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West Pittsburgh Bike/Ped Committee
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Message from the Director

Dear Friends,

After five years in development, scores of neighborhood meetings, a dozen public events and inputs and suggestions from innumerable individuals, I am so pleased to release this draft Bike(+) Plan for your review. It has been more than twenty years since Pittsburgh’s last ten-year bike plan and a lot has changed since then. We have added more than 50 miles of bike friendly facilities, seen a many-fold increase in people who commute by bicycle, and dramatic increases in bicycle-based recreation and tourism. Bicycles now come in many different shapes and sizes transporting children and cargo, sitting upright or recumbent, traveling by two wheels or three with two people or more. Traditional pedal cycles have been joined by electric pedal assist bicycles, scooters and skateboards that give people more confidence (and joy!) traveling up our steep hills and across longer commutes.

At the same time, many things have not changed. Bicycles and their kin have been around for more than 200 years and remain one of the cleanest, most efficient and most enjoyable ways to travel. Bikes still give many of us the same thrill and sense of freedom and independence we felt as when we first learned to pedal, and remain an affordable source of mobility independence for many as we have gotten older. Travel by bicycle is still something enjoyed by 8-year olds and 80-year olds – where they are provided a safe place to travel.

And that’s what this plan is about. It is about providing safe, affordable, sustainable and joyful travel options for people of all ages and all abilities in our city. It is a plan and roadmap for implementation that we will travel with each neighborhood of our city as we collaborate with residents and stakeholders in designing individual segments that will knit our city together as a whole.

I am excited to hear from you as you review this draft document. I am eager for your feedback on these meaningful actions to improve safety, combat climate change, lower transportation costs and increase access to opportunity. And I look forward to our continued collaboration over the next decade as we build another component of our diverse mobility system.

I want to thank all the people who have given countless hours and ideas in contributing to this plan and look forward to the many more people who will help to make it even better.

Sincerely,

Karina Ricks, Director
Department of Mobility and Infrastructure
Bike(+) Defined

Bike(+) is used throughout this document to include not only conventional pedalcycles, but also other personal mobility devices such as electric pedal assist bicycles, kick scooters or e-scooters, and other similar lightweight (<150 pounds), low-speed (<20 MPH) vehicles without internal combustion engines.

Examples of Bike(+) devices including an electric pedal assist bicycle, an electric mobility scooter, and an electric kick scooter.
Executive Summary

The Pittsburgh Bike(+) Plan establishes a vision to continue building a safe, comfortable, and convenient bike network for all types of riders and all types of trips.

Beginning with the City’s first Bike Plan in 1999, Pittsburgh has a history of striving to improve the safety and accessibility of its 90 neighborhoods by implementing bicycle network improvements. As the City’s population prepares for growth, it becomes more important than ever to find ways to move people safely and efficiently. The goal of the Pittsburgh Bike(+) Plan is to identify policy and infrastructure improvements that will support the City’s mobility goals — objectives intended to ensure that Pittsburgh residents thrive.

Pittsburgh Mobility Goals:

Goal 1: No one dies traveling on city streets.

Goal 2: All households can access fresh fruits and vegetables within 20 minutes travel of home, without requiring a private automobile.

Goal 3: Walking and bicycling are the most joyful mode for short distance trips.

Goal 4: No household must spend more than 45% of household income for basic housing and mobility.

Goal 5: Pittsburgh streets and right of ways reflect the values of our community.

The City of Pittsburgh’s Department of Mobility & Infrastructure has commissioned surveys and utilized Census and other data to capture a snapshot of biking in Pittsburgh today. These data have helped guide the recommendations in the Bike(+) Plan. The Pittsburgh Bike(+) Plan incorporates results from a robust public engagement campaign to help identify critical gaps in our existing bike network that should be addressed over the next 10 years.

Bike Plan Engagement Highlights:

- 7 Citywide open houses
- 5 OpenStreetsPGH booths
- 16 Neighborhood bicycle and pedestrian committee meetings
- 15 Neighborhood-level meetings
- 1,536 Online map inputs
- 750+ People engaged

Proposed Bike Network:

Critical network gaps are highlighted in the Bike(+) Plan. In some cases, a preferred route for new or improved bike facilities is identified, and what remains is the selection of the appropriate facility type (neighborway, bike lane, separated bike lane, etc.). In other instances, where multiple route options remain, the Plan identifies steps to determine the most beneficial and viable route option.

Biking in Pittsburgh Tomorrow (after 10-year network is built):

- 123 miles of new on-street bike facilities
- 27 miles of new trails
- 243 total miles of facilities (existing + proposed) for bicycles and similar light-weight devices

Policy & Program Highlights:

Infrastructure solutions will go a long way in encouraging more individuals of all ages and abilities to get on two wheels for quick trips around Pittsburgh. However, supportive policies and strategies are critical to achieving the outlined mobility goals. Such policies and strategies include:

- Pursuit of “Vision Zero” design strategies to reduce traffic-related serious injuries and fatalities to zero
- Improved accessibility of bike facilities and curbside destinations for those with mobility impairments
- Increased inclusive bike-related education among students and the general public
- Defined policies that help prepare for the introduction of new two- and three-wheeled low-speed mobility devices
- Promotion of non-car travel through progressive transportation demand management strategies
- Expanded integration of transit and bike(+) mobility
- Enhanced bikeshare system and utilization
- Enhanced bicycle and bike(+) data collection
- Collaboration with the Department of Public Safety to improve reporting of crashes involving people on bicycles
- Increased supply of convenient short-term, and secure long-term, bike(+) parking

Through rain and shine, up hills and along rivers, getting around on two feet or two wheels is in Pittsburgh’s DNA. The 2020 Bike(+) Plan is the City of Pittsburgh’s playbook to make biking safe, easy, and joyful for everyone regardless of age, ability, and economic or geographic location.
Vision and Principles
CHAPTER 1

Vision and Principles

Vision

Provide the people of Pittsburgh the physical mobility necessary to achieve equitable economic mobility and a sustainable, inclusive, and vibrant city.

Pittsburgh Bike(+) Plan Vision Statement

“The Pittsburgh Bike (+) Plan will outline clear steps toward building a safe, comfortable, and convenient bike network for all types of riders and all types of trips.”

City Mobility Goal 1

No one dies traveling on city streets.

To accomplish this the Bike(+) Plan must:

• Provide a safe network for people of all ages and abilities to use bike(+) devices.
• Ensure the network is intuitive and easy to navigate for all.
• Increase access to, and use of, helmets, lights, and other equipment.
• Promote better understanding of and adherence to traffic safety rules by all roadway users.

City Mobility Goal 2

All households can safely access fresh fruits and vegetables within 20 minutes travel of home, without requiring a private automobile.

To accomplish this the Bike(+) Plan must:

• Expand the bike(+) network to provide a comfortable, safe facility within ¼ mile of every home.
• Connect residential areas to grocery stores and other commercial districts with a continuous network of comfortable bike(+) facilities.
• Work with shared-mobility providers to ensure forms of bike(+) vehicles accommodate at least one bag of groceries.
• Provide safe, adequate short-term bike(+) parking at commercial destinations.

City Mobility Goal 3

Walking and bicycling are the most joyful mode for short trips.

To accomplish this the Bike(+) Plan must:

• Provide a comfortable, safe network for residents to access neighborhood destinations like parks, libraries, and schools.
• Remove high-stress barriers to bicycling such as critical connections, bridges, or intersections that put people on bicycles at high risk.
• Promote a more inclusive and diverse bicycling community through authentic collaboration, confidence-building, and support.
• Reduce conflicts between pedestrians and people on bicycles and other micromobility devices through proactive policies, facility design, and implementation.
• Make bicycling accessible to more people, particularly given Pittsburgh’s hilly terrain, by accommodating electric, pedal-assist bicycles.
• Celebrate bicycling through public events.

City Mobility Goal 4

No household must spend more than 45% of household income for basic housing and mobility.

To accomplish this the Bike(+) Plan must:

• Provide a complete citywide network appropriate for commuting across the city at all hours of the day and night.
• Address gaps in the existing bike(+) network.
• Increase low-cost access to bicycles and other micromobility devices.
• Promote employer bicycle benefits.
• Provide adequate long-term bicycle parking.

City Mobility Goal 5

Pittsburgh streets and right of ways reflect the values of our community.

To accomplish this the Bike(+) Plan must:

• Plan and design facilities in collaboration with local residents and stakeholders.
• Maintain bike(+) facilities and equipment in a good state of repair.

Multiple types of users on Three Rivers Heritage Trail at Allegheny Landing

Photo by Toole Design
Why a Bike(+) Plan?

Bicycling brings benefits to the health and happiness of those who ride, but also to the whole community of Pittsburgh by improving the safety of our streets and the quality of the streetscape.

People who bicycle in Pittsburgh come in all shapes and sizes. They are people of all colors who span the entire income spectrum. They ride to work, school, visit friends, and run errands. They are new learners and lifelong riders. While 2% regularly commute by bicycle, roughly one-third (32%) ride a bike on occasion,¹ and many more would if they felt safer on our streets. The Plan will make bicycling more viable for them all: whoever they are, wherever they ride, or whatever the purpose of the trip.

This Bike(+) Plan is also for those who do not bike and perhaps never will. Providing a safe, connected, convenient network for people who bike can reduce the number of vehicles on our roads and improve the flow of traffic by reducing friction and frustration between modes; helping transit vehicles and motorists to have more efficient and reliable trips as well. Allowing shorter distance trips (trips less than three miles) to be made on foot, bicycle, or similar modes can reduce vehicle congestion, parking demand, and associated air emissions.

Plan Development
CHAPTER 2

Plan Development

Pittsburgh’s Bike(+) Plan has been in development since 2016. During its development, hundreds of individuals spent countless hours engaging residents and workers from across the city and visitors from around the world. Participants generated ideas at citywide open houses, local neighborhood and community meetings, OpenStreetsPGH events, via online engagement, and many other modes of comment and input. Participants reflected Pittsburgh’s diversity across age, race, income, and geography. While 93% of those providing input biked at least occasionally, 7% of contributors do not ride bikes at all.

Key partners in development of this Bike(+) Plan include:

- **BikePGH** – a non-profit organization working on behalf of the Pittsburgh community to make the city safe, accessible, and friendly to bicycle transportation. BikePGH is transforming our streets to make biking and walking commonplace for all Pittsburghers in order to improve our quality of life and reduce the harmful effects of car dependence in our communities.

- **Friends of the Riverfront** – a nonprofit trail stewardship organization that focuses on preserving and improving the 25 miles of the Three Rivers Heritage Trail.

- **Riverlife** – a nonprofit organization that collaborates with private landowners, community groups to create new parks, trails, real estate development, and riverfront art.

- **Healthy Ride** - Pittsburgh’s public bike share system.

Figure 3: Plan Outreach

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<th>Citywide open houses</th>
<th>OpenStreetsPGH booths</th>
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People biking and walking on the Three Rivers Heritage Trail

Temporary protected bike lane OpenStreetsPGH event

OpenStreetsPGH event in Pittsburgh

Bike(+) Plan public meeting in East Liberty

Photo by Toole Design

Photo by Kristin Saunders

Photo by BikePGH

Photo by City of Pittsburgh
Biking in Pittsburgh Today
CHAPTER 3

Biking in Pittsburgh Today

Since the completion of Pittsburgh’s first and most recent Bike Plan in 1999, Pittsburgh has seen an expansion of its bicycle network, a dramatic increase in bicycle ridership, and the creation of supportive bicycle policies.

Pittsburgh’s bicycle network has grown from about 11 miles in 1999 to roughly 93 miles in 2019, 40% of which are bike lanes. The City’s extensive network of over 35 miles of paved riverfront trails forms a strong backbone of the bicycle system and culture in Pittsburgh. After launching in 2015 with 50 stations, Pittsburgh Bike Share (a.k.a. “Healthy Ride”) now has over 500 bikes at 113 stations and over 66,000 active users.

The number of people who bicycle – and people who WANT to bicycle – has grown substantially as well. The share of bicycle commuters has increased from .05% in 1999 to 2.1% today, according to the American Community Survey (a product of the U.S. Census). According to the Make My Trip Count survey conducted by Pittsburgh’s Green Building Alliance, 7.1% of respondents living in Allegheny County indicated biking as among their primary three transportation methods. Fifteen percent of respondents living within the City of Pittsburgh indicated that they ride a bike for transportation.

All of this has contributed to making Pittsburgh 12th in the nation for the share of people who bike to work and 20th on People for Bikes ranking of the best places for bicycle riding.\(^2\)

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2 BikePGH, Bike Commuters in Pittsburgh Double Amidst a Growth in Driving, 2017 American Community Survey data

3 People for Bikes, City Ratings, https://cityratings.peopleforbikes.org/all-cities-ratings/
**Pittsburgh by the numbers**

- 31% of residents bike, walk, or ride public transit to get to work.
- 12th highest share of bicycle commuters in the nation.
- 484.9% increase in bicycle commuting from 2000 to 2016.
- 2nd among large cities where bike commuting is growing the fastest.
- 23% of Pittsburgh households do not have access to a personal automobile.
- 33% of Pittsburgh households have 2 or more vehicles.
- $6,000 to $11,000 per year is the total cost of owning a car in Pittsburgh.
- 19% is the average amount of Pittsburgh household income spent on transportation.

**Pittsburghers who pedal**

- 30% of Pittsburghers aged 18 to 54 bicycle at least occasionally.
- Half of people who bicycle in Pittsburgh do so only on the weekends.
- 78% bicycle for exercise, health and fitness, or simply for joy.
- 21% use a bicycle because it is less expensive than driving.
- 43% of people who bicycle are comfortable riding on city streets, in the same lane as motor vehicle traffic.

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6 U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Means of Transportation to Work
5 U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates, Selected Housing Characteristics
6 BikePGH, Bike Commuters in Pittsburgh Double Amidst a Growth in Driving, 2017 American Community Survey data
10 Information from the Bicycle Marketing Campaign research city.pittsburgh.pa.us/group/DOMI-Planning and Projects/199386 - Bike Marketing Campaign Presentations
Figure 6: Existing Bicycle Facilities
Figure 7: Existing Bicycling Level of Traffic Stress

Bicycling Level of Traffic Stress takes into account motor vehicle speeds and volumes, the presence of separated bicycling facilities, and other factors to represent how comfortable or stressful a particular route might be for the average person who is bicycling. Blue lines indicate streets on which the average bicyclist would be comfortable riding, while red lines indicate streets the average bicyclist would likely avoid. Red lines also represent gaps in the existing bicycling network. In some cases, there are red lines where there are existing bike lanes. This is because the bike lane does not provide an adequate level of comfort considering motor vehicle speeds and volumes.
Safety remains a critical concern. Fewer than 37% of motorists and people who bicycle think bicycling is a safe travel option in Pittsburgh. Over the past ten years the city has averaged 57 reported crashes per year involving people on bicycles – more than one a week. Crashes involving people on bicycles are fairly distributed throughout the City, with slightly higher concentrations in Downtown, the Strip District, throughout the East End, and around East Carson Street in Southside. Five out of the six fatal crashes involving people on bicycles in the past ten years occurred on arterial roadways, which tend to have the highest traffic volumes and speeds compared with other roads in the City.

Pittsburghers who do not bicycle reported that the top two reasons why people do not ride bicycles in Pittsburgh are:
- Concerns about safety
- Hills and inclement weather

73% of motorists said they would be MORE likely to bicycle if there were:
- Protected bike(+) lanes
- More trails
- Fewer aggressive drivers and/or
- Low volume, slower speed streets

There is an urgent need to expand the existing bike(+) network for reasons of safety, climate, and mobility. Furthermore, there is support to do so. 83% of motorists believe people on bicycles should have their own lane or facility to ride in. This sentiment was particularly high among people of color (95%) and women (87%).

Figure 8: Bicycle Crashes, Pittsburgh, 2009-2018 (Pennsylvania Crash Information Tool)
Proposed Bike(+) Network
CHAPTER 4

Proposed Bike(+) Network

The proposed Bike(+) network is designed for all ages and abilities and a range of trip purposes.

The proposed network is based on technical analysis and the input of neighborhood-level pedestrian and bicycle committees, civic and community organizations, and innumerable individuals. The Plan consolidates and reflects a number of improvements identified in various neighborhood plans.

The network development process began with identification of gaps in the current bicycling network. Options for addressing each gap were then assessed based on several criteria, including input received through the public outreach process, roadway width, motor vehicle volume, data from the cycling mobile app Strava that shows where some bicyclists ride, and the location of destinations, such as transit stations, community centers, schools, and neighborhood districts.

The proposed network provides connectivity at both a citywide and localized scale:

- An extended, citywide system of routes provides direct connections to major job centers and supports longer commuter trips.
- A fine-grained network of local “neighborways” knits together low-speed, low-volume and residential streets to connect children and adults to community necessities and amenities including groceries, school, parks, and recreation centers.

Both are complemented by riverfront trails that provide connections for commuting, recreation and fitness.

In total, the proposed Bike(+) network adds an additional 150 miles of safe and appropriate bicycle facilities to the city expanding the total network from 57 miles of on-street facilities and 36 miles of trail to 180 miles on street and 63 miles of trails for a total of over 243 miles of travel lanes for bicycles and other lightweight, low-speed travel modes.

While the City of Pittsburgh has authority over the roadways it owns within City limits, oftentimes individuals need to travel across the City’s borders to access employment, entertainment, and residential opportunities. This Plan includes several facilities located along the City’s border that would benefit from connections to adjacent communities. The City will continue to coordinate with its neighbors to complete network connections requested during the Plan’s public engagement process, with the goal of ensuring that inter-jurisdictional travel is a safe and seamless experience.
Figure 9: Proposed Bike(+) Network
Figure 10: Proposed Bike(+) Network Northern Quadrant

Figure 11: Proposed Bike(+) Network Eastern Quadrant
Figure 12: Proposed Bike(+) Network Southeast Quadrant

Figure 13: Proposed Bike(+) Network Southwest Quadrant
Figure 14: Proposed Bicycle Level of Traffic Stress

Bicycling Level of Traffic Stress takes into account motor vehicle speeds and volumes, the presence of separated bicycling facilities, and other factors to represent how comfortable or stressful a particular route might be for the average person who is bicycling. Blue lines indicate streets on which the average bicyclist would be comfortable riding, while red lines indicate streets the average bicyclist would likely avoid.
An expanded Bike(+) network...
...will improve low-stress bicycling access to key destinations.

Table 1: Percent of households within 1-mile of a key destination along a low-stress bicycling route.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Existing Network</th>
<th>Proposed Network</th>
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<tbody>
<tr>
<td>Grocery Stores</td>
<td>20%</td>
<td>35%</td>
</tr>
<tr>
<td>High-frequency transit stops</td>
<td>52%</td>
<td>64%</td>
</tr>
<tr>
<td>K-12 schools</td>
<td>44%</td>
<td>64%</td>
</tr>
<tr>
<td>Civic destinations*</td>
<td>55%</td>
<td>72%</td>
</tr>
</tbody>
</table>

*Libraries, parks, recreation facilities, community centers, senior centers
Bike(+) Facilities and Facility Selection
CHAPTER 5

Bike(+) Facilities and Facility Selection

Based on the input received, the Bike(+) Plan identifies a number of specific routes for bike(+) connections.

In most cases, the Plan does not identify the specific type of bike(+) facility to be implemented on a specific street or segment. The facility type will be determined in consultation with local stakeholders and with consideration of the unique street context and character. The facility selection matrix in this chapter provides guidance on the appropriate facility type(s) for streets of varying character. For example, based on the chart on p. 41, a street with 5,000 vehicles per day and a speed limit of 30 miles per hour typically requires a buffered or standard bike lane (buffered preferred), whereas a street with 2,000 vehicles per day and a speed limit of 25 miles per hour could be configured as a neighborway.

The chart below will be used in Pittsburgh to guide decisions about the type of bike(+) facility that is appropriate for individual roadways. This chart is based on national research related to the safety and comfort of bicyclists of all ages and abilities.

Table 2: Pittsburgh Bicycle Facility Selection Chart

Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.
Bike(+) Facility Types

The proposed bike(+) network will be achieved by implementing a variety of different facility types appropriate to the conditions and context of each individual street and segment. Detailed guidance on facility design is provided in the Pittsburgh Complete Street Design Guidelines.

Shared Use Paths
- Commonly referred to as trails
- Completely separated from the roadway of a street. May have their own right of way or may run parallel to, but separate from, the street
- Generally shared by people walking and riding; may distinguish “lanes” for diverse users
- Typically paved or covered with crushed limestone
- May or may not have lighting; may or may not be permissible for use after dark
- Highly comfortable for users of all ages and abilities

Protected Bike Lane
- Also referred to as a cycle track
- On-street bike(+) facility separated from motor vehicle traffic by a physical barrier such as curb, flexible bollards, planters, parked cars, or similar
- May be one-way or two-way
- Highly comfortable for users of all ages and abilities

Buffered Bike Lane
- Bike lane separated from adjacent vehicle traffic by a painted buffer
- Lane does not have physical protection from motor vehicle encroachment
- Generally used only for one-way travel; may be used for contra-flow travel
- Moderate level of comfort; appropriate for most ages and abilities

Bike Lane
- Marked and dedicated in-street lane for bicycles located immediately adjacent to vehicle traffic
- Used for one-directional travel
- Modest level of comfort; generally appropriate for more confident and experienced bicyclists

Shared Lane Markings
- Also known as sharrows
- Do not establish a dedicated or reserved space for travel
- Generally advisory as a wayfinding convention or to alert motorists to expect the presence of people on bicycles
- When used on their own, shared lane markings do little to reduce the level of stress or improve safety for people on bicycles

Neighborway
- Also known as a neighborhood slow street
- Proactively managed low-volume (generally less than 1,000 vehicles per day), low-speed (less than 25 MPH) local streets with well-designed crossings safe for all ages and abilities
- Generally two-way travel
- May utilize sharrows for wayfinding or trailblazing
- Comfortable for all ages and abilities, however less appropriate for higher-speed bicycle travel
Intersection Treatments

Two-stage Turning Boxes
• Provide a place outside of a travel lane for a left-turning bicyclist to wait for the signal to change
• Persons on bicycles cross with cross traffic

Protected Intersections
• Intersection with extended corner refuge islands and bicycle-friendly signal phasing to separate bicycle movements – both straight and turning – from turning or straight traveling vehicles

Bike Box
• Designated area at the front of a traffic lane at a signalized intersection that provides a safe and visible way for bicyclists to get ahead of queuing traffic during the red phase

Through Bike Lanes
• Dashed lines or chevrons extending through a complicated intersection indicating the appropriate and expected route of bicycle travel

Mixing Zones
• Dashed bike facility lines, often with dashed green paint extending across the lane, indicating an area where vehicles may cross, or cross into the bicycle facility

Implementing Bike(+) Facilities on Existing Streets

Almost without exception, the public right of ways of city streets are fixed widths without any opportunity to widen. This generally means that right of way space must be reallocated to make room for safe, dedicated bike(+) facilities. This is generally accomplished by one of several processes:

Road Diet
• Typically used to reduce four vehicle travel lanes to three vehicle lanes and bi-directional bike(+) travel lanes. Occasionally reduces three lanes to two
• Generally used on streets with fewer than 15,000 vehicles per day

Narrowing Travel Lanes
• Reduce width of vehicle travel and/or parking lanes and apply excess space to bicycle accommodations
• Special considerations are needed for streets with significant bus or truck volumes

Street Redistribution
• May redistribute street such as removing center medians, changing angled parking to parallel, or changing curb alignment

On-Street Parking Reduction
• Reduce or remove on-street parking to provide safe bicycle accommodation
• Generally requires a parking study to document parking utilization and viable alternative parking accommodations
• May consider parking time restriction rather than reduction or removal

Examples of bikeways accomplished using the tools described on this page.
Bike(+) Supportive Policies and Strategies
CHAPTER 6

Bike(+) Supportive Policies and Strategies

Defining a connected network and appropriate facilities for each of its segments is only part of the picture. Fully realizing our goals for a safe, efficient, fun, affordable, and inclusive Bike(+) network that addresses climate change and social equity requires policies that promote safe operations, increased accessibility, and expanded services. Over the next ten years, Pittsburgh will pursue a number of policies to promote bicycle use and safety.

Pursue Vision Zero.

“Vision Zero” is a fundamentally different approach to traffic safety. Adopted by communities across the globe, Vision Zero is based in the fundamental knowledge that we can eliminate all traffic fatalities by recognizing that people will sometimes make mistakes while driving or traveling on the road. Therefore, street design and operations must be crafted to ensure those inevitable mistakes do not result in fatalities. Vision Zero not only leads to greater safety, it also increases healthy and equitable mobility for all.

1. Convene a regular working group among at least the four public agencies central to any successful Vision Zero transformation: the Department of Mobility and Infrastructure, the Department of Public Safety, the Department of Public Health, and the Office of the Mayor.
   - With community partners, develop a roadmap to Vision Zero and follow through on the multi-year workplan.
   - Develop reportable milestones and create a public dashboard to track progress.

2. Conduct an equity assessment to ensure safety benefits are accruing in all neighborhoods, prioritizing those with more vulnerable populations including higher proportions of children, older adults, and those without access to an automobile.

Ensure access for all, with particular attention to those with mobility impairments.

Pittsburgh seeks to be an equitable and inclusive city. As such, it is imperative that bike(+) facilities are both accessible for all and maintain accessibility to curbside destinations. Similarly, shared public mobility services such as bikeshare and shared micromobility (bike(+)) should offer vehicle types that accommodate a range of different abilities.

1. Review bike(+) facility design standards and guidelines through an accessibility lens and modify as necessary.

2. Support integration of accessible devices into shared micromobility fleets. Work with the industry to prototype and deploy more accessible form factors.

3. Meet regularly with groups representing the interests and perspectives of persons with disabilities to review design guidelines, specific project designs, and/or emerging policies.

4. Update, as necessary, and make readily publicly available, City policy on bike lanes/protected bike lanes and access for persons with disabilities.
Improve bike(+) safety education.

Safety is paramount in expanding the use and enjoyment of travel by bicycle and other small personal mobility devices. While building upon current educational offerings, more education programs are needed to comprehensively inform the various communities in the city including children, adults, seniors, motorists, commuter bicyclists, recreational bicyclists, university students, immigrants, developers, employers, employees, and public officials.

1. Expand on existing partnerships to further promote bike safety education and awareness.
   - Leverage programs and materials provided by Allegheny County Health Department’s Traffic Safety Education Project and the Pennsylvania Department of Transportation to ensure users of all modes know the rules of the road and actively participate in crash and injury prevention.
   - Enhance long-standing partnership with BikePGH to promote participation in bicycle awareness campaigns, learn to bike programs, and similar.

2. Develop safety education materials to specifically address the use of and interaction with emerging bike(+) devices.
   - Publish all operating rules and regulations for users of privately owned or publicly available shared bike(+) devices in the public right of way.
   - Develop multi-media outreach and awareness materials using social media, internet, video, print, radio, and other.
   - Require any shared mobility service providers to develop safety education materials and require all users to undergo safety training prior to service use.
   - Incorporate safety standards and established regulatory standards for emerging mobility technology and its components from the Consumer Product Safety Commission, Underwriters Laboratories (UL), or equivalent into operating agreements with any fleet mobility service providers, and make them available for consumers to reference.

3. Expand youth bicycle safety education initiatives.
   - Create and staff a citywide Safe Routes to Schools program providing infrastructure improvements as well as educational opportunities for schools.
   - Expand access to low-cost or free city bicycle skill classes for youth at community organizations.
   - Partner with Pittsburgh Bureau of Police (PBP) on youth riding education programs.
   - Support the development and expansion of a bicycle safety component of high school driver education programs.
   - Work with public, charter and private school systems to encourage schools (1st grade through high school) to provide on-bicycle training as part of their physical education curriculum.
   - Partner with a bicycle provider, such as Free Ride or Major Force, to make bicycles available at a low cost or free for youth.

4. Expand and promote adult bicycle education initiatives.
   - Work with partners to provide low or no cost adult bicycle skill courses, rules of the road bicycle maintenance, and similar programing.
   - Support positive reinforcement programs such as BikePGH’s Operation Illumination and bike helmet giveaways.
   - Support the development and expansion of a bicycle safety component included in driver’s education programs and licensure.
   - Translate bicycle education programs and materials into at least four of the major languages spoken by a significant share of the Pittsburgh population.

5. Develop bike(+) education initiatives for city employees.
   - Offer and promote bicycle education classes to city employees.
   - Integrate bike education, bikeshare membership, bike purchasing, and bike repair into the City’s employment benefits.
   - Regularly train and retrain City staff who operate motor vehicles to understand the laws governing interactions between bicycles and motorized vehicles.
Expand integration of transit and bike(+) mobility

Bicycles and similar personal mobility devices are important extenders of the public transit network. While transit riders commonly walk up to a mile to high-frequency transit corridors, bicycles serve as a “walk accelerator” permitting users to cover roughly three times the distance in the same amount of “last mile” travel time. Increasing the seamless integration of bicycles to, on, and from the transit network can radically increase access to high-frequency transit services and access to more transit routes and more direct travel to destinations.

1. Enhance the experience of biking to transit.
   • Establish regular coordination with the Port Authority on all bicycle projects and bicycle planning efforts.
   • Complete bike(+) network access to high-frequency and rapid transit stop locations. Prioritize projects in areas with large changes in elevation.

2. Establish bike(+) parking and storage at transit facilities.
   • Work with the Port Authority to identify opportunities for covered bike(+) parking and design. Fund and implement such parking at 30% of high-frequency, rapid transit stops by 2025.
   • Increase the amount of bike(+) parking at or near bus stops in commercial districts.
   • Incorporate covered bike(+) parking into larger bus rapid transit (BRT) stop designs and provide bike(+) parking as a component of BRT implementation.

3. Improve the ease of taking bicycles on transit.
   • Encourage the Port Authority to increase the bike carrying capacity on its buses (e.g. racks that might accommodate more than 2 bicycles).
   • Widely distribute educational materials that inform residents about their ability to take bicycles on transit.
   • Encourage space designated for bikes be added to “T” light rail train cars. Evaluate policies related to where bicycles are permitted on train cars.

Currently two bicycles can fit on buses in Pittsburgh
Enhance bikeshare system and utilization.

Bikesharing is a service where bicycles are available for public, short-term rental at a fee. Bikes are available for rent and return in public spaces like streets and sidewalks. In 2015, Bike Share Pittsburgh launched the Healthy Ride bike share system. Healthy Ride has been a local success and a national leader in bikeshare innovation including, in 2017, piloting the first-of-its-kind partnership with the Port Authority of Allegheny County to enable all Connect Card pass holders to utilize an unlimited number of free 15-minute trips on bikeshare.

1. Continue to support public bikeshare as the most reliable, equitable means of shared bike(+) mobility.
   - Incorporate public bikeshare benefits and facilities in approved transportation demand management (TDM) plans to reduce traffic impacts associated with new development or larger employment centers.
   - Meet regularly with leadership of Pittsburgh Bike Share to review existing and developing policies for their effect on the strength and sustainability of public bikeshare in the City of Pittsburgh.

2. Support the full or partial conversion to electric, pedal-assist public bikeshare.
   - Support Pittsburgh Bike Share in its pursuit of various state and federal funding streams to aid in capital costs associated with full or partial fleet conversion.
   - Work with partners to install electric charging stations in the public right of way and in appropriate off-street locations.

3. Promote and expand efforts to increase equity in ridership, access, siting, and pricing in public bikeshare.
   - Jointly develop equity goals using national best practices in shared mobility.
   - Leverage city resources to communicate and promote equity programs to private, and other public-serving, local organizations.

   - Investigate additional revenue streams to support public bikeshare such as outdoor advertising, third-party contributions to citywide bikeshare goals, developer offsets for station expansion, and other emerging models.
   - Support further integrated experiences between transit and public bikeshare, especially by co-locating bikeshare and other mobility options near transit.

Develop and pursue a citywide Transportation Demand Management (TDM) program that promotes a greater share of bicycle use.

Transportation Demand Management (TDM) is a programmatic strategy that seeks to shift mode of travel, time of travel, and/or route of travel to reduce congestion and transportation-related emissions associated with climate change. TDM programs are generally aimed at larger employers, institutions such as universities and hospital systems, dense employment or mixed use districts, and/or larger residential or commercial developments.

1. Establish a citywide Transportation Demand Management (TDM) program and install appropriate staff to lead and coordinate efforts.
2. Develop marketing and informational materials that increase awareness of the viability of year-round bicycle commuting and travel in the city, and provide these materials developing TDM plans and strategies.
3. Develop a toolkit of TDM strategies and investments to reduce peak period vehicle trips and support alternatives such as sponsorship of mobility hubs, mobility as a service memberships, contributions to bike(+) network build-out, enhanced bicycle parking, and similar.
4. Encourage the provision of bicycle benefits such as employee bike share or bicycle purchase assistance.
5. Contribute to methodologies to track and measure the effectiveness of TDM programs and strategies, especially with regard to bicycle and bike(+) utilization and vehicle use and traffic reductions.

Enhance bicycle and bike(+) data collection.

Better data contributes to better decision-making.

1. Look for appropriate opportunities to install real-time bike counters and displays and make information available to the public and app developers via an open data feed and live data displays.
2. Improve data gathering on occasional bicycle usage. Currently the American Community Survey does not capture reporting of multimodal trips or occasional use of bicycles for commuting which generally leads to an undercount of persons interested in bicycling.
3. Partner with local institutions to improve data analytics related to bicycle use, route selection, and general demands for all ages and abilities.
5. Require all bike(+) and micromobility service providers operating in the City of Pittsburgh to utilize the Mobility Data Standard and provide open standardized data feeds to the city.
Proactively define and manage bike(+)1. The increased availability and use of various bike(+) devices such as electric assist pedalcycles, electric kick-scooters, motorized skateboards, and other similar devices increases the opportunity for low-cost, low-emission, and space efficient travel. It also increases the demand for safe travel lanes for the use of these modes in the public right of way. The Bike(+) Plan must anticipate the increased presence of these devices and the expanded constituency for bike(+) lanes their users represent, and appropriately accommodate them in the mobility ecosystem of the city in a way that does not diminish the use and enjoyment of a conventional bicycle in the city.

1 At the time of writing, only bicycles, Segways, motorcycles, motorcyclists, and conventional motor vehicles are defined in the Pennsylvania Motor Vehicle Code with clear operating rules in the public right of way. Other devices are specifically designated for off-road travel. In general, most undefined forms of bike(+) devices (a.k.a. micromobility) are then categorized as “toys” and consigned to operating on the sidewalk. Given the significant speed differential between pedestrians and micromobility devices, Pittsburgh has adopted policy that micromobility devices typical not operate on the sidewalk.

Propagate local regulations to manage new bike(+) modes in the City of Pittsburgh.

1. Clearly define where emerging bike(+) devices may, and may not, operate in the public right of ways of Pittsburgh.
2. Develop operating requirements for new bike(+) devices including speed, operator age, permit requirements for rental enterprises, etc.
3. Promote broad public awareness and understanding of regulations defining the appropriate use of bike(+) devices in the public right of way, including in designated bicycle facilities.
4. Collaborate with enforcement agencies and authorities to ensure safe behavior and compliance with all traffic rules.

Establish a diverse multi-agency and stakeholder working group to propagate and maintain current policies and regulations for the management of bike(+) devices in the public right of way and on city trail facilities.

1. Set quarterly meetings (at minimum) to discuss and develop bike(+) policy by a working group to include, but not be limited to: Department of Mobility and Infrastructure, Department of Public Safety, Bureau of Police, Department of Parks and Recreation, Department of Public Works, Department of Law, Port Authority of Allegheny County, and bicycle and pedestrian focused organization representatives.
2. Establish policies governing allowable speed of operations for emerging/bike(+) devices when operating in bike(+) lanes, trails and general purpose travel lanes.

Establish appropriate policies regarding bike(+) parking in the public right of way.

1. Bike(+) parking in the right of way must not block or inappropriately constrain pedestrian, bicycle, and/or vehicular travelways of the street.
2. Clearly identify appropriate bike(+) parking locations with paint and/or signage.
3. Ensure bike(+) parking areas are equitably distributed across the City in both commercial and residential areas to maintain order in the public right of ways.

Collaborate with the Department of Public Safety to improve reporting of crashes involving persons on bicycles.

Full crash reporting in the Commonwealth of Pennsylvania is required only when a person involved in the crash requires medical care or when a vehicle involved in the crash is disabled and must be towed. This policy may result in an underreporting of crashes involving people on bicycles, as bicyclists often decline medical attention immediately following a crash, but may need to seek attention after the fact. Although a bicycle may be disabled in a crash, it is not “towed” and therefore does not meet the alternate threshold for reporting.

1. Collaborate with the Department of Public Safety on a city protocol, intake process, and database to increase reporting of local crashes involving people on bicycles.

Meet with Department of Public Safety leadership on a monthly basis to review crash events and trends and/or identify problematic locations requiring enforcement or engineering interventions.

3. Explore emerging technology systems with analytics to assess near-miss activity and other risk indicators at signalized intersections. Pilot at least two approaches by 2025.
Collaborate with the Department of Public Works, public utilities, and other partners to improve routine maintenance of bike(+) facilities.

People on bicycles are often more vulnerable to small disruptions in bike travelways than motor vehicles are to objects or disruptions in the vehicle travelway. A minor pothole, missing utility cap, or mass of organic debris in a bike lane can cause a person on a bicycle to swerve out of the lane or into the curb to miss the object, putting them at grave risk of a crash or injury. This becomes particularly dangerous for more vulnerable bike(+) users such as children and older adults.

1. Collaborate with the Department of Public Works on bike(+) facility design to ensure it can be readily swept and plowed in both summer and winter using reliably available equipment and staff.

2. Meet regularly with the Department of Public Works to review key performance indicators in relation to bike(+) lane clearance and routine maintenance.

3. Aid the Department of Public Works in acquiring equipment and staff, if needed, to adequately and reliably address maintenance issues that could affect safety on bike(+) facilities.

4. The City of Pittsburgh’s Department of Mobility & Infrastructure collaborates with the Department of Public Works to maintain roads and sidewalks. For the facilities located on roads owned by Allegheny County and PennDOT, the City must coordinate maintenance with those entities.

5. The City of Pittsburgh has a robust trail network, and this Plan indicates the need for many more miles of trails. At this time, routine maintenance of trails is a collaboration between the City and a number of non-profit partners including Friends of the Riverfront and Riverlife. As the trail infrastructure continues to degrade over time and with substantial use, the City should identify a strategy for larger-scale capital maintenance and replacement of the existing trail network.

6. Many of the aforementioned trails are located within the City’s expansive Parks network. As City parks are closed after dark, these trails are technically not accessible between sunset and sunrise. Given the critical transportation network connections that park trails provide, the Department of Mobility & Infrastructure should work with the Department of Public Works to open these trails at night. This initiative may include infrastructure upgrades such as lighting or other security features, which would necessitate the identification of funding.

Minimize disruptions incurred by utility work and construction projects in the public right of way through improved oversight and enforcement.

DOMI manages and permits work in the public right of way. Maintenance and new construction projects have the potential to temporarily or semi-permanently make riding bicycles and other bike(+) devices more hazardous. Construction debris, utility cuts resulting in uneven pavement or temporary metal plates, as well as sidewalk and travel lane closures, can create an uncomfortable experience for all roadway users.

1. Improve permit reviews and inspections, during and after completion of projects in the right of way, to ensure compliance with all permit requirements.

2. Improve maintenance of traffic standards and publish resulting guidance that prioritizes safety and accessibility for travelers on bike(+) devices and pedestrians.

3. Educate public right of way inspectors to be aware of the special impact of utility cuts, restoration, and other facilities in bicycle travelways and to enforce accordingly.

4. Increase awareness among utilities and other right of way users on the impact of their activities on the safety and utility of bike(+) facilities for users of all ages and abilities.

5. Revise public right of way obstruction permit policies to require continuity of bicycle facilities through work zones. Explore development of Public Inconvenience Fees to encourage the rapid restoration of public travelways when pedestrian, bicycle, and vehicle travelways must be closed for construction.

Support programs and events that promote increased bicycle use.

Pittsburgh has a robust community of bicycle users and lovers and a number of annual and episodic events that promote and celebrate bicycle use.

1. Support BikePGH annual OpenStreetsPGH events and use them to assist in the continued implementation of this Bike(+) Plan.

2. Robustly promote national Bike to Work Day and associated events.

3. Collaborate with organizers on various other bike-related events that promote safe bicycle use for people of all ages and abilities from throughout the city.

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5. Robustly promote national Bike to Work Day and associated events.

6. Collaborate with organizers on various other bike-related events that promote safe bicycle use for people of all ages and abilities from throughout the city.
Support wayfinding to and around bike(+) facilities.

To access bike(+) facilities, one needs to know where they are located and how to navigate between origins and destinations using the network. By ensuring that this information is readily accessible for bicycle routes, from neighborways to trails, will help cyclists make informed decisions about routing choices and also bring awareness to the infrastructure upgrades outlined in this Plan.

1. Establish an analog wayfinding program that increases access to bicycle routing information by increasing bicycle network information in street and trail signage, including directional arrows and distances to key destinations.

2. Collaborate with local partners such as transit agencies, local universities, and other map-producing entities to ensure inclusion of bike(+) network information on their maps.

3. Support digital wayfinding by ensuring that accurate and complete bike(+) facility data is available for technology providers to assist in their incorporation into digital wayfinding and trip-planning platforms.

4. Explore new opportunities for enhanced ways to help residents and visitors navigate our City on two (or three) wheels.

Support and expand the bicycle-related economy, especially among small, minority-owned business enterprises and organizations.

Bicycle entrepreneurship is alive and well in Pittsburgh and contributes significantly to our local economy.

1. Lend technical support and expertise to emerging minority-owned business enterprises participating in the bicycle-related economy through bike repair, (re)sale, or bike-related events.

2. Encourage youth involvement in bicycle-related initiatives and employment opportunities.

Bike(+) Support Facilities

Increase supply of convenient short-term bike(+) parking.

Short-term ("unprotected") bicycle parking is infrastructure designed to hold bikes for a few hours while the rider is visiting a destination. Short-term parking is generally located in the public right of way either in the sidewalk zone or parking zone of the street. It is commonly provided via bike racks, bike corrals, and/or covered bicycle parking. Sufficient bicycle parking supports access to local shopping districts and other activity centers, reduces the number of bicycles locked to trees, benches, or railings, and helps to keep the sidewalk clear for walking.

1. Increase city-led installation of on-street bike racks.
   - With BikePGH, promote programs to increase support for bike racks and other complementary bicycle amenities in local business districts.
   - Work with local neighborhood and business associations to appropriately locate and install bike racks in all business districts by 2025.
   - Develop and launch a streamlined process for the public to request bicycle racks.
   - Develop and launch a streamlined process for public or private partners to sponsor standard city bike racks and their installation.

2. Modify the public right of way permit process to make it easier for the public to both request and install on-street bicycle parking.
   - Develop a “furnishing permit” in lieu of the current “encroachment permit” to reduce the burden on private sector partners installing publicly available bicycle parking.
   - Publish bicycle parking design guidelines in the Complete Streets Design Guidelines to facilitate provision of bicycle parking.

3. Review right of way plans associated with new development to encourage and ensure appropriate and visible short-term bike(+) parking accommodation.

Expand and promote long-term bike(+) parking and storage.

Long-term ("protected") bicycle parking supports people commuting by bicycle to work and/or transit and provides organized storage at residential buildings for residents owning bicycles or other small mobility devices. Long-term, protected bicycle parking is a storage facility that protects the entire bike from theft and inclement weather such as bicycle rooms, bicycle lockers, and bicycle cages.

1. Promote the use of bicycle storage facilities at existing high-frequency, rapid transit stops, such as the East Liberty Station.

2. Identify additional opportunities for "park and bike" facilities near regional trails to promote last mile(s) bicycle commuting into congested employment centers.
   - Pilot at least one covered and/or secure bicycle parking and storage facility adjacent to a regional trail used for commuting by 2025.
   - Review vehicle parking management policies against the objective to increase last mile(s) bicycle commuting into employment centers. Adjust as appropriate.
Where appropriate, implement projects on a temporary basis before implementing them permanently. Utilize demonstrations, pilot projects, and “quick-builds” for real-world testing of potential bike facility solutions, particularly in hard-to-solve segments.

BikePGH installed a one-day parking protected bike lane installation that allowed community members and elected officials to better understand and try out the design. Parking protected bike lanes are currently not allowed in the state of Pennsylvania due to the state Vehicle Code which requires vehicles to park within 12 inches of a curb.

BikePGH staff and volunteers installed a temporary two-way protected on Euclid Street/Penn Circle ahead of the real installation to talk to OpenStreetsPGH visitors about the project and have them test it out.

DOMI staff installed a temporary bus lane and one-way projected bike lane on the street where BRT will be installed in 2021.

Install bike runnels on public steps to increase access.

Pittsburgh has over 800 sets of public steps. These vertical travel ways are important connections within and between neighborhoods – especially given the steep topography of our city. Bike runnels are channels alongside steps that facilitate walking a bicycle up or down the stairway. These simple enhancements dramatically improve the ease of bicycle access in the city.

1. Adopt a policy to make bike runnels standard on all public step restoration projects.
2. Install bike runnels on all steps leading to high-frequency and/or rapid transit stops where consistent with Port Authority policies.
3. Install bike runnels to access bike parking areas in the City-County building and other public city facilities.

Stairs are a critical part of Pittsburgh’s transportation system.

Example of a bike runnel on a public staircase in Pittsburgh.

Example of a bike runnel on a public staircase in Pittsburgh.
Phasing, Implementation and Plan Updates
**Chapter 7**

**Phasing, Implementation and Plan Updates**

Transforming Pittsburgh's existing network of bike infrastructure into the vision expressed in the network map will be a multi-year process. Implementation of the proposed 120 mile network will be phased in over the course of the next decade.

**Project Prioritization**

This Plan lays out a phased approach to installing bicycle infrastructure. Projects will be prioritized for implementation according to the following factors:

- **High crash segment** – Areas of the network where bike(+) facilities are lacking and where there is a relative concentration of residents or jobs but no access to a designated bike(+) facility within ¼ mile.
- **Low access segments** – Areas where there is a relative frequency of crashes involving people on bicycles.
- **Network gap** – Missing segments between two established bike(+) facilities that complete a necessary link in the city network.
- **Final link** – Segments that connect to critical destination nodes such as high-frequency, rapid transit stops, concentrated employment centers, significant commercial areas, regional assets such as parks or cultural destinations, or similar.
- **Opportunities** – Segments that present a unique and time-limited opportunity such as scheduled street resurfacing or street restoration, adjacent development projects, currently low traffic volumes, or similar. May also represent upgrades to enhance existing facilities to a higher level of user comfort and protection.
- **Planning need** – Necessary links that require a community planning process in which to determine the appropriate alignment to complete the connection.

**Network Implementation**

While it is expected that the City of Pittsburgh will build the majority of the network, other actors are anticipated to contribute to project implementation over time. These include:

- **Pennsylvania Department of Transportation (PennDOT)** – Of the approximately 1,200 linear miles of street in the City of Pittsburgh, roughly 160 belong to PennDOT. A small fraction of these overlap with the proposed bike(+) network. Implementation on these right of ways will be completed by, or in coordination with, PennDOT either as a discrete project or as a component of routine street resurfacing. PennDOT is also an important funder of bike(+) facilities with state funds or as the steward of federal investments.
- **Allegheny County** – A number of critical links, including several bridge or tunnel connections, are county-owned assets that will require participation by the County for implementation. The County has also been instrumental in providing technical support and/or funding for critical links such as riverfront or rail corridor trails.
- **Port Authority of Allegheny County (PAAC)** – While no link in the proposed network is on PAAC right of way, final access to and parking near Port Authority stations will require close cooperation with the Authority. Opportunities may emerge over time to utilize PAAC assets such as the Wabash Tunnel.
- **Southwestern Pennsylvanian Commission (SPC)** – While SPC does not own any right of way assets in the City, the Commission oversees a number of funding programs that will be critical sources of funding for implementation of the network.
- **Private Developers and Investment** – Today it is common for private development projects to build a new traffic signal, restripe streets for turn lanes, or make other investments to mitigate vehicle impacts. Building out the bike(+) network may be one of the most effective means to reduce vehicle impacts and require less mitigation. The Department of Mobility and Infrastructure will work with the Department of City Planning Office of Zoning and private developers to increase private investment in bike(+) network implementation.

**Funding**

The City of Pittsburgh employs a variety of funding sources for implementing mobility infrastructure and programs. Each type of funding has distinct requirements pertaining to allocation, utilization, and reporting. The three most common sources of funding for mobility projects are:

- **City of Pittsburgh’s Local Capital Budget** - Priority projects that have strong community support and can be completed within one year are typically funded via Capital Budget requests. Capital projects are often designed and installed by in-house crews and can be completed in a short amount of time.
- **County, State, and Federal Grants** - Larger-scale and therefore more expensive projects, especially those critical to the regional network, are good candidates for County, State, and Federal Grants. Because the application and program requirements for this type of funding are among the most time-consuming and rigorous, these funds are typically used only on multi-year, high cost projects.
- **Philanthropic or Private Funding** - There are several local and national organizations that fund active transportation projects and programs. Pittsburgh has a rich history of working with such organizations to fund a variety of mobility programs and services, and will continue to pursue these opportunities as they become available.

74 | 75
From Planning to Implementation

This Plan sets the stage for implementation, as shown in the graphic below.
### Tracking Progress

The Department of Mobility and Infrastructure will measure and report progress in both implementation of the plan and measures of effectiveness at least annually by way of a report to the Office of the Mayor shared with City Council and public stakeholders. Progress tracking will include, but is not limited to:

<table>
<thead>
<tr>
<th>Metric</th>
<th>Baseline (2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles of network built and/or improved</td>
<td>93 mi</td>
</tr>
<tr>
<td>New critical connections made (e.g. difficult intersections, bridge crossings, etc.)</td>
<td>N/A</td>
</tr>
<tr>
<td>User data from count locations by month</td>
<td>13,210 rides/month (Penn Ave - Average for 3 count locations, May-Nov 2019)</td>
</tr>
<tr>
<td>Percent of households within ¼ mile of a bike(+) facility</td>
<td>44% households</td>
</tr>
<tr>
<td>Percent of households within 1 mile of groceries by way of a low-stress bicycle route</td>
<td>20%</td>
</tr>
<tr>
<td>Crashes involving people on bicycles</td>
<td>57 per year (rolling 5 year average, 2014-2018, PCIT data)</td>
</tr>
<tr>
<td>Crash rate (crashes/population) for people on bicycles</td>
<td>0.019% (rolling 5 year average, 2014-2019 PCIT data)</td>
</tr>
<tr>
<td>Number of new bike racks or corrals installed</td>
<td>N/A</td>
</tr>
<tr>
<td>Average monthly bikeshare customers</td>
<td>~1,750 customers per month in 2019</td>
</tr>
<tr>
<td>Rides taken on shared bike(+) devices by month</td>
<td>7,191 per month avg. Healthy Ride trips, 2019</td>
</tr>
<tr>
<td>Number of public steps infrastructure with runnels</td>
<td>3</td>
</tr>
</tbody>
</table>

### Looking Forward

The 2020 Bike(+) Plan is a living document. This is a framework that will need to be regularly revisited, debated, and updated to keep current with the changing nature of our city, the demands of our public, and evolutions in mobility. While this is a ten-year plan, the Plan and associated strategies should be formally reviewed by City agencies, advocates, and representatives of the diverse public roughly every two years with a significant update anticipated after five years.
### Projects

#### Table 3: Bike(+) Network Projects and Connections

<table>
<thead>
<tr>
<th>Name</th>
<th>From</th>
<th>To</th>
<th>Neighborhood</th>
<th>Council District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merchant Street Connector</td>
<td>Ridge Avenue</td>
<td>Reedsdale Street</td>
<td>Allegheny Center, Allegheny West North Shore</td>
<td>1</td>
</tr>
<tr>
<td>East North Avenue Bridge Connection</td>
<td>Vinal Street</td>
<td>Cedar Avenue</td>
<td>Allegheny Center, Central Northside</td>
<td>1</td>
</tr>
<tr>
<td>South Federal Street Bike Facilities</td>
<td>South Commons</td>
<td>Roberto Clemente Bridge</td>
<td>Allegheny Center, North Shore</td>
<td>1</td>
</tr>
<tr>
<td>Brighton Heights Bike Facilities</td>
<td>California Avenue</td>
<td>Woods Run Avenue</td>
<td>Brighton Heights</td>
<td>1</td>
</tr>
<tr>
<td>Eckart Westhall Connection to Trail</td>
<td>California Ave</td>
<td>Three River Heritage Trail</td>
<td>Brighton Heights, Marshall-Shadeland</td>
<td>1</td>
</tr>
<tr>
<td>East Ohio Commercial District Connection</td>
<td>East Street</td>
<td>Cedar Avenue</td>
<td>East Allegheny</td>
<td>1</td>
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<tr>
<td>Lower Spring Garden Bike Facilities</td>
<td>Wicklins Lane</td>
<td>Vinal Street</td>
<td>East Allegheny, Spring Garden, Troy Hill</td>
<td>1</td>
</tr>
<tr>
<td>East Street South Extension</td>
<td>Lareda Street</td>
<td>East Ohio Street</td>
<td>East Allegheny, Spring Hill View</td>
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</tr>
<tr>
<td>Troy Hill Bike Facilities</td>
<td>Rialto Street</td>
<td>Phoenix Avenue</td>
<td>East Allegheny, Troy Hill</td>
<td>1</td>
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<tr>
<td>Lecky Avenue Neighborway</td>
<td>Central Avenue</td>
<td>Eckert Street</td>
<td>Marshall-Shadeland</td>
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<tr>
<td>Kilbuck Road Park Connection</td>
<td>Riverview Park</td>
<td>Marshall-Shadeland, Perry North</td>
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<tr>
<td>Tony Dorsett Drive Bike Facilities</td>
<td>Reedsdale Street</td>
<td>North Shore Drive</td>
<td>North Shore</td>
<td>1</td>
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<tr>
<td>East Street North Extension Phase 1</td>
<td>East Street</td>
<td>Evergreen Road</td>
<td>Northiew Heights, Perry North, Summer Hill</td>
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<tr>
<td>Spring Hill City View Bike Facilities</td>
<td>Swindell Bridge</td>
<td>East Street</td>
<td>Northiew Heights, Spring Hill City View</td>
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<tr>
<td>East Street North Extension Phase 2</td>
<td>Evergreen Road</td>
<td>Perryville Avenue</td>
<td>Perry North</td>
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<tr>
<td>Old Kilbuck Road Trail Improvements</td>
<td>Riverview Avenue</td>
<td>Perry North</td>
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<tr>
<td>Riverview Avenue Entrance Bike Facilities</td>
<td>Riverview Avenue</td>
<td>Perryville Avenue</td>
<td>Perry North</td>
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<tr>
<td>Upper Perryville Avenue Bike Facilities</td>
<td>Maindale Avenue</td>
<td>Riverview Avenue</td>
<td>Perry North</td>
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<tr>
<td>Upper Spring Garden Avenue Bike Facilities</td>
<td>City Limits</td>
<td>Wicklins Lane</td>
<td>Spring Garden</td>
<td>1</td>
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<tr>
<td>Ley Street Bike Facilities</td>
<td>City Limits</td>
<td>Rialto Street</td>
<td>Troy Hill</td>
<td>1</td>
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<tr>
<td>Rialto Street Steps Runnel Upgrade</td>
<td>Ley Street</td>
<td>31st Street Bridge</td>
<td>Troy Hill</td>
<td>1</td>
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<tr>
<td>Upper Chatteries Avenue Bike Facilities</td>
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### Appendix A

#### Table A: Bike Route Improvements and Connections

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<td>35th Street</td>
<td>Morewood Avenue, Shadyside, Squirrel Hill North</td>
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<td>Wilkins Avenue, Forbes Avenue, Squirrel Hill North</td>
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<td>Hamilton Avenue Bike Facilities</td>
<td>35th Street</td>
<td>East Liberty Boulevard, East Hills, Homewood South, Homewood West, Larimer</td>
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<td>Black Street Bike Facilities</td>
<td>Mossfield Street</td>
<td>North Negley Avenue</td>
<td>East Liberty, Garfield</td>
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<td>East Liberty Boulevard</td>
<td>Lincoln Avenue</td>
<td>East Liberty, Larimer</td>
<td>9</td>
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<td>East Liberty Boulevard Bike Extension</td>
<td>Hamilton Avenue</td>
<td>Mill Street</td>
<td>Homewood North, Homewood South, Point Breeze North</td>
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<td>North Homewood Avenue Bike Facilities</td>
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<td>Lincoln Avenue</td>
<td>Homewood North, Lincoln-Lemington-Belmar</td>
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<td>Apple Avenue Bike Facilities</td>
<td>McPherson Boulevard</td>
<td>Hamilton Avenue</td>
<td>Homewood South, Homewood West, Point Breeze North</td>
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<td>Brilliant Branch Rails to Trails</td>
<td>Negley Run Boulevard</td>
<td>Hamilton Avenue</td>
<td>Homewood West, Lincoln-Lemington-Belmar</td>
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<td>Meade Street Bike Facilities</td>
<td>City Limits</td>
<td>South Homewood Avenue</td>
<td>Point Breeze North</td>
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<td>39th Street</td>
<td>Reynolds Street</td>
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<td>Ridge Avenue</td>
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<td>24th Street</td>
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<td>24th Street</td>
<td>Allegheny West, Central Northside, Manchester</td>
<td>1, 6</td>
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<td>California Avenue</td>
<td>Three Rivers Heritage Trail</td>
<td>Chateau, Manchester, Marshall-Shadeland</td>
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<td>37th Street</td>
<td>24th Street</td>
<td>Three Rivers Heritage Trail</td>
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<td>Central Perryville Avenue Bike Facilities</td>
<td>37th Street</td>
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<td>Three Rivers Heritage Trail</td>
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<td>35th Street</td>
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<td>East Liberty Centre Avenue Bike Facilities</td>
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<td>Broadway Avenue Bike Lanes</td>
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<td>Fallerview Avenue</td>
<td>Beechview</td>
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<td>Chateau, Elliott, South Shore</td>
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The Bicycling Level of Traffic Stress (LTS) analysis conducted for the Pittsburgh Bike (+) Master Plan is an extension of the Mineta methodology that incorporates updates published by the Mineta paper’s author and other modifications drawn from experience applying the methodology nationwide. It used street data from the City of Pittsburgh and OpenStreetMap, including: City of Pittsburgh street centerlines with speed volumes; City of Pittsburgh bicycle facility data (update during Plan development); and OpenStreetMap functional classifications, which were used in cases where segments that scored LTS 3 or LTS 4 were classified as high stress if they had a primary, secondary, trunk, or tertiary street classification.

Finally, unlike a typical Bicycling Level of Traffic Stress analysis that assigns scores based on a four-point system, the Bicycling Level of Traffic Stress analysis shown on pages 28-29 and 42-43 uses a two-level system. Segments that scored LTS 1 or LTS 2 on the four-point system were classified as low stress. Segments that scored LTS 3 or LTS 4 were classified as high stress. Combining LTS 1 and LTS 2 into a single category corresponds with the comfort level of a typical adult who is interested in riding a bicycle but concerned about motor vehicle volumes and speeds. Simplifying the LTS scoring into these two categories emphasizes the importance of the low-stress network while highlighting existing high-stress gaps.

A map showing Bicycling Level of Traffic Stress (LTS) showing all four stress levels is provided in Figure 17 on the following page.

Appendix B

Bicycling Level of Traffic Stress

The Bicycling Level of Traffic Stress analysis in this Plan differed from conventional Bicycling Level of Traffic Stress in that it incorporated street slope as a factor contributing to stress. Any street with a slope of 25% or higher was coded as high stress. In addition, streets with slopes between 12% and 25% were classified as high stress if they had a primary, secondary, trunk, or tertiary street classification.

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Figure 17: Bicycling Level of Traffic Stress (LTS) Four Stress Levels

Pittsburgh, PA
Bicycle Level of Traffic Stress – Existing Network