



# *Lancaster Avenue*

## **Bike & Pedestrian Improvement Plan**

CPLN 655 Multimodal Transportation Planning | Spring 2022

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# Executive Summary

Lancaster Avenue goes diagonally across 40th and 44th in Belmont and Haverford North. Trolley number 10 operates right at the center of this avenue. It serves as an important commercial corridor in these two neighborhoods. During the day, it facilitates most of the commercial activities and social interactions, and it is the busiest avenue in the area. Lancaster Avenue as a major arterial serves both local residents who rely mostly on public transits for commuting, consumers who visit local businesses, and other road users.

This proposal aims to enhance the road conditions along Lancaster Avenue and strengthen it as a connecting corridor that mobilizes social and economic resources to promote a greater sense of safety and accessibility in the community. After examining the current conditions, four goals are developed under this vision:

1. Make walking and cycling an enjoyable experience
2. Create a community and consumer oriented pedestrian experience
3. Reduce traffic accidents through physical design approaches
4. Protect vulnerable groups

Appropriate measures are identified to address each goal, including repainting signage, adding crosswalks, implementing road diet, reconfiguring the existing lanes, and creating parklets.

The plan analysis is not solely based on numerical data. The team members also interviewed with the local residents and visited the site to gather information. It is through both the empirical and quantifiable data that the plan is made to be holistic.

# Current Conditions

**Lancaster Avenue** goes diagonally across 40th to 44th in Belmont and North Haverford. Trolley number 10 operates right at the center of this avenue. It serves as an important commercial corridor and hosts as many as 181 local businesses. During the day, it facilitates most of the commercial activities and social interactions, and it is the busiest avenue in the area. Lancaster Avenue as a major arterial serves both local residents, consumers who visit local businesses, and other road users. Before analyzing Lancaster Avenue's walking and biking environment, we start by first understanding the local community's characteristics and related transportation demands.

According to the 2020 US Census, Belmont and Haverford North are home to 4,955 residents. Nearly 85% of the population is African Americans. Children and seniors are two significant groups in these neighborhoods. Children under 18 contribute 35% to the total population. This is much higher than the rate at 19% in Philadelphia. The neighborhoods also consist of 11% seniors over age 65. Single-mother households are also worth noting. About 40% of the households are single-mother households, double the amount of overall Philadelphia. All single mothers have at least one child under 18 in their families. In addition, nearly 830 people suffer from disabilities, almost 17% of the total population.

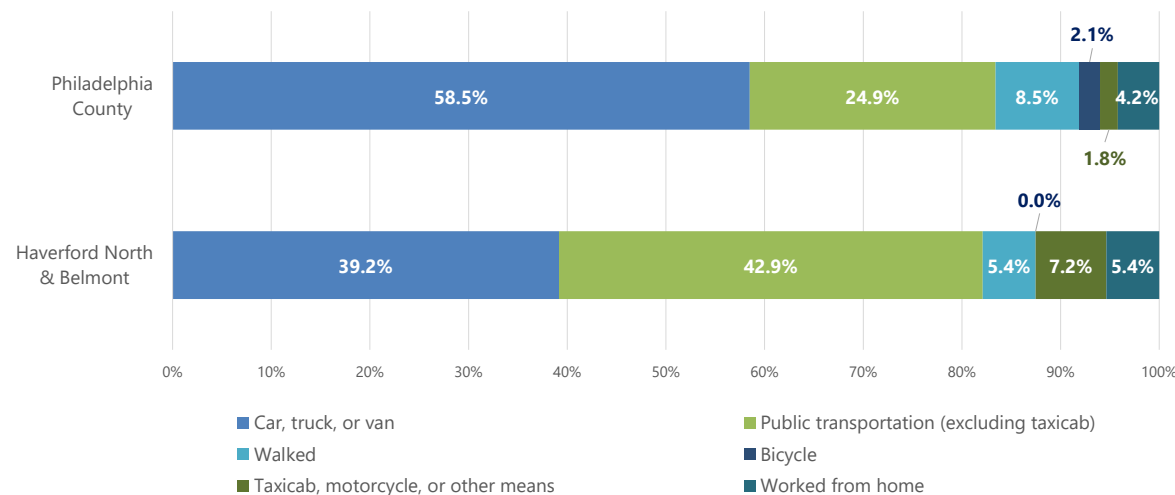


Base map of Lancaster Avenue between 40th Street and 44th Street



The median household income (MHI) of Haverford North and Belmont is roughly \$20,000 in 2019. This is significantly lower than the MHI of Philadelphia at \$46,000. Among the 1,754 population employed, 99% commute outside of the neighborhoods to work. About 10% of the residents work in Tract 369 (University of Pennsylvania and Hospital) and Tract 4.02 (City Hall commercial corridor). With their MHI, it is not too surprising to see a high poverty rate in the area. Roughly 40% of the population are living below the poverty line, though the unemployment rate among the working-age population is relatively similar to that of Philadelphia (at roughly 6%). Creating a safe pedestrian infrastructure and efficient transportation system is clearly vital for travel safety and employment accessibility for these family-oriented neighborhoods with a high proportion of vulnerable members.

In Belmont and Haverford North, roughly 41% of households in the neighborhood have no access to vehicles (ACS 2019 5-year estimates), which is significantly higher than Philadelphia County's 30%. This low car ownership corresponds to the local workers' choices of commuting mode, where driving does not make up the biggest share of commuting like most American neighborhoods. Only less than 40% of the workers in the neighborhood drive to work, contrasting with almost 60% county-wide. Instead, this neighborhood shows a noticeable dependency on public transportation. Roughly 43% of workers use transit to commute, benefiting from the well-established transit network within and near the neighborhood.



As mentioned before, Lancaster Avenue is a primary corridor bearing many of these transit routes. At the same time, the residents of Belmont and North Haverford are less likely to walk or bike to work than the county's average level. Barely any workers reported biking to work from 2015 to 2019, while 5% of workers travel to work by walking.

Means of transportation to work in Philadelphia County and tracts along the study corridor  
Source: 2019 5-Year ACS Estimates

# Land Use & Zoning

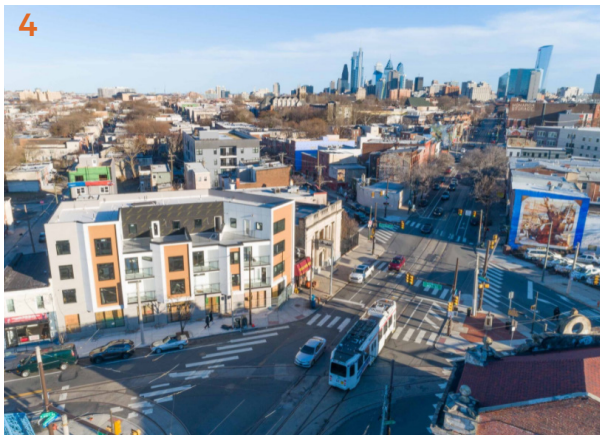
Most of the area immediately adjacent to our study corridor is zoned for commercial uses or commercial mixed-use. Areas further away from Lancaster Avenue are more heavily zoned for residential uses, with some commercial zoning mixed in. When looking at actual land use, we see that there is a significant portion of the land

along or near our study corridor that is vacant. Large sections of residential blocks are either vacant buildings or land, with several vacant areas along Lancaster Ave as well, which may pose issues to establishing a cohesive, walkable urban fabric.



Zoning and land use maps  
Source: Department of Planning and Development, City of Philadelphia





**Local People (Source: Emma Lee/WHYY)**

- 1. Leroy's Barbershop on Lancaster Avenue
- 2. Morton Smith ran Eagle Jewelry and Loan on Lancaster Avenue for 42 years
- 3. Dante Leonard is the manager of the Lancaster Avenue Commercial Corridor for the People's Emergency Center Community Development Corporation.

**Street Overview**

- 4. Birdview of Lancaster Avenue (Source: 3965 Lancaster Ave @ Apartments.com)



**Street Close View**

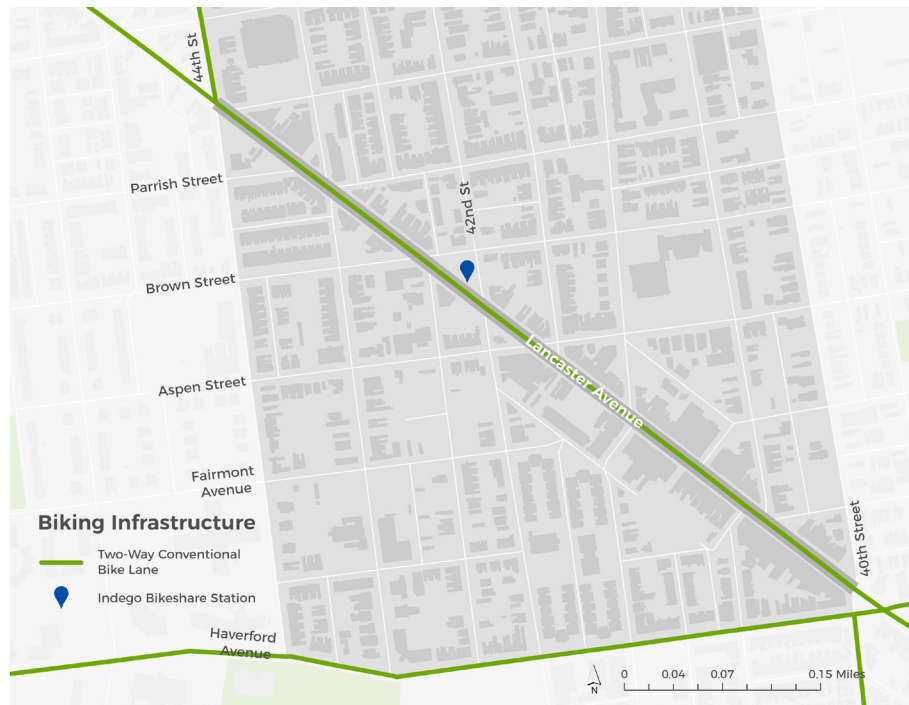
- 5. The old Gartside's Iron Rust Soap Company headquarters at 4054 Lancaster Avenue (Source: Michael Bixler/Hidden City)
- 6. SEPTA Trolley Route 10 running on Lancaster Avenue (Source: iseptaphilly.com\_)
- 7. Lancaster Avenue intersecting 41st St (Source: Yihong Hu)

# Physical Infrastructure

**Bicycle.** Philadelphia developed its first Bicycle Network Plan in 2000. Since then, over hundreds of bike lanes have been implemented across the city. In 2012, the city released its 2012 Pedestrian and Bicycle Plan. This plan identifies five goals for Philadelphia’s biking and walking development: safety, encouragement, public realm, connectivity, and recognition. This plan both planned for new developments of biking and pedestrian infrastructure and evaluated the existing facilities. It rates its bicycle demand and walk demand relatively high, and recommends Lancaster Avenue

from 34th St to 48th St to be a walkable commercial corridor (Philadelphia City Planning Commission, 2012).

Based on the 2015 progress report of the Philadelphia Pedestrian and Bicycle Plan, the entire Lancaster Ave within the city limit had been paved with conventional bike lanes by then (Philadelphia City Planning Commission, 2015). This status hasn’t changed substantially in our study corridor since 2015. At present, the corridor has two-way conventional bike lanes with no physical separations from vehicle lanes and curbside parking lanes. On this 40-foot wide arterial street, spaces are limited not only for cyclists but also drivers and trolleys running on their tracks in the middle of the street. Based on our observation, the bike lanes are sometimes occupied by parked cars and overran by driving vehicles.



Biking lanes and Indego bike share station

**Bikeshare Station.** Besides bike lanes, the city also committed to provide bike sharing opportunities to residents and visitors through the Indego bike-share program. According to Indego’s web map, there is one bike station located on Lancaster Avenue at the intersection with 42nd street, which has 12 bike docks (Indego, 2015). Users have access to either classic bikes or electric bikes 24/7, 365 days a year. This may incentivize local residents’ use of bicycles.



**Transit.** According to SEPTA Fall 2021 routes, four transit lines intersect with our study corridor, including one trolley and three bus lines. Amongst them, the route 43 and 10 drive down Lancaster Avenue, while route 31 and 40 cross Lancaster Avenue. Thirteen transit stops are located at a mostly regular interval on the corridor. Moreover, SEPTA's Market-Frankford Line (the Blue Line) has stops at 34th, 40th and 46th Street, which are all within walking distance of Lancaster Avenue. According to DVRPC's Sidewalk Gap Analysis, the average walk time to a transit stop in the study area does not exceed 2 minutes.

**Sidewalk.** Between N 40th St and N 44th St, DVRPC's Sidewalk Gap Analysis tool has identified that there are complete streets with sidewalks on both sides of the street (Delaware Valley Regional Planning Commission, 2021a). This indicates that the street is walkable and should not pose a threat to pedestrians who fear that there may not be an appropriate surface to traverse by foot. Walking along the study area, we observed that there is ample room for about four people to walk side by side on the sidewalk.

**Crosswalk.** There are gaps within the crosswalk infrastructure of the study area. Traveling between north and south, there is sufficient crosswalk infrastructure indicating a safe path for pedestrians and signaling vehicles to take caution. Although 2021 data provided by DVRPC indicates there is crosswalk infrastructure, many of these do

not in fact have appropriate signage, as observed during a site visit and on Google Maps. Additionally, there is a lack of crosswalk infrastructure going between East and West. The distance between crosswalks that go through the street ranges from 490 to 690 feet, making the avenue quite difficult to cross by foot.

**Curb Ramp.** Curb ramps are abundant in the study area. At every curb, a ramp is available, allowing for greater accessibility. However, this data has not been classified as ADA accessible according to DVRPC data (Delaware Valley Regional Planning Commission, 2022).



Crosswalks and ramps

Source: DVRPC MPO

# Safety

**High-Injury Network.** The entire length of our study area on Lancaster Ave is part of Philadelphia’s High Injury Network. As of February 2022, no Vision Zero safety projects had been completed or planned for the study corridor. There have been three fatal crashes within or near the study area since 2019. The fatal crash on Brown and Lancaster, which occurred in October of 2021, involved a driver striking a parked vehicle. According to the Vision Zero Action Plan from the City of Philadelphia, 9 out of 10 people die when hit by a driver traveling at 40 miles per hour, compared to only 1 out of 10 for speeds of 20 miles per hour (City of Philadelphia, 2020). Lowering speeds on Lancaster below its current limit of 35mph, both through regulation and street design, would help to prevent speed-related deaths such as this crash. Additionally, other factors such as lack of traffic calming, enforcement, and the avenue’s close proximity with Girard Ave, another major road with high speeds, all contribute to speed-related crashes.

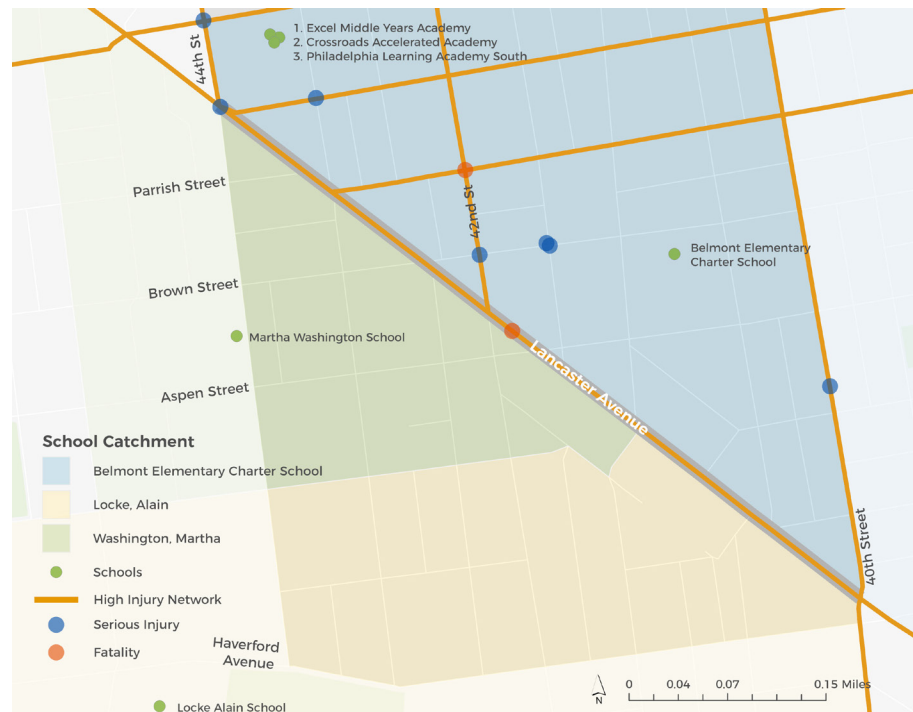


Figure 7. High Injury Network and killed or severely injured collisions (2014 to 2018)

**Safe Routes to School.** There are several schools within our study area, including a portion surrounded by HIN streets. Two of these schools, Belmont Charter School and Martha Washington School, serve as primary schools for those in the catchment areas around our corridor along Lancaster Ave. Though Belmont Charter School is only officially the catchment school for those in grades K-8 (West Philadelphia High School being the primary high school), it also accepts students within its K-8 catchment area. Based on data from OpenDataPhilly, there are over 1,000 students between these two schools, over half of which are between the ages of 5 and 14 (City of Philadelphia, 2022). As these catchment areas are fairly small, it is also likely that many of the students walk to school each day. Furthermore, there is a higher percentage of single mothers within our analysis

area, who may not have the time to accompany their children to school each day.

**Cycling Stress.** Lancaster Ave is mostly marked as a low-moderate stress area for cyclists, or under DVRPC guidelines, "suitable for most adults"(Delaware Valley Regional Planning Commission, 2021b). However, when evaluating crash data, two out of three of the fatal crashes within or near our study corridor involved a cyclist being struck by a car. Though there may not be high levels of stress in relation to the DVRPC criteria, the street being along the High-Injury Network indicates that risk is still very much present for cyclists passing through the area.



Bicycle Level of Traffic Stress (LTS)

Source: Department of Planning and Development & Vision Zero



An intersection with no painted crosswalk on Lancaster Avenue

Source: Google Maps



# 2 Vision & Goals



Our vision is to strengthen Lancaster Avenue as a **connecting** corridor that mobilizes **social & economic** resources to promote a greater sense of **safety and accessibility** in the community.



# Goals

## 1 Make walking and cycling an enjoyable experience

- + Ensure the road offers ample space for cyclist traffic
- + Add crosswalks

## 2 Create a community and consumer oriented pedestrian experience

- + Encourage community members and consumers to utilize sidewalks and engage with local businesses by developing crosswalks at shorter intervals
- + Promote a sense of safety and place by ensuring crosswalks are clearly painted with the opportunity for the local community to activate these design elements through arts and placemaking

## 3 Reduce traffic accidents through physical design approaches

- + Calm down high-speed vehicles and reduce irresponsible driving behaviors (through narrowing vehicle lanes and installing occasional/infrequent speed humps)

## 4 Protect vulnerable groups

- + Prioritize local residents and incorporate community feedback into street improvements
- + Respect the experiences of and provide welcoming infrastructure for people with disabilities, the elderly, and children
- + Make streets near schools slower and safer for students
- + Use methods to slow and calm streets without increasing police presence

# 3 Proposed Improvements

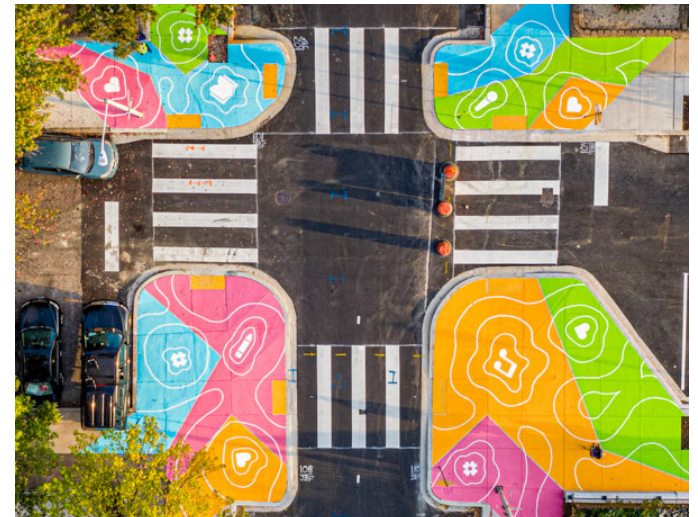
## Crosswalks and Intersections

Complete streets are essential for pedestrians to navigate to their destination. This includes the proper planning and implementation of crosswalks as well as the appropriate signage and signaling that denote safe spaces for pedestrians. The distance between crosswalks has been identified as a component for potential improvement in the area. Although there is no guideline on the distance between crosswalks, National Association of City Transportation Officials (NACTO) recommended that crosswalks be placed in areas with high foot traffic and appropriate to the length of a block, street width, business entrances, and traffic signals (National Association of City Transportation Officials, 2013). According to research professor Reid Ewing at the National Center for Smart Growth, Philadelphia's average block sizes range from 400-500 feet, and blocks over 500 feet start to push the boundaries of walkability (PlanPhilly, 2008).

However, in mapping crosswalk data from OpenDataPhilly the average distance between crosswalks in the study area ranges from 490 to 690 feet. With this relatively far distance between crosswalks, it may pose issues for pedestrians looking to access a service or business. This is especially true for crosswalks connecting two different sides of the street. Considering that Lancaster Avenue is a commercial corridor, a proposed improvement is implementing new crosswalks between those that are already existing. This



Example of Seattle Cap Hill crosswalks



Example of Central Baltimore crosswalk

implementation would result in crosswalk distance ranging from 245 to 345 feet, which is a more walkable and pedestrian oriented distance that also has the potential to increase activity for businesses along the commercial corridor.

To materialize the proposed improvement of more crosswalks, signage and signaling are equally as important. Many of the crosswalks in the site area lack proper paintings on the surface that denote crosswalks. This poses an issue as it can increase the risk for pedestrians to be struck by a vehicle or bicyclist. Unsignalized crosswalks are prominently found when crossing to the other side of the street. Although these sections of the road intersect with smaller inter-city streets, Lancaster Avenue is a prime location for high injury rates. Maintaining and creating crosswalk signage on the

## Inspirations of crosswalk design in the neighborhoods



African American quilt pattern represents prosperity



African American women's braids

## Rich local culture and history



"Thank you Mr. Blackwell" mural on 42nd and Lancaster Ave



Martin Luther King mural on 40th and Lancaster Ave, who also made a speech on the space

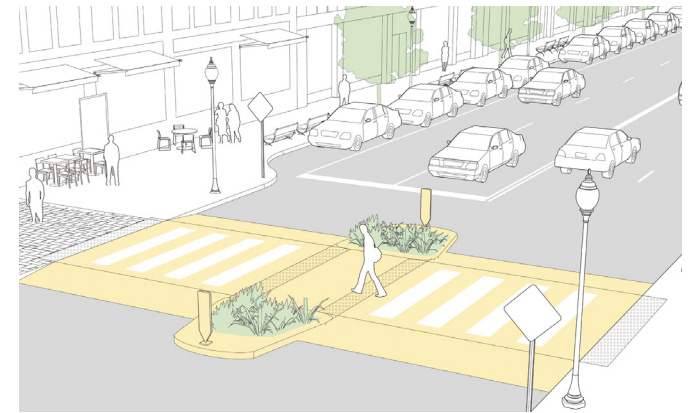


road is not only a safety measure for all parties, but gives the community an opportunity to collaborate and engage in placemaking. Similar to rainbow crosswalks in many gay neighborhoods of the United States, the community surrounding Lancaster Avenue can have the chance to create their own public art pieces that promote placemaking and safety.

Placemaking should reflect the rich culture and history of these neighborhoods. The neighborhoods were the first U.S. site to host the World's Fair. In 1937, it was marked as one of the "high risk" areas for housing mortgage investment by Home Owners' Loan Corporation. Post World War II, movements such as suburbanization, the great migration, and the white flight have made these neighborhoods predominantly inhabited by African American residents. They are neighborhoods of historic significance that experienced systemic disinvestment starting in the mid 20th century. Today, the neighborhood is home to a civically engaged community that can harness existing assets to promote future resilience, equity, and economic opportunity.

## Road Dieting & Traffic Calming

Road diet is a roadway reconfiguration method that reduces the number of existing lanes and turns them over for other purposes. One study by the Federal Highway Administration shows that this technique may reduce crashes by 19 - 47% (Federal Highway Administration, 2016). Currently, there are six lanes packed on the 14.6 meter (48 ft) wide Lancaster Ave, three on each side for vehicles, bikes, and parking.



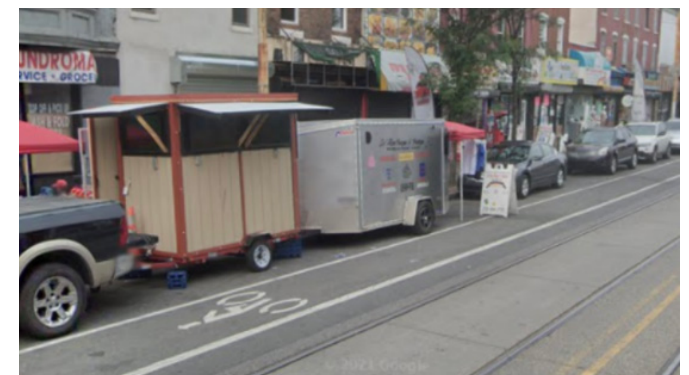
Mid block crosswalk design guide

Source: NACTO



Vehicles parking on Lancaster Ave bike lane

Source: Google Maps



Street vendors using parking lane

Source: Google Maps



The bike lanes along Lancaster Ave are narrow. They are 4.6 feet in width, which does not meet the minimum width of 5 feet in the design guideline by American Association of State Highway and Transportation Officials (AASHTO) (American Association of State Highway and Transportation Officials, 2012). The situation is even more unpleasant when cars park on the bike lanes. In addition, the length between the curb and the edge of the bike lane is about 12.5 feet, shorter than the recommended length of 14.5 feet and just a little over the absolute minimum of 12 feet. This left about 11.5 feet wide space for cars to transpass. It is inevitable for drivers to trample on the bike lanes. This compact design might not only increase the risk of collision, but it is extremely uncomfortable for bikers who are baked in between two arrays of vehicles. In addition, this design requires vehicles to constantly stop on the street for parking. It may disrupt the traffic, along with trolley 10 that stops for passengers. This might further hinder the on-time performance for transit that is already often delayed (average about a 75% on-time performance rate), noting that most people use public transit to work. Moreover, there is very little or no space for emergency vehicles to pass through.

In terms of aesthetics and visibility, vehicles may block the sight of the storefronts, making the local businesses less welcoming for pedestrians. The array of vehicles would be a natural barricade that discourages pedestrians from

crossing the streets.

Considering the relatively low car ownership and high number of transit users, we propose to reduce one parking lane, widen the bike lanes, and leave more space as a leeway for drivers to keep away from bikers. Based on a site visit at 12 pm in February, parking is more concentrated in the 40th and 41st streets, but more sparse in the 42nd to 44th streets. It is reasonable to reserve some parking space for local businesses, the overall parking demand, however, is low. The local residents are more likely to be in accord with the proposed improvement to remove a parking lane.

Additionally, the bike lanes are raised to the same level as the sidewalks to prevent bikes from vehicle



Improperly occupied bike lane on Lancaster Avenue, Source: Google Maps  
Proposed Improvements | 17

crashes. Improved bike lanes mainly serve the transient bikers. Though the number of bikers are relatively low in the neighborhoods, the future demand is foreseen to be high as more biking programs are introduced in the neighborhoods.

Some spaces of the remaining parking lane could be converted for other uses, possibly even accommodating the street vendor culture in the community. The proposed improvement ensures safety, improves traffic flows, increases economic activities, and creates a more walking and biking-friendly environment with more open space.

## Sidewalk Improvements

According to Philadelphia Complete Streets dataset, the study corridor is categorized as a walkable commercial corridor with sidewalks greater than or equal to 12 feet on both sides. While the reported width meets the minimum sidewalk width of commercial thoroughway and neighborhood retail streets of 12 feet, we observed that some segments were improperly (temporarily) occupied by retailers (San Francisco Better Streets, 2012). Some programs or regulations that clean up obstacles in the thoroughway zone will ensure adequate space for walking.

Meanwhile, the study corridor lacks street furnishings and landscaping that improve pedestrians' comfort level. On Lancaster Avenue, benches and trees are rarely seen on sidewalks. As many sidewalk design manuals recommend for commercial streets, cafe or restaurant seating, merchandise displays, and other interactive design elements in the building frontage zone encourage active use of sidewalks. Tree canopies are desired, especially near transit stops, to provide shade for pedestrians and riders waiting for transit. Therefore, we think it's necessary to start planting and street furnishing programs along the corridor, especially between 40th Street and 41st Street, where most commercial activities occur.



Rare tree coverage on Lancaster Ave between 40th St and Wallace St, Source: Google Maps

## Proposed Complete Streets

Based on the discussion of street redesign above, we propose to remove one parking lane on Lancaster Avenue. The avenue will be reconfigured with bike lanes of 6ft, driveways of 14ft on both sides, and a parking lane of 8ft.

Both bike lanes will be raised to the same level as the sidewalk, and some segments are buffered by bollards. Due to the low car ownership rate in the neighborhoods, the demand for parking is expected to be low. This is an incentive to build more flexible spaces or parklets. Parklets refer to the conversion of a part of the parking lane for outdoor uses, such as leisure gathering space with chairs and tables or even street vendors often seen in the neighborhoods. The creation of these spaces will benefit the local small businesses along Lancaster Avenue by providing more stopping points and resting areas. Parklets are also important for local restaurants post-pandemic, as more consumers are being served outdoors. A ten-meter flexible space will be created every 40 meters. There will be approximately twelve parklets along the 0.4-mile study corridor.



Example of Parklet on Divisadero Street, San Francisco, Source: Jeremy Shaw



# LANCASTER AVENUE BEFORE



# LANCASTER AVENUE AFTER



SIDEWALK  
13.5 FT

BIKE LANE  
5 FT

PARKING  
7 FT

TRAVEL LANE  
12 FT

TRAVEL LANE  
12 FT

PARKLET  
7 FT

BIKE LANE  
5 FT

SIDEWALK  
13.5 FT



## Safe Routes to Schools

Safe Routes to School is a movement, funded by the Pennsylvania state government, meant to encourage students to walk and bicycle to school. The area around Lancaster Ave has potential for encouraging walking and cycling as the local schools' catchment areas are fairly small and many people already commute by transit. From surveys of parents, main concerns about barriers to walking and biking center around safety, with traffic speed, traffic volume, and unsafe intersections being three out of the five top concerns.

The program is made up of both non infrastructural and infrastructural improvements, with non infrastructural improvements (generally education) making up about



Ongoing Safe Routes to Philly Program  
Source: City of Philadelphia

10% of funding, and 90% of funding provided for capital improvements (Pennsylvania Department of Transportation, 2013).

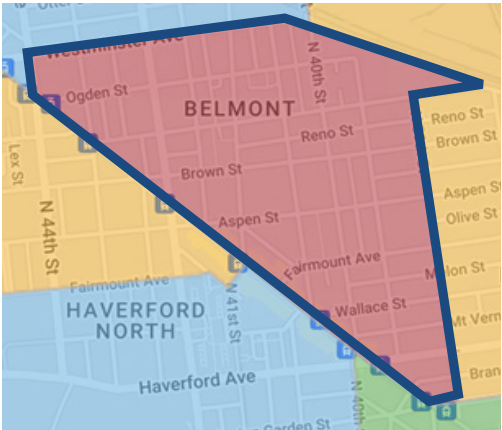
Non infrastructure funding is awarded through grants to individual schools, which for our study area would most likely be the Belmont Charter School or Martha Washington School, the two largest schools. "Walk or Roll to School Day," bicycle education, and crossing guard training are a few of the most common non infrastructural improvements. One of the education suggestions in the Pennsylvania Comprehensive Guide to Safe Routes to School is bicycle and walking lessons for those under sixth grade; both the Belmont Charter School and Martha Washington School, which teach K-8, can take advantage of these lessons. Schools with grades K-8 are also eligible to use funding for bicycle rental projects, helmets, and safety equipment.

For infrastructural improvements, we have broken up proposals by school. Some of the most common infrastructure barriers to walkability include non-conductive roadway design and intersections, on-street parking, substandard traffic signaling, and barriers that force walkers into the streets (Pennsylvania Department of Transportation, 2013).



**Belmont Charter School**, near the intersection of N 41st St and Brown St, is about two blocks away from Lancaster Ave. Its complex also contains the Belmont Community Health Center, which is an urgent care center specializing in pediatrics. Though its total student body of over nine hundred students is not entirely made up of those living in its catchment area, the school is a significant draw for pedestrians on weekdays. According to the Philadelphia School District records for the 2021-2022 school year, nearly 94% of the student body is black or African-American, with about 2% Hispanic/Latinx, and 3% multiracial, and less than 1% white or Asian (The School District of Philadelphia, 2022).

All four crosswalks around the block of Belmont Charter School are faded, with at least one direction on each being nearly invisible. The intersections are also all full-way stops. One improvement could be the addition of controlled, lit pedestrian crossings or “stop on red” crossings, which would not necessitate the addition of full stop lights, but serve as additional pedestrian protections. Speed humps, of which there are none on the streets adjacent to the school or on nearby blocks, can also slow driving speeds and push drivers to pay attention.



Belmont Charter School catchment area

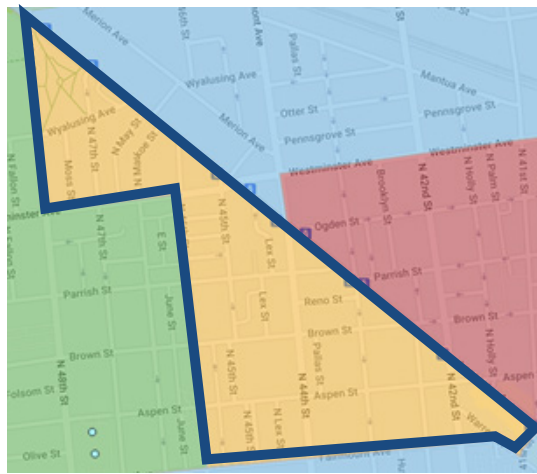


Faded crosswalks at 41st and Brown

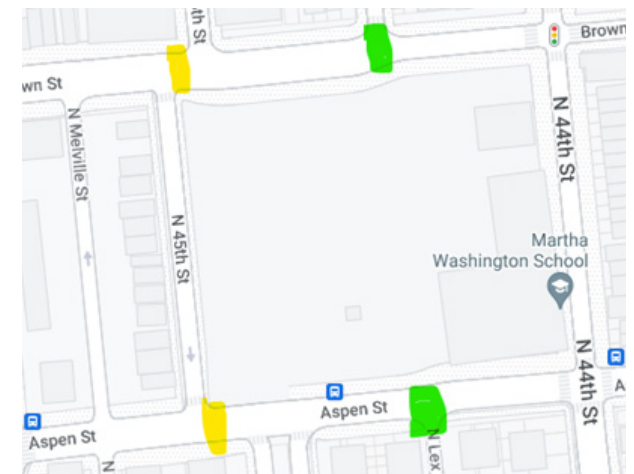


**Martha Washington School.** The demographics of the student body at the Martha Washington School are similar to those at the Belmont Charter School, with about 93% of students being black/African-American, 2% Hispanic or Latinx, 4% multiracial, and less than 1% white or Asian. The school records also identify that 100% of its students are economically disadvantaged.

Two of the intersections near the Martha Washington School are signalized, and all look to be less faded than those around Belmont Charter School. As discussed in the Crosswalks and Intersections section, any crosswalk spacing beyond 500 is a stretch. . Both Brown and Aspen, around the Martha Washington School, do not have north-south crosswalks for nearly three times that, at 600 feet between crosswalks. To break up the length of this block, we propose adding activated signalized crosswalks at the intersections of 45th Street and non-signalized crosswalks at the intersections of Lex Street. This, along with speed humps between crosswalks, would allow schoolchildren to cross more safely.



Martha Washington School catchment area

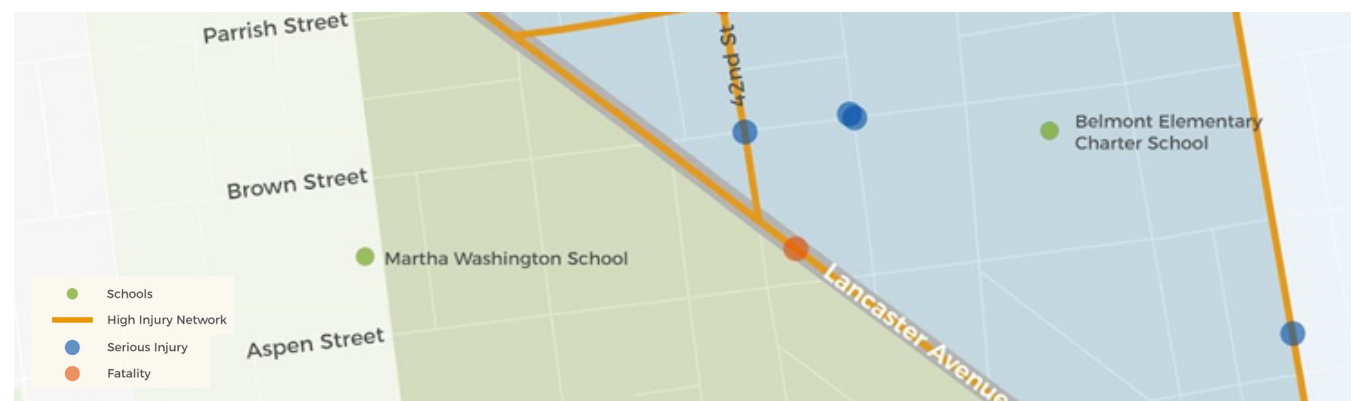


Proposed crosswalks on Brown and Aspen Streets.



**Surrounding Area.** As previously mentioned, over 90% of the students of Belmont Charter School and Martha Washington School are black or African-American, many of which are also in lower-income families or in poverty. Children who often experience high levels of stress, dubbed “toxic stress” by the Economic Policy Institute, are at risk of “disrupted physiological functioning and lower academic achievement;” African-American and economically disadvantaged children are more frequently exposed to these toxic stressors. One of the toxic stressors discussed in the EPI study is living in a neighborhood perceived as disorderly due to factors that display disinvestment, such as trash or noise (Morsy & Rothstein, 2019). The lack of clear crosswalks, as well as the unsafe streets that contribute to accidents such as those along Brown Street just two blocks away from the Belmont Charter School, contribute to an unhealthy environment that may have long-term negative effects if not remedied.









Both the Martha Washington School and Belmont Charter School sit along the same streets, Aspen and Brown Streets. However, both streets do not have crosswalks across Lancaster Avenue, forcing pedestrians to walk up or down a block to cross the street. Adding signals and crosswalks to the Aspen & Lancaster and Brown & Lancaster intersections can improve interconnectivity between the two schools and neighborhoods, as well as general pedestrian accessibility on Lancaster Avenue. Though we want to avoid relying solely on enforcement, we propose increasing the presence of crossing guards at busy intersections during school hours. Furthermore, the Lucien Blackwell Community Center, along with two full blocks of green space in the form of Mill Creek Playground and Lucien Blackwell Park, are just two blocks west of the Martha Washington School. The need for accessible community space cements the importance of Aspen and Brown Streets in creating safe corridors for children to walk. Due to the concentrated community resources, the area around these two schools has potential to be a safe and active space.



Surrounding areas of Martha Washinton School and Belmont Charter School.

# 4 Plan Implementation & Evaluation

This section will summarize all the proposed improvements in the previous section into an actionable timeline. The timeline consists of three phases. The goals cannot be achieved without the mobilization of different resources and actors. The likely partners who will implement this plan together are also listed in the [Summary Table](#) below.

Program	City Role	Likely Partners	Phase 1	Phase 2	Phase 3
 Midblock crosswalks	Lead (OTIS)	People's Emergency Center	Identify where new crosswalks belong	Community engagement for art	Painting
 Road diet	Lead (OTIS)	Dept. of Planning and Development	Remove one-side parking lane	Raise bike lane level	Repaint signage / Expand bike and driving lanes
 Parklet	Leads (Streets, Parks & Rec)	Centennial Parkside CDC, Volunteer	Identify and reserve parklet space	Install equipment (bench, table, etc)	Planting
 Bike Lane expansion	Lead (Streets)	Bicycle Coalition	Remove current signage	Repaint and reduce	
 Low stress bike facilities	Lead (OTIS)	Bicycle Coalition	Buffered/protected bike lane	Repainting	
 Bicycle parking and other end-of-trip facilities	Lead (OTIS)	Bicycle Coalition	Site selection	Construction	Maintenance
 Sidewalk furnishing and landscaping	Lead (Streets)	Local businesses and nurseries	Sidewalk site selection and design	Planting and renovation	Maintenance
 Safe Routes to School	Lead (OTIS, School District)	Centennial Parkside CDC, Volunteers	Education (ongoing) → intersection design	Intersection construction	Crosswalk repainting

## Community Outreach

Effective community outreach is central to developing a bike and pedestrian plan that truly benefits the neighborhood residents around Lancaster Ave. We will be seeking community feedback through every step of the implementation process; though we have developed initial designs based on publicly available data and previous analysis, any further action will need to be done in conjunction with local residents. Additionally, we will gauge community interest in each program to better understand which projects should take priority.

We will be conducting both small- and large-scale outreach. Large-scale outreach will involve working with neighborhood entities like community groups, holding community meetings at public locations (such as schools), and sending out online surveys. To better get individual feedback, small-scale outreach will be done through in-person methods like visiting the stores along Lancaster Ave and talking to business owners, going to local events, or talking to parents that are picking up their children from school.



Community meeting  
Source: Philadelphia OTIS



Household visit  
Source: Penn Today



## Performance Measures

Performance measures are needed to analyze whether improvements are having a tangible effect on walkability, bikeability, and safety. Additionally, as gentrification is a major concern for Philadelphia, especially in the case of pedestrian and bicycle infrastructure improvements, tracking possible indicators of displacement is a necessity.

For walkability and bikeability, American Community Survey (ACS) data can be used to estimate commute patterns, including shares of each means of transportation, travel time to work, and vehicles available. ACS data can also be used to compare possible gentrification indicators such as recent residency, income inequality, and changes in racial makeup. Also, the National Household Travel Survey gives a sample of more minute data, including trips that are non-work related. To understand the geographic spread of modes, we will either conduct manual counts or pull data from automatic counters, such as those on buses or trolleys. Counts are especially useful for tracking bicycle usage, transit ons and offs, and intersection crossings per time of day. Lastly, we will mainly evaluate safety through use of annual crash data, which PennDOT provides and includes a high level of detail. Crashes of particular significance include those that result in severe injury or death and those that involve pedestrians or cyclists.

Tracking performance goes hand-in-hand with community outreach, as personal experience provides informative feedback at faster rates than concrete data. Though it will not be used as the primary method to evaluate overall effectiveness, we will be relying on community outreach to gauge levels of community support and if shifts in strategy are needed.



Traffic observation, Source: NOACA

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