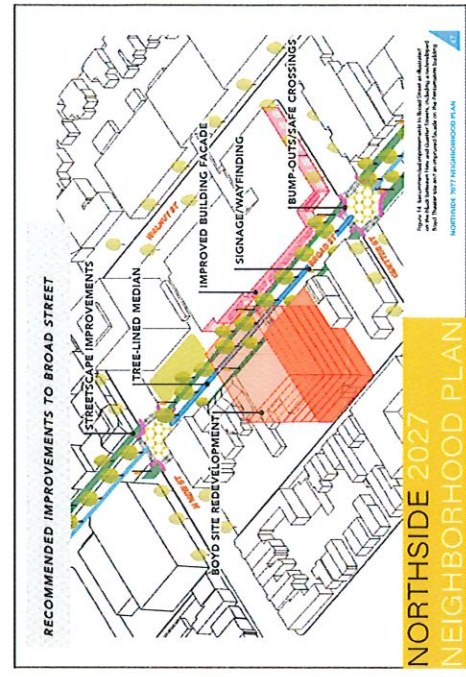
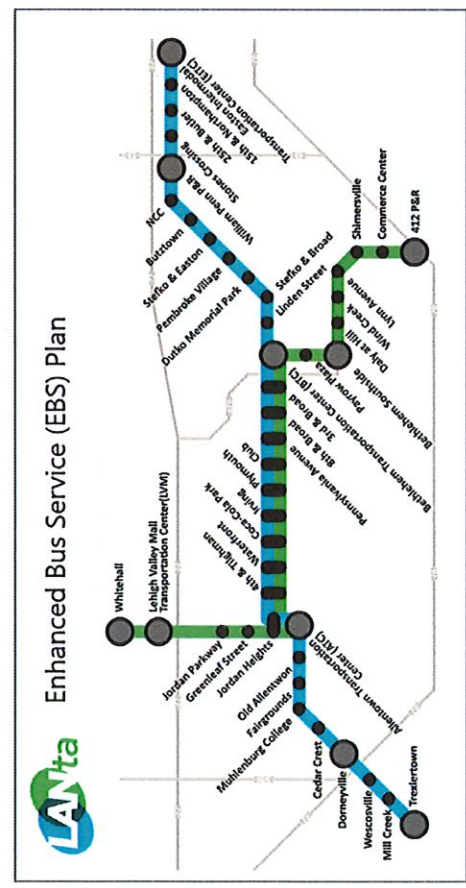
The 2010 report titled Moving LANTA Forward identified the need for increased frequency and other service enhancements on major transit corridors. The report was updated in 2014, and LANTA has continued to develop plans for enhanced bus service (EBS) over the past several years. The Broad Street Corridor is at the center of this plan, which envisions six station-stops in the study area.

### Walk/Roll LV

The Lehigh Valley Planning Commission's Active Transportation Plan (Walk/Roll LV), adopted in June 2020, identified Broad Street as one of five catalytic projects across the region. The catalytic projects were highlighted due to their significant potential to spark interest and use of active transportation in the Lehigh Valley. The plan includes several recommendations to improve walking and biking conditions on the corridor, such as reducing the lane width, providing separated bike lanes, adding accessible pedestrian refuge islands, and incorporating streetscape improvements.

### Northside 2027 Neighborhood Plan

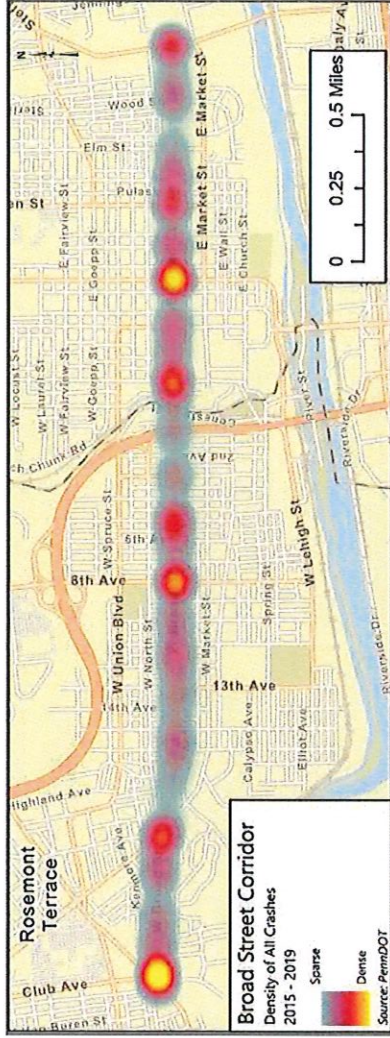
In August 2019, the City of Bethlehem Department of Community & Economic Development finalized the Northside 2027 Neighborhood Plan. This plan studied the area from Mauch Chunk Road on the west to Maple Street on the east, and from Broad Street to the south to Laurel Street on the north. One goal identified in this plan was to implement physical improvements to the Broad Street corridor. The recommendations for Broad Street included the addition of a tree-lined median between Guetter and New Streets, as well as additional amenities such as benches and greening elements.



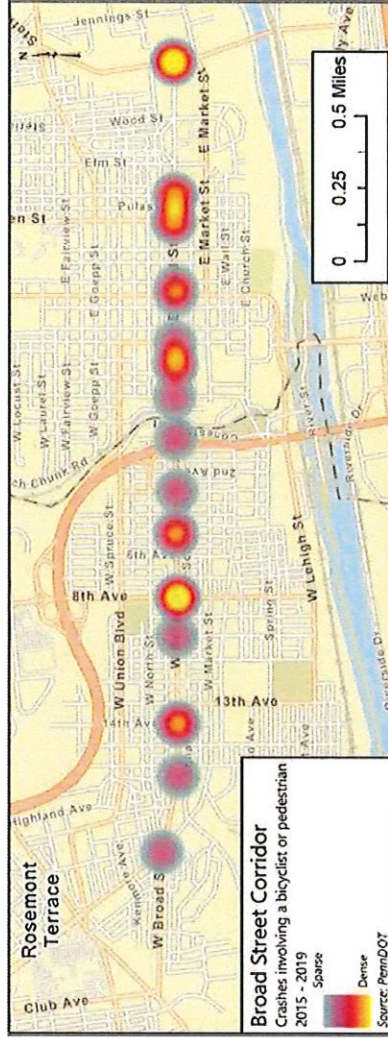
## A PLAN FOR IMPROVING MULTIMODAL USER SAFETY

The Broad Street corridor from Club Avenue to Rosemont Terrace experienced 299 reportable crashes between 2015 and 2019, based on data obtained from PennDOT. Map A depicts all reportable crashes that occurred during the five-year study period.

A primary focus of this plan is to improve the safety of Broad Street for people who are walking, rolling, or riding the bus. Over this five-year period, 17 of the crashes involved a pedestrian and 7 of the crashes involved a bicycle. Map B shows these crashes.




Map A



Map B

*Intentionally blank to facilitate double-sided printing*

*Intentionally blank to facilitate double-sided printing*

A photograph of a residential street. In the foreground, a yellow school bus is partially visible, with the text 'BETHLEHEM AREA SCHOOL DISTRICT' on its side. The street is paved with asphalt and has a white curb. In the background, there are several houses, some with bare trees in front of them. The sky is overcast and grey. A blue semi-transparent banner is overlaid on the right side of the image, containing the text 'Broad Street - Today' and 'Existing Conditions' in white.

# Broad Street - Today

## Existing Conditions

# Board Street - Today

## EXISTING CONDITIONS

Broad Street is a major east-west route connecting several neighborhoods through the north side of Bethlehem. The physical characteristics of the roadway vary throughout the corridor. Some blocks are pedestrian friendly destinations, while elsewhere on the corridor the street can serve as a barrier dividing walkable neighborhoods on either side. The project team identified four general segments of the corridor for the purposes of this study.

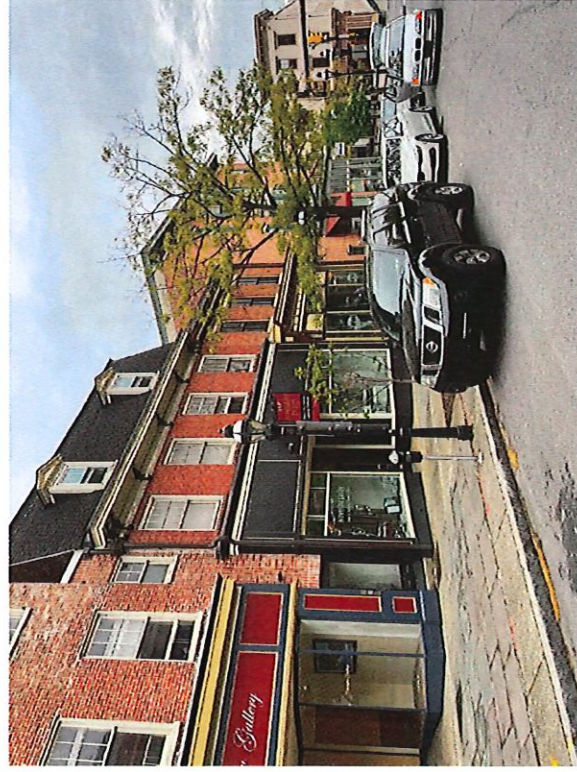
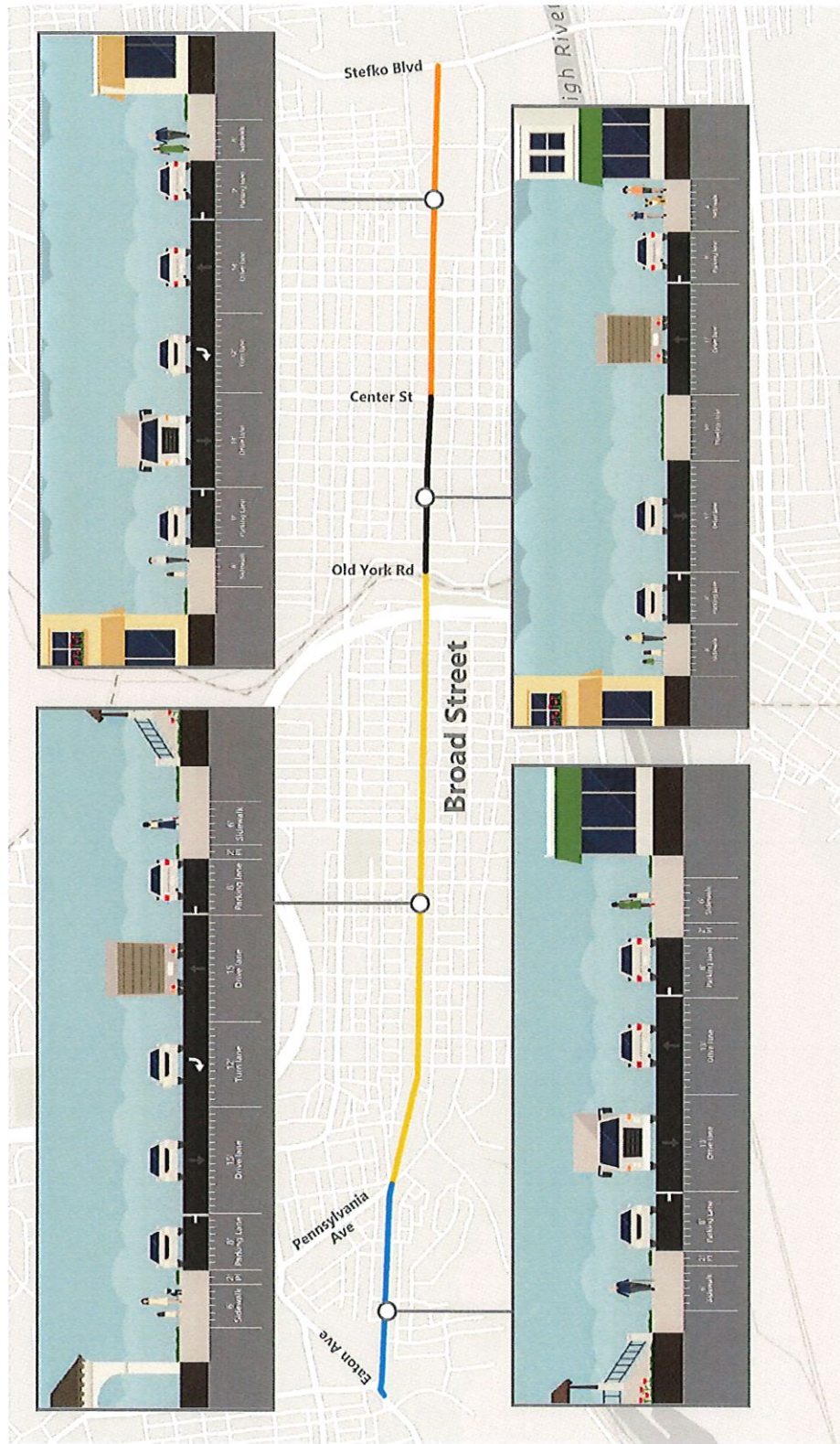


Figure 1: Study Context and Limits



Section 1 – West Broad Street from Club Avenue to Pennsylvania Avenue

IMAGE 1

Entering Bethlehem from the west, Broad Street is 38 feet wide with on-street parking on both sides. Shared lane markings reinforce that bicyclists and motorists should share the travel lane.

IMAGE 2

The skewed intersection of Broad Street & Pennsylvania Avenue creates long crossing distances and unusual crosswalk placement.



Image 1



Image 2



Section 2 – West Broad Street from Pennsylvania Avenue to Main Street

IMAGE 1

Between First Avenue and Sixteenth Avenue, Broad Street widens to 58 feet. The width of the street impacts traffic speeds and the distance pedestrians need to cross.

IMAGE 2

There are marked crosswalks at 12th Avenue and 10th Avenue, but the existing pavement markings may be insufficient due to the street width and traffic characteristics.

IMAGE 3

Clusters of small businesses are natural nodes of pedestrian activity. West Broad Street serves as an important neighborhood commercial district.



Image 1

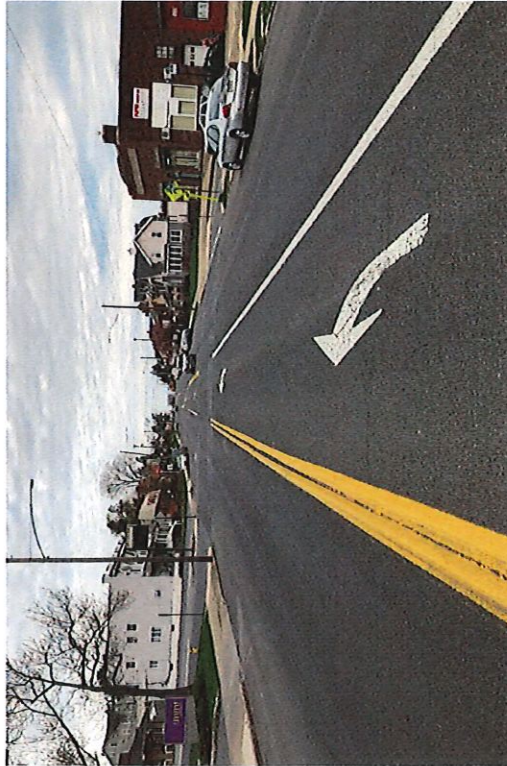


Image 2



Image 3

**IMAGE 4**

Design elements such as wide sidewalks, street trees, outdoor dining, and pedestrian-oriented signage can create a sense of place for neighborhood commercial districts.

**IMAGE 5**

The Broad Street Bridge over the Monocacy Creek is a key connection for people walking and biking. When the parking spaces are occupied the bridge can be a pinch point for bicyclists.

**IMAGE 6**

At the western gateway to downtown, there is a short section of Broad Street where the travel lane is directly adjacent to the sidewalk. There is no buffer from street trees or parked cars.

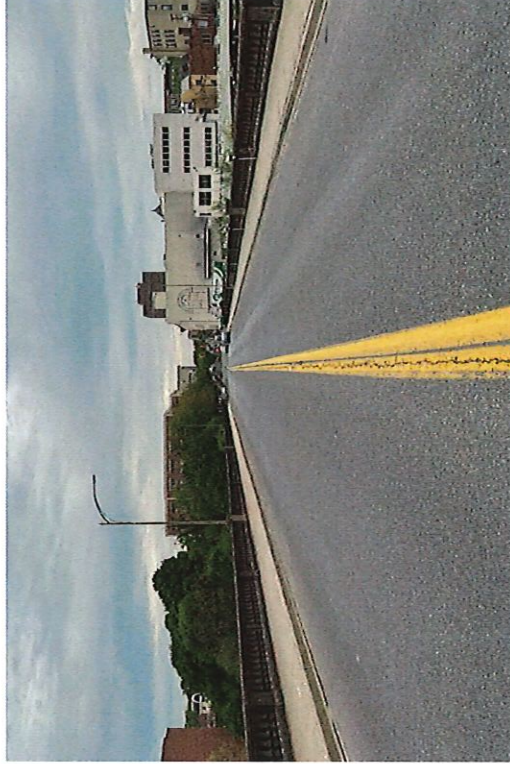


Image 5



Image 4



Image 6

### Section 3 – Downtown Broad Street from Main Street to Center Street

#### IMAGE 1

Between Main Street and Guetter Street, Broad Street has a tree-lined median, supplemented with curb bump-outs at intersections.

#### IMAGE 2

The streetscape materials have been carefully selected to provide continuity with Main Street.

#### IMAGE 3

Between Guetter Street and New Street, the landscaped median is discontinued but other streetscape elements continue. The curb bump-outs reduce the crossing distance at both intersections and at the midblock crosswalk.

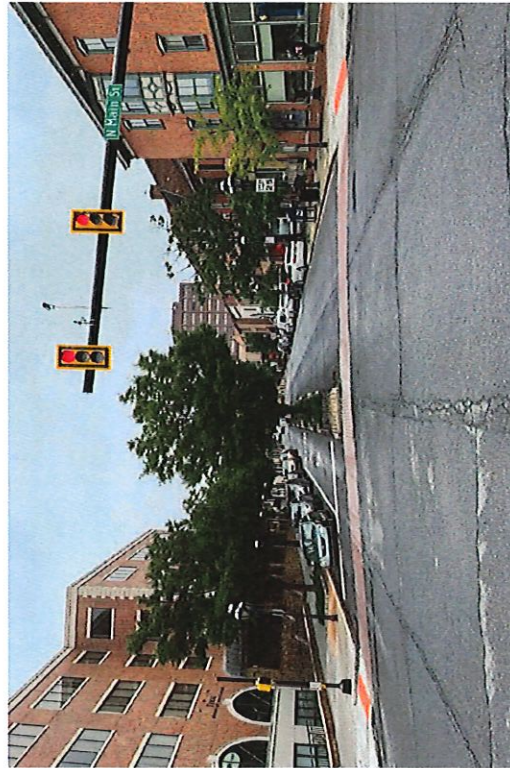


Image 1

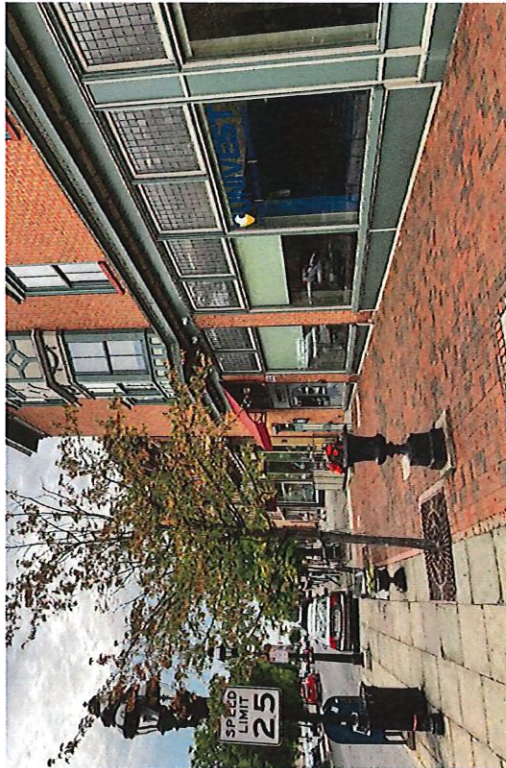


Image 2



Image 3

**IMAGE 4**

East of New Street, the tree-lined median returns, again complemented with curb bump-outs at key crossing locations.

**IMAGE 5**

At this midblock crosswalk, the combination of the median and the bump-outs allow pedestrians to cross a single 20-foot travel lane at a time.

**IMAGE 6**

This view from the west of Center Street shows how the streetscape elements work together. The bump-outs and median reduce the crossing distance, while the street trees and pedestrian-scale lighting create a sense of place.

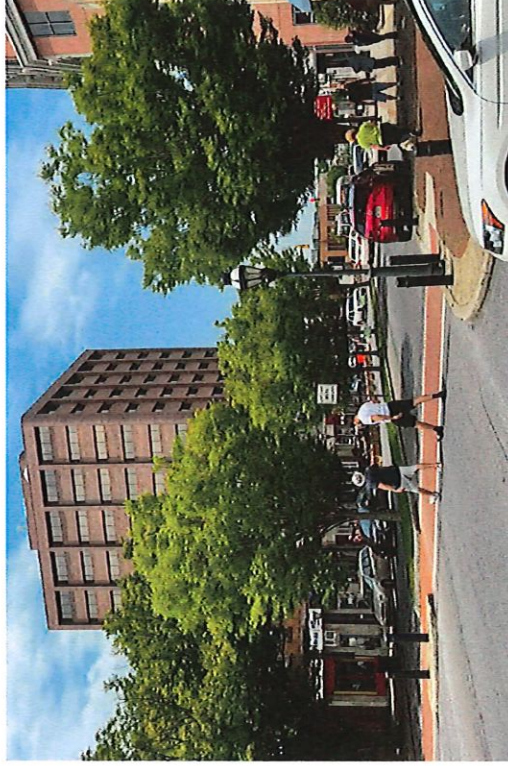


Image 5

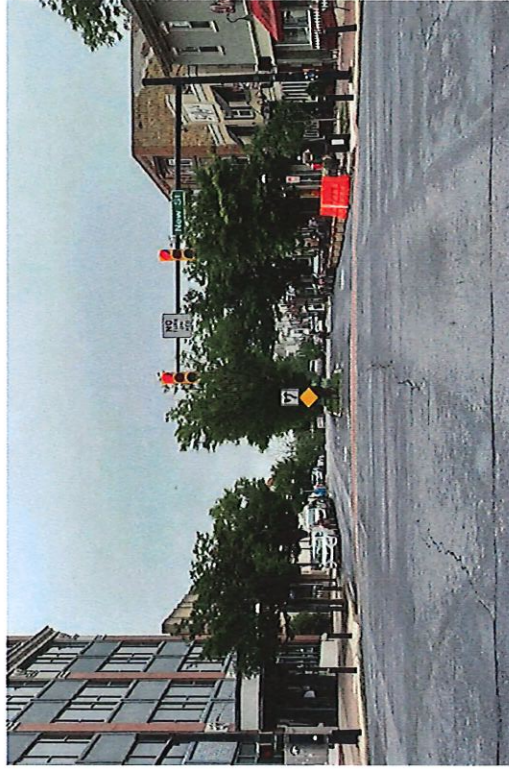


Image 4

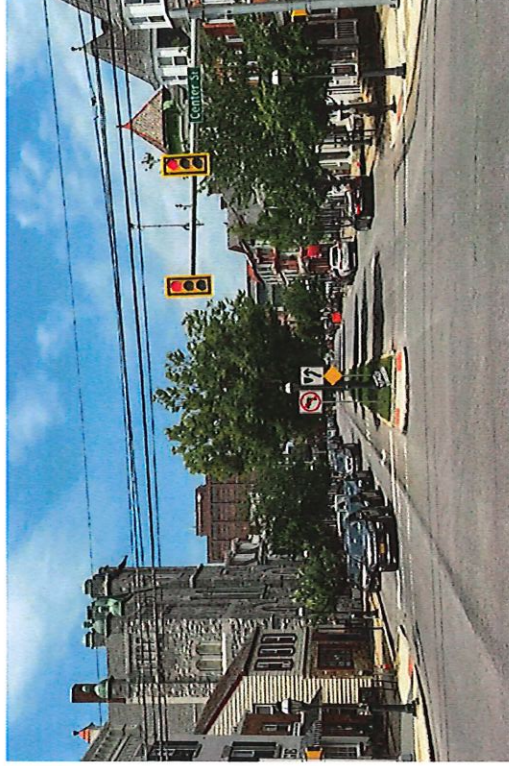


Image 6

### Section 4 – East Broad Street from Center Street to Stefko Boulevard

#### IMAGE 1

East of Center Street, the width of Broad Street returns to 58 feet.

#### IMAGE 2

The section of Broad Street between Center Street and Linden Street is home to multiple restaurants and small businesses. However, crossing the street at the unsignalized intersections in this area is challenging due to the width of the street, traffic speeds, and sight distance.

#### IMAGE 3

At Linden Street, there may be an opportunity to repurpose the space that currently serves as a right-turn lane.



Image 1



Image 2

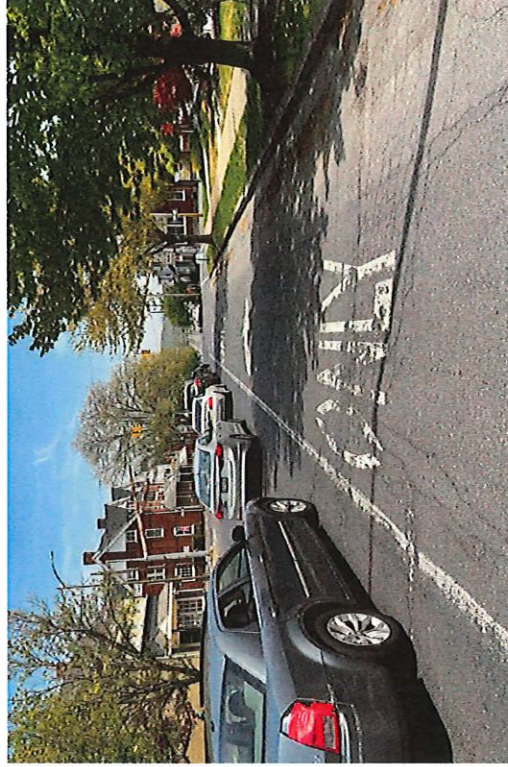


Image 3

**IMAGE 4**

Linden Street, which is one-way, has three lanes of southbound traffic at its intersection with Broad Street.

**IMAGE 5**

The crosswalk at Broad Street & Maple Street is an important crossing location for students at Thomas Jefferson Elementary School and neighbors accessing the YMCA.

**IMAGE 6**

Cars traveling downhill may not notice pedestrians waiting to cross the street.



Image 5



Image 4



Image 6

**IMAGE 7**

Directly in front of the YMCA, the intersection of Broad Street & Elm Street/Dellwood Street is another challenging intersection to cross.



Image 7

**IMAGE 8**

This is a view of how a pedestrian experiences this intersection as they're walking towards the YMCA or the bus stop on the opposite corner. Turning cars may approach from five different directions.



Image 8

**IMAGE 9**

The intersection of Broad Street & Wood Street is also a five-legged intersection, but the traffic signal and marked crosswalks serve to improve the pedestrian experience.

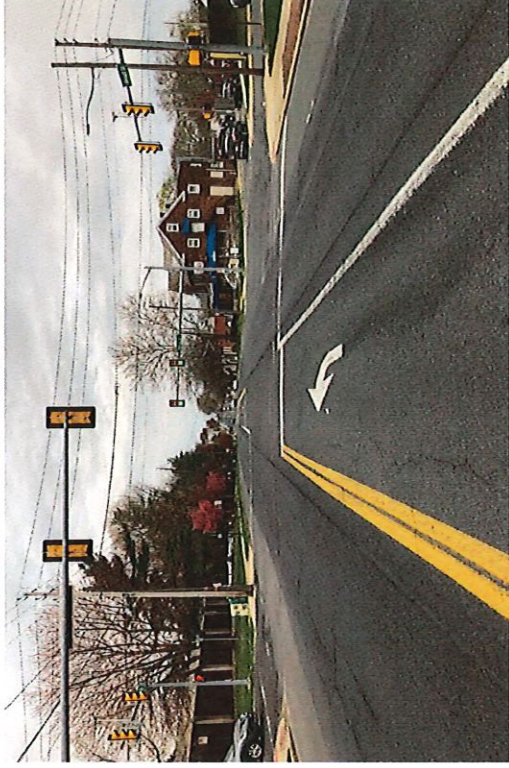


Image 9

**IMAGE 10**

At the eastern end of the corridor, cars are transitioning from the 40 mph environment on Stefko Boulevard. The on-street parking in this area is lightly used, so drivers experience minimal friction.

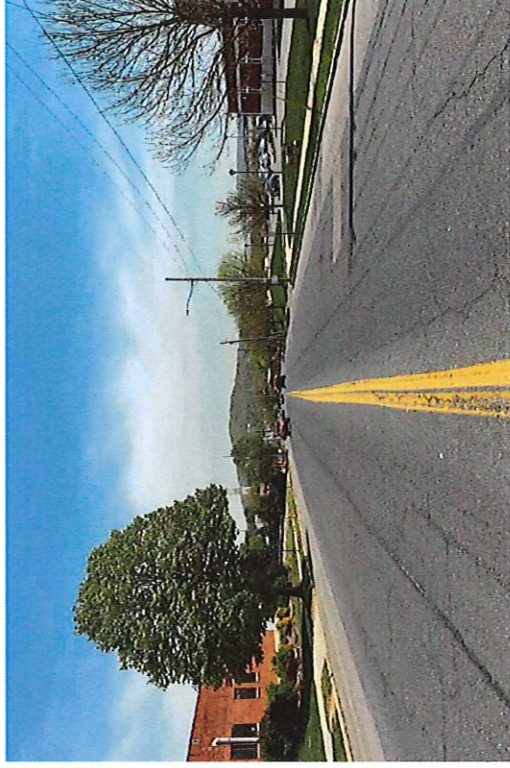


Image 10

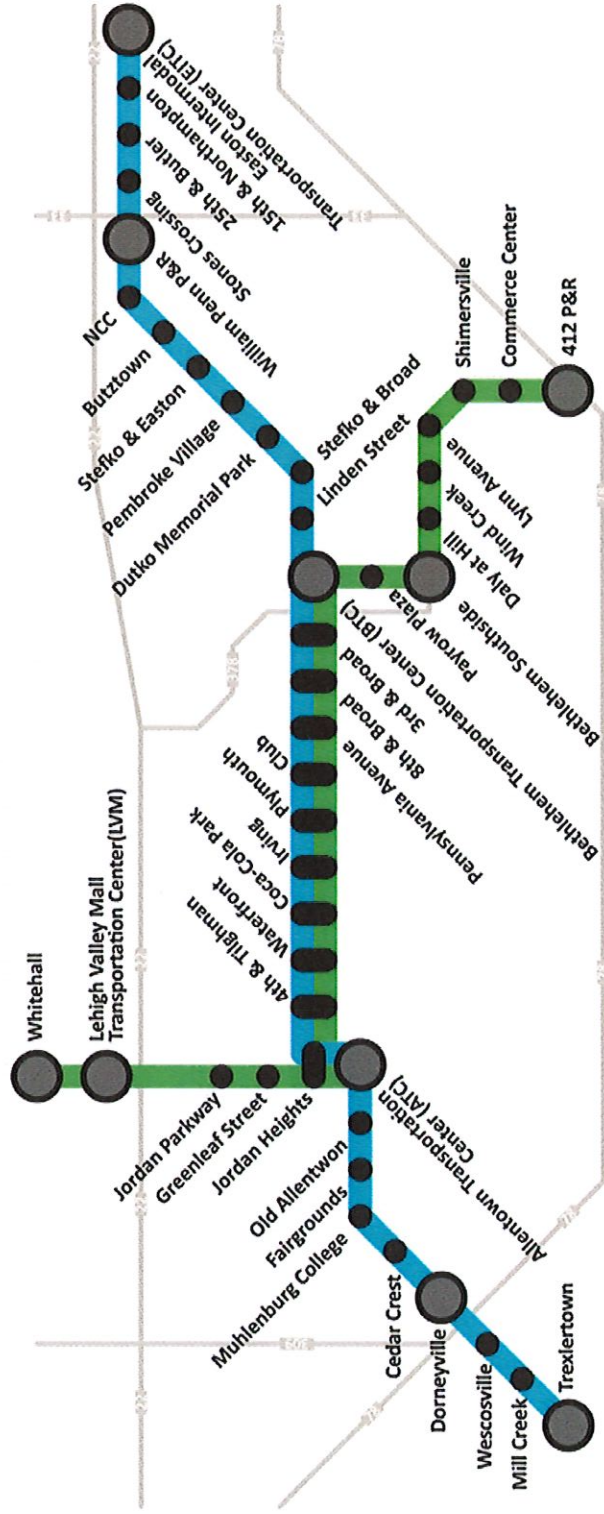


## TRANSIT RIDERSHIP

Several LANTA routes operate along Broad Street, including Routes 107, 220, and 215 west of the Bethlehem Transit Center (BTC) and Routes 101 and 215 east of the BTC. Several north/south routes are also accessible via the BTC. Based on data provided by LANTA, the corridor contains 40 bus stops with an average annual ridership of 330,750 (FY19).

As part of LANTA's plans for Enhanced Bus Service (EBS) across the region, additional transit service will be provided along the corridor. The new routes will serve six key transit stops within the study area:

- » Broad Street and Pennsylvania Avenue
- » Broad Street and Eighth Avenue
- » Broad Street and Second Avenue/Third Avenue
- » Broad Street and Main Street/Guetter Street
- » Broad Street and Linden Street
- » Broad Street and Stefko Boulevard



*Intentionally blank to facilitate double-sided printing*



# The Public Pulse

Feedback from the Public

ESU ST UNIT



# The Public Pulse

## COMMUNITY ENGAGEMENT

The summer of 2021 was a challenging time for traditional public meetings. Due to caution related to the COVID-19 pandemic, the project team worked with the City of Bethlehem to plan and host a mix of outdoor events and virtual meetings that provided community members with multiple ways to get involved. Steering Committee members volunteered to host a series of walking tours in partnerships with community groups such as the Coalition for Appropriate Transportation and the Mount Airy Neighborhood Association. The project team also created a StoryMap webpage via ArcGIS online that summarized the plans objectives and the findings of the existing conditions analysis.

The heart of the public engagement effort was a three-day community charrette held in June 2021. The charrette included two outdoor meetings, smaller pop-up public engagement stations along the corridor, and a virtual drop-in session with the project team. The first public meeting was held on June 22, 2021 at an outdoor location in the heart of the

Broad Street corridor. The public was invited to visit several boards set up throughout the meeting room to share their thoughts on the corridor. They were asked to provide input on the following:

- » The best thing about Broad Street is...
- » I would improve Broad Street by...
- » The biggest issue with Broad Street is...
- » How can we make Broad Street a better place to walk, bike, or ride transit?
- » What improvements or amenities I would like to see on Broad Street...

The following pages summarize the feedback given by the public at this public meeting.



Figure 2: The best thing about Broad Street is...

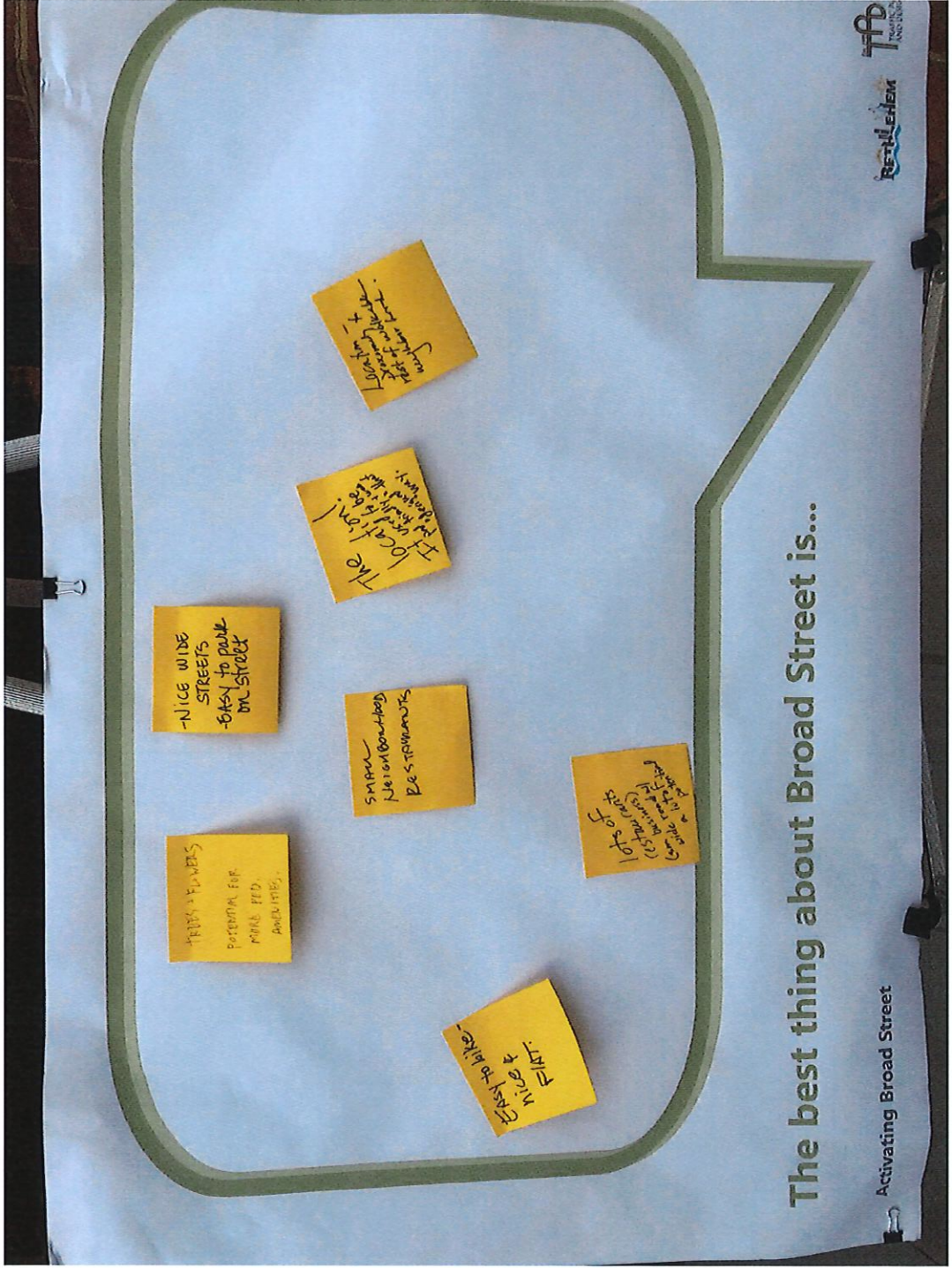


Figure 3: I would improve Broad Street by...

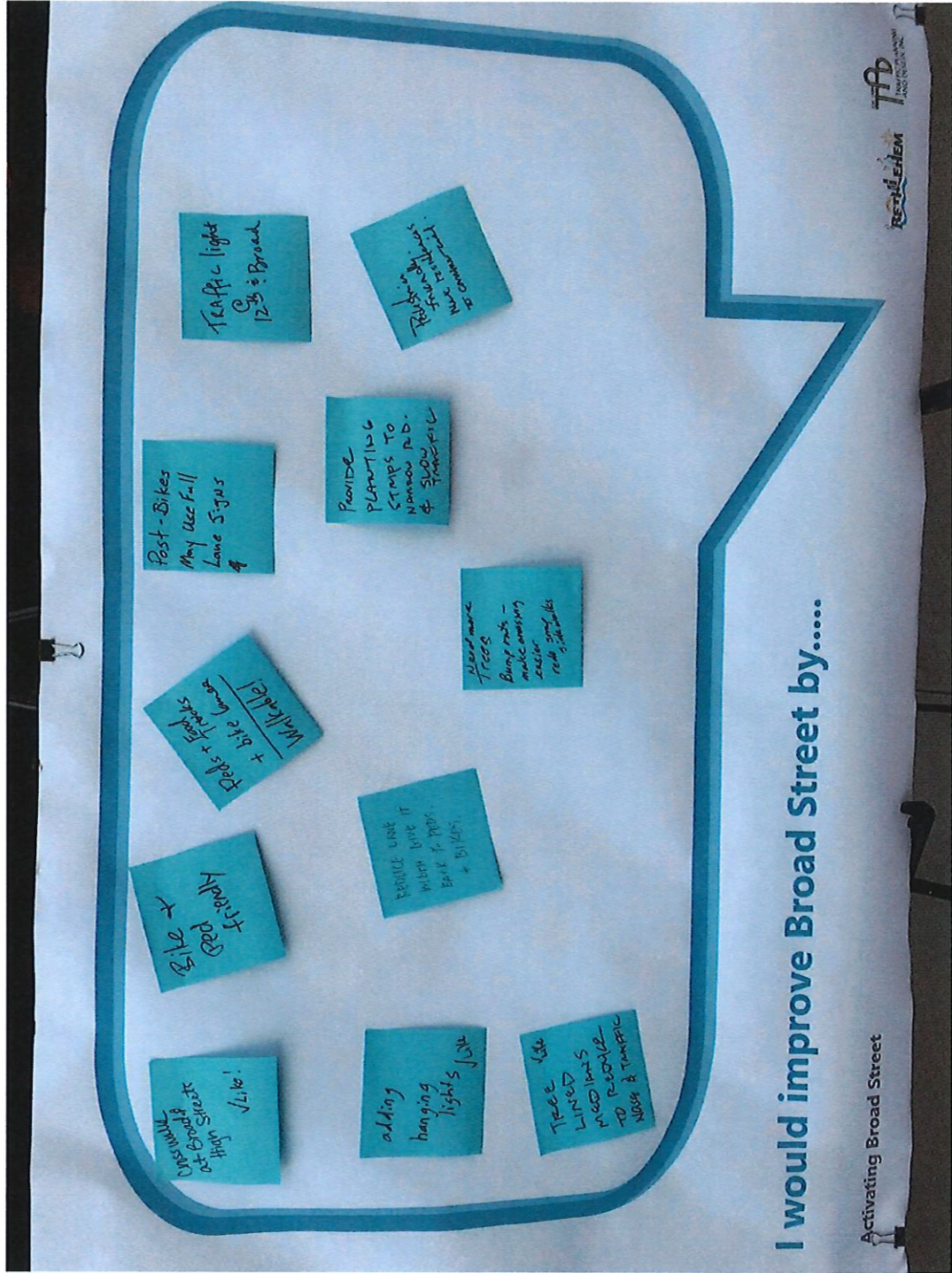
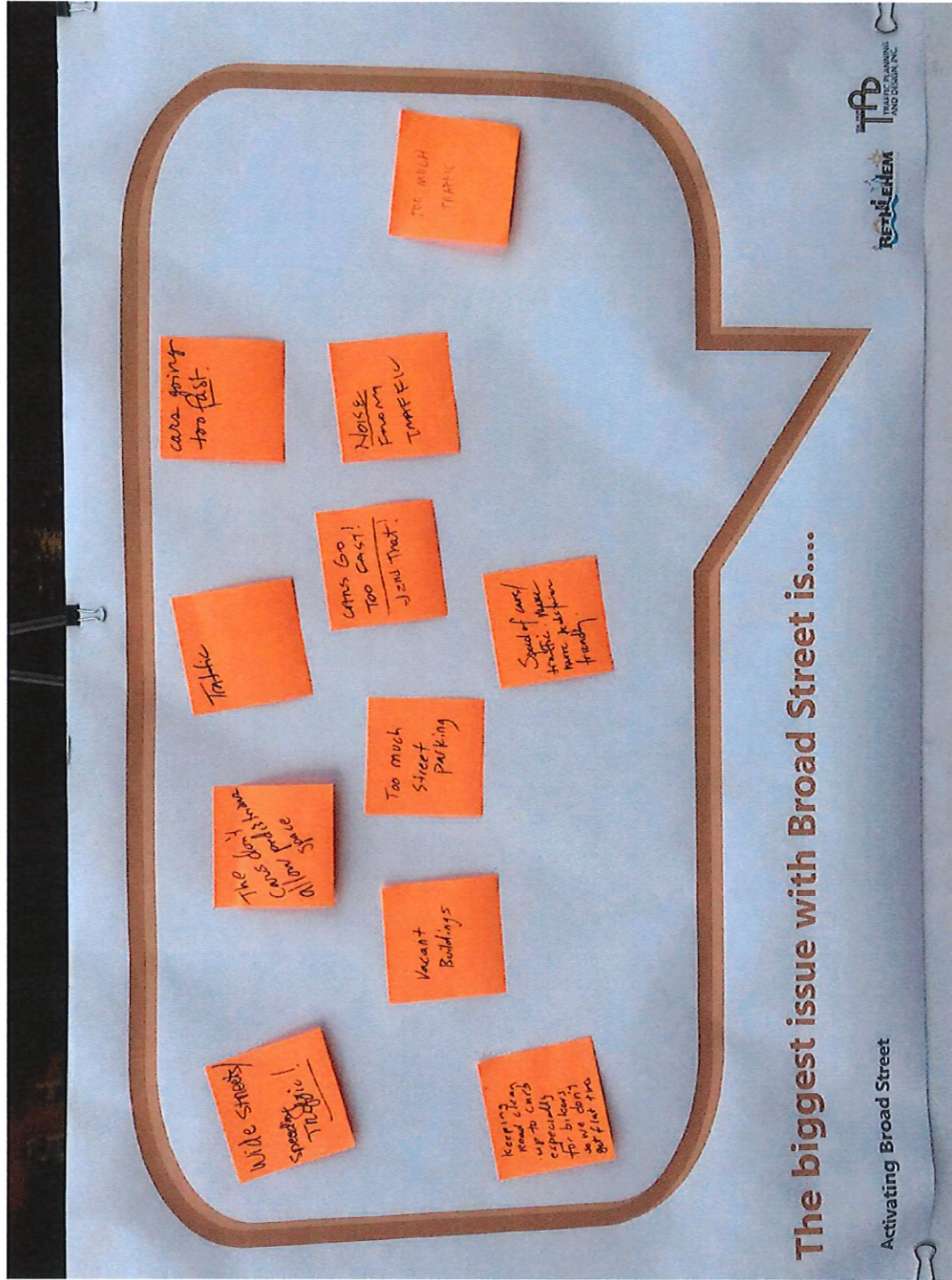


Figure 4: The biggest issue with Broad Street is...



The biggest issue with Broad Street is....

Activating Broad Street

Figure 5a: How can we make Broad Street a better place to walk, bike or ride transit?

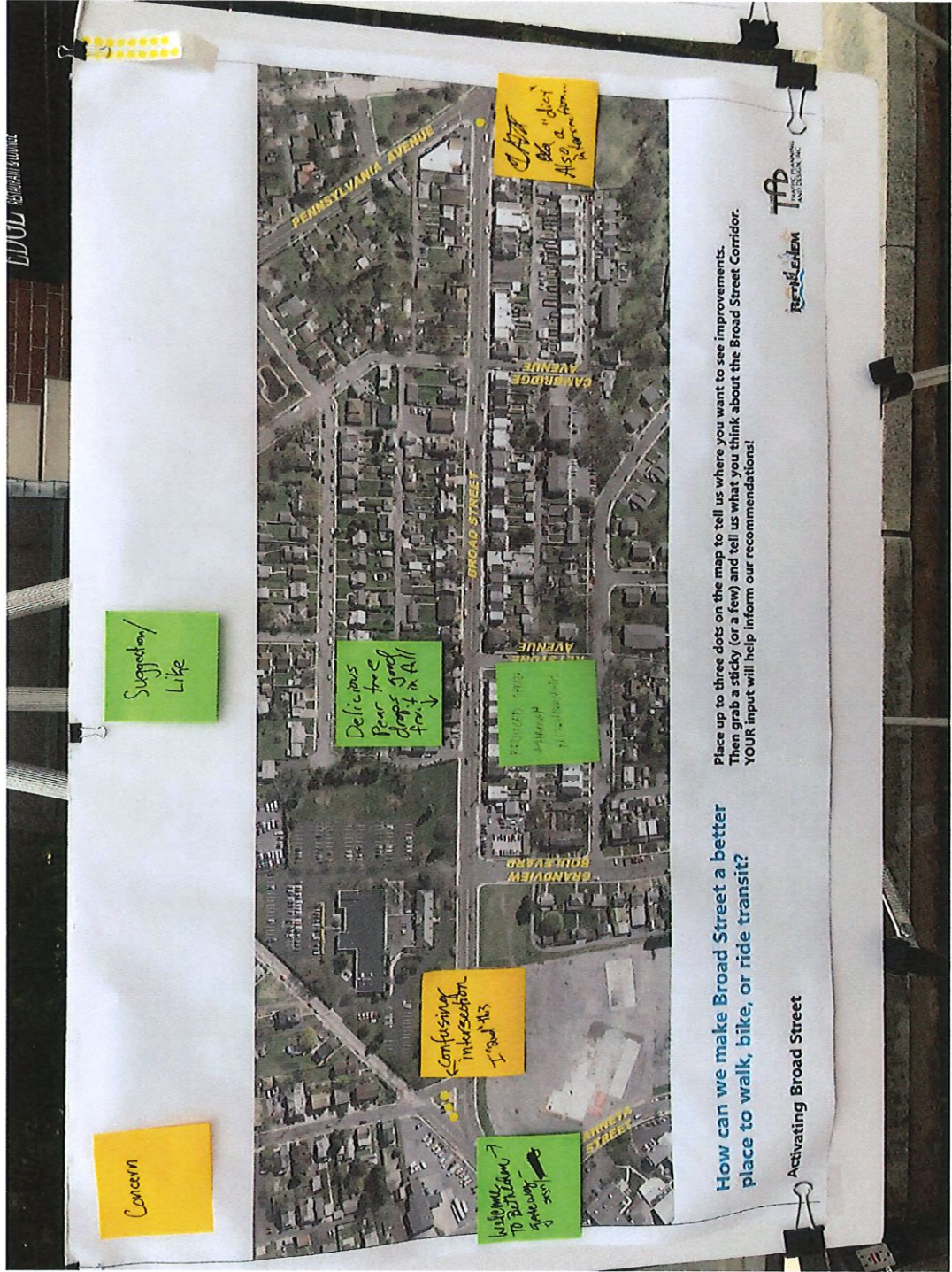
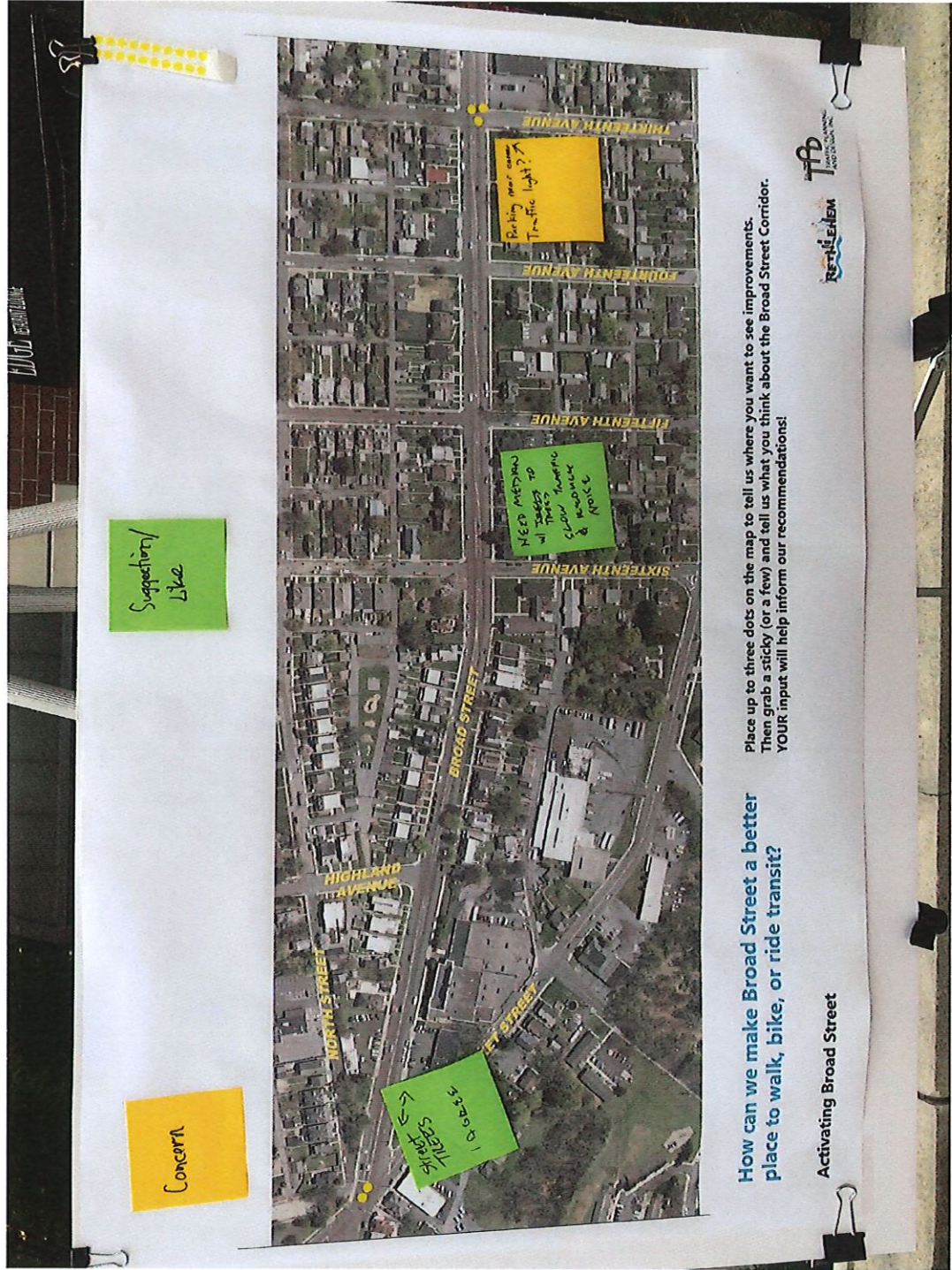




Figure 5b: How can we make Broad Street a better place to walk, bike or ride transit?



How can we make Broad Street a better place to walk, bike, or ride transit?

Place up to three dots on the map to tell us where you want to see improvements. Then grab a sticky (or a few) and tell us what you think about the Broad Street Corridor. YOUR input will help inform our recommendations!

Activating Broad Street



Figure 5c: How can we make Broad Street a better place to walk, bike or ride transit?

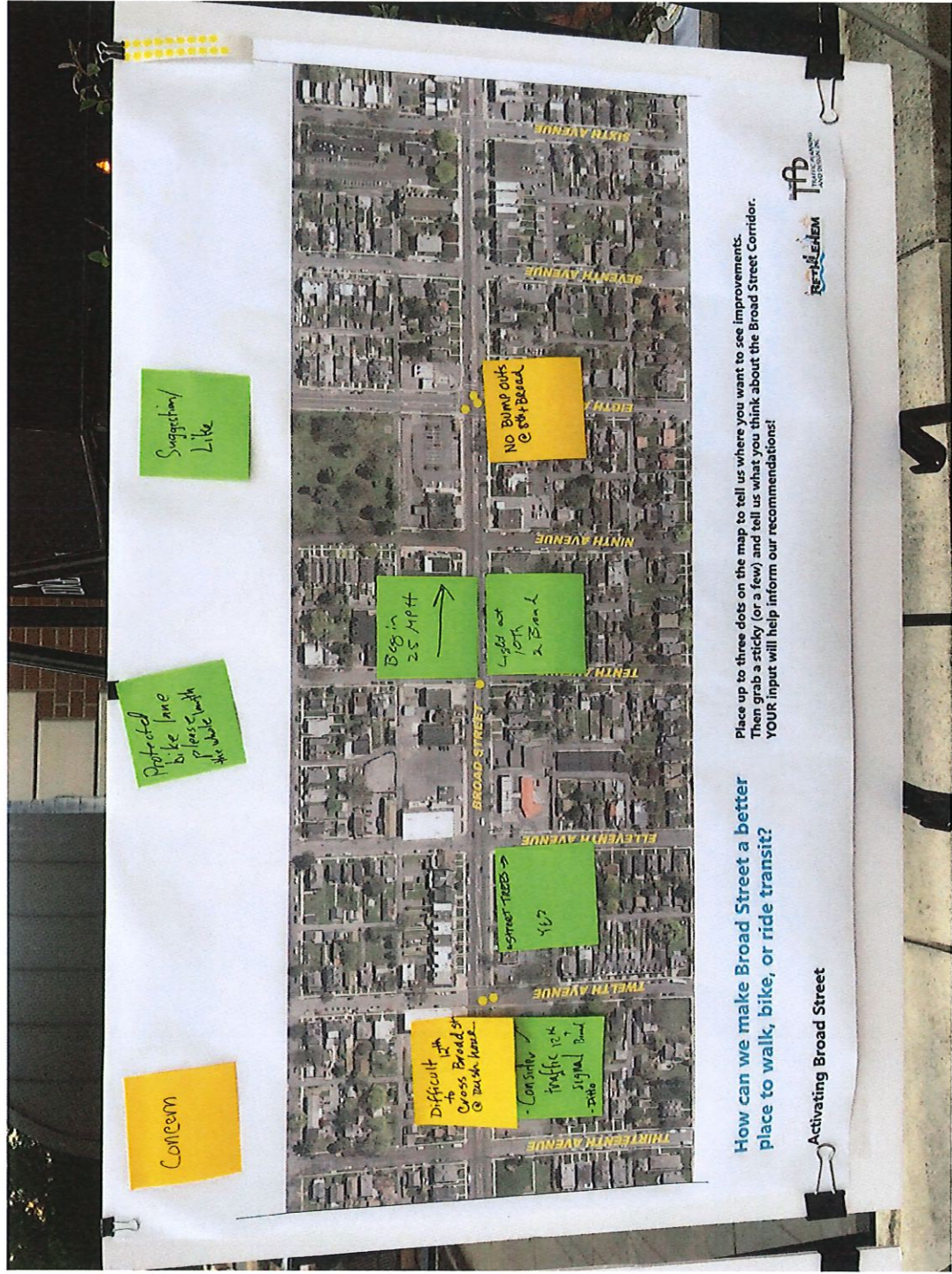


Figure 5d: How can we make Broad Street a better place to walk, bike or ride transit?

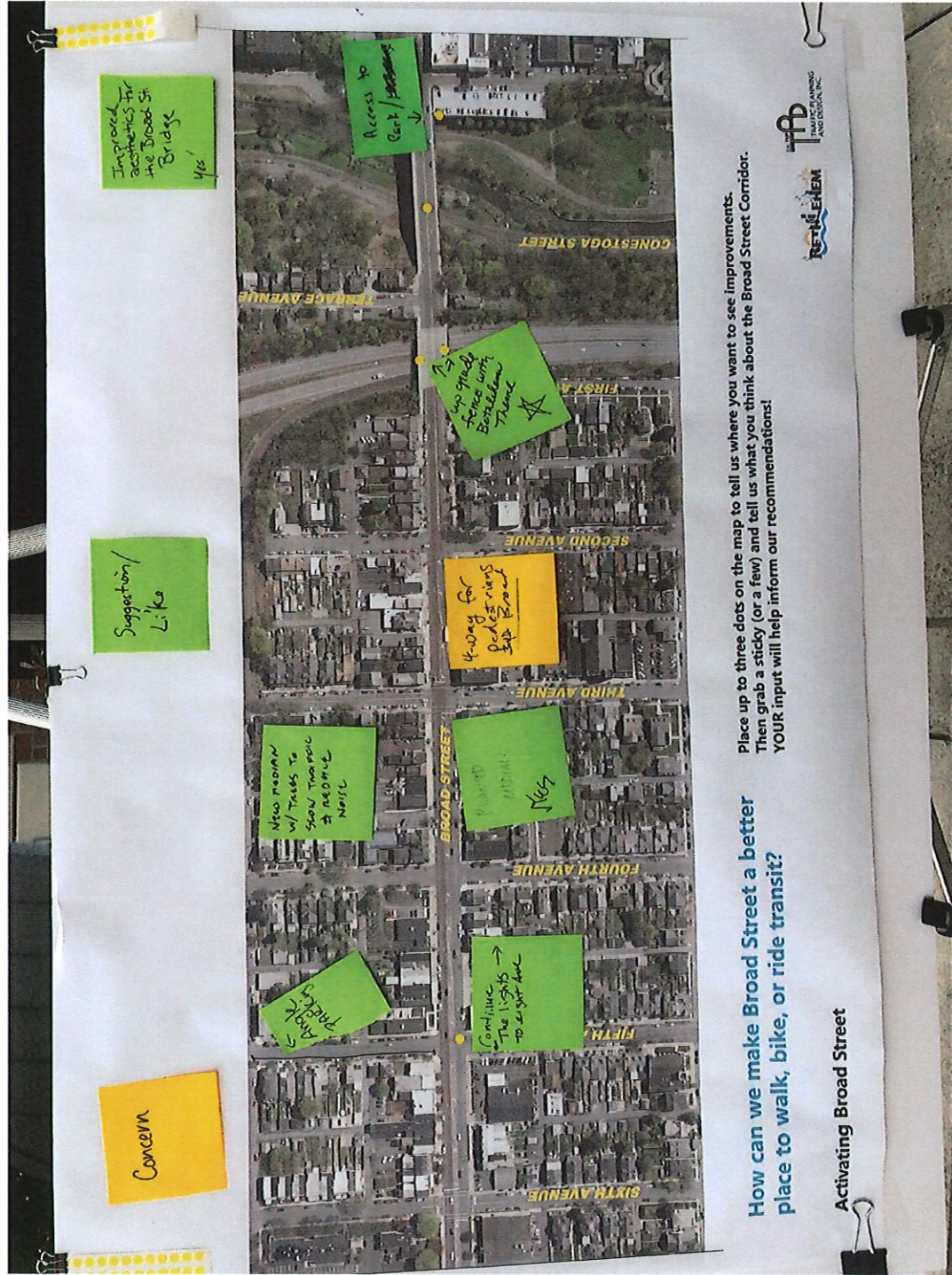


Figure 5e: How can we make Broad Street a better place to walk, bike or ride transit?

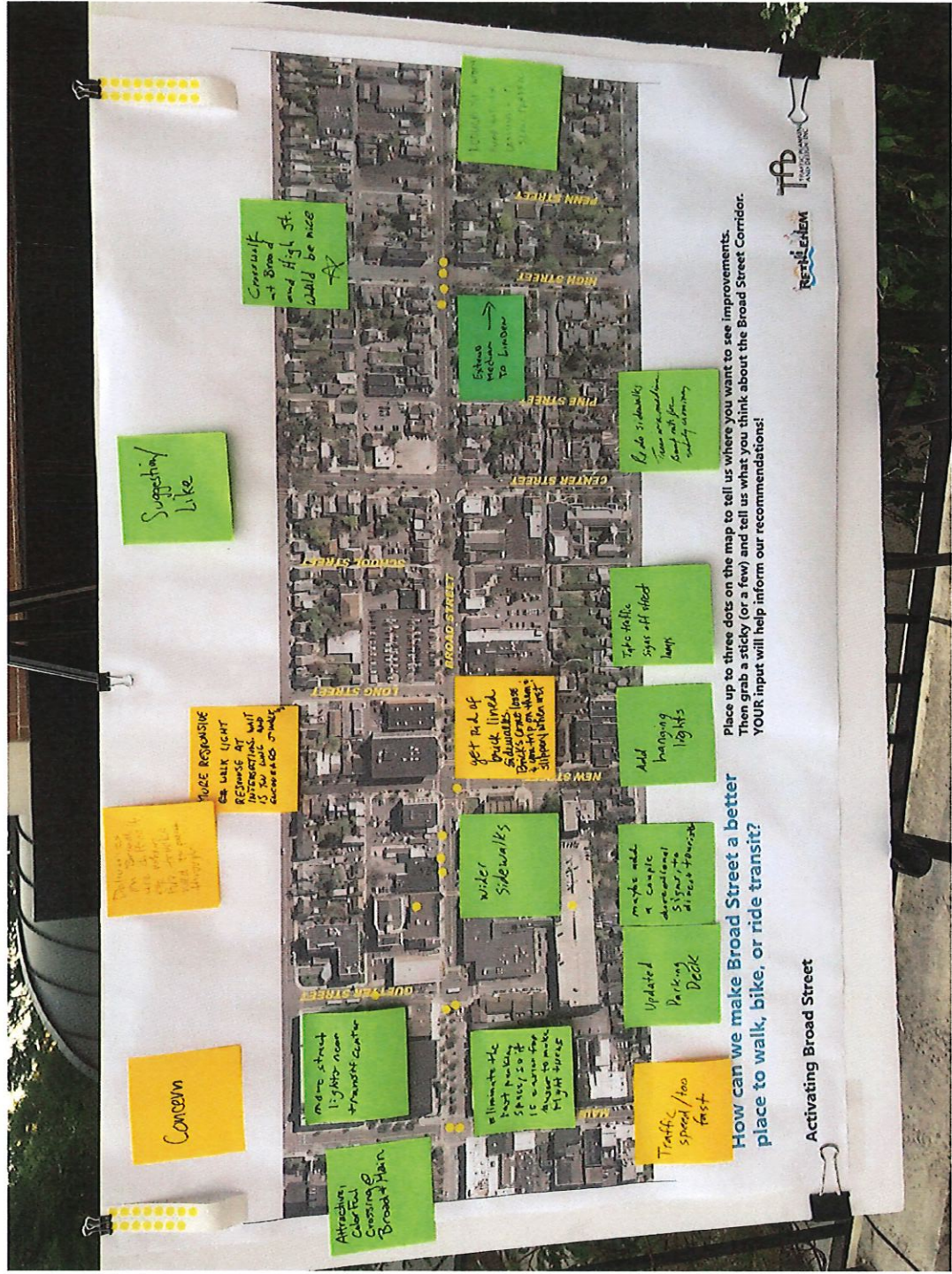


Figure 5f: How can we make Broad Street a better place to walk, bike or ride transit?

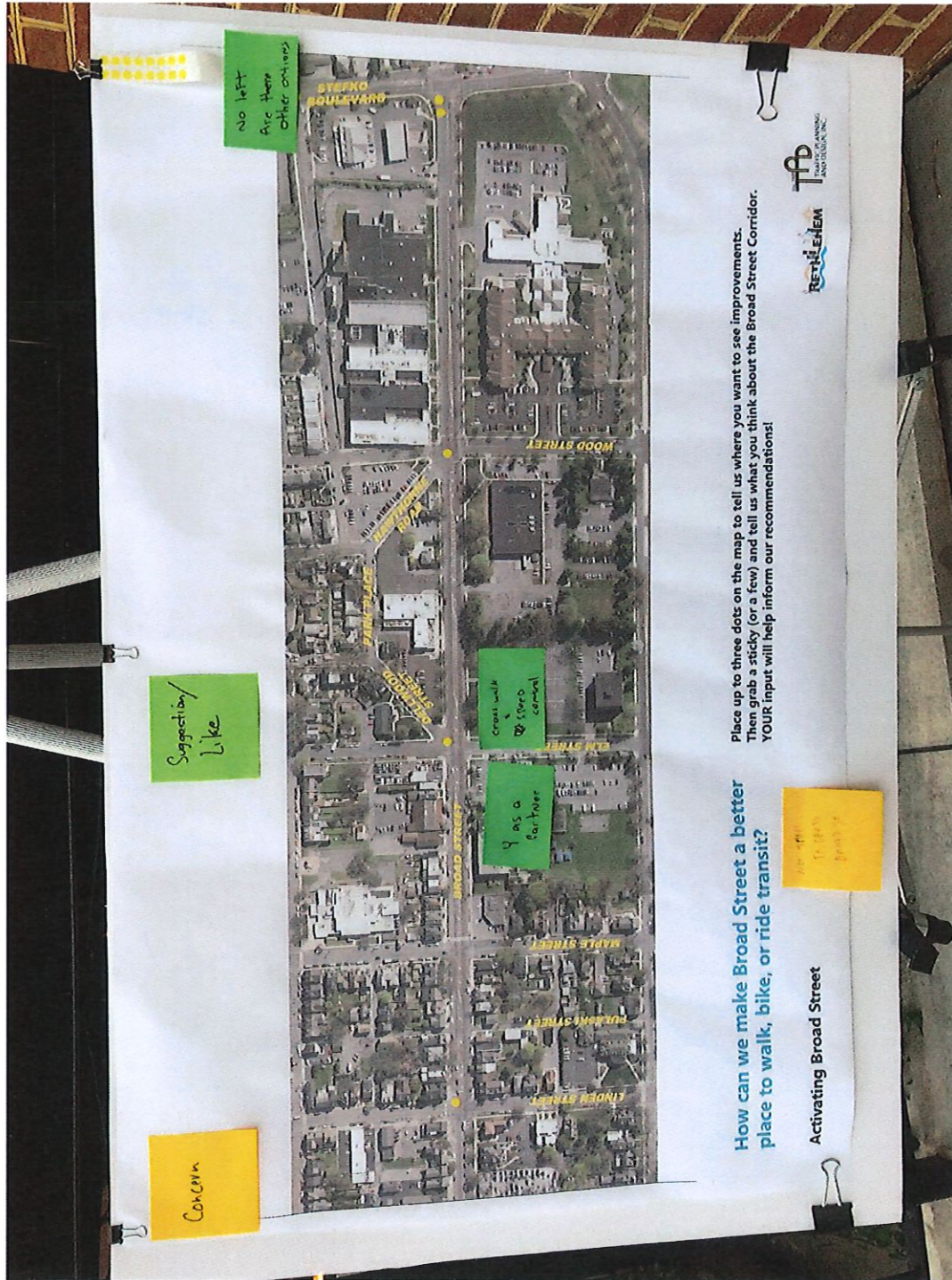
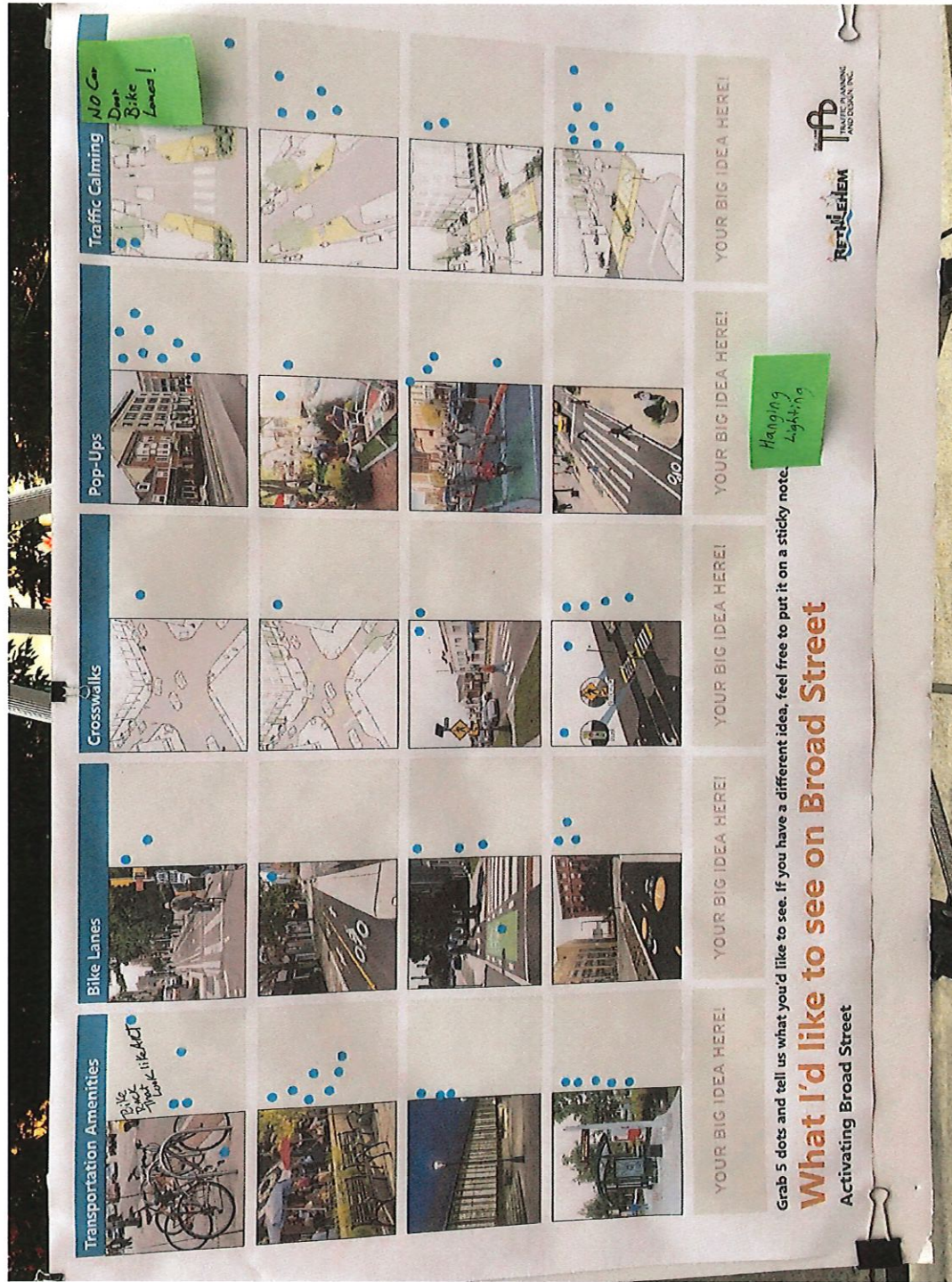


Figure 6: What I'd like to see on Broad Street





The project team took this feedback and immediately began to develop sketches that addressed key issues raised by the public. A virtual check-in with the planning team was held on Wednesday, June 23. Members of the public were invited to learn more about the design solutions the team was considering.

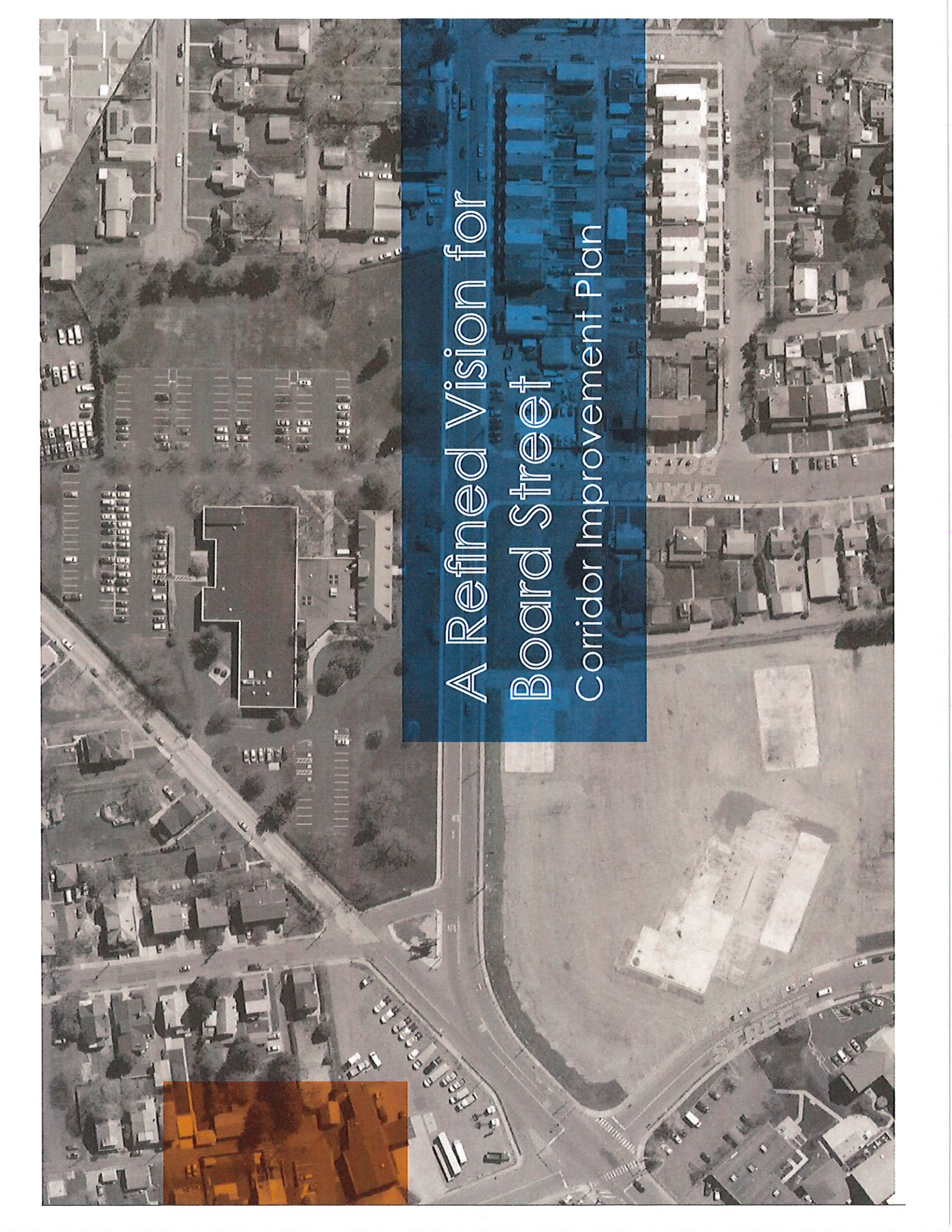
The following day, on Thursday, June 24, the project team reconvened with community members for another public meeting to share the team's initial recommendations and sketches.

During the three-day process the public shared valuable insights that largely echoed the concerns of the Steering Committee and were supported by the existing conditions analysis.



*Intentionally blank to facilitate double-sided printing*



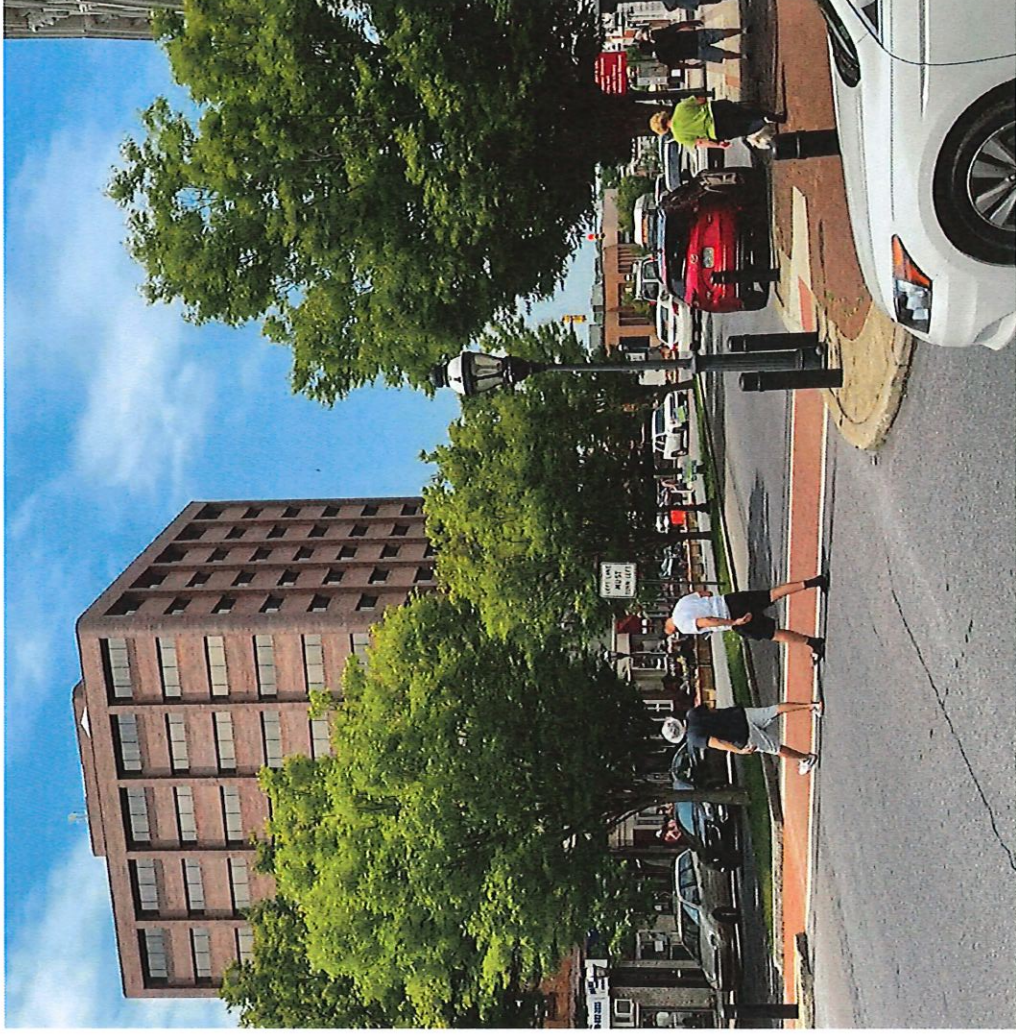
An aerial photograph of a city street corridor, likely Board Street, showing residential buildings, parking lots, and a large open lot. A semi-transparent blue vertical band is overlaid on the center of the image, containing the title text. The text is written in a white, sans-serif font. The background shows a mix of urban development and open space.

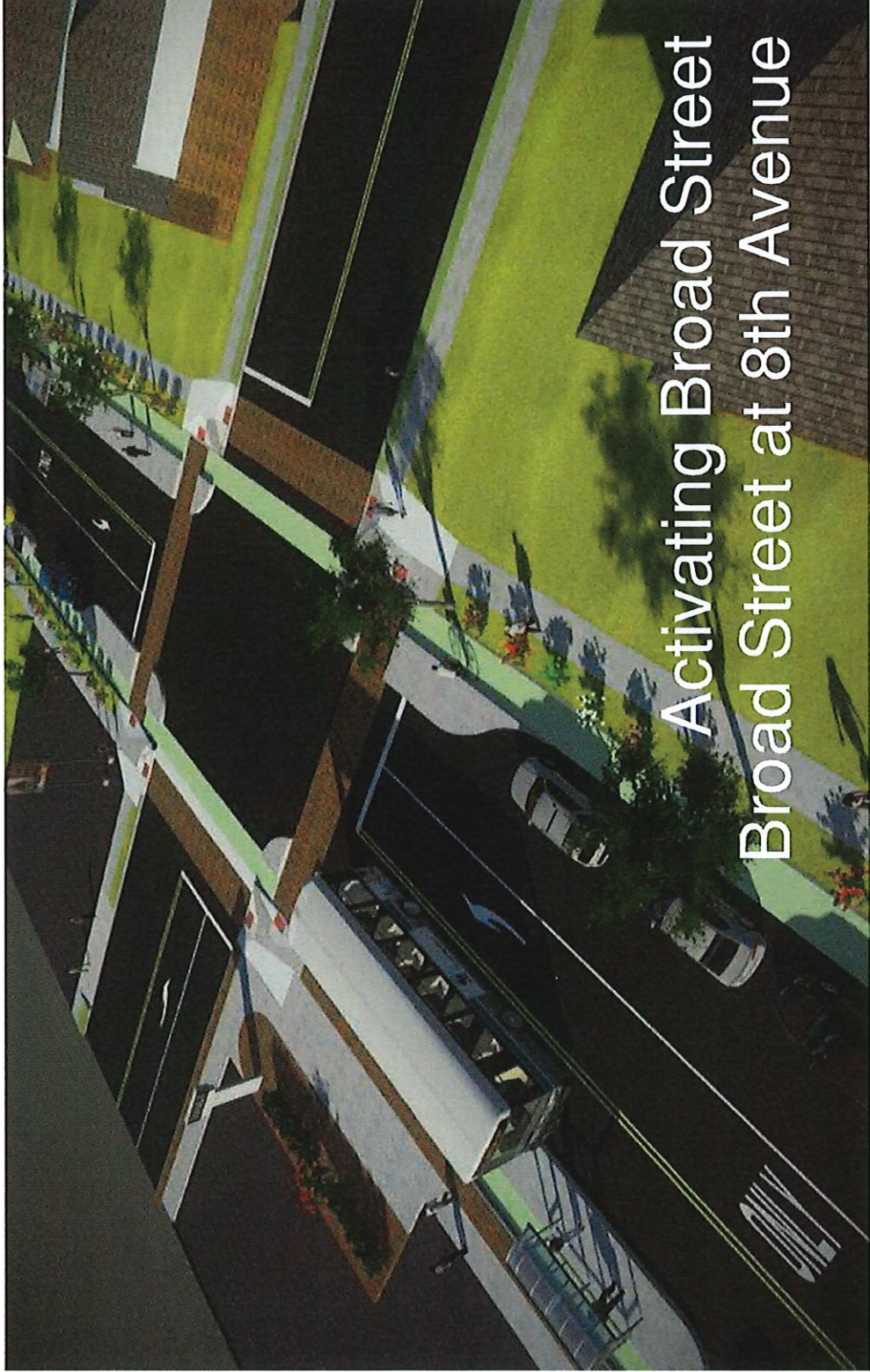
# A Refined Vision for Board Street Corridor Improvement Plan

# A Refined Vision for Board Street

## CORRIDOR VISION

The public comments and existing conditions data were synthesized to create a vision for the future of the Broad Street Corridor. While the health, safety and welfare of the public are the driving factors in the development of the corridor, aesthetics, comfort and consistency help to create an improved environment for all modes of travel along the corridor. The results of the public engagement were very clear, the public embraces the existing streetscape located within the downtown area, while desiring improvements for all modes along the corridor. The conceptual improvement plan on the following pages presents this vision graphically and addresses the comments offered by the public.





Activating Broad Street  
Broad Street at 8th Avenue

## CONCEPTUAL IMPROVEMENT PLAN

### Panel 1: Club Avenue to Pennsylvania Avenue

The western section of the corridor is a transition area with a narrower cartway width. Incremental improvements in this section can enhance pedestrian safety and create a more pleasant walking environment.

- » Provide high-visibility crosswalks and accessible curb ramps at the following intersections, which are each served by LANTA bus stops: Grandview Boulevard, Keystone Avenue, and Cambridge Avenue.
- » Plant additional street trees along these blocks, which currently lack a tree canopy. The Bureau of Urban Forestry should be consulted to identify the proper locations for new plantings and determine what species are appropriate.
- » At the intersection of Broad Street & Pennsylvania Avenue/Market Street, provide an enhanced transit stop in each direction that includes modern bus shelters, real time schedule information, and other amenities.
- » At the intersection of Broad Street & Pennsylvania Avenue/Market Street, reduce the crossing distance on the northbound approach of Market Street.

Panel 1: Club Avenue to Pennsylvania Avenue

The image is an aerial photograph of a residential street, Broad Street, running north-south. The street is highlighted in yellow. At the top of the map, the text 'PENNSYLVANIA AVENUE' is written in yellow. At the bottom, 'WANNETA STREET' is written in yellow. Other streets shown include 'GRANDVIEW BOULEVARD', 'KEystone AVENUE', and 'CAMBRIDGE AVENUE'. Two callout boxes are present: one on the left showing a street with trees and the text 'Plant Additional Street Trees', and one on the right showing a street with a median and the text 'Reduce Crossing Distance on W. Market Street/High Visibility Crosswalks'. A legend in the bottom right corner shows a tree icon for 'Add Landscaped Median' and a green line icon for 'Separated Bike Lanes'. The text 'How can we make Broad Street a better place to walk, bike, or ride transit?' is written in bold black font. Below it, 'Activating Broad Street' is written in bold black font. Logos for 'RETHINK' and 'TIP' are in the bottom right corner.

Plant Additional Street Trees

Reduce Crossing Distance on W. Market Street/High Visibility Crosswalks

**Legend:**

- Add Landscaped Median
- Separated Bike Lanes

**How can we make Broad Street a better place to walk, bike, or ride transit?**

**Activating Broad Street**

RETHINK  
TRAFFIC PLANNING AND DESIGN, INC.

TIP  
TRAFFIC PLANNING AND DESIGN, INC.

### Panel 2: Pennsylvania Avenue to Thirteenth Avenue

Significant physical improvements to the streetscape are recommended to begin at the intersection of Broad Street and Sixteenth Avenue. The following improvements will provide safe and comfortable travel for all road users. Reducing the width of the travel lanes will reduce the crossing distance for pedestrians and discourage excessive driving speeds.

- » East of Sixteenth Avenue, reconfigure the typical intersection to provide curb bump-outs and high-visibility crosswalks.
- » Provide separated bike lanes in each direction along Broad Street. The preferred bike lane width is six feet wide with a four-foot-wide buffer.
- » Where a separated bike lane traverses through an intersection, provide sufficient clear sight distance so that people driving and biking can see one another before the intersection. Curb bump-outs should be designed with curb radii that discourage cars from turning at speeds above 10 mph. Additional guidance on intersection design is included in Appendix X.
- » Where possible, the number of commercial driveways along Broad Street should be reduced by consolidating driveways or providing access to perpendicular streets.
- » Plant additional street trees on the blocks between Sixteenth Avenue and Thirteenth Avenue. The Bureau of Urban Forestry should be consulted to identify the proper locations for new plantings and determine what species are appropriate.
- » Eliminate the existing sidewalk gap on the south side of Broad Street in the vicinity of Highland Avenue.

Panel 2: Pennsylvania Avenue to Thirteenth Avenue

**EBS Stations-Stop (Pennsylvania Ave)**

**Plant Additional Street Trees**

**Separated Bike Lanes**

**Legend:**

- Add Landscaped Median
- Separated Bike Lanes

**Pedestrian Safety Bumpouts with Protected Bike Lane (Typical)**

**How can we make Broad Street a better place to walk, bike, or ride transit?**

**Activating Broad Street**

**RETHINK**

**TTP**  
TRAFFIC PLANNING AND DESIGN, INC.

### Panel 3: Thirteenth Avenue to Sixth Avenue

The improvements recommended for this section of the corridor are an extension of the improvements recommended between Sixteenth Avenue and Thirteenth Avenue. Community feedback indicated that pedestrian safety improvements at Tenth Avenue and Eighth Avenue are a high priority because they are key crossing locations for Nitschmann Middle School students.

- » Reconfigure the typical intersection to provide curb bump-outs and high-visibility crosswalks.
- » Provide separated bike lanes in each direction along Broad Street.
- » Where a separated bike lane traverses through an intersection, provide sufficient clear sight distance so that people driving and biking can see one another before the intersection. Curb bump-outs should be designed with curb radii that discourage cars from turning at speeds above 10 mph. Additional guidance on intersection design is included in Appendix X.
- » The City may wish to retain a left-turn lane at key intersections such as the intersection of Broad Street & Eighth Avenue. Further evaluation is needed. The intersection design should prioritize the safety of vulnerable roadway users. Additional guidance on intersection design is included in Appendix X.
- » Where possible, the number of commercial driveways along Broad Street should be reduced by consolidating driveways or providing access to perpendicular streets.
- » At the intersection of Broad Street & Eighth Avenue, provide an enhanced transit stop in each direction that includes modern bus shelters, real time schedule information, and other amenities.
- » At the intersection of Broad Street & Eighth Avenue, revise the traffic signal phasing to provide a leading pedestrian interval. Right turns on red should be prohibited.



Panel 3: Thirteenth Avenue to Sixth Avenue

**Separated Bike Lanes**

**Leading Pedestrian Interval/Right Turn on Red Restriction**

**EBS Station-Stop (Eighth Ave)**

**THIRTEENTH AVENUE**  
**TWELTH AVENUE**  
**ELEVENTH AVENUE**  
**TENTH AVENUE**  
**NINTH AVENUE**  
**EIGHTH AVENUE**  
**SEVENTH AVENUE**  
**SIXTH AVENUE**

**BROAD STREET**

**Legend:**

- Add Landscaped Median
- Separated Bike Lanes

**Pedestrian Safety Bumpouts with Protected Bike Lane (Typical)**

**How can we make Broad Street a better place to walk, bike, or ride transit?**

**Activating Broad Street**

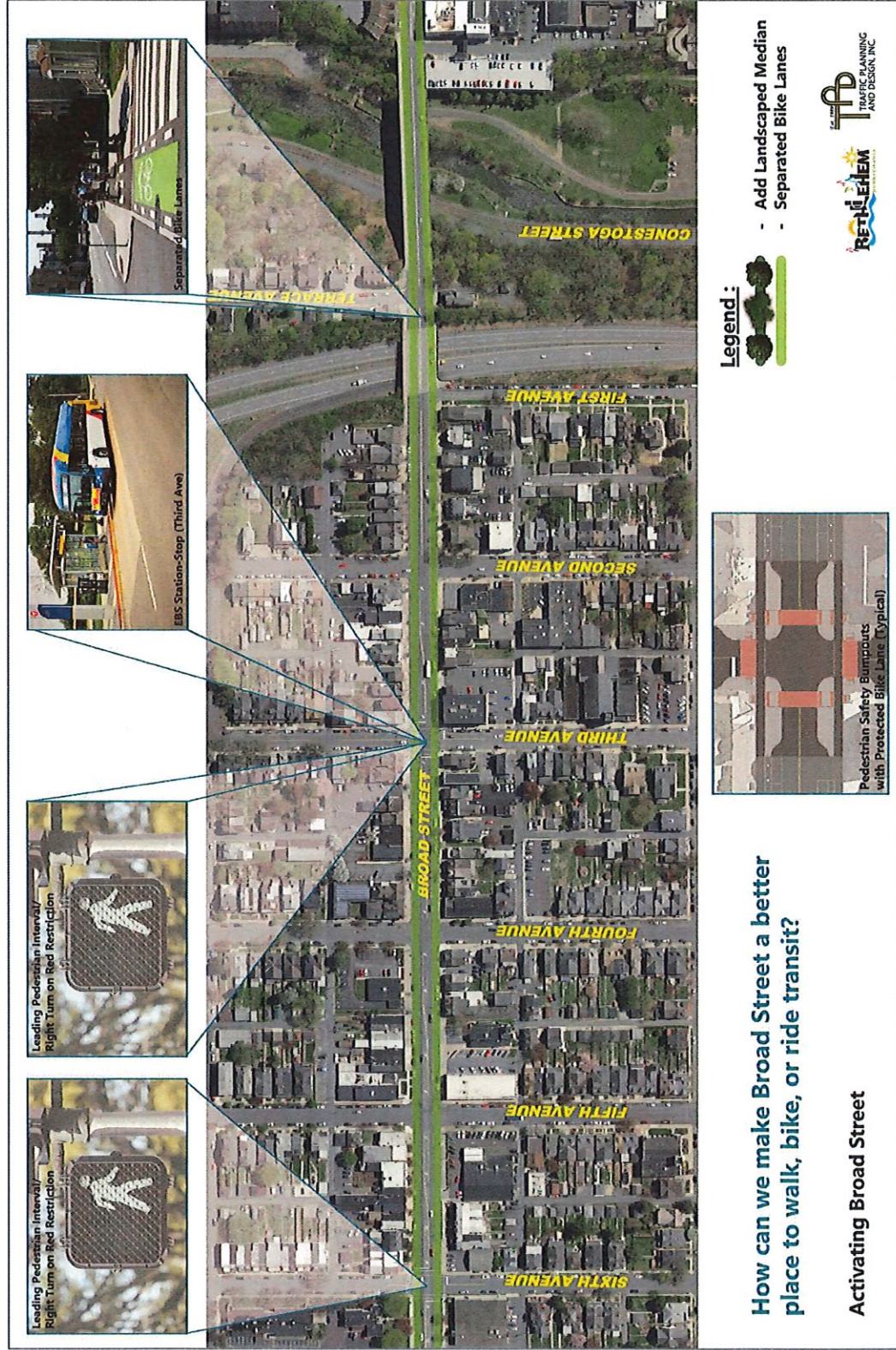
**RETHINK THEM**  
 TRAFFIC PLANNING AND DESIGN, INC.

#### Panel 4: Sixth Avenue to Main Street

The improvements recommended for this section of the corridor are an extension of the improvements recommended between Sixteenth Avenue and Sixth Avenue. The blocks between Sixth Avenue and Fourth Avenue serve as a neighborhood commercial district, which may result in higher parking demand and increased pedestrian activity.

- » Reconfigure the typical intersection to provide curb bump-outs and high-visibility crosswalks.
- » Provide separated bike lanes in each direction along Broad Street.
- » Where a separated bike lane traverses through an intersection, provide sufficient clear sight distance so that people driving and biking can see one another before the intersection. Curb bump-outs should be designed with curb radii that discourage cars from turning at speeds above 10 mph. Additional guidance on intersection design is included in Appendix X.
- » The City may wish to retain a left-turn lane at key intersections such as the intersection of Broad Street & Third Avenue. Further evaluation is needed. The intersection design should prioritize the safety of vulnerable roadway users.
- » Where possible, the number of commercial driveways along Broad Street should be reduced by consolidating driveways or providing access to perpendicular streets.
- » At the intersection of Broad Street & Third Avenue, provide an enhanced transit stop in each direction that includes modern bus shelters, real time schedule information, and other amenities.
- » At the intersections of Broad Street & Sixth Avenue and Broad Street & Third Avenue, revise the traffic signal phasing to provide a leading pedestrian interval. Right turns on red should be prohibited.

Panel 4: Sixth Avenue to Main Street



### Panel 5: Main Street to High Street

The current streetscape between Main Street and High Street is pedestrian friendly and well-loved by the community. Bump-outs and tree-lined medians discourage high-speed traffic and reduce pedestrian crossing distance. The high-quality materials extend the look and feel of Main Street and the nearby historic district. The improvements identified below are intended to build on this success.

- » Provide a transition area where separated bike lanes end on the eastbound approach to Main Street.
- » In the vicinity of the Bethlehem Transit Center, provide an enhanced transit stop in each direction that includes modern bus shelters, real time schedule information, and other amenities.
- » Provide a landscaped median on the block between Guetter Street and New Street. This would eliminate the gap between the existing medians.
- » Extend the landscaped median from Center Street to Penn Street.
- » Provide curb bump-outs at the intersections of Broad Street with Pine Street, High Street, and Penn Street. Bump-outs should also be provided on the east side of Center Street.
- » Where possible, the number of commercial driveways along Broad Street should be reduced by consolidating driveways or providing access to perpendicular streets.

Panel 5: Main Street to High Street

**Legend:**

- Add Landscaped Median
- Separated Bike Lanes

**How can we make Broad Street a better place to walk, bike, or ride transit?**

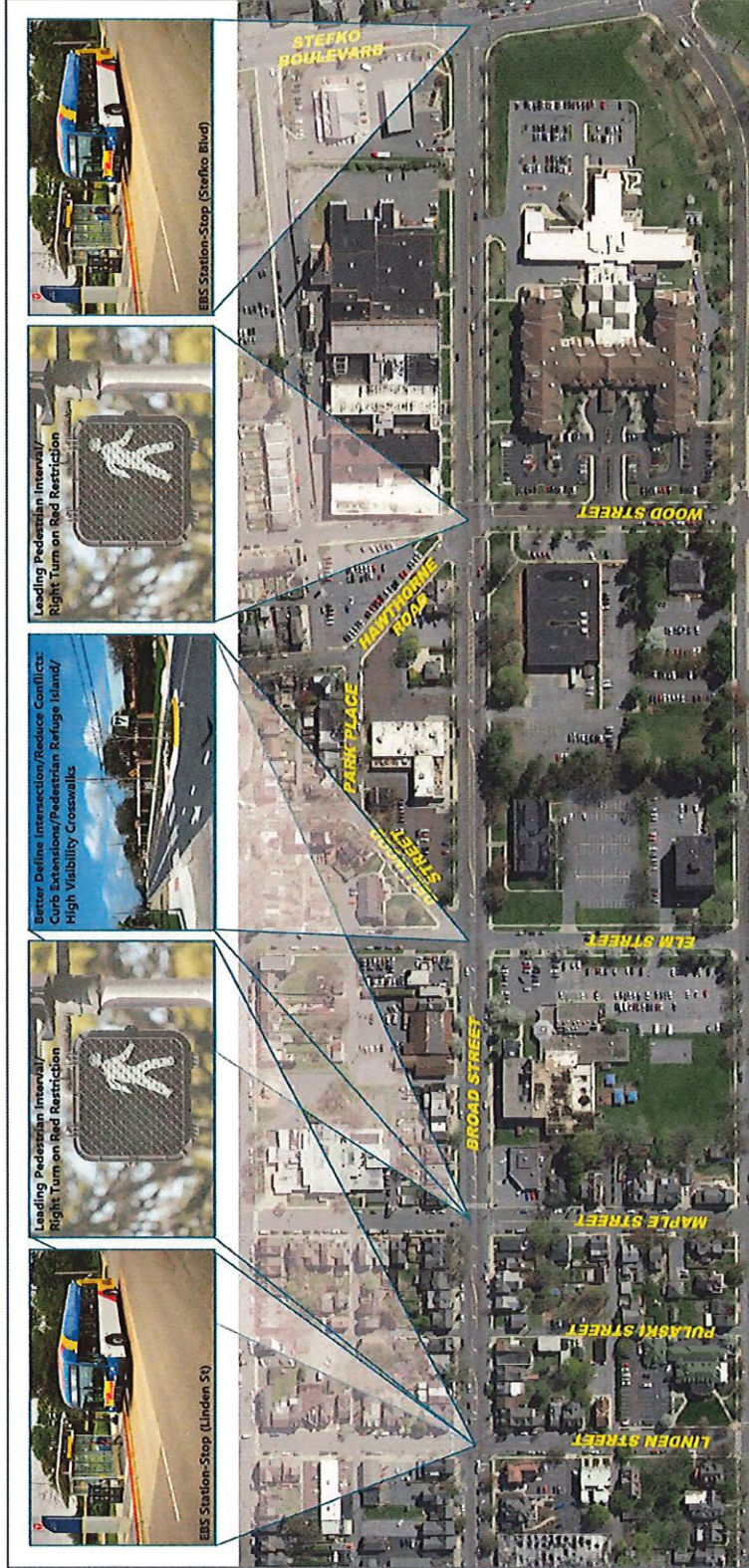
**Activating Broad Street**

### *Panel 6: Linden Street to Stefko Boulevard*

The intersection of Broad Street & Linden Street is a critical connection point for two neighborhood commercial districts. East of Linden Street, destinations such as Thomas Jefferson Elementary School and the Bethlehem YMCA attract walkers and bikers of all ages from the surrounding neighborhood. The improvements identified below will enhance pedestrian safety at each of these destinations.

- » At the intersection of Broad Street & Linden Street, provide curb bump-outs and high-visibility crosswalks.
- » At the intersection of Broad Street & Linden Street, revise the traffic signal phasing to provide a leading pedestrian interval. Right turns on red should be prohibited.
- » At the intersection of Broad Street & Linden Street, provide an enhanced transit stop in each direction that includes modern bus shelters, real time schedule information, and other amenities.
- » At the intersection of Broad Street & Maple Street, provide curb bump-outs, a pedestrian refuge island, and high-visibility crosswalks.
- » At the intersection of Broad Street & Elm Street, provide curb bump-outs, a pedestrian refuge island, and high-visibility crosswalks. Assess further changes to reduce conflicts on the northeast corner.
- » At the intersections of Broad Street & Linden Street and Broad Street & Wood Street, revise the traffic signal phasing to provide a leading pedestrian interval. Right turns on red should be prohibited.
- » Where possible, the number of commercial driveways along Broad Street should be reduced by consolidating driveways or providing access to perpendicular streets.
- » At the intersection of Broad Street & Stefko Boulevard, provide an enhanced transit stop in each direction that includes modern bus shelters, real time schedule information, and other amenities.

Panel 6: Linden Street to Stefko Boulevard



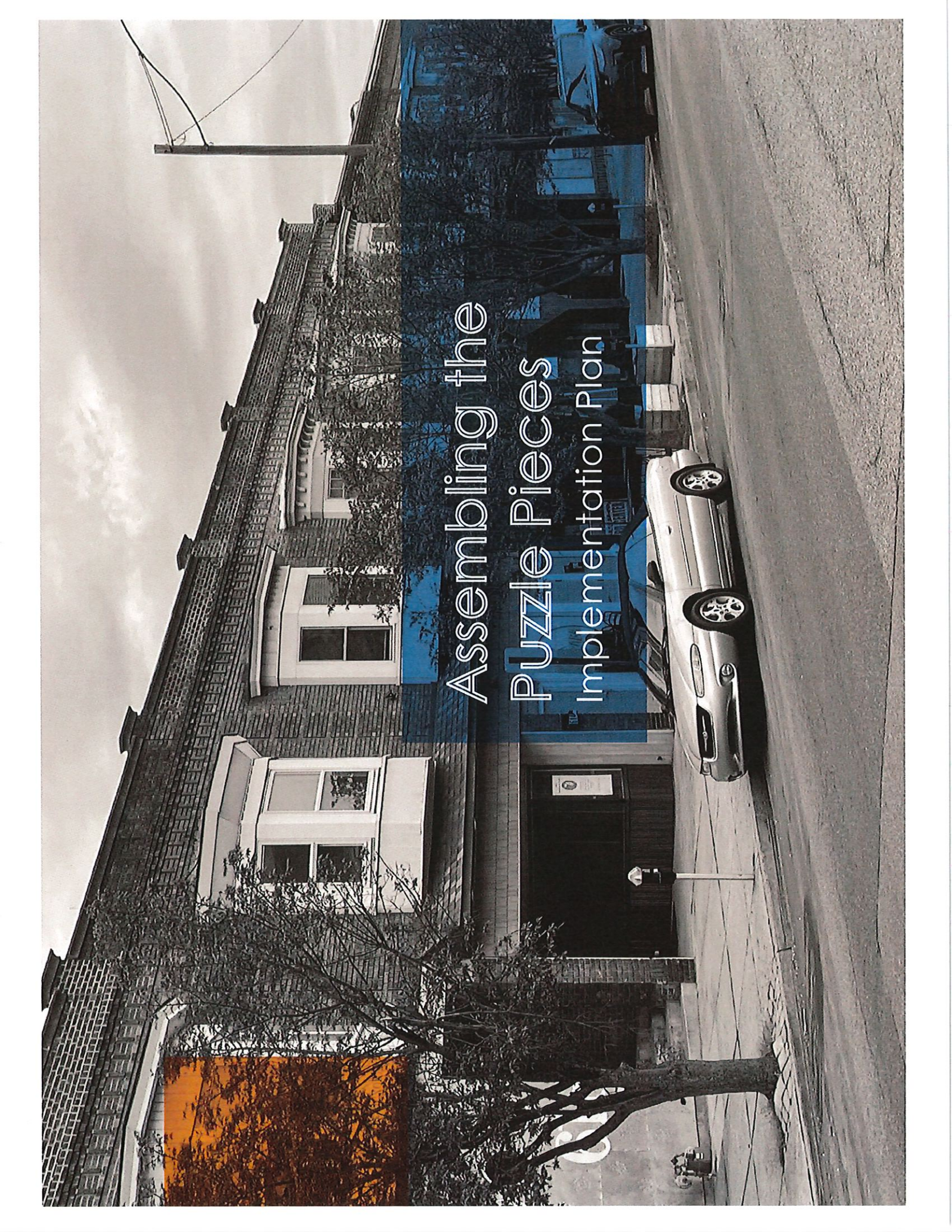
How can we make Broad Street a better place to walk, bike, or ride transit?

Activating Broad Street



*Intentionally blank to facilitate double-sided printing*





# Assembling the Puzzle Pieces Implementation Plan

# Assembling the Puzzle Pieces

## ASSEMBLING THE PUZZLE PIECES – IMPLEMENTATION PLAN

This plan is intended to serve as a resource to the City of Bethlehem to guide the improvement and transformation of Broad Street. The Implementation Plan outlines a course for advancing the corridor vision and improvement plan.

and Prospect Avenue may be candidates for all-way stop control in accordance with MUTCD Section 2B.07, Option D. An engineering study would be required to further assess any changes in intersection control.

### *A Phased Approach*

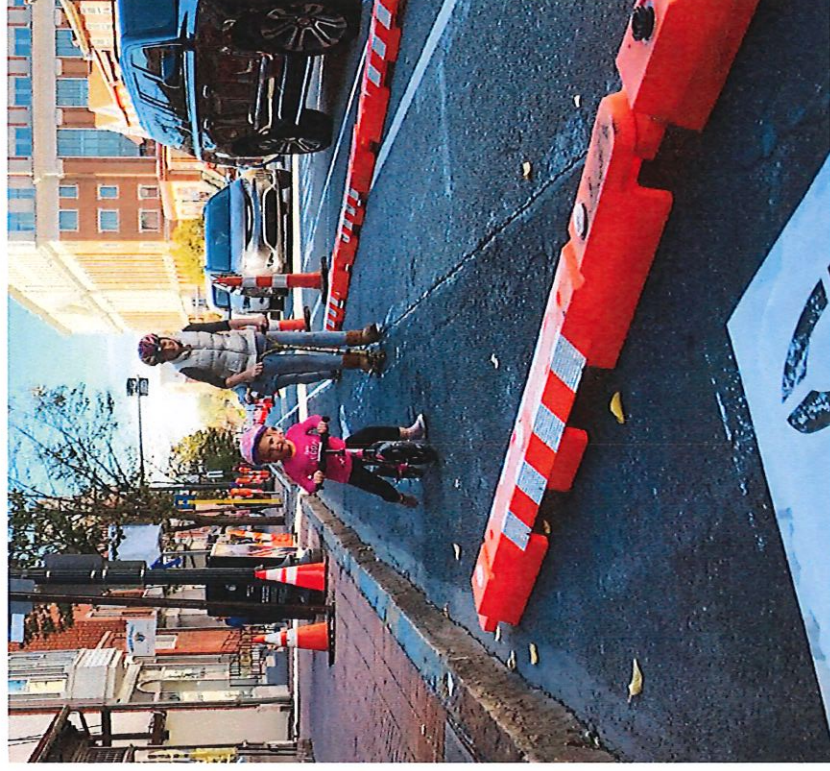
Although the Broad Street corridor is more than three miles long, the recommendations of this plan may be implemented as a series of smaller, stand-alone projects. Potential funding sources are identified on the following page.

### *Pop-Up Events*

A demonstration project using temporary materials can be an engaging way to introduce a new street design to the community. Some of the recommendations contained in this plan, such as the separated bike lanes on West Broad Street, may be a new concept to residents, business owners, and even City staff. A one-day or one-week demonstration project can bring community members together and provide real, on the ground experience. The pop-up event can serve to refine the design and better understand the changes to parking or the impact of eliminating a left-turn lane. Ultimately, the experience can provide proof-of-concept before the project moves to final design or construction.

### *Monitoring Community Concerns*

During the public engagement process, several community members expressed concerns that reducing traffic speeds on Broad Street may lead to increased traffic on West Market Street and Thirteenth Avenue. While the recommended improvements are expected to have a minimal impact on travel time, the City may wish to monitor traffic volumes on West Market Street and Thirteenth Avenue to confirm that there is no impact. The intersections of Thirteenth Avenue with Market Street



## IMPLEMENTING THE CORRIDOR PLAN

### *Through Programmed Projects*

The Transportation Improvement Program (TIP) is the locally endorsed list of highway, bridge, and transit projects proposed to be implemented with Federal assistance. The City may wish to engage with local planning partners to discuss how the recommendations identified in this plan align with regional goals.

### *Additional Grant Opportunities*

The City may choose to seek out grant funding from a variety of sources to fully advance the Corridor Improvement Plan -- whether immediately or upon the completion of the aforementioned projects. Grants well-suited for this Plan include:

#### TRANSPORTATION ALTERNATIVES SET-ASIDE – PENNDOT/DVRPC

- » Primary Purpose: multimodal improvements
- » Amount: \$250,000 - \$1,000,000; pre-construction match
- » Application Window: Spring 2022 (anticipated)
- » More Information: <http://tinyurl.com/TPD-TASetAside>

#### AUTOMATED RED LIGHT ENFORCEMENT (ARLE) - PENNDOT

- » Primary Purpose: signal upgrades
- » Amount: \$20,000 - \$400,000
- » Application Window: June 1 - July 1, 2022 (annually)
- » More Information: <http://tinyurl.com/TPD-ARLE>

#### MULTIMODAL TRANSPORTATION FUND - CFA/DCED

- » Primary Purpose: roadway, bridge, multimodal, transit, freight improvements
- » Amount: \$100,000 - \$3,000,000; 30% match
- » Application Deadline: July 1, 2022 (anticipated)
- » More Information: <http://tinyurl.com/TPD-MTF-CFA>

#### MULTIMODAL TRANSPORTATION FUND - PENNDOT

- » Primary Purpose: roadway, bridge, multimodal, transit, freight improvements
- » Amount: \$100,000 - \$3,000,000; 30% match
- » Anticipated Deadline: November 2022 (anticipated)
- » More Information: <http://tinyurl.com/TPD-MTF-PennDOT>

### *Land Development/Redevelopment*

Beyond grants and programmed projects, the City may wish to implement elements of the Corridor Improvement Plan through proposed development/redevelopment along the Broad Street Corridor.

### *Integration with Maintenance Projects*

In locations where the City has planned maintenance projects or capital improvements, such as traffic signal replacements, stormwater management projects, or street resurfacing, there may be opportunities to incorporate improvements identified in this plan in a cost-effective manner.

**OPINION OF PROBABLE COST**

The consultant team developed the following opinion of probable cost for the corridor concept plan.

*Intentionally blank to facilitate double-sided printing*

*Intentionally blank to facilitate double-sided printing*



# Appendices

## Additional Technical Details



