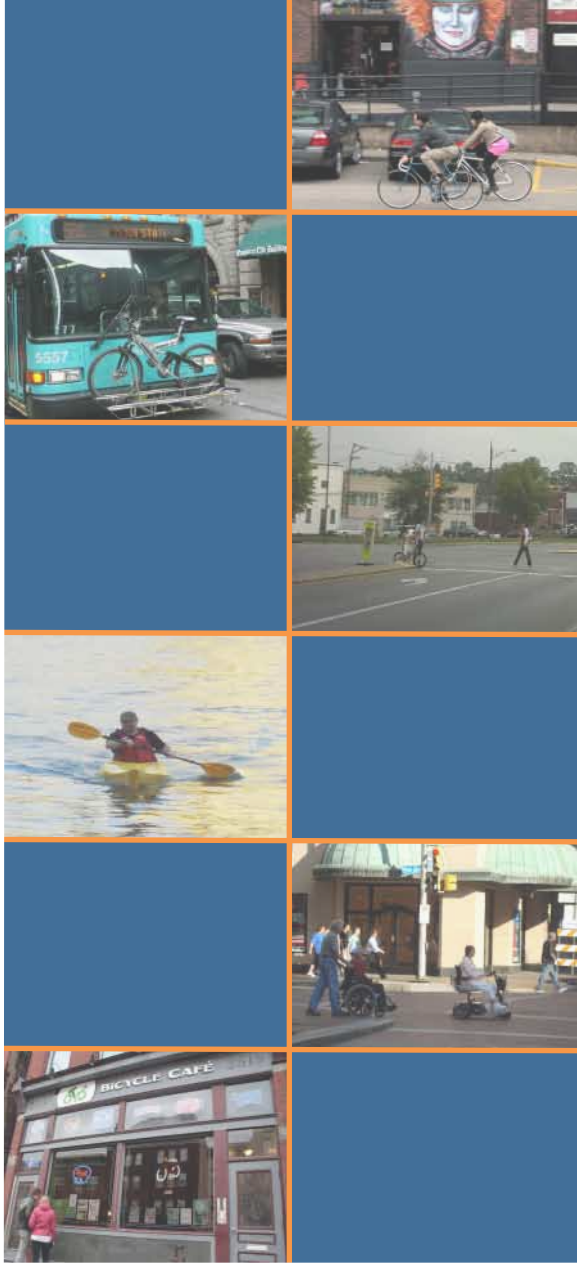
ACTIVEALLEGHENY

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan for Allegheny County

An implementation activity of:

ALLEGHENYPLACES



ACTIVE TRANSPORTATION PLAN

Allegheny County Economic Development
Allegheny County, Pennsylvania

DECEMBER 2010

ACTIVEALLEGHENY

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan for Allegheny County

An Implementation Activity of ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

The Preparation of this Plan was Funded By:

The **Pennsylvania Department of Transportation:** Smart Transportation Grant, Pennsylvania Community Transportation Initiative (PCTI), and with **Allegheny County** in-kind services.

The Plan was Prepared For:

Allegheny County
Dan Onorato, County Executive
Allegheny County Economic Development
Dennis Davin, Director
Robert Hurley, Deputy Director

Project Manager: Lynn Heckman, Assistant Director – Transportation Initiatives

The Plan was Prepared By:

Michael Baker Jr., Inc. in close coordination with the ACTIVEALLEGHENY Core Committee, Study Advisory Committee and Allegheny County Residents.

Project Manager: Regina E. Del Vecchio, P.T.P.

We would like to thank the ACTIVEALLEGHENY Core Committee, Study Advisory Committee and Public for their contributions to this plan.

Core Committee Members

10,000 Friends of PA
Airport Corridor Transportation Management Association
Allegheny County Economic Development
Allegheny County Executive's Office
Allegheny County Parks Foundation
Allegheny County Police
Allegheny County Public Works
Allegheny County Task Force on Disabilities
Bike Pittsburgh
City of Pittsburgh
CityLAB
Friends of the Riverfront
Montour Trail Council
Oakland Transportation Management Association
Pennsylvania Environmental Council
Pennsylvania Department of Transportation Central Office
Pennsylvania Department of Transportation District-11
Pittsburgh Downtown Partnership Transportation Management Association
Port Authority of Allegheny County
Southwestern Pennsylvania Commission
Township of Upper St. Clair

Study Advisory Committee Members

10,000 Friends of PA
3 Rivers Wet Weather
ACCESS Transportation
Airport Corridor Transportation Management Association
Allegheny County, Various Departments and Agencies
Bike Pittsburgh
Blind Leisure Outdoor Development
CityLAB
City of Pittsburgh
Civil & Environmental Consultants, Inc.
Community College of Allegheny County
Friends of the Riverfront
Gateway Engineers
GoBurgh Initiative
Manchester Bidwell Corporation
Montour Trail Council
Mon Valley Initiative
Moon Township
Mt. Lebanon
Mullen Advertising
Oakland Transportation Management Association
Pennoni Associates
Pennsylvania Department of Transportation
Picadio, Sneath, Miller & Norton, P.C.
Point Park University
Pittsburgh Downtown Partnership Transportation Management Association
Quaker Valley Council of Government
RAND
Rothschild, Doyno Collaborativo
Southwestern Pennsylvania Commission
Steel Valley Council of Government
Sustainable Pittsburgh
Three Rivers Center for Independent Living
Traffic 21
Turtle Creek Council of Government
Twin Rivers Council of Government
URS Corporation
United Cerebral Palsy of Pittsburgh
Upper St. Clair Township
Venture Outdoors

Large Cover Photo – Allegheny County's Roberto Clemente Bridge (Frequently Switched to Pedestrian-Only for Events)
Small Cover Photos – Bicyclists in the Strip District (Top Right Photo: Kevin Smay); Pedestrian and Bicyclist (Middle Right Photo); Pedestrians in Pittsburgh (Bottom Right Photo); Bike Rack on PAAC Bus (Top Left Photo: Sara Walfoort); Kayaker (Middle Left Photo); Bicycle Café (Bottom Left Photo: Kevin Smay)

All photos provided by Michael Baker Jr., Inc. unless noted otherwise.

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Accommodations for children are denoted by this symbol in the Plan.

EXECUTIVE SUMMARY

"ACTIVEALLEGHENY integrates walking, biking, and other active, healthy travel modes into the existing transportation system. Planning and prioritizing investment in commuter bike routes and walking facilities will enhance our existing transportation network, and provide sustainable travel mode choices to move people to their destinations. This plan will be a blueprint for improved access to connect our communities, work sites, schools, attractions and homes. Active infrastructure will encourage investment and economic development."

– *Dan Onorato*, County Executive

County Executive Dan Onorato with County Employees walking on the Smithfield Bridge to promote healthy lifestyles, Photo: Allegheny County Executive Office

Active Transportation is human-powered transportation including bicycling, walking, kayaking, and in-line skating. Allegheny County partnered with the Pennsylvania Department of Transportation's (PennDOT) Bureau of Public Transportation to develop ACTIVEALLEGHENY.

- **ACTIVEALLEGHENY's Goal: To integrate non-vehicular modes of transportation, specifically walking and biking, into the transportation system through creation of a comprehensive active transportation plan.**
- **ACTIVEALLEGHENY's Primary Objective: To encourage and accommodate walking and biking as modes of commuting to destinations.**

ACTIVEALLEGHENY focuses on:

- Connectivity, access, mobility, and healthy lifestyle through specialized plan components:
  - ***Bike Allegheny,***
  - ***Walk and Roll* Allegheny,*** **(*ADA accessibility)**
  - ***Other Active Transportation Opportunities,***
  - ***Complete the Street,*** **and**
  - ***Action for Active Transportation.***

- Each component provides resources, identifies deficiencies, potential opportunities, system improvements, and other considerations such as policies and programs.

ACTIVEALLEGHENY ***is An Implementation Activity of*** **ALLEGHENYPLACES,** Allegheny County's Comprehensive Plan, which establishes a vision for the County and includes strategies to achieve that vision. The Plan includes a transportation element with actions for commuter bicycle & pedestrian accommodation. **ACTIVEALLEGHENY** is the detailed plan for active transportation. It enhances and enriches **ALLEGHENYPLACES**.





Top Left: Roberto Clemente Bridge; Top Right: On-street bike rack parking downtown Pittsburgh;
Center: Children coloring at the Allegheny Green+Innovation Festival's Active Allegheny Booth (Photo: Kevin Smay);
Bottom Left: Rowing Team at Millvale Park (Photo: Lynn Heckman); Bottom Right: Core Committee Members Darla Cravotta and Tom Baxter reviewing maps (Photo: Lynn Heckman)

The ACTIVEALLEGHENY plan includes five primary components:

1) Bike Allegheny – *To enhance bicycling as a mode of travel in the County,*
2) Walk and Roll* Allegheny – *To improve pedestrian travel,* (*includes ADA accessibility)
3) Other Active Transportation Opportunities – *To improve access for other travel modes (e.g., kayaks, skateboards),*
4) Complete the Street – *Prototypical examples for three "Complete Streets" projects in the County, and*
5) Action for Active Transportation – *Guidance on how to implement the Plan.*

These plan components were developed through a process that included **Defining Themes**, **Sustainability**, **Commitment**, **Coordination,** and **Outreach**.

The League of American Bicyclists summarized U.S. Census American Community Survey statistics and saw an increase in active transportation mode usage in the City of Pittsburgh in recent years:

- **Bicycle commuting** increased 206% between 2000 and 2009.
- One-third of Pittsburgh workers commute to work using green, **active transportation** modes (walking, biking, and/or riding transit).
- Pittsburgh ranks #7 out of 60 cities in the percentage of people who use some form of **active transportation**.

Bike Trailer on a Light Rail Train in Germany
Photo: Patrick Roberts

DEFINING THEMES

Through the course of ACTIVEALLEGHENY, four defining themes were developed to guide future infrastructure improvements and assist in prioritizing identified projects. The themes are:

- Access
- Connectivity
- Mobility
- Health

SUSTAINABILITY

This plan outlines investments advancing sustainable improvements for both short- and long-term community benefits. This is accomplished by utilizing the principles below:

Smart Transportation

PennDOT defines Smart Transportation as "partnering to build great communities for future generations of Pennsylvanians by linking transportation investments, land use planning and decisionmaking…". Smart Transportation components must integrate with other land use elements that comprise sustainable communities, such as: **Environment, Economic Development, Housing, Parks, Open Space and Greenways, Community Facilities, Sustainable Energy Resources, Historic and Cultural Resources, and Equity and Diversity Considerations.** ACTIVEALLEGHENY integrates these principles into the planning process.

Placemaking

ACTIVEALLEGHENY advances the ALLEGHENYPLACES vision within a placemaking context. It helps to create targeted "places" where residents can **live, learn, work, invest and play**!

COMMITMENT, COORDINATION & OUTREACH

Stakeholder coordination and public participation was an integral part of the ACTIVEALLEGHENY planning process. Several different methods were utilized to encourage involvement including a website **www.activeallegheny.com**, online survey, Facebook page, coordination with a Core Committee, participation by a Study Advisory Committee, and interaction with the public.

Above: Presentation to CAT, 9/2/2010
Left: Active Allegheny Booth at the Allegheny County Green+Innovation Festival
Photo: Kevin Smay

THE PLAN

BIKE ALLEGHENY

Allegheny's Bicycle Network

Bicyclists have identified the need for safe and convenient access to destinations in the County. Although some bicycle routes are available, most notably PA State Bicycle Routes and shared use trails including the Great Allegheny Passage (GAP) and Montour Trail, designated commuter and recreational routes are still desired. ACTIVEALLEGHENY considered the following elements:

- **Desired Access**
- **Identified Deficiencies**
- **Potential Opportunities**

Family Bike Outing
Photo: Allegheny County Executive Office

At one point in time, people considered "trail development" to be a recreational accommodation. Not any longer. Trail development within Allegheny County provides connections to our communities, opportunities for economic development, and offers transportation alternatives. Trails are used for recreational purposes, but also for commuting from one place to another.

System Improvements

Based on analysis of the Bicycle Network, system improvements were developed. It is recommended that Allegheny County designate bicycle routes to serve bicycle commuters from north, south, east and west suburbs to the City of Pittsburgh to connect with the City of Pittsburgh Bicycle Network. A designated beltway bicycle route is also recommended around the County to connect the County Parks and other area land uses.

Bicyclists on Washington Boulevard Cycling Track

Bicycle Facilities Toolbox

The Bicycle Facilities Toolbox is a resource for County and local officials, staff, residents, and stakeholders that will assist in planning and developing bicycle facilities as part of the implementation of the ACTIVEALLEGHENY Plan. The toolbox is composed of the following four (4) sections:

- **Bicycle Facility Users**
- **Bicycle Facility Types and Design Guidelines**
- **Order of Magnitude Costs**
- **Innovative Bicycle Facilities**

Policy and Programmatic Considerations

Recommendations for policies and programs to impact and influence the development of a bicycle network in Allegheny County are part of the ACTIVEALLEGHENY Plan.

WALK AND ROLL ALLEGHENY

Allegheny's Pedestrian Network

ALLEGHENYPLACES identified key challenges in increasing pedestrian travel as a mode share. Some of those challenges included a "lack of continuous sidewalk network in new and old developments" and incorporation of pedestrian facilities into roadway projects. ACTIVEALLEGHENY details the deficiencies and constraints for pedestrians in Allegheny County and offers solutions from engineering to education.

Pedestrians using crosswalks, City of Pittsburgh

During the course of the ACTIVEALLEGHENY study, the Study Team worked closely with the Allegheny County/City of Pittsburgh Task Force on Disabilities and the Committee for Accessible Transportation (CAT) to incorporate deficiencies and opportunities for older adults and those with ambulatory, visual, hearing, or cognitive impairments. Several deficiencies and opportunities were raised by members of these groups and the general public in both the online survey and at public meetings. These are outlined in the Walk and Roll Allegheny chapter of the Plan.

System Improvements

A System Improvements Plan was developed that considered the following:

- Desired Access
- Identified Deficiencies
- Equal Opportunities

Pedestrian Corridors

More than twenty corridors were investigated in the field and identified in the Plan.

Intersections

Approximately twenty intersections were investigated for improvements and are included in the Plan.

Public Steps

Neighborhoods where commuter stairways are most frequently used and where maintenance is needed are identified in the Plan.

Pedestrian Facilities Toolbox

The Plan includes a Pedestrian Facilities Toolbox. The toolbox identifies pedestrian types, and pedestrian facility improvements to accommodate them. The toolbox discusses the applicability and design guidelines for the following types of pedestrian facility improvements:

- Sidewalks
- Curb Ramps
- Intersection Facilities
- Crosswalks
- Signs, Direction, and Reflection
- Traffic Calming and Streetscapes
- Bus Stops
- Costs

Pedestrians in Sewickley

Pedestrian Innovation

Some innovative pedestrian facility designs and/or treatments are detailed in the Plan, including:

- Pedestrian Zones
- Non-standard Crosswalk Striping
- Pedestrian Pavement Messages

Policy and Programmatic Considerations

Policies and programs that support walking, and improve the built environment for all transportation modes, are discussed in the Plan. The plan includes policy recommendations for:

- PennDOT's Design Manual
- Curb Ramps
- Pennsylvania Driver's Manual
- Hazardous Walking Routes

Education and Enforcement

To properly plan for future growth of pedestrian use in the County, it is important to implement educational programs that encourage proper safety techniques among pedestrians and motorists statewide, countywide, and on a municipal level. The plan describes numerous resources available to use in these education programs.

OTHER ACTIVE TRANSPORTATION OPPORTUNITIES

Pittsburgh Waterfront, Allegheny County

Although bicycling and walking are the most prevalent modes of active transportation, in Allegheny County, other modes are emerging as not only recreational preference, but commuter options. A system of water trails is available to kayakers and non-motorized watercraft, while on-land in-line skating has become increasingly popular due in part to the network of paved paths.

Three Rivers Water Trail

The Three Rivers Water Trail is a system of access points and accommodations for water port access for the Allegheny, Monongahela and Ohio Rivers in Allegheny County, developed and maintained by Friends of the Riverfront.

ACTIVEALLEGHENY describes recommended improvements to promote connectivity between the Three Rivers Water Trail and other Active Transportation facilities in the region. It also makes recommendations to improve access to the rivers through improvements to:

- Parking
- Kayak Rental Locations
- Docking and Launching Locations

In-Line Skating & Skateboarding

In-line skating has emerged as an active transportation option in Allegheny County due in part to the network of paved paths available as part of the trail system.

COMPLETE THE STREET

The term "complete streets" is defined as follows: "A complete streets policy ensures that the entire right-of-way is routinely designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street."

Under the complete streets approach, all projects begin with the assumption that, in addition to motor vehicles, pedestrians, bicyclists, and transit users of all ages and abilities should be accommodated.

Rendering of a Complete Street

Complete Streets Policy

The most fundamental step that Allegheny County and its constituent municipalities can take to advance complete streets practice is to adopt and implement a Complete Streets policy. This step is recommended for the municipalities in the ACTIVEALLEGHENY study area. The Plan includes a Model Ordinance that municipalities can use to implement Complete Streets policies.

Circulation Plan

A municipality's comprehensive circulation plan should express support for complete streets goals and establish a framework for improving pedestrian, bicycle, and transit facilities.

SALDO and Design Standards

Another important step for municipalities is to revise their Subdivision and Land Development Ordinance (SALDO) and/or their public and private improvements codes, to provide standards for pedestrian and bicycle facilities. A quality resource for municipalities wishing to revise their roadway design standards is the PA *Smart Transportation Guidebook*.

Prototypical Projects

ACTIVEALLEGHENY includes recommendations for three prototypical complete street projects in the County to demonstrate how complete street principles can be implemented. The complete streets prototypes to serve as examples for the other candidates are:

- **Freeport Road in Blawnox Borough and O'Hara Township**
- **South Braddock Avenue/Belmar Place in Swissvale Borough**
- **Broadway Avenue in Beechview and Dormont, Pittsburgh**

TAKE ACTION

ACTIVEALLEGHENY lays the groundwork for a complete transportation network with active transportation connections within Allegheny County. In order for this countywide plan to be implemented, local municipalities, the County, PennDOT, and the Southwestern Pennsylvania Commission need to continuously integrate and update their active transportation plans and cooperatively work on implementation opportunities. The Plan describes suggested roles for each of the implementing agencies, including PennDOT, municipalities, and developers as well as a wide variety of funding sources that can be utilized.

Due to the size of the County and its evolving nature, the plan should not be treated as a static document, or one that identifies every desirable Active Transportation project in the County. Instead the Plan should be used as a basis for the planning and development of pedestrian, bicycle, and active transportation modes of transportation in the County, and serve to provide examples of Active Transportation projects that others can follow. Further study and recommendations can and should develop from this document.

Preliminary systems improvements identified in ACTIVEALLEGHENY are shown in Figures E-1 through E-3. Figure E-1 shows the Countywide Bicycle Routes, Figure E-2 shows the Pedestrian Corridors and Intersections, and Figure E-3 shows the City Bicycle Network.

Projects are listed in Table E-1, including which user group may benefit from the improvement. Also provided is information on when the improvement is likely to be implemented:

- **Short- term (1-3 Years),**
- **Mid-term (3-5 Years), or**
- **Long-term (5+ Years).**

The time frame recommended for implementation is based on the potential physical constraints observed in the field, the level of design required prior to construction, and the quantity of improvements for the specified location. For example, if an intersection has faded crosswalks and outdated pedestrian signals, but has ADA compliant curb ramps and connecting sidewalk in good condition, then the improvements for the intersection would be short-term as they would likely involve restriping the crosswalk and replacing the pedestrian signal heads. However, if there were no connecting sidewalk and the curb ramps were not ADA compliant, then the improvement would be long-term since connecting sidewalk would need to be constructed and ADA compliant curb ramps installed. Additional details for the projects are included in the Plan.

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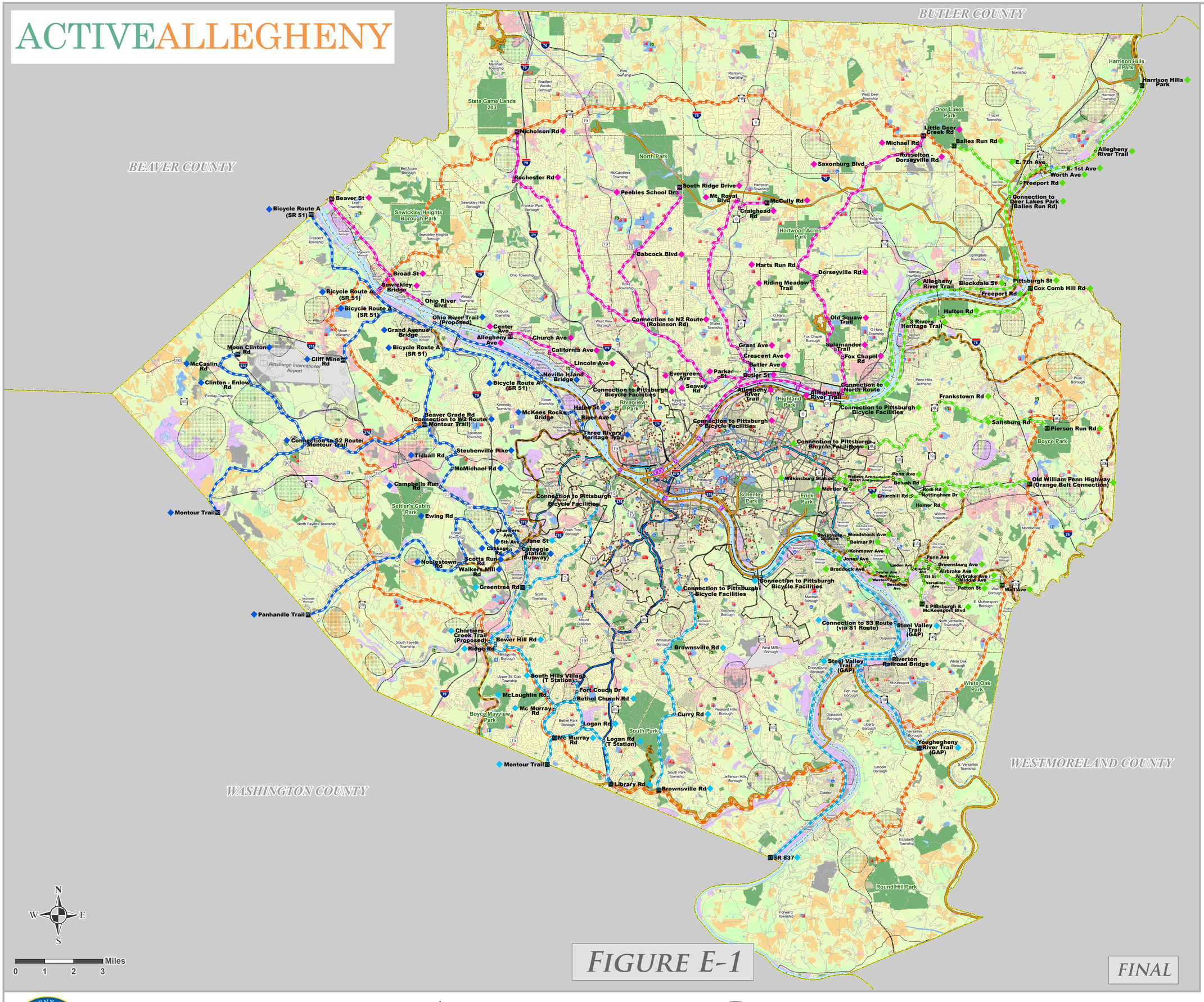
ACTIVEALLEGHENY



Legend

Proposed Bicycle Routes
- North Bicycle Routes
- West Bicycle Routes
- East Bicycle Routes
- South Bicycle Routes
- City Bicycle Routes
- Beltway Bicycle Route
- Route Transitions

Trails
- Existing Trails
- Proposed Trails
- Trail Under Development
- Three Rivers Water Trail

Transportation
- Higher Order Roadways
- Local Roadways
- Bridges
- Busways and Stations (East, North Shore, South, West)
- T and Stations

Focus Area Attractors
- Focus Area Bridge
- Bike Rental
- Cycle Track
- Sports Legacy
- Hospital
- Senior Center
- Library
- Park and Ride Lots
- Private School
- Public School
- College / University
- Potential TOD Sites

Physical Boundaries
- County Boundary
- Municipal Boundaries

Source for boundaries: Allegheny Places municipal boundaries - Assessor Territory

Water Features
- Rivers and Lakes

Land Uses (Allegheny Places)
- Economic Growth Areas
- Residential
- Commercial
- Industrial
- Transportation
- Recreation / Conservation
- Parks
- Community Facilities
- Agriculture
- Cemetery
- Undeveloped
- Vacant

N W E S

0 1 2 3 Miles

Figure E-1

FINAL

October 2010
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Allegheny County
Preliminary System Improvements
Countywide Bicycle Routes

ALLEGHENY COUNTY ECONOMIC DEVELOPMENT COORDINATING SUCCESS

ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

ACTIVEALLEGHENY

BUTLER COUNTY

BEAVER COUNTY

WESTMORELAND COUNTY

WASHINGTON COUNTY

Identified Intersections

1. Thorn Run Road & State Hwy 51
2. Beadling Road & Washington Road
3. Negley Run Boulevard & Washington Boulevard
4. Foster Street & 40th Street
5. Route 19 Truck & Brookline Boulevard
6. Cochran Road & Washington Road
7. Bethel Church Road & Broughton Road
8. Smithfield Street & Carson Street
9. Campbells Run Road & Steubenville Pike
10. State Hwy 837 & Amity Street
11. Belmar Place & Woodstock Avenue
12. Braddock Avenue & 4th Street
13. Braddock Avenue & 7th Street
14. Brinton Avenue & Ridge Avenue
15. Boulevard of the Allies & Bates Street
16. Boulevard of the Allies & Halket Street
17. S. Bellefield Avenue & 5th Avenue
18. Ardmore Boulevard & Yost Boulevard
19. Castle Shannon Boulevard & Mt. Lebanon Boulevard

Top 10 Intersection Crash Concentrations

1. 10th Street & E. Carson Street (6)
2. E. Ohio Street & Cedar Avenue (5)
3. 18th Street & E. Carson Street (5)
4. Baum Boulevard & Roup Avenue (3)
5. Cherry Way & Boulevard of the Allies (3)
6. 17th Street & E. Carson Street (3)
7. Main Street & 4th Avenue (3)
8. Butler Street & 45th Street (3)
9. S. Main Street & Wabash Street (3)
10. E. Ohio Street & Middle Street (3)

Legend

Focus Areas

- Pedestrian Intersections
- Pedestrian Corridors
- Major Pedestrian Crash Locations
- Low Income, Disabled, & Minority Population Concentrations*
  *2005 SFC Population by Census Block Maps
- Elderly /Older Adult Population Concentrations*
  *2005 SFC Population by Census Block Maps

Trails

- Existing Trails
- Proposed Trails
- Trail Under Development
- Three Rivers Water Trail

Transportation

- Higher Order Roadways
- Local Roadways
- Bridges
- Busways and Stations (East, North Shore, South, West)
- T and Stations

Focus Area Attractors

- Focus Area Bridge
- Bike Rental
- Cycle Track
- Sports Legacy
- Hospital
- Senior Center
- Library
- Park and Ride Lots
- Private School
- Public School
- College / University
- Potential TOD Sites
- Steps

Physical Boundaries

- County Boundary
- Municipal Boundaries

Source for boundaries: Allegheny Places municipal boundaries - Assessor Territory

Water Features

- Rivers and Lakes

Land Uses (allegheny places)

- Economic Growth Areas
- Residential
- Commercial
- Industrial
- Transportation
- Recreation / Conservation
- Parks
- Community Facilities
- Agriculture
- Cemetery
- Undeveloped
- Vacant

N W E S

0 1 2 3 Miles

FIGURE E-2

FINAL

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ALLEGHENY COUNTY
PRELIMINARY SYSTEM IMPROVEMENTS
PEDESTRIAN CORRIDORS AND INTERSECTIONS

ALLEGHENY PLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

ACTIVEALLEGHENY

Highland Park

Schenley Park

Frick Park

N
W E
S

0 Miles 1

LEGEND

PROPOSED BICYCLE ROUTES
- NORTH BICYCLE ROUTES
- WEST BICYCLE ROUTES
- EAST BICYCLE ROUTES
- SOUTH BICYCLE ROUTES
- CONNECTION TO PITTSBURGH BICYCLE FACILITIES

EXISTING FACILITIES
- BIKE PGH BICYCLE ROUTES
- CITY OF PITTSBURGH MARKED BIKEWAYS

TRAILS
- EXISTING TRAILS
- PROPOSED TRAILS
- TRAIL UNDER DEVELOPMENT
- THREE RIVERS WATER TRAIL

TRANSPORTATION
- HIGHER ORDER ROADWAYS
- LOCAL ROADWAYS
- BRIDGES
- BUSWAYS AND STATIONS (EAST, NORTH SHORE, SOUTH, WEST)
- T AND STATIONS

FOCUS AREA ATTRACTORS
- FOCUS AREA BRIDGE
- BIKE RENTAL
- CYCLE TRACK
- SPORTS LEGACY
- HOSPITAL
- SENIOR CENTER
- LIBRARY
- PARK AND RIDE LOTS
- PRIVATE SCHOOL
- PUBLIC SCHOOL
- COLLEGE / UNIVERSITY
- POTENTIAL TOD SITES

PHYSICAL BOUNDARIES
- COUNTY BOUNDARY
- MUNICIPAL BOUNDARIES

Source for boundaries: Allegheny Places municipal boundaries - Assessor Territory

WATER FEATURES
- RIVERS AND LAKES

LAND USES (ALLEGHENY PLACES)
- ECONOMIC GROWTH AREAS
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION
- RECREATION / CONSERVATION
- PARKS
- COMMUNITY FACILITIES
- AGRICULTURE
- CEMETERY
- UNDEVELOPED
- VACANT

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FIGURE E-3

FINAL

ALLEGHENY COUNTY
CITY BICYCLE NETWORK

ALLEGHENY COUNTY ECONOMIC DEVELOPMENT
COORDINATING SUCCESS

ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

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Table E-1. Project List

Project	User Group Benefit	Time to Implement
Bicycle Accommodation and/or Safety Improvements *(providing on-road bicycle facilities through the use of shared lane markings, parking restrictions, reduced speed limit, traffic calming volume and/or speed control measures, bicycle lanes, signing, striping, widening, and by other means identified in the Bicycle Facilities Toolbox in Chapter 2.*		
Freeport Road (Aspinwall to Cheswick)	Bicyclists	Mid-term
Route 837/East Carson Street (Pittsburgh to West Elizabeth)	Bicyclists	Mid-term
Allegheny River Boulevard (Pittsburgh to Oakmont)	Bicyclists	Long-term
Bigelow Boulevard (Pittsburgh)	Bicyclists	Long-term
Fifth Avenue (Pittsburgh)	Bicyclists	Long-term
Liberty Avenue (Pittsburgh)	Bicyclists	Long-term
Penn Avenue (Pittsburgh)	Bicyclists	Long-term
Route 8/Butler Street (Etna to Richland)	Bicyclists	Long-term
Route 28 (Pittsburgh to Blawnox)	Bicyclists	Long-term
Road Diets *(reducing four-lane cross-section to three lanes including a center left turn lane, addition of on-road bicycle facilities, reduced crossing distance for pedestrians, bus stops located at intersections or in dedicated pull offs).*		
Route 48/Long Run Road (White Oak)	Bicyclists	Mid-term
Route 51 (Coraopolis)	Bicyclists, Pedestrians, Transit Users	Mid-term
Bigelow Boulevard (Pittsburgh)	Bicyclists, Pedestrians, Transit Users	Long-term
Negley Run Boulevard (Pittsburgh)	Bicyclists, Pedestrians	Long-term
Park Manor Boulevard (Robinson)	Bicyclists, Pedestrians, Transit Users	Long-term
Washington Boulevard (Pittsburgh)	Bicyclists, Pedestrians	Long-term

Project	User Group Benefit	Time to Implement
Potential Partial Closures to Motor Vehicles for Active Transportation Accommodation		
Roberto Clemente Bridge, Pittsburgh (Allegheny County)	Bicyclists, Pedestrians, In-Line Skaters, Skateboarders, Water Trail Users	Mid-term
Wabash Tunnel, Pittsburgh (Port Authority of Allegheny County or others)	Bicyclists	Long-term
Dedicated County-Wide Bicycle Routes* *(signing, striping, widening, incorporation into roadway projects, peak hour bicycle use of transit facilities, increased storage on transit facilities, bicycle parking provisions, trail completion, roadway maintenance, and additional planning/design)*		
East Route 1 Connector (Deer Lakes Park to Proposed East Route 1)	Bicyclists	Mid-term
East Route 4 (North Versailles to Swissvale Station)	Bicyclists	Mid-term
East Route 4 Connector (Wall to Turtle Creek)	Bicyclists	Mid-term
East Route 5 (Boyce Park to Pittsburgh)	Bicyclists	Mid-term
North Route 2 (North Park to Allegheny River Trail)	Bicyclists	Mid-term
North Route 3 Detour (Leetsdale to PA Bike Route A)	Bicyclists	Mid-term
North Route 4 (West Deer to Allegheny River Trail)	Bicyclists	Mid-term
South Route 1 (West Elizabeth to Steel Valley Trail)	Bicyclists	Mid-term
South Route 3 (Youghiogheny River Trail to Pittsburgh)	Bicyclists	Mid-term
South Route 5 (South Park to Pittsburgh)	Bicyclists	Mid-term
West Route 1 (Panhandle Trail to Carnegie PAAC Station)	Bicyclists	Mid-term
West Route 2 (Montour Trail to Pittsburgh)	Bicyclists	Mid-term
West Route 3 Connector (Cliff Mine Road to PA Bike Route A)	Bicyclists	Mid-term

***East, South, West, North, and circumferential route (Beltway Bicycle Route) connecting the regional parks and other area land uses.**

Project	User Group Benefit	Time to Implement
East Route 1 (Allegheny River Trail to Pittsburgh)	Bicyclists	Long-term
East Route 2 (Plum to Pittsburgh)	Bicyclists	Long-term
East Route 3 (Monroeville to Wilkinsburg Station)	Bicyclists	Long-term
North Route 1 (Hampton Township Park to Proposed North Route 2)	Bicyclists	Long-term
North Route 2 Connector (Proposed Beltway Bicycle Route to Proposed North Route 2)	Bicyclists	Long-term
North Route 3 (Leetsdale to Pittsburgh)	Bicyclists	Long-term
North Route 4 Connector (Proposed Recreational County Park Route to Proposed North Route 2)	Bicyclists	Long-term
Recreational County Park Route (Beltway Bicycle Route following Orange Belt and Detour Routes to Connect County Parks)	Bicyclists	Long-term
South Route 2 (Montour Trail to South Hills Village Station)	Bicyclists	Long-term
South Route 2 Connector (Library Road to Proposed South Route 2)	Bicyclists	Long-term
South Route 4 (Bethel Park to Proposed Chartiers Creek Trail)	Bicyclists	Long-term
South Route 4 Connector (Greentree Road to Pittsburgh)	Bicyclists	Long-term
West Route 2 Connector (Pittsburgh International Airport to Montour Trail)	Bicyclists	Long-term
West Route 3 (PA Bike Route A to Pittsburgh)	Bicyclists	Long-term
West Route 4 (Moon to Carnegie Station)	Bicyclists	Long-term

Project	User Group Benefit	Time to Implement
Pedestrian Corridor Improvements *(sidewalk maintenance, repair and/or installation; curb ramp installation; street furniture; lighting; and other corridor enhancements desired by a variety of pedestrians)*		
Beaver Street (Glen Osborne)	Pedestrian, Transit User	Short-term
Belmar Place (Swissvale)	Pedestrian, Transit User	Short-term
Braddock Avenue (Braddock)	Pedestrian	Short-term
Chartiers Avenue (McKees Rocks)	Pedestrian, Transit User	Short-term
Cochran Road & Washington Road (Mt. Lebanon)	Pedestrian	Short-term
McLaughlin Run Road (Bridgeville)	Pedestrian	Short-term
Route 837 (Clairton)	Pedestrian	Short-term
Route 837 (Duquesne)	Pedestrian, Transit User	Short-term
Beadling Road (Mt. Lebanon)	Pedestrians	Mid-term
Route 19 Truck/Washington Road (Mt. Lebanon)	Pedestrian, Transit User	Mid-term
Route 19 Truck/West Liberty Avenue (Dormont)	Pedestrian, Transit User	Mid-term
Route 50 (Heidelberg)	Pedestrian, Transit User	Mid-term
Steubenville Pike (Robinson)	Pedestrian, Transit User	Mid-term
Ardmore Boulevard (Forest Hills)	Pedestrians, Transit User	Long-term
Bates Street (Pittsburgh)	Pedestrians, Transit User	Long-term
Bigelow Boulevard (Pittsburgh)	Pedestrian, Transit User	Long-term

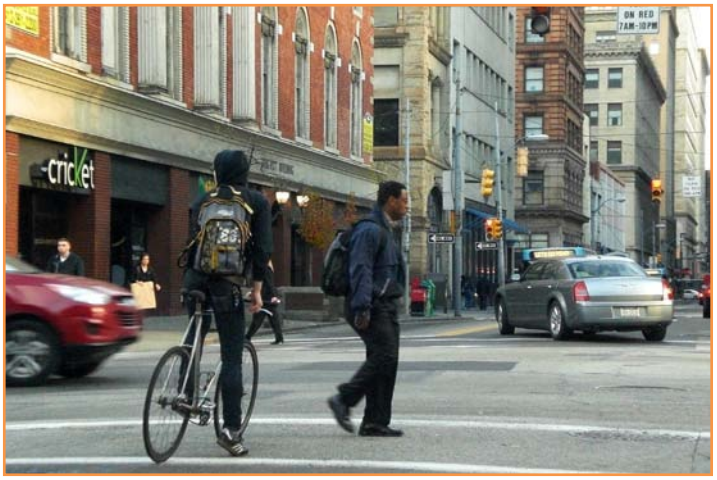
Project	User Group Benefit	Time to Implement
Campbells Run Road (Robinson)	Pedestrian	Long-term
Grove Road (Castle Shannon)	Pedestrian, Bicyclist, Transit User	Long-term
Island Avenue/Route 51 (McKees Rocks)	Pedestrian, Transit User	Long-term
Lincoln Way (White Oak)	Pedestrian	Long-term
Mayview Road (Upper St. Clair)	Pedestrian, Transit User	Long-term
McLaughlin Run Road (Upper St. Clair)	Pedestrian	Long-term
Park Manor Boulevard (Robinson)	Pedestrian, Trail User	Long-term
River Road (Haysville)	Pedestrian, Motorist	Long-term
Robinson Town Center Boulevard (Robinson)	Pedestrian, Transit User	Long-term
Intersection Improvements *(curb ramp maintenance, ADA upgrades, curb ramp installation, pedestrian signal upgrades, push button installation, restriping crosswalks, installing warning signs, and installing crosswalks)*		
Smithfield Street & Carson Street (Pittsburgh)	Pedestrian	Short-term
Route 28 & River Front Drive (Millvale)	Pedestrian	Short-term
Ardmore Boulevard & Yost Boulevard (Pittsburgh)	Pedestrian	Mid-term
Belmar Place & Woodstock Avenue (Rankin)	Pedestrian	Mid-term
Bethel Church Road & Broughton Road (Bethel Park)	Pedestrian	Mid-term
Boulevard of the Allies & Bates Street (Pittsburgh)	Pedestrian	Mid-term
Boulevard of the Allies & Halket Street (Pittsburgh)	Pedestrian	Mid-term
Braddock Avenue & 4th Street (Braddock)	Pedestrian	Mid-term

Project	User Group Benefit	Time to Implement
Braddock Avenue & 7th Street (Braddock)	Pedestrian	Mid-term
Brinton Avenue & Ridge Avenue (East Pittsburgh)	Pedestrian	Mid-term
PJ McArdle Road & Liberty Bridge (Pittsburgh)	Pedestrian	Mid-term
Negley Run Boulevard & Washington Boulevard (Pittsburgh)	Pedestrian	Mid-term
Route 19 Truck & Brookline Boulevard (Dormont)	Pedestrian	Mid-term
South Bellefield Avenue & 5thAvenue (Pittsburgh)	Pedestrian	Mid-term
Route 837 & Amity Street (Homestead)	Pedestrian	Mid-term
Beadling Road & Washington Road (Route 19) (Mt. Lebanon)	Pedestrian	Long-term
Campbells Run Road & Steubenville Pike (Robinson)	Pedestrian	Long-term
Castle Shannon Boulevard & Mt. Lebanon Boulevard (Castle Shannon)	Pedestrian	Long-term
Foster Street & 40th Street (Pittsburgh)	Pedestrian	Long-term
Thorn Run Road & Route 51 (Coraopolis)	Pedestrian	Long-term
Policy and Programmatic Recommendations *(education, enforcement, maintenance, coordination, plan making, and support)*		
Support of Municipal Active Transportation Plans and Plans/Programs with Bicycle and Pedestrian Improvement Recommendations (e.g., City of Pittsburgh Bicycle Plan)	Bicycle and Pedestrian	Short-term
Support of County Active Transportation Plans and Plans/Programs with Bicycle and Pedestrian Improvement Recommendations (e.g., ALLEGHENYPLACES)	Bicycle and Pedestrian	Short-term

Project	User Group Benefit	Time to Implement
Support of Regional Active Transportation Plans and Plans/Programs with Bicycle and Pedestrian Improvement Recommendations (e.g., Move PGH, SPC Regional Traffic Signal Update Project, SPC Bike Count Program, Multi-modal Road Safety Audits, etc.)	Bicycle and Pedestrian	Short-term
Support of State Active Transportation Plans and Plans/Programs with Bicycle and Pedestrian Improvement (e.g., PCTI Program, Smart Transportation Guidebook, Bicycle and Pedestrian Project Checklist, Safe Routes to School (Federal Funded)	Bicycle and Pedestrian	Short-term
Encouragement and Technical Support in Completion of Regional Trail Network (e.g., Whitaker and Sandcastle Portions of Great Allegheny Passage in 2011, Ohio River Trail Development Feasibility Study)	Active Transportation Modes	Short-term
Assessment of Bicycle Parking Needs	Bicycle	Short-term
Installation of Bicycle Racks on Port Authority of Allegheny County Buses (expected in 2011)	Bicycle	Short-term
Continued utilization of PennDOT Bicycle and Pedestrian Checklist for Projects, consider making available to Public and conducting a Periodic Quality Audit	Bicycle and Pedestrian	Short-term
Coordination of Activities to Promote Safe Bicycling including Cyclovia and Bicycle Education Materials	Bicycle, In-line Skating, and Pedestrian	Short-term
Develop and Implement Plans for Snow Removal/Winter Maintenance for Trails and Bicycle Facilities	Bicycle and Pedestrian	Short-term
Continued Coordination with Allegheny County Public Works to Identify/Remediate Potentially Hazardous Conditions for Bicyclists on County Roadways, including Potholes, Sewer/Drain Grates, and/or Scuppers	Bicycle	Short-term
Exploration of Lighting Options for Trails that Experience Heavy Commuter Use	Bicycle and Pedestrian	Short-term
Continued Exploration of Funding Opportunities for Maintenance of Public Steps in Allegheny County	Pedestrian	Short-term
Expanded Crosswalk Needs Assessment and Marking Program	Pedestrian	Short-term
Consistent Enforcement of Winter Snow Removal Requirements for Sidewalks	Pedestrian	Short-term

CONCLUSION

ACTIVEALLEGHENY provides a roadmap for municipalities to integrate the active transportation improvements identified in the Plan into their own comprehensive and transportation plans. Allegheny County will coordinate with neighboring counties with the goal of regional integration of active transportation and creation of active transportation byways that connect from county-to-county. Residents should be actively involved in assisting local governments and others to implement improvements identified in the plan. **Together we can integrate active transportation, an important component of everyday life in Allegheny County.**



Bicyclist and Pedestrian, Downtown Pittsburgh
Photo: Lynn Heckman

CHAPTER 1. *An Active Transportation Plan*

1.1 INTRODUCTION

"ACTIVEALLEGHENY integrates walking, biking, and other active, healthy travel modes into the existing transportation system. Planning and prioritizing investment in commuter bike routes and walking facilities will enhance our existing transportation network, and provide sustainable travel mode choices to move people to their destinations. This plan will be a blueprint for improved access to connect our communities, work sites, schools, attractions and homes. Active infrastructure will encourage investment and economic development." – Dan Onorato, County Executive

What is Active Transportation?

Active Transportation is human-powered transportation including bicycling, walking, kayaking, and in-line skating. In the past decade, studies have detailed the potential benefits of active transportation for both users and society. *Active Transportation in Urban Areas: Exploring Health Benefits and Risk* released in June 2010 indicates that "people who use active transportation are, on average, more physically fit, less obese and have a reduced risk of cardiovascular disease compared to people who use only motorized transportation."[i] Benefits to society include reduced air pollutants and greenhouse gas emissions.

Hot Metal Bridge Opening
Photo: Sara Walfoort

About this Plan

Allegheny County partnered with the Pennsylvania Department of Transportation's (PennDOT) Bureau of Public Transportation to develop ACTIVEALLEGHENY. The plan was funded through a Pennsylvania Community Transportation Initiative (PCTI) "Smart Transportation" grant to enhance the ALLEGHENYPLACES (Allegheny County's Comprehensive Plan) transportation element and prioritize active transportation action items. **The goal of ACTIVEALLEGHENY is to integrate non-vehicular modes of transportation, specifically walking and biking, into the transportation system through creation of a comprehensive active transportation plan.** The primary objective of ACTIVEALLEGHENY is to encourage and accommodate walking and biking as modes of commuting.

Plan Components

ACTIVEALLEGHENY focuses on connectivity, access, mobility, and health through specialized plan components: *Bike Allegheny*, *Walk and Roll Allegheny*, *Other Active Transportation Opportunities*, *Complete the Street,* and *Action for Active Transportation*. Each component provides resources, identified deficiencies, potential opportunities, system improvements, and other considerations such as policies and programs.

How to Use this Plan

Due to the size of the County and its evolving nature, the plan should not be treated as a static document, or one that identifies every desirable Active Transportation project in the County. Instead the plan should be used as a basis for the planning and development of pedestrian, bicycle, and active transportation modes of transportation in the County, and serve to provide examples of Active Transportation projects that others can follow. Further study and recommendations can and should develop from this document.

PCTI Program

In 2008, PennDOT introduced the Pennsylvania Community Transportation Initiative (PCTI) to advance Smart Transportation by "incentivizing collaborative decision-making, emphasizing regional, multi-municipal, and multi-agency cooperation, as well as advancing integrated land use and transportation decisions."[ii] The PCTI program requires strong partnerships and extensive collaboration between PennDOT, Metropolitan Planning Organizations (MPO)/Rural Planning Organizations (RPO), counties, and municipalities. Selection criteria include a commitment to the principles of Smart Transportation and desire to enhance the transportation network in a proactive manner. PennDOT initially set aside $60 million in State and Federal funding for projects that advanced Smart Transportation in the Commonwealth. ACTIVEALLEGHENY was funded in the initial phase. A second round of PCTI funding was initiated for the 2011-2014 Transportation Improvement Plan (TIP).

1.2 PERSPECTIVES

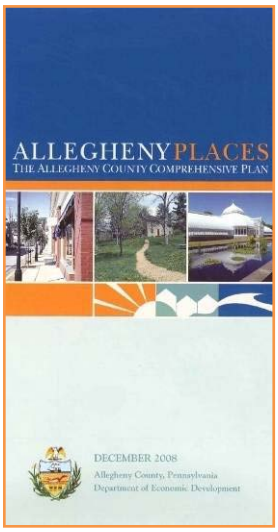
An Implementation Activity of ALLEGHENYPLACES

Allegheny County's Comprehensive Plan establishes a vision and strategies to achieve that vision. It includes a transportation element with actions for commuter bicycle and pedestrian accommodation. ACTIVEALLEGHENY is the detailed plan for active transportation. It enhances and enriches ALLEGHENYPLACES.

Smart Transportation Guidebook Principles

The Pennsylvania Department of Transportation (PennDOT) and the New Jersey Department of Transportation (NJDOT) facilitated the development of the *Smart Transportation Guidebook* in 2008[iii] with a goal of integrating planning and design aspects of roadways to advance development of livable and sustainable communities. The principles of Smart Transportation as detailed in the guidebook are:

- Tailor solutions to the context
- Tailor the approach
- Plan all projects in collaboration with the community
- Plan for alternative transportation modes
- Use sound professional judgment
- Scale the solution to the size of the problem



1.3 DEFINING THEMES

Through the course of ACTIVEALLEGHENY, four (4) defining themes were developed to guide future infrastructure improvements and assist in prioritizing identified projects. Through these four (4) themes, a quality transportation network can be developed and successfully implemented. The themes are access, connectivity, mobility, and health.

Access

Access for active transportation is the ability to safely enter destinations without barriers by multiple modes of transportation. Offices, commercial centers, neighborhoods, and other popular destinations should consider the needs of non-auto users and provide a safe and effective path of entry for non-motorized transportation.

Connectivity

Connectivity refers to the way which two features, destinations, or modes are *connected* to each other. In active transportation planning, connectivity links destinations (i.e., neighborhoods, commercial districts, offices, stadiums) through multiple modes of transportation and provides safe and reliable paths for active transportation users. Connectivity requires *access* and is ineffective without access to the destinations with which people wish to connect.

Mobility

When a transportation network has multi-modal access and substantial connectivity, an overall climate of mobility is created. A good transportation network puts an emphasis on the word *transportation*, creating an environment where many modes of transportation are given an opportunity to succeed in a safe and efficient manner. Mobility is at the root of good transportation networks by providing users the *choice* of several different modes of transportation to arrive at the same destination without feeling burdened by that *choice*.

Bike Rack at Ingram Busway Station
Photo: David Wohlwill

Health

In a country that has seen a dramatic increase in obesity and chronic illness; healthy lifestyles are increasingly becoming an important life choice. Active transportation is a critical component of a healthy lifestyle, and it's important to offer a transportation network that allows for active options. Quite frequently commuters choose the automobile not out of desire but rather out of necessity. When networks are created that provide multi-modal access to destinations, exhibit high levels of connectivity, and have an overall character of mobility, healthy transportation options become viable and allow those who desire to improve their lifestyle to do so safely and effectively.

1.4 SUSTAINABILITY

Merriam-Webster Dictionary[iv] defines "sustainability" as "of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged." This concept of sustainability has been forged throughout the nation's history and in its most simplest of terms refers to "waste not, want not." In order to provide a transportation network that is functional yet capable of safe trip conversion to alternative modes for the future requires investment in active transportation modes. The first step in active transportation investments is planning. This active plan outlines investments toward sustainable improvements for both short- and long-term community benefits. Sustainable Pittsburgh outlines the importance of transportation investment and livable communities on their website (www.sustainablepittsburgh.org) to include "Smart Growth and Integration of Transportation and Land Use" and "Public Transportation and Transportation for Livable Communities."

Broad Street, Sewickley Borough

Smart Transportation

PennDOT defines Smart Transportation as "partnering to build great communities for future generations of Pennsylvanians by linking transportation investments and land use planning and decision-making," with a goal of creating transportation facilities "that are safe and affordable, responsive to the needs of all users, and support community planning goals."[v] They outline ten (10) themes for Smart Transportation:

- ✓ Money counts. Innovation for fiscal challenges.
- ✓ Leverage and preserve existing investments.
- ✓ Choose projects with high value/price ratio.
- ✓ Safety always and maybe safety only. Safety for all users is the most important consideration.
- ✓ Look beyond level-of-service. Evaluate other performance measures as well.

- ✓ Accommodate all modes of travel. Including walking, bicycling, and transit.
- ✓ Enhance local network. Highly connected local network with route options.
- ✓ Build towns not sprawl. Smart Growth!
- ✓ Understand the context; plan and design within the context. Context-sensitive design solutions.
- ✓ Develop local governments as strong land use partners.

Placemaking

ALLEGHENYPLACES is about PLACEMAKING for Allegheny County's bright and sustainable future. It integrates new and redevelopment activities into our established communities, while maintaining their character and respecting their history. ACTIVEALLEGHENY advances the ALLEGHENYPLACES vision within a placemaking context. It helps to create targeted "places" where residents can live, learn, work, invest, and play.

Measuring Performance

The National Bicycling and Walking Study: 15 Year Status Report[vi] summarizes the numerous benefits associated with bicycling and walking as mode choices. Benefits to both the user and society as a whole are outlined and include: health, transportation, environmental and energy, economic, and quality of life. Each benefit can be measured either quantitatively or qualitatively prior to and after transportation system improvements.

Health

The National Collaborating Centre for Environmental Health[vii] found that people who use active transportation are "more physically fit, less obese, and have a reduced risk of cardiovascular disease compared to people who use only motorized transportation."

Transportation

According to the *National Bicycle and Walking Study: 15 Year Status Report*, 72% of short trips (3 miles or less) are made in motor vehicles. This results in increased congestion on the roadway network and decreased level-of-service for motor vehicles. Trip conversion from motor vehicle to active transportation modes would reduce the amount of vehicle trips, thereby reducing congestion and delays.

Environmental and Energy

According to the Department of Energy, the transportation sector accounted for 29% of energy consumed in the U.S. in 2009.[viii] Similarly, in 2006, 29% of total U.S. Greenhouse Gas Emissions (GHG) came from transportation sources.[ix] The United States Environmental Protection Agency (U.S. EPA) notes that transportation is the fastest growing sector and U.S. emissions have increased nearly 47% over the past decade. Bicycles, kayaks, sneakers, and wheelchairs do not produce GHG and therefore trip conversion from motor vehicles to active transportation would reduce GHG caused by motor vehicles.

Economic

AAA estimates that commuting to work by motor vehicle costs approximately $56 per 100 miles.[x] They suggest that traveling by public or active transportation can save money.

Quality of Life

An increase in active transportation can benefit communities as well in creating livability through reduced vehicular traffic, reduced pollution, increased travel mode options, and revitalized business districts.

The U.S. EPA[xi] encourages transportation agencies to integrate sustainability into planning, programming, and project development activities through performance measures to quantify the results. "Transportation performance measures predict, evaluate, and monitor the degree to which the transportation system accomplishes adopted public objectives. They can be applied at all stages of transportation decision making." The U.S. EPA lists the following ten (10) performance measures:

- Transit Accessibility
- Bicycle and Pedestrian Mode Share
- Vehicle Miles Traveled (VMT) per Capita
- Carbon Intensity
- Mixed Land Uses
- Transportation Affordability
- Distribution of Benefits by Income Group
- Land Consumption
- Bicycle and Pedestrian Activity and Safety
- Bicycle and Pedestrian Level of Service

Bicycle Parking, Carnegie Mellon University
Photo: Lynn Heckman

Guidance on utilizing the performance measures is provided in the Draft *Guide to Sustainable Transportation Performance Measures*.

1.5 COMMITMENT, COORDINATION & OUTREACH

Stakeholder coordination and public participation was an integral part of the ACTIVEALLEGHENY planning process and several different methods were utilized to encourage involvement including a website, online survey, Facebook page, coordination with a Core Committee, participation by a Study Advisory Committee, and interaction with the general public.

Allegheny County Economic Development

The ACTIVEALLEGHENY study was administered in coordination with Allegheny County departments and officials. Allegheny County Economic Development (ACED) managed the study.

Core Committee

The Core Committee for the study consisted of county selected stakeholders to provide vision and guidance on active transportation in Allegheny County. Core Committee members included:

- City of Pittsburgh
- Southwestern Pennsylvania Commission (SPC)
- PennDOT District 11-0
- Allegheny County Parks Foundation
- Allegheny County Executive's Office
- Pennsylvania Environmental Council
- Allegheny County Economic Development
- 10,000 Friends of PA
- Oakland Transportation Management Association
- Montour Trail Council
- Upper St. Clair Township
- Bike Pittsburgh
- Friends of the Riverfront
- CityLAB

Active Allegheny Core Committee

- Pittsburgh Downtown Partnership Transportation Management Association
- Allegheny County Public Works, Airport Corridor Transportation Management Association
- Port Authority of Allegheny County (PAAC)
- Allegheny County Task Force on Disabilities

Four (4) Core Committee Meetings were held during ACTIVEALLEGHENY. Meeting Memoranda from those meetings is contained in **Appendix B** (included in a separate document).

Study Advisory Committee

The Study Advisory Committee for the plan consisted of numerous county and state agency representatives, local municipal stakeholders, SPC members, sustainable advocacy groups, commuters, businesses, schools, and others, identified by the Core Committee, to present input on potential deficiencies, opportunities, and enhancements. Study Advisory Committee members included:

- Allegheny County
- SPC
- Sustainable Pittsburgh
- Venture Outdoors
- GoBurgh Initiative
- Pennsylvania Department of Conservation and Natural Resources (DCNR)
- RAND
- Airport Corridor Transportation Association
- Oakland Transportation Management Association
- Pittsburgh Downtown Partnership Transportation Management Association
- Point Park University
- Community College of Allegheny County (CCAC)
- Twin Rivers Council of Government (COG)
- Steel Valley COG
- Quaker Valley COG
- Three Rivers Center for Independent Living
- United Cerebral Palsy of Pittsburgh
- Mullen Advertising
- Rothschild Doyno Collaborative
- URS Corporation
- Pennoni Associates
- Gateway Engineers
- Civil & Environmental Consultants, Inc.
- Carnegie Mellon University's Traffic 21
- Mon Valley Initiative
- ACCESS Transportation
- Montour Trail Council
- Picadio, Sneath, Miller & Norton, P.C.
- 3 Rivers Wet Weather Inc.
- Blind Leisure Outdoor Development
- Manchester Bidwell Corporation
- City of Pittsburgh, and a number local municipalities

Three (3) Study Advisory Committee Meetings were held during ACTIVEALLEGHENY. Meeting Memoranda from those meetings is contained in **Appendix C** (included in a separate document).

Allegheny Municipalities

Allegheny County municipalities and other organizations (e.g., Mon Valley Initiative, Allegheny Together, Bike Pittsburgh, Port Authority of Allegheny County, and others) were contacted via email, fax, and phone to ascertain if they had existing plans and documents related to active transportation improvements in their municipality or their region. **Table 1-1** summarizes the plans and documents obtained as a result of the outreach effort.

These plans and documents were reviewed for identified issues as well as recommended improvements. In addition, Allegheny County municipalities and organizations were asked if they had other concerns, or if improvement opportunities exist, within their municipality. **Table 1-2** summarizes the issues and opportunities identified through input and plans collected.

Public Outreach

Website

www.activeallegheny.com serves as the study's website. The website contains background information on active transportation, updates on project progress, and served as a resource for obtaining study materials.

Online Survey

An online survey was designed and administered for ACTIVEALLEGHENY. The purpose of the survey was to gather public input and assist the Study Team in identifying active transportation deficiencies, opportunities, and locations for potential improvement.

The survey was available online from June 23, 2010 through July 26, 2010 through www.surveymonkey.com. During that time, a total of 738 responses were received from the online survey. Nearly half (48%) of the survey respondents were residents of the City of Pittsburgh. A second tier survey analysis was performed in August to filter residents by municipality and identify additional locations for improvements in the County. The Survey Results Summary and Filter by Municipality Addendum are contained in **Appendix D** (included in a separate document).

Social Networking on Facebook

ACTIVEALLEGHENY joined social networking in June with its very own Facebook page. It provided an opportunity for posting comments and blogs with the Project Manager, while also providing information on upcoming events, photos and other information about the study.

Public Presentations and Community Events

Public Meetings were held in June to present findings from the existing conditions analysis including crash overrepresentations and preliminary countywide bicycle routing. One Public Meeting was held in Carnegie, while the other was held in the City of Pittsburgh at Point Park University. Comments received at the Public Meetings are contained in **Appendix E** (included in a separate document).

Presentations were made to several entities as well to inform them about ACTIVEALLEGHENY and receive feedback on issues and opportunities relevant to their groups. Presentations were made to the following organizations, committees, and agencies: SPC Pedestrian-Bicycle Advisory Committee, Airport Corridor Transportation Association, 10,000 Friends of PA, and the Committee for Accessible Transportation (ACCESS Transportation).

ACTIVEALLEGHENY staffed a booth at the Allegheny Green + Innovation Festival on August 14, 2010 to provide residents with information about the study. Interactive games and a raffle were available for entertainment at the festival. The word find and the memory game developed for use at the Allegheny Green + Innovation Festival are contained in **Appendix F** (included in a separate document).

Table 1-1. Collected Plans and Documents

Municipality/ Organization	Plans and/or Documents Obtained
Bridgeville Borough	Design Guidelines, Strategic Plan, and Traffic and Parking Analysis
Elizabeth Borough	Design Guidelines, Streetscape Design Plan, and Strategic Plan
Stowe Township	Design Guidelines and Traffic and Parking Analysis
Edgewood Borough	Edgewood Avenue Revitalization Plan
Etna Borough	Etna's Walking Trails
Heidelberg Borough	Heidelberg Trail Journal
Moon Township	Sidewalk and Trails Master Plan
Oakmont Borough	Transportation Plan and Action Plan from the Comprehensive Plan
Pittsburgh, City of	Final Corridor Phasing Plan for Penn Avenue (between 34th Street and Negley Avenue), Bicycle Plan, Pittsburgh Downtown Plan, City of Pittsburgh Bicycle Facility Guidelines and Policies, Bicycle Parking Policy and Guidelines, Bicycling Resources and Contacts, Employee Survey 2009, 2009 Sharrows Survey
Swissvale Borough	Design Guidelines, Strategic Plan, and Streetscape Master Plan
Tarentum Borough	Design Guidelines, Strategic Plan, and Traffic and Parking Analysis
Verona Borough	Design Guidelines and Traffic and Parking Analysis, Sustainable Verona
Southwestern Pennsylvania Commission (SPC)	Liberty Avenue from 12th Street to Herron Avenue Road Safety Audit (RSA) Report, Census Block Maps for minorities, low income, disabled, and older adult populations, Bicycle Counts: Master Record by Location, Pedestrian and Bicycle Public Participation Report, Report on Environmental Justice, Allegheny County Transportation Improvement Program (TIP), Bike Suitability Maps
Allegheny County	Greenways Plan, ALLEGHENYPLACES Comprehensive Plan, Allegheny County: Early History and Subsequent Development, West Busway Transit Oriented Development Assessment and Plan, South Hills Transit Revitalization Investment District Study
Mon Valley Initiative	Mon Valley Corridor Vision Plan
Airport Corridor Transportation Association (ACTA)	Commercial Center Mobility Study, A Planner's Notebook, Intersections 06'-08' Annual Reports, Rethinking the Suburban Bus Stop, Study of Improved Shared Ride Transportation Services, Suburban Transportation Solutions, Transportation 101 Brochure
Oakland Transportation Management Association (OTMA)	Crosswalk/Stop Bar Line Striping Priority List, Engineering Applications for Society Final Report for Intersection Analysis Project (Bigelow Boulevard, Hamlet Street and Bates Street)
Pittsburgh Downtown Partnership Transportation Management Association (PDP)	Downtown Pittsburgh Made Easy Guide, Street Smarts Pedestrian Resource Guide, Street Smarts Cycling Guidelines, 2010 Downtown Resident Survey, Pedestrian Traffic Study (2008)
Bike Pittsburgh (BikePGH)	Bike to Work Guide (Bike Commuting 101), Rack 'N Roll Routes (also received from the Port Authority of Allegheny County), Pittsburgh Bicycle Map
Port Authority of Allegheny County	Transit Development Plan and proposed route changes, Wabash Tunnel input from various Port Authority Departments, Rack 'N Roll Program

Table 1-2. Identified Issues, Opportunities, and Improvements

Municipality	Identified Issues, Opportunities, and Improvements
Braddock Borough	• Extend Maple Way and develop into a greenway.
Bridgeville Borough	• Pedestrian Improvements and Traffic Calming for Washington Avenue. • Connect Washington Avenue to Triangle Park/Railroad Street via a trail or open space. • Connect Bower Hill Road to Railroad Street through an extension of existing sidewalk. • Connect Triangle Park/Railroad Street to the Bank Street Extension parking lot and lower Washington Avenue via pedestrian walkway. • Sidewalk buffer improvements, median improvements, and potential roundabout at Washington Avenue and Bower Hill Road.
Carnegie Borough	• Does not have a formal bicycle and pedestrian plan but does encourage biking and walking as part of the West Busway TOD Assessment and Plan completed in 2010 (West Busway TOD Assessment and Plan was an implementation activity of ALLEGHENYPLACES and the SPC 2035 Transportation and Development Plan). • Participant in multi-municipal Third Street Improvements including active components. • Has many projects moving forward that would encourage biking and pedestrian plan.
Collier Township	• Bike/ped/active transportation is not addressed in the Township's current comprehensive plan (expires in 2011). In the upcoming plan update, bike/ped/active transportation is an emerging topic which will be addressed and incorporated into the new plan. • The recently adopted conservation subdivision ordinance, based in part on the desire to create a network of interconnected greenways that could be used for trails, could provide additional pedestrian access and may have potential commuter bicycle connectivity. • Pedestrian concerns are an ongoing topic in Collier. Sidewalks are not required for all new developments. There is some difficulty in overcoming perception issues since much of Collier is semi-rural with steep terrain. Those required to construct sidewalks, at times, have difficulty understanding who will use them and what destinations they will connect. • Other important concerns are some hazardous road issues, cited by bicyclists, during public input for this plan. • The Township is home to a long stretch of Panhandle Trail. The Trail is a recreational asset and often functions as a community park. However, the 3-mile disconnect between the Walkers Mill Trailhead and Carnegie Borough limits the trail's use as a transportation asset. The trail has great potential for bike commuters to the West Busway park-and-ride and other Carnegie-and-beyond destinations; once this key connection is complete. • The Township, nonetheless, is a very popular destination for bicyclists, on-road and on the trail. Several opportunities exist for important bike/ped connections with Settlers Cabin County Park and the adjoining Botanic Garden site, currently under construction. • Another specific connection in the planning stage is on-road bike lane markings along Nike Site Road, which currently has extremely wide lanes. This is part of the Park Commission's plan for transition of the former Kelly Army Reserve facility into recreation facilities and a community center. The bike lane will connect the Panhandle Trail to these new park and recreation facilities. The connection length between the facilities is about a mile. Pedestrian access to the new park, from nearby residential developments, is another key element in the new park design. • Along the Route 50 Corridor in the Township, a smaller scale streetscaping and sidewalk improvement initiative, supplemented by transit service, is under study with the intent of linking Carnegie, Scott, Heidelberg, Collier, and Bridgeville. This initiative takes resource constraints into account that preclude major roadway improvements along the corridor.

Municipality	Identified Issues, Opportunities, and Improvements
Edgewood Borough	• Gaps in the sidewalk network exist and sections of sidewalk are in poor condition. • ADA compatibility issues noted for sidewalks. • Inadequate pedestrian lighting cited. • Install a new pedestrian bridge over Race Street with new linear park/pedestrian walkway. • Improve crosswalk and sidewalk at the corner of Swissvale Avenue and Race Street. • Install new crosswalks and sidewalks at the corner of Swissvale Avenue, Edgewood Avenue, and Maple Street. • Renovate pedestrian tunnel connecting Pennwood Avenue to busway station. • Stairs and crosswalk improvements for busway station platform at Pennwood Avenue. • Sidewalk and crosswalk improvements on Edgewood Avenue from Lacrosse Street to Maple Avenue. • Sidewalk and crosswalk improvements at Edgewood Towne Center to improve access for Park and Ride lot.
Elizabeth Borough	• Increase bicycle and pedestrian access to Duke and Wiley Parks. • Market and Plum Streets should be developed with pedestrians as the primary focus. • Develop Pedestrian Oriented Corridors perpendicular to the Riverfront. • Develop a repair and maintenance program that addresses pedestrian signals, sidewalks, and curbs. • Strengthen the connection between 2nd Avenue and the river by improving pedestrian accommodations along Market and Plum Streets. • Add curb extensions to assist in pedestrian crossing at 2nd and 3rd Avenues.
Etna Borough	• Identified five (5) walking routes that start in downtown Etna and then continue out into the rest of the Borough. Routes use sections of the following streets: Grant Street, Butler Street, Maplewood Street, Grandview Avenue, High Street, Bridge Street, Locust Street, Prospect Street, Vine Street, Walnut Street, Morelock Street, Bottomfield Street, and Freeport Street.
Greentree Borough	• Hazardous roads cited as issue affecting bicyclists.
Heidelberg Borough	• Developed 1.5 mile walking route for the Borough that uses the following roadways: W. Railroad Street, 4th Street, Garfield Street, Jackson Street, Industry, and Zero Street. • Participating in a multi-municipal streetscape/sidewalk project with Carnegie Borough and Scott Township. Completed pedestrian and transit stop improvements on Route 50 near the borough building.
Ingram Borough	• Local funding and budget cited as issue affecting ability to develop bicycle/ped plan.
Kennedy Township	• Infrastructure and topography challenges in the township affecting ability to develop bicycle and pedestrian plans.
McCandless Township	• Developing sidewalk plan for township. • Developing a pedestrian plan in conjunction with the Rachel Carson Trail. • Intersections of concern on McKnight Road include: Blazier Drive, Peebles Road, Perrymont Road, Cumberland Road, and Arcadia Drive.

Municipality	Identified Issues, Opportunities, and Improvements
Moon Township	• Nine (9) of the 26 pedestrian crashes in the Township between 2001 and 2006 were on University Boulevard. • The University Boulevard plan of improvements includes connectivity between the Airside Business Park, business strip development, local schools, and Robert Morris University. • New sidewalks are proposed to connect between and within residential neighborhoods. • Hiking trails are proposed to connect between residential neighborhoods. • Multi-use trails proposed along roadway corridors including: Flaugherty Run Road, Beaver Grade Road, Ewing Road, McCormick Road, Hookstown Grade Road, and Hershinger Road.
Mt. Lebanon, Municipality of	• Bike lanes through South Hills to Great Allegheny Passage (GAP) that link at Peter's Woods or Bethel Park. • Bike lanes through Mt. Lebanon to connect schools and municipal areas. • Develop way to allow bicycles on T service. • Other initiatives identified by Mt. Lebanon and the school board include a potential Safe Routes to Schools Study and improvements to Washington Road in response to school children needing access.
North Fayette Township	• Worn footpaths, or desire lines, were noted on both sides of Summit Park Drive. • Recommends sidewalk connections and new sidewalk where worn footpaths are present. • Recommends a Montour Trail spur connecting to Summit Park Drive which would connect to new shared use paths to nearby retail. • Montour Trail runs through the township and they do assist with maintenance. • There are plans to install a one (1)-mile walking trail at the new Donaldson Community Park. • Property acquisition and "Not In My Back Yard" (NIMBY) issues affecting the development of additional facilities. • Recommends improving crosswalks at bus stop locations.
Pennsbury Village Borough	• No plans to develop a bicycle and pedestrian plan.
Pittsburgh, City of	• Develop consistent cross-section along the Boulevard of the Allies, including bike lanes and wide sidewalks, develop a greenway connection from Boulevard of the Allies to Panther Hollow, and install new pedestrian connections across Boulevard of the Allies including a link to the Second Avenue Area Technology developments. • Extend greenway along hillside to Bates Hollow with new connection to Eliza Furnace Trail. • Intersections along Boulevard of Allies, Bates Street, and Dawson Street need re-striping/re-marking of pavement. • Enhance multi-modal connections along 2nd Avenue to Panther Hollow. • Extend Eliza Furnace Trail eastward along the river. • Sections of sidewalk along Penn Avenue found to be in poor or very poor condition. • Penn Avenue corridor in need of street lighting improvements. • Crosswalk and pedestrian signal improvement needed at intersections along Penn Avenue. • Bicycle issues along Penn Avenue include: speeding, lack of adequate lighting, uneven pavement and potholes, and lack of bike friendly facilities. • Penn Avenue is not a goal for a future bicycle route but as a destination, a recommended parallel bicycle route to Penn Avenue would utilize Coral Street, Comrie Way, and Woolslayer Way.

Municipality	Identified Issues, Opportunities, and Improvements
Pittsburgh, City of (continued)	• More bicycle racks needed on Penn Avenue, especially at key destinations. • Factors impacting bicycling in Pittsburgh include: topography, bridge crossings, narrow streets, high levels of road user conflicts, roadway surface issues, inadequate level of existing bicycle routes, and scarcity of bicycle parking. • Goals for the city bicycle route system include: connect downtown with surrounding neighborhoods via commuter routes and riverfront trails, connect riverfront trails to each other, connect downtown to Oakland via on-street and off-road routes, connect Oakland universities to surrounding neighborhoods and trip attractors, connect regional parks to riverfront trails, connect neighborhoods to local business districts, connect bicycle routes to transit facilities, cross-river connections, and connections that circumvent major traffic or topographic obstacles. • Improve pedestrian connections between the North Shore and North Side and Golden Triangle areas. Improve pedestrian connections between the Strip area and the Golden Triangle. • Establish a continuous pedestrian-friendly corridor along Federal Street across the Sixth Street Bridge to Market Street. • Reconstruct Fort Pitt Boulevard, Fort Duquesne Boulevard, Wood Street, and Forbes Avenue to provide a more conducive pedestrian street environment. • Improve the pedestrian link between the Lower Hill District, Civic Arena, and Grant Street. • Provide new pedestrian link between Station Square and the Golden Triangle via a new lower Triangle Monongahela River Crossing. • A Transit Revitalization Investment District (TRID) Planning Study was initiated in October 2010 for Broadway Avenue in Beechview, Pittsburgh. The study is expected to engage the community and provide conceptual design for Complete Streets and redevelopment. Streetscape improvements, neighborhood connectivity, regional transit commuter routes and regional bicycle and pedestrian facilities will be highlighted as part of the study, which is expected to be complete in June 2011.
Robinson Township	• Local funding and lack of personnel cited as issue affecting ability to develop bicycle plan. • Worn footpaths, or desire lines, were noted on south side of Park Manor Boulevard, and at existing gaps in the sidewalk network along Robinson Center Drive and Park Manor Boulevard. • Pedestrians observed transcending hillsides, which led to recommended locations for steps or potentially ADA compliant facility. Recommendations for sidewalk connections and new sidewalk where worn footpaths are present. • Recommends a second Montour Trail spur connection from the YMCA on Montour Run Road up the hill to the Mall at Robinson. • Recommends shifting and narrowing travel lanes on bridge over I-376 to create a pedestrian walkway/sidewalk. • Recommends improving crosswalks at bus stop locations.
Sewickley Heights Borough	• Blackburn Road in need of sidewalk from Sewickley Valley Hospital School of Nursing to Sewickley Borough War Memorial Park where there is parking lot for students.
Stowe Township	• Pedestrian crosswalks are in very poor condition.

Municipality	Identified Issues, Opportunities, and Improvements
Swissvale Borough	• Improve pedestrian connection between the Central Business District (CBD) and the residential neighborhood that lies to the east across Braddock Avenue and up the hill. • Improve pedestrian connection between the CBD and the residential area to the west of Monongahela River and Noble Street. • Pedestrian crosswalk pavement markings are worn. • Pedestrian countdown signal heads recommended at multiple intersections. • Add bulb-outs, concrete curbs, sidewalks, ADA compatible handicap ramps at pedestrian crossings, and pedestrian level street lighting along roadways, including Washington and Monongahela Streets.
Rankin Borough/ Swissvale Borough	• Create ped connection from Memorial Park and Schley Avenue to Carrie Furnace site. • Create greenway system along hillside and with pathway connections to Rankin ball fields.
Tarentum Borough	• Find opportunities to draw pedestrians from 6th Avenue down into the Corbet Street corridor and from Riverview Park back into Corbet Street and the CBD. • Sidewalk issues at Blackburn's Pharmacy, located at Corbet Street and 4th Avenue.
Turtle Creek Borough	• Build pedestrian connection between Keystone Commons and business district. • Develop greenway parallel to Monroeville Avenue/Lynn Avenue and Turtle Creek. • Create new pedestrian bridge over Tri-boro Expressway along Monroeville /Lynn Avenues.
Verona Borough	• Riverfront access for Allegheny River. • Existing rail line acts as a barrier to riverfront. • Trail connection from Verona to Oakmont. • Development of a riverfront trail. • Public dock on waterfront with bicycle and pedestrian access. • Trail using land adjacent to Allegheny River Railroad line. • Connection to Pittsburgh Heritage Trail to provide access to downtown Pittsburgh.
Wilkinsburg, Borough of	• Completed a Comprehensive Plan and Business District Revitalization Plan, as well as an initial sustainability assessment, which was performed by Sustainable Pittsburgh. Each plan has transportation components that set goals and objectives for transportation including bicycle and pedestrian traffic, as well as improvements in the business district.
Allegheny County	• Develop trails along greenways, including rail to trail conversions. • Develop commuter bikeways both along established roadways and through greenways. • Implement and promote recommendations in this Plan.

Organization	Identified Issues, Opportunities, and Improvements
Southwestern Pennsylvania Commission (SPC) (continued)	• High level of transit, pedestrian, and bicycle activity on Liberty Avenue between Lawrenceville and Downtown. Issues include: o Pedestrian crossings needed to access bus stops. o Bicycles from Lawrenceville to the Strip District need to be better accommodated. o Poor maintenance of sidewalk and crosswalk markings. o Vehicles park on sidewalk and impede pedestrians. o Few pedestrian refuge areas. o Pedestrian often crossing at unmarked mid-block crossings to access bus stops. o Crosswalks missing at some intersections. • There is a need for pedestrian countdown signals.There is an opportunity for needs-based planning based on observed behavior (e.g., bicycle activity counts). • There is an opportunity for residents wishing to bike to work through Bike Pools as part of SPC's CommuteInfo Program. • SPC's Pedestrian and Bicycle Program is advancing Bike Suitability Maps for roadways in Allegheny County.
Mon Valley Initiative	• Reclaim the Mon River as a "Front Door" for communities along the corridor. • Reconnect fragmented neighborhoods and communities to each other. • Create vibrant centers and gathering places along the corridor. • Create viable/interim uses for land in the path of the proposed Mon-Fayette Expressway. • Leverage investment pressures, particularly the Almono and Carrie Furnace sites as well as Oakland, to jump start development in all communities along the corridor. • Restore and increase stock and variety of high quality housing and public amenities. • Coordinate plans and initiatives among communities including Oakland, Hazelwood, Swissvale, Rankin, Braddock, and Turtle Creek.
Airport Corridor Transportation Association (ACTA)	• Over the past twenty years, retail, hotel, restaurant, and office development in the Robinson and North Fayette Township areas has been very successful. So successful, in fact, that Robinson Town Centre, The Mall at Robinson, and The Pointe at North Fayette are, by far, the largest concentration of retail in the western suburbs. With this success has come increased movement of all types: vehicular as well as pedestrian and bicycle. The Montour Trail is adjacent to the commercial area. The hub of Port Authority of Allegheny County (PAAC) service in the airport corridor is also in this commercial area. Pedestrian amenities are few. Most areas do not have sidewalks, steps, handicap ramps, etc. A commercial area developed for the automobile now hosts hundreds of pedestrians each day. Many of them are employees going to and from work. With the help of "Walkable Communities, Inc." and Southwestern Pennsylvania Commission (SPC), ACTA held a community workshop/audit to discuss mobility issues in the commercial area. As part of the workshop, ACTA documented a significant increase in pedestrian traffic through a series of photographs showing the "desire paths" in the unimproved grassy/earth areas, many on steep earth slopes. ACTA subsequently developed a walking tour of the area for local elected officials to illustrate mobility concerns.

Organization	Identified Issues, Opportunities, and Improvements
Airport Corridor Transportation Association (ACTA) (continued)	• Over the past few years, ACTA conducted three major studies to look at commuting and mobility issues in the airport corridor. The studies were based on user surveys and focus groups of workers, shoppers, business owners, local residents, bus riders, bicyclists and pedestrians. The first, *Study of Improved Shared Ride Transportation Services in the Robinson/North Fayette Employment Center*, looked at where jobs are located and the current barriers and future opportunities for commuters getting to work. The second, *ACTA's Commercial Center Mobility Study*, took a much broader look at mobility issues in the same study area in order to develop a community and user-focused plan of action to improve mobility, enhance intermodal connectivity and create a sense of place in the commercial area which serves as the downtown for the community. Specific study recommendations include pedestrian crosswalks and a connection between the Montour Trail and the retail area. The third study, *Rethinking the Suburban Bus Stop*, uses existing conditions in the study area to design a set of replicable prototype bus stops and bus stop placements that address mobility and accessibility challenges faced by bus riders in an area with limited pedestrian amenities. Prototypes address typical suburban bus stop placements including a hub stop, a stop along a busy roadway, a stop in a retail area, and an intermodal transfer stop. The bus shelter designs incorporate technology related to real-time bus information and pedestrian amenities. The designs also address pedestrian access to and around the bus stops so that pedestrian circulation is raised to a level more equal to vehicular travel. In addition to the three technical studies, three other publications were produced as part of the studies: *Commuting in the Corridor*, *A Planner's Notebook* and *Suburban Transportation Solutions*. All of the publications are available at www.acta-pgh.org.
Oakland Transportation Management Association (OTMA)	• Focused on improving 11 intersections for pedestrians as part of the 5th/Forbes Pedestrian Safety and Mobility Improvements Study. OTMA developed a brochure "Hometown Streets, Re-imagining Safe Streets – Transforming an Urban Center" to highlight pedestrian safety elements (e.g., countdown signals) for Oakland. • OTMA would like to improve crossings for pedestrians at the following intersections: o Halket Street and Boulevard of the Allies. o Bates Street and Boulevard of the Allies. o Fifth Avenue and Bellefield Avenue.
Pittsburgh Downtown Partnership (PDP)	• Planning to implement a pilot project downtown in Market Square for an ADA Wayfinding System (www.clickandgomaps.com). The goal is to make Downtown Pittsburgh more accessible for the blind and deaf/blind. The City of Pittsburgh would be the first US Downtown to implement this program according to PDP. According to the website for Click and Go Wayfinding Maps, the maps "render public facilities…accessible to blind and deaf/blind travelers down to a level of detail that is unparalleled by any other service or technology…[and it also provides] customized narrative walking directions for outdoor landmark-to-landmark route travel."

Organization	Identified Issues, Opportunities, and Improvements
Allegheny Together (continued)	**SPECIAL NEW PROGRAMS FOR ALLEGHENY TOGETHER COMMUNITIES** The following new programs are being launched in Allegheny Together communities this summer: 1. **Healthy Downtown Business Program** - Allegheny County Economic Development, Allegheny County Health Department, and Town Center Associates (TCA) are currently implementing a new "Healthy Downtown Business Program" in the Allegheny Together communities. This new program has been **created to make it easy for downtown business owners and their employees to implement regular exercise into their daily routine**. Each downtown business owner and all of their employees are eligible to participate in this program, which is the first phase in creating healthier business districts in Allegheny County.* In August, TCA visited all of the Allegheny Together downtown businesses to let them know about the program and to provide them with: • A **Free "Allegheny Together Pedometer"** • A **"Walking Route Map"** of their downtown to make it easy for them to gauge the distance they walk each day, and achieve their mileage goals • A **Downtown Business Directory** to encourage downtown businesses to support one another's businesses • A **Walking Log** to keep track of their progress (which will be collected by TCA in October) • Other handouts provided to encourage and support healthier downtown businesses 2. All of the above documents will also be available at DowntownFirst.net, making it easy for businesses to access additional copies, etc. During the month of September, **downtown business owners and employees will track their steps walked using a free Allegheny Together pedometer.** Each week of the program, TCA will be selecting participants to receive prizes to encourage their continued participation. An award, based on the average number of steps walked per employee, will be given to the "**Healthiest Downtown Business"** and the **"Healthiest Downtown Business Employee**" in each Allegheny Together Community. Local participating communities include: • Bellevue • Bridgeville • Coraopolis • Elizabeth • Stowe • Swissvale • Tarentum • Verona **NOTE: The next phase of "Healthy Downtowns" program, pending available funding, will consist of downtown business owners providing their customers with free pedometers and walking logs. The pedometers will be given out during an established week in all of the Allegheny Together communities, and a similar contest will ensue. Additional features will be added to the Walking Route Map during this phase of the program, to encourage more residents to make walking in their business district a regular part of their daily routine. Having more people walking in the business districts will not only make them more vibrant and safe, but will also help to make residents more aware of their downtown businesses. The Allegheny Together Business District Advisory Committees have already expressed interest in this program.* *Source: Allegheny Together, 09/2010*

CHAPTER 2. *Bike Allegheny*

ALLEGHENYPLACES identified key challenges in increasing bicycle travel as a mode share. Some of those challenges included a "lack of a bicycle route signage program," "lack of available, safe bicycle parking facilities," and incorporation of bicycle facilities into roadway projects. ACTIVEALLEGHENY details the issues and constraints for bicyclists in Allegheny County and offers solutions from engineering to education.

2.1 ALLEGHENY'S BICYCLE NETWORK

Bicyclists have identified the need for safe and convenient access to destinations in the County. Although some bicycle routes are available, most notably PA State Bicycle Routes and shared use trails including the Great Allegheny Passage (GAP) and Montour Trail, more designated commuter and recreational routes are still strongly desired. PennDOT's Design Manual[xii] states that although "most highways have not been designed with bicycle travel in mind...there are many methods to safely improve most roadways to accommodate bicycle traffic while also improving safety for motorized road users and pedestrians."

Shoulder on Hulton Road, Oakmont

Desired Access

Through discussions with stakeholders and the public and analysis of the online survey results, bicycle access is desired primarily along spokes from the north, east, south, and west suburbs into the City of Pittsburgh. Secondary access desired includes employers and schools, new and proposed development sites, trail network and parks, transit stops and stations, and connecting adjacent communities. **Table 2-1** details desired access for bicyclists that were expressed through these discussions and surveys.

Table 2-1. Desired Access for Bicyclists

To	From
Downtown Pittsburgh	• North Hills • Oakland • Mt. Lebanon
Kennywood Park	• East End
The Waterworks Mall	• Downtown
The Waterfront	• Sandcastle/South Side Trail • Duck Hollow Trail
Carrie Furnace Site	• East End
Montour Trail	• South Park • IKEA • Mt. Lebanon • Bethel Park
Great Allegheny Passage	• Rankin Bridge • Glenwood Bridge • Montour Trail • Round Hill Park • Frick Park • Mt. Lebanon

To	From
West Busway Carnegie Station	• Panhandle Trail • Heidelberg
Bidwell Technical Institute	• Penn Hills
Pittsburgh International Airport	• Montour Trail • Clinton Road
Millvale Riverfront Park	• Millvale • Freeport
Duck Hollow Trail	• Frick Park • Eliza Furnace Trail • Glen Hazel
Eliza Furnace Trail (Jail Trail)	• Riverview Park • Schenley Park • Duck Hollow Trail • Glenwood Bridge
Schenley Park	• West End • Eliza Furnace Trail
Sandcastle Waterpark	• Route 885 • East End
New Kensington	• Dorseyville

Identified Deficiencies

A review and analysis of existing conditions, survey results, bicycle and pedestrian crashes, and public feedback was performed to identify locations where bicycle facility deficiencies exist. Although there are a number of locations throughout Allegheny County that could benefit from the installation or enhancement of bicycle facilities, for this plan ten (10) locations are identified for further study and improvement. The ten (10) locations would require additional study prior to design and are therefore classified as long term improvements (5+ years). **Table 2-2** details the location and the identified deficiency. The crash summary and bicycle crash map are contained in **Appendix G** (included in a separate document).

Bridge Street, Etna Borough

Table 2-2. Top 10 Bicycle Facility Deficiencies

Corridor	Limits	Identified Deficiency
Penn Avenue	City of Pittsburgh	• 10 reported bicycle crashes in 5 years (2005 to 2009). • Actively used by bicycle commuters. • Limited cartway width (36') with multiple demands (parking, transit, pedestrians, bicyclists, vehicles). • 10' travel lanes, no shoulders, 7-8' parking provisions and bus stops. • #1 listed roadway needing bicycle facility improvements by survey users.
Liberty Avenue	City of Pittsburgh	• 7 reported bicycle crashes in 5 years (2005-2009). • Identified as a top 5 roadway needing bicycle facility improvements by survey users.
Bigelow Boulevard	City of Pittsburgh	• Identified as not compatible for bicycle traffic from Oakland to Downtown based on PennDOT design guidelines for lane/shoulder widths and observed average operating speed. • Public desires safe and convenient access to Frank Curto Park and Downtown. • Speed limit posted at 35 mph, observed average speed at 55 mph. • Existing cross section is 4 travel lanes with less than 1' shoulder. • For pedestrians, sidewalk is not continuous and ends at the merge with the I-579 Ramp.
Allegheny River Boulevard	City of Pittsburgh to Oakmont	• Identified as not compatible for bicycle traffic as it would need a consistent 4'-6' shoulder based on PennDOT design guidelines. • Existing cross section is 30' with 11' and 12' lanes and 3'-4' shoulders.
Route 8/ Butler Street	Etna to Richland (Orange Belt)	• 6 reported bicycle crashes in 5 years (2005-2009). • Identified as a top 5 roadway needing bicycle facility improvements by non-Pittsburgh residents in the online survey. *In Etna* o 38' pavement width, 12' lanes, 7' parking on-street. *At Saxonburg Boulevard* o 50' pavement width, 4 lanes at a width of 11.5' and center median. o SPC Bicycle Compatibility Below Average.
Route 28 Corridor	City of Pittsburgh to Blawnox	• Identified as a top 5 roadway needing bicycle facility improvements by non-Pittsburgh residents in the online survey. • Three Rivers Heritage Trail extends only to Millvale. The trail could be extended to Blawnox and access across Route 28 for bicycles and pedestrians investigated.
Route 19/ Washington Road/ West Liberty Avenue	City of Pittsburgh to Upper St. Clair	• Identified as a top 5 roadway needing bicycle facility improvements by non-Pittsburgh residents in the online survey. • 25 to 35 mph. • 4 lanes with <1' shoulder. • SPC Bicycle Compatibility Above Average to Below Average with Significant Grade.
Route 837/ East Carson Street	City of Pittsburgh	• 5 reported bicycle crashes in 5 years (2005-2009). • Identified as a top 5 roadway needing bicycle facility improvements by non-Pittsburgh residents in the online survey.

Corridor	Limits	Identified Deficiency
Freeport Road	Aspinwall to Cheswick	• 8 reported bicycle crashes in 5 years (2005-2009). *In Etna (25 mph – 35 mph)* o 2 lanes, no parking at 24' pavement width. *Aspinwall (35 mph)* o 2 lanes with parking westbound and shoulder eastbound. *Blawnox (25 mph)* o 2 lanes with parking. o East of Blawnox Business District, speed limit increases to 45 mph and the cross section becomes 3 lanes, then 4 lanes (under construction). o SPC Bicycle Compatibility Average to Below Average.
Fifth Avenue	City of Pittsburgh	• 7 reported bicycle crashes in 5 years (2005-2009). • Identified as a top 5 roadway needing bicycle facility improvements by Pittsburgh residents in the online survey. • Connects Downtown to Shadyside through Oakland.

Potential Opportunities

Several innovative opportunities for active transportation were identified by the stakeholders, study team, and public during the course of the study. They are described in this section.

Wabash Tunnel

The Wabash Tunnel is open daily for one-directional motor vehicle travel with HOV restrictions during the weekday morning and evening peak periods and without restrictions at other times. Traffic is allowed inbound during the weekday mornings and early afternoons and outbound during the weekday evenings and early mornings. The tunnel operates with outbound traffic during the weekends. In all of these instances, only one of the two travel lanes is being used at any one time by vehicular traffic.

Wabash Tunnel, South Side
Photo: Port Authority of Allegheny County

Users of the tunnel include the Fayette Area Coordinated Transit, which currently operates scheduled weekday bus service through the tunnel. Special event buses (e.g., incline shuttles) utilize the tunnel as well as significant traffic volumes outbound from Station Square and vicinity after sporting and other entertainment events.

Bicycles are restricted from the Wabash Tunnel for many valid reasons. Stakeholders and the public suggested during the course of the study that the community consider how the Wabash Tunnel could potentially accommodate bicycle traffic sometime in the future. The Port Authority of Allegheny County has considered and investigated the feasibility of the suggestion in the past. Based on PennDOT Design Guidelines (Publication 13M, Design Manual 2), emergency vehicle access must be maintained through the tunnel. The existing tunnel provides this access per design guidelines. As travel modes, bike access, and federal and state policy evolve over the next decade to accommodate and more fully utilize all modes of transportation, it may be advantageous to revisit Wabash Tunnel bicycle access, in the context of other changes in mode shift. Port Authority cannot allow bicycles in the Wabash Tunnel due to safety, design, liability, and operational concerns. However, it may be possible if there is significant demand, to pursue an alternative ownership scenario, where bicycle access to the tunnel can be considered, although that would be a major undertaking and cost.

Roberto Clemente Bridge

Roberto Clemente Bridge, Pittsburgh

It was suggested during the study that the Roberto Clemente Bridge (6th Street) in Pittsburgh be permanently closed to motor vehicle traffic. The bridge is currently closed to motor vehicles before sporting events at PNC Park and Heinz Field. The Roberto Clemente Bridge is one of the Three Sister's Bridges owned by Allegheny County serving as a connection between Downtown and the North Side. According to the book "The Bridges of Pittsburgh", they are the only three identical side-by-side bridges in the world.[xiii] The other two bridges are the Andy Warhol Bridge (7th Street) and Rachel Carson Bridge (9th Street). While comparing activity on the three bridges, the Roberto Clemente Bridge was observed to have the most bicycle and pedestrian activity on its 10-foot sidewalks both northbound and southbound. A feasibility study to determine traffic impacts of permanently restricting motor vehicles from the Roberto Clemente Bridge can be performed to determine if the bridge could be a bicycle and pedestrian only facility in the future. Performing a "road diet" on the bridge to narrow it to two vehicular travel lanes plus bicycle lanes could also be considered in this feasibility study.

Road Diet Feasibility Studies

During the course of field investigations for the study, several roadways were observed to be under capacity in terms of vehicle-to-capacity ratio. Those roadways, with four (4) lane cross-sections and without shoulders, are:

East Liberty Boulevard, Pittsburgh

- Park Manor Boulevard in Robinson between Montour Run Road and Robinson Town Center Boulevard
- Negley Run Boulevard in East Liberty between E. Liberty Avenue and Washington Boulevard
- Washington Boulevard in Highland Park between Negley Run Boulevard and Allegheny River Boulevard
- Route 51 in Coraopolis (study to include appropriate use of one-way pair system)
- Bigelow Boulevard between Oakland and Downtown, currently a limited access divided highway
- Long Run Road/Route 48 in White Oak

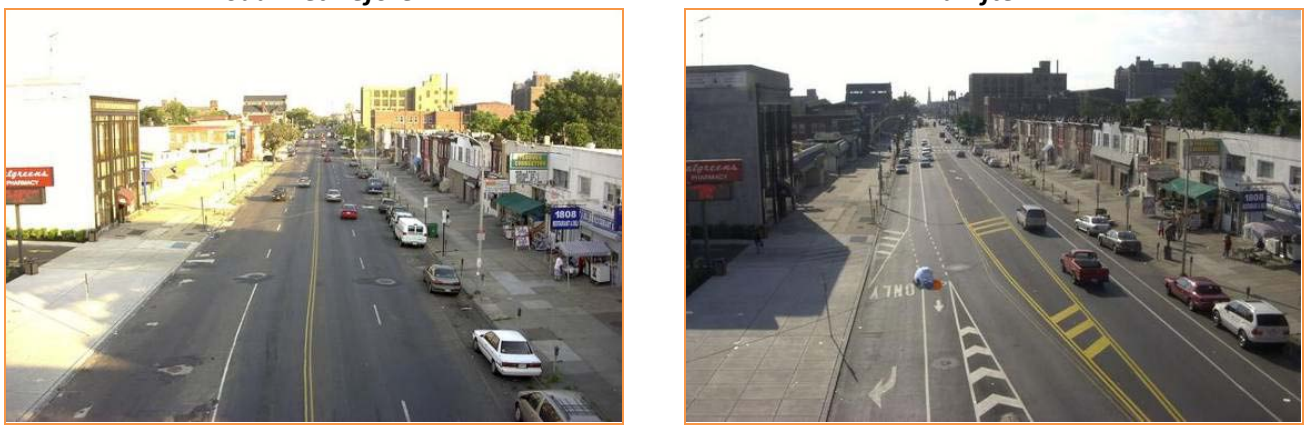
The six (6) roadways are recommended for study to accommodate a road diet. A road diet is the conversion of a four lane cross-section to a configuration with two through lanes, one two-way left turn lane, and two bike lanes. The *Smart Transportation Guidebook* outlines the benefits of a road diet to include:

- Creates a designated facility for bicyclists,
- Reduces crossing distance in which pedestrians are exposed to vehicular traffic,
- Provides a refuge for crossing pedestrians if physical medians are created,
- Can reduce the incidence of left turn crashes for motorists, and;
- Can reduce vehicular speeds by 1 to 5 mph on roadways where speeding is common.[xiv]

The Borough of Carnegie has submitted a PCTI grant application to perform a road diet assessment for Main Street near the Carnegie Station of the West Busway.

Washington Road (Route 19) in Mt. Lebanon was recommended for a Road Diet as well by residents of Mt. Lebanon. They cited high turning movement volumes and a safety concern for children walking and biking to school. It is recommended that Mt. Lebanon pursue several funding opportunities for Washington Road as well.

A Road Diet Before... ***And After***



Photos: FHWA University Course on Bicycle and Pedestrian Improvement, Lesson 15, Bicycle Lanes Publication No. FHWA-HRT-05-114

It should be noted that as part of a road diet assessment, traffic analysis should be performed to determine potential impacts to vehicle level-of-service.

2.2 SYSTEM IMPROVEMENTS

Designated County Commuter Bicycle Routes

It is recommended that Allegheny County designate bicycle routes to serve bicycle commuters from north, south, east, and west suburbs to the City of Pittsburgh to connect with the City of Pittsburgh Bicycle Network. The proposed routes in this plan were reviewed and compared to existing data sources (e.g., traffic volumes, jurisdiction, SPC bicycle suitability rating) for potential designation as a bicycle route. Prior to the designation of a bicycle route, facilities should be evaluated for compatibility per PennDOT design guidelines and brought up to bicycle standards where needed. The SPC Region's neighboring counties may also wish to connect to these routes to extend the spokes from the entire region to the regional hubs in Pittsburgh and Oakland, as well as to access points on the Great Allegheny Passage.

East Carson Street, Pittsburgh

The bicycle routes proposed in this Plan may make use of existing or proposed off-road trail segments, roadways, and/or transit routes. In the case of off-road trail segments which are under construction or proposed, user connectivity can often be provided in the interim through the use of local streets and roadways. While formal route designation should not occur until a facility is complete, it is recommended that segments be constructed and existing roadways be brought up to applicable bicycle standards where feasible in support of on-going bicycle route development. Constructing portions of a route and utilizing interim sections may ultimately help to achieve the goal of route completion and formal designation. Proposed routes could be designated as future bicycle routes which can help promote usage.

Rack and Roll Bus in Pittsburgh
Photo: Sara Walfoort

Proposed bicycle routes that involve utilizing transit would also need to be evaluated and coordinated with the Port Authority, as current policy allows folding bicycles on the rail system and inclines, but currently does not permit regular bicycles on light rail and incline vehicles during peak periods (folding bicycles are allowed inside all Port Authority vehicles at all times of the day). The Port Authority has indicated that in the year 2011, all PAAC buses will be equipped with racks as part of the "Rack 'N Roll" Program.[xv] **Table 2-3** details the proposed countywide designated commuter bicycle routes.

Appendix H (included in a separate document) contains the System Improvements Map for Countywide Bicycle Routes. This map is also included in the Executive Summary. **Appendix A** contains cue sheets (detailed maps and templates which list specific information for a pre-determined list of attributes) for each route illustrating the utilized roadways, bridges, bike routes, trails, and transit, as well as providing information for that section.

Table 2-3. Designated County Commuter Bicycle Routes

Route	Description
N1	Mc Cully Road *(Hampton Township Park)*, Craighead Road, Mt. Royal Road, Grant Avenue, Crescent Avenue, Butler Ave, *Connection to Proposed N2 Route*
N2	South Ridge Drive *(North Park)*, Peebles School Road, Babcock Boulevard, Evergreen Avenue, Seavey Road, Parker Street, Butler Street, Allegheny River Trail (existing), *Connection to City Facilities*
N2 Connector	Nicholson Road, Rochester Road, *Connection to Proposed N2 Route*
N3	Beaver Street, Ohio River Boulevard, Allegheny Avenue, Center Avenue, Church Avenue, California Avenue, Lincoln Avenue, *Connection to City Facilities*
N3 Detour of Ohio River Boulevard	Broad Street, Sewickley Bridge, PA Bike Route A (existing), *Connection to Proposed W3 route @ Bike Route A*
N4	Little Deer Creek Road *(@ Proposed Beltway Bicycle Route)*, Michael Road, Russelton-Dorseyville Road, Saxonburg Boulevard, Harts Run Road, Dorseyville Road, Riding Meadow Trail, Old Squaw Trail, Salamander Trail, Fox Chapel Road, Allegheny River Trail (existing), *Connection to Proposed N2 Route*
W1	Panhandle Trail (existing), Walkers Mill Road, Noblestown Road, Scotts Run Road, Ewing Road, Cubbage Road, Logan Road, *Connection to West Busway*
W2	Montour Trail (existing), Bike Route A (SR 51), McKees Rocks Bridge, Helen Street, River Avenue, Three Rivers Heritage Trail (existing), *Connection to City Facilities*
W2 Connector	Moon Clinton Road *(Pittsburgh International Airport)*, McCaslin Road, Clinton-Enlow Road, Montour Trail (existing)
W3	PA Bike Route A (existing), Grand Avenue Bridge, Ohio River Trail (proposed), Neville Island Bridge, *Connection to Proposed W2 Route*
W3 Connector	Cliff Mine Road, Thorn Run Road, *Connection to Proposed W3 Route*
W4	Beaver Grade Road *(Connection to Proposed W2 Route)*, Steubenville Pike, Tidball Road, McMichael Road, Campbells Run Road, Chartiers Avenue, 5th Avenue, Dick Street, Carnegie Station (West Busway), *Connection to Proposed S4 Route*

Route	Description
E1	Allegheny River Trail (existing) *(Harrison Hills Park)*, E. 1st Avenue, Worth Avenue, E. 7th Avenue, Freeport Road *(Connection to Proposed E1 Route Connector)*, Pittsburgh Street, Freeport Road, Blockdale Street, Allegheny River Trail (proposed), *Connection to Proposed N4 Route*
E1 Connector	Baileys Run Road *(Deer Lakes Park)*, Freeport Road, *Connection to Proposed N1 Route*
E2	Cox Comb Hill Road *(@ Proposed Beltway Bicycle Route)*, Hulton Road, Three Rivers Heritage Trail (proposed), *Connection to City Facilities*
E3	Old William Penn Highway, Rodi Road, Nottingham Drive, Homer Road, Churchill Road, Beulah Road, William Penn Highway (Penn Avenue), Montier Street, North Avenue (Eastbound) / Wallace Avenue (Westbound), Wilkinsburg Station, *Connection to East Busway*
E4	East Pittsburgh-McKeesport Boulevard, Versailles Avenue, First Street, Greensburg Avenue, Penn Avenue, Braddock Avenue, Electric Avenue, Linden Avenue Pedestrian Plaza, Linden Avenue, Bessemer Avenue, Western Avenue, Center Street/Bell Avenue, Jones Avenue, Braddock Avenue, Kenmawr Avenue, Belmar Place, Woodstock Avenue, Swissvale Station *Connection to East Busway*
E4 Connector	Wall Avenue *(@ Proposed Beltway Bicycle Route)*, Patton Street, Airbrake Avenue (Eastbound) / Middle Avenue (Westbound), Penn Avenue, *Connection to Proposed E4 Route*
E5	Pierson Run Road, Saltsburg Road, Frankstown Road, *Connection to City Facilities*
S1	Route 837, *(Connection to Proposed Beltway Bicycle Route)*, Steel Valley Trail (existing), *Connection to Proposed S3 Route*
S2	Montour Trail, Logan Road, Bethel Church Road, Fort Couch Road, Village Road, *Connection to South Hills Village T Station*
S2 Connector	Library Road, Logan Road, *Connection to Proposed S2 Route*
S3	Youghiogheny River Trail (existing), Steel Valley Trail (existing), Riverton Railroad Bridge, *Connection to City Facilities*
S4	McMurray Road, McLaughlin Run Road, Ridge Road, Bower Hill Road, Chartiers Creek Trail (proposed), *Connections to Proposed W1, W4, S4 Connector Routes, and West Busway* with connection to Panhandle Trail
S4 Connector	Greentree Road, *Connection to City Facilities*
S5	Brownsville Road, Curry Road, Brownsville Road, *Connection to City Facilities*

Designated County Beltway Bicycle Route

Members of the Core and Study Advisory Committee, as well as the public, expressed desire for a circular bicycle route to connect County Parks and nearby land uses. The Orange Belt, which is comprised of 91.7 miles of miscellaneous county and state owned roads and color coded for navigational purposes[xvi], was a logical starting point. Spurs and parallel routes were then added to or substituted for the existing Orange Belt to avoid high volume cross sections. Prior to designating the recommended route, existing roadways need to be evaluated for compatibility per PennDOT design guidelines. Study Team observations noted that the proposed beltway route, utilizing a majority of Orange Belt roadways, is scenic with light truck traffic and relatively low volumes and motor vehicle operating speeds. A typical cross section is comprised of 10' travel lanes with 0' - 4' shoulders. **Table 2-4** details the proposed beltway bicycle route. **Appendix H** (included in a separate document) contains the Preliminary System Improvements Map for Countywide Bicycle Routes, which includes this route. This map is also included in the Executive Summary.

Table 2-4. Designated County Beltway Bicycle Route

Route	Description
Beltway Bicycle Route	Montour Trail (existing), Library Road, Clifton Road, McMurray Road, McLaughlin Run Road, Ridge Road, Baldwin Street, Railroad Street, Bower Hill Road, Washington Avenue, Prestley Road, Thoms Run Road, Battle Ridge Road, Boys Home Road, Union Avenue (Route 978), W. State Street, Clinton Avenue, McKee Road, Steubenville Pike, Enlow Road, Montour Trail (existing), Beaver Grade Road, University Boulevard, Sewickley Bridge, Broad Street, Hill Street, Blackburn Road, Fern Hollow Road, Camp Meeting Road, Rochester Road, Wexford–Bayne Road, Wexford Road, Gibsonia Road, Oak Road, Bairdford Road, Saxonburg Boulevard, East Union Road, Starr Road, Little Deer Creek Road, Creighton-Russellton Road, Butler Logan Road, Crawford Run Road, Freeport Road, New Kensington Bridge (C.L. Schmitt Bridge), Industrial Boulevard, 3rd Avenue, 2nd Street, Logans Ferry Road, Leechburg Road, New Texas Road, Saltsburg Road (Route 380), Center Road, Haymaker Road, Mosside Boulevard (Route 48), Jacks Run Road (Route 48), Long Run Road (Route 48), Walnut Street (Route 48), Boston Bridge, Boston Hollow Road (Route 48), Scenery Drive (Route 48), Lovedale Road, McKeesport Road, Hayden Boulevard (Route 51), State Street (Route 837), Montour Trail (existing)

City of Pittsburgh Bicycle Network

The City of Pittsburgh, BikePittsburgh (BikePGH), and Friends of the Riverfront have been working diligently to enhance the bicycle network in the City of Pittsburgh. Many roadways have been retrofitted for bicycle facilities and many more are proposed. In 2009, the Mayor of Pittsburgh created a list of bicycle and pedestrian specific initiatives to be advanced in the categories of engineering, education, enforcement, and events (**Appendix I**, included in a separate document). As a result of that initiative, a Bicycle Route and Signage Plan is currently under development, as well as other efforts to enhance the bicycle and pedestrian network within the City. A map illustrating the current City of Pittsburgh Bicycle Network, and routes proposed as part of this plan, is contained in **Appendix J**, which is included in a separate document as well as the Executive Summary. The City will further its Bicycle and Pedestrian Network as part of its upcoming MovePGH Comprehensive Transportation Plan and Bicycle Master Plan update. The City and the County should coordinate any future routes to promote system connectivity.

Approaching Roberto Clemente Bridge, North Shore

Three Rivers Heritage Trail

Friends of the Riverfront is performing planning, development and construction to expand the Three Rivers Heritage Trail along the Allegheny County Riverfront. They are one of many groups working to support beneficial and community focused riverfront development through the Pittsburgh Metropolitan Area. The following projects are key regional priorities:

- **Community Initiatives – Extending the trail/commuter bike facility up the Allegheny River:** A public/private initiative to complete a trail through 17 municipalities along the North Shore of the Allegheny River to connect the Three Rivers Heritage Trail with the Armstrong Trail.

North Shore Trail, North Shore

- **Allegheny Riverfront – Convention Center to Highland Park:** As part of the Allegheny Riverfront Vision Plan, create an urban design vision and implementation plan for the south bank of the Allegheny River between the Convention Center and Highland Park.
- **Allegheny Riverfront – Allegheny River Boulevard to Rail Trail:** Planned trail connection between Penn Hills and Verona along Allegheny River Boulevard.
- **Verona Borough Sustainability Needs Assessment:** Includes recommendation for a multipurpose walkway along the railroad tracks and activities at Riverbank Park.
- **Carrie Furnace:** Preliminary engineering design for a trail to connect Duck Hollow through Carrie Furnace to Braddock.
- **East End Loop:** Planning to connect the Duck Hollow Trail to the Pittsburgh Zoo.
- **Ohio Riverfront Montour Connection**: Planning to connect the Three Rivers Heritage Trail downstream to the Montour Trail.
- **Carnegie Science Center Development Plan:** A plan to expand the Science Center to include a redesigned riverfront park and trail access to the Three Rivers Heritage Trail.
- **Convention Center Riverfront Park:** Development of a riverfront park on the Allegheny River adjacent to the Convention Center with connections to the Three Rivers Heritage Trail.
- **Mon Wharf Landing:** Development of the Mon Wharf for riverfront open space to the public including a linear park and trail.
- **South Shore Riverfront Park:** Extension of the South Side Riverfront Park to include the Three Rivers Heritage Trail and South Side Trail.

2.3 BICYCLE FACILITIES TOOLBOX

The Bicycle Facilities Toolbox is a resource for County and local officials, staff, residents, and stakeholders that will assist in planning and developing bicycle facilities as part of the ACTIVEALLEGHENY Plan. The toolbox is composed of the following four (4) sections:

- **Bicycle Facility Users**: An overview of the types of cyclists that are a focus of this study.
- **Bicycle Facility Types and Design Guidelines:** A review of common bicycle facilities and relevant design guidance from PennDOT, Allegheny County, and the City of Pittsburgh, as well as national guidelines and standards.
- **Order of Magnitude Costs:** A guide to typical costs for design and installation of bicycle facilities.
- **Innovative Bicycle Facilities:** A presentation of innovative bicycle facilities that are being developed and evaluated, both nationally and internationally.

Bicyclists in the Strip District
Photo: Kevin Smay

Bicycle Facility Users

There are multiple ways to categorize cyclists. They can be separated into groups by purpose (e.g., commuter, recreational, etc.), by skill level (e.g., experienced, inexperienced, etc.), or by age (adult, child, etc.). For the purposes of ACTIVEALLEGHENY, the focus is the following types of bicyclists: Experienced Commuter, Casual Commuter, Utilitarian, and Children, which are described briefly in this section:

- **Experienced Commuter:** This type of user is comfortable in mixed traffic and using shared travel lanes or on-road bicycle facilities. Experienced commuters are adults who have been bicycling over a long period of time, and who may ride by choice or because bicycling is their only means for getting to work (e.g., no personal vehicle, no transit access, etc.). These users are focused on direct trips, which usually occur during peak travel periods. Trip lengths for the experienced commuter vary from short trips of 3 to 5 miles to long trips of 10 to 20+ miles.
- **Casual Commuter:** This type of user has limited experience with bicycling and may lack confidence with on-road bicycle travel, but has interest in commuting by bicycle. Casual commuters are adults who may have experimented with bicycling to work, but typically rely on another means for commuting, such as driving alone or walking to transit. These users are focused on direct trips, but feel more comfortable on: off-road facilities; low-volume roadways; or exclusive on-road bicycle facilities. The casual commuter has a trip length of 1 to 5 miles, and a preference for transit connections to traverse difficult locations, such as congested roadways and bridges.

Bicyclists in Pittsburgh
Photo: Sara Walfoort

- **Utilitarian:** Although commute trips can be utilitarian, this descriptor is used for bicyclists who are making off-peak trips or daytime work trips, shopping, medical visits, or other non-commute purposes. These cyclists can be experienced or casual, adults or adolescents, and are often prepared to make trips in mixed traffic. Trip lengths for the utilitarian likely range between 1 to 3 miles.
- **Children:** Children tend to not travel as fast as adult cyclists, but still desire and require access to destinations such as schools, stores, recreational areas, and neighboring residences. According to AASHTO, "residential streets with low motor vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles can accommodate children without encouraging them to ride in the travel lane of major arterials." Ideally children on bicycles should be accommodated with barrier-separated bicycle lanes and accompanied by adults until they are an appropriate age when they have an understanding of traffic movements and signage and they are able to operate a bicycle on-street.

Bicycle Facility Types and Design Guidelines

There are a common set of on-road and off-road bicycle facilities that are used to enhance and accommodate bicycle travel. These facilities, which are grouped as "Bikeways" by PennDOT, have recommended physical dimensions and characteristics, as well as typical pavement striping, markings, and signs. Bicycle facility guidelines are outlined in Chapter 16 and Chapter 19 of PennDOT Design Manual 2. Roadways and intersections should be compliant with PennDOT and MUTCD guidelines and standards. The current approved version of the MUTCD in Pennsylvania is the 2003 edition. PennDOT is currently in the process of evaluating the 2009 edition for potential adoption. States are given two years from the publication date (January 15, 2010) to conduct their review process.

On-Road Bicycle Facilities

The common on road bicycle facilities are: Shared Lanes/Shared Roadways, Paved Shoulders, and Bicycle Lanes. Specific roadway attributes (e.g., pavement widths, cross-sections, parking provisions, traffic volumes, posted speed limit, etc.) determine the applicability of each facility. In addition to these common facilities, there are approaches, including signed bicycle routes and bicycle boulevards, that can be used to integrate the roadway improvements into discrete corridors and an overall on road network. **Table 2-5** describes these facilities in detail. Striping for bicycle facilities should be thermoplastic for longevity.

Table 2-5. On-Road Bicycle Facilities

Shared Lane/ Shared Roadway	A Shared Lane, or Shared Roadway per the PennDOT Design Manual 2, accommodates bicyclists and motorists in the same travel lane. Shared lanes can be located on urban or rural roadways with low vehicular traffic volumes and low posted speeds, and are often supplemented with 'Share the Road' warning signs. Wide outside travel lanes, which have widths of 12' to 15' depending on the roadway context (e.g., rural or urban), are desired for shared lane facilities. A new pavement marking used to guide bicyclists with lateral positioning in a shared travel lane, especially in locations with on-street parking, is the shared lane marking (informally referred to as 'Sharrows'). Sharrows are included in the MUTCD 2009 Edition.	 *Shared Lane with Shared Lane Marking*  *'Shared The Road' Used in Pennsylvania*
Paved Shoulder	A paved shoulder provides accommodation for bicyclists adjacent to vehicle travel lanes. Paved shoulders can be located on urban or rural roadways with moderate to high vehicular traffic volumes and moderate to high posted speeds. Paved shoulders for bicyclists range in width from 4' to 6'+ depending on the available pavement width, and can be supplemented with 'Share the Road' warning signs. Chapter 16 of the PennDOT Design Manual (Publication 10A) does not identify paved shoulders, but paved shoulders are listed in the Bicycle and Pedestrian Checklist (**Appendix K**, included in a separate document). In the checklist, paved shoulders are grouped with bicycle lanes, and appropriate widths are cited as 6' standard and 5' adjacent to curb.	 *Paved Shoulder*

Bicycle Lane	Bicycle lanes are designated travel lanes for exclusive or preferential use by bicyclists. Bicycle lanes are typically located on roadways in urban settings with moderate to high vehicular traffic volumes, moderate to high posted speeds and permitted or designated on-street parking. According to the PennDOT Design Manual, bicycle lanes include the application of pavement striping, markings, and regulatory signage. Bicycle lane facilities should be one-way facilities that carry traffic in the same direction as motor vehicles, and utilize configurations that encourage merging to occur in advance of intersections. Following the Bicycle and Pedestrian Checklist, bicycle lane widths are cited as 6' standard and 5' adjacent to curb, and are to include marking as per AASHTO guidance.	 *Bicycle Lane*
Signed Bicycle Route	Signed bicycle routes are treatments used to provide wayfinding guidance to cyclists. Route signs can be used to provide directional, distance, and destination information to assist bicyclists in navigation. Signed routes can also be used to direct cyclists to corridors that have existing on-road facilities, or access locations for off road facilities. The PennDOT Design Manual 2 does not provide specific guidance on signed bicycle routes, but AASHTO does provide guidance on the design and application of signed bicycle routes.	 *Bicycle Route Sign* *Source: MUTCD 2009 Edition*
Bicycle Boulevard	A bicycle boulevard is a corridor treatment that prioritizes bicycle travel. Bicycle boulevards accommodate shared travel for bicyclists and motorists and utilize traffic calming measures, signs, pavement markings, and crossing improvements to enhance bicycle travel. Corridors identified for bicycle boulevards are typically characterized by low volumes and low speeds. Bicycle boulevards are not included in the PennDOT Design Manual; however, a Bicycle Boulevard Guidebook was recently released by the Initiative for Bicycle and Pedestrian Innovation at the Center for Transportation Studies (Portland State University).[xvii] The guidebook provides direction on selecting routes and application of design elements (e.g., priority, intersection, traffic calming, and traffic reduction treatments).	 *Bicycle Boulevard in Berkley, CA* *Photo: sfgate.com (Paul Chinn)*

Three Rivers Heritage Trail
Photo: Tom Baxter

Off-Road Bicycle Facilities

The typical facility used to accommodate off-road bicycle travel is the Shared Use Path, or Bicycle Path (PennDOT). The Shared Use Path has specific physical attributes which are described in **Table 2-6**. At one point in time, people considered "trail development" to be a recreational accommodation. Not any longer. Trail development within Allegheny County provides connections to our communities, opportunities for economic development, and offers transportation alternatives through the use of the corridors. Trails are used for recreational purposes, but also for commuting from one place to another.

The Allegheny County comprehensive plan outlines the goals for trails, greenways, and bike routes. ACTIVEALLEGHENY will integrate existing trail corridors with planned on-road and off-road (trail) segments to connect to the destinations across our region.

Table 2-6. Shared Use Path or Bicycle Path

Shared Use Path	A shared use path or bicycle path is a facility that is physically separated from the roadway and typically accommodates bi-directional travel by both bicyclists and pedestrians. The path can be located either within publicly owned right-of-way, within an exclusive right-of-way, or on an easement. Shared use paths typically have a hard surface (e.g., asphalt, concrete, compacted gravel, etc.) and have a recommended width of 10', although a minimum width of 8' may be used where space is constrained or in environmentally sensitive areas. Wider paths are also recommended if there is a high volume of existing or anticipated bicycle and pedestrian traffic. Sidepaths are a subset of shared use paths that denote paths that run adjacent to a parallel roadway. Sidepaths can assist in providing bicycle connections between on- and off-road facilities, but often require a more in-depth operational and safety analysis.	 *Shared Use Path*  *Sidepath at an intersection*

Order of Magnitude Costs

Costs associated with implementing bicycle facility improvements will vary. Interim improvements (e.g., shoulder striping, bicycle route signage) will have less design requirements and will therefore be less expensive than an improvement that would need to go through feasibility assessment and design before obtaining funding for construction (e.g., shared use path/bicycle path construction, accommodating bicycle lanes through signalized intersections). Current typical costs are contained in **Table 2-7**.

Table 2-7. Typical Average Costs for Bicycle Facilities

Item	Cost Per Unit	Quantity	Cost	Source
Cost Per Lane Mile				
Bicycle Lane Striping	$1.00 / LF	10,560 LF	$10,560.00	(2) 4" White Hot Thermoplastic Pavement Markings (1 MILE) (ECMS)
	$110.00 EA	22 Legends	$2,420.00	(22) White Waterborne Pavement Legend, "Bicycle With Rider", 8'-0" X 4' 0" (1 Every ~250 FT) (ECMS)
	--	--	**$12,980.00**	--
Sharrow Decals	$135.00 EA	22 Decals	**$2,970.00**	(22) White Waterborne Pavement Legend, "Bicycle with Rider", 8'-0" X 4'-0" With 2 Chevrons (1 Every ~250FT) (ECMS + Estimate)
Shoulder Striping	$1.00 / LF	5,280 LF	**$5,280.00**	4" White Hot Thermoplastic Pavement Markings (1 MILE) (ECMS)
Cost Per Item				
Share the Road Sign	$25.00 / SF	6.25 SF	**$156.25**	30 " X 30" Share The Road Sign, Type B Post Mounted (W16-1)(ECMS)
Bicycle Warning Sign	$25.00 / SF	6.25 SF	**$156.25**	30" X 30" Bicycle Warning Sign, Type B Post Mounted (W11-1) (ECMS)
Bicycle Route Sign	$25.00 / SF	3 SF	**$75.00**	24" X 18" Bicycle Route Sign, Type B Post Mounted (D11-1)(ECMS)
Bicycle Lane Sign	$25.00 / SF	5 SF	**$125.00**	30"X 24" Bicycle Lane Sign, Type B Post Mounted (R3-17) (ECMS)
Bicycle Rack (Hoop)	$175.00 EA	1 Rack	**$175.00**	BikePGH ($99.00 without installation cost)
Bus Mounted Bicycle Racks	$1,030.00 EA	1 Rack	**$1,030.00**	Port Authority of Allegheny County, Summer 2010

Source: PennDOT, http://www.dot14.state.pa.us/ECMS/ and *2010 RS Means Site Work and Landscape Cost Data, 29th Edition.*

Innovative Bicycle Facilities

In certain situations, traditional bicycle facilities (e.g., bicycle lanes) may not achieve desired results due to the nature of the existing roadway network. For this reason, the application of innovative facilities can be utilized to make important connections that would otherwise be unavailable through traditional means. Examples of innovative facilities are presented in **Table 2-8**. These facilities may be applicable in the future to bicycle compatibility improvements in Allegheny County. These facilities have been evaluated by the Institute of Transportation Engineers (ITE) and have successfully been implemented in many cities throughout the United States.

Table 2-8. Innovative Bicycle Facilities

Cycle Track	A cycle track is a bicycle facility that is adjacent to the roadway but separated by a physical barrier. Physical barriers can include the addition of concrete islands or the movement of the parking lane away from the curb, where space permits. Cycle tracks often require right-of-way of up to 14' but can be constructed in situations with as little as 9' of additional right-of-way. Cycle tracks would be applied where significant demand for bicycling exists, and often permit bi-directional travel, eliminating the need for accommodations on both sides of the roadway.	 *Cycle Track in Montreal, Quebec* *Photo: BikePortland.org*
Contra-flow Bicycle Lanes	Contra-flow bicycle lanes are similar to traditional bicycle lanes, except they provide for travel down a one-way street against the flow of motor vehicle traffic. This application is best utilized in extraordinary circumstances when vital connections are excluded from a bicycle route network. Prior to application, significant study should be performed to identify alternate routes which follow existing travel lane directions. In many cases, alternate routing through the use of shared use paths and parallel roadways will exist. Applications of contra-flow bicycle lanes often include the use of bollards or permanent physical barriers as a means of physical separation from oncoming vehicular traffic.	 *Contra-flow Bike Lane in Washington D.C.* *Photo: DCist.org*
High Visibility Bicycle Lanes	High visibility bicycle lanes are similar to traditional bicycle lanes with the exception that the entire lane is painted to differentiate it from vehicular travel lanes. This application provides an additional layer of visibility which will alert motorists to the presence of cyclists. Prominent examples include New York City's bicycle lanes which utilize the color green, and Portland, Oregon, which use blue markings at merging locations, such as highway ramps. Despite this difference, the application of the high visibility bicycle lanes have produced favorable results by way of bringing attention to the presence of cyclists and additional traffic calming effects to the roadway.	 *High Visibility Bicycle Lane in NYC* *Photo: NYC Street Design Manual*

Advance Stop Line/ "Bicycle Box"	The advance stop line or "bicycle box" is a roadway treatment developed to provide the bicyclist with a space to position themselves for turning movements at signalized intersections. This treatment marks an area for bicyclists in front of stopped vehicles at signalized intersections. Current applications use a contrasting surface color to mark the entire area occupied by the bicycle box and to enhance visibility. A prominent example of this treatment currently in use and under evaluation is Portland, Oregon.	 *Bicycle Box in Portland, Oregon.* *Photo: BikePortland.org*
Buffered Bicycle Lane	Similar to a striped bicycle lane, the buffered bicycle lane provides a dedicated travel lane for bicycle travel. The difference is that the buffered lane is marked with a typical 2' – 4' "shy zone" that creates a wider physical separation between vehicles and bicycles. Buffered bicycle lanes have been built adjacent to travel lanes, as well as adjacent to parking lanes.	 *Buffered Bicycle Lane in NYC* *Photo: economyleague.org*

2.4 POLICY AND PROGRAMMATIC CONSIDERATIONS

There are policy and programmatic factors in developing and maintaining a convenient, attractive, and accessible bicycle network. Described below are policies and programs that will impact and influence the development of a bicycle network in Allegheny County. These factors reference existing local guidelines, laws, and requirements, and identify best practice policies and programs that should be considered as Allegheny County, its municipal partners, and other stakeholders develop the bicycle network in the County.

Bicycle Parking

Bicycle Racks at Capacity in Downtown Pittsburgh

Bicycle parking is a necessary amenity at trip destinations for bicyclists. Parking accommodations allow for secure placement of bicycles, and in some locations, protection from the elements. Bicycle parking encompasses racks that can accommodate an individual bicycle or multiple bicycles, lockers to secure and store bicycles, and bike stations where bicycles are locked up at indoor locations that offer additional amenities such a repair and maintenance services.

Bicycle parking can be separated in short- and long-term parking. Short-term parking accommodates bicycles used for utilitarian trips where cyclists will only need to secure the bicycle temporarily. Short-term parking facilities include bicycle racks (both covered and uncovered) and

on-street bicycle parking stations conveniently located at civic buildings and in commercial areas. Long-term parking would be used for commuter trips, where the bicycle can be secured and left unattended over a lengthier period of time. The length of time parking is required impacts the location and type of parking used. Short-term parking should be provided in highly visible and easily accessible locations, whereas long-term parking tends to be placed in low traffic and low visibility locations that offer exclusive access for bicyclists. Long-term parking facilities include lockers, cages or designated rooms within buildings to offer a higher degree of security and weather protection.

BikePGH in Pittsburgh
Photo by Kevin Smay

In Allegheny County, the City of Pittsburgh has Bicycle Parking Guidelines for the installation, location, and design of bicycle racks. In conjunction with the guidelines, the City also recently passed a bicycle parking ordinance that requires and provides incentives for the installation of bicycle parking when a building is being built or altered. Other municipalities in Allegheny County can reference and/or utilize the city's guidelines as well as guidelines, from the Association of Pedestrian and Bicycle Professionals (APBP) to develop local guidance and ordinances.

Traffic Calming

Traffic calming involves the installation of volume or speed control measures on a roadway to modify driver behavior and improve conditions for non-motorized transportation users. Volume control measures range from full street closures to diagonal diverters to reducing the width of vehicle travel lanes, while speed control measures include enforcement equipment (e.g., speed trailers), speed humps, bulb-outs, chicanes, roundabouts, raised crosswalks and intersections, medians and gateway features (e.g., welcome signs, speed limit reduction, landscaping, archway, etc.). According to Chapter 9 of the Smart Transportation Guidebook, traffic calming may apply to many different roadway classifications, however prior to choosing a measure for installation, factors such as design speed, right-of-way, pedestrian and bicycle accommodation and ample warning for motor vehicles should be evaluated. In the Smart Transportation Guidebook, Table 9.1. "Traffic Calming Measures Appropriate to Roadway Classifications" provides planning guidance regarding the installation of traffic calming measures.[xviii]

Policies

State Bicycle and Pedestrian Coordinator

The Federal Highway Administration (FHWA) indicates that each state should have a Bicycle and Pedestrian Coordinator "to promote and facilitate the increased use of non-motorized transportation, including developing facilities for the use of pedestrians and bicyclists and public educational, promotional, and safety programs for using such facilities." For Pennsylvania, that person is based out of PennDOT's Bureau of Design, Highway Quality Assurance Division in Harrisburg. The Bicycle and Pedestrian Coordinator position facilitates the following:

- ✓ "Increased use of non-motorized transportation, including developing facilities for the use of pedestrians and bicyclists and public education, promotional and safety program for using such facilities."[xix]
- ✓ Implementation of the goals and objectives set forth in the 2007 PennDOT Bicycle and Pedestrian Plan.
- ✓ Information exchange among public agencies with regards to bicycle and pedestrian travel.

Given this ambitious program, the implementation of this plan may require additional staff resources to achieve the program goals.

Roadway Maintenance and Repairs

Regular maintenance and repair of roadways is an essential activity for locations where there are on-road bicycle facilities. Maintenance activities, which include clearance of obstacles in bicycle lanes, sweeping shoulder areas, clearing overgrown vegetation, and keeping drainage inlets clear, ensure accessible bicycle facilities and, importantly prevent bicyclists from needing to merge into traffic in order to avoid roadside debris and other impediments. A standard and regular repair schedule for roadway surfaces is very critical for corridors with bicycle facilities. Potholes, cracks, and heaved pavement disrupt smooth pavement surfaces and can contribute to loss of control of a bicycle. PennDOT has a number of regular maintenance and repair approaches that it employs. These include:

- **Seal Coat (Tar and Chip)** – A maintenance activity utilized to extend the performance and condition of low traffic volume roads. This activity involves the use of liquid asphalt and fine stones in order to seal the road surface, keep water out, and restore surface friction. Although it is a low-cost highly effective means of maintaining the road surface, this technique is problematic for bicyclists. It was noted by several online survey users as a constraint to bicycle riding on-road. Efforts should be made to clear the shoulders of the treated roadway, as soon as possible after applying the seal coat (tar and chip), to minimize disruption to bicycle travel and the process should be clearly communicated to the public and bicycle organizations in advance and once excess material has been cleared from the roadway and the shoulder.
- **Joint/Crack Sealing** – A maintenance activity used to close joints and prevent water from seeping into paved roadway. When water seeps in the paved surface, it can lead to potholes and breaks in the pavement.
- **Vegetation Management** – A maintenance activity that includes mowing, thinning of trees, and other processes to control encroachment into the roadway and prevent visibility issues. This should include removing overgrown weeds from road shoulders on designated bike routes at regular intervals during growth season.
- **Line Painting** – A maintenance activity to improve visibility of roadway dividing lines and markings.
- **Mechanized and Manual Patching** – A maintenance activity performed both by machines and individual workers to fill in sections of roadways with extensive potholes and cracking. Patching is used to fill in these gaps and restore pavement smoothness.

It is recommended that local municipalities and other responsible organizations in Allegheny County coordinate with PennDOT and the County to identify and set a regular maintenance and repair schedule for roadways with bicycle facilities. The use of seal coat (tar and chip) should be minimized on roadways with high bicycle usage, or the process should be clearly communicated in advance. PennDOT alerts should be distributed to include biking organizations. In addition, localities should look how to integrate these activities into local capital programs with the aim of keeping bicycle facilities on their roadways clear of impediments.

Railroad Crossings

When bicyclists cross over a rail line, bicycle tires may become trapped in the openings adjacent to rail line where they cross roadways (referred to as the flangeway). Bicyclists may also have trouble maintaining friction over surface materials around the flangeway. PennDOT's Statewide Bicycle and Pedestrian Master Plan[xx] emphasizes that bicycle facilities crossing rail lines should ideally be at a 90-degree angle to reduce the potential for the wheels to get trapped. If a crossing cannot be close to 90-degrees, and especially if it cannot be maintained greater the 45-degrees, consideration should be give to providing a wider path so that bicyclists can angle their approach over the rails.

Recommended bicycle facility treatments that include angling of crossings, signing, and striping are included in the AASHTO Bicycle Guide.

Railroad Crossing on Bower Hill Road in Bridgeville

With the presence of many rail lines in Allegheny County, it is recommended that all entities involved with advancing bicycle improvements follow AASHTO guidance and adopt them in locally developed guidelines.

Bikeways on State Highways

To construct a bicycle facility on a state highway, there are two policies to be considered: 1) Procedures for Processing Bikeway Construction Projects, and 2) Bikeway Occupancy Permits.[xxi] The procedures primarily apply to independent bikeway projects, which include the construction of just a bicycle facility[1], and follow a prescribed set of procedures for document submissions and reviews by PennDOT and FHWA. The Bikeway Occupancy Permit is also required for the development of a bicycle facility and is issued by PennDOT. The permit, which is in the form of resolution, includes stipulations for local ordinances addressing enforcement, maintenance, and design of the bikeway. To obtain a permit, the entire route (beginning to end) must be submitted and the local municipality is responsible for the maintenance of the bikeway, including snow removal.

It is recommended that as part of the ongoing development of the bicycle network in Allegheny County, proposed changes that will utilize state highways be grouped to provide a more efficient and comprehensive review. A joint proposal should illustrate the network connections proposed for development and allow for a more informed coordination between project sponsors and PennDOT.

Rumble Strips (Placement and Need)

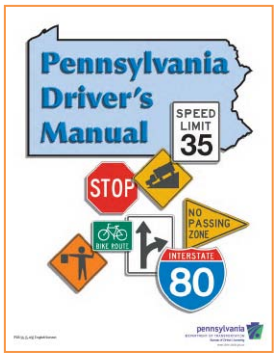
PennDOT's Publication 46, Chapter 11, Section 11.11 establishes the criteria for the use of rumble strips in PennDOT projects. A rumble strip is a pavement treatment that creates noise and vibration in order to alert motorists to changes in travel, such as crossing over shoulders or centerlines, or the need to slow down. Textured or grooved pavement treatments are used for the rumble strips, and they can be placed parallel to travel (e.g., along shoulders or centerlines) or perpendicular to travel (e.g., across travel lanes). Although the strips can provide safety benefits for motorized vehicle travel, when rumble strips are placed on shoulders, they impact the mobility of bicyclists. The vibrations experienced while traveling over the strips can force bicyclists to merge into non-compatible travel lanes and even make bicyclists avoid an otherwise compatible bicycle roadway.

Rumble Strips on SR 837 in West Mifflin

For the future development of the bicycle network, it is recommended that rumble strips not be included on shoulder bicycle facilities unless there is a minimum clear passage of 4' from edge of shoulder strip to edge of pavement or 5' clearance from strip if a curb is present. If these dimensions are not obtainable and rumble strips are necessary, it is recommended that the rumble strip be placed under the shoulder stripe. With this treatment, it is recommended that intermittent gaps in the rumble strip be provided to allow a bicyclist to move off the shoulder when needed (e.g., avoiding obstacles in shoulder, for turning movements, etc.). These recommendations should be integrated into design manuals at the local, county, and state levels.

[1] The other category of bikeway projects is incidental. These are constructed as part of a more comprehensive highway project and are reviewed along with other elements of the project.

Pennsylvania (PA) Department of Motor Vehicles (DMV) – Driver's Manual



The PA DMV driver's manual is applicable to the three (3) legally-recognized types of vehicles in the state: bicycles, motor vehicles, and horse-drawn vehicles. It provides guidance for operations according to the PA Vehicle Code and notes that the rules of the road are applicable to each of these vehicles. Specifically relevant to bicycle interactions with the other vehicle types and rules of the road are: compliance with regulatory signs (e.g., R5-6, 'No Bicycle' where bicycles may not use the roadway), observance of warning signage (e.g., "Share the Road', which is used to warn motorists to provide adequate space for bicyclists to share the roadway), and required behavior for motorists travel in the presence of bicyclists (e.g., allow a longer following distance, do not sound horn in close proximity to bicyclists unless needed, being alert when making turns, etc.). In addition to the existing aspects of the Pennsylvania vehicle code, there has been interest in a 'Safe Passage Law', which requires motorists to allow at least 3' – 4' when passing a bicyclist. There are 16 states that currently have enacted this law and organizations such as BikePGH and PA Walk & Bikes are actively working to have a similar bill considered in Pennsylvania.

It is recommended that partners and stakeholders in ACTIVEALLEGHENY initiate and continue outreach efforts to highlight traffic operations and rules of the road guidance, especially sections relevant to bicycle travel. This could include a regular schedule of announcements and promotions at the county level with support from more locally focused campaigns by municipalities. A goal should be consistency of messages that can reinforced at multiple levels and with various audiences. Furthermore, it is recommended that support be provided for the passing a 'Safe Passage Law' in Pennsylvania.

Pennsylvania (PA) Department of Motor Vehicles (DMV) – Bicycle Driver's Manual

Pennsylvania has developed a driver's manual specifically for bicycles. The manual provides information about recommended bicycle travel behavior, with specific sections addressing: preparations before riding, traveling with motorists along roadways and through intersections, responding to poor driving behavior by motorists, traveling at night or in the rain, and riding with groups of bicyclists. The manual also identifies elements of the PA Vehicle Code that specifically apply to bicyclists. It is recommended that the Bicycle Driver's Manual be excerpted or referenced and included in outreach efforts to increase knowledge of rules of the road and recommended travel behavior for bicyclists and motorists.

Bikes on Bridges

Bridges can present bicyclists with mobility and accessibility issues due to changes in cross-sections from approaching lanes (e.g., narrower lanes, shoulder drops, etc.) to features on the bridge's roadway surface like expansion joints. In many cases, bridges are currently being addressed for reconstruction or rehabilitation, and that presents an opportunity to retrofit the structure with bicycle accommodations. One (1) approach for improving bicycle compatibility across bridges is to re-allocate available roadway space to enable the installation of a bicycle lane or shoulder facility. If space is constrained on the roadway, the addition of a shared use path or the widening of existing sidewalk to accommodate bi-directional bicycle and pedestrian travel should be investigated. For both approaches, it is important to include applicable signing and striping, to thoughtfully address locations where transitions will occur between facilities (e.g., markings shoulder to bicycle lanes, ramps to accommodate on-road to off-road travel, etc.), and to provide lighting, where needed, to improve visibility for roadway users.

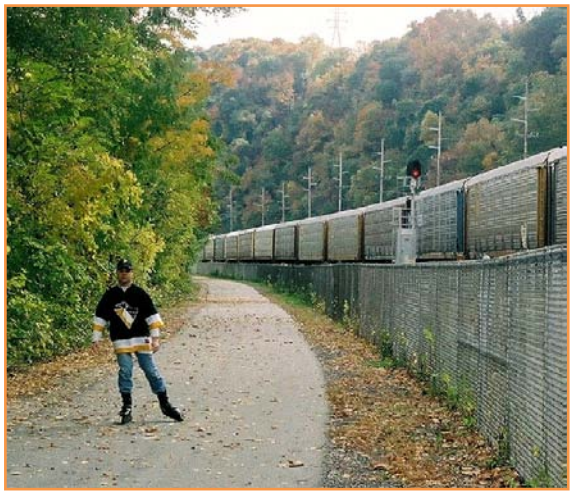
Cyclist on the Roberto Clemente Bridge

Based on AASHTO guidelines, if bicyclists will be operating directly adjacent to railings or barriers, these elements are recommended to be a minimum height of 3.5'. Taller railings are recommended for consideration in locations where there are major changes in vertical or horizontal roadways elements (e.g., sharp curves, steep hills, etc.). Local emphasis relative to bicycles on bridges has been focused on bicycle friendly accommodations including compatible bridge scuppers/grates and expansion joint design, and bicycle lane striping in the vicinity of ramps (e.g., Birmingham Bridge).

Bikes on Busways

Busways are exclusive rapid transit rights-of-way provided for bus travel. Busways in Allegheny County and other urbanized areas are designed to be higher speed and high capacity public transportation facilities and are not designed for bicycle traffic. Port Authority's three busways link outlying areas in the South, West and East to downtown Pittsburgh and Oakland.

East Busway



In-line skater on Baldwin Borough Trail (CSX)

Another arrangement, with active railroad lines and bicyclists in close proximity, is rails-with-trails. This approach features the development of a bicycle and pedestrian shared use path adjacent to an active railroad line or rapid transit line. The *AASHTO Guide for the Development of Bicycle Facilities* and the Rails-to-Trails Conservancy[xxii] both provide guidance and lessons learned on the practice of rails-with-trails. Pittsburgh has two examples of active freight railroad lines with adjacent trails. The North Shore and Millvale trails are located along the Norfolk Southern's Conemaugh Line. The Station Square, South Side and Baldwin Borough trails are located next to CSX Transportation's Pittsburgh Subdivision.

Although some bicyclists desire to use the busways as commuter routes, Port Authority policy does not allow bicycles on busways due to design, safety liability and operational issues. Additionally, there is not sufficient right-of-way in the busway corridors to allow placement of bicycle lanes adjacent to any of the three busways. However, establishment of bike lanes on streets near the busways can be explored. As more buses become equipped with bicycle racks, it becomes increasingly feasible for bicyclists to take advantage of the rapid service offered by buses on busways to get to downtown Pittsburgh, Oakland and other destinations in Allegheny County.

Lighting on Road for Bicycles

On roadways, street lights are mostly provided to assist motorists. These lights, which are typically set 25' to 30' above the road, may provide adequate illumination for motorists to see the roadway, but for bicyclists, typical street lights may not provide the best visibility. *BIKESAFE*[xxiii], a publication by FHWA, provides strategies to improve lighting on road for bicyclists.

Bike Lanes and On-Street Parking (Parallel and Angled)

Bicycle lanes are recommended to be a minimum of 5' wide, which is the preferred operating width of cyclists as noted in the AASHTO Bicycle Guide. In the presence of on-street parking, bicycle lanes are recommended to be 6' to 7' wide, with the wider option used in locations with a high rate of parking turnover. The additional width is recommended to allow bicycles room to maneuver and respond to motorists behavior during parking or while parked.

In the case of parallel parking, a common hazard for bicyclists is being 'doored'. Dooring occurs when a motorist opens the door of their parked vehicle and strikes a traveling bicyclist. Dooring can seriously injure a bicyclist. Dooring incidents can potentially be reduced by installing striping and pavement markings, such as the bicycle lane symbol further to the left in a lane and using parking stall 'T' stripe that extends into the bicycle lane.

Bicycle Lanes adjacent to parallel parking in New York City
Photo: nycbikemaps.com

Angled parking can pose a different kind of hazard to bicyclists. It is not recommended that bicycle lanes be striped adjacent to front-in angled parking due the restricted visibility of motorists as they back out of spaces. An approach that can be utilized in locations where proposed bicycle lanes are adjacent to angled parking is back-in angled parking. This approach leads to improved sight distances and access to rear of vehicles outside of travel lanes.[xxiv]

When bicycle lanes are proposed for locations with on-street parking, it is recommended that they be provided at a width of 6' to 7'. In locations where a bicycle facility is proposed adjacent to angled parking, a study exploring back-in angled parking should be performed.

Bicyclists using Stop Signs as Yield Signs

Bicycling requires physical efforts and most bicyclists prefer to maintain a level of momentum while traveling. Routes where bicyclists have to continually stop and start again can serve as an impediment to bicycle travel. To this end, there has been recent interest in a legal change that would allow bicyclists to treat stop signs as yield signs under specific conditions. This would mean that cyclists would still have to slowly approach the stop sign, but if the intersection is clear of vehicles, the bicyclist could proceed without stopping. A law to this effect has been legal in Idaho[xxv] since the 1980's and has recently been considered in Oregon and California.

The PA Vehicle Code does not allow bicyclists to treat stop signs as yield signs. It is recommended that Allegheny County and its municipalities monitor this law and studies of its results on bicycle travel and crashes. There is merit to this proposal given the travel preferences of bicyclists, but it will likely have impacts on vehicle operations so it should be continued to be studied. Topography in Allegheny County should be a prime consideration when deciding if this type of change could be safe for bikes and motorized vehicle in this area.

Programs

B-Cycle Automated Rental Kiosk in Denver, Colorado
Photo: votewithyourfeetchicago.blogspot.com

Bike Sharing and Rental Stations

Programs to support bicycle sharing and rentals have been growing both nationally and internationally. Examples of popular programs such as the 'Velib' in Paris, France, which has deployed 20,000 bicycles and over 1,600 stations throughout the city. Another is the SmartBike DC (www.smartbikedc.com) program[xxvi] in Washington D.C., a public-private collaboration between Clear Channel Outdoor and the District Department of Transportation with over approximately 100 bikes at ten (10) stations. Bike rental stations can be either full-service or self-service, with many recent programs using a self-service approach. Bicycles are placed in locked racks which release a bike once the rental payment is made. The bicycle can then be returned at the original location or at other stations at

different locations. The bike rental station can work well with transit to provide a non-motorized connection at the end of a transit trip.

Bike sharing and bike rental programs should be considered for downtown Pittsburgh, Oakland, and other town center in Allegheny County, especially those near existing bicycle and shared use facilities. There are bicycle rental facilities at the end of the Eliza Furnace Trail (across from the First Avenue LRT Station) and at Station Square along the South Side Trail. Also of note, The Friends of the Riverfront currently have a bicycle loan program on some of their trails near downtown Pittsburgh.

Cyclovia

Cyclovias are events where a street or a set of streets are shut down to motorized traffic for a certain period of time and are made available for non-motorized use. Cyclovia, or ciclovía in Spanish, started in Columbia[xxvii] where streets were closed to cars and opened for bicyclists, pedestrians, skaters, and various other individuals. The Cyclovia becomes a celebrated event and brings diverse members of the community out to interact around active living. This commonly occurs on Sunday afternoons, but many options could be explored.

Pittsburgh BikeFest Poster
Source: BikePGH

The cyclovia movement has come to North America and several locations now host cyclovias, sometimes under different names such as 'Sunday Streets' (San Francisco), 'Sunday Parkways' (Portland, Oregon, and Summer Streets ('New York, New York). These events provide car free space for people to experiment with bicycle tripmaking, take recreational rides, and have space where parents may feel comfortable having children and teenagers learn how to ride on-street.

Car Free Fridays Poster
Source: BikePGH

As partners in the ACTIVEALLEGHENY look to encourage more bicycling, a program of cyclovia events could be scheduled to provide opportunities and support for bicycle riders, especially casual riders who are looking to become more comfortable on bikes. These events could also be coordinated with Car Free Fridays and the annual BikeFest that are sponsored by BikePGH. Each month, Car Free Fridays highlights a different neighborhood or municipality in our region to promote active transportation. It's a great chance to learn about the neighborhood, check out the business district, and figure out how to travel car free.

A strategic program of rotating Cyclovia opportunities each Sunday, spring through fall, (especially on scenic routes such as Grandview Avenue in Mt. Washington, Bigelow Boulevard from Downtown to Oakland, etc.), with each road closed one Sunday afternoon per year, could become a major amenity/attraction for our region.

Bicycle to Work Month

May is bicycle to work month[xxviii], and the annual bike to work day is usually scheduled for the third Thursday of the month. Bike to work month provides a tremendous opportunity to focus efforts and promote bicycle commuting both due to the extra attention given to bicycling at this time of year and the support that bicyclists have as more people ride to work. SPC, BikePGH, and other local groups participate in and promote bike to work week in Allegheny County. This activity helps to raise awareness which ultimately helps to increase safety for all roadway users.

Bicycle Ambassador

The Bicycle Ambassador Program is a method of providing person-to-person outreach regarding bicycle travel to a community. Comprised of experienced and trained bicyclists, the ambassadors perform educational and encouragement activities to assist with route planning for bicycle trips. This increases knowledge of rules-of-the-road for newer bicycle commuters and motorists and assists in gathering feedback for needed bicycle facility improvements. In some cases, bicycle ambassadors are paid staff, but more often they are volunteers who want to be a resource for bicyclists in their community, especially to those who are newly exploring bicycle travel.

Bicycle Ambassadors in Philadelphia
Photo: Bicycle Coalition of Philadelphia

Cities like Chicago[xxix], Philadelphia[xxx], and Minneapolis/St.Paul[xxxi] have successful bicycle ambassador programs. The ambassadors attend community events, reach out to schools, and are frequently just present in neighborhoods or high bicycle traffic locations as an available resource. Chicago's program also has a junior ambassador element where teenagers are trained through a 10-week course. Those individuals are then able to provide outreach to fellow teenagers and other young riders about recommended bicycle travel behavior.

A bicycle ambassador program for Allegheny County can be explored. In cooperation with local municipalities and organization like BikePGH, the County, the City, and others, ambassador teams could provide assistance in various locations or employment centers. This could increase the amount of outreach being provided to both adults and children. The Bike Pool Program, offered through the CommuteInfo Program and BikePGH, offers a Bike Mentor Program for new bicycle riders.

Bicycle Commuter Incentives

There are approaches to incentivize bicycle commuting that are used on a national level as well as by many states. The Internal Revenue Service (IRS) allows a monthly tax credit of up to $20 that can be applied to the maintenance and purchase of bicycle equipment. Many states offer Guaranteed Ride Home Programs (GRH) through commuter organizations such as Transportation Management Associations. The GRH assists bicyclists, as well as other commuters without access to a personal motor vehicle, with a ride home in response to emergencies. In our region, SPC provides this service. Employers can provide incentives for bicycling commuting as well. Such incentives are: pre-tax deductions for bicycle commuting expenses, parking cash-out to provide bicyclists a cash equivalent for not using subsidized parking, and shower and changing facilities at employment locations.


Bethesda's 2009 Bicycle Commuter Spirit Awards

In conjunction with the regional Bike to Work Day to be held Friday, May 15, 2009, Bethesda Transportation Solutions is sponsoring the *Bicycle Commuter Spirit Awards*. The awards recognize downtown Bethesda employees who are dedicated to biking to work.

Bike to Work Day 2009

We need your help in finding two commuters devoted to two-wheeled bicycle transportation. The first award is for the Most Committed Bicycle Commuter, an employee who bikes to work on a consistent basis. The second award is for the Longest Distance Commuted by Bicycle – for that dedicated bike commuter who goes the distance!

Nominate a co-worker or yourself. The deadline for nominations is Friday, April 17, 2009. Awards will be distributed during Bethesda's Bike to Work Day pit stop event on Friday, May 15, 2009 between 6:30-8:30am at Reed Street (corner of Woodmont and Bethesda Avenues).

It is recommended that local municipalities, Allegheny County, and other agencies explore the possibility of implementing bicycle commute incentives in places of employment. As a first step, these incentives would provide the foundation for encouraging the use of bicycle commute incentives at private employment locations. Promotion of existing programs, such as the GRH (guaranteed ride home), can help those interested in commuting by bicycle understand the support and incentive system available to them. In Western Pennsylvania, SPC has a ridesharing program, CommuteInfo (www.commuterinfo.org), for employers which offer rides home for cyclists under certain conditions.

Bike Friendly Employer

BikePGH's Bike Friendly Employer program works with local employers to help them assess how well they are meeting the needs of their bicycling employees. By demonstrating a supportive work culture and securing facilities that support the decision to bike to work, employers play a crucial role in advancing bicycling as a desirable mode of transportation.

BikePGH's Bike Friendly Employer Logo
Source: BikePGH

To get started employers are provided with a questionnaire that informs them about the elements and resources that should be in place. The questionnaire is also used to evaluate how well the employer is doing. BikePGH follows each completed questionnaire up with a phone call to discuss whether or not the organization is meeting the basic bike friendly requirements. Following the conversation BikePGH provides the employer with an evaluation known as a Bicycle Action Plan. BikePGH then directly supports the organizations in meeting their goals.

Employers are encouraged to apply to the League of American Bicyclist for recognition nationally as a *Bike Friendly Business*. By encouraging local employers to achieve this recognition, it sends a strong message about the priorities of the region. By empowering businesses to create a bike friendly culture at the workplace, the Bike Friendly Employer program supports organizations in their ability to have a positive impact on their employees and directly address the quality of life in the region.

2.5 EDUCATION, ENFORCEMENT & PUBLIC AWARENESS

Education of bicyclists and motorists, and enforcement of traffic laws and statues are important to supporting travel on a bicycle network. To properly plan for future growth of bicycle use, it is key to implement educational programs that encourage lawful and recommended practices among bicyclists and motorists. When educating a community, it is important to dispel myths, encourage behavior that follows the rules of the road, and enhance awareness. By utilizing the resources of the local police, schools, and libraries, education programs have the potential to reach a broader audience and cross-section of the community. In addition, Pennsylvania has the benefit of having an official Bicycle Driver's Manual.

The following four (4) primary groups should be educated about bicycle safety and awareness:

1. Young bicyclists
2. Parents of young bicyclists
3. Adult bicyclists
4. Motorists

Educational materials regarding recommended bicycle travel practices and behavior can be accessed at the following locations:

- BikePGH: http://bike-pgh.org/
- PennDOT, PACommutes: http://www.pacommutes.com/biking/
- USDOT, FHWA: http://safety.fhwa.dot.gov/ped_bike/ and http://www.bicyclinginfo.org
- Association of Pedestrian and Bicycle Professionals: http://www.apbp.org
- AAA: http://www.aaacentral.com/community/safety/index.jsp

The key to encouraging a safe and well-traveled transportation system is an enforcement program for traffic regulations applied to all roadway users: motorists, bicyclists, and pedestrians. Allegheny County and its municipalities can reduce poor travel behavior and encourage beneficial travel habits through enforcement. This process includes review of current local ordinances and traffic regulations to identify elements that may unnecessarily affect certain roadway users, such as bicyclists. As bicycle lanes and other designated bicycle facilities are installed, it is recommended that local ordinances and regulations be developed, or revised, to clarify items such as: application of vehicle laws to bicyclists, permitted movements on and across bicycle facilities (e.g. permitted motor vehicle movements across bicycle lanes), bicycling on sidewalks, and bicycle parking requirements.

Possible vehicle code references include the California Vehicle Code, Division 11, Chapter 1 (http://www.dmv.ca.gov/pubs/vctop/vc/vctoc.htm), the Pennsylvania Consolidated Statutes, Title 75, Chapter 35 (http://www.dot.state.pa.us/bike/web/bikelaws.htm) and the City of Cambridge, MA Traffic regulations Article XII (http://www.cambridgema.gov/cdd/et/bike/bike_reg.html). In addition, a review of enforcement regulations and practices may assist in identifying opportunities to partner with community, county, or state organizations to inform users about safe bicycle travel behavior, such as the use of helmets by bicyclists. Outreach and promotion through community channels and events is a critical piece in reminding all roadway users of existing laws and recommended travel practices.

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CHAPTER 3. *Walk and Roll Allegheny (ADA)*

ALLEGHENYPLACES identified key challenges to increasing pedestrian travel as a mode share. Some of those challenges included a "lack of continuous sidewalk network in new developments" and incorporation of pedestrian facilities into roadway projects. ACTIVEALLEGHENY details the deficiencies and constraints for pedestrians in Allegheny County and offers solutions from engineering to education.

Pedestrians, City of Pittsburgh

3.1 Walking & Rolling in Allegheny

Pedestrians, and wheelchair users, have identified desired access to destinations in the County. Although some sidewalks and pedestrian accommodations are available in high density retail areas and neighborhoods, in many cases there is a gap in the network. As a result, pedestrian trips are converted to vehicle trips to access destinations which may only be a half-mile long. PennDOT's Design Manual[xxxii] states "pedestrians are a part of every roadway environment and attention must be paid to their presence in urban as well as rural areas."

Desired Access

Through discussions with stakeholders and the public and analysis of the online survey results, pedestrian access and/or improvements are desired in nearly every municipality in Allegheny County. Destinations listed most frequently included access to schools, bus stops, hospitals, and commercial districts. Specific destinations identified for desired access are listed in **Table 3-1**.

Table 3-1. Desired Access for Pedestrians

To	From
Downtown	• Mt. Washington
Frank Curto Park (Bigelow Boulevard)	• Oakland
Chateau Trail (North Side)	• McKees Rocks
Hazelwood Business District	• Hazelwood Avenue • Eliza Furnace Trail
Bethel Park Giant Eagle	• Bethel Village T Station
Great Allegheny Passage	• East End Communities
West Busway Carnegie Station	• Panhandle Trail (Collier)
North Shore	• Mt. Washington
Millvale Riverfront Park	• Millvale
Duck Hollow Trail (Hazelwood)	• Frick Park • Eliza Furnace Trail
Schools in Mt. Lebanon	• Mt. Lebanon (specifically Washington Road)
South Park	• Library T Station
Pittsburgh Zoo & Aquarium	• Baker Street and vicinity (parallel to Route 8)
Route 48 (Monroeville)	• Penn Center Boulevard (Monroeville)
Oakland	• Polish Hill
Ben Avon & Avalon Parks	• Kilbuck

Identified Deficiencies

A review and analysis of existing conditions, survey results, pedestrian crashes and public feedback was performed to identify locations for potential pedestrian facility improvements. Although there are many locations throughout Allegheny County that could benefit from the installation of sidewalk, curb ramps, and crosswalks, 18 roadways and 19 intersections were identified in this plan. **Table 3-2** lists the corridors targeted for pedestrian enhancements and **Table 3-3** lists the intersections. Improvements at these locations can serve as a model for other locations throughout the County as they are identified in the future. The crash summary and pedestrian crash map are contained in **Appendix L**, which is included in a separate document.

Table 3-2. Pedestrian Corridors for Facility Improvements

Roadway	Municipality
Ardmore Boulevard	Forest Hills
Bates Street	Pittsburgh
Beadling Road	Mt. Lebanon
Beaver Street	Glen Osborne
Belmar Place	Swissvale
Bigelow Boulevard	Pittsburgh
Braddock Avenue	Braddock
Campbells Run Road	Robinson
Chartiers Avenue	McKees Rocks
Grove Road	Castle Shannon
Route 51/Island Avenue	McKees Rocks
Lincoln Way	White Oak
Mayview Road	Upper St. Clair
McLaughlin Run Road	Bridgeville and Upper St. Clair
Park Manor Boulevard	Robinson
River Road	Haysville
Robinson Town Center Boulevard	Robinson
Route 19 Truck/Washington Road	Mt. Lebanon
Route 19 Truck/West Liberty Avenue	Dormont
Business Route 22	Monroeville
Route 50	Heidelberg, Carnegie, Collier, and Bridgeville
Route 837	Clairton
Route 837	Duquesne
Steubenville Pike	Robinson

Table 3-3. Intersections for Facility Improvements

Intersection	Municipality
Thorn Run Road & Route 51	Coraopolis
Beadling Road & Washington Road	Mt. Lebanon
Negley Run Boulevard & Washington Boulevard	Pittsburgh (East Liberty)
Foster Street & 40th Street	Pittsburgh (Lawrenceville)
Route 19 Truck & Brookline Boulevard	Dormont

Intersection	Municipality
Cochran Road & Washington Road/Route 19	Mt. Lebanon
Bethel Church Road & Broughton Road	Bethel Park
Smithfield Street & Carson Street	Pittsburgh (South Side)
Campbells Run Road & Steubenville Pike	Robinson
Route 837 & Amity Street	Homestead
Belmar Place & Woodstock Avenue	Rankin
Braddock Avenue & 4th Street	Braddock
Braddock Avenue & 7th Street	Braddock
Brinton Avenue & Ridge Avenue	East Pittsburgh
Boulevard of the Allies & Bates Street	Pittsburgh (Oakland)
Boulevard of the Allies & Halket Street	Pittsburgh (Oakland)
S. Bellefield Avenue & 5th Avenue	Pittsburgh (Oakland)
Ardmore Boulevard & Yost Boulevard	Forest Hills
Castle Shannon Boulevard & Mt. Lebanon Boulevard	Castle Shannon
PJ McArdle Road & Liberty Bridge	Pittsburgh (Mt. Washington)
Route 28 & River Front Drive	Millvale
10th Street & E. Carson Street (Crash Concentration)	Pittsburgh (South Side)
E. Ohio Street & Cedar Avenue (Crash Concentration)	Pittsburgh (North Side)
18th Street & E. Carson Street (Crash Concentration)	Pittsburgh (South Side)
Baum Boulevard & Roup Avenue (Crash Concentration)	Pittsburgh (East Liberty)
Cherry Way & Boulevard of the Allies (Crash Concentration)	Pittsburgh (Downtown)
17th Street & E. Carson Street (Crash Concentration)	Pittsburgh (South Side)
Main Street & 4th Avenue (Crash Concentration)	Coraopolis
Butler Street & 45th Street (Crash Concentration)	Pittsburgh (Lawrenceville)
S. Main Street & Wabash Street (Crash Concentration)	Pittsburgh (West End)
E. Ohio Street & Middle Street (Crash Concentration)	Pittsburgh (North Side)

Equal Opportunities

During the course of the ACTIVEALLEGHENY study, the Study Team worked closely with the City of Pittsburgh/ Allegheny County Task Force on Disabilities and the Committee for Accessible Transportation (CAT) to incorporate deficiencies and opportunities for older adults and those with ambulatory, visual, hearing, or cognitive impairments. Several deficiencies and opportunities were raised by members of these groups and the general public, in both the online survey and at public meetings, including:

- ADA upgrades are vital for older neighborhoods and especially where there are concentrations of older adults.
- Connecting the Panhandle Trail from the trailhead in Collier to the Carnegie Busway Station on West Main Street would provide a safer route for those in electric wheelchairs currently forced to travel on Noblestown Road to reach bus service, due to recent service cuts.
- Bates Street in Oakland needs sidewalks and ADA compliant curb ramps.
- Ongoing improved access upgrades to Port Authority facilities (bus and light rail stops and busway, light rail, and incline stations) is a goal throughout the County. Access to Amtrak and Greyhound stations in Downtown Pittsburgh should also be improved to serve those with mobility impairments.
- Desire for "recharging stations" for electric wheelchairs in the City of Pittsburgh.
- Audible signals for signalized intersections are desired by those with visual impairments.

- Increasing the width of curb cuts and ramps to 4' (not including the flares) is crucial as narrow curb ramps present constraints for motorized wheelchairs.
- Perpendicular curb ramps are preferred by those with visual impairments.
- Increase availability, reliability, and timeliness of door-to-door ACCESS transit service or reduce the distance between bus stops in areas of concentrated disabled populations (recommendations in the PAAC Transit Development Plan may address these issues).
- Brownsville Road in Mt. Oliver needs ADA upgrades and improved maintenance.
- Business Route 22 and Old William Penn Highway in Monroeville need sidewalks and curb ramps to facilitate safe travel for those with visual impairments.
- Create a model ordinance for municipalities to maintain the sidewalk network, including curb ramps, and pedestrian signals.

Recommendations for ADA compliant improvements are contained in the Pedestrian Facilities Toolbox of this Plan. Additionally, the City of Pittsburgh ACCESS Transportation Board compiled a list of trip origins and destinations for pedestrians with visual impairments. This list, which is available in **Appendix M** (included in a separate document) identifies the need and location for accessible pedestrian signals and detectors in the City of Pittsburgh.

3.2 SYSTEM IMPROVEMENTS

It is recommended that responsible local municipalities and other agencies study the feasibility of pedestrian improvements listed in this plan, including ADA compliant upgrades to existing facilities. Existing roadways and intersections should be evaluated for design compliance with PennDOT and MUTCD guidelines.

Pedestrian Corridors

Pedestrian corridors for improvement should be studied relating to feasibility of sidewalk installation, curb ramp installation, and for crosswalks at any unsignalized intersection, where pedestrian activity indicates a need for their installation. Improvements should focus on sections of the corridors that facilitate pedestrian movements to transit, schools, commercial centers, and parks. Sidewalk and curb ramp installation are typically mid-term (3-5 years) to long-term (5+ years) improvements requiring design prior to construction. Potential constraints associated with sidewalk installation include utility relocation, environmentally sensitive areas requiring permits, stormwater management, and right-of-way acquisition. The corridors in this plan were investigated in the field and the results of those investigations are detailed in **Table 3-4**.

Table 3-4. Field Investigation Findings for Pedestrian Corridors

Roadway	Findings
Ardmore Boulevard (Forest Hills)	• Observed to be an active pedestrian corridor. • Transit stops and shelters exist. • Intermittent sidewalk. Desire lines are present where there is no sidewalk. • Connects southeast suburbs of Forest Hills and Chalfant with the City of Pittsburgh's Wilkinsburg neighborhood.
Bates Street (Pittsburgh – Oakland)	• Intermittent sidewalk exists. • Southbound sidewalk in disrepair (overgrowth, cracking, and obstacles) and then ends. • Northbound sidewalk passable, but width reduced to 3' due to utility poles.

Roadway	Findings
Beadling Road between Washington Road and Cedar Boulevard (Mt. Lebanon)	• Sidewalk on one side of roadway. • Crosswalk at Markham Elementary School standard striped (potential improvement: restripe with high visibility crosswalk and overhead school warning signs with flashing beacons). • Safe Route to School investigation potential.
Beaver Street (Glen Osborne)	• Continuous sidewalks exist. • Yield to Pedestrian Channelizing Devices exist at Osborne Elementary School. • Transit route located along roadway. • Crosswalks at Osborne Elementary School are faded (potential improvement: restripe with high visibility crosswalk and overhead school warning signs with flashing beacons). • Safe Route to School investigation potential.
Belmar Place (Swissvale)	• Sidewalk in disrepair (cracking, overgrowth, and obstacles). • Connects to Woodstock Avenue for access to Swissvale East Busway Station and South Braddock Avenue (potential complete street).
Bigelow Boulevard (Pittsburgh – Hill District, Polish Hill, & Oakland)	• Posted speed limit of 35 mph, actual operating speed closer to 55 mph+. Speed control traffic calming measures should be investigated. • Intermittent sidewalks exist. • Sidewalks overgrown, resulting in reduced passable width, in some locations. • Provides a motor vehicle connection between Oakland to Downtown.
Braddock Avenue (Braddock)	• Continuous sidewalks exist in fair condition. • Transit route located along roadway. • Faded crosswalks at bus stops. • Connectivity to Swissvale via Belmar Place and South Braddock Avenue.
Campbells Run Road (Robinson)	• Connects hotels and businesses (Marquis Plaza and Bayer Corporation) to Steubenville Pike (Robinson Town Centre, the Pointe at North Fayette, and the Mall at Robinson). • No existing sidewalk.
Chartiers Avenue (McKees Rocks)	• Sidewalks continuous in fair condition. • Transit route located along roadway. • Connects Route 51 through business district. • Lane striping overlaps crosswalk striping at some intersections.
Grove Road (Castle Shannon)	• Provides connection between Baptist Road (Whitehall) and Route 88 (Castle Shannon). • Caste Village is located at Baptist Road, while a T Station is located at Route 88 (Memorial Hall). • Bicycle and pedestrian activity observed. • No shoulders or sidewalks.
Route 51/Island Avenue (McKees Rocks)	• Transit route located along roadway. • Cars observed parked on sidewalk. • Northbound sidewalk clear width reduced to 3’ due to utility poles. • No buffer between sidewalk and roadway. • Faded crosswalks exist.

Roadway	Findings
Lincoln Way (White Oak) 	• No sidewalks or limited sidewalks. • Crosswalks faded. • Pedestrian activity observed. • Pedestrians with visual impairments (walking sticks) observed walking in street. • Children riding bicycles in street without helmets. • Yield to Pedestrian Channelizing Devices exist at locations without crosswalks.
Mayview Road (Upper St. Clair) 	• Provides connection between residential areas and Boyce Mayview Park. • Transit route located along roadway. • Bicycle and pedestrian activity observed. • No existing sidewalks.
McLaughlin Run Road (Bridgeville)	• Sidewalk in disrepair (cracking, overgrowth, and obstacles). • Cars parked on sidewalk. • Sidewalk replacement and maintenance needed.
McLaughlin Run Road (Upper St. Clair) 	• 5’ sidewalk southbound along Recreation Center and park. • Sidewalk reduces to 4’ southbound at municipal complex and ends at Route 19 interchange. • Sidewalk exists on north side of roadway through Route 19 Interchange. • Sidewalk provided to Route 19 Southbound; sidewalk not provided to Route 19 Northbound. • Limited number of crosswalks provided.
Park Manor Boulevard (Robinson)	• Connects retail to Montour Trail via Robinson Town Centre Boulevard. • Serves vehicular-oriented retail center. • Transit route located along roadway. • Unofficial park and ride facilities exist along corridor. • No existing sidewalk. • Pedestrian population consists of employees of local businesses and business patrons.
River Road (Haysville)	• One lane roadway with sidewalk northbound. • Cars drive on sidewalk and park on sidewalk. • Sidewalk limited on River Road to ¼ mile distance from Ohio River Boulevard.
Robinson Town Centre Boulevard (Robinson)	• Transit route located along roadway. • Connects to Robinson Town Centre, the Pointe at North Fayette, and the Mall at Robinson. • Serves vehicular-oriented retail center. • No sidewalk. • Pedestrians observed walking in median. • ACTA performed a pedestrian access improvement study for Robinson Town Centre, the Pointe at North Fayette and the Mall at Robinson.
Route 19 Truck/ Washington Road (Mt. Lebanon)	• Continuous sidewalk in good condition. • Standard striped crosswalks at intersections. • Curb ramps provided at most locations. • At unsignalized intersections upgrade crosswalks to high visibility or HAWK (high-intensity activated crosswalk) signals to accommodate level of pedestrian activity. • Washington Road is accessible from the Mt. Lebanon T Station.

Roadway	Findings
Route 19 Truck/ West Liberty Avenue (Dormont)	• Continuous sidewalk in varying condition. • Curb ramps at intermittent intersections. • Faded crosswalks at signalized intersections. • Strong pedestrian activity observed. • Transit route located along roadway.
Business Route 22 (Monroeville)	• Intermittent sidewalks exist. • Transit route located along roadway. • Observed pedestrian activity. • ADA accessibility concerns noted by the Committee for Accessible Transportation.
Route 50 (Heidelberg)	• Transit route located along roadway. • Yield to Pedestrian Channelizing Devices exist at unmarked midblock crossings. • Intermittent sidewalk. • Faded crosswalks at signalized intersections.
Route 837 (Clairton)	• Intermittent sidewalk in disrepair (cracking and overgrowth). • Cars observed parked on sidewalk. • Faded crosswalks at signalized intersections.
Route 837 (Duquesne)	• Sidewalk southbound, Steel Valley Trail northbound. • Transit route located along roadway. • Faded crosswalks at Grant Avenue.
Steubenville Pike / Route 60 (Robinson)	• Transit route located along roadway. • Intermittent sidewalk. • Connects to Robinson Town Centre, the Pointe at North Fayette, and the Mall at Robinson via Park Manor Boulevard

Pedestrian corridors are illustrated on the System Improvements Map – Pedestrian Corridors and Intersections contained in **Appendix N**, which is included in a separate document.

Intersections

Intersections recommended for improvement should be evaluated for upgrades to accommodate all types of pedestrians. Improvements should focus on striping crosswalks or restriping existing crosswalks; providing curb ramps with tactile surfaces and truncated domes; upgrading pedestrian signal heads to countdown signal heads with audible tones or vibrating surfaces; and evaluating signal timing directives and phasing to accommodate MUTCD guidelines. Intersection improvements are typically short-term (less than 3 years) to mid-term (3-5 years), with vehicle traffic analysis performed prior to design to determine impacts to motor vehicle level-of-service. The intersections in this plan, which were identified through the public involvement stakeholder process, were investigated in the field and the results of those investigations are detailed in **Table 3-5**. Intersections identified as having a concentration of crashes were not investigated in the field since they were automatically carried forward and recommended for further study to reduce the incidence of crashes.

Table 3-5. Field Investigation Findings for Intersections

Intersection	Findings
Thorn Run Road & Route 51 (Coraopolis)	• Signalized intersection. • Faded crosswalks. • Several "no pedestrian crossing" signs could cause confusion for pedestrians since there are striped crosswalks. • No curb ramps. • Sidewalk connection not provided to Coraopolis business district. • Sidewalk connection not provided to Sewickley Bridge.
Beadling Road & Washington Road/ Route 19 (Mt. Lebanon)	• Unsignalized intersection. • Recent pedestrian crash. • No crosswalks.
Negley Run Boulevard & Washington Boulevard/ Route 8 (Pittsburgh – East Liberty)	• Signalized intersection. • Proposed trail alignment through intersection desired. • Crosswalk faded. • Push button inaccessible (overgrowth) northbound. • No curb ramps or connecting sidewalk. • Pedestrian signals do not meet MUTCD 2009 guidelines.
Foster Street & 40th Street (Pittsburgh - Lawrenceville)	• Unsignalized intersection. • Wide intersection without refuge islands. • Transit route bus stops located near intersection. • Faded crosswalks. • Intermittent sidewalk does not provide complete connections between sidewalks and bus stops.
Route 19 Truck & Brookline Boulevard (Dormont)	• Signalized intersection. • Faded crosswalks. • Pedestrian activity observed. • Curb ramps are not ADA compliant. • Transit route bus stops located near intersection.
Cochran Road & Washington Road (Mt. Lebanon)	• Signalized intersection. • Faded crosswalks. • Pedestrian activity observed.
Bethel Church Road & Broughton Road (Bethel Park)	• Signalized intersection. • Faded crosswalks. • Curb ramps are not ADA compliant.
Smithfield Street & Carson Street (Pittsburgh – South Side)	• Signalized intersection. • Faded crosswalks. • Pedestrian activity observed. • PAAC identifies this location as a major transit hub in Pittsburgh with the Station Square T Station and lower station of the Monongahela Incline. All routes operating on the South Busway, as well as several local routes (e.g.,#51 Carrick) have stops at this location.

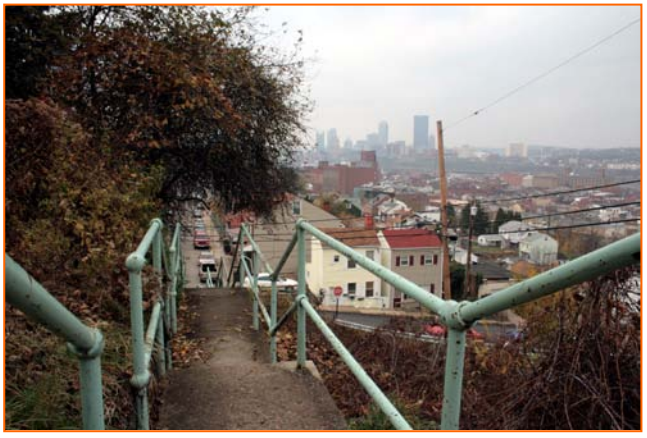
Intersection	Findings
Campbells Run Road & Steubenville Pike/ Route 60 (Robinson)	• Signalized intersection. • Accesses Robinson Town Centre, the Pointe at North Fayette, and the Mall at Robinson. • No crosswalks. • No curb ramps.
State Hwy 837 & Amity Street (Homestead)	• Signalized intersection. • Faded crosswalks. • Curb ramps not ADA compliant. • Pedestrian activity observed. • At-grade railroad crossings with heavy rail activity located near intersection.
Belmar Place & Woodstock Avenue (Rankin)	• Signalized intersection. • Faded crosswalks. • Curb ramps not ADA compliant.
Braddock Avenue & 4th Street (Braddock)	• Signalized intersection. • Faded crosswalks. • Curb ramps not ADA compliant. • Transit route bus stops located near intersection.
Braddock Avenue & 7th Street (Braddock)	• Unsignalized intersection. • Faded crosswalks on 7th Street. • No crosswalk on Braddock Avenue. • Transit route bus stops located near intersection serving Community College of Allegheny County facility.
Brinton Avenue & Ridge Avenue (East Pittsburgh)	• Unsignalized intersection. • Standard striped crosswalks with no connecting sidewalk. • No curb ramps. • Transit route bus stops located near intersection.
Boulevard of the Allies & Bates Street (Pittsburgh - Oakland)	• Signalized intersection. • Faded crosswalks. • Curb ramps are not ADA compliant. • Pedestrian signals do not meet MUTCD 2009 guidelines. • Transit route bus stops located near intersection.
Boulevard of the Allies & Halket Street (Pittsburgh - Oakland)	• Signalized intersection. • Faded crosswalks. • Curb ramps are not ADA compliant. • Wide intersection without refuge islands. • Transit route bus stops located near intersection serving Magee-Womens Hospital of UPMC.
S. Bellefield Avenue & 5th Avenue (Pittsburgh - Oakland)	• Signalized intersection. • Faded crosswalks. • Pedestrian signals do not meet MUTCD 2009 guidelines. • Pedestrian access to University of Pittsburgh.

Intersection	Findings
Ardmore Boulevard & Yost Boulevard (Forest Hills)	• Signalized intersection. • Faded crosswalks. • Intermittent curb ramps not ADA compliant. • Transit route bus stop located near intersection.
Castle Shannon Boulevard & Mt. Lebanon Boulevard (Castle Shannon & Mt. Lebanon)	• Signalized intersection. • Faded crosswalks. • No connecting sidewalk or curb ramp northbound. • Located near major light rail station, Park and Ride lot, and commercial center.
PJ McArdle Road & Liberty Bridge (Pittsburgh – Mt. Washington)	• Signalized intersection. • Signed "No Pedestrian Crossing." • Connecting sidewalk on both sides of intersection. • No curb ramps. • Provides access to Downtown via Liberty Bridge sidewalk. • Access to Station Square area via "city steps" in very poor condition. • Guiderail is a barrier to pedestrian access.
E. Ohio Street & River Front Drive (Millvale)	• Unsignalized intersection. • Faded crosswalk. • No curb ramps. • Access to Millvale Waterfront Park and Three Rivers Heritage Trail. • No rail crossing. • Pedestrian Warning Signs exist. • Pedestrian access improvements currently under construction at this location as part of Route 28 corridor improvement project.
Steubenville Pike/ Route 60 & Park Manor Boulevard (Robinson)	• Gateway into vehicular-oriented retail center. • Pedestrian crossing of Steubenville Pike/Route 60 very difficult due to amount and speed of traffic. • Motorists often do not yield to pedestrians in crosswalk despite signage.

Recommended intersections for improvement are also illustrated on the System Improvements Map – Pedestrian Corridors and Intersections contained in **Appendix N**.

Public Steps

According to Bob Regan in his book "Steps of Pittsburgh," the City of Pittsburgh has 912 sets of public stairs. This isn't inclusive of Allegheny County, which has numerous sets of municipality-owned steps outside of the City of Pittsburgh. In the online survey for ACTIVEALLEGHENY, residents of Allegheny County were asked how frequently they utilize public steps (including steps at transit stops and stations). Twenty-five percent (25%) of respondents indicated they sometimes use them, while the remaining 75% indicated almost never or never using public steps/stairs. South Side Slopes were noted as the public steps used most frequently by respondents. The survey also requested the location of public steps/stairs that may need



Public Steps, South Side Slopes, Pittsburgh
Photo: Kevin Smay

maintenance. Public steps in the South Side Slopes, Troy Hill, Mt. Washington, and the Negley Avenue Bus Station were listed most frequently for needed maintenance.

Public Steps and Pedestrian, South Side Slopes
Photo: Lynn Heckman

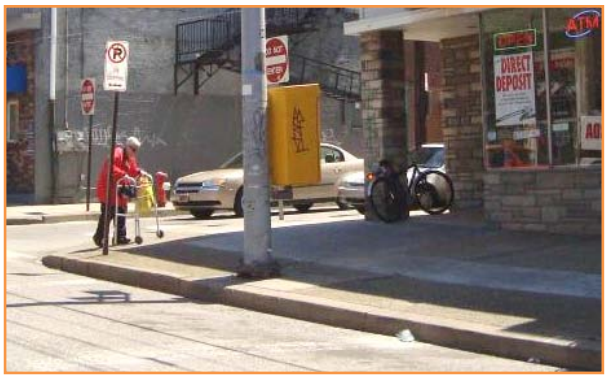
To improve the public steps in Allegheny County, consideration must be given to accessibility. The Revised Draft Guidelines for Accessible Public Rights-of-Way (Draft PROWAG), released by the United States Access Board in November 2005, recommends that new construction or modifications to existing structures be met with equal opportunity with regards to access and mobility for those with disabilities. While these are currently guidelines, it is likely that they will eventually become mandates when the guidelines are formally adopted. Accessibility is a concern, however, many of the public step locations within Allegheny County have significant physical, site, and right-of-way constraints. If and when public steps are rehabilitated, an accessibility assessment should be conducted to determine if alternative accommodations are technically feasible. As with all accessibility design issues, appropriate documentation of the accessibility review is required, including the reasons for any determination that an ADA alternative is technically infeasible. In situations where a technically infeasible determination is made, the accessibility assessment may include a discussion of other ADA-compliant parallel or alternative routes, however, those routes are not necessarily justification for not providing ADA-compliant accommodations.

3.3 PEDESTRIAN FACILITIES TOOLBOX

Types of Pedestrians

The transportation network must accommodate a full spectrum of pedestrians. The American Association of State Highway and Transportation Officials *Guide for the Planning, Design and Operation of Pedestrian Facilities*[xxxiii] identifies a variety of pedestrians including:

- Children
- Adults (age 19-65)
- Older Adults (age 65+)
- Pedestrians with Ambulatory Impairments (wheelchairs, scooters, canes, prosthetics, etc.)
- Pedestrians with Hearing Impairments
- Pedestrians with Vision Impairments (white cane users, dog guide users, etc.)
- Pedestrians with Cognitive Impairments



Penn Avenue, City of Pittsburgh

It is important to recognize the different types of pedestrians when planning and designing pedestrian facilities since walking speed, spatial needs, and mobility issues are unique to each type of pedestrian. For example, pedestrians with ambulatory impairments require sufficient width to maneuver their devices, plus level and hard surfaces.

Sidewalks

PennDOT's Design Manual 2, Chapter 6, Section 6.6 establishes the criteria for sidewalks in PennDOT projects. The Department may participate when criteria are met and where communities support sidewalks and participate in cost sharing, ownership, and future maintenance. Municipal buy-in to add sidewalks is sometimes a challenge. Municipalities should be educated on Smart Transportation and the benefits of sidewalks.

Sidewalk activity in the Strip District

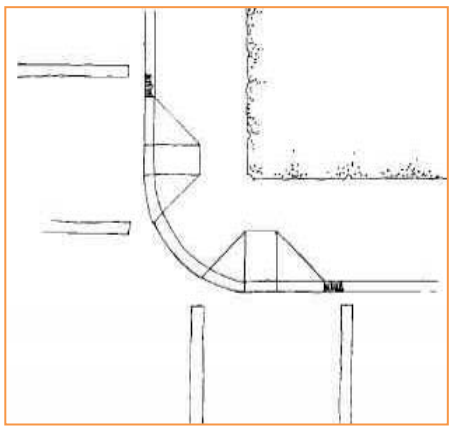
Locations identified for sidewalk construction or maintenance in this plan in Section 3-2 should follow guidelines set forth in PennDOT's Design Manual Part 2, Chapter 6; the MUTCD; and *AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities*. This includes constructing new sidewalk at a minimum of 5' to provide for a wheelchair to u-turn or pass another wheelchair. If 5' cannot be accommodated, then a minimum of 4' may be acceptable if passing spaces of 5' are provided every 200'.

In a central business district or Village Center, it is recommended that sidewalk widths be increased to 6' - 10' per AASHTO Design Guidelines and the Smart Transportation Guidebook. Robinson Town Centre is an example of a location where providing such sidewalk widths would promote the use of the area as a village center.


University Boulevard, Moon Township

PennDOT sidewalk design criteria further states that sidewalks must be physically separated from vehicles through the utilization of a buffer, curb, or other barrier depending on roadway conditions and pedestrian activity levels. Grade should not exceed 5% on a pedestrian access route and slope should not exceed 2% to accommodate different types of pedestrians. On bridges, sidewalk widths should be equivalent to the approaching sidewalk width. Eight feet (8') is desirable for the clear width of sidewalk on bridges per AASHTO guidelines, however 4' is the acceptable minimum clear width if 8' is not feasible. Most of the bridges within Allegheny County have narrow lane widths as compared to current standards. Motor vehicle travelers rarely have the choice to take alternate routes. For pedestrians and bicyclists, safe accommodations on bridges are critical and should be provided via wide sidewalks whenever possible.

Curb Ramps

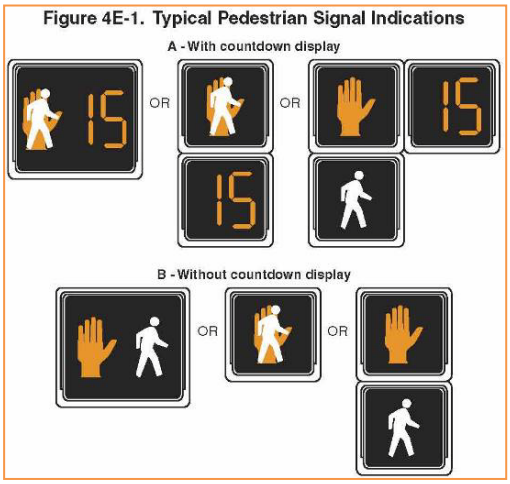

Two Perpendicular Curb Ramps
Source: FHWA

ADA Law, 28 CFR Part 35.151(e) maintains that new construction or alterations to streets, roads, or highways must have curb ramps at any intersection which has curbs or barriers to entry from a street level pedestrian walkway. PennDOT Design Manual, Part 2, Chapter 6, Sections 6.2, 6.3 and 6.9 further states that striping of a crosswalk (new installation) requires an upgrade and/or installation of curb ramps at the crossing. However, restriping does not constitute an alteration. A suggested revision of this policy will be evaluated in Section 3-4 of this plan. AASHTO guidelines specify that the grade of a curb ramp not exceed 8.33% and the cross slope be no greater than 2%. A curb ramp should be a minimum 4' wide, not including the flares. Detectable warning surfaces (e.g., truncated domes) must be provided per PennDOT and AASHTO Design Guidelines.

There are three (3) types of curb ramps: perpendicular, parallel, and diagonal. However, diagonal ramps are not recommended since they may cause additional roadway exposure for pedestrians or aim a visually impaired pedestrian away from the crosswalk and into the intersection. PennDOT Design Manual, Part 2, Chapter 6, Section 6.9 provides additional guidance on adaptations with regards to curb ramp types which provides for various configurations in limited space locations.

Intersection Facilities

The Smart Transportation Guidebook, Chapter 7, Section 7.6, discusses the importance of designing intersections that balance the needs and features desired by different intersection users including motor vehicles, bicyclists, and pedestrians. Pedestrians desire short crossing distances, adequate time to cross the intersection through proper signal timing, and marked crosswalks. Additionally, movements at the intersection are facilitated by providing sidewalks approaching the intersection and curb ramps.



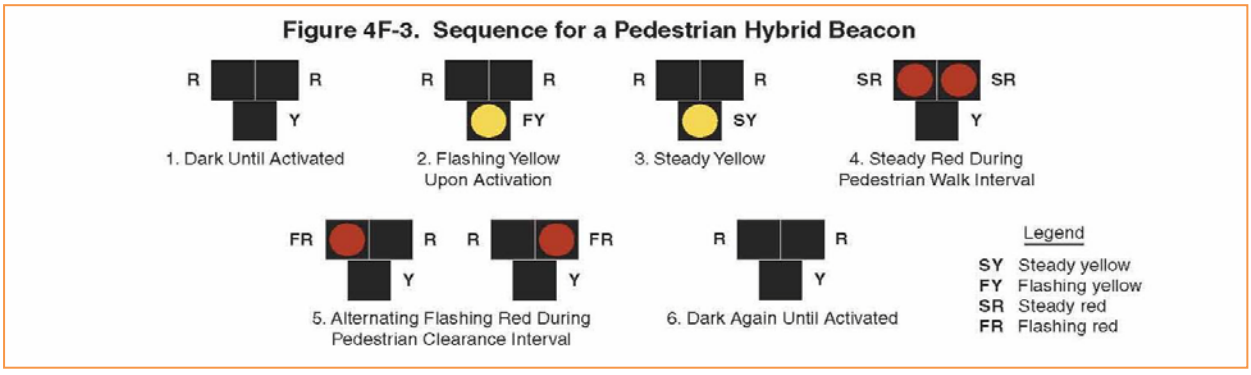
Pedestrian Signal Indications
Source: MUTCD 2009 Edition

Traffic Control Signals

MUTCD, Chapter 4, Section 4D.03 provides standards and guidance for the design and operation of traffic controls for pedestrians. It states specifically, "where pedestrian movements regularly occur, pedestrians should be provided with sufficient time to cross the roadway by adjusting the traffic control signal operation and timing to provide sufficient crossing time every cycle or by providing pedestrian detectors." MUTCD guidelines mandate a walking speed of 4' per second be used to determine pedestrian clearance times. Where slower pedestrian traffic is anticipated, as is the case with older adults and those with ambulatory impairments, a walking speed of 3.5' per second should be considered. PennDOT *Publication 149, Traffic Signal Design Handbook* states that a walking speed of 3.5' per second should typically be used.

Revisions to the 2009 Edition of the MUTCD include the use of pedestrian change interval countdown displays on pedestrian signal heads used at crosswalks where the pedestrian change interval is more than 7 seconds. If less than 7 seconds, the countdown display should still be considered to inform pedestrians of remaining time in the change interval.

Accessible pedestrian signals and detectors providing audible tones, vibration, or speech should be considered for intersections where pedestrians with visual disabilities need to cross. MUTCD guidelines state that an engineering study should be performed in these cases to determine the needs of pedestrians to be accommodated at the intersection, and the need for accessible pedestrian signals. Several factors should be considered prior to the installation of accessible signals including pedestrian volumes, traffic volumes, the complexity of the intersection geometry, and the complexity of traffic signal phasing. MUTCD cites the importance of involving local organizations who provide support services for pedestrians with hearing and/or vision impairments. At unsignalized crosswalks, Pedestrian Hybrid Beacons are an option for interrupting traffic flow to provide pedestrians with priority movement. MUTCD 2009 Edition provides warrants for their installation. The following graphic illustrates how the hybrid sequence functions at a midblock crossing.



Pedestrian Hybrid Beacon Sequence
Source: MUTCD 2009 Edition

Crosswalks

The Smart Transportation Guidebook, Chapter 8, Section 8.1.4 states that "crosswalks should be present on all legs of a signalized intersection, unless hazardous conditions make one or two legs unsuitable for installation." MUTCD and AASHTO agree that crosswalks provide a pedestrian guidance and right-of-way when crossing roadways. Crosswalk design and striping can range from transverse (standard) lines to colored or textured treatments. This toolbox recommends crosswalks with longitudinal (ladder) striping for the following reasons:

1) Due to the parallel line positioning, fading from vehicle wheel paths is not as prevalent.
2) Motorists can see a longitudinal striped crosswalk from a further distance than a diagonal or standard striped crosswalk.

Rendering of a Midblock Crosswalk

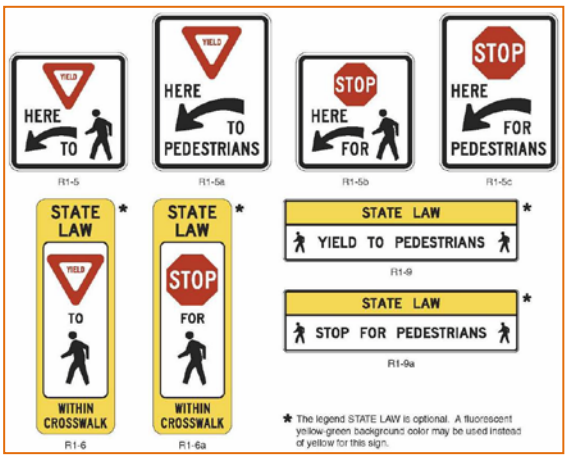
Crosswalks, regardless of type, should include curb ramps to facilitate pedestrian movements to and from the push button assemblies and to the connecting sidewalk. Crosswalks should also be high visibility and striping should be thermoplastic for longevity.

Midblock crosswalks should be considered for unsignalized intersections if pedestrian demand and activity supports their installation. The placement of a crosswalk is dependent upon the context of the area, however, a midblock crosswalk should have adequate sight distance and it should not be located less than 200' from a signalized intersection. Pedestrians crossing less than 200' from a signalized intersection should be encouraged or channelized to use the signal crossing, if needed. Pedestrian warning signs and longitudinal striped crosswalk with ADA compliant curb ramps and truncated domes should be installed at midblock crosswalks at uncontrolled locations.

Signs, Direction and Reflection

Signs not only provide direction to pedestrians, but also serve to alert motorists to the presence of pedestrians. At signalized intersections, pedestrian signs provide direction on push button operation, preferred crossing location, and pedestrian signal head use. Regulatory signs, such as "No Turn on Red" (MUTCD R10-11a) and "Turning Vehicles Yield to Pedestrians" (R10-15) at intersections alert motorists to the presence of pedestrians and provide direction on priority movements at the intersection.

From Left to Right: Pedestrian Warning Sign, Handicap Warning Sign, Turning Vehicles Yield to Pedestrians for use at Signalized Intersections
Source: MUTCD 2009 Edition



Pedestrian Channelizing Devices for MidBlock Crosswalks
Source: MUTCD 2009 Edition

At unsignalized intersections, pedestrian warning signs and/or bollards alert motorists to yield or stop for pedestrians in the crosswalk. The Yield signs are used in the state of Pennsylvania, rather than the Stop signs. Yield to Pedestrian Channelizing Devices should be placed on the approach to a midblock crosswalk to increase motorist awareness of the crossing and to slow vehicular traffic (traffic calming effect).

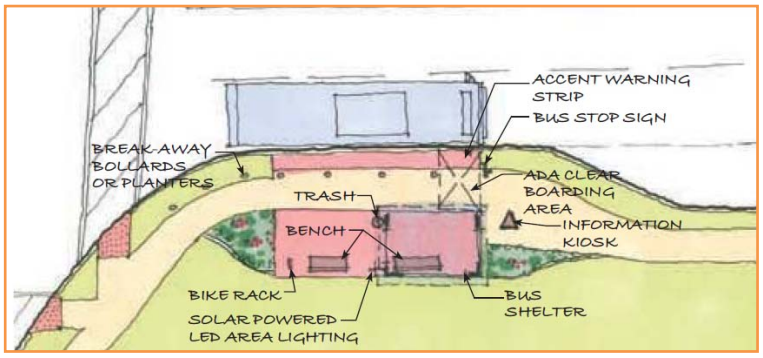
These pedestrian bollards were observed throughout Allegheny County, however they had been moved to the sidewalk or curb side at many of those locations. This observed displacement of the bollards should be monitored by municipalities who utilize the channelizing devices at unsignalized crossing locations.

Traffic Calming and Streetscapes

Speed control traffic calming measures and streetscapes provide for an improved pedestrian environment by reducing vehicular speeds, increasing pedestrian activity and providing an economic stimulus to the corridor through the use of decorative materials and pedestrian amenities (e.g., street furniture, landscaping, etc.).

Transit Stops and Stations

Transit facilities are an important component of active transportation and transit stops and stations facilitate connectivity and encourage multimodal trips (walking/bus or biking/bus). According to the *Smart Transportation Guidebook*, bus stops should be well-lit, provide safe access, and facilitate mobility for a variety of pedestrians in order to encourage trips by bus. Properly designed passenger waiting shelters provide pedestrians rest and cover from the weather, hence a more desirable and comfortable trip. Transit-Oriented Development (TOD) strategies further enhance the accessibility of transit stops and stations. The ACTA (www.acta-pgh.org/) has developed a prototype bus stop design in an attempt to improve the user experience. Additionally, the *20/20 Transit Vision Study* (developed by the SPC, Port Authority of Allegheny County, and the region's other transit providers) includes a TOD Toolbox with a section on typology for passenger facilities (http://www.portauthority.org/PAAC/Portals/Capital/VisionStudy/images/Toolbox_C.pdf).



Suburban Bus Stop Concept
Source: ACTA

Order of Magnitude Costs

Costs associated with implementing pedestrian facility improvements will vary. Interim improvements (e.g., crosswalk striping and signage) will have less design requirements and will therefore be less expensive than an improvement that would need to go through feasibility assessment and design before obtaining funding for construction (e.g., sidewalk construction). Typical costs are contained in **Table 3-6**.

Table 3-6. Typical Costs for Pedestrian Facilities

Item	Cost Per Unit	Quantity	Cost	Source
Cost Per Lane Mile				
5' Concrete Sidewalk	$5.19 / SF	26,400 SF	**$137,016.00**	2010 Means Sitework and Landscape Cost Data: G 2030 120 1580 Concrete Sidewalk 4" on 4" converted to SF
Crosswalk Striping	$3.00 / LF	240 LF	**$720.00**	12" White Hot Thermoplastic Pavement Markings (ECMS)
Cost Per Item				
Curb Ramp	$1,500 EA	1 Ramp	**$1,500.00**	Walkinginfo.org
Pedestrian Warning Sign	$25.00 / SF	6.25 SF	**$156.25**	30" X 30" Pedestrian Warning Sign, Type B Post Mounted (W11-2) (ECMS)
Pedestrian Signal Head	$650.00 EA	1 Signal Head	**$650.00**	Pedestrian Crosswalk Signal Head (LED), Type B, Countdown (ECMS)
Audible & Vibrating Push Button	$1,400.00 EA	1 Pushbutton	**$1,400.00**	Pedestrian APS Push Button (ECMS)
In-Street Pedestrian Channelizing Device	$300.00 EA	1 Device	**$300.00**	12" X 36" In-street Crossing Sign per MUTCD 2009 (private supplier)
Bench	$810.00 EA	1 Bench	**$810.00**	2010 Means Sitework and Landscape Cost Data: 12 93 43.13 0610 Site Seating
Pipe Bollard	$525.00 EA	1 Bollard	**$525.00**	2010 Means Sitework and Landscape Cost Data: 32 17 13.13 1300 Pipe Bollards

Source: PennDOT, http://www.dot14.state.pa.us/ECMS/ and *2010 RS Means Site Work and Landscape Cost Data, 29th Edition*

Pedestrian Innovation

Both ITE and FHWA offer alternative treatments to existing pedestrian facility improvements. ITE's *Innovative Treatments at Unsignalized Pedestrian Crossing Locations* offers treatments specifically for unsignalized locations. FHWA's *Study Tour for Pedestrian and Bicyclist Safety in England, Germany and the Netherlands* showcases innovative European approaches to pedestrian facility design. Some innovative pedestrian facility designs and/or treatments are detailed in **Table 3-7**.

Table 3-7. Innovative Pedestrian Facilities and Treatments

Pedestrian Zones	A Pedestrian Zone or Mall blocks access to an area or roadway for vehicles, and in some cases bicycles. Pedestrian zones create a sense of place where pedestrians are not in conflict with motor vehicles, and an otherwise vehicle congested area is transformed into an area with exclusive pedestrian access. Times Square in New York City has embraced the vehicle free pedestrian zone, and locally the City of Pittsburgh recently redeveloped Market Square to be more pedestrian-oriented. The square has already generated increased pedestrian activity with its picnic tables. Market Square, when complete, will boast a children's play area, garden, and public art.[xxxiv]	 *Market Square, Pittsburgh*

Zebra, Pelican, Toucan and Puffin Crossings	Zebra, Pelican, Toucan and Puffin Crossings are different types of nonstandard crosswalk striping. According to the FHWA Study Tour, Zebra crossings are specifically used in uncontrolled midblock locations and are a zig-zag pattern at vehicle approaches indicating that pedestrians have the right-of-way. Pelican crossings are dotted lines marking the crosswalk and controlled by traffic signals and push buttons. Puffin (Pedestrian User-Friendly Intersection) crossings are a combination of traffic and pedestrian signals with infrared detectors and barriers to channel pedestrians into the crosswalk. Finally, Toucan (cyclists "too can" cross together) crossings are a shared pedestrian and bicycle treatment with tactile surfaces, audible signals, push buttons, monitors, and detection.	 *Zebra Crossing, Abbey Road, London, UK* *Photo: www.Wired.com*  *Toucan Crossing, Longden Road, Shrewsbury, UK* *Photo: www.Shropshire.gov/uk*
Pedestrian Pavement Messages	Utilized most frequently in Europe, these pavement messages alert the pedestrian to "Look Right" and/or "Look Left" before proceeding through the crosswalk.	 *Pavement Messages in London, UK* *Photo: FHWA*

3.4 POLICY & PROGRAMMATIC CONSIDERATIONS

This plan was developed to serve as a guide for Allegheny County and its local municipalities to assist in improving active transportation facilities and encouraging active transportation. Based on the public outreach activities and document comments, there is growing public support for improved pedestrian facilities for access and mobility. Policies and programs that support walking improve the built environment for all transportation modes. Everyone starts their trip, regardless of trip purpose, as a pedestrian (even if you are getting in your car, you walk and/or roll there).

Policies

PennDOT's Design Manual

Sidewalks – PennDOT's Design Manual 2, Chapter 6, Section 6.6 establishes the criteria for sidewalks in PennDOT projects. The Department may participate when criteria are met and where communities support sidewalks and participate in cost sharing, ownership and future maintenance. Municipal buy-in to add sidewalks is sometimes a challenge. Municipalities should be educated on Smart Transportation and the benefits of sidewalks:

- To emphasize the importance of pedestrian safety,
- To advance the implementation of smart and healthy transportation principals,
- To assist with placemaking and to discourage sprawl, and
- To reduce fossil fuel consumption and to reduce costs in the long term.

Municipalities should be further encouraged to support the local match with applicable local funding sources or creative funding programs, such as grants, donation credits, and/or private and business participation.

Curb Ramps – PennDOT Design Manual, Part 2, Chapter 6, Sections 6.2, 6.3 and 6.9 states that striping of a crosswalk (new installation) requires an upgrade and/or installation of curb ramps at the crossing. Within the next ten years, PennDOT will be upgrading curb ramps for ADA compliance per federal regulations. However, if specific locations are identified as a concern by a user or an evaluation is requested, PennDOT or the local municipality will address a potential location upgrade expeditiously.

Pennsylvania Driver's Manual

Chapter 2: PA's signal, sign, and pavement marking requirements state "always yield to pedestrians" as they may not know their responsibility at an intersection with regards to pedestrian signals. Pedestrian crossing and school crossing signs are also addressed. It is recommended that when the Driver's Manual is revised, it incorporate language advising drivers not to stop in a crosswalk as it hinders pedestrian mobility at an intersection.

Hazardous Walking Routes

Pennsylvania code sections 506 and 2001 of the Administrative Code of 1929 and sections 1362 and 2541 of the Public School code of 1949 empowers schools to designate a school student walking route along a public highway as hazardous provided they meet the outlined criteria. The hazardous walking routes designation discourages students from walking to school on roadways without sidewalks, shoulder provisions, or designated crossings. While the code has the best interest of students in mind, schools should be required to evaluate potential safe routes to school prior to designation of hazardous walking routes. If funding is available for improvements, it is recommended that the potential hazardous walking routes be improved. If hazardous route designation is unavoidable, it is recommended that parallel routes to school be evaluated and designated by the school. It is further recommended that hazardous designations be reviewed periodically, and if necessary updated, to reflect infrastructure improvements.

State Bicycle and Pedestrian Coordinator

The Federal Highway Administration (FHWA) indicates that each state should have a Bicycle and Pedestrian Coordinator "to promote and facilitate the increased use of non-motorized transportation, including developing facilities for the use of pedestrians and bicyclists and public educational, promotional, and safety programs for using such facilities." For Pennsylvania, that person is based out of PennDOT's Bureau of Design, Highway Quality Assurance Division in Harrisburg. The Bicycle and Pedestrian Coordinator position facilitates the following:

- ✓ "Increased use of nonmotorized transportation, including developing facilities for the use of pedestrians and bicyclists and public education, promotional and safety program for using such facilities."[xxxv]
- ✓ Implementation of the goals and objectives set forth in the 2007 PennDOT Bicycle and Pedestrian Plan
- ✓ Information exchange among public agencies with regards to bicycle and pedestrian travel.

Given this ambitious program, the implementation of this plan may require additional staff resources to achieve the program goals.

Programs

United States

Many states and their communities have developed programs in the past decade to encourage walking for the numerous benefits it provides to an individual and the environment. Walkinginfo.org[xxxvi] offers strategies to promote walking including special events, clubs, incentives, programs, and maps. Some examples of successful programs across the country are detailed in this section.

Pennsylvania – "PACommutes" caters to alternative transportation in Pennsylvania, including ridesharing, transit, bicycling, and walking. Resources for pedestrians are provided on www.PACommutes.com including the benefits of walking, safety and laws in the state, information and links to trails and paths, and "walkscore." "Walkscore" provides pedestrians with a checklist to evaluate their community for walkability and suggests ways to take action if their community scores low. A tool is also available on the PACommutes website to calculate how much money an individual could save through switching from single occupancy vehicle commutes to alternative modes of transportation.

PA Commutes Website
Source: www.pacommutes.com

Allegheny County, Pennsylvania – The TMAs in Allegheny County (Oakland Transportation Management Association, the Pittsburgh Downtown Partnership and Airport Corridor Transportation Association) have been developing programs to raise awareness of walking as a viable mobility alternative. The following programs were provided by ACTA for the Plan:

- Walk Challenge (www.walk-challenge.org) – An eight-week Summer Walk Challenge "Ready, Set, Walk" and a Winter Walk Challenge "See a Smaller Shadow" are held jointly by the TMAs to promote walking as a means of commuting to destinations. People can track their steps via provided pedometers and record their numbers on the Walk Challenge website for weekly prizes and a grand prize.
- Walk Pittsburgh – CMAQ funded project under development via website to encourage walking. Walk Pittsburgh will provide walking maps of the Greater Metropolitan Area, as well as other resources once publicly available.

Walk Challenge Poster
Source: walk-challenge.org/sass2011/default.asp

- Walkability Audits – Utilizing grant monies recently applied for by the TMAs, there are plans to assist Allegheny County municipalities in performing walkability audits in their communities. Walkability Audits focus on improving and enhancing pedestrian conditions along corridors and at intersections to improve access, mobility and safety.

Cambridge, Massachusetts – "Cambridge Walks and the Hunt for the Golden Shoes" is an incentive program by the Cambridge Public Health Department to increase walking as a mode share through rewards. It enlightens people on the benefits of walking, while providing an interactive experience of hiding gold shoes around the city where people may walk. Shoes can then be turned in by the finder for prizes donated by local merchants. For more information, visit www.cambridgema.gov/cdd/et/ped/index.html.

Yolo TMA, California – Yolo Transportation Management Association has a pedestrian incentive program that provides financial compensation to single occupancy vehicle commuters who switch to walking as a mode of commuting. There are guidelines for participation including an application process. Compensation includes $10 per month for three months and bonuses for continued participation of ten days of commuting at least one mile each way for a period of one year.

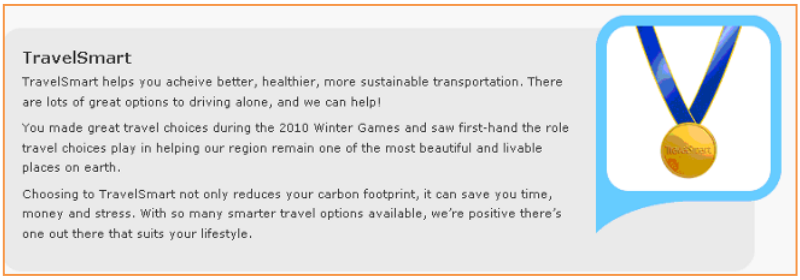
Wilsonville, Oregon – Wilsonville implemented the "WalkSmart" program, which provides residents and employees with a pedometer and log book to encourage walking within the community. Participants in the program who submit their logs are eligible to receive prizes in a monthly drawing as well.

Canada

With high concentrations of pedestrian activity in their cities, Canada has several programs for its residents who choose to walk. The "Commuter Challenge" is a national one week event urging commuters to leave their vehicles parked and travel to work by other means. The goal is to educate commuters on the numerous benefits of commuting by alternative transportation and encourage trips by walking, biking, or transit.

Toronto and Hamilton Metropolitan Area – "Smart Commute" assists employers and commuters through emergency ride home services, incentives, and promotions for those who are interested in commuting through alternative transportation.

Vancouver – The Greater Vancouver Transportation Authority piloted a program "TravelSmart" to promote sustainable travel through education and incentives. "TravelSmart" participants who requested additional information about walking as a travel mode choice were rewarded with prizes.



TravelSmart Summary
Source: travelsmart.ca/

Alberta – Alberta Winter Walk Day is an event held in February to promote active transportation, including school trips. Schools can become a member of "Safe Healthy Active People Everywhere (SHAPE)" and information for students will be sent to the school. Total number of minutes walked to school is logged into the membership profile of SHAPE, who promotes active and safe routes to schools in Alberta.

3.5 EDUCATION, ENFORCEMENT & PUBLIC AWARENESS

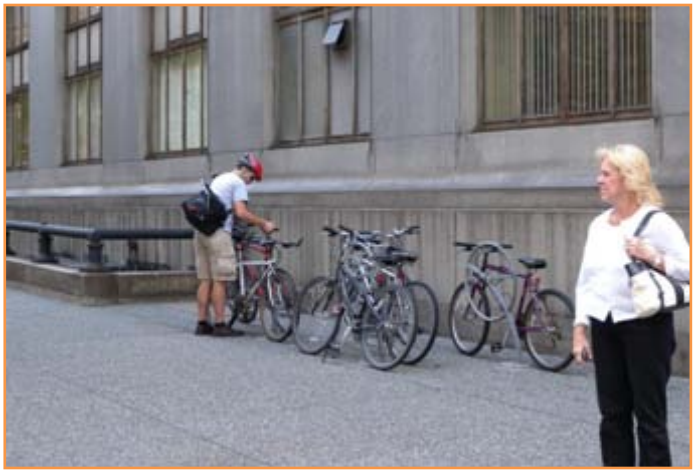
To properly plan for future growth of pedestrian facilities usage in the county, it is important to implement educational programs that encourage proper safety techniques among pedestrians and motorists statewide, countywide, and on a municipal level. When educating the targeted users of the transportation network, it is important to dispel myths, encourage courteous, respectful and lawful behavior, and enhance awareness and acceptance of alternative modes. By utilizing the resources of the police, schools, municipal administration, and libraries, educational programs have the potential of reaching a broader audience and cross section.

It is important to educate each group on the most frequent causes of crashes and injuries. Pedestrian safety programs and educational materials should be made available to everyone. The U.S. Department of Transportation (USDOT) – Federal Highway Administration (FHWA) provides materials and training to assist states, counties, and local jurisdictions in enhancing pedestrian access, mobility, and safety. These materials and/or training are detailed on FHWA's website and include:

- **FHWA University Course on Bicycle and Pedestrian Transportation** – Provides current information on pedestrian planning and design techniques, as well as practical lessons on how to increase walking facilitated by land use and engineering. (www.fhwa.dot.gov/publications/research/safety/pedbike/05085/)
- **National Highway Institute (NHI) Pedestrian Facility Design Course** – A one and a half day session that provides information and application opportunities for those involved in the design of pedestrian facilities. (www.nhi.fhwa.dot.gov/training/course_detail.aspx?num=FHWA-NHI-142045&num=)
- **Safer Journey CD-ROM** – An interactive CD-ROM that takes the user through various pedestrian safety scenarios encountered every day by pedestrians. (http://safety.fhwa.dot.gov/ped_bike/ped_bike_order.cfm)
- **PEDSAFE** – The Pedestrian Safety Guide and Countermeasure Selection System (FHWA-SA-04-003) is intended to provide practitioners with the latest information available for improving the safety and mobility of those who walk. (www.walkinginfo.org/pedsafe/about.cfm)
- **Pedestrian Road Safety Audit Guidelines and Prompt Lists** – This publication (FHWA-SA-07-007) provides transportation agencies and teams conducting road safety audits with a better understanding of the needs of pedestrians and their abilities. (http://drusilla.hsrc.unc.edu/cms/downloads/PedRSA.reduced.pdf)
- **A Review of Pedestrian Safety Research in the United States and Abroad** – This report (FHWA-RD-03-042) examines pedestrian safety across the 50 states and in countries abroad to draw comparisons and conclusions. (www.fhwa.dot.gov/publications/research/safety/pedbike/03042/)

Several other organizations and agencies provide information regarding walking including the National Center for Bicycling and Walking (www.bikewalk.org), the Pedestrian and Bicycle Information Center (www.walkinginfo.org), America WALKS (www.americawalks.org), Perils for Pedestrians (www.pedestrian.org), and Walkable Communities (www.walkable.org).

In Allegheny County, the SPC (www.spcregion.org), BikePGH (www.bike-pgh.org) and Friends of the Riverfront (www.friendsoftheriverfront.org) provide pedestrian resources as well as bicycle resources detailed in Chapter 2.



Pedestrian and Bicyclist, City of Pittsburgh

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CHAPTER 4. *Other Active Transportation Opportunities*

Although bicycling and walking are the most prevalent modes of active transportation in Allegheny County, other modes are emerging as not only a recreational preference, but as commuter options. A system of water trails is available to kayakers and non-motorized watercraft. While on land in-line skating has become increasingly popular partly due to the network of paved paths.

Water Trail Route Sign

4.1 THREE RIVERS WATER TRAIL

The Three Rivers Water Trail is a system of access points and accommodations for water sport access for the Allegheny, Monongahela, and Ohio Rivers in Allegheny County. The water trail was developed and is maintained by Friends of the Riverfront. According to their website (www.friendsoftheriverfront.org/), "kayaking and canoeing were among the top five sports that had the most first-time participants in 2001." The Three Rivers Water Trail serves these emerging non-motorized water users with signed routes and amenities.

Connectivity

The Three Rivers Water Trail system provides connectivity to the Three Rivers Heritage Trail and Steel Valley Trail (part of the Great Allegheny Passage) (www.gaptrail.org/), and offers access to bike rentals and programs in South Side and Millvale. As part of ACTIVEALLEGHENY, countywide bicycle routes were drafted to connect active transportation opportunities (Chapter 2-2), including access to the Three Rivers Heritage Trail and Steel Valley Trail, which both offer access to the Three Rivers Water Trail system. ACTIVEALLEGHENY also recommended locations for complete street improvements, and pedestrian access and mobility at intersections and along corridors in Allegheny County (Chapter 3-2). A few of these locations serve as potential access to the rivers and more specifically the Three Rivers Water Trail. For example, the missing link along the Route 28 Trail has recently been constructed and additional improvements are currently under construction to enhance access at River Front Drive near Route 28. These improvements have and will continue to facilitate mobility and access to the Millvale Riverfront Park, the Three Rivers Water Trail and the Three Rivers Heritage Trail.


Route 28 Trail "Missing Link"

Accessibility

ACTIVEALLEGHENY online survey respondents told a story of active and enthusiastic kayakers. A desire was expressed by kayakers in the survey for additional access points and convenient parking near the rivers. Issues with kayaking mentioned by survey respondents included:

- Metered parking on Federal Street is restricted to 2 hours, limiting time on the Three Rivers Water Trail (Kayak Pittsburgh is located underneath the Robert Roberto Clemente Bridge on the north side of the Allegheny River).
- Secure kayak parking is desired in Verona and Oakmont to enjoy nearby restaurants and retail.
- More kayak rental locations are desired in addition to the rentals offered by Kayak Pittsburgh (http://www.kayakpittsburgh.org/).
- There needs to be more publicity and public awareness for docking and launching locations.
- Add an access point at Chapel Harbor, where available vacant land use could be utilized.

Planning and Development

The Three Rivers Water Trail is expanding in Allegheny County and new access sites and amenities are planned. According the Friends of the Riverfront website, the following access sites are under development:

Monongahela River
Braddock
Elizabeth
Mon Wharf

Allegheny River
Sharpsburg
O'Hara
Sycamore Island
Oakmont

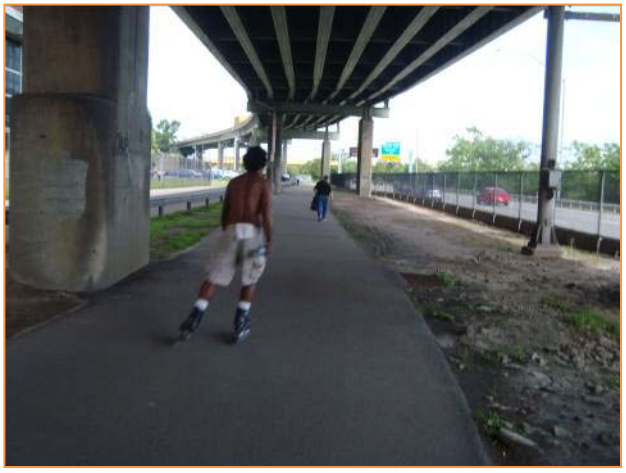
Ohio River
Sewickley

Kayaker in the Allegheny River

Updates and progress with regards to expansion of the Three Rivers Water Trail are available on the Friends of the Riverfront website (www.friendsoftheriverfront.org/) under "Trails" and then "Water Status."

4.2 IN-LINE SKATING & SKATEBOARDING

In-line skating has emerged as an active transportation option in Allegheny County due in part to the network of paved paths available as part of the trail system. In-line skaters in the region are supported through the Three Rivers Inline Club, which holds activities and events to promote and teach skating to cater to a variety of skill levels. Both in-line skating and skateboarding were mentioned by survey respondents as an activity they enjoy and would like better accommodated by additional paved paths. Two paths where in-line skaters were observed in the City of Pittsburgh are shown below.



In-line Skater on Eliza Furnace Trail

Group of In-line Skaters, Station Square Trail

CHAPTER 5. *Complete the Street*

5.1 WHAT IS A COMPLETE STREET?

The term "complete streets" is relatively new; it was coined in 2003 by the advocacy group "America Bikes" as it worked to include pedestrians, bicyclists, and transit users in SAFETEA-LU, the federal transportation funding bill. The term was defined as follows: "A complete streets policy ensures that the entire right-of-way is routinely designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and transit riders of all ages and abilities must be able to safely move along and across a complete street."[2]

This policy was not included in SAFETEA-LU when the bill passed in 2005, but the effort sparked the formation of the National Complete Streets Coalition (www.completestreets.org/) and a nationwide movement to enact complete streets policy at the municipal and state level. Early members of the Complete Streets Coalition included the Institute of Transportation Engineers, AARP (formerly known as the American Association of Retired Persons), the American Society of Landscape Architects, the American Planning Association, Smart Growth America, Paralyzed Veterans of America, and the American Public Transportation Association.

Sidewalk with adequate clear width and buffer

The impetus for complete streets grew partly out of the recognition that the previous approach for accommodating pedestrians and bicyclists on federally funded studies – arguing for the inclusion of pedestrian and bicycle facilities on a project-by-project basis – had limited potential for changing infrastructure. Under the complete streets approach, all projects begin with the assumption that pedestrians, bicyclists, and transit users of all ages and abilities should be accommodated.

In this chapter, complete streets practice is defined, along with a discussion of complete streets policy elements. This is followed by a discussion of the potential for re-visioning three example projects that are serving as prototypes for ACTIVEALLEGHENY using complete streets principles.

There is no standard design or template for a complete street, and the National Complete Streets Coalition has actively discouraged attempts to prescribe specific roadway components. The emphasis of the complete streets movement has been primarily on policy, and less on design practices. As noted in *Complete Streets: Best Policy and Implementation Practices* (APA 2010), "changing the overall approach to design is of greatest importance." Practitioners thus have great flexibility in working toward the goal of creating roadways that provide safe mobility for all modes. The Coalition has indicated that examples of features that might be included in a Complete Street are sidewalks, bike lanes (or wide paved shoulders), special bus

Separated bike lane in NYC

[2] Information on the history of complete streets, and complete streets practices discussed in this chapter, is found in the text *Complete Streets: Best Policy and Implementation Practices*, Planning Advisory Service Report 559, American Planning Association, March 2010. http://www.planning.org/apastore/search/Default.aspx?p=4060.

lanes, comfortable, and accessible transit stops, frequent crossing opportunities, median islands, accessible pedestrian signals, and curb extensions.

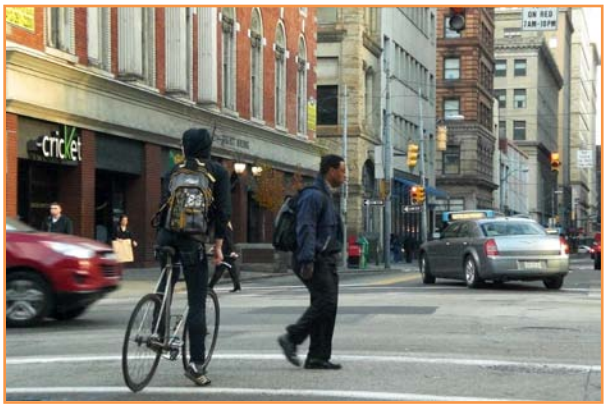
In short, the tools to be used in designing complete streets are not unique to roadways designated as complete streets. They include planning and design techniques that are regularly used to develop pedestrian and bicycle facilities; those discussed elsewhere in the ACTIVEALLEGHENY Plan. In complete streets, there is also a strong emphasis on accommodating the more vulnerable groups in our population: children and older adults and persons with disabilities.

Along with facilities regularly incorporated into roadway projects (curb ramps), consideration should be given to facilities such as audible traffic signals, preferably with vibrating arrows, as intersection improvements. A sidewalk may exist on a corridor, but if the clear width is impeded by utilities and street furniture or if sidewalk panels are uneven, travel by persons in wheelchairs is difficult. As part of the public involvement process on projects, input should be gathered on the presence of disabled persons in the vicinity and facility needs.

5.2 THE SMART TRANSPORTATION CONNECTION

A complete streets approach is consistent with PennDOT's Smart Transportation Initiative. That initiative is built around 10 Smart Transportation themes, including the theme "accommodate all modes." The *Smart Transportation Guidebook* (ftp.dot.state.pa.us/public/Bureaus/design/SMART%20TRANSPORTATION%20.pdf) was jointly developed by PennDOT and NJDOT to guide the planning and design of all land service roadways. The Guidebook is essentially a complete streets practice in its emphasis on flexibility in creating transportation facilities that work well for all users, and in balancing trade-offs between vehicular, pedestrian, bicycle, and transit mobility.

For example, the Guidebook does not specify the type of bike facility that should be provided on roadways to accommodate bicyclists; rather, the planner or designer must evaluate all pertinent factors in selecting an outside travel lane width, bike lane width, or shoulder width that would be compatible with bicycle travel.



Bicyclist, pedestrian, and motor vehicles in Pittsburgh
Photo: Lynn Heckman

Similar flexibility is offered in the Guidebook for pedestrian facilities. Sidewalks are the cornerstone of any pedestrian network, but their width, and their setback from the roadway, will vary depending upon roadway type and land use context). Although critical on urban and most suburban roadways, sidewalks are not vital to many roadways in rural areas. Further, there will be choices for how pedestrian travel throughout the community: signalized or unsignalized crossings, the frequency of designated pedestrian crossings, the provision of medians for multilane roadways, accessible pedestrian signals, and curb extensions are examples of how pedestrian movement can be accommodated.

Accommodation of transit service is another component of a complete street. This can be viewed from two perspectives:

- Accommodation of transit riders traveling to and from bus stops
- Accommodation of the transit vehicle

The ability of transit riders to safely access bus stops and rail stations depends in large measure on the provision of adequate pedestrian and bicycle facilities proximate to the stops and stations. As discussed in the *Smart Transportation Guidebook*, there are unique issues associated with bus boarding that must be taken into account. Bus stops are

typically better positioned at intersections than mid-block locations, since they offer the best pedestrian access from both sides of the street as well as cross-street locations, and will reduce the tendency for jaywalking. However, at some locations, major land use generators will suggest the need for midblock bus stops; in these cases, the accommodation of safe midblock crossings must be evaluated.

The need for balancing modes in complete streets is illustrated by the issue of transit. Pedestrians find it easier to cross roadways with narrow travel lanes, and modest curb radii at intersections (smaller curb radii result in reduced pedestrian crossing length, and also slow vehicular speeds through intersections). However, buses have different needs than passenger vehicles. The roadway width needed to accommodate buses depends in part on the frequency of service. As discussed in the Guidebook, on arterial roadways with regular bus service, a travel lane width of 12' is recommended. On collector roadways, travel lane width of 11' is recommended. At intersections where buses make regular turning movements, a curb radius of at least 25' may be needed.

Suburban roadway with high visibility crosswalks, median and bike lanes

5.3 POLICY

Complete Streets Policy

The most fundamental step that Allegheny County and its constituent local municipalities can take to advance complete streets practice is to adopt and implement a complete streets policy. ALLEGHENYPLACES, the County's comprehensive plan, advocates for complete streets. The National Complete Streets Coalition recommends consideration of 10 elements in a comprehensive complete streets policy document. Following is a summary of these 10 elements, along with a discussion of each element.

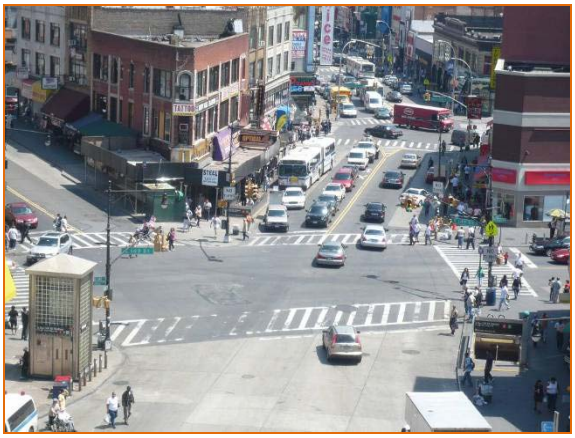
Intersections developed under a Complete Streets Policy accommodate all users Photo: FHWA

- *A vision for how and why the community wants to complete its streets.* The primary purpose of the complete streets policy should be identified.
- *Specifies that "all users" includes pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as automobile drivers and transit vehicle operators.* This provision is particularly important given the significant concentrations of disabled persons living in some Allegheny County municipalities. As noted on the Complete Streets website (www.completestreets.org), narrow sidewalks or sidewalks with obstacles and uneven surfaces can discourage wheelchair travel, and signalized intersections without audible signals can increase the danger for blind pedestrians.
- *Encourages street connectivity and aims to create a comprehensive, integrated connected network for all modes.* A well-connected network greatly enhances the ability of pedestrians and bicyclists to move around a community, and is a vital complement to complete streets.
- *Is adoptable by relevant agencies to cover all roads.* Local officials should work with state officials to ensure that complete streets principles are applied to state roadways within their jurisdiction.
- *Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right-of-way.* Even a relatively simple resurfacing project should involve an evaluation as to whether the roadway can better accommodate bicyclists; for example, can travel lanes be narrowed to provide wider shoulders or bike lanes?
- *Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.* Many jurisdictions with complete streets policies recognize the need for exceptions on some projects; this policy should be clearly stated in advance to avoid confusion.

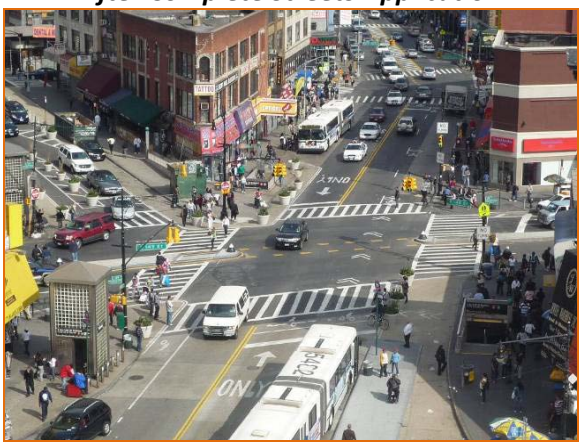
- *Directs the use of the latest and best design standards while recognizing the need for flexibility in balancing user needs.* Detailed design standards should not be included in an ordinance or resolution, but there should be a commitment to revisit existing standards in municipal subdivision and land development ordinances or design manuals.
- *Directs that complete streets solutions will complement the context of the community.* Roadway design that is tailored to fit the context of the surrounding community is at the heart of Pennsylvania's Smart Transportation initiative, and the key guiding principle to the *Smart Transportation Guidebook*.
- *Establishes performance standards with measurable outcomes.* Goals should be set on improving pedestrian and bicycle facilities, and existing standards for vehicular service may need to be revised. For example, vehicular levels of service may need to be lowered if these promote major roadway improvements at the expense of pedestrian or bicycle facilities.
- *Includes specific next steps for implementing the policy.* The policy should state other steps, such as revision of manuals or procedures that will be necessary to better implement policy.

There are a variety of measures by which local municipalities can adopt a complete streets policy, and not all of the above 10 elements are vital to every measure. For example, the establishment of performance measures would be appropriate for a complete streets plan, but detailed performance measures should be left out of an ordinance.

Before Complete Streets Application



After Complete Streets Application



Photos: CompleteStreets.org

Complete streets practice can be adopted in a wide variety of ways:

- Ordinance or Legislation
- Resolution
- Executive Order
- Internal Policy
- Plan

Ordinances and resolutions are the preferred means for adopting complete streets policies, since they provide a concise, direct declaration of municipal intent by the municipality's governing body. Resolutions have been chosen by the largest plurality of municipalities, representing 47% of municipalities with complete streets policies. An ordinance is second in popularity, being adopted by 22% of municipalities.[3] Plans and internal policies can be useful in providing guidelines for implementing ordinances, resolutions, or executive orders.

[3] Percentages were calculated based on summary of adopted policies, www.completestreets.org.

Below is a model ordinance recommended for adoption by Allegheny County's local municipalities. The text is based on model policy language recommended by the National Policy and Legal Analysis Network to Prevent Childhood Obesity (NPLAN), and also incorporates language from adopted policies for Rochester, Minnesota and Seattle, Washington. The model ordinance is concise by intent, focusing on the simple principle that roadway projects should accommodate all users. The language can be modified for use on resolutions and executive orders.

Complete Streets Model Ordinance

AN ORDINANCE relating to complete streets policy for the ____ of _____, stating guiding principles and practices so that transportation improvements are planned, designed and constructed to encourage walking, bicycling and transit use while promoting safe operations for all users.

WHEREAS, implementing transportation improvements that are planned, designed and constructed to safely accommodate walking, bicycling, and transit use increase the general safety, health and overall welfare of the citizens of and visitors to the ___ of_____; and,

WHEREAS, the ____ of _____ will seek to enhance the safety, access, convenience and comfort of all users, including pedestrians, bicyclists, transit users and drivers, motorists and freight drivers, and people of all ages and abilities, including children, older adults, and persons with disabilities, through the design, operation and maintenance of the transportation network so as to create a connected network of facilities accommodating each mode of travel; and,

WHEREAS, transportation improvements are to be planned and designed in a manner consistent with, and supportive of, the surrounding community, recognizing that all streets are different and that the needs of various users will need to be balanced in a flexible manner;

NOW, THEREFORE, BE IT ORDAINED BY THE _____ OF _____ AS FOLLOWS:

Section 1. All roadway projects, including construction, re-construction, re-paving and rehabilitation, will provide appropriate accommodation for pedestrians, bicyclists, transit riders and drivers, motorists and freight drivers, and people of all ages and abilities, including children, older adults and persons with disabilities, except under one or more of the following conditions:

- The roadway project is comprised of ordinary maintenance activities designed to keep assets in serviceable condition (e.g., mowing, cleaning, sweeping, spot repair and surface treatments such as chip seal);
- Where use by nonmotorized users is prohibited by law;
- The cost would be excessively disproportionate to the need or probable future use over the long term;
- There is an absence of current and future need.

Section 2. Appropriate accommodations include facilities and amenities that are recognized as contributing to complete streets, which may include sidewalks and pedestrian safety improvements such as median refuges, pedestrian signals, bulbouts and crosswalks; street and sidewalk lighting; improvements that provide ADA (Americans with Disabilities Act) compliant accessibility; transit accommodations including improved pedestrian access to transit stops and bus shelters; bicycle accommodations including shared-use lanes, wide travel lanes or bike lanes as appropriate; paved shoulders; bicycle parking; street trees, landscaping, street furniture and adequate drainage facilities; and other facilities.

Section 3. Complete streets principles will be incorporated into the comprehensive plan, subdivision and land development ordinance, and other plans, manuals, regulations and programs as appropriate.

The first paragraph of the model ordinance summarizes the ordinance, and indicates the purpose. The preamble ("Whereas" clauses) indicate the reasons why the municipality is adopting a complete streets ordinance; it is recommended that officials of local municipalities in Allegheny County add reasons specific to their community, if possible.

Section 1 indicates that complete streets policies will be followed on roadway projects in the municipality, with the exception of simple maintenance projects, and projects where there is no need or where implementation of the policy will result in disproportionate costs. These exceptions are common provisions in adopted complete streets policies nationwide. They help address concerns on the part of some that implementation of a complete streets policy will significantly increase costs.

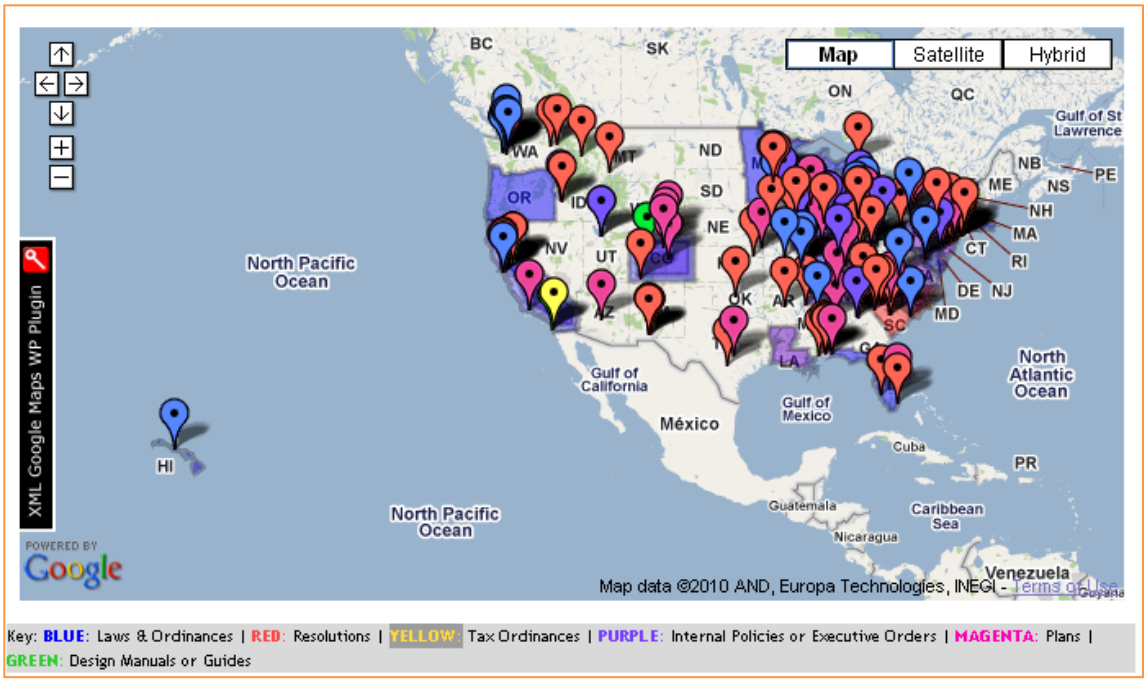
Section 2 provides examples of complete streets facilities. The examples are similar to those found in the NPLAN model ordinance, and in adopted policies. However, not every local municipality has listed typical examples of complete streets facilities in their adopted policies.

Section 3 indicates that the local municipality will incorporate complete streets principles into other municipal ordinances, plans, and standards as appropriate. Although, as discussed earlier, there is not a prescribed complete streets treatment, the municipal standards should be reviewed to determine whether there are basic standards for sidewalks and bike facilities. Further, there should not be one set standard for travel lanes; flexibility for this feature is desirable.

In addition to local municipalities, developers should consider Complete Streets approaches when planning, designing and building large scale projects (e.g., The Waterfront at Homestead and South Side Works).

Where Have Complete Streets Policies Been Adopted?

According to the National Complete Streets Coalition, over 150 jurisdictions across the country – state, county, and local governments – have adopted complete streets policies, or committed to doing so. PennDOT does not have a formal complete streets policy, but it has increasingly followed a complete streets approach to roadway projects in policy and implementation. This approach is exemplified in its Bicycle and Pedestrian Checklist. When issuing the Checklist, PennDOT stated: "Department policy requires the evaluation of the access and mobility needs of pedestrians and bicycle users in highway and bridge transportation corridors. This revised policy mandates that highway and bridge projects must evaluate the existing, latent, and projected needs of pedestrians and bicycle users. It requires the integration of the identified needs into project planning and design processes."



Google Map showing where Complete Streets Policies have been enacted
Source: CompleteStreets.org

At the local level in Pennsylvania, interest in complete streets is also growing. The City of Philadelphia was the first municipality in the state to adopt a complete streets policy, issuing an Executive Order in 2009. The City directed all city departments and agencies to:

- Give full consideration to the safety and convenience of all users of the transportation system, be they pedestrians, bicyclists, public transit users, or motor vehicle drivers;
- Place a high priority on the safety of those traveling in the public right-of-way, and in particular the safety of children, the elderly, and persons with disabilities.

Philadelphia is also currently preparing a complete streets handbook. The City of Franklin in Venango County recently became the second municipality in Pennsylvania to adopt a complete streets policy, in its case doing so through a resolution (http://www.completestreets.org/webdocs/policy/cs-pa-franklin-resolution.pdf). The City of Allentown has been preparing a complete streets policy to incorporate into *Connecting our Community*, which is the city's bicycle and pedestrian trail plan.

5.4 IMPLEMENTATION

Following approval of a complete streets policy, a local municipality can move immediately to implementation. Depending upon the level of detail of the adoption instrument, the municipality may wish to consider preparation of a plan or policy at this point. As discussed above, a plan or policy is not recommended as the primary adoption instrument.

Transportation Plan

A municipality's transportation plan or transportation element of a comprehensive and/or master plan should express support for complete streets goals and establish a framework for improving pedestrian, bicycle, and transit facilities. It should also identify areas of the municipality where transit service is needed, or where greater frequency/extended service periods are needed. Safe and accessible routes to transit stops or stations are needed, with consideration of relocating transit stops, if safe routes to transit stops are not feasible at the current location. Although the transportation plan is the most common plan used to express municipal goals for roadways, some municipalities have adopted a complete streets implementation plan.

Transportation elements play a vital role in Complete Streets Policy making. Photo: CompleteStreets.org

Programs complementary to pedestrian and bicycle facility improvements, such as travel demand management and parking management programs, should be included in a complete streets plan where appropriate.

Performance measures may also be included. For example, the plan could state that by 2020, 20% of trips will occur by bicycling or walking; the number of injuries to pedestrians and bicyclists will be reduced by 20%, and the number of miles of roadways with 5' sidewalk will increase by 20%.

SALDO and Design Standards

An important step will be to revise every local municipality's Subdivision and Land Development Ordinance (SALDO) or their public and private improvements codes to provide standards for pedestrian and bicycle facilities. Equally important, the standards should be revised to approve roadway design supportive of pedestrian and bicycle movement, ranging from a well-connected street network, to discouraging excessively wide roadways, large curb radii, and other features that promote vehicular speeding. One of the most important components of a complete streets approach is

moving away from a "one size fits all" idea that permeates the SALDO standards in many municipalities, in which existing standards for roadway design are narrowly prescriptive. For example, it is not unusual to encounter travel lane widths of 12' as a minimum standard for arterial roadways, regardless of whether the roadway is along a fast-moving commercial corridor or in a busy downtown, and whether the travel lanes are accompanied by bike lanes. In complete streets, the entire context of the roadway is taken into consideration, and the travel lane width should change depending upon the need to complement the surrounding land use context, manage vehicular speeds, provide room for bike lanes, and other factors.

An important resource for local municipalities that wish to revise their roadway design standards is the *Smart Transportation Guidebook* (ftp.dot.state.pa.us/public/Bureaus/design/SMART%20TRANSPORTATION%20.pdf). **Table 5-1** shows suggested design values for arterial and collector roadways, based on the Guidebook:

Table 5-1. Smart Transportation Guidebook Design Values

Feature	Land Use Context		
	Urban	Suburban	Rural
Travel Lanes	Evaluate 10' to 11' lanes for roadways of 35 mph or below; 12' for roadways of 35 mph or above and high traffic volumes and heavy vehicles. 14' shared lane recommended for bike compatible treatment on roads without shoulders.	11' to 12', with 14' shared lane recommended for bike compatible treatment, on roads without shoulders.	Evaluate 10' for lightly trafficked roadways; 11' to 12' for roadways with regularly trafficked roadways, or with speeds above 35 mph.
Shoulders	4' to 6' on roadways where sidewalks are not provided.	8' to 10' for suburban corridors; 4' to 8' for suburban neighborhoods.	8' to 10' for arterials; 4' to 8' for collector roadways.
Medians	Provide depending upon access control, left turn and "pedestrian refuge" needs. Left turn medians are 12' to 18'; pedestrian refuges 4' to 8'.	Provide depending upon access control, left turn and "pedestrian refuge" needs. Left turn medians are 12' to 18'; pedestrian refuges 4' to 8'.	Design depending upon access control, left turn needs.
On-Street Parking	7' to 8' parallel parking.	Provide on-street parking as needed.	NA
Grass buffer	4' to 6' along neighborhood streets; typically absent in urban/town centers.	4' to 8'.	NA
Clear Sidewalk Width	6' to 14' in urban/town centers, 5' to 8' in urban/town neighborhoods.	Min. 5'.	NA

Checklist

As part of the normal review process of projects advanced by private developers, a checklist should be used to ensure that developers have considered the needs of pedestrians, bicyclists, and transit users. Further, the municipal capital improvements program should be reviewed to determine whether all projects are consistent with complete streets principles. The implementation of complete streets goals should be coordinated with the planned resurfacing or reconstruction of streets, utility projects, or other public improvement projects.

Training

Some municipalities that have adopted complete streets policies have conducted training sessions on the design of pedestrian and bicycle facilities for planners and engineers. Other municipalities have emphasized procedural training, provided to all members of staff that might have a hand in implementation, such as zoning officers that do site plan review. Training has also been provided to contractors and consultants who regularly provide municipal services.

5.5 PROTOTYPES IN ALLEGHENY COUNTY

Criteria

In this section, recommendations are provided for three (3) roadways using complete streets principles. The three prototypical projects are representative of different cross sections in Allegheny County and represent what could be implemented for a complete street candidate. The complete streets candidates (**Appendix O**, which is included in a separate document) were selected after input from the ACTIVEALLEGHENY Core and Study Advisory Committees and an extensive review process. The following are the primary criteria used to evaluate candidate projects:

- Arterial or collector roadway
- Average daily traffic greater than 5,000
- Volume demand does not exceed capacity
- At least minimal pedestrian activity
- Proposed bike route and/or existing transit route
- Existing pedestrian and bicycle facilities are not ideal
- Economic growth area (identified as "places" in ALLEGHENYPLACES), or otherwise identified as proposed and targeted development areas

There is a preference for applying complete streets treatments to arterial and collector roadways, and roadways with daily volumes greater than 5,000, since the potential exists for a higher number of conflicts between motorists and non-motorized travelers on these roadways. However, it is recommended that when beginning a complete streets program, municipalities concentrate on roadways where traffic volumes do not significantly exceed capacity. It will be more difficult to reconfigure roadways where existing traffic congestion is seen as a serious issue, potentially shifting right-of-way to non-motorized modes or slowing vehicular traffic.

Complete streets implementation is recommended for roadways with at least minimal pedestrian activity, to address situations with demonstrated existing need. For the same reason, municipalities should focus on roadways where existing accommodations for pedestrians or bicyclists are not already ideal. Roadways with transit routes are preferred, to help foster multi-modal connections between transit and non-motorized modes. Finally, treatments should be prioritized for economic growth areas, since infrastructure improvements have the ability to help spur reinvestment.

Similar criteria can be used by study area municipalities when evaluating complete streets projects in the future. As these projects are advanced, it is recommended that local municipalities focus on those areas that meet vital planning goals, and thus consider the additional contextual criteria below:

- *Alignment of other public investments:* Is the county, local municipality or another public entity planning to make investments in the areas under study?
- *Land use impacts:* Will the complete street designation impact land use decisions in the areas adjacent to the designated streets?
- *System preservation and enhancement*: Are other transportation investment scheduled for the areas being proposed, and if so, can a complete streets approach be incorporated into the planned improvement?
- *Density and capture area*: Is the roadway in proximity to a good population base of pedestrians and bicyclists?

Complete Streets Prototypes

The complete streets prototypes for ACTIVEALLEGHENY are:

- Freeport Road, Blawnox Borough and O'Hara Township
- South Braddock Avenue, Swissvale Borough
- Broadway Avenue, Beechview, City of Pittsburgh

The three prototypes, selected from the candidate list as representative projects, were chosen to serve as examples for the other candidates based on diversity in location and roadway type. Freeport Road dramatically changes character as it transitions from the traditional downtown center of Blawnox Borough to the strip commercial corridor of O'Hara Township (just west of the Waterworks Mall); solutions discussed for this corridor can be applied to many other locations in the region where urban areas adjoin busy suburban retail corridors. South Braddock Avenue is a constrained roadway in an older urban neighborhood, with a poorly maintained pedestrian infrastructure in Swissvale. Options for major roadway reconfiguration are limited, but the pedestrian infrastructure can be upgraded, making a clear difference in the lives of the many residents that depend upon walking (including walking to transit) as their primary mode of transportation. Broadway Avenue has more roadway capacity than needed to accommodate vehicular traffic, and has potential to upgrade bicycle accommodations, in particular.

1) Freeport Road, O'Hara Township, Blawnox Borough

Freeport Road is an ideal example of why a complete streets approach is needed in transportation planning. Sidewalks or other pedestrian infrastructure are missing on significant sections of the roadway in O'Hara Township, although they could easily have been installed as part of the original land developments along the corridor. In this pilot project, the condition of Freeport Road, a state owned road, is reviewed in both O'Hara Township and Blawnox Borough, as the roadway changes quite markedly between the two municipalities. It also illustrates a common problem: it is difficult for pedestrians and bicyclists living in urban areas to access the major retail areas that have migrated to the outside of boroughs and cities.

Sidewalk clear width in Blawnox is reduced by utilities and parking meters. Maintenance is needed for some sections.

Land uses along Freeport Road in Blawnox Borough are mixed: residential, retail, commercial, and institutional. Freeport Road serves as the "main street" of the community. Different land uses are also found along Freeport Road in O'Hara Township, however, they are not as mixed as they are in Blawnox Borough. The Waterworks Mall, a large retail center located west of Fox Chapel Road and on the north side of Freeport Road, is near a compact residential subdivision to the east, and other scattered retail uses. Closer to Blawnox, a number of office and industrial uses are present.

Freeport Road in Blawnox

Freeport Road in Blawnox Borough is typically 40' wide, comprised of two travel lanes of about 12' in width and two parking lanes of about 8' in width. The roadway is posted at 25 mph. In O'Hara Township, the total pavement width of Freeport Road west of the Route 28 ramps is typically 40' to 42', with 13' to 15' travel lanes and 5' to 6' shoulders. However, the shoulder width is not consistent on this section, and shoulders are narrow or non-existent closer to Fox Chapel Road. Our survey indicates that Fox Chapel Road is a very popular biking destination for riders from the East End of Pittsburgh.

To the east of the Route 28 ramps, the total roadway width is 44', with four 11' travel lanes, and no shoulders. The AADT (Annual Average Daily Traffic) along the corridor is 32,000 west of the Route 28 interchange, and 16,000 east of the Route 28 interchange. The corridor is very heavily trafficked by motor vehicles. Access management along Freeport Road is poor, and there are many curb cuts/driveways intersecting with Freeport Road along the corridor.

Pedestrian Conditions – Sidewalks are present along Freeport Road in Blawnox Borough. The typical width is 4' to 5', with the presence of utility poles, street lights, meters and other street furniture reducing the clear width to 2.5' to 3'. Sections of the sidewalk are deteriorated. Curb ramps are typically present, with some in poor condition. Crosswalks are provided across Freeport Road at regular intervals at both unsignalized intersections and at mid-block locations. Standard crosswalks with parallel stripes are provided, as well as a unique crosswalk design with diagonal crossing lines and foot patterns.

Crosswalk with foot pattern in Blawnox

In O'Hara Township, sidewalks are missing from the vast majority of the corridor. They are present on the north side of Freeport Road, just east of the Route 28 ramps. However, based on the presence of highly worn foot paths, many pedestrians prefer to walk on the south side of Freeport Road, in part to avoid having to cross the ramps to Route 28. During field investigation, pedestrians were observed walking in the shoulder of several sections of the roadway. Curb ramps are missing from the corridor, largely due to the lack of sidewalks.

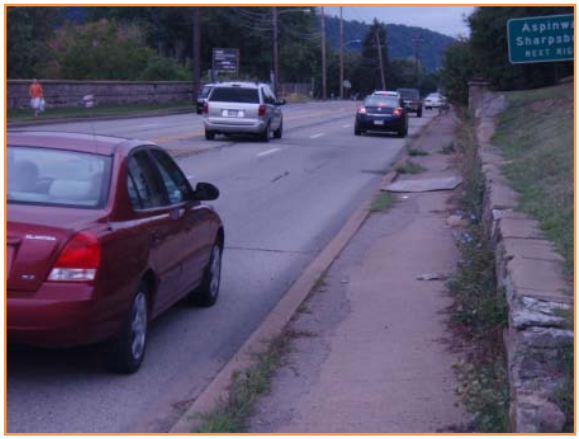
Freeport Road in O'Hara Township.

Bicycle Conditions – There are no designated bicycle facilities along the corridor. Based on PennDOT's *Bicycle Guidelines*, the section of Freeport Road west of Route 28 is typically bicycle compatible, due to the presence of shoulders at least 5' to 6' in width. However, shoulders are not consistent on this section. East of Route 28, the roadway is not bicycle compatible, since shoulders are absent. Freeport Road is not bicycle compatible within Blawnox Borough; for that context, 14' shared lanes are recommended in the *Bicycle Guidelines*.

Transit Conditions – The Route 1 bus between Tarentum and Downtown serves this corridor. Bus stop shelters are located on the corridor adjacent to the edge of cartway in O'Hara Township.

Complete Streets Analysis – Freeport Road presents very different issues for non-motorized travelers within the two municipalities. Most pedestrians would prefer walking on Freeport Road through Blawnox Borough to walking in O'Hara Township. Blawnox Borough has a well-connected sidewalk system with and well-defined midblock crossings, and the presence of parked cars shields pedestrians on the sidewalk from passing vehicles. The sidewalk clear width is not ideal; at 2.5' to 3', it is less than the recommended minimum of 5', and would discourage two pedestrians from walking side-by-side. Sidewalks should be widened where readily permitted, but will be difficult to widen in most places. The presence of slopes and a retaining wall on the north side of Freeport Road through much of the Borough will make widening on this side challenging. Shifting the curb line and extending the sidewalk into the existing roadway would reduce the width of Freeport Road below 40', considered the minimum ideal width for a "main street" with on-street parking. It would also further reduce the compatibility of the roadway for bicyclists and transit vehicles. Deteriorated sidewalk should be replaced to improve travel, particularly for persons with disabilities.

Increasing the compatibility of the roadway for bicyclists within Blawnox would also prove difficult. Shifting on-street parking to only one side of the roadway would free-up roadway space to create bike lanes, but few urban commercial districts have shown interest in this strategy. A more feasible strategy would involve re-striping parking stalls from their existing width of 8' to 7'. Studies show that motorists park slightly closer to the curb with narrower parking stalls, thus reducing the potential for a car door to be opened into the path of a passing bicyclist.[4] This treatment should be combined with the use of shared lane (sharrow) markings (centered 11' from the curb), to encourage bicyclists to appropriately position themselves in the roadway to avoid being "doored." Since only limited improvements are possible in Blawnox, consideration should be given to traffic calming treatments to reduce the speed of vehicles moving through the Borough. Landscaped curb extensions and other measures could be employed downtown. Based on recent field views, parking space occupancy is low for several blocks downtown; well-used on-street parking spaces are an effective traffic calming measure.



A sidewalk is provided on the north side of Freeport Road east of Route 28, however sidewalk does not exist on the south sides where many pedestrians prefer to walk.

In O'Hara Township, the most pressing need is to begin development of a sidewalk network. Sidewalks are missing along the entire corridor, so it will be necessary to prioritize sections, if public funding is desired. Local municipal officials should ask landowners along the corridor to install sidewalks as part of all future developments and redevelopments. An example of a high priority for a new sidewalk is in front of the Community Supermarket shopping center at the northeast corner of Fox Chapel Road and Freeport Road. A new sidewalk could be readily installed here, with space created by restriping the parking lot. Unlike Blawnox Borough, where widening a sidewalk would present significant challenges, sidewalks could readily be installed along much of the corridor in O'Hara Township, with minimal impact to existing land uses.

As noted, most of Freeport Road west of Route 28 is bike compatible due to the presence of shoulders. However, to provide a greater setback for bicyclists from the high traffic volumes – especially since

[4] P. Furth, D. Dulaski, M. Buessing, and P. Tavakolian, *Parking Lane Width and Bicycle Operating Space*, Transportation Research Board 2010 Annual Meeting.

pedestrians are equally dependent upon the shoulders for travel, given the absence of sidewalks – shoulders should be expanded to 8' as part of future roadway improvements. Shoulders of this width would also enable buses to pull completely off the roadway at transit stops along the corridor. Shoulders are needed on Freeport Road east of Route 28; the lack of shoulders on this section, combined with vehicles moving onto the Route 28 ramps, could discourage bicycle traffic.

Some shoulder improvements could take part in the absence of roadway widening projects. As noted, travel lanes are about 13' to 15' in width in sections of O'Hara Township close to Fox Chapel Road. While a travel lane of this width permits safer side-by-side travel with bicycles than the standard lane width of 11' to 12', a shoulder would be considered more desirable for bicyclists on a high volume corridor. The travel lanes should be reduced in size, and the width added to shoulders.

Bicycles are prohibited at Waterworks Mall

As part of future redevelopment, retail uses along the corridor should also be required to install bike racks, with the number of bike rack spaces proportionate to the number of vehicle parking spaces. At a minimum, all land uses should be prevented from prohibiting bicycle access. Such a prohibition is in place at the Waterworks Mall.

Transit shelters are present along Freeport Road in O'Hara Township. More shelters are needed in Blawnox Borough. There is no room to install shelters, so officials might wish to identify landowners willing to host shelters.

An Access Management Plan should be instituted for the Freeport Road corridor, encompassing O'Hara Township and other sections along the roadway, including immediately to the west – in Pittsburgh, adjacent to the Waterworks Mall – and to the east, such as the retail strip in Harmar Township. By better controlling the frequency, location, and design of driveways along the corridor, an Access Management Plan can reduce the number of conflicts between turning vehicles, bicycles and pedestrians walking along the corridor. An Access Management Plan could also improve mobility for motorists, and has the potential to lower crash rates.

Conclusion – In O'Hara Township, Freeport Road is a typical suburban strip corridor, built primarily to accommodate motorists. Complete streets improvements are needed, to enable pedestrians and bicyclists to travel between land uses along the strip corridor, and to enable persons to travel here from adjacent urban communities, such as Blawnox. The most basic improvements are sidewalks for pedestrians and shoulders of an adequate width for bicyclists. Further, the proposed improvements would enable pedestrians and bicyclists to better access transit service along the corridor. Although facilities have not been installed to accommodate pedestrians and bicyclists, both groups travel the corridor today. Their numbers could increase with these improvements. In Blawnox, options for improvements are more limited, but upgrades of pedestrian facilities are desirable. Installation of such measures as shared lane markings (sharrows) would increase motorists' awareness of bicyclists.

2) South Braddock Avenue/Belmar Place, Swissvale

The study area on South Braddock Avenue, a locally owned road, extends from immediately east of the interchange with I-376 to Woodstock Avenue, for a distance of about one mile. A small section of Belmar Place (at the eastern end of South Braddock Avenue) is also included in this analysis. That extends the corridor to just past the driveway for the MLK East Busway Swissvale Station. East of Edgewood Avenue, South Braddock Avenue lies wholly within Swissvale Borough. West of Edgewood Avenue, South Braddock Avenue lies between Swissvale Borough and Edgewood Borough. Land uses

are mixed along the corridor, although residential uses are predominant east of Roslyn Street. SPC demographic data indicates that Swissvale has a high concentration of low-income, disabled, and minority populations. Based on field observation, there is a presence of older adults and minority persons in the study area. Swissvale is adjacent to the Edgewood Towne Center retail complex, and as such, it would be desirable to facilitate the ability of Swissvale residents to walk or bicycle to these retail services.

There are two typical roadway sections in the study area. On the western half of the corridor, the roadway width is 30', consisting of two 15' travel lanes, without parking. However, the width increases proximate to I-376 and Edgewood Avenue, due to the presence of auxiliary lanes. On the eastern half of the corridor, the roadway width is also 30', with the cross-section comprised of an 11' eastbound travel lane and a 19' westbound travel lane, with on-street parking permitted but not striped. The roadway is posted at 25 mph east of Edgewood Avenue.

Pedestrian Conditions – Much of the pedestrian infrastructure in the study area east of Church Street is in poor condition. Many of the crosswalks, which consist almost exclusively of standard parallel stripes as opposed to high-visibility treatments, are badly faded. Crosswalk markings are missing on the approaches at some signalized intersections, such as Center Drive. Curb ramps are missing at many intersections, and of the existing curb ramps, few have detectable warning pads. Sidewalk width varies from 6' to as little as 3'. Even on sections of 5' to 6' width, the presence of utilities and other obstructions often effectively narrow the sidewalk clear width to 3'. Weeds and other growth have encroached on the sidewalks at a number of locations. Sidewalks are absent on the north side of South Braddock Avenue in several sections, such as adjacent to wooded lots at Ormond Street and Melrose Street. Portions of the sidewalk are badly overgrown, with uneven panels.

Many sidewalks along S. Braddock Avenue are in poor condition

West of Church Street, the pedestrian infrastructure is in much better condition. The sidewalk is relatively new, and "Yield to Pedestrians" channelizing devices alert motorists to the potential presence of pedestrians.

Bicycle Conditions – There are no designated bicycle facilities on the corridor. The section of South Braddock Avenue comprised of two 15' lanes is bicycle compatible, based on PennDOT *Bicycle Guidelines*. The section of South Braddock with parking and two 11' lanes is not bicycle compatible. On field views, children were seen riding their bicycles on the sidewalk.

Transit Conditions – The corridor enjoys access to good transit service. The Swissvale Station on the East Busway is one block removed from the corridor.

Complete Streets Analysis – The study area is characteristic of many roadways in older urban areas: a constrained roadway with existing land uses in close proximity, limiting options for improvements. The most significant complete streets improvements possible on this corridor would involve addressing the pedestrian infrastructure. The installation of sidewalks is needed on the north side of South Braddock Avenue where missing. Sidewalk should also be replaced where deteriorated. Sidewalk clear width is preferably 5', and should be 4' at a minimum. Curb ramps need to be installed at intersections where missing. High-visibility crosswalks are recommended for signalized intersections with higher pedestrian volumes. Crosswalks are also recommended for uncontrolled intersections with higher pedestrian volumes, accompanied by "Yield to Pedestrian" channelizing devices. At signalized intersections, auditory pedestrian signals are recommended.

Given the high concentrations of elderly and disabled persons in Swissvale, the above steps for improving the pedestrian infrastructure are key recommendations. Although curb ramps are perhaps the most visible example of facilities for disabled persons, sidewalks of an even grade, free of debris and obstacles, are also important in facilitating travel by this population.

Pedestrians can cross South Braddock Avenue at a number of stop-controlled intersections between Roslyn Street and Woodstock Avenue. These intersections are Vernon Avenue, Melrose Street, and Cheyenne Street, all of which are T-intersections with South Braddock Avenue. It should also be noted that no stop bars or crosswalks are located on South Braddock Avenue at these intersections. Based on field views, motorists on the corridor regularly roll through these stop signs without coming to a complete stop. This activity should be evaluated, since it may increase the potential for conflicts, with both cars and pedestrians. If volumes on South Braddock Avenue are significantly higher than side street volumes, consideration should be given to shifting the stop control to the side street. However, a crosswalk with "Yield to Pedestrians in Crosswalk" sign could then be installed for South Braddock traffic to facilitate safer pedestrian crossings.

Towne Center Driveway Stop Sign Location

Although, as noted earlier, sidewalk condition is typically in good condition west of Church Street, steps can be taken here to improve pedestrian infrastructure as well, to facilitate travel between the Edgewood Towne Center and the dense residential uses in Swissvale. This area is marked by roadway design typical of newer suburban areas, including large curb radii and channelized islands. For example, the Towne Centre driveway intersecting with South Braddock Avenue between Schoyer Avenue and McClure Avenue is channelized (using striping only), with no crosswalk along South Braddock. A stop sign does control vehicular egress here, but it is placed close to the beginning of radius curvature, and the natural motorist movement would be to roll through this stop sign (no stop bar) and be in motion at the point of pedestrian crossing. It is recommended that a physical island and crosswalks be installed here to improve pedestrian crossings. Similar reviews should occur for the newer, suburban-type infrastructure west of Church Street.

Options for specifically accommodating bicyclists on the corridor are limited. Where two 15' travel lanes are present, it would be possible to stripe 5' shoulders and 10' travel lanes. These shoulders could essentially serve as bike lanes. However, the extent of this treatment would be limited; only from Roslyn Street to Ormond Street on the west, and east of Vernon Avenue. This treatment is not possible for the entire length of the corridor due to the presence of parked vehicles in front of two section of row houses on the north side of South Braddock Avenue, where the cross-section consists of an 11' eastbound travel lane and a 19' westbound travel lane. This cross-section represents an appropriate response to the need to accommodate parked vehicles on a section with no off-street parking, and where the roadway width is constrained.

Although buses do not travel the corridor between Roslyn Street and the Swissvale MLK East Busway Station driveway, residents along the corridor have access to excellent transit service in close proximity.

Conclusion – Major changes in roadway configuration are not envisioned for South Braddock Avenue. This will be characteristic of many complete streets projects in the region; major upgrades will be possible for one non-motorized mode, but not for all. In the case of South Braddock Avenue, there is potential to provide significant improvements for pedestrians, particularly those with disabilities.

3) Broadway Avenue, Beechview, City of Pittsburgh and the Borough of Dormont

Broadway Avenue, is located in the City of Pittsburgh (Beechview neighborhood) and Borough of Dormont, extending 1.2 miles in length from Fallowfield Avenue in the north to Potomac Avenue on the south. North of Neeld Avenue, Broadway is 52' in width, with two travel lanes. In this section, the northbound and southbound lanes share the same roadway space as the T Red Line northbound and southbound tracks. Between Potomac Avenue and Neeld Avenue, the rail lines occupy dedicated right-of-way, with northbound and southbound travel lanes of 20' in width on either side.

North of Neeld Avenue, Red Line passenger platforms are located at the intersections of a number of roadways with Broadway. The platforms are 6' in width, and placed 9' from the curbline. On-street parking is permitted along most of Broadway Avenue. Parking spaces are striped south of Neeld Avenue; unstriped between Neeld Avenue and Coast Avenue; and striped north of Coast Avenue. Parking is typically prohibited proximate to intersections with streetcar platforms. The roadway between streetcar platforms and curbing is used by many motorists as an auxiliary lane, although it is not striped as such. Some motorists use these areas to turn right onto side streets. Other motorists essentially use these areas as a passing area. For example, if the streetcar stops at the platform, some motorists circumvent the slower-moving streetcar by driving to the right of the platform. Based on field views, other motorists use these areas to bypass slower motorists.

A vehicle drives to the right of the T passenger platform before turning right

The large majority of Broadway Avenue is posted at 25 mph, but a small northbound section of Broadway, south of Neeld Avenue, is posted at 20 mph. North of Coast Avenue, the roadway surface is comprised of asphalt for the approximately 11' wide travel lanes, with the rest of the surface being bricked.

The land uses are predominately residential, with substantial retail and commercial land uses mixed in at several locations. The commercial/retail facilities have a high percentage of marginal uses or vacancies. There are also some public and institutional uses. Pittsburgh is beginning a TRID (Transit Revitalization Investment District) study of Beechview (SmartTRID) and is interested in determining potential new commercial and retail uses along Broadway Avenue.

Bicycle Conditions – There are no designated bicycle facilities along Broadway Avenue. The roadway is bicycle compatible according to the PennDOT *Bicycle Guidelines*, which recommends 14' shared travel lanes for this roadway type and land use context.

Pedestrian Conditions – The typical sidewalk width is 5', but the width increases in segments, particularly proximate to commercial or institutional uses. The presence of utility poles and other obstacles reduce the sidewalk clear width to 3'. Sidewalks are directly adjacent to the curb. At driveway locations, the sidewalk grade changes due to the presence of driveway cross-slopes.

Crosswalks are located on Broadway Avenue at the majority of signalized intersections. However, crosswalks are not consistently available for every controlled crossing. Crosswalks are also installed at a number of unsignalized intersections, usually where T platforms are present. At these intersections, a crosswalk is installed at only one

approach on Broadway. Virtually all of the crosswalks are standard; with the exception of one ladder striped crosswalk which traverses Broadway Avenue at its intersection with Belasco Avenue.

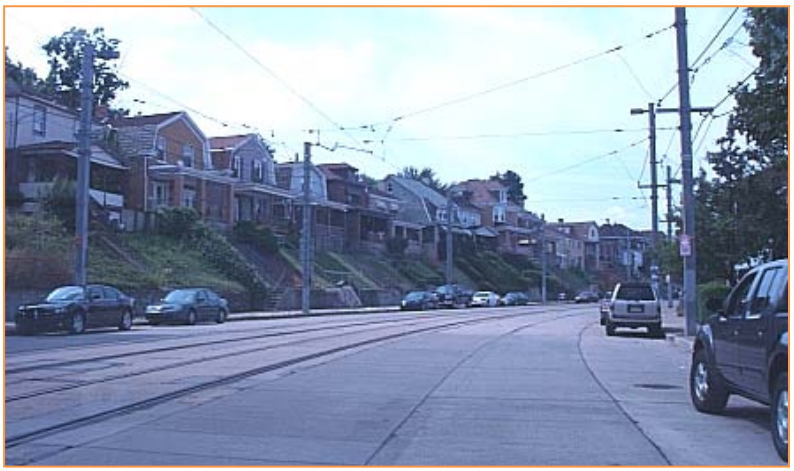
Most of the curb ramps along the corridor are older, without detectable warning surfaces (e.g., truncated domes). At many intersections, the curb ramps are installed only to accommodate pedestrians walking along Broadway, not across Broadway.

Transit Conditions – The PAAC T Red Line provides excellent transit service to the Beechview neighborhood. Light rail vehicle (LRT) service operates in this neighborhood with 10-minute headways during weekday peak periods and with 15-minute headways during weekday off-peak periods. The streetcar has 20-minute headways on weekends. Regular service is provided between Castle Shannon and Downtown via Beechview. Red Line service may be reduced in 2011 based on Port Authority proposed service reductions.

The Port Authority supports implementation of Complete Streets approaches so long as transit operations are not compromised. A traffic analysis is needed to better understand the impacts to rail operations and motor vehicle traffic for a Complete Streets concept on Broadway Avenue.

Complete Streets Analysis – The opportunity for the most significant reconfiguration of Broadway Avenue along complete streets principles involves bicycle facilities. Although the roadway is currently bike compatible, the design of the roadway complicates bicycle travel. As discussed above, motorists traveling along Broadway routinely depart from the major travel path (proximate to the roadway centerlines) to bypass traffic at intersections by driving to the right of passenger platforms. These motorist actions have the potential to create conflicts with bicyclists, both before and after the passenger platforms, but particularly directly between platforms and the curb, where motorist and bicyclist would be squeezing into an area of only nine feet in width. This configuration also reduces the comfort level of bicyclists.

Pittsburgh has begun investigating the potential for creating bicycle lanes on the roadway. At 52', Broadway Avenue north of Neeld Avenue is significantly wider than needed for a two lane roadway. Bike lanes can thus be accommodated. In the process, it will be necessary to better define the vehicular travelway. The presence of the Red Line, and particularly of the platforms for passengers boarding the Red Line, presents unusual design issues.



Broadway Avenue has ample capacity for accommodating bike lane

If the passenger platforms are kept in place, one potential midblock configuration could involve 11' travel lanes, 9' parking lanes, and 6' bike lanes. The travel lane width would need to remain at about 11' to maintain the combination travel lane/light rail track on the inside of existing passenger platforms. An unusually wide parking lane (9') is recommended, as opposed to bike lanes wider than 6', in order to help discourage motorists from using the bike lane as an auxiliary travel lane.

Pittsburgh has also begun preliminary consideration of the idea of separating bike lanes from vehicular traffic, and placing the bike lanes next to the curb. This design has recently been implemented on a number of roadways in New York City and other municipalities, and has been implemented in many European cities. It is sometimes referred to as a "cycle track." Many bicyclists like this design. To be implemented on Broadway Avenue, a number of issues will need to

be addressed. It will be important to prohibit on-street parking for a sufficient distance at all intersections to permit good visibility of motorists and bicyclists of each other when they approach intersections, in order to avoid conflicts. Some bicycle advocates have also expressed general concerns that such designs have the effect of discouraging bicyclists from "taking the lane" or otherwise positioning themselves to conduct a vehicular-style left turn at intersections. In the case of Broadway, however, bicyclists will likely be less inclined to turn left from the travel lane in any event, given the constrained travel lane between the centerline and the streetcar passenger platforms. This design will require significant study; one possible configuration (from centerline to curb) would involve 11' travel lanes; 7' parking lanes; 3' buffer, with pylons, curbing, or other physical means to demarcate the travelway from the bike lane; and a 5' bike lane. The 3' buffer will also serve to protect bicyclists from passengers who exit from their car curbside, since it will place bicyclists beyond the "door zone."

Under a reconfiguration, whether bike lanes are placed next to the curb or next to the travel lane, the new roadway configuration will indicate that motorists will no longer be able to use the area between the platform and the curb as a bypass. Keeping vehicles in one travel lane will increase vehicular delays at intersections, but any increase should not be significant. The design will also have the effect of tempering vehicular speeds on Broadway, acting as a "traffic calming" measure.

It should be noted that the section of Broadway Avenue to the south of Neeld Avenue would not be affected by this proposed roadway reconfiguration. At a width of 20' each for northbound and southbound lanes, including parking, the installation of bike lanes is not possible. Particularly if it is proposed to designate all of Broadway Avenue as a bike route, it is recommended to install shared lane markings (also known as "sharrows") to indicate where bicyclists should position themselves in order to avoid being struck by opened car doors, and to alert motorists to the potential presence of bicyclists.

Other changes in roadway design will be necessary. For example, the bricked portion of Broadway Avenue will need to be replaced with asphalt or other smooth surface to improve the comfort level and safety of bicyclists. Angle parking will need to be changed to parallel parking.

Connecting Broadway Avenue bicycle facilities to the larger network will need to be investigated. At the south, Broadway terminates at Potomac Avenue. The Potomac Avenue area has recently been studied as a Transit-Oriented Development (TOD) "place". Plans for this area are included in the South Hills TRID Study, and may be accessed at http://www.mtlebanon.org/index.aspx?nid=338. Potomac Avenue is a two-lane roadway of only 38' in width, with on-street parking on both sides. No designated bicycle facility is possible here, but the appearance of this roadway – traditional commercial/retail buildings with residences above and with zero building setback, landscaped curb extensions, and well-used on-street parking – have the effect of traffic calming motorists. This is a densely settled residential neighborhood with a senior citizen high rise located at the Potomac T station. It should be noted that there are other quiet side streets in Dormont, on blocks surrounding Potomac Avenue that can accommodate bike access to Brookline's residential and commercial retail area or to West Liberty Avenue in Dormont, another commercial/retail corridor a few blocks away from Potomac. To the north where the T crosses a narrow bridge which cannot accommodate bikes, the City has expressed interest in a bicycle route to tie into Brashear High School, and the investigation of a crossing of the Route 19 viaduct to the Mt. Washington area. These aspects will require longer range plans, which will occur during the upcoming SMART TRID study process.

To further enhance bicycle travel along Broadway Avenue, it would be desirable to improve the capacity of Red Line cars to accommodate bicycles. The T service currently accepts up to two bicycles on streetcars, but only during off-peak hours. It also accepts folding bicycles anytime. The T is very popular and filled to capacity during peak travel times. PAAC and interested parties can work together to explore alternative ways to expand bicycle storage capacity, and

expedite bicycle boarding during peak hours. A small flatcar added to the front of the T may be one avenue worth exploring, although it will likely necessitate costly adjustments to the length of the T platforms which may not be feasible at all stations/stops.

Although the most dramatic changes to Broadway Avenue would affect bicyclists, pedestrians would also benefit from the reconfiguration. Motorist movements would be better defined and controlled at intersections. The installation of bike lanes would reduce the width in which pedestrians are exposed to motorized traffic.

New pedestrian facilities should be installed along Broadway Avenue, whether or not a reconfiguration with bike lanes proceeds. High visibility crosswalks should be installed at intersections with large numbers of pedestrian crossings. More crosswalks are needed at intersections with T Red Line passenger platforms. Curb ramps are recommended where missing to facilitate crossings of Broadway, not just pedestrians along Broadway. "Yield to Pedestrians" signs mounted on stanchions are recommended to accompany installation of crosswalks. New equipment is recommended at signalized crossings, including auditory pedestrian signals.

As noted, clear sidewalk width is often reduced to 3' by the presence of utilities and other obstacles. Driveways that run across the sidewalks result in uneven grades. Where existing right-of-way permits, sidewalks should be widened to provide greater sidewalk clearance. Because the roadway is wider than needed to accommodate traffic, the curbs could be moved away from the right-of-way line in order to widen the sidewalk. It should be noted that this would reduce the ability to install certain roadway treatments with bike lanes, and would also involve considerable expense.

Conclusion – Because the roadway capacity of Broadway Avenue is greater than necessary, a number of options are available for a complete streets approach to this roadway. A proposed reconfiguration of Broadway Avenue would improve conditions for pedestrians and bicyclists, and abet the ability of both modes to access the T Red Line on this corridor.

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CHAPTER 6. *Action for Active Transportation*

6.1 ADOPT, APPROVE AND INTEGRATE

ACTIVEALLEGHENY lays the groundwork for a complete multi-modal transportation network with successful active transportation connectivity for Allegheny County. Implementation of this plan will be by PennDOT, Allegheny County, and local municipalities. Local municipal plans should work toward consistency and this enhancement to the ALLEGHENYPLACES transportation element, pending adoption of the updates. PennDOT, Allegheny County, and local municipal support for ACTIVEALLEGHENY will enable effective implementation of this active transportation vision. Municipalities can work to plan and adopt specific active improvements consistent with the standards and guidelines in this plan. The toolboxes, model ordinance and specifications are resources for use in customizing local municipal plans. For specific projects identified in the plan, a focused team effort by all levels of government involved in each suggested improvement can lead to construction and use of the desire facilities. For regional active transportation connectivity, Allegheny County will coordinate with adjacent counties to achieve regional integration of active transportation, creating active transportation byways that connect from county-to-county.

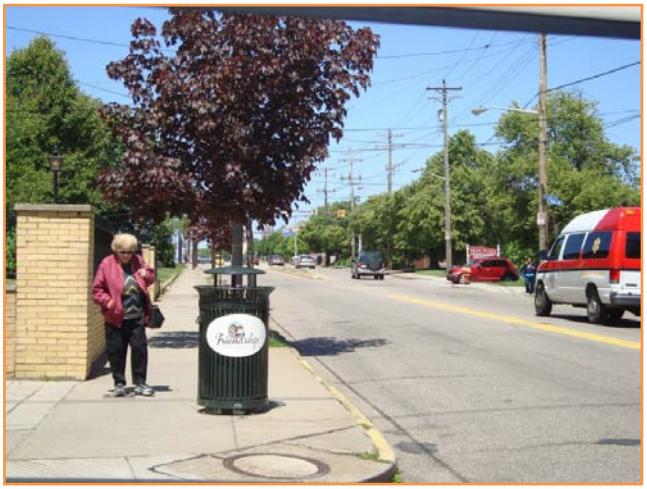
County residents have a role to encourage leaders to implement improvements identified in the plan, and to assist in achieving active transportation facilities and usage an important component for a healthier life experience with mode choices for Allegheny County. PennDOT is a critical partner in provision of support for this vision through assistance and commitment to identifying and committing funds to construct active transportation improvements.

6.2 IMPLEMENTING AGENCY

Active transportation projects can be implemented by a variety of entities; the party implementing the improvement will help determine the funding source that can be used. The entities are:

PennDOT

PennDOT must be involved in all bicycle and pedestrian improvements that occur within state roadway rights-of-way, even if they do not necessarily providing funding for these improvements. PennDOT typically does not fund the construction of "independent bikeway projects", or projects that are intended to construct only a bicycle facility. However, it will process federal funding (and county and state matches) for such projects if requested by sponsoring organizations for projects on state roadways. If an "incidental bikeway projects" is developed as part of a larger project; for example, on a roadway improvement, a shoulder could be modified to bicycle compatible standards. The recently opened segment of the Three Rivers Heritage Trail between the 31st Street Bridge and Millvale Riverfront Park was developed as part of the Route 28 Improvement Project. Depending on the scale of improvement, incidental bikeway projects may be incorporated into normal PennDOT funding channels. The sponsoring agency should initiate discussion and advocacy in the early stages of a PennDOT project so that incidental bikeway projects are included in the project pipeline. But more importantly, PennDOT should take the initiative to consider all modes on projects.



Pedestrian in Friendship

According to PennDOT Design Manual (DM-2, Chapter 6: Pedestrian Facilities) it is PennDOT's policy not to use state funds for sidewalk construction. However, there are several exceptions, such as to accommodate critical pedestrian

safety needs as part of a larger roadway project, or ADA compliance for alterations as defined in the Americans with Disabilities Act. PennDOT will process federal funding (with local matching funds) for the construction of sidewalks within state rights-of-way. Municipalities can donate right-of-way, engineering, or construction funding for sidewalks as part of their local match.

Although PennDOT typically does not fund construction of independent bicycle and pedestrian projects, it will fund planning studies for such facilities (see "Pennsylvania Community and Transportation Initiative" (PCTI) in Section 6-3 below; other state departments also provide funding for active transportation projects.

Municipalities

Local municipalities can adopt their own plans and policies for developing and funding active transportation projects on locally owned roadways. These projects are then added to their capital improvements program, which are funded from local tax revenues or from state gas tax revenues. In addition to projects specifically developed as active transportation efforts, municipal officials should review projects currently on the capital improvements program, and determine where facilities that encourage pedestrian and bicycle travel, and transit use, can be added at little expense. Municipalities will also often serve as the initiating agency for projects on state roadways; they may request the installation of facilities to accommodate pedestrians and bicyclists, and secure funding offered by federal, state and county agencies, even if PennDOT ultimately performs the work. Municipalities should utilize criteria developed for active transportation safety and demand to prioritize improvements.

Need for bicycle racks
Photo: Kevin Smay

Developers

Developers may be asked to construct pedestrian and bicycle facilities along both state and local municipal roadways as part of development projects. Applications for all land developments requiring access to state highways are reviewed by PennDOT and this provides the opportunity to request needed improvements. As part of PennDOT's Smart Transportation initiative, a 2009 revision to PennDOT's *Transportation Impact Studies Guidelines* requires developers to state how pedestrians, bicyclists and transit users will be accommodated in projects along state roadways. For example, if a state roadway is designated as a bike route by the municipality, PennDOT should request that the shoulder be developed to bicycle compatible standards.

Likewise, municipalities should have appropriate standards for pedestrian facilities in their subdivision and land development ordinances, and request developers to install such facilities along both local and state owned roadways as part of the normal land development review. Bicycle facilities are in a different category than pedestrian facilities; a sidewalk can have utility if installed as a segment only on the developer's property, but a bicycle facility will normally be appropriate if needed as part of a larger planned facility. The local municipality should therefore request the developer to install the appropriate bike facility if the roadway is designated as such in a local municipal bicycle plan.

Accommodations at Airside Business Park, Moon Township

6.3 FUNDING SOURCES

Following is a discussion of funding sources available to assist in the planning, design and construction of active transportation improvements.

Federal Funding

Federal transportation funding is typically authorized in 6 year cycles. In 2005, Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) guaranteed $244.1 billion for transportation funding. According to FHWA's website, $480 million of federal funding was spent on bicycle and pedestrian projects during the life of SAFETEA-LU (2005-2009). Due to federal budget issues and other priorities, the current Administration and Congress did not pass a new reauthorization bill in 2009 or 2010. Instead, SAFETEA-LU funding levels and programs have been extended year-to-year with continuing resolutions. After the 2010 mid-term elections, a new reauthorization bill will likely be considered in 2011. The Administration has stated that its priorities for this bill include promoting Livable Communities, transit, congestion reduction, and climate change. These priorities all offer opportunities for funding Active Transportation projects. State and local governments and Active Transportation proponents should lobby for these programs to be included in the reauthorization.

Federal funding programs for bicycle and pedestrian projects currently include:

1) **National Highway System (NHS)** funds if adjacent to a highway on the National Highway System.
2) **Surface Transportation Program (STP)** funds including Transportation Enhancement Activities and Hazard Elimination and Railway-Highway Crossing Programs.
3) **Congestion Mitigation and Air Quality Improvement Program (CMAQ)** funds.
4) **Recreational Trails Program** funds for trail projects.
5) **Federal Lands Highway Program** if used in conjunction with roadway improvements.
6) **National Scenic Byways Program** funds if adjacent to a National Scenic Byway.
7) **Job Access and Reverse Commute (JARC) Grants** if used to improve employment access and increase opportunities.
8) **High Priority Projects and Designated Transportation Enhancement (TE) Activities.**
9) **Federal Transit Program** to improve access to transit facilities and provide non-motorized amenities.
10) **State and Community Highway Safety Grants** for research, development, demonstrations and training to improve highway safety (23 USC Section 403).
11) **Home Town Streets/Safe Routes to School** to improve access by bicycles and pedestrians to schools and to encourage the use of alternative modes.

State Funding

The Pennsylvania Department of Transportation (PennDOT) initiated the **Pennsylvania Community Transportation Initiative (PCTI)** in 2008 to promote the principles of Smart Transportation throughout the Commonwealth. PCTI funds planning projects up to $300,000 and construction projects of up to $1 million. The program is currently in its second round of funding with applications currently under consideration. In addition to the PCTI program, PennDOT uses federally allocated money throughout the Commonwealth for bicycle and pedestrian facilities. Most commonly used sources of funding for bicycle and pedestrian facilities come from Transportation Enhancement (TE) funding and the Home Town Streets/Safe Routes to School Program, both federally funded programs administered at the state level. Not all of these programs have funding or opportunities to apply for funding at all times.

In addition to PennDOT funding, the Pennsylvania Department of Conservation and Natural Resources (DCNR) has several grant opportunities available to promote active transportation. Grant opportunities are part of the **Community Conservation Partnership Program (C2P2)** which is designed to assist communities in addressing their recreation and

conservation needs as well as supporting economically beneficial recreational tourism. The following grants are available and applicable for bicycle and pedestrian uses for development, construction, or education[5]:

- **Community Recreation and Conservation** – These grants fund municipalities and nonprofit organizations to plan for, acquire, develop and/or rehabilitate public park, recreation, open space, greenway, trail and conservation areas and facilities.
- **Pennsylvania Recreational Trails** – These grants help develop and maintain recreational trails and trail related facilities for motorized and non-motorized recreational trail use, and to purchase equipment for those purposes.
- **DCNR C2P2 Rails-to-Trails** – These grants help plan for, acquire, or develop rail-trail corridors.
- **Rivers Conservation** – These Grants help develop watershed/river-corridor conservation plans, assist with land acquisition and development projects recommended in areas with completed river conservation plans on the rivers conservation registry.
- **Technical Assistance** – Grants to develop/promote/conduct training/education programs; prepare and distribute technical assistance/education manuals/brochures/videos or otherwise provide for training and education of professionals and the general public on a local, county, regional or statewide issues concerning recreation, park, conservation, natural areas, open space, greenways, and trails.
- **Circuit Rider Projects** – These projects provide grant funds for counties, multi-municipal organizations, or COGs to hire a professional, full-time staff person. The circuit rider's purpose is to initiate new programs and services for a county and/or municipalities that individually do not have the financial resources to hire a professional staff person.
- **Peer-to-Peer** – These projects help municipalities improve their park, recreation and conservation services through a collaborative process. Projects are accomplished through contracts with experienced park, recreation and conservation professionals from nearby communities working closely with local leaders.

Eliza Furnace Trail, City of Pittsburgh

Regional Funding

MPOs

Metropolitan Planning Organizations (MPO) are federally designated transportation planning organizations located in all urbanized areas in the U.S. MPOs are charged with programming all federal transportation funding expended in an urbanized area, as well as maintaining a short-term transportation plan (Transportation Improvement Plan (TIP), 4-year horizon) and a long-term transportation and economic development plan (typically 20-year horizon). MPOs also program non-federally funded projects of regional significance. Each MPO's TIP is then integrated into the Statewide Transportation Improvement Plan (STIP), a twelve-year program to provide a broad picture of transportation projects throughout the Commonwealth. Allegheny County is one of ten counties in the Southwestern Pennsylvania Commission (SPC) region. Other SPC members are Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington and Westmoreland counties, as well as the City of Pittsburgh.

TMAs

Transportation Management Associations (TMA) are non-profit organizations tasked with creating a better transportation environment for residents, businesses, and visitors. TMAs are comprised of members, often businesses, who support the TMA financially. TMAs in the study area include:

[5] all information is taken from the DCNR C2P2 Grant Website at https://www.grants.dcnr.state.pa.us/GrantPrograms.aspx

- The Airport Corridor Transportation Association (ACTA) serves the business community located along the Parkway West from the western portal of the Fort Pitt Tunnel through Beaver County.
- The Oakland Transportation Management Association (OTMA) serves the Oakland area.
- The Pittsburgh Downtown Partnership Transportation Management Association (PDP TMA) serves the Downtown Pittsburgh central business district.

TMAs offer transportation services (shuttles, shared-ride, etc), as well as advocate, educate, and offer technical assistance to individuals and member organizations. TMAs often provide funding for community transportation initiatives and are an excellent source of technical assistance to local municipalities for project implementation. TMA's also advocate for funding from state and federal sources and provide valuable education programs to encourage active transportation use.

Private Funding

The Bicycles Belong Coalition is sponsored by member companies of the American bicycle industry. According to their website (www.bikesbelong.org), Bikes Belong has awarded 209 grants to municipalities and grassroots groups since 1999, for a total of nearly $1.6 million in bicycle projects. Eligibility and funding guidelines are provided on their website under "Grants."

Other local organizations provide support and funding for bicycle and pedestrian facilities. The Montour Trail Council, for example, builds, operates and maintains the Montour Trail.

Foundations are another source of private funding. There are many foundations in Allegheny County, and some have become active in transportation funding. **The Pittsburgh Foundation,** one of the largest community foundations in the United States, has provided funding for community transportation initiatives involving workforce accessibility, reverse commuting, and others. Their grant eligibility criteria include projects that "enhance access to entry-level jobs and needed services through integrated transit systems; expand strategic alliances to increase transit ridership; and promote development of healthy transportation alternatives (walking, biking, etc.)." Other foundations also provide active transportation funding. For example, the newly opened section of the Three Rivers Heritage Trail received funding from the **Laurel Foundation,** the **Richard King Mellon Foundation** and the **Heinz Foundation**.

6.4 SIGNIFICANT PROJECTS – ACTION PLAN

As noted previously, PennDOT, Allegheny County, and local municipalities should use this plan and its toolboxes and other resources as a guide in developing Active Transportation projects in their communities or as part of their transportation facilities. However, some major elements of the plan will require coordinated, multi-jurisdictional actions to move forward. These elements include:

Motorist and a Bicyclist

Designated County Commuter Bicycle Routes and Recreational Route

These routes (N1-N4, W1-W4, E1-E4, S1-S4 and the Beltway Bicycle Route), will traverse a combination of state, county and municipally owned roads. Logically, Allegheny County could assume a lead role in the implementation of these routes. In this role, the County could identify and help to secure funding sources, provide engineering to determine actions and budgets needed to bring deficient route segments up to current bicycle suitability standards, prioritize the order of route implementation, establish route signing and marking standards, and identify the responsible agencies for implementing improvements (such as new trail construction, shoulder widening, signing, etc.).

Pedestrian Corridor Improvements

Steps, Carnegie Mellon University

Similarly, the plan includes a number of pedestrian corridors identified for improvements. Although many of these corridors are within one municipality, it may be desirable for one agency, possibly the County, to serve as a "Champion" for these projects in order to identify and secure funding and coordinate in instances where they cross municipal boundaries or involve multiple jurisdictions (such as provision of sidewalks along state roads).

Complete Streets Prototype Projects

The plan includes three "Complete Streets" prototype projects. Two of them, Broadway Avenue (City of Pittsburgh and Borough of Dormont) and South Braddock Avenue (Borough of Swissvale), are each contained within one municipality. The third, Freeport Road, is within Blawnox Borough and O'Hara Township. The City of Pittsburgh has the professional expertise and resources to advance the Broadway Avenue project on its own, but the other two may require assistance from a higher level, either the County or the State. Since Freeport Road is a state road traversing two communities, PennDOT may be the logical implementation agency for this project. South Braddock Avenue in Swissvale is a municipal roadway, but Swissvale has limited professional and financial resources to undertake a project of this magnitude. In this case, again, it may be logical for the County to act as a "Champion" for the project to at least identify and assist with securing funding and professional assistance to the Borough in moving the project forward.

INDEX

ACRONYMS

AAA	American Automobile Association
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACED	Allegheny County Economic Development
ACTA	Airport Corridor Transportation Association
ADA	Americans with Disabilities Act
APBP	Association of Pedestrian and Bicycle Professionals
BikePGH	BikePittsburgh
C2P2	Community Conservation Partnership Program
CAT	Committee for Accessible Transportation
CBD	Central Business District
CCAC	Community College of Allegheny County
CMAQ	Congestion Mitigation and Air Quality Improvement Program
COG	Council of Government
DCNR	Department of Conservation and Natural Resources
DMV	Department of Motor Vehicles
FHWA	Federal Highway Administration
GAP	Great Allegheny Passage
GHG	Greenhouse Gas Emissions
GRH	Guaranteed Ride Home Programs
HOV	High Occupancy Vehicle
IRS	Internal Revenue Service
ITE	Institute of Transportation Engineers
JARC	Job Access and Reserve Commute
MPO	Metropolitan Planning Organizations
MUTCD	Manual on Uniform Traffic Control Devices
NHI	National Highway Institute
NHS	National Highway System
NIMY	Not In My Back Yard
NJDOT	New Jersey Department of Transportation
NPLAN	National Policy and Legal Analysis Network to Prevent Childhood Obesity
OTMA	Oakland Transportation Management Association
PA	Pennsylvania
PCTI	Pennsylvania Community Transportation Initiative
PDP	Pittsburgh Downtown Partnership
PennDOT	Pennsylvania Department of Transportation
RPO	Rural Planning Organizations
RSA	Road Safety Audit
SAFETEA-LU	Safe Accountable Flexible Efficient Transportation Equity Act - A Legacy for Users

SALDO	Subdivision and Land Development Ordinance
SPC	Southwestern Pennsylvania Commission
STIP	Statewide Transportation Improvement Plan
STP	Surface Transportation Program
TE	Transportation Enhancement
TIP	Transportation Improvement Plan
TMA	Transportation Management Areas
TOD	Transit Oriented Development
TRID	Transit Revitalization Investment District
USDO	United States Department of Transportation
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles of Travel
YMCA	Young Men's Christian Association

GLOSSARY

A

Active Transportation — A human powered transportation including bicycling, walking, kayaking and in-line skating. (ACTIVEALLEGHENY)

Alignment — The line which represents the proposed location of a new highway or transit line. (ALLEGHENYPLACES)

Annual Average Daily Traffic (AADT) — The estimate of typical daily traffic on a road segment for all seven days of the week over the period of one year. (ALLEGHENYPLACES)

B

Bicycle Facilities Toolbox — A resource for County and local officials, staff, residents, and stakeholders that will assist in planning and developing bicycle facilities. (ACTIVEALLEGHENY)

Bulb-out — A bulb-out, or curb extension, is a traffic calming measure which narrows the roadway width and serves multiple purposes including reducing speeds, reducing pedestrian crossing distances, improving visibility of pedestrians at crossings, and defining on-street parking,

C

Capacity — The maximum rate of traffic flow which can be expected to pass a certain point; usually expressed in vehicles per hour. (ALLEGHENYPLACES)

Carbon Intensity — The relative amount of carbon by emitted per unit of energy or fuels consumed. (Babylon Dictionary)

Central Business District (CBD) — The downtown retail trade area of the city or an area of very high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels, and services. (ALLEGHENYPLACES)

Chicane — A traffic calming method intended to reduce vehicular speeds by creating horizontal deflection through the use S-shaped curves typically formed by curb extensions or on-street parking. Chicanes are often used on residential neighborhood streets.

Complete Streets — A complete streets policy ensures that the entire right of way is routinely designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit rider of all ages and abilities must be able to safely move along and across a

	complete street. (ACTIVEALLEGHENY)
Comprehensive Plan	The general, inclusive, long-range statement of the future development of a community. The plan is typically a map accompanied by description and supplemented by policy statements that direct future capital improvements in an area. (ALLEGHENYPLACES)
Congestion	The level at which transportation system performance is no longer acceptable to the traveling public due to traffic interference. The level of acceptable system performance may vary by type of transportation facility, geographic location, public tolerance, and/or time of day. (ALLEGHENYPLACES)
Congestion Mitigation and Air Quality Program (CMAQ)	A $6 billion funding program contained in Title I of ISTEA which provides funds for projects and activities which reduce congestion and improve air quality. To be eligible for CMAQ, projects and activities must contribute to the National Ambient Air Quality Standards and must be included in a transportation improvement program (TIP). (ALLEGHENYPLACES)
Corridor	Any major transportation route that includes parallel limited access highways, major arterials or transit lines. With regard to traffic incident management, a corridor may include more distant transportation routes that can serve as viable alternatives to each other in the event of accidents. (ALLEGHENYPLACES)
Crosswalk	(a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of the roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line; (b) any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by pavement marking lines on the surface, which might be supplemented by contrasting pavement texture, style, or color. (MUTCD)

E

Environmental	1. In a scientific context, a combination of external or extrinsic conditions present in nature. 2. In a planning context, a category of analytical studies of aesthetic values, ecological resources, cultural (historical) resources, sociological and economic conditions, etc. (ALLEGHENYPLACES)

Environmental Protection Agency (EPA) — The government agency responsible for enforcing environmental regulations such as RCRA, CERCLA, Clean Air Act, Clean Water Act. (ALLEGHENYPLACES)

F

Feasibility Study — Evaluation of potential remedial alternatives for their ability to meet technical, public health, environmental and cost effective programs. (ALLEGHENYPLACES)

G

Great Allegheny Passage (GAP) — A non-motorized shared use trail connecting Pittsburgh, PA to Washington, DC. Portions of the trail are currently under construction.

Greenway — A linear open space established along either a natural corridor, such as a river front, stream valley, or ridge line, or over land along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route;

- Any natural or landscaped course for pedestrian or bicycle passage;
- An open space connector linking parks, natural reserves, cultural features, or historic sites with each other and with populated areas; and
- Locally, certain strip or linear parks designated as a parkway or greenbelt. (ALLEGHENYPLACES)

I

Interchange — A system of interconnecting roadways in conjunction with one or more grade separations, providing for the movement of traffic between two or more roadways on different levels. (ALLEGHENYPLACES)

L

Local Government — A city, county, parish, township, municipality, borough, or other general purpose political subdivision of a state. (ALLEGHENYPLACES)

M

Metropolitan Planning Organization (MPO) — The agency designated by the Governor (or Governors in multi state areas) to administer the federally required transportation planning process in a metropolitan area. An MPO must be in place in an urbanized area with a population over 50,000. The MPO is responsible for the 20-year long range plan and the transportation improvement program. (ALLEGHENYPLACES)

Mitigation	The replacement of natural features which have been lost or reduced in value. (ALLEGHENYPLACES)
Montour Trail	A non-motorized shared use trail connecting Moon Township, PA to Clairton, DC. Portions of the trail are under currently under construction.

N

Natural Resources	Land, fish, wildlife, drinking water supplies and other assets belonging to, maintained by, or otherwise controlled by the federal, state, or local government. (ALLEGHENYPLACES)

O

Open Space	Any parcel or area of land or water essentially unimproved and set aside, dedicated, designated, or reserved for public or private use or enjoyment of owners, occupants, and their guests, of land adjoining or neighboring such open space. (ALLEGHENYPLACES)
Orange Belt	Comprised of 91.7 miles of miscellaneous county roads color coded for navigational purposes. (ACTIVEALLEGHENY)
Ordinance	A municipal ordinance regulates building setbacks, lot and building coverage, parking, and storm water management. (ALLEGHENYPLACES)

P

Panhandle Trail	A rail trail extending from Collier Township in Allegheny County to Colliers in Northern West Virginia. It was built on an abandoned Conrail line once known as the Panhandle Route. (PAAC)
Park and Ride	A procedure that permits a patron to drive a private automobile to a transit station, park in the area provided for that purpose and ride the transit system to his or her destination. (ALLEGHENYPLACES)
Peak Hour	The one hour period of a typical day during which traffic volumes are the greatest. (ALLEGHENYPLACES)
Pennsylvania Department of Transportation (PennDOT)	The agency of the Pennsylvania State Government responsible for the design, construction and maintenance of state highways and bridges in Pennsylvania, no including toll highways that are under the jurisdiction of the Pennsylvania Turnpike Commission. PennDOT is funded by state and federal tax dollars. (ALLEGHENYPLACES)

Placemaking	A term that began to be used in the 1970s by architects and planners to describe the process of creating squares, plazas, parks, streets and waterfronts that will attract people because they are pleasurable or interesting. (Wikipedia)
Public Involvement	Coordination events and informational materials geared at encouraging the public to participate in project development. A successful Public Involvement Program facilitates the exchange of information among project sponsors and outside groups and the general public, and includes meetings, surveys, committees, presentations, etc. (ALLEGHENYPLACES)

R

Roundabout	An intersection traffic control treatment utilized throughout the world. Roundabouts form circular intersections in which entering traffic is required to yield to circulating traffic.

S

Safety Improvements	Roadway maintenance activities and smaller construction projects that correct conditions occurring on or alongside an existing highway. Typically involves minor widening, resurfacing, regarding roadside, hazard or obstacle elimination, guiderail installation, and miscellaneous maintenance. (ALLEGHENYPLACES)
Seeps	Location where fluids contained in the ground slowly release to the surface and often form small pools. (ALLEGHENYPLACES)
Smart Growth	An urban planning and transportation theory that concentrates growth in the center of a city to avoid urban sprawl; and advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices. (Wikipedia)
Smart Transportation	Partnering to build great communities for future generations of Pennsylvanians by linking transportation investments and land use planning and decision-making. (PennDOT)
Sprawl	Uncontrolled growth, usually of a low-density nature, in previously rural areas and some distance from existing development and infrastructure. (ALLEGHENYPLACES)
Subdivision	The division or re-division of lots, tracts or parcels. A municipal ordinance that regulates how this may occur, including, but not

	limited to, public streets, parks, utilities and storm water management. (ALLEGHENYPLACES)
Sustainability	Of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged. (Merriam-Webster Dictionary)

T

Topography	The natural surface features of a region, including its relief; may be land or water-bottom surface. (ALLEGHENYPLACES)
Traffic Control Signal	Any highway traffic signal by which traffic is alternately directed to stop and permitted to proceed. (MUTCD)
Transit Oriented Development (TOD)	The concept of using mass transit as the focal point of new development, particularly housing, because if residents can be bought close to mass transit, people would be more inclined to use it rather than their own automobiles. (ALLEGHENYPLACES)

U

Urban Area	An area having a Center City population of 50,000 or more as defined by the 1990 US Census, may also include other major population concentrations where a systems planning study is deemed necessary. (ALLEGHENYPLACES)

V

Vehicle Miles Traveled (VMT)	The sum of distances traveled by all motor vehicles in a specified region in a given period of time. Travel demand forecasting (modeling) is used to generate the average trip lengths for a region. The average trip length measure can then be used in estimating vehicle miles of travel, which in turn is used in estimating gasoline usage or mobile source emissions of air pollutants. (ALLEGHENYPLACES)

W

Watershed	A region or area bounded by a water parting and draining ultimately to a particular watercourse or body of water. (ALLEGHENYPLACES)

ENDNOTES

[i] Reynolds, Winters, Ries and Gouge for the National Collaborating Centre for Environmental Health. "Active Transportation in Urban Areas: Exploring Health Benefits and Risks." June 2010.

[ii] *PCTI 2010 Program Guide* 2010, p. 3.

[iii] *Smart Transportation Guidebook, Planning and Designing Highways and Streets that Support Sustainable and Livable Communities*, New Jersey Department of Transportation and Pennsylvania Department of Transportation, March 2008.

[iv] http://www.merriam-webster.com/dictionary/sustainability

[v] http://www.smart-transportation.com/index.html

[vi] *The National Bicycling and Walking Study: 15 Year Status Report*, USDOT, FHWA and Pedestrian and Bicycle Information Center, May 2010, p. 2.

[vii] Reynolds, Winters, Ries and Gouge for the National Collaborating Centre for Environmental Health. "Active Transportation in Urban Areas: Exploring Health Benefits and Risks." June 2010.

[viii] U.S. Energy Information Administration / Annual Energy Review 2009, p. 40, Table 2.1a Energy Consumption by Sector, Selected Years, 1949-2009.

[ix] United States Environmental Protection Agency, http://www.epa.gov/otaq/climate/basicinfo.htm.

[x] *Your Driving Costs 2010 Edition.* AAA Association Communication.

[xi] *Guide to Sustainable Transportation Performance Measures, Review DRAFT.* Prepared for the U.S. Environmental Protection Agency by ICF International, May 17, 2010.

[xii] PennDOT Design Manual 2, 2009, Chapter 16, Section 16-2.

[xiii] Regan, Bob. "The Bridges of Pittsburgh." 2006, p. 68.

[xiv] *Smart Transportation Guidebook, Planning and Designing Highways and Streets that Support Sustainable and Livable Communities*, New Jersey Department of Transportation and Pennsylvania Department of Transportation, March 2008, Chapter 7, Section 7.4.5.

[xv] http://www.portauthority.org/PAAC/CustomerInfo/RacknRoll/tabid/267/Default.aspx

[xvi] http://www.pahighways.com/other/acbeltsystem.html

[xvii] www.ibpi.usp.pdx.edu/media/BicycleBoulevardGuidebook.pdf

[xviii] *Smart Transportation Guidebook*, Chapter 9, Table 9.1, pg. 78.

[xix] ftp://ftp.dot.state.pa.us/public/pdf/BPPlan.pdf

[xx] *PennDOT Statewide Bicycle and Pedestrian Master Plan*, April 1996, p. 15.

[xxi] PennDOT Design Manual 2, 2009, Chapter 16, Section 16-5.

[xxii] www.railstotrails.org/index.html

[xxiii] *BIKESAFE, Bicycle Countermeasure Selection System.* U.S. Department of Transportation, Federal Highway Administration (FHWA-SA-05-006), May 2006, p. 60.

[xxiv] http://www.bicyclinginfo.org/bikesafe/case_studies/casestudy.cfm?CS_NUM=104

[xxv] Idaho State Legislature, Title 49, Chapter 7. http://www.legislature.idaho.gov/idstat/Title49/T49CH7SECT49-720.htm

[xxvi] https://www.smartbikedc.com/program_information.asp

[xxvii] www.streetfilms.org/ciclovia/

[xxviii] http://www.bikeleague.org/programs/bikemonth/

[xxix] http://bicyclingambassadors.org/

[xxx] http://www.bicyclecoalition.org/resources/ambassadors

[xxxi] http://www.bikewalktwincities.org/ambassadors

[xxxii] PennDOT Design Manual 2, 2009, Chapter 6, Section 6.0.

[xxxiii] AASHTO Design Guide for Pedestrian Facilities, July 2004.

[xxxiv] http://www.city.pittsburgh.pa.us/cp/assets/07_Market_Square_Final_Report.pdf

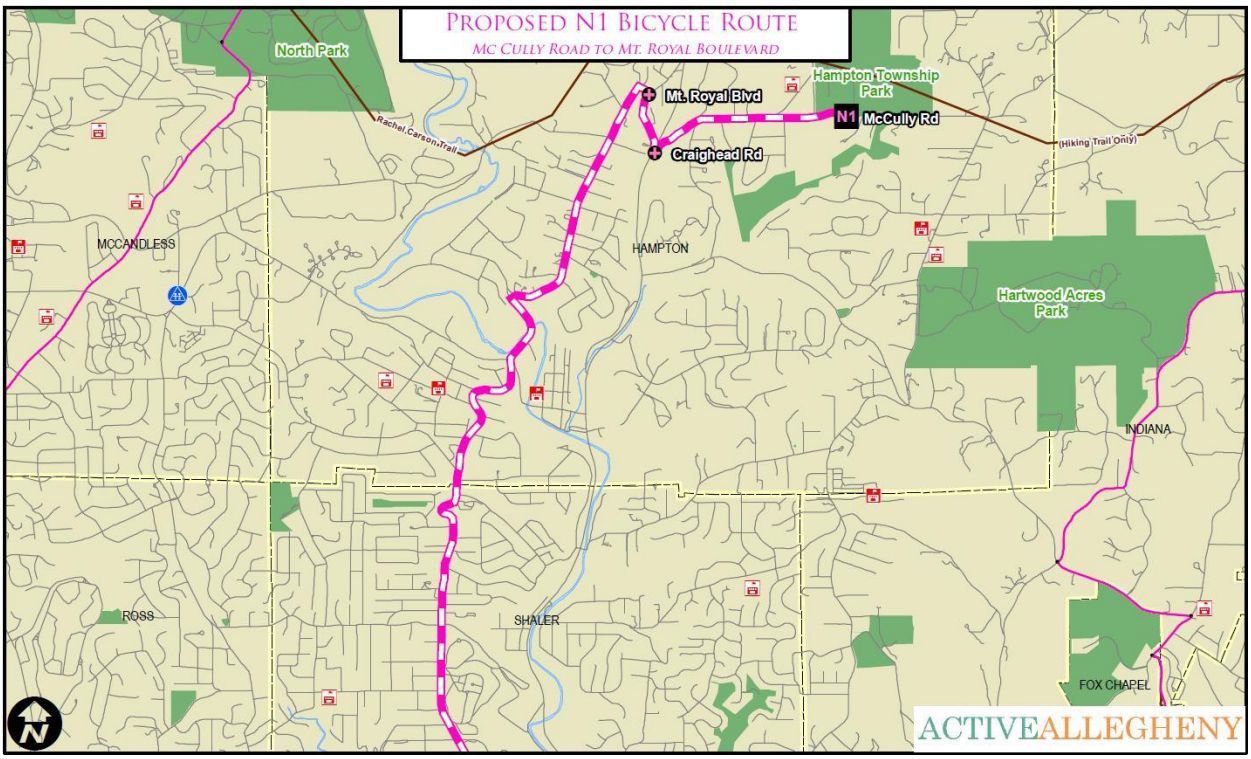
[xxxv] ftp://ftp.dot.state.pa.us/public/pdf/BPPlan.pdf

[xxxvi] www.walkinginfo.org/promote/strategies.cfm

Appendix A

Bicycle Route Cue Sheets

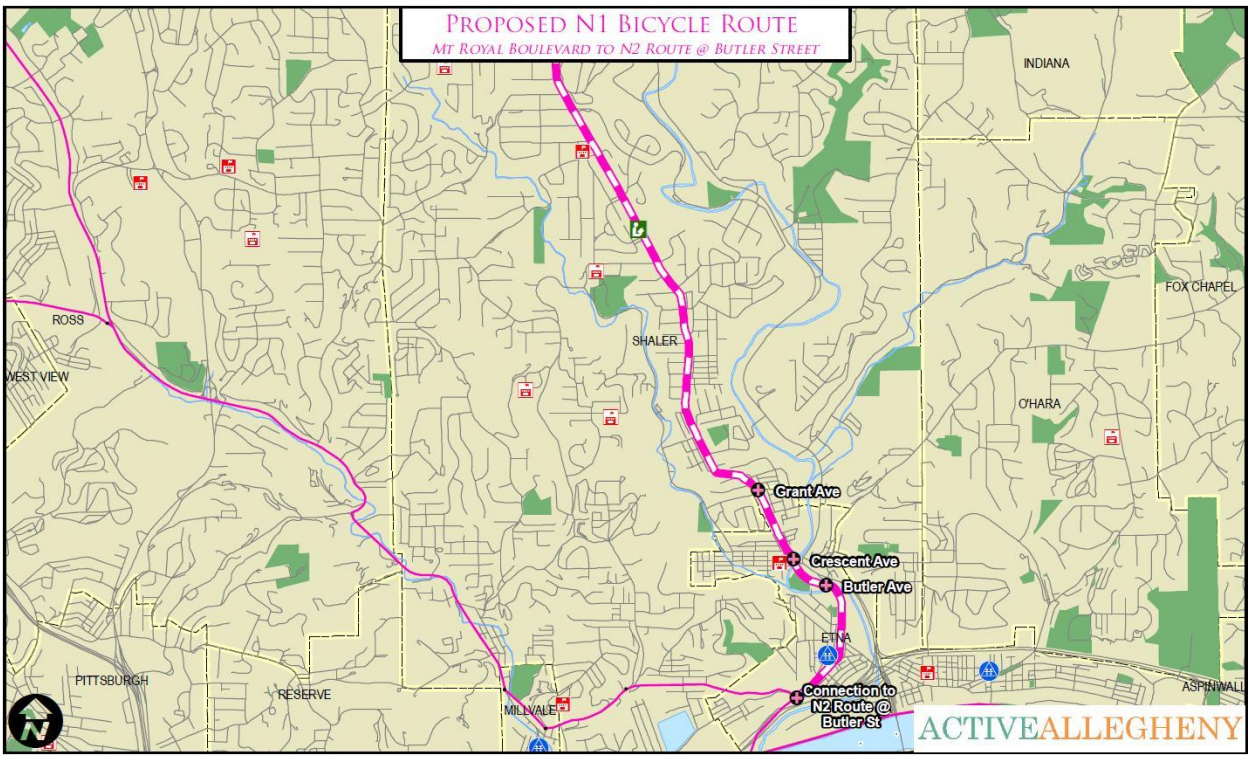
ACTIVEALLEGHENY



Cross Sectional Information

Mc Cully Rd → Craighead Rd	
SPC Rating	Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	Unavailable
Roadway Ownership	Local
Municipality	Hampton

Craighead Rd → Mt Royal Blvd	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	Unavailable
Roadway Ownership	Local
Municipality	Hampton



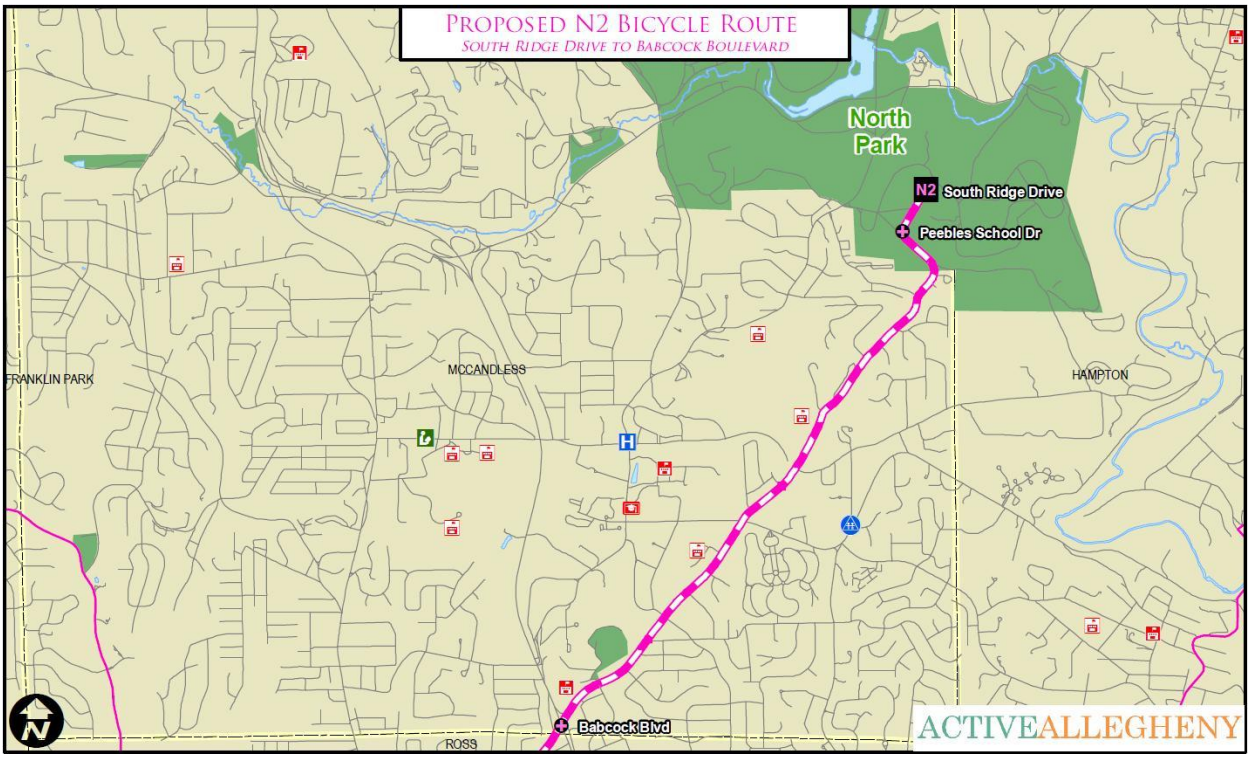
Cross Sectional Information

Mt Royal Blvd → Grant Ave	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	12,000
Roadway Ownership	State
Municipality	Shaler

Grant Ave → Crescent Ave	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	9,000
Roadway Ownership	State
Municipality	Etna

Crescent Ave → Butler Ave	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	14,000
Roadway Ownership	State
Municipality	Etna

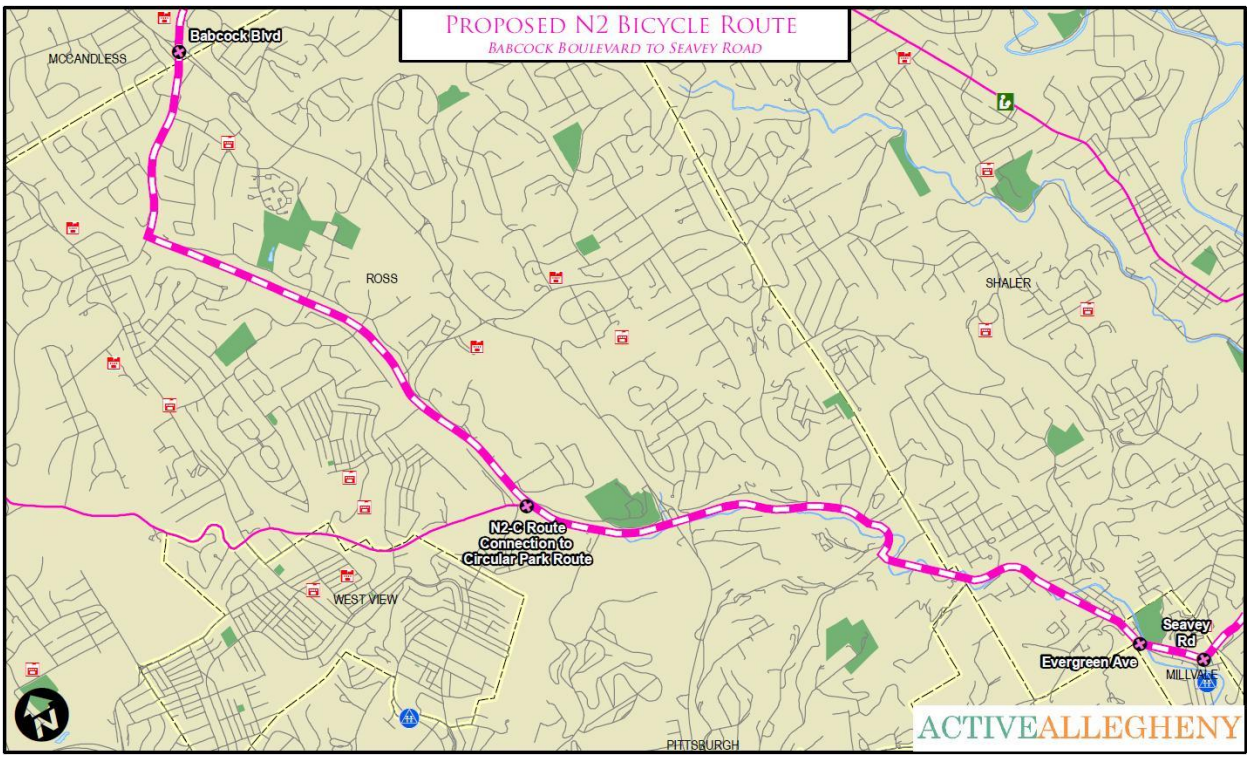
Butler Ave → N2 Route	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	Yes, intermittent
AADT	10,000
Roadway Ownership	State
Municipality	Etna



Cross Sectional Information

South Ridge Dr → Peebles School Dr	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	Unavailable
Roadway Ownership	Local
Municipality	McCandless

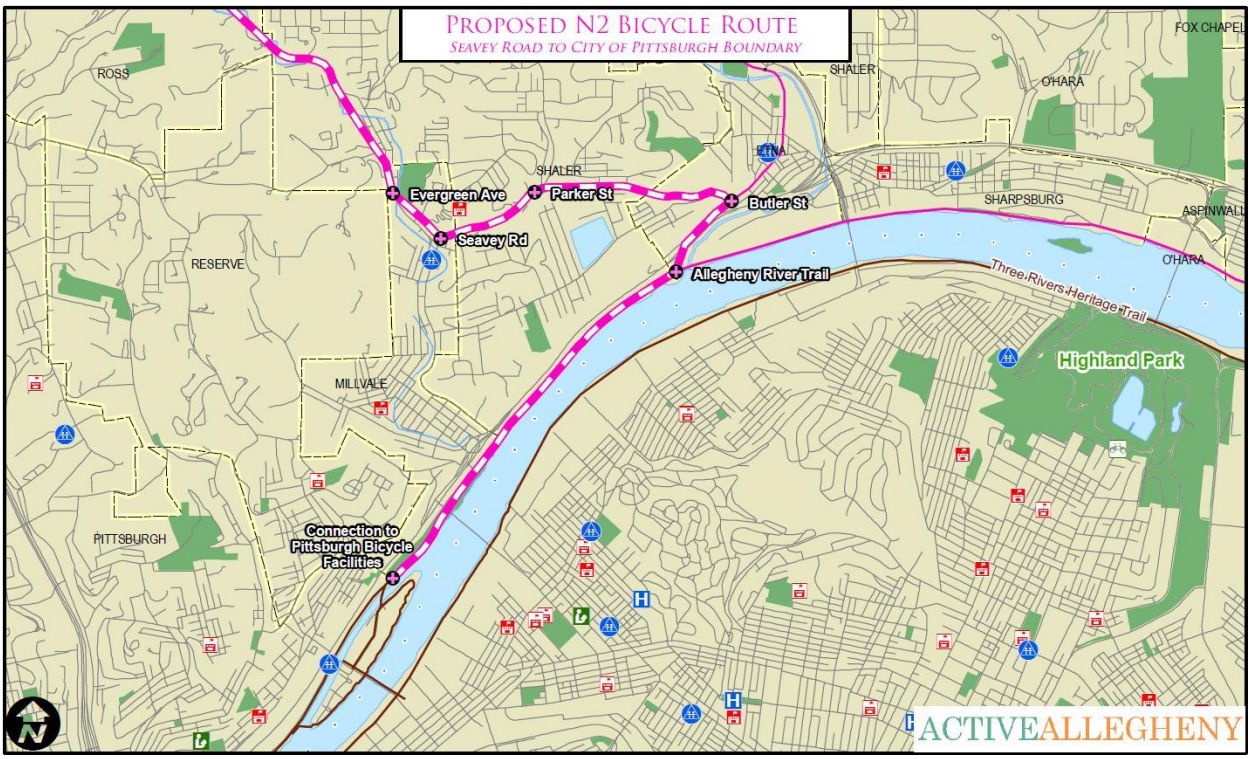
Peebles School Dr → Babcock Blvd	
SPC Rating	Average
Roadway Type	Collector/Arterial
Typical Pavement Width	N/A
Parking	No
AADT	4,000 – 14,000
Roadway Ownership	County
Municipality	McCandless



Cross Sectional Information

Babcock Blvd → Evergreen Ave	
SPC Rating	Above/Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	13,000 – 15,000
Roadway Ownership	County/State
Municipality	McCandless/Ross/Shaler/Millvale

Evergreen Ave → Seavey Rd	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	11,000
Roadway Ownership	State
Municipality	Millvale



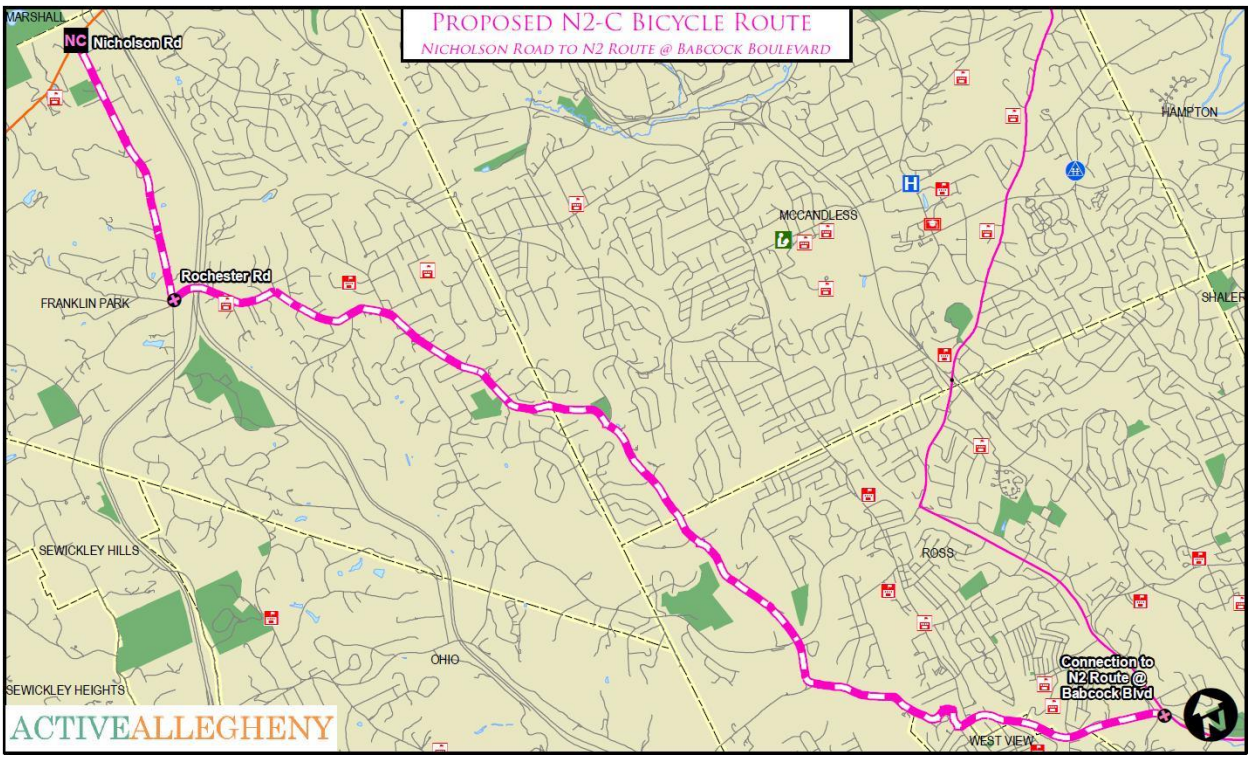
Cross Sectional Information

Seavey Rd → Parker St	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	15,000
Roadway Ownership	State
Municipality	Millvale/Shaler

Parker St → Butler St	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	4,000 – 7,000
Roadway Ownership	State
Municipality	Shaler/Etna

Butler St → Allegheny River Trail	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	4,000
Roadway Ownership	State
Municipality	Etna

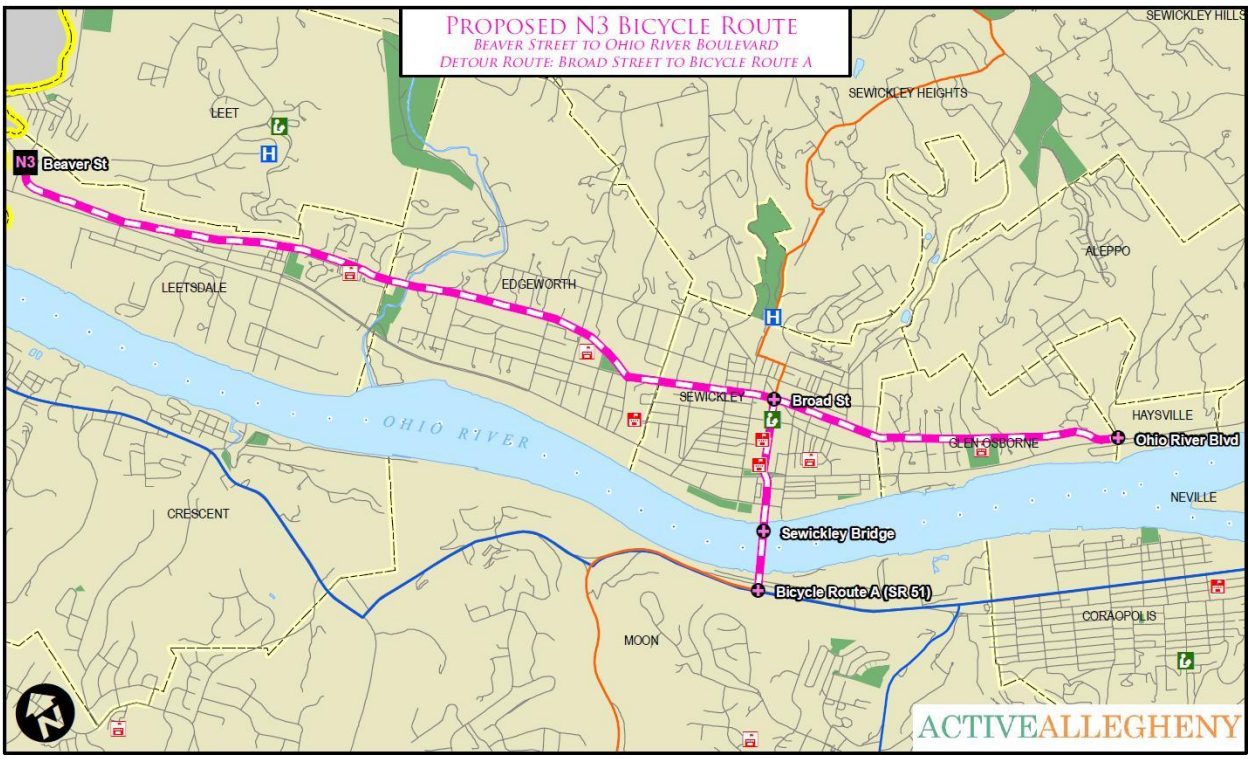
Allegheny River Trail → City of Pittsburgh	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Shaler/Millvale



Cross Sectional Information

Nicholson Rd → Rochester Rd	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	5,500
Roadway Ownership	Local
Municipality	Franklin Park

Rochester Rd → N2 Route	
SPC Rating	Above Average/Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	7,000 – 10,000
Roadway Ownership	Local
Municipality	Franklin Park/McCandless/ West View



Cross Sectional Information

Mainline Route

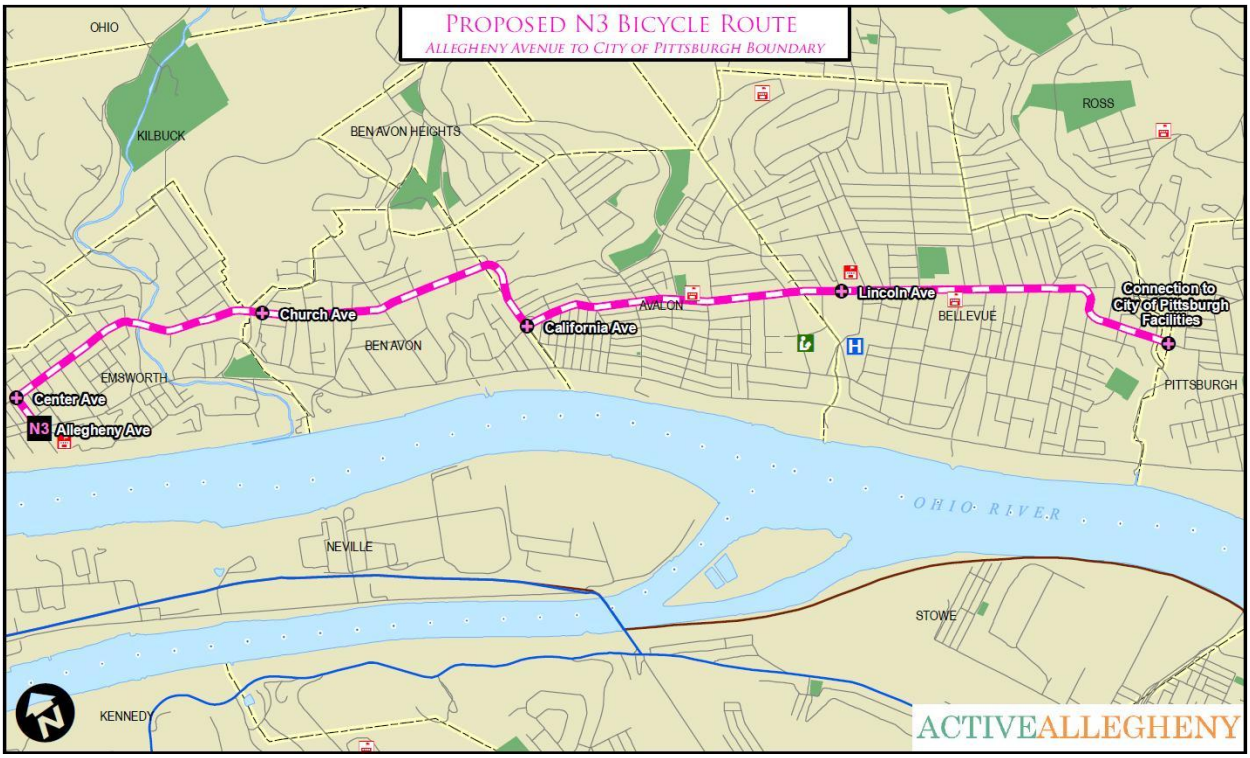
Beaver St → Broad St	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	27’ – 30’
Parking	Yes
AADT	10,000
Roadway Ownership	Local
Municipality	Leetsdale/ Edgeworth/Sewickley

Broad St → Ohio River Boulevard	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	20’ – 34’
Parking	Yes
AADT	10,000
Roadway Ownership	Local
Municipality	Sewickley/Glen Osborne

Detour Route

Broad St → Sewickley Bridge	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	50’
Parking	No
AADT	19,000
Roadway Ownership	State
Municipality	Sewickley

Sewickley Bridge → Bicycle Route A	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	32’
Parking	No
AADT	19,000
Roadway Ownership	State
Municipality	Moon



Cross Sectional Information

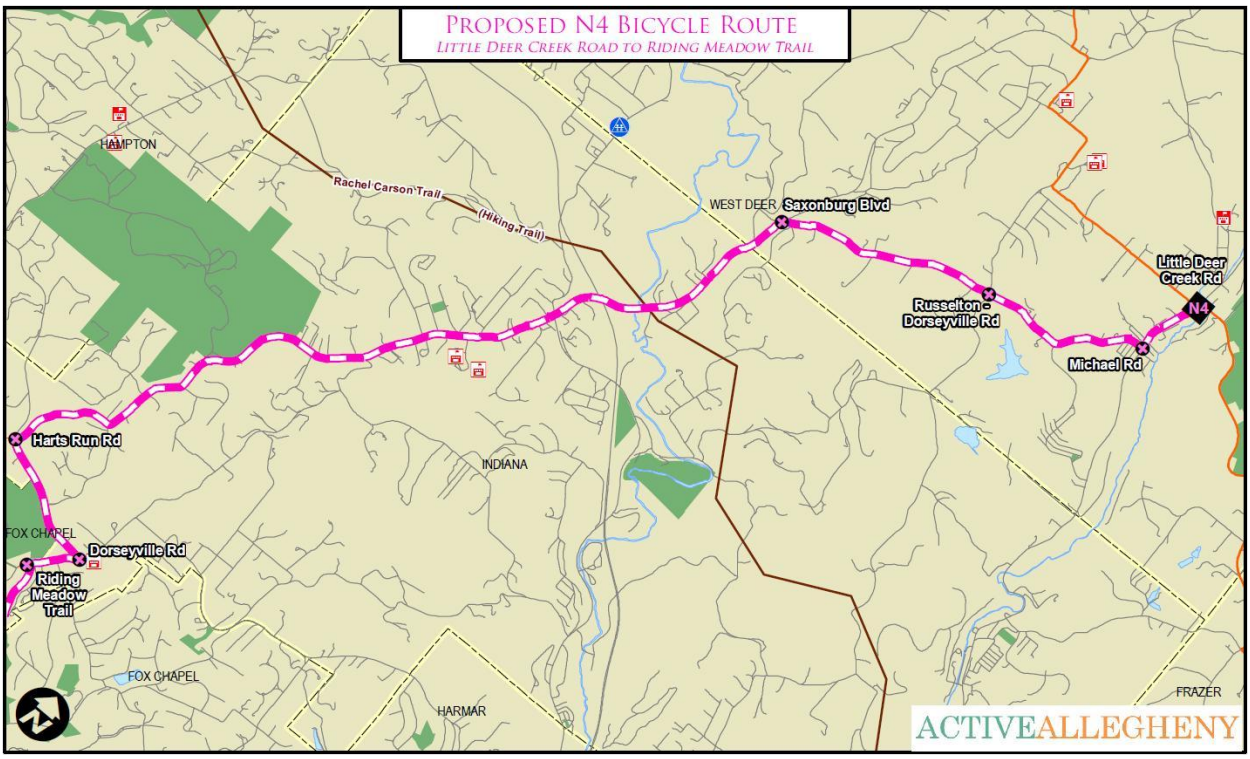
Allegheny Ave → Center Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	1,500
Roadway Ownership	Local
Municipality	Edgeworth

Center Ave → Church Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	1,500
Roadway Ownership	Local
Municipality	Edgeworth/Ben Avon

Church Ave → California Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	36’
Parking	Yes, intermittent
AADT	15,000
Roadway Ownership	Local
Municipality	Ben Avon

California Ave → Lincoln Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	15,000
Roadway Ownership	Local
Municipality	Avalon/Bellevue

Lincoln Ave → City of Pittsburgh	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	15,000
Roadway Ownership	Local
Municipality	Bellevue



Cross Sectional Information

Little Deer Creek Rd → Michael Rd	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	4,000
Roadway Ownership	Local
Municipality	West Deer

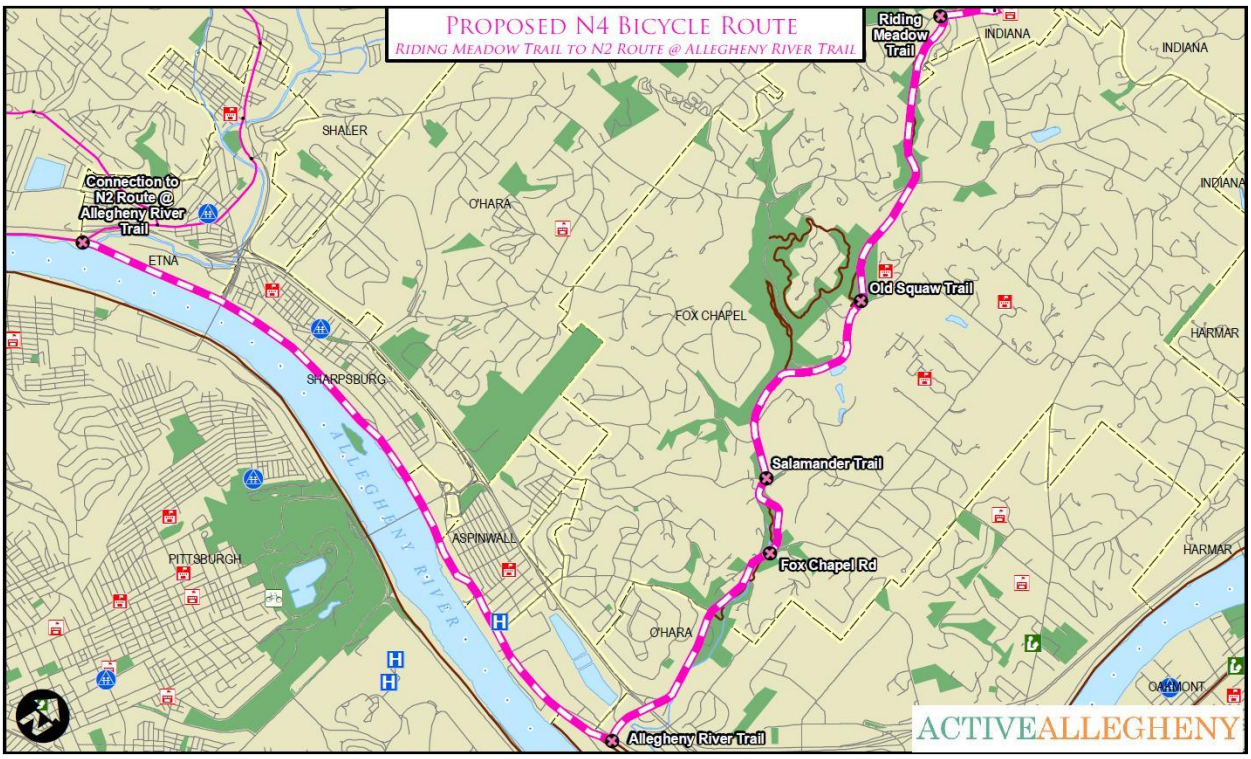
Michael Rd → Russelton – Dorseyville Rd	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	2,000
Roadway Ownership	Local
	West Deer

Russelton – Dorseyville Rd → Saxonburg Blvd	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	2,000
Roadway Ownership	Local
	West Deer

Saxonburg Blvd → Harts Run Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	5,000
Roadway Ownership	Local
	Indiana/State

Harts Run Rd → Dorseyville Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	No
Parking	No
AADT	7,000
Roadway Ownership	Local
	Indiana

Dorseyville Rd → Riding Meadow Trail	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	No
Parking	No
AADT	4,000
Roadway Ownership	Local
	Indiana



Cross Sectional Information

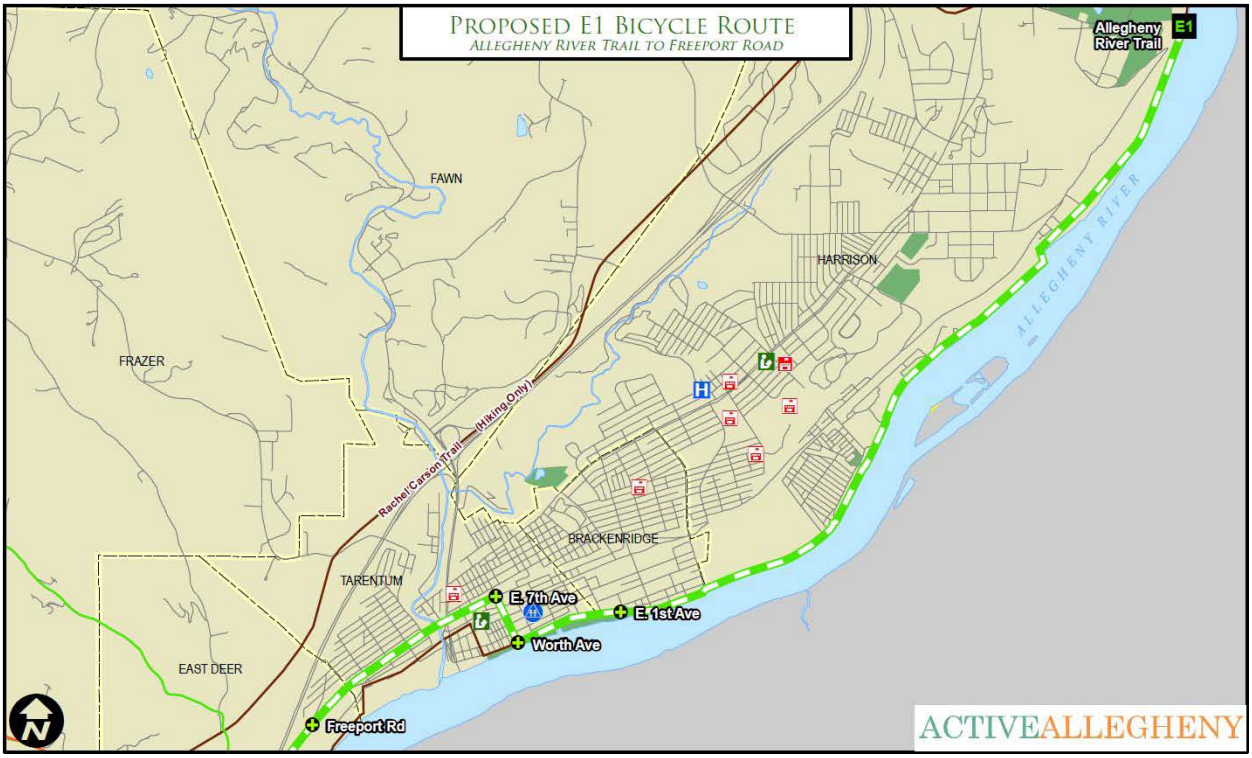
Riding Meadow Trail → Old Squaw Trail	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Indiana/Fox Chapel

Old Squaw Trail → Salamander Trail	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Fox Chapel

Salamander Trail → Fox Chapel Rd	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Fox Chapel

Fox Chapel Rd → Allegheny River Trail	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	26,000
Roadway Ownership	County
Municipality	Fox Chapel/O'Hara

Allegheny River Trail → N2 Route	
SPC Rating	N/A
Roadway Type	Trail (Proposed)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	O'Hara/Fox Chapel/Aspinwall/ Sharpsburg/Etna



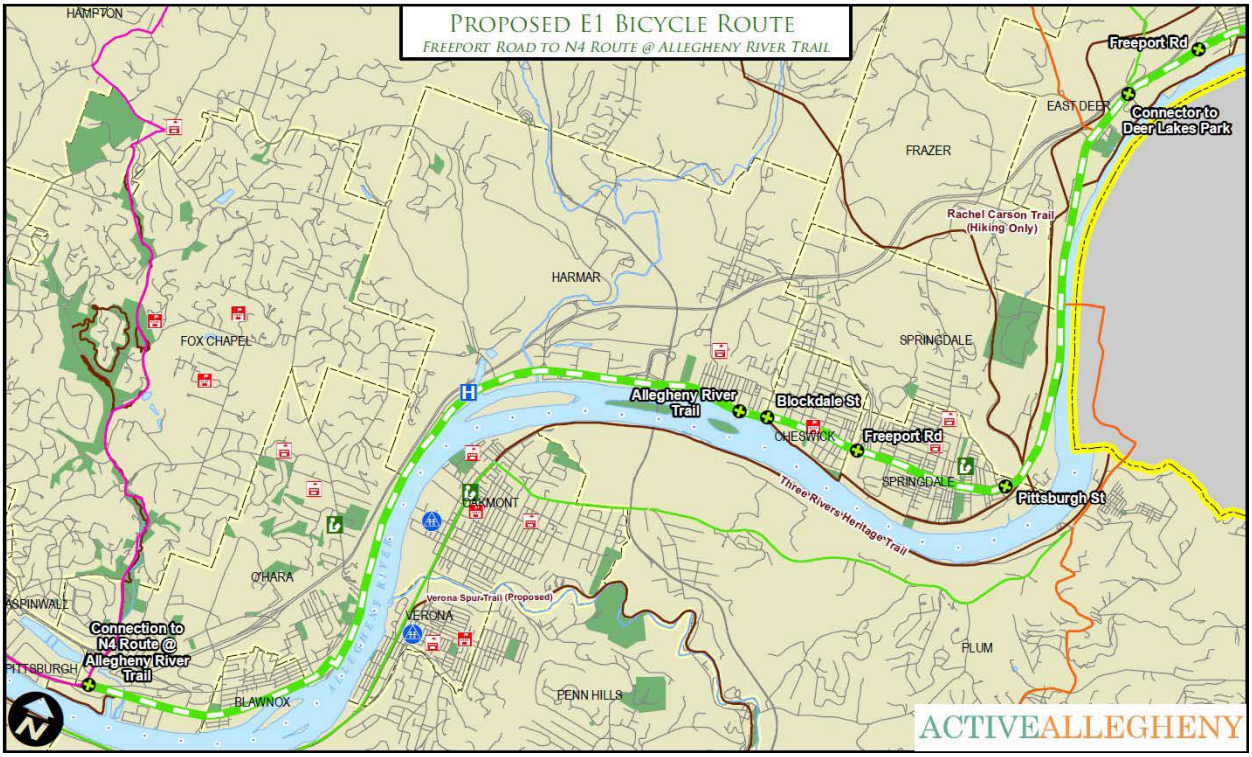
Cross Sectional Information

Allegheny River Trail → E. 1st Ave	
SPC Rating	N/A
Roadway Type	Trail (Proposed)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	N/A

E. 1st Ave → Worth Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	4,000
Roadway Ownership	Local
Municipality	Brackenridge/Tarentum

Worth Ave → E. 7th Ave	
SPC Rating	Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	Unavailable
Roadway Ownership	Local
Municipality	Tarentum

E. 7th Ave → Freeport Rd	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	32’
Parking	Yes, both sides
AADT	2,000
Roadway Ownership	Local
Municipality	Tarentum/East Deer



Cross Sectional Information

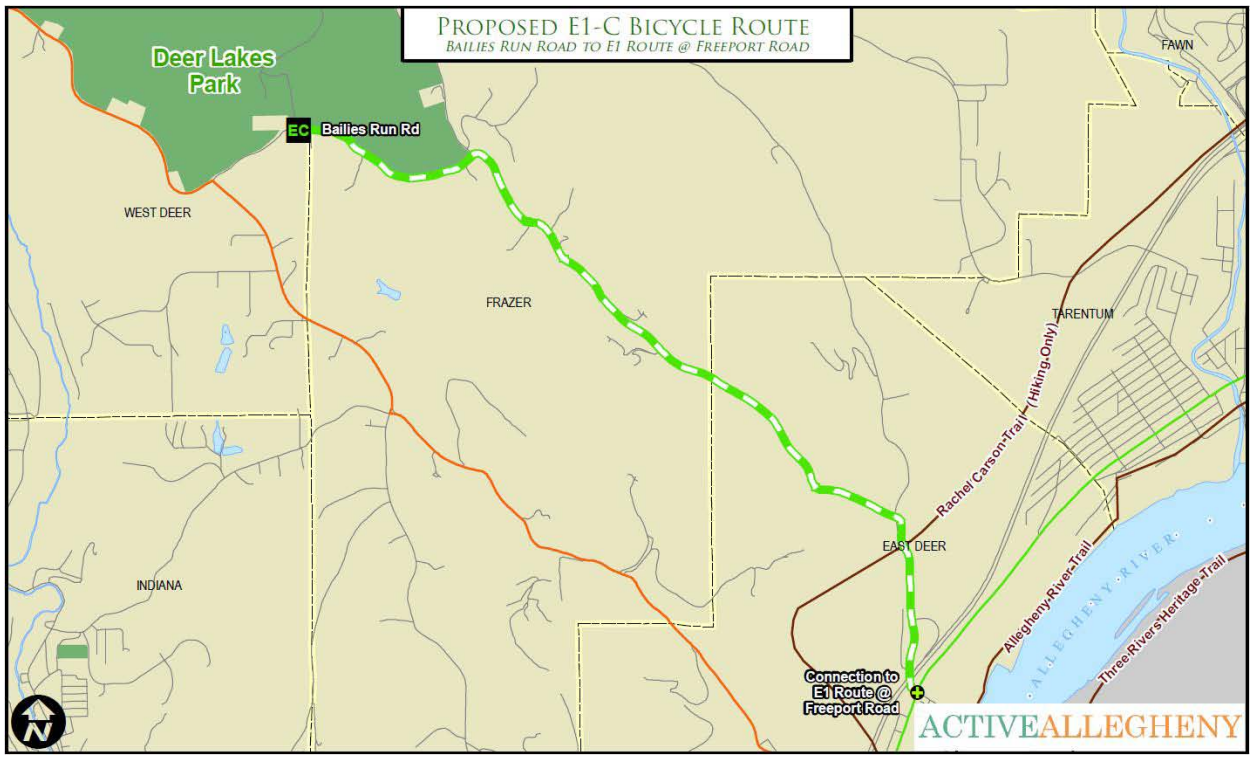
Freeport Rd → Pittsburgh St	
SPC Rating	Above Average
Roadway Type	Arterial
Typical Pavement Width	N/A
Parking	No
AADT	11,000
Roadway Ownership	State
Municipality	East Deer/Frazer/Springdale

Pittsburgh St→ Freeport Rd	
SPC Rating	Average
Roadway Type	Arterial
Typical Pavement Width	34’
Parking	Yes, intermittent
AADT	20,000
Roadway Ownership	State
Municipality	Springdale

Freeport Rd → Blockdale St	
SPC Rating	Average
Roadway Type	Arterial
Typical Pavement Width	34’
Parking	No
AADT	17,000
Roadway Ownership	State
Municipality	Cheswick

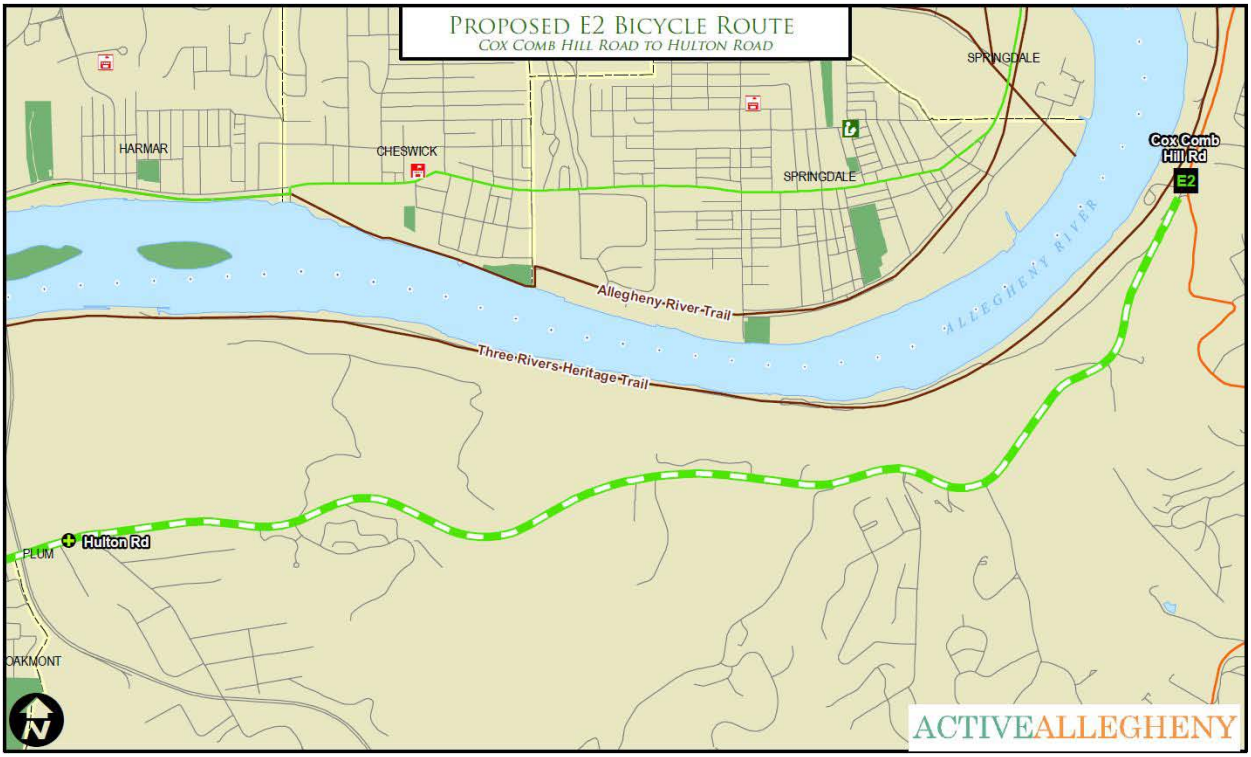
Blockdale St → Allegheny River Trail	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	
Roadway Ownership	Local
Municipality	Cheswick

Allegheny River Trail → N4 Route	
SPC Rating	N/A
Roadway Type	Trail (Proposed)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Hamar/O’Hara/Blawnox



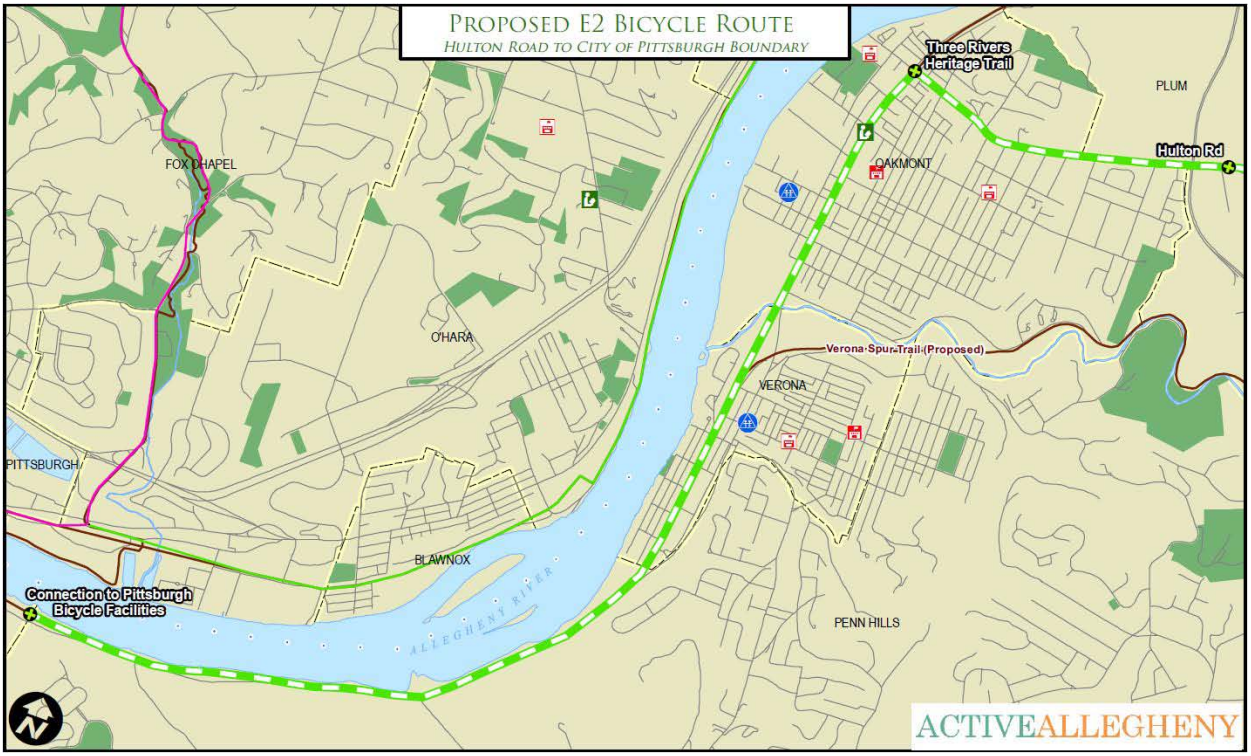
Cross Sectional Information

Bailies Run Rd → Freeport Rd	
SPC Rating	Above Average/ Average
Roadway Type	Rural Collector
Typical Pavement Width	N/A
Parking	No
AADT	Unavailable
Roadway Ownership	County
Municipality	West Deer/Frazer/Tarentum



Cross Sectional Information

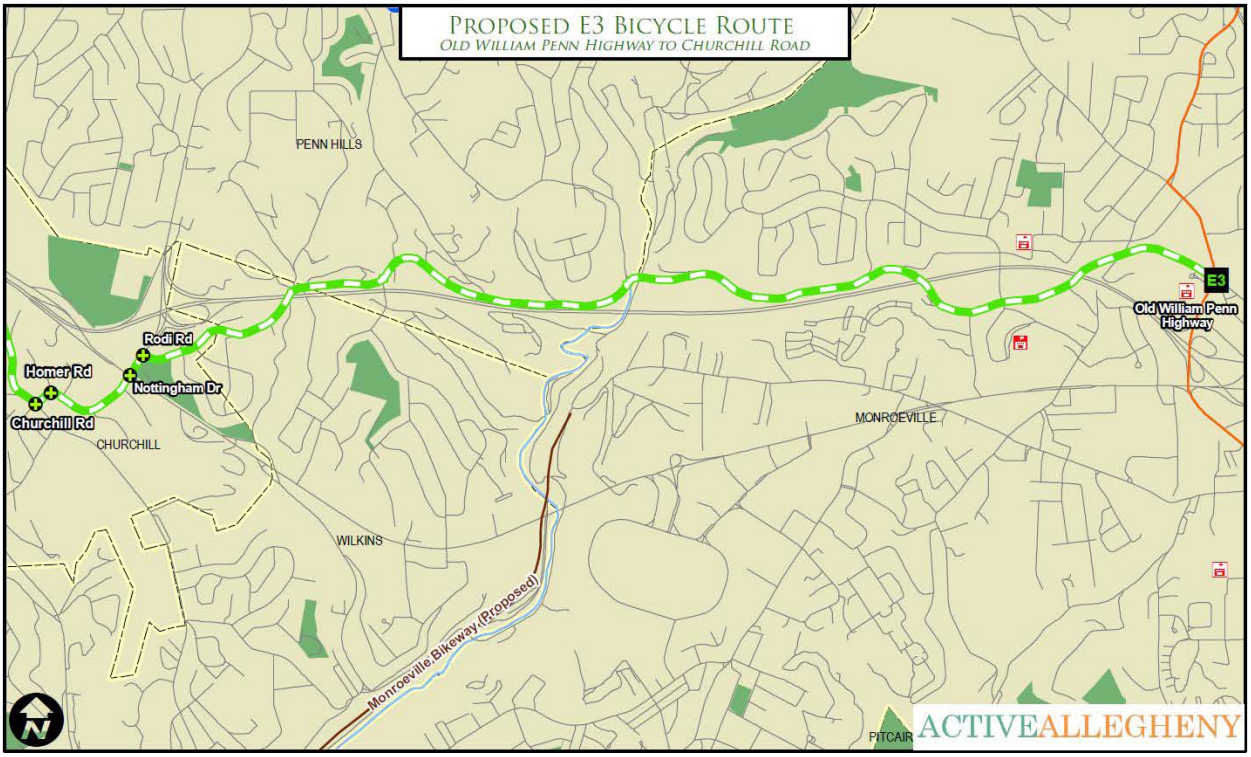
Cox Comb Hill Rd → Hulton Rd	
SPC Rating	Above Average
Roadway Type	Rural Collector
Typical Pavement Width	32’
Parking	No
AADT	11,400
Roadway Ownership	State
Municipality	Plum



Cross Sectional Information

Hulton Rd → Three Rivers Heritage Trail	
SPC Rating	Above Average
Roadway Type	Rural Collector
Typical Pavement Width	30'
Parking	No
AADT	14,700
Roadway Ownership	State
Municipality	Plum/Oakmont

Three Rivers Heritage Trail → City of Pittsburgh	
SPC Rating	N/A
Roadway Type	Trail (Proposed)
Typical Pavement Width	N/A
Parking	No
AADT	N/A
Roadway Ownership	N/A
Municipality	Oakmont/Verona/Penn Hills



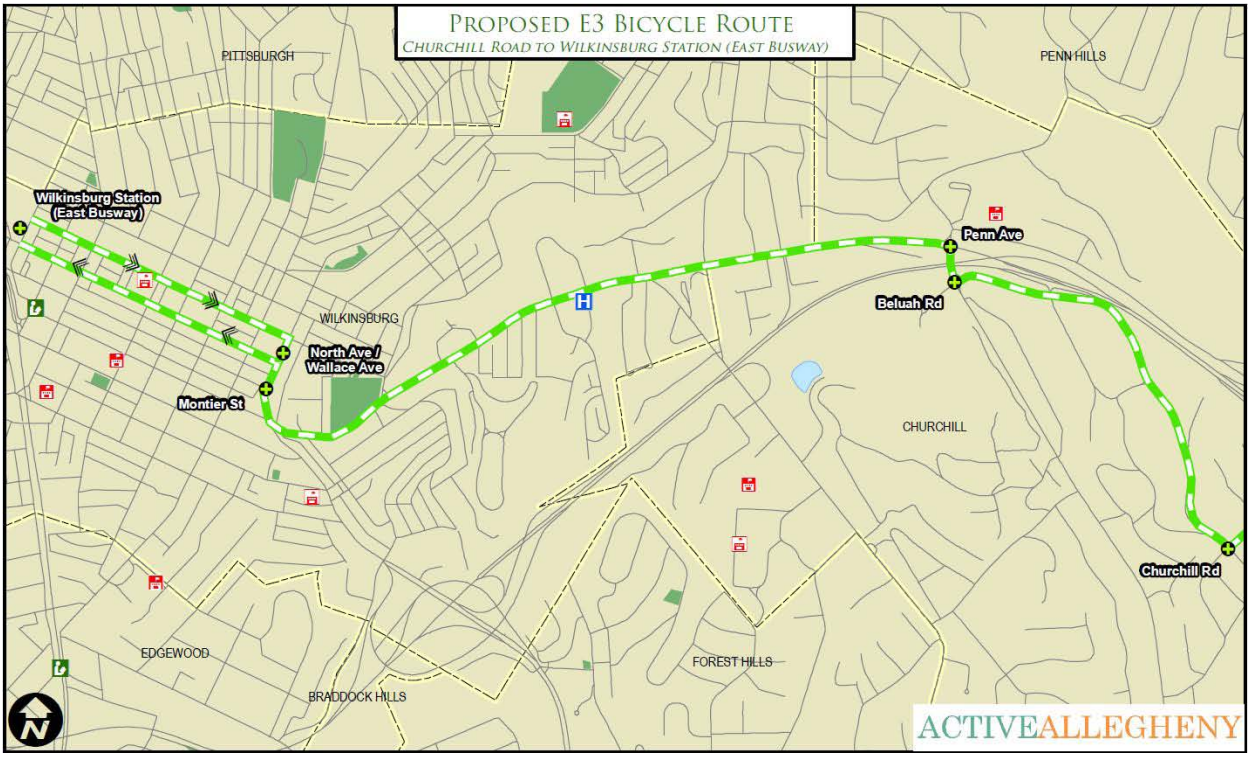
Cross Sectional Information

Old William Penn Highway → Rodi Rd	
SPC Rating	Above Average/Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	N/A
AADT	8,000
Roadway Ownership	Local
Municipality	Monroeville/Penn Hills/Wilkins/ Churchill

Rodi Rd →Nottingham Dr	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	N/A
AADT	14,600
Roadway Ownership	State
Municipality	Churchill

Nottingham Dr → Homer Rd	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	Churchill

Homer Rd → Churchill Rd	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	Churchill



Cross Sectional Information

Churchill Rd → Beluah Rd	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	3,000
Roadway Ownership	County/City
Municipality	Churchill

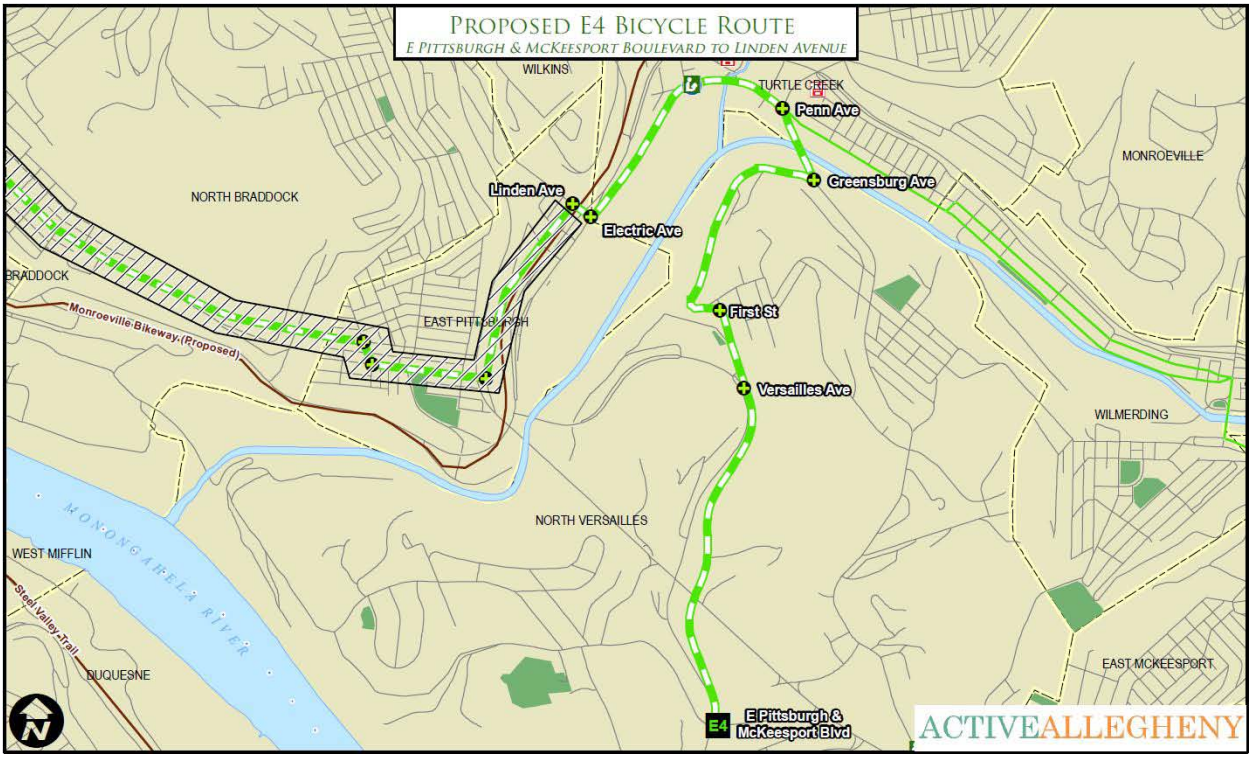
Beluah Rd → Penn Ave	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	N/A
AADT	5,000
Roadway Ownership	State
Municipality	Churchill

Penn Ave → Montier St	
SPC Rating	Average
Roadway Type	Arterial
Typical Pavement Width	36' – 50'
Parking	Yes, intermittent
AADT	10,000 – 15,000
Roadway Ownership	State
Municipality	Churchill/Wilkinsburg

Montier St → Wallace Ave/North Ave	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	Wilkinsburg

Wallace Ave → Wilkinsburg Station	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	30'
Parking	Yes
AADT	3,200
Roadway Ownership	Local
Municipality	Wilkinsburg

Wilkinsburg Station → Montier St	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	30'
Parking	Yes
AADT	Unavailable
Roadway Ownership	Local
Municipality	Wilkinsburg



Cross Sectional Information

E. Pgh & McKeesport Blvd → Versailles Ave	
SPC Rating	Above Average
Roadway Type	Arterial
Typical Pavement Width	38’
Parking	No
AADT	3,000
Roadway Ownership	State
Municipality	N. Versailles

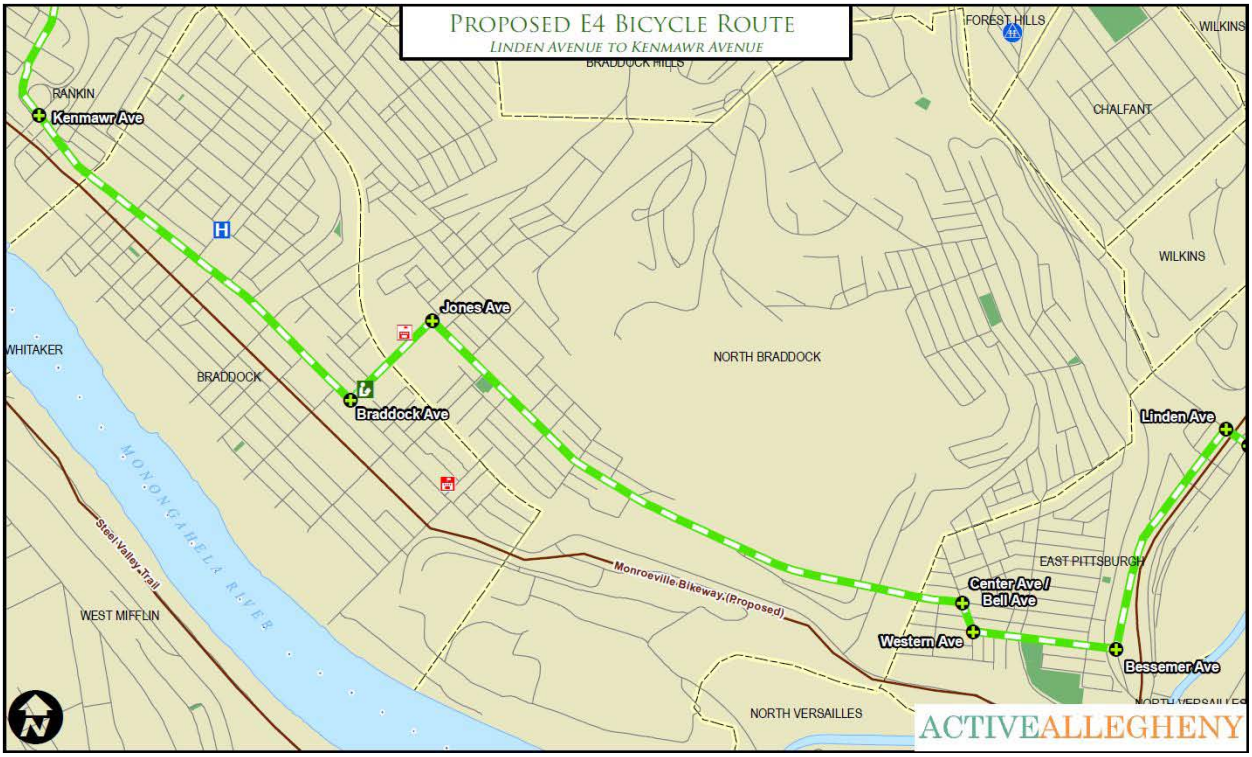
Versailles Ave → First St	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	18’ – 22’
Parking	No
AADT	500
Roadway Ownership	State
Municipality	N. Versailles

First St → Greensburg Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	18’-22’
Parking	No
AADT	500
Roadway Ownership	State
Municipality	N. Versailles

Greensburg → Penn Ave	
SPC Rating	Average
Roadway Type	Bridge
Typical Pavement Width	22’ – 24’
Parking	No
AADT	5,000 – 7,000
Roadway Ownership	County
Municipality	N. Versailles/Turtle Creek

Penn Ave → Electric Ave	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	30’
Parking	Yes, Intermittent
AADT	Unavailable
Roadway Ownership	Local
Municipality	Turtle Creek

Electric Ave → Linden Ave	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	10,000
Roadway Ownership	Local
Municipality	E. Pittsburgh



Cross Sectional Information

Linden Ave → Bessemer Ave	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	3,500
Roadway Ownership	Local
Municipality	E. Pittsburgh

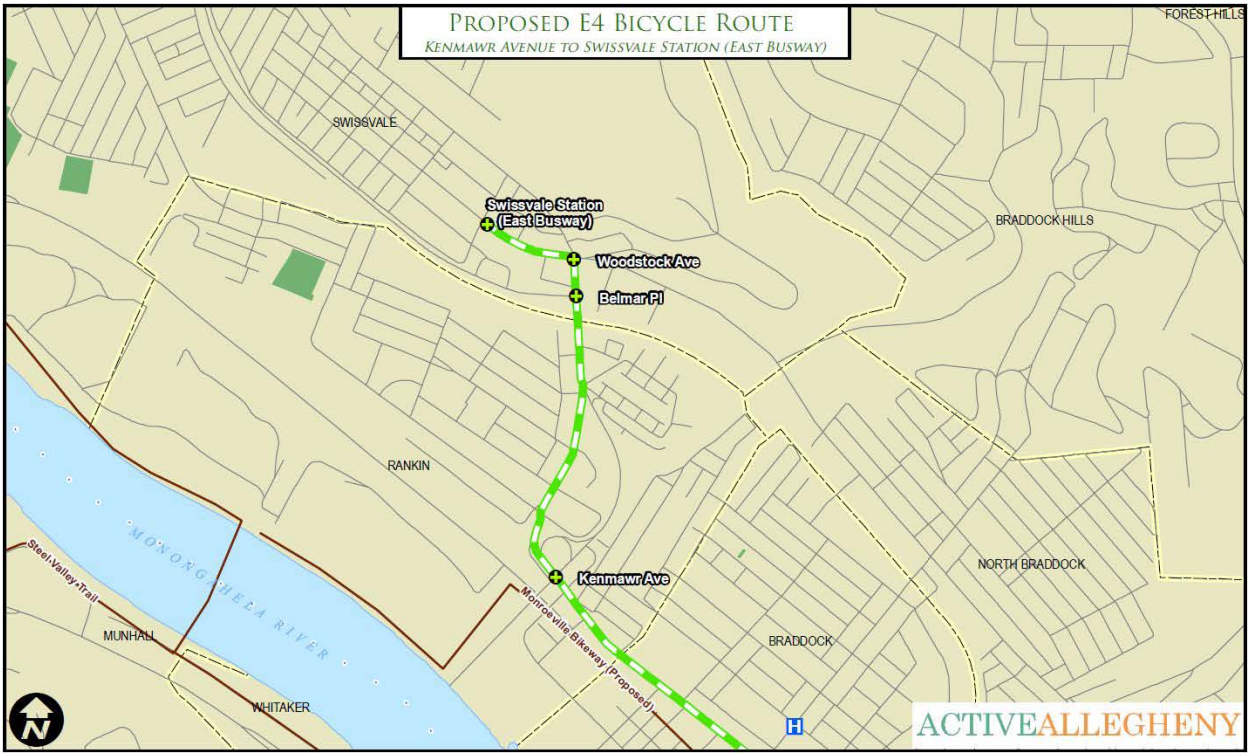
Bessemer Ave → Western Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	E. Pittsburgh

Western Ave → Center Ave/Bell Ave	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	E. Pittsburgh

Center Ave/Bell Ave → Jones Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	3,500
Roadway Ownership	Local
Municipality	N. Braddock

Jones Ave → Braddock Ave	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	N. Braddock/ Braddock

Braddock Ave → Kenmawr Ave	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	36’
Parking	Yes, both sides
AADT	8,000
Roadway Ownership	Local
Municipality	Braddock/ Rankin

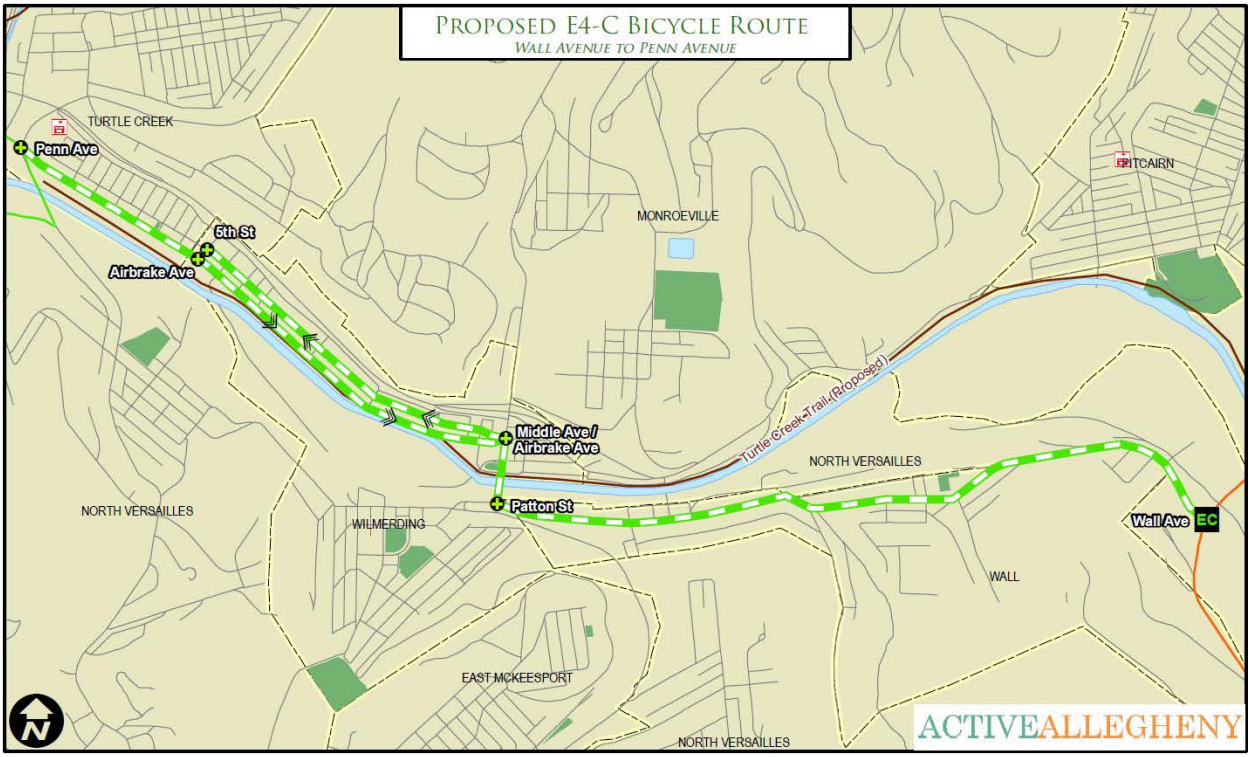


Cross Sectional Information

Kenmawr Ave → Belmar Pl	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	26’
Parking	West side only
AADT	Unavailable
Roadway Ownership	Local
Municipality	Rankin

Belmar Pl → Woodstock Ave	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	27’
Parking	No
AADT	Unavailable
Roadway Ownership	Local
Municipality	Swissvale

Woodstock Ave → Swissvale Station	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	34’
Parking	Yes
AADT	3,500
Roadway Ownership	Local
Municipality	Swissvale



Cross Sectional Information

Wall Ave → Patton St	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	Yes, intermittent
AADT	Unavailable
Roadway Ownership	Local
Municipality	N. Versailles

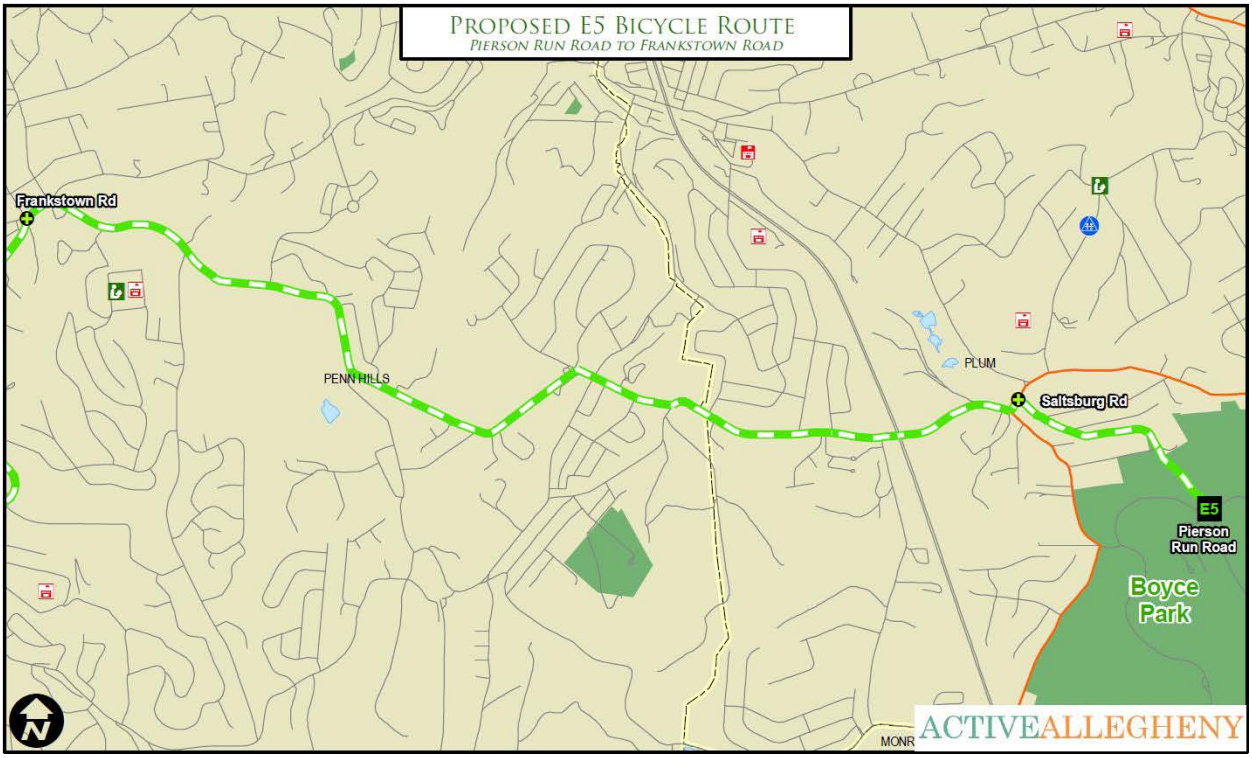
Patton St → Middle Ave/Airbrake Ave	
SPC Rating	Average
Roadway Type	Bridge
Typical Pavement Width	N/A
Parking	No
AADT	11,000
Roadway Ownership	Local
Municipality	Wilmerding

Middle Ave → 5th St	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	No
AADT	Unavailable
Roadway Ownership	Local
Municipality	Wilmerding

5th St → Airbrake Ave	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, intermittent
AADT	Unavailable
Roadway Ownership	Local
Municipality	Wilmerding

Airbrake Ave → Patton St (Eastbound Dir)	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, intermittent
AADT	2,000
Roadway Ownership	Local
Municipality	Wilmerding

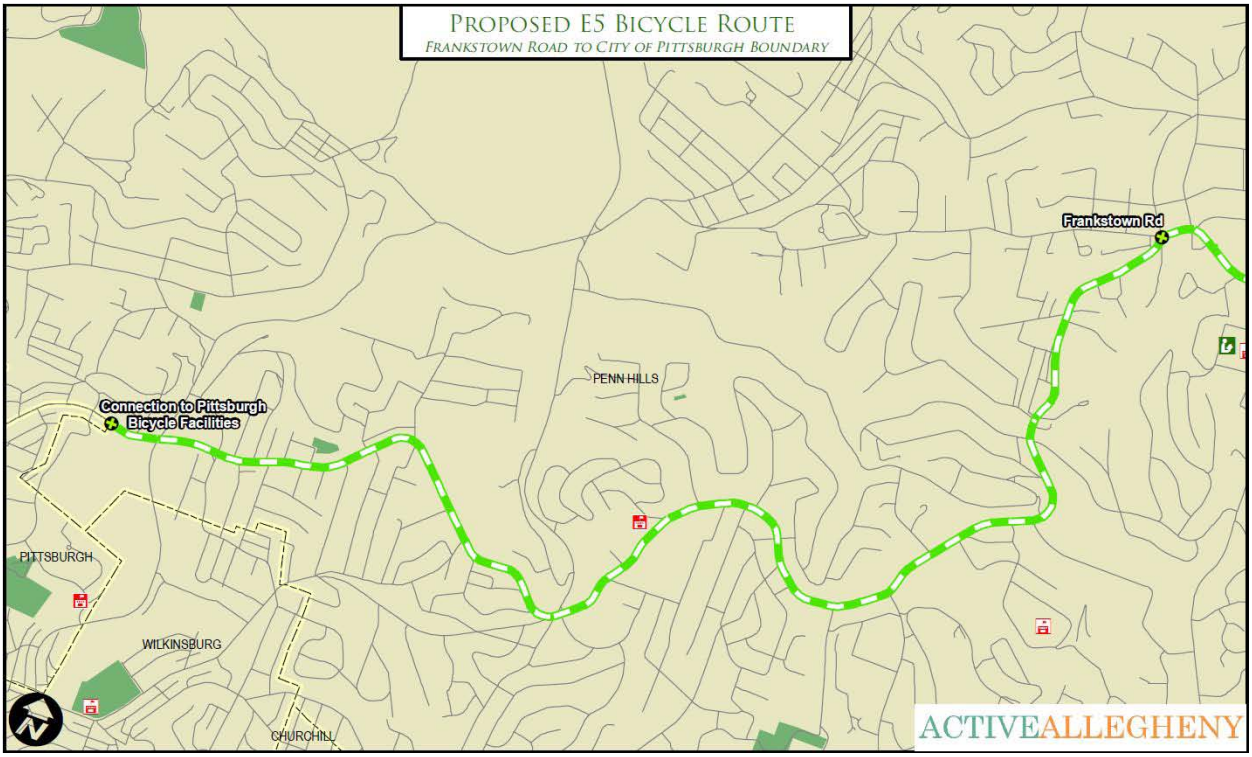
Airbrake Ave → Penn Ave	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, intermittent
AADT	Unavailable
Roadway Ownership	Local
Municipality	Turtle Creek



Cross Sectional Information

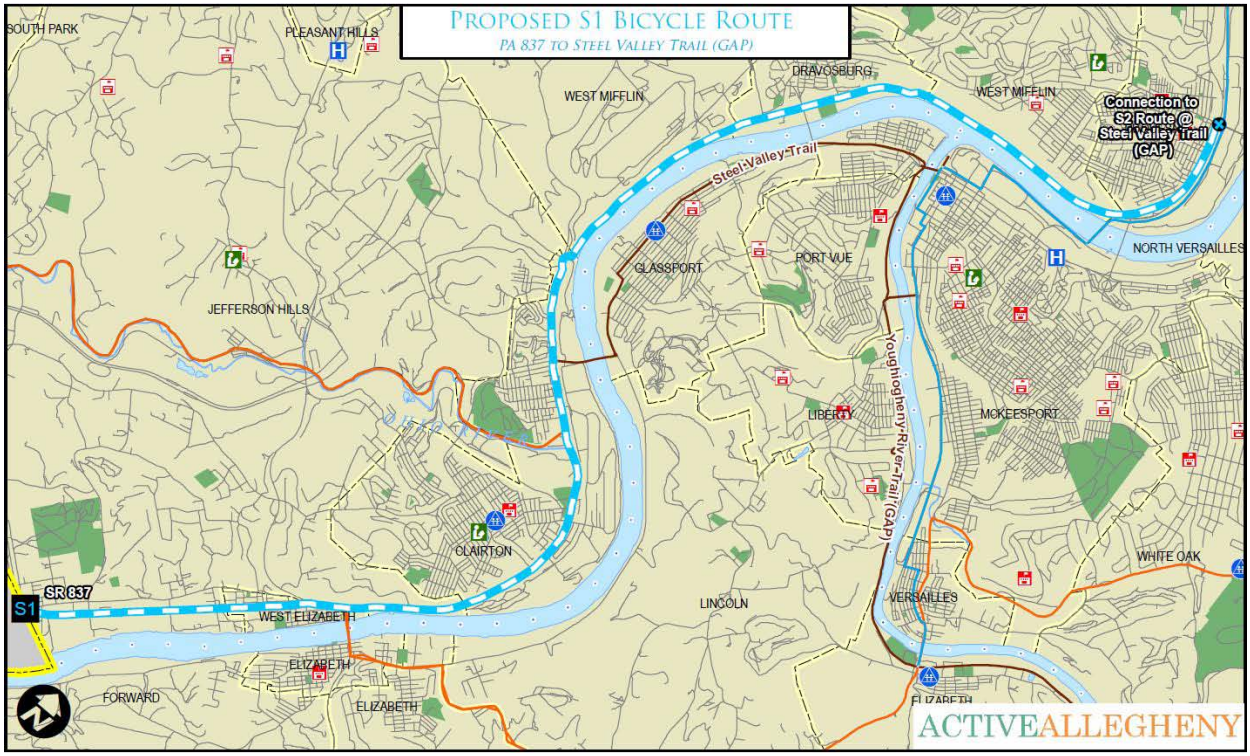
Pierson Run Rd → Saltsburg Rd	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	No
AADT	Unavailable
Roadway Ownership	County
Municipality	Plum

Saltsburg Rd → Frankstown Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	12,000 – 14,000
Roadway Ownership	State
Municipality	Plum/Penn Hills



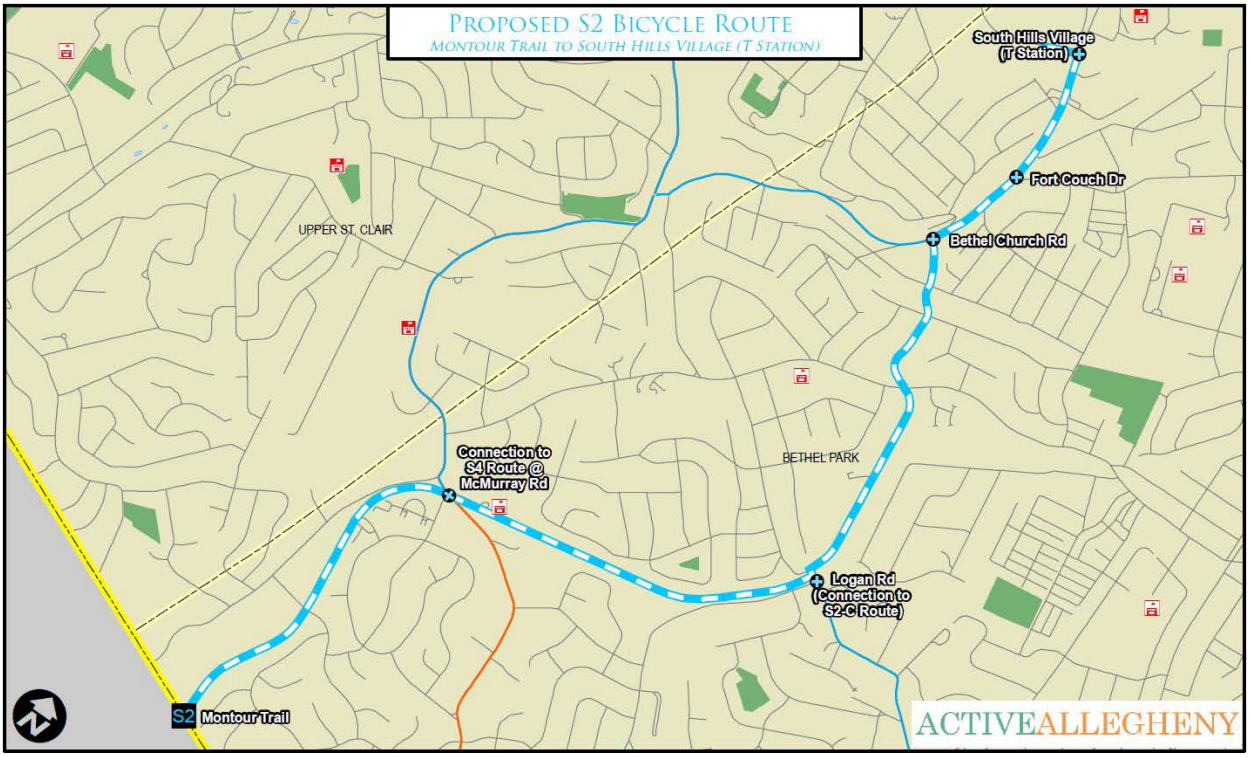
Cross Sectional Information

Frankstown Rd → City of Pittsburgh	
SPC Rating	Average/Above Average
Roadway Type	Arterial
Typical Pavement Width	N/A
Parking	No
AADT	10,000 – 12,000
Roadway Ownership	State
Municipality	Penn Hills



Cross Sectional Information

SR 837 → Steel Valley Trail	
SPC Rating	Above Average
Roadway Type	Arterial
Typical Pavement Width	34’
Parking	No
AADT	9,000 – 13,000
Roadway Ownership	State
Municipality	W/ Elizabeth/Clairton/ W.Mifflin/Dravosburg/Duquesne



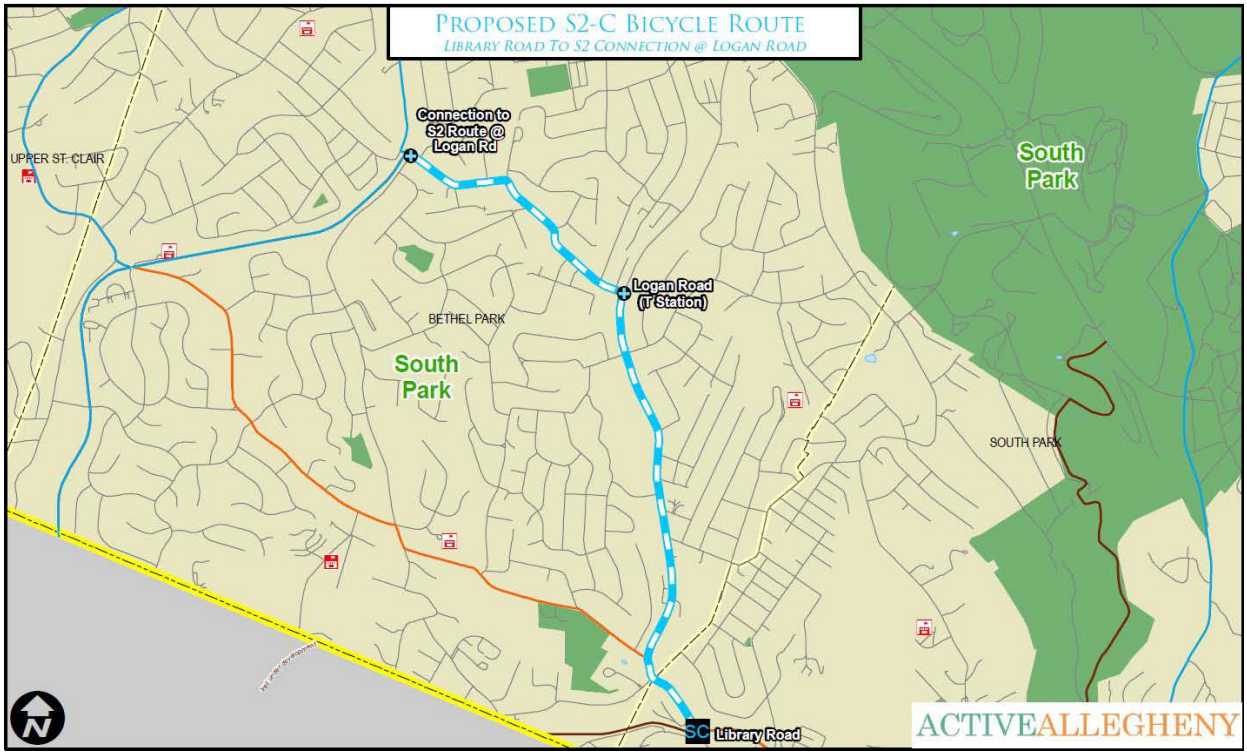
Cross Sectional Information

Montour Trail → Logan Rd	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Bethel Park

Logan Rd → Bethel Church Rd	
SPC Rating	Average
Roadway Type	Local
Typical Pavement Width	27’
Parking	No
AADT	9,000
Roadway Ownership	State
Municipality	Bethel Park

Bethel Church Rd → Fort Couch Dr	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	29’
Parking	No
AADT	14,000
Roadway Ownership	County
Municipality	Bethel Park

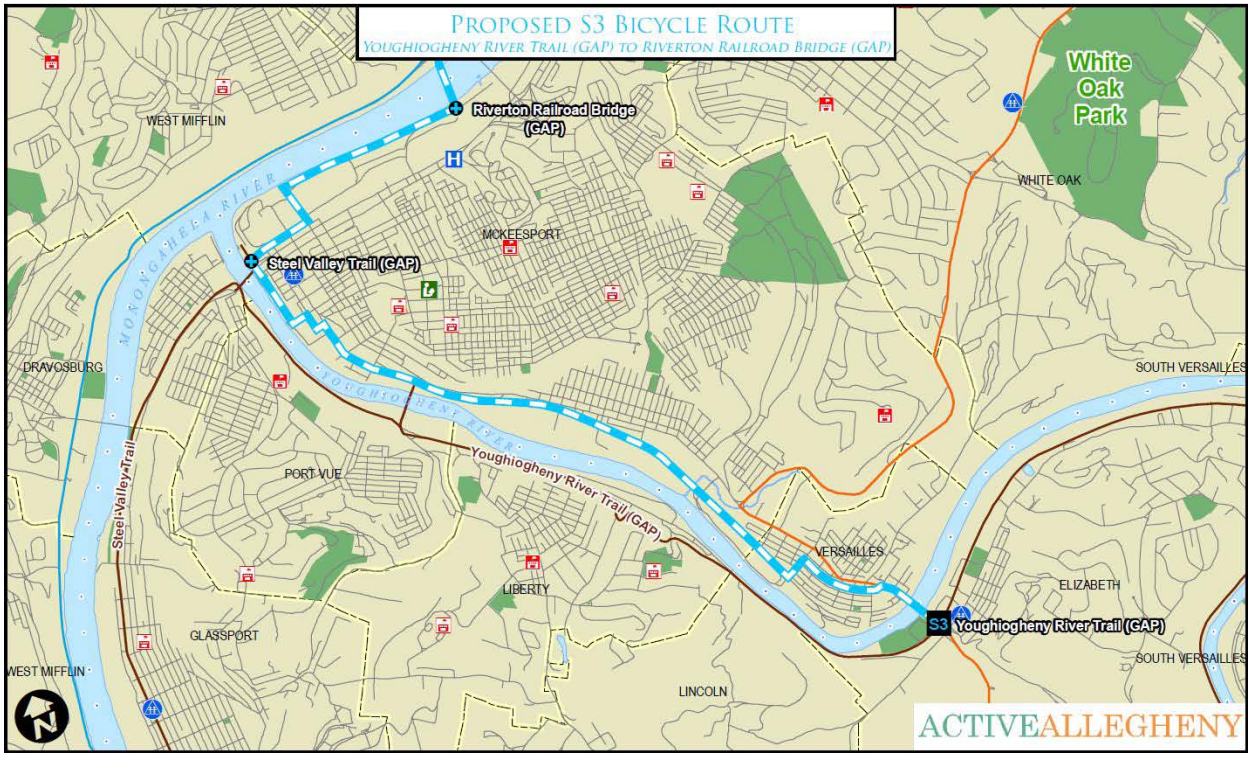
Fort Couch Dr → South Hills Village Station	
SPC Rating	Below Average
Roadway Type	Arterial
Typical Pavement Width	67’
Parking	No
AADT	25,000
Roadway Ownership	County
Municipality	Bethel Park



Cross Sectional Information

Library Rd → Logan Rd	
SPC Rating	Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	10,000
Roadway Ownership	Local
Municipality	South Park/Bethel Park

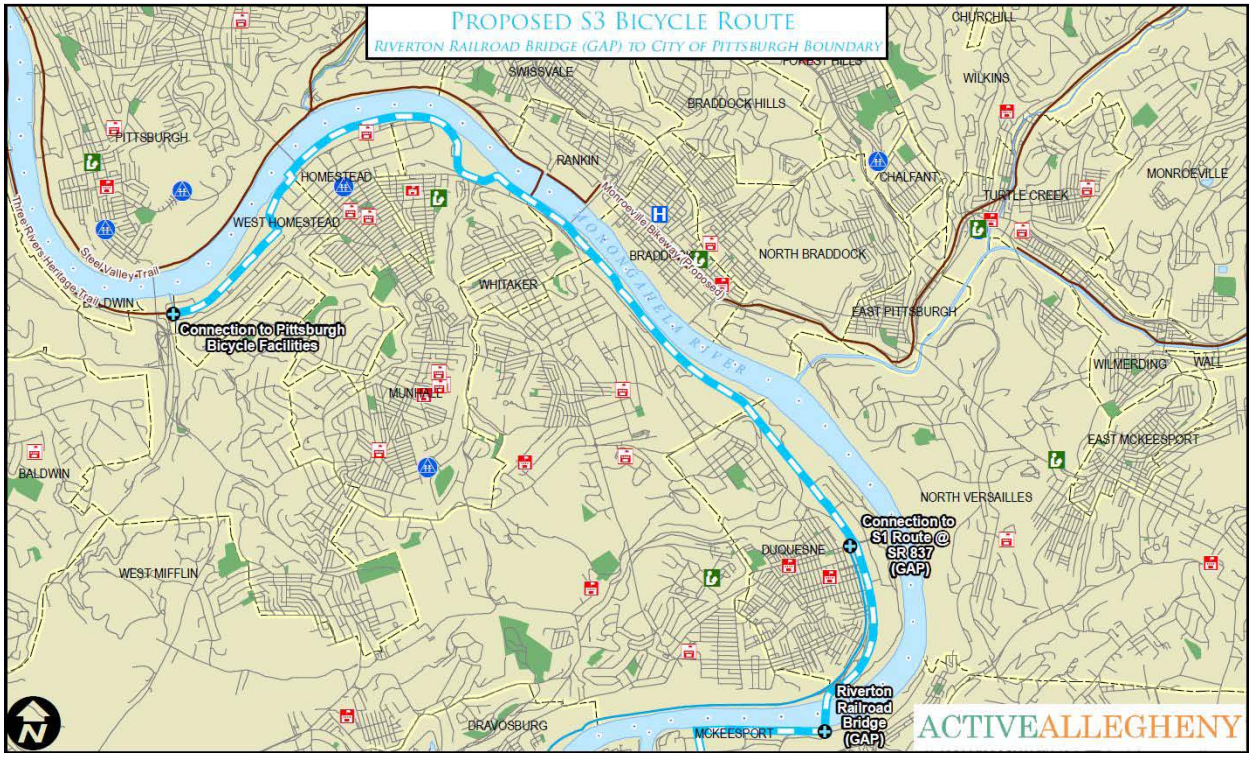
Logan Rd → S2 Route	
SPC Rating	Average
Roadway Type	Local
Typical Pavement Width	27’
Parking	No
AADT	9,000
Roadway Ownership	State
Municipality	Bethel Park



Cross Sectional Information

Youghiogheny River Trail → Steel Valley Trail	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Versailles/McKeesport

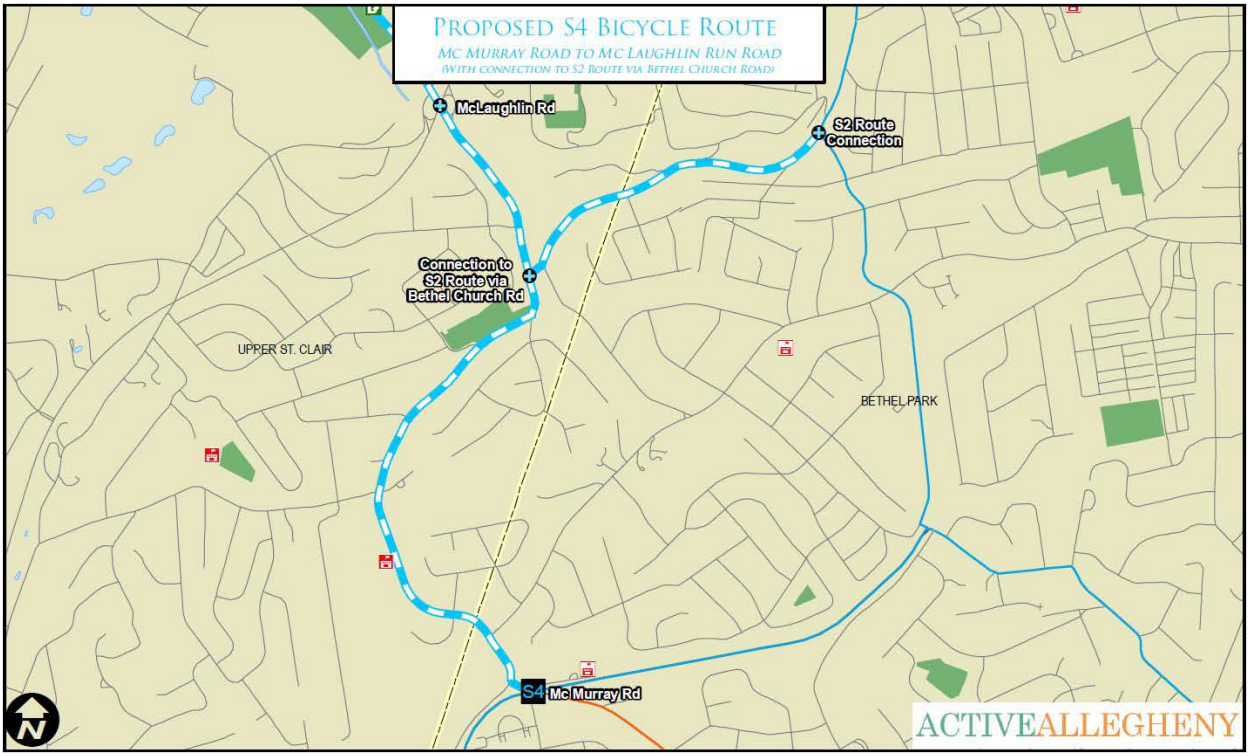
Steel Valley Trail → Riverton Railroad Bridge	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	McKeesport



Cross Sectional Information

Riverton Railroad Bridge → Steel Valley Trail	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	McKeesport/Duquesne

Steel Valley Trail → City of Pittsburgh	
SPC Rating	N/A
Roadway Type	Trail (Existing/Proposed)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Duquesne/W.Mifflin/ Whitaker/Homestead/ W. Homestead



Cross Sectional Information

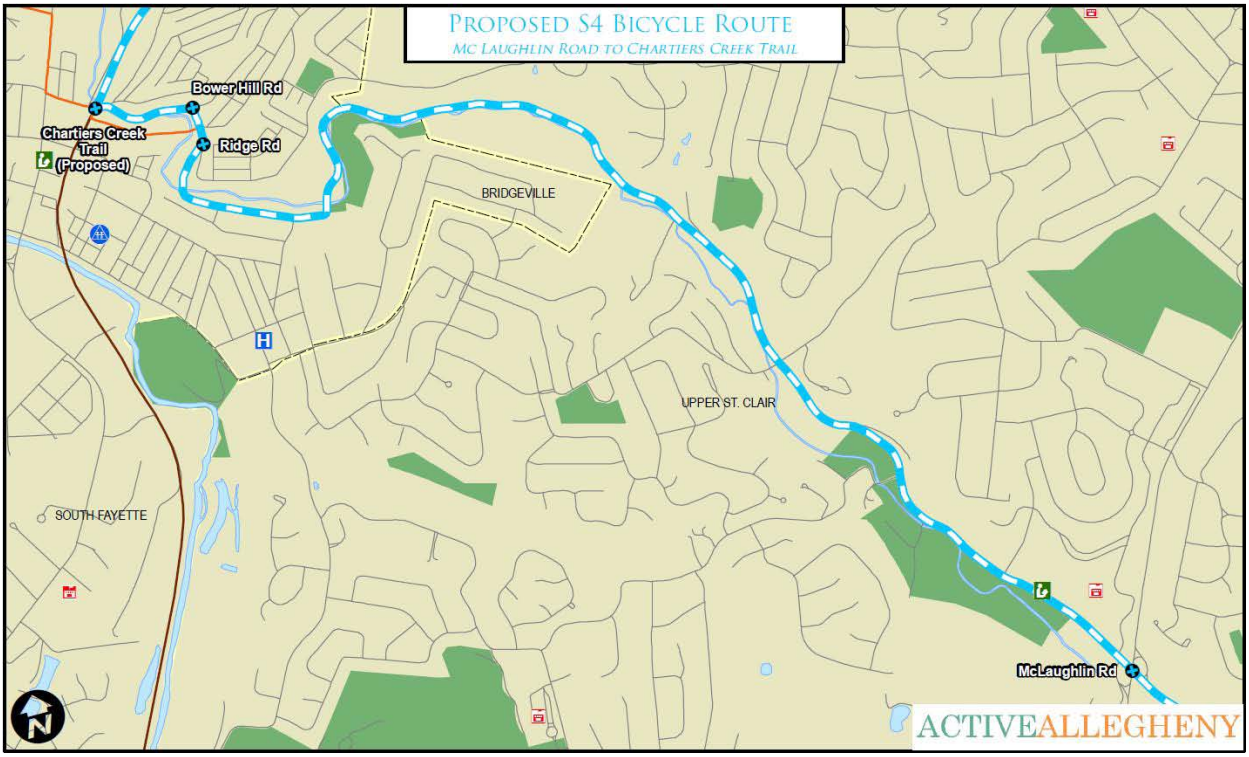
Mainline Route

Mc Murray Rd → Bethel Church Rd	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	14,000
Roadway Ownership	Local
Municipality	Bethel Park/ Upper St. Clair

Bethel Church Rd → McLaughlin Rd	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	N/A
AADT	14,000
Roadway Ownership	State
Municipality	Upper St. Clair

Connection Route

Bethel Church Rd → S2 Route	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	29’
Parking	No
AADT	10,000
Roadway Ownership	County
Municipality	Upper St. Clair/Bethel Park

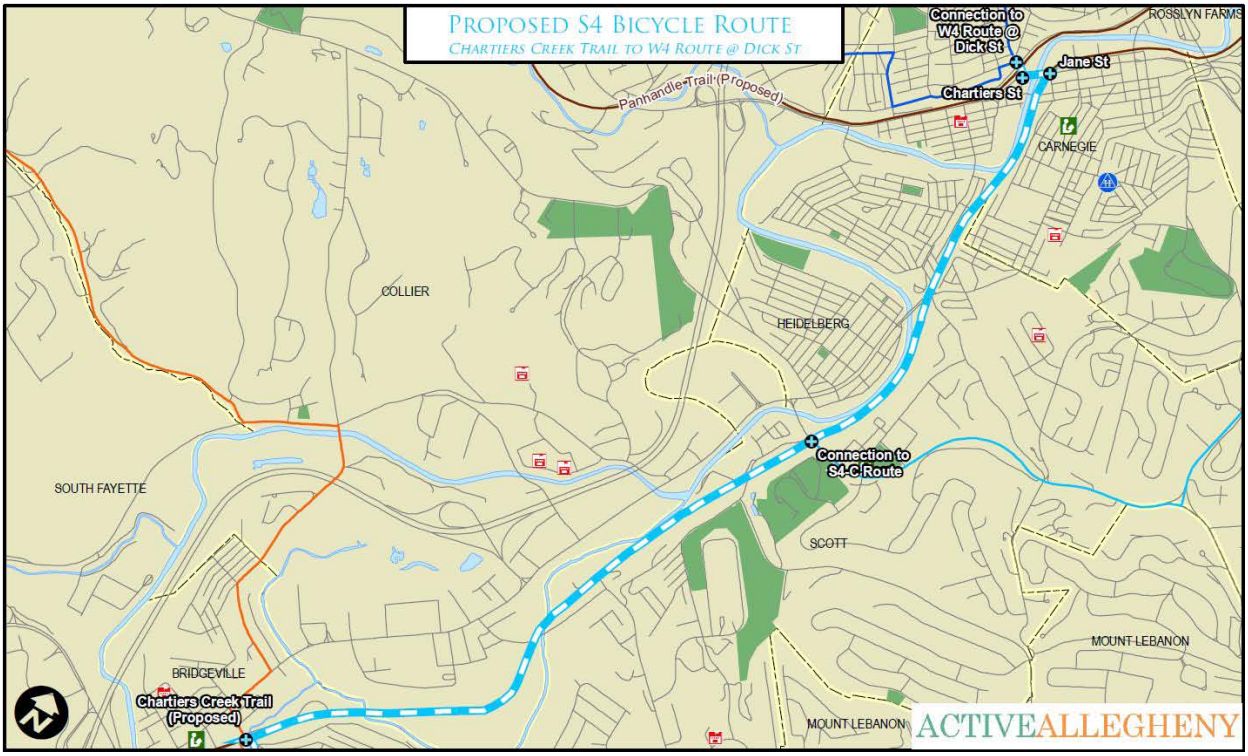


Cross Sectional Information

Mc Laughlin Rd → Ridge Rd	
SPC Rating	Below & Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	7,000 – 15,000
Roadway Ownership	State
Municipality	Upper St. Clair/Bridgeville

Ridge Rd → Bower Hill Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	7,000
Roadway Ownership	Local
Municipality	Bridgeville

Bower Hill Rd → Chartiers Creek Trail	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	24’
Parking	No
AADT	10,000
Roadway Ownership	Local
Municipality	Bridgeville

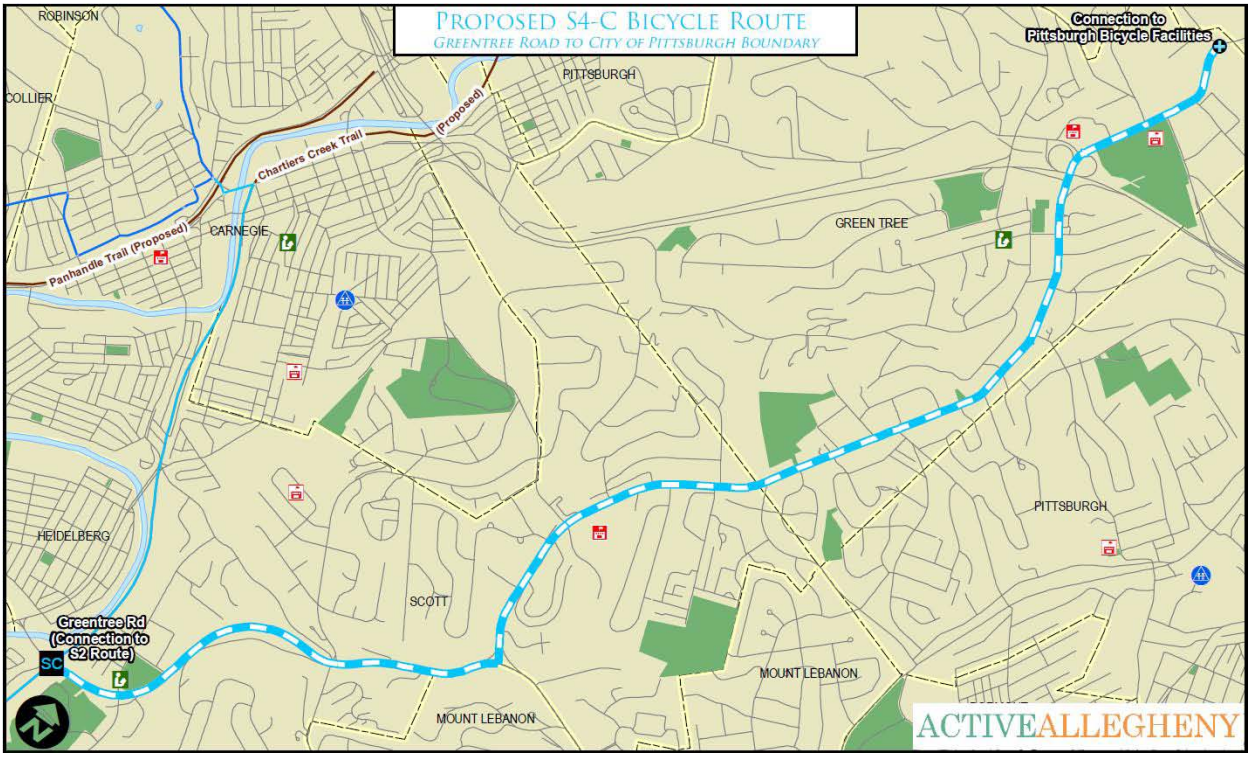


Cross Sectional Information

Chartiers Creek Trail → Jane Street	
SPC Rating	N/A
Roadway Type	Trail (Proposed)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Scott

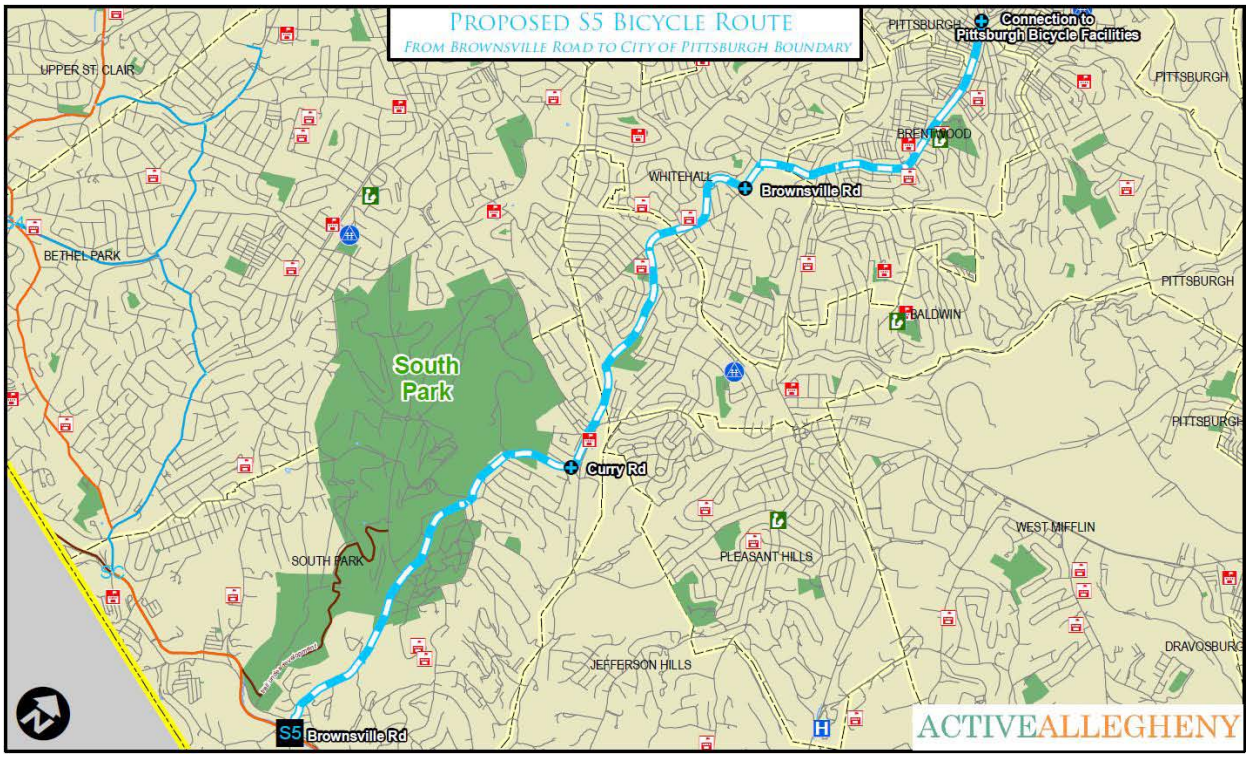
Jane Street → Chartiers St	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	7,500
Roadway Ownership	Local
Municipality	Carnegie

Chartiers St → Dick St	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	9,000
Roadway Ownership	Local
Municipality	Carnegie



Cross Sectional Information

Greentree Rd – City of Pittsburgh	
SPC Rating	Above / Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	20,000
Roadway Ownership	Local
Municipality	Scott/Green Tree

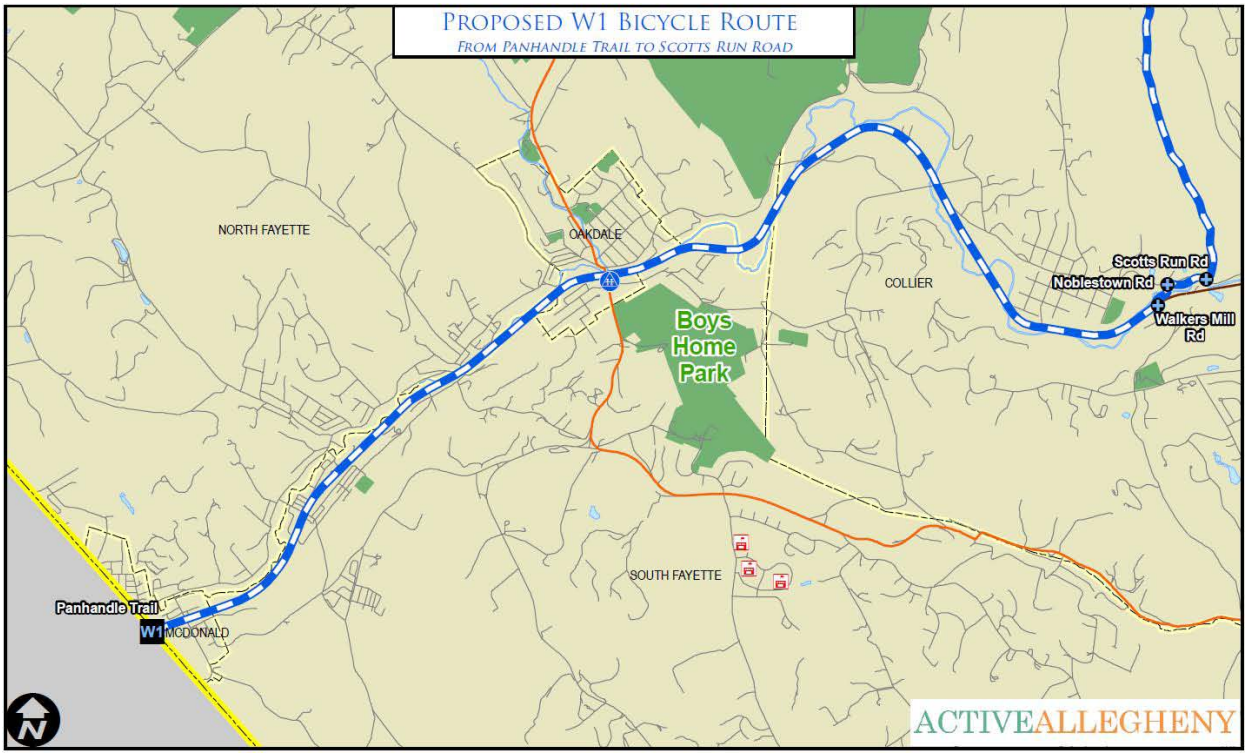


Cross Sectional Information

Brownsville Rd → Curry Rd	
SPC Rating	Average / Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	10,000
Roadway Ownership	Local/County
Municipality	South Park

Curry Rd → Brownsville Rd	
SPC Rating	Above Average
Roadway Type	Local / Collector
Typical Pavement Width	N/A
Parking	No
AADT	13,000
Roadway Ownership	Local/County
Municipality	S. Park/Baldwin/Whitehall

Brownsville Rd → City of Pittsburgh	
SPC Rating	Average / Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	Yes, intermittent
AADT	13,000
Roadway Ownership	Local/County
Municipality	Whitehall/Brentwood

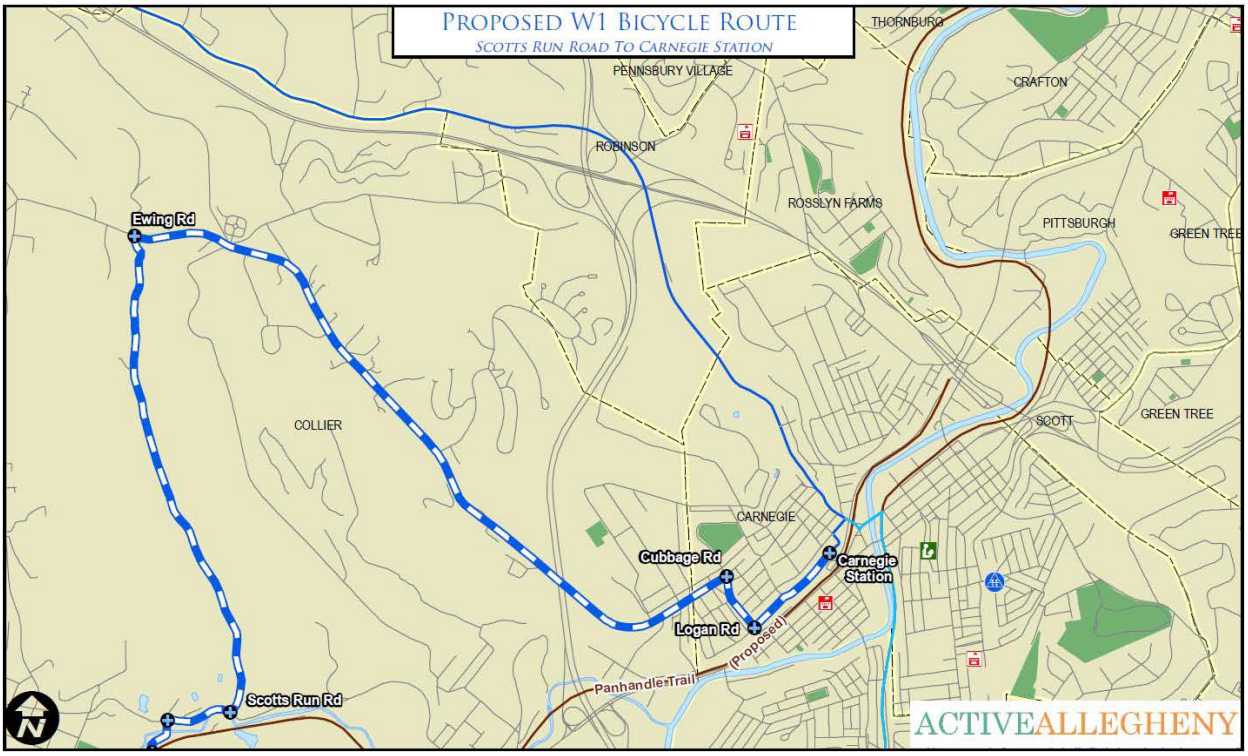


Cross Sectional Information

Panhandle Trail → Walkers Mill Rd	
SPC Rating	None
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	N/A
Municipality	N. Fayette/Oakdale/Collier

Walkers Mill Rd → Noblestown Rd	
SPC Rating	Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	No
AADT	1,500
Roadway Ownership	State
Municipality	Collier

Noblestown Rd → Scotts Run Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	County
Municipality	Collier



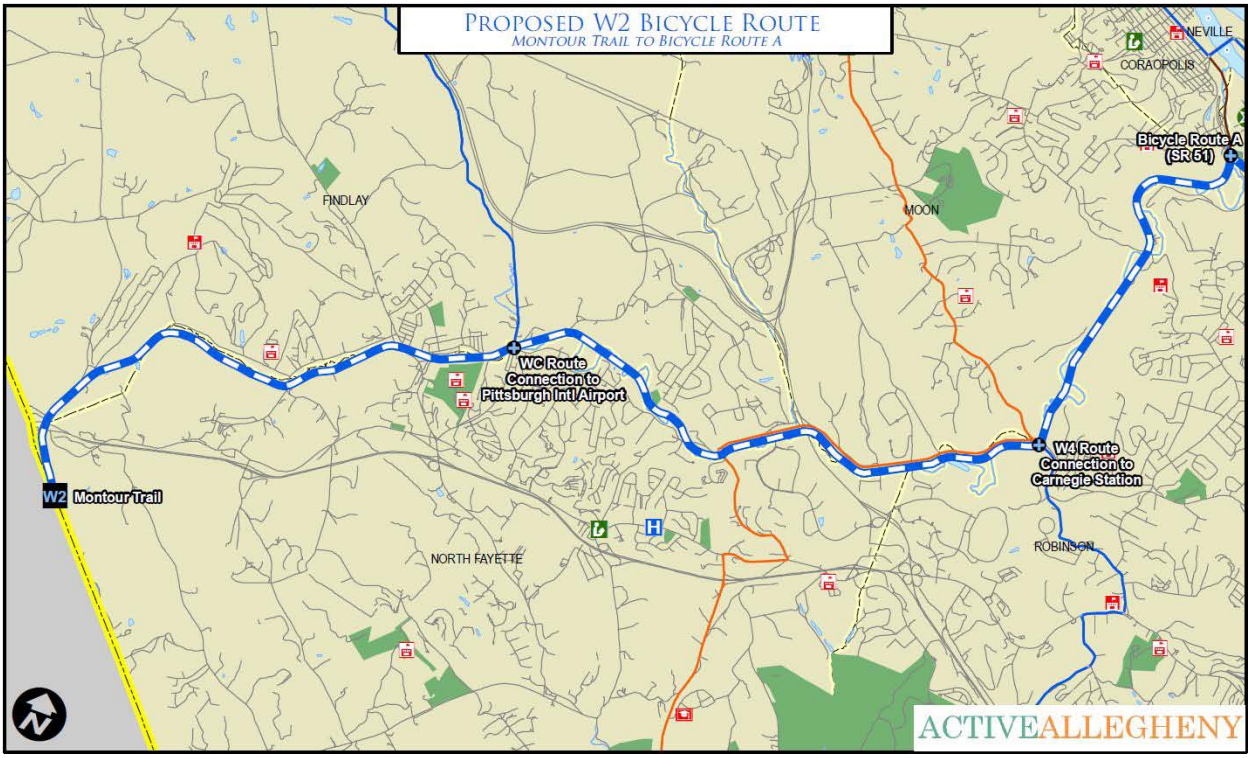
Cross Sectional Information

Scotts Run Rd → Ewing Rd	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	Collier

Ewing Rd → Cubbage Rd	
SPC Rating	Above Average/Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	Collier

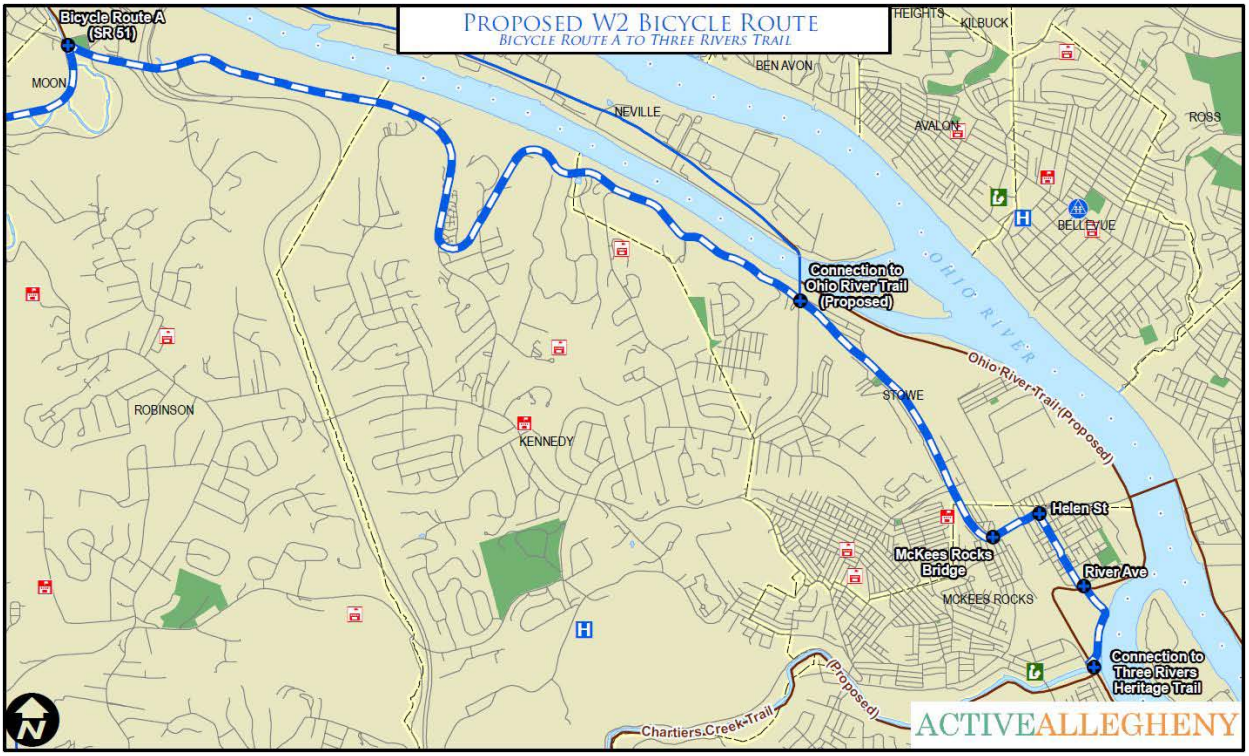
Cubbage Rd → Logan Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	Carnegie

Logan Rd → Carnegie Station	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	Carnegie



Cross Sectional Information

Montour Trail → Bicycle Route A	
SPC Rating	N/A
Roadway Type	Trail (Existing)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Findlay/North Fayette/ Moon/Robinson



Cross Sectional Information

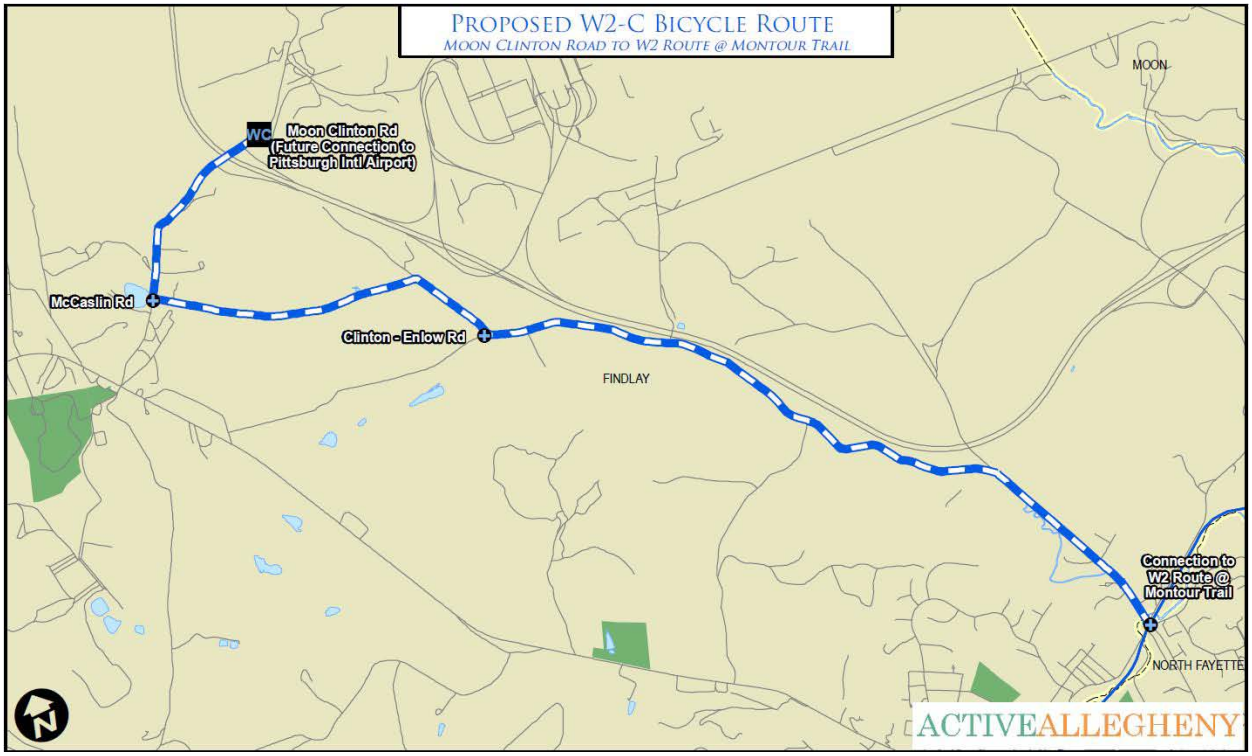
Bicycle Route A → McKees Rocks Bridge	
SPC Rating	Above Average / Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	Yes, intermittent
AADT	7,000 – 10,000
Roadway Ownership	State
Municipality	Robinson/Kennedy/Stone/ McKees Rocks

McKees Rocks Bridge → Helen St	
SPC Rating	Below Average
Roadway Type	Bridge
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	County
Municipality	Collier

Helen St → River Ave	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	McKees Rocks

River Ave → Three Rivers Heritage Trail	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	N/A
AADT	Unavailable
Roadway Ownership	Local
Municipality	McKees Rocks

Note: W2 Bicycle Route shown on Route 51 and Helen St. Route may be modified to include the proposed Ohio River trail and Nichol Ave. once the trail is constructed.

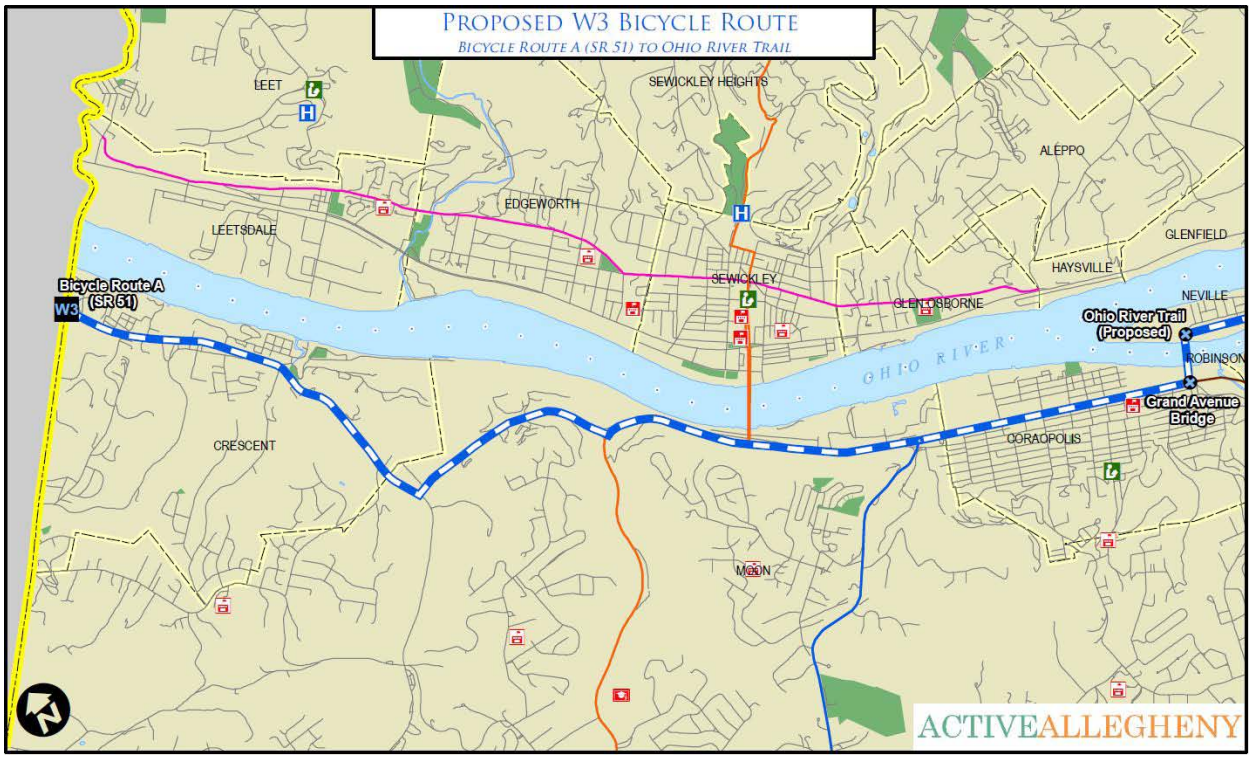


Cross Sectional Information

Moon Clinton Rd → McCaslin Rd	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	Unavailable
Roadway Ownership	Local
Municipality	Findlay

McCaslin Rd → Clinton – Enlow Rd	
SPC Rating	Above Average
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Unknown
AADT	Unavailable
Roadway Ownership	County
Municipality	Findlay

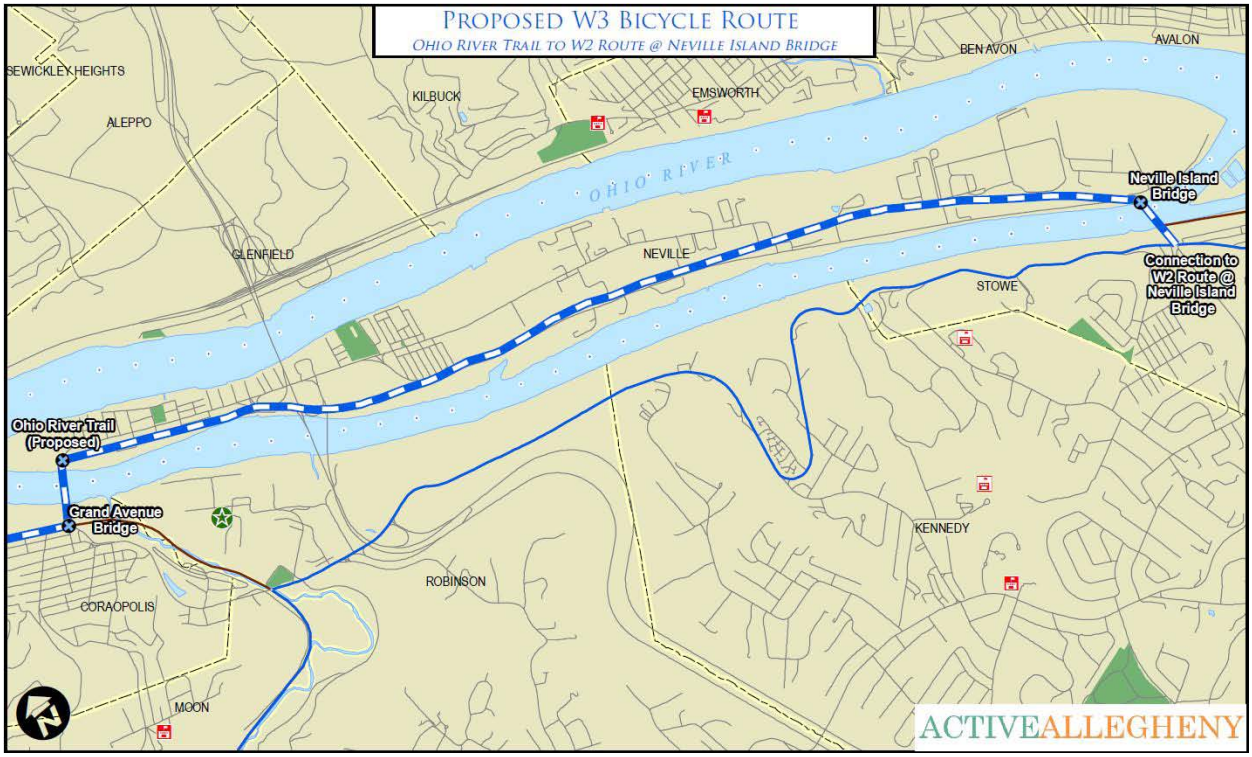
Clinton – Enlow Rd → Montour Trail	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	8,000
Roadway Ownership	County
Municipality	Findlay/North Fayette



Cross Sectional Information

Bicycle Route A → Grand Avenue Bridge	
SPC Rating	Above Average
Roadway Type	Arterial
Typical Pavement Width	N/A
Parking	No
AADT	12,000
Roadway Ownership	State
Municipality	Crescent/Moon/Coraopolis

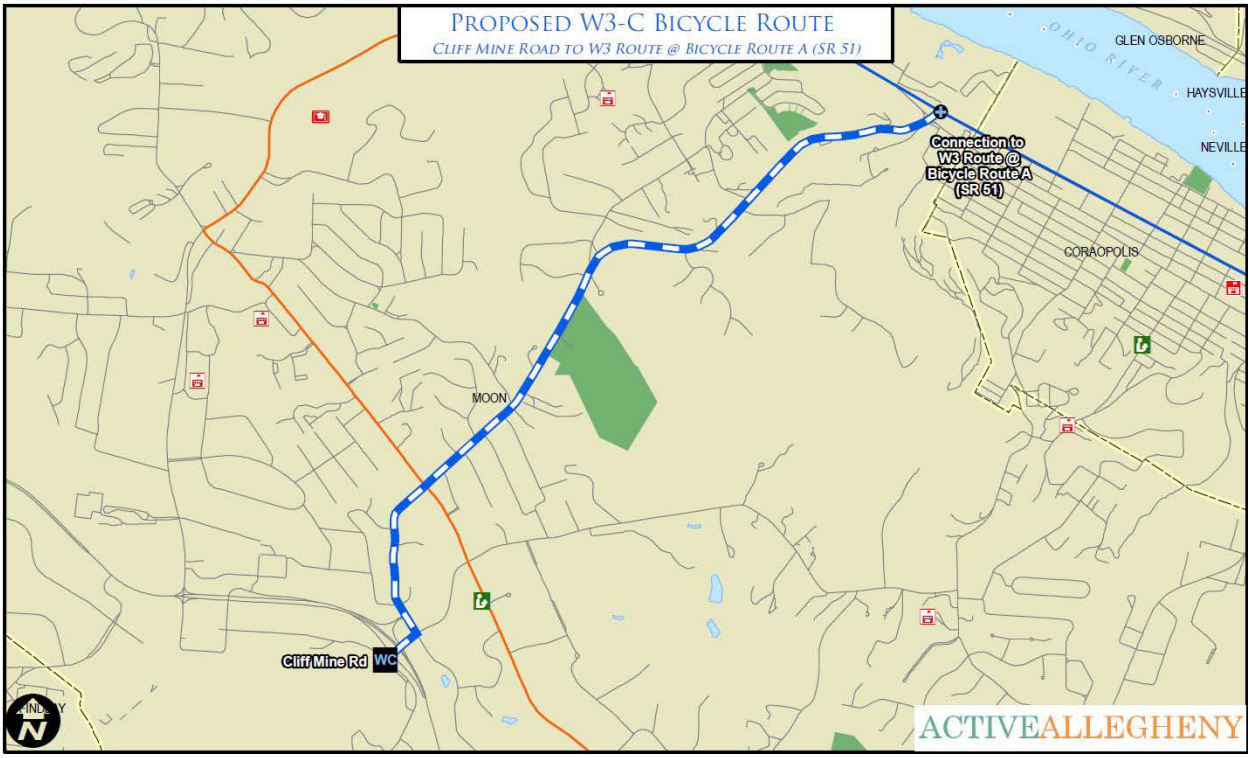
Grand Avenue Bridge → Ohio River Trail	
SPC Rating	Above Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	8,000
Roadway Ownership	County
Municipality	Coraopolis/Neville



Cross Sectional Information

Ohio River Trail → Neville Island Bridge	
SPC Rating	N/A
Roadway Type	Trail (Proposed)
Typical Pavement Width	N/A
Parking	N/A
AADT	N/A
Roadway Ownership	N/A
Municipality	Neville

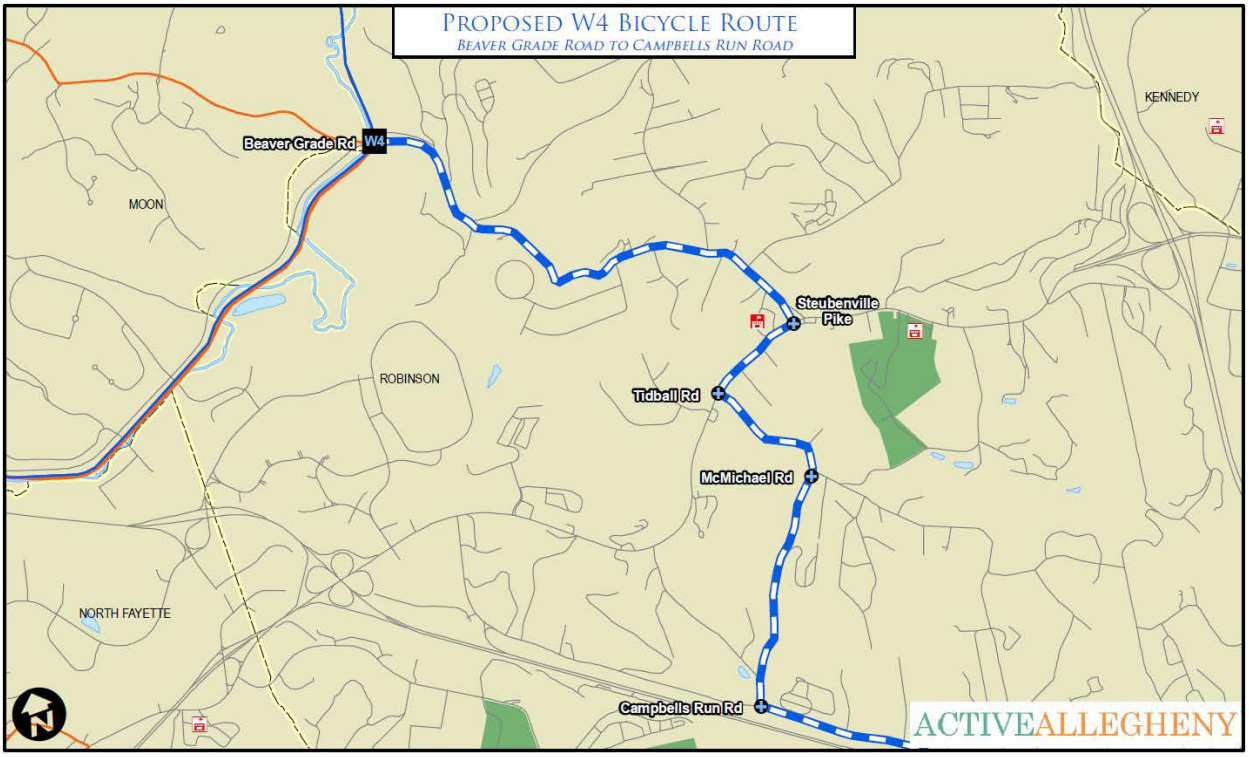
Neville Island Bridge → W2 Route	
SPC Rating	Average
Roadway Type	Bridge
Typical Pavement Width	N/A
Parking	No
AADT	9,000
Roadway Ownership	County
Municipality	Neville/Stowe



Cross Sectional Information

Cliff Mine Rd → Thorn Run Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	6,000
Roadway Ownership	County
Municipality	Moon

Thorn Run Rd → W3 Route	
SPC Rating	Below Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	14,000
Roadway Ownership	State
Municipality	Moon



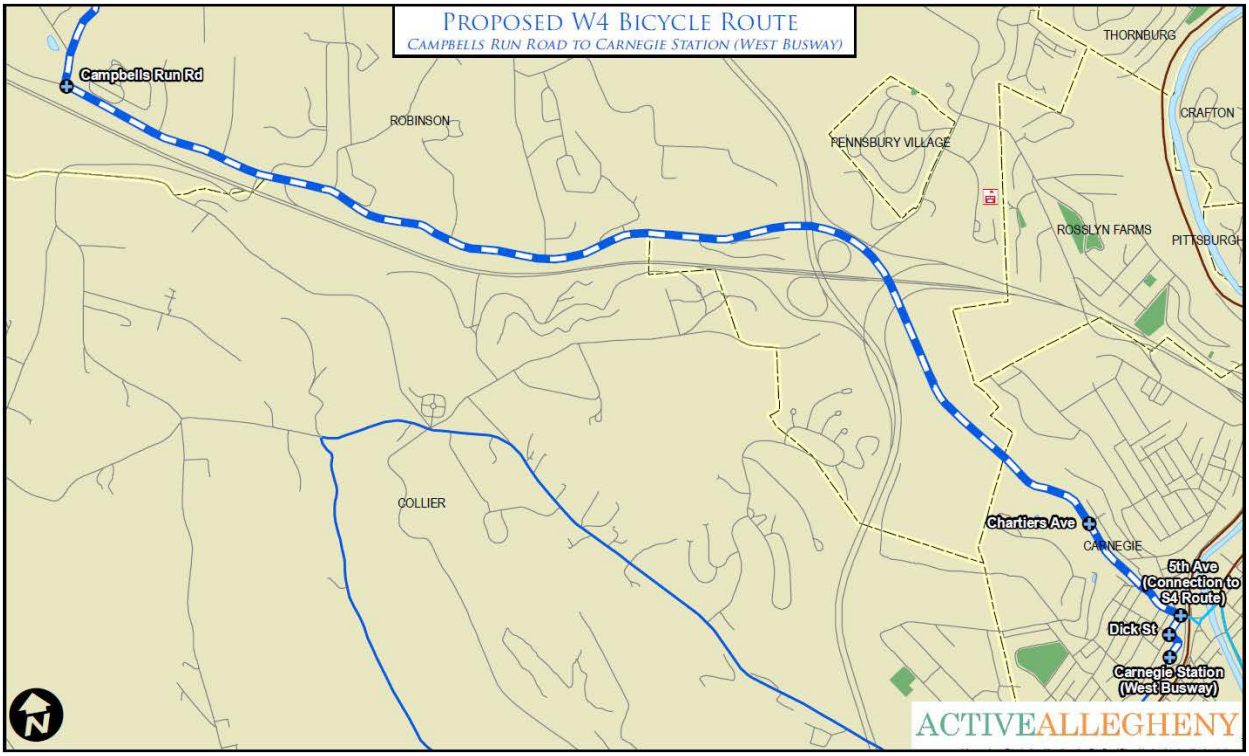
Cross Sectional Information

Beaver Grade Rd → Steubenville Pike	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	Unknown
AADT	12,000
Roadway Ownership	State
Municipality	Robinson

Steubenville Pike → Tidball Rd	
SPC Rating	Below Average
Roadway Type	Arterial
Typical Pavement Width	N/A
Parking	No
AADT	12,000 – 24,000
Roadway Ownership	State
Municipality	Robinson

Tidball Rd → McMichael Rd	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	No
AADT	Unavailable
Roadway Ownership	Local
Municipality	Robinson

McMichael Rd → Campbells Run Rd	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	N/A
Parking	No
AADT	2,500
Roadway Ownership	State
Municipality	Robinson



Cross Sectional Information

Campbells Run Rd → Chartiers Ave	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	24’
Parking	No
AADT	8,000
Roadway Ownership	County
Municipality	Robinson/Carnegie

Chartiers Ave → 5th Ave (S4 Route)	
SPC Rating	Average
Roadway Type	Collector
Typical Pavement Width	24’
Parking	No
AADT	9,000
Roadway Ownership	County
Municipality	Carnegie

5th Ave → Dick St	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	Unavailable
Roadway Ownership	Local
Municipality	Carnegie

Dick St → Carnegie Station	
SPC Rating	N/A
Roadway Type	Local
Typical Pavement Width	N/A
Parking	Yes, both sides
AADT	Unavailable
Roadway Ownership	Local
Municipality	Carnegie

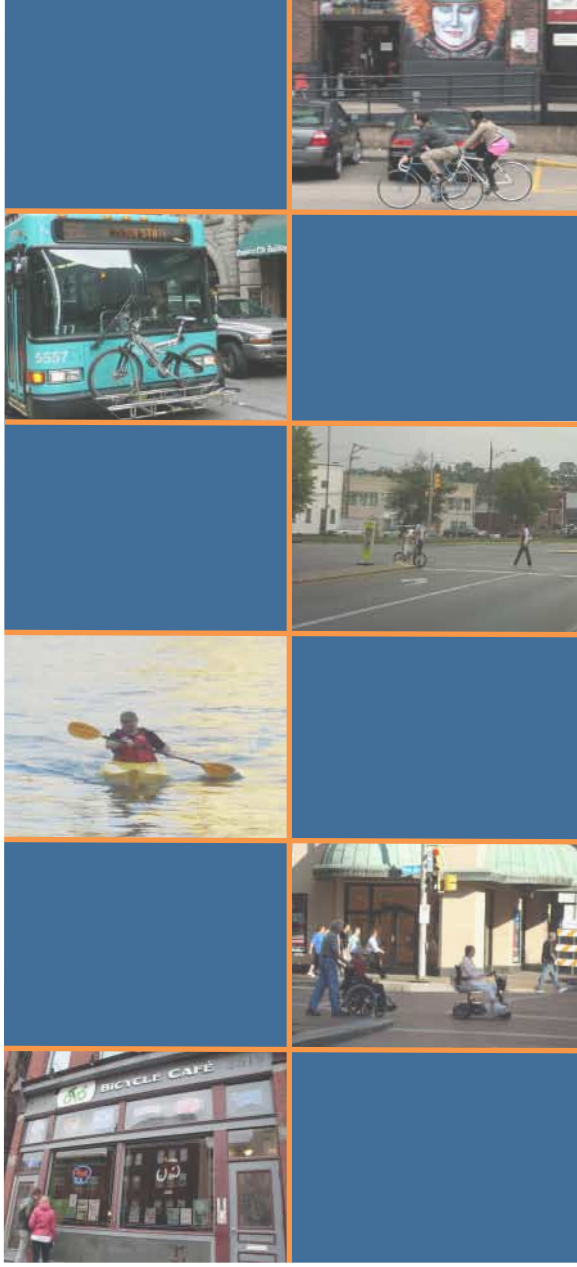
ACTIVEALLEGHENY

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan for Allegheny County

APPENDIX

An implementation activity of:

ALLEGHENY PLACES



ACTIVE TRANSPORTATION PLAN

Allegheny County Economic Development
Allegheny County, Pennsylvania

DECEMBER 2010

ACTIVEALLEGHENY

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan for Allegheny County

An Implementation Activity of ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

The Preparation of this Plan was Funded By:

The **Pennsylvania Department of Transportation:** Smart Transportation Grant, Pennsylvania Community Transportation Initiative (PCTI), and with **Allegheny County** in-kind services.

The Plan was Prepared For:

Allegheny County
Dan Onorato, County Executive
Allegheny County Economic Development
Dennis Davin, Director
Robert Hurley, Deputy Director

Project Manager: Lynn Heckman, Assistant Director – Transportation Initiatives

The Plan was Prepared By:

Michael Baker Jr., Inc. in close coordination with the ACTIVEALLEGHENY Core Committee, Study Advisory Committee and Allegheny County Residents.

Project Manager: Regina E. Del Vecchio, P.T.P.

We would like to thank the ACTIVEALLEGHENY Core Committee, Study Advisory Committee and Public for their contributions to this plan.

Core Committee Members

10,000 Friends of PA
Airport Corridor Transportation Management Association
Allegheny County Economic Development
Allegheny County Executive's Office
Allegheny County Parks Foundation
Allegheny County Police
Allegheny County Public Works
Allegheny County Task Force on Disabilities
Bike Pittsburgh
City of Pittsburgh
CityLAB
Friends of the Riverfront
Montour Trail Council
Oakland Transportation Management Association
Pennsylvania Environmental Council
Pennsylvania Department of Transportation Central Office
Pennsylvania Department of Transportation District-11
Pittsburgh Downtown Partnership Transportation Management Association
Port Authority of Allegheny County
Southwestern Pennsylvania Commission
Township of Upper St. Clair

Study Advisory Committee Members

10,000 Friends of PA
3 Rivers Wet Weather
ACCESS Transportation
Airport Corridor Transportation Management Association
Allegheny County, Various Departments and Agencies
Bike Pittsburgh
Blind Leisure Outdoor Development
CityLAB
City of Pittsburgh
Civil & Environmental Consultants, Inc.
Community College of Allegheny County
Friends of the Riverfront
Gateway Engineers
GoBurgh Initiative
Manchester Bidwell Corporation
Montour Trail Council
Mon Valley Initiative
Moon Township
Mt. Lebanon
Mullen Advertising
Oakland Transportation Management Association
Pennoni Associates
Pennsylvania Department of Transportation
Picadio, Sneath, Miller & Norton, P.C.
Point Park University
Pittsburgh Downtown Partnership Transportation Management Association
Quaker Valley Council of Government
RAND
Rothschild, Doyno Collaborativo
Southwestern Pennsylvania Commission
Steel Valley Council of Government
Sustainable Pittsburgh
Three Rivers Center for Independent Living
Traffic 21
Turtle Creek Council of Government
Twin Rivers Council of Government
URS Corporation
United Cerebral Palsy of Pittsburgh
Upper St. Clair Township
Venture Outdoors

Large Cover Photo – Allegheny County's Roberto Clemente Bridge (Frequently Switched to Pedestrian-Only for Events)
Small Cover Photos – Bicyclists in the Strip District (Top Right Photo: Kevin Smay); Pedestrian and Bicyclist (Middle Right Photo); Pedestrians in Pittsburgh (Bottom Right Photo); Bike Rack on PAAC Bus (Top Left Photo: Sara Walfoort); Kayaker (Middle Left Photo); Bicycle Café (Bottom Left Photo: Kevin Smay)

All photos provided by Michael Baker Jr., Inc. unless noted otherwise.

The ACTIVEALLEGHENY Plan, an implementation activity of ALLEGHENYPLACES, is contained in a separate document along with Appendix A (Bicycle Route Cue Sheets). This document contains Appendices B through O.

LIST OF APPENDICES

Appendix B

Core Committee Meeting Memorandum

ACTIVEALLEGHENY

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan

MEETING MEMORANDUM

Core Committee Meeting #1

Date:	Tuesday, May 11, 2010	**Location:**	Allegheny County Economic Development Large Conference Room
Time:	1:30 PM	**Baker Job #:**	119953
To:	Lynn Heckman, Assistant Director-Transportation Initiatives, **ACED**		
Attendees:	**Allegheny County:** Darla Cravotta, Christine Fulton, Chris Goswick, Lynn Heckman; **PennDOT-11:** Ben DeVore, Jeff Skalican; **Southwestern Pennsylvania Commission (SPC):** Sara Walfoort; **City of Pittsburgh:** Steve Patchen, Patrick Roberts, Brian Hurley; **Airport Corridor Transportation Association (ACTA):** Lynn Manion; **Friends of the Riverfront (FOR):** Thomas Baxter; **CityLAB:** Eve Picker; **Upper St. Clair:** Scott Brilhart; **Bike Pittsburgh:** Scott Bricker; **Oakland Transportation Management Association (OTMA):** Mavis Rainey**,** Baker: Max Heckman, Regina Del Vecchio		
	Submitted by : Regina Del Vecchio – Project Manager, **Baker**		

Purpose: To identify potential bicycle and pedestrian focus areas and/or corridors, and provide feedback on potential data sources, map development and the public outreach process.

Topic	Action Items
1. Welcome, Introductions & Meeting Purpose	➢ None
2. Scope of Services	➢ None
3. Project Initiation (Data and Map Development)	

- Several comments were received on potential data for analysis and map development including: • "The Steps of Pittsburgh" book • "Rack and Roll" inventory of buses and/or routes • Location of places of worship • Location of recreation centers • Bicycle Suitability GIS data from SPC • Location of major retail centers • Inventory of visually impaired pedestrian heads • Carfree Census data for 2000 • Focus areas for theme "live, learn, work, play, invest" • Updated Three Rivers Heritage Trail Map • Pedal Pittsburgh • Three Rivers Water Trail • Schools (SPC) • All parks to include municipal • Municipal Sidewalk Plans • PennDOT Hazardous Walking Routes and Policy • Safe Routes to School and Transportation Enhancement Projects • SDI for roadways from PennDOT • Congestion data from PennDOT or SPC • Speed limit data • Designated greenways (DCNR) • Location of coffee shops • Location of hospitals • Location of bicycle shops, rentals and repairs • Location of major employment centers (e.g., Bayer) • Map of bridges and river crossings • ACTA Projects • Universities and colleges (SPC) • Can functional classifications for trails be assigned considered? There may be certain trails that serve commuters best.	➢ Acquire identified data from various sources for data and map development and deliverables (Task 1 and Task 2 deliverables).
4. Facilities Inventory and Analysis (Identify Focus Areas – Map Exercise)	➢ In future mapping incorporate trails, bridges, the busways and the T. at a minimum.
- A series of maps were marked with locations for future inclusion and analysis of deficiencies and opportunities as they relate to bicycle and pedestrian mobility and access in the county.	➢ Evaluate identified locations on maps to be "focus areas/corridors" for the Active Allegheny Study ➢ Perform field work for locations ➢ Create a draft map and list of locations and inventory

5. Public Outreach (Input on Study Advisory Committee and Online Survey)	
- Core Committee members were asked to provide feedback on potential Study Advisory Committee members.	➢ Incorporate identified potential Study Advisory Committee members from Core Committee lists.
- Online Survey development was discussed. Core Committee members were asked to identify any specific questions they think should be added. The following input was received for potential questions: • Ways to improve your existing route? • What's your primary mode of choice? • In primary purpose for bicycle trip, select primary and secondary • Refer to City and SPC templates and questions for their previous surveys of bicyclists and pedestrians • Student surveys • Geography of land as prevention to bicycle trips? • Transit integration • Title not to be exclusive to Bike/Ped or non-bicyclists/avid walkers will not take survey • Pop City/Local Media channels • School access question for parents/kids	➢ Coordinate with Olszak to incorporate suggested potential questions.
6. News and Next Steps	➢ Design and administer Online Survey with Olszak ➢ Develop public outreach plan with Olszak ➢ SPC Bike/Ped Meeting on May 12, 2010 at 10:00AM ➢ Data collection and map development continue ➢ Initiate field inventory

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan

MEETING MEMORANDUM

Core Committee Meeting #2

Date:	Tuesday, June 22, 2010	**Location:**	Allegheny County Economic Development Large Conference Room
Time:	1:30 PM	**Baker Job #:**	119953
To:	Lynn Heckman, Assistant Director-Transportation Initiatives, **ACED**		
Attendees:	**Allegheny County:** Darla Cravotta, Sam Thomas, Steve Shanley, Chris Goswick, Lynn Heckman; **PennDOT-11:** Jeff Skalican; **Southwestern Pennsylvania Commission (SPC):** Sara Walfoort; **City of Pittsburgh:** Steve Patchen; **Airport Corridor Transportation Association (ACTA):** Lynn Manion; **CityLAB:** Eve Picker; **Upper St. Clair:** Scott Brilhart; **Bike Pittsburgh:** Scott Bricker; **Oakland Transportation Management Association (OTMA):** Mavis Rainey; **Pennsylvania Environmental Council:** Hannah Hardy; **Port Authority of Allegheny County:** David Wohlwill; **Pittsburgh Downtown Partnership:** Lucinda Beattie; **Baker**: Max Heckman, Regina Del Vecchio		
	Submitted by : Regina Del Vecchio – Project Manager, **Baker**		

Purpose: To review bicycle and pedestrian deficiencies and opportunities identified to date, and solicit feedback on additional routes and/or focus areas for further development.

Topic	Action Items
1. Welcome, Introductions & Meeting Purpose	➢ None
2. Scope of Services	➢ None
3. Project Initiation	

Several comments were received during the presentation of data and information collected to date. 1) Bicycle and Pedestrian Crash Data a. What is an "angle crash?" b. Does the crash data include crashes on local roadways, as well as county and state roadways? c. Does the Port Authority maintain a database and/or report bus crashes with bicycles and pedestrians? d. Are crashes on college campuses included? How could this data be captured if they are not? e. How does Pittsburgh measure to other cities and/or metropolitan areas? 2) Additional Data and Information Needed a. Port Authority Transit Development Plan b. Rack n Roll Program Brochure (online) c. GAP Guidebook d. Downtown Commuter Study (mid-July) e. SPC Survey Data (when officially released) f. "Small Investments, Big Difference" (obtained from Roy Weil) g. GIS data for city steps, pedestrian signals and sidewalk network gaps (available in August) h. DCR trails GIS data i. SPC dot exercise report j. "Downtown Circulation Plan." (Pittsburgh Downtown Partnership) k. PCTI grant and pedestrian mobility for Oakland (from OTMA) l. Bridges scheduled for rehabilitation	➢ Contact Ben DeVore for additional details regarding the crash data received. ➢ Coordinate with David Wohlwill and Port Authority Legal Dept. ➢ Contact Ben DeVore and follow up with Universities security/police departments. ➢ Coordinate with the Core Committee to obtain additional data as requested at meeting.

4. Facilities Inventory and Analysis (Group Discussion) 1) Policies to consider/investigate a. Tar and Chip b. Shoulder sweeping c. Edge of pavement d. RR grade crossings e. Rumble strips (placement and need) f. Bikes on bridges: sidewalk vs. roadway 2) Programs to consider/investigate a. Project tracker – construction schedule to include bike/ped projects proposed.	➢ Research policies/ordinances/programs on a county, state and municipal level for potential recommendations in the Action Plan.
***Focus areas were presented for feedback, however discussion with Core Committee members and Allegheny County following the meeting have created an opportunity to revise the focus areas to serve as active transportation routes to the city and other destinations. For example, the Orange Belt will now be investigated as a potential bicycle route to connect the parks. At the meeting, Core Committee members were told they would be given the opportunity to prioritize/comment on the focus areas. They will be given this opportunity once the mapping is revised based on recent discussions and findings.	➢ Revise mapping to illustrate new potential pedestrian focus areas, intersections of focus and preliminary bicycle routes. ➢ Present mapping and location list to Core Committee. ➢ Once revised based on Core Committee feedback, begin a route/street analysis based on data collected. ➢ Draft preliminary concepts
5. Public Outreach 1) Core Committee	➢ Core Committee members request that handouts be emailed at least one day prior to the meeting for review. Baker will email the handouts to the Core Committee PRIOR to future meetings.

6. News and Next Steps	➢ Continue building Study Advisory Committee to include representatives from disabled populations and minority populations. ➢ Determine pilot locations for potential bike lockers/showers, racks, and designated county bicycle routes ➢ Obtain public steps GIS data if possible ➢ Obtain City of Pittsburgh bicycle facilities GIS data from City or Friends of the Riverfront (CD-ROM in mail to Baker as of July 1, 2010).

Note: Comments were received regarding the meeting structure. To help facilitate the presentation in the future, there will be protocols established at future meetings with regards to contributing to the conversation.

MEETING MEMORANDUM

Core Committee Meeting #3

Date:	August 4, 2010	**Location:**	Allegheny County Economic Development Large Conference Room, 8th Floor, Regional Enterprise Tower, Pittsburgh, PA
Time:	1:30PM	**Baker Job #:**	119953
To:	Lynn Heckman, Assistant Director-Transportation Initiatives, **ACED**		
Attendees:	**Allegheny County:** Lynn Heckman, Heather Westenzweig; **PennDOT-11:** Jeff Skalican, Ben Devore; **Southwestern Pennsylvania Commission (SPC):** Sara Walfoort; **City of Pittsburgh:** Steve Patchen, Richard Meritzer, Patrick Roberts; **Airport Corridor Transportation Association (ACTA):** Lynn Manion; **Upper St. Clair:** Scott Brilhart; **Pennsylvania Environmental Council:** Hannah Hardy; **Port Authority of Allegheny County:** David Wohlwill; **Pittsburgh Downtown Partnership:** Lucinda Beattie; **Friends of the Riverfront (FOR):** Tom Baxter; **Allegheny County Department of Public Works:** Steve Shanley, Patrick Abruzzese; **10,000 Friends of PA:** Grant Ervin; **Allegheny County Parks Foundation:** Christine Fulton; **Baker:** Max Heckman, Regina Del Vecchio , James Van Schoick		
	Submitted by : Regina Del Vecchio – Project Manager, **Baker**		

Purpose: To present preliminary improvement locations within Allegheny County's transportation network for accommodating active transportation users and receive feedback from Core Committee members into additional recommendations for improvement.

Topic	Action Items
1. Welcome, Introductions & Meeting Purpose	➢ None
2. Meeting Conduct & Recording of Questions/Comments	➢ None
3. Scope of Services Progress and Schedule Updates 1) Extension has been granted by PennDOT	➢ None
4. Facilities and Inventory Analysis 1) Additional Field Investigations a. Preliminary System Improvements Map b. Orange Belt Roadways c. Complete Streets Candidates	➢ Round 2 analysis to continue with collection of traffic volumes, utilization of information from public plans, and public feedback

5. Preliminary System Improvements 1) Bicycle Routes a. Red Belt is a good connection to Ohio Rover Blvd. 2) Pedestrian Improvements a. 10% response rate from municipalities in regard to any existing plans. 3) Complete Streets Several comments and recommendations for complete streets candidates were noted by Core Committee Members a. Bigelow Boulevard, Pittsburgh b. University Boulevard, Moon Twp c. McKnight Road, Ross Twp d. Ardmore Boulevard, Forest Hills Boro e. Main Street, Carnegie f. Washington Road/W. Liberty Ave, Mt. Lebanon/Dormont g. SR 837, Duquesne/Homestead h. West Carson Street, Pittsburgh i. Trip generators are key	➢ Revise mapping to include the City on countywide maps. ➢ Include Steve Patchen, Tom Baxter, and Scott Bricker with the identification of any City bicycle routes. ➢ Communication with municipalities is ongoing and will be included in the study as it is received. ➢ Revise Bicycle Route Matrix to make it easier to understand. Tie maps together with the routes. ➢ Add road/bridge ownership to Bicycle Route Matrix
6. Public Outreach Several questions were received during the presentation of survey results. 1) Survey Results a. 738 responses 2) Upcoming events and Opportunities a. Bikefest – 8/6 – 8/15 b. Allegheny Green Festival 8/14 c. SPC bicycle Committee Meeting 8/11 d. Trail Symposium 10/22 e. Public meeting on Bike Signing/Marking Plan 9/23 f. Car-free Friday (Carnegie) 8/20 g. Port Authority service cuts public meeting 8/19	➢ 2nd round analysis of survey results to be performed which will only look at responses from individuals who reside outside the City of Pittsburgh

7. News and Next Steps	➢ Continue writing draft report ➢ Bicycle and Pedestrian Facility Toolbox ➢ Finalize pilot locations for Complete Streets locations (Total of 3) ➢ Continue with Round 2 analysis of proposed bicycle routes with added feedback from Core Committee and Study Advisory Committee.

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan

MEETING MEMORANDUM

Core Committee Meeting #4

Date:	August 31, 2010	**Location:**	Allegheny County Economic Development Large Conference Room, 8th Floor, Regional Enterprise Tower, Pittsburgh, PA
Time:	9:00 AM	**Baker Job #:**	119953
To:	Lynn Heckman, Assistant Director-Transportation Initiatives, **ACED**		
Attendees:	**Allegheny County:** Lynn Heckman, Christine Goswick, Darla Cravotta ; **PennDOT Central:** Bob Garrett; **Southwestern Pennsylvania Commission (SPC):** Ryan Gordon; **City of Pittsburgh:** Steve Patchan, Patrick Roberts; **Airport Corridor Transportation Association (ACTA):** Lynn Manion; **Oakland Transportation Management Association:** Mavis Rainey; **Upper St. Clair:** Scott Brilhart; **Pittsburgh Downtown Partnership:** Lucinda Beattie; **Friends of the Riverfront (FOR):** Tom Baxter; **BikePGH:** Scott Bricker; **Allegheny County Department of Public Works:** David Wright; **10,000 Friends of PA:** Grant Ervin; **Allegheny County Parks Foundation:** Christine Fulton; **Baker:** Max Heckman, Regina Del Vecchio		
	Submitted by : Regina Del Vecchio – Project Manager, **Baker**		

Purpose: To present components of the Draft Plan including the Complete Streets Prototypes, Bicycle Route Cue Sheets and Survey Results Summary Addendum

Topic	Action Items
1. Welcome, Introductions & Meeting Purpose	➢ None
2. Meeting Conduct & Recording of Questions/Comments	➢ None
3. Scope of Services Progress and Schedule Updates 1) Draft Plan Review Process Detailed for Core Committee	➢ Submit Draft Plan to Core Committee for review on September 8, 2010

4. System Improvements Revised and Finalized 1) Improvement Mapping and Documentation a. Cross referenced data – Round 2 b. Core and Study Advisory Review c. Comments from Allegheny Green Festival	➢ Improve visibility of labels on bicycle route mapping and pedestrian route mapping
2) Complete Streets Pilot Projects	➢ Add land density and capture area to Complete Street project consideration items. ➢ Change name from "Pilot Projects" to "Prototypes" to indicate they are representative of the other candidates.
3) Toolboxes for Bicycle, Pedestrian and Complete Street Improvements	➢ Children commute to school, add them as a type of commuter to the Bicycle Toolbox
5. Action for Active Transportation 1) Strategies for implementing the improvements were discussed	➢ Could the improvements be prioritized? ➢ Can we indicate which bicycle routes are ready for implementation v. which ones include proposed trails that would need additional time and coordinated efforts to complete. ➢ Indicate a number of different funding sources (both public and private). ➢ Specify for municipalities to utilize criteria to prioritize improvements. Establish a criteria based on safety and or demand.
6. Public Outreach 1) Survey Results Filtered by Municipality of Residence a. Survey Addendum Presented	➢ Braddock Avenue is only in Braddock, not North Braddock as indicated in Addendum. Revision will be made prior to submittal to PennDOT.
2) Upcoming Events and Opportunities	➢ None

7. Draft Plan Review Process	➢ September 7, 2010: Draft to PennDOT ➢ September 8, 2010: Draft to Core and Study Advisory ➢ September 22, 2010: Comments from Core and Study Advisory Due ➢ September 29, 2010: Draft out for Public Comment ➢ October 29, 2010: All Draft Comments Due ➢ December 15, 2010: Final Plan Submittal
8. Next Steps, News and Updates	➢ Draft Plan Submittal to PennDOT ➢ Draft Plan Submittal to Core and Study Advisory

Appendix C

Study Advisory Committee Meeting Memorandum

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan

MEETING MEMORANDUM

Study Advisory Committee Meeting #1

Date:	Wednesday, June 23, 2010	**Location:**	Regional Enterprise Tower, 31st Floor
Time:	1:00 PM	**Baker Job #:**	119953
To:	Lynn Heckman, Assistant Director-Transportation Initiatives, **ACED**		
Attendees:	**Allegheny County Economic Development (ACED):** Lynn Heckman, Lance Chimka, Jessica Mooney; **Allegheny County Executive Office:** Darla Cravotta, Sam Thomas, Lance Chimka; **Allegheny County Police Department:** Glenn Zilch; **Airport Corridor Transportation Association (ACTA):** Lynn Manion; **City of Pittsburgh Department of Planning:** Patrick Roberts; **Montour Trail:** Dennis Pfeiffer; **Mullen:** Eric Ash, Marikaye Detendre, Thomas Walker; **Pennoni Associates:** Ron Schiapani; **Pittsburgh Community Reinvestment Group (PCRG):** Chris Sandvig; **Pittsburgh Downtown Partnership (PDP):** Lucinda Beattie; **Pittsburgh Technical Institute:** Ruth Delach; **Point Park University:** Mariann Geyer; **RAND Corporation:** Ian Cook; **Southwestern Pennsylvania Commission (SPC):** Sara Walfoort, Ryan Gordon; **URS Corporation:** Keith Johnson; **Venture Outdoors:** Seth Gernot; **Baker:** Regina Del Vecchio, Max Heckman; **Olszak:** Jackie Freeman		
	Submitted by : Jackie Freeman, Olszak **Revised by:** Regina Del Vecchio, Project Manager, Baker		

Purpose: To review bicycle and pedestrian deficiencies and opportunities identified to date, and solicit feedback on additional routes and/or focus areas for further development.

Topic	Action Items
1. Welcome, Introductions & Meeting Purpose	➢ None
2. Scope of Services	➢ None
3. Project Initiation	➢ None
4. Facilities Inventory and Analysis (Group Discussion) 1) Policies/Programs to consider/investigate a. Pilot locations for Bicycle Rentals b. Best practices for bicycle lanes striped against curb vs. against parking lane c. On road and secure locker parking for bicycles downtown d. Bikeways on busways best practices e. Lighting standards	➢ Research policies/programs/best practices nationally for potential recommendations in the Action Plan.

f. Coordinate recommendations with John Schombert of Three Rivers Wet Weather and his Stormwater Management Projects. g. (Study Advisory Committee Member documented) Formally designate bicyclists to use stop signs as yield signs and stop lights as stop signs. h. (Study Advisory Committee Member documented) Pedestrian and bicyclist education for PA State Drivers License Exam. 2) Study Advisory Committee members were given the opportunity to identify deficiencies and opportunities as related to active transportation in the county. They were asked to list these areas on a worksheet provided at the start of the meeting. Listed locations are in **Appendix A** to this memorandum.	➢ Research stormwater management process for potential coordination opportunities on a project level. ➢ Research PA DMV Manual for traffic controls. ➢ Review Driver's License Exam for PA. ➢ Perform a preliminary investigation of identified deficiencies and opportunities listed by the Study Advisory Committee for incorporation into focus area assessment and concept development.
5. Public Outreach 1) Study Advisory Committee	➢ Add a third meeting at Allegheny County's request. ➢ Schedule second meeting and secure venue. ➢ Continue coordination to build Study Advisory Committee and finalize list of members.
6. News and Next Steps	➢ Continue facilities inventory and analysis. ➢ Finalize list of Study Advisory Committee members. ➢ Perform a preliminary investigation of committee identified areas.

APPENDIX A

Study Advisory Committee Identified Deficiencies/Opportunities

Location	Notes
I-279 N/HOV Lane	• Don't know if possible but we're brainstorming here • Underutilized • Jersey barrier segregation
Route 837	• Room for dedicated trail • Scenic
Wabash Tunnel	• Seemingly underutilized • Another option for difficult connections west
Airport Connection	
East Ohio and 16th Street Intersection	• Reconfiguration
Martin Luther King Boulevard Busway/Bus Lanes	• Should be opened as corridors for bicycle commuters
9th Street into North Side, under trestle to gas station	• Death trap • Current construction setup should be adopted permanently • From ramps all the way to the curve in road at Cedar
East and West North Avenue	• Road Diet • Bike Lanes
McKee Road in North Fayette	• Bicycle route • PTI – CCAC to Bike trail in Oakdale
Route 51	• Bicycle route in Heidelberg
Bicycle Route from Pittsburgh to Mt. Lebanon/Dormont	• Difficult to go over Mt. Washington
Robinson Township/North Fayette	• Robinson walking path across parkway and walkway path to connect retail areas
South Park to Montour Trail	• Bicycle route planning underway by county public works
North Shore Trail	• Signage needed to find the Ft. Duquesne Ped Bridge
Friendship Avenue	• Bicycle route alternative to Penn Avenue
South Side River Trail	• Missing link at 2nd Street [connectivity issue] • Connection to Smithfield Bridge
Second Avenue	• Bicycle route Downtown to the Glenwood Bridge
Railroad Street	• Reason not listed
Route 30	• Reason not listed
Rankin Bridge	• Reason not listed
Homestead	• Reason not listed
Highlevel	• Reason not listed

APPENDIX A

Study Advisory Committee Identified Deficiencies/Opportunities

Location	Notes
Route 885 to Sandcastle	• Bicycle route
West Mifflin	• Bicycle route Ravine Street to waterfront • Commonwealth and SVT connection
Beedle Park in Jefferson Borough	• Connection by bicycle
Thomas Boulevard between Pt. Breeze and Homewood	• Bicycle route • Poor sidewalks • Narrow Road
Braddock Avenue (junction of Wilkinsburgh, Regent Square, Pittsburgh, etc.)	• Bicycle route and access
Millvale Trail Extension	• Up river to Shaler, Etna, Sharpsburg, Aspinwall, etc.
Railroad Street in the Strip	• RR tracks cross Railroad Street at the intersection of 29th/30th streets
Kayak access	• Downtown from the Allegheny
62nd Street Bridge and Route 8 to Middle Road	• Bike lanes • Widen 62nd Street Bridge sidewalk and add ramp to ground level • Sharrows on Route 8 to Middle Road
1st Avenue, Downtown from Stanwix to Grant	• Bike only!!!! Can have local vehicle access (delivery) but cut up so that this can be a bike artery that connects to jail trail @PNC.
Frick Park Connection	• Along Nine Mile Run to Duck Hollow
Pioneer Avenue	• Link Brookline to Liberty Interchange area
South Hills Access	• To Downtown via transit and trail
Broadway Avenue	• Link Beechview to Liberty Interchange area
Mt. Washington Trail System	• From Liberty Interchange to Wabash Tunnel
Greenway to connect Beechview over area opposite to Wabash Tunnel	• See Location
Corrigan Drive and Brownsville Road	• Through South Park – good route/existing facility connection to Montour Trail from South Park
Access for Commuters to CCAC South	• Bicycle Route
Old William Penn Highway	• Alternate Route from Rodi Road to Boyce Park and Community College
Greensburg Pike	• 4 lane with low ADT good SD connect, Churchill to Turtle Creek
Pearson Run/Center Road	• Connector from Old William Penn to Boyce Park, High traffic, no shoulder, below average
Laketon/Frankstown/Graham	• Connection from Churchill to Penns Hill, Medium volume, but good sight distance
McClure Road	• Less traffic then Brighton

APPENDIX A

Study Advisory Committee Identified Deficiencies/Opportunities

Location	Notes
Millvale Access to Trail	• Poor bicycle/pedestrian connection
Connection to Elizabeth Borough	• GAP to Montour Trail and Round Hill Park • Mon Valley Century Bike Race starts in Elizabeth Borough. They may be a good group to talk to. [potential Study Advisory Committee member?]
Wildwood Drive – North Park	• Reason not listed
River Road from Elizabeth to McKeesport	• Reason not listed
Roadways to/from South Park	• Reason not listed
Roadways to/from Frick Park	• Reason not listed

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan

MEETING MEMORANDUM

Study Advisory Committee Meeting #2

Date:	Thursday, August 5, 2010	**Location:**	P.H. O'Neill Room, 23rd Floor, Regional Enterprise Tower, 425 Sixth Avenue, Pittsburgh, PA
Time:	9:00AM	**Baker Job #:**	119953
To:	Lynn Heckman, Assistant Director-Transportation Initiatives, **ACED**		
Attendees:	**Allegheny County Economic Development (ACED):** Lynn Heckman, Jeaney Zappa, Lance Chimka, Jessica Mooney, Kathy Castner; **Allegheny County Department of Public Works (ACDPW):** Ron Sander, Michael Gezo; **Allegheny County Health Department:** Darija Wiswell; **Southwestern Pennsylvania Commission (SPC):** Sara Walfoort, Ryan Gordon; **Mt. Lebanon:** Eric Milliron; **URS Corporation:** Keith Johnson; **City of Pittsburgh:** Richard Meritzer; **Pennoni Engineering:** Ron Schipani; **Manchester Bidwell Corporation:** Roy Conrad; **Sustainable Pittsburgh:** Ginette Walker Vinksi; **Blind Outdoor Leisure Development (BOLD):** Holly Dick; **Rothschild Doyno Collaborative:** Ken Doyno; **Twin Rivers Council of Governments:** John Pazyo; **Quaker Valley Council of Governments:** John Jakiela; **Civil and Environmental Consultants:** Geoff Nara		

Purpose: To present preliminary improvement locations within Allegheny County's transportation network for accommodating active transportation users.

Topic	Action Items
1. Welcome, Introductions & Meeting Purpose	➢ None
2. Scope of Services Progress and Schedule Updates	➢ None
3. Facilities Inventory and Analysis 1) Additional Field Investigations a. Orange Belt Inventory b. Complete Streets Pilot Locations Inventory c. Parking accommodations for bicycles d. Slope analysis on roadways designated bicycle facilities	➢ Investigate the ownership of roadways for which concepts have been proposed. ➢ Requested that SAC members submit additional pedestrian corridors to be included in the project.

4. Preliminary System Improvements 1) Designated Countywide Bicycle Routes 2) Pedestrian Corridor Improvements 3) Intersection Improvements 4) Complete Streets Pilot Locations 5) Study Advisory Committee members were given the opportunity to review the preliminary bicycle routes and proposed pedestrian corridors identified for Allegheny County They were asked to form groups and list additional areas for consideration on large maps which were provided at the start of the meeting. Additional locations and comments can be found in **Appendix A** to this memorandum.	➢ Research "Project Action," initiative led by the Easter Seals to provide information on ADA compliant infrastructure. ➢ Investigate additional recommendations and include relevant corridors on mapping included with the report.
5. Public Outreach 1) Public Survey Results	➢ 2nd round of analysis on survey results will be performed to identify responses from only those who live outside City limits. ➢ Schedule third meeting and secure venue
6. News and Next Steps	➢ Continue Round 2 facilities inventory and analysis. ➢ Continue writing Bicycle and Pedestrian Toolbox. Draft submission on September 3, 2010

APPENDIX A

Study Advisory Committee Identified Bicycle Facilities and Pedestrian Corridors

Bicycle Facility Comments:

North Focus Area Comments
• Observatory Hill Route to regional trails and Downtown PGH
• Active cycling area through State Game Lands and along Red Belt
• Connection between N3 routes via Ohio River Boulevard
• Connect N1 to North Park via Babcock Boulevard
• Connect N2 to North Park via Babcock Boulevard
West Focus Area Comments
• Plan a better connection between N1 and W2/W3 routes and McKees Rocks Bridge
• Crafton
• Montour Trail is missing (Findlay Twp, near airport circled)
• Connect W4 to Settler's Cabin Park
• Bike tourists from D.C. fly into Pittsburgh International Airport and bike home. Anticipate bikes from Airport -> Montour -> Great Allegheny Passage
East Focus Area Comments
• Focus on completing two sides of the River Trail Network. Connection to this network is key.
• Electric Valley (Along SR 130)
• Connect E3 to Boyce Park
• Route from PGH along SR 380 to Boyce Park
• Connect E1 to Harrison Hills Park
South Focus Area Comments
• Mt Lebanon
• Dormont
• Duquesne
• McKeesport
• Carnegie
• Transit gap from South Hills T-Station to S. Park with no safe pedestrian or bicycle corridor

• Road Diet – Carnegie (Connection to Panhandle/Montour Trail)
• SR 51 and McKeesport Road (In Forward Twp. / Lincoln Borough)
• Connection to South Park from Downtown PGH
• Mt. Lebanon and Dormont need route to Downtown PGH and regional trail network
• Connect S2 to South Park
• Connect S4 to Boyce Mayview Park
• Mon Valley Century in Forward Township
• Connect Duck Hollow/Carrie Furnace/S.V.H.T
• Montour Trail connection to S1 route is a Key Link
• SR 837 to McKeesport (Montour Trail Access)
• Connect S4 to Montour Trail
• Brownsville Road (Mt. Oliver/Brentwood/Baldwin)

Pedestrian Corridor Comments:

Street Name/Location	Municipality
• Baker Street	• Pittsburgh
• Butler Street	
• Highland Park needs curb ramps	
• 16th Street Bridge	
• 9th Street Bridge	
• 10th Street and Armstrong Tunnels	
• Tole Street	
• Olivant Street	
• Sidewalks on Baker Street to Zoo	
• Ramps for trails in Highland Park	
• Yost Boulevard	•

• Bad pedestrian connection across bridge in Tarrentum Borough. Many cross with no connections available.	• Tarrentum
• Monroeville Business District	• Monroeville
• Route 22	
• Stroschein Road	
• Sidewalks to connect Wexford flats	• Marshall Township
• Route 22/48 Complete Streets	• Churchill/Wilkins
• Complete streets in Carnegie on W. or E. main Street	• Carnegie
• Washington Road./W. Liberty	• Dormont
• Look at bus routes	• Mt. Lebanon
• 700 Block of Washington Road	
• Washington Road./W. Liberty	
• Route 19	• Ross Township
• Route 19 truck	
• Mc Knight Road	
• Mt. Royal	• Shaler township

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan

MEETING MEMORANDUM

Study Advisory Committee Meeting #3

Date:	September 2, 2010	**Location:**	A.E. Hunt Room , 23rd Floor, Regional Enterprise Tower, Pittsburgh, PA
Time:	9:00 AM	**Baker Job #:**	119953
To:	Lynn Heckman, Assistant Director-Transportation Initiatives, **ACED**		
Attendees:	**Allegheny County Economic Development (ACED):** Lynn Heckman, Jeaneen Zappa, Lance Chimka, Jessica Mooney; **Allegheny County Health Department:** Darija Wiswell; **Southwestern Pennsylvania Commission (SPC):** Sara Walfoort; **City of Pittsburgh:** Richard Meritzer; **Pennoni Engineering:** Ron Schipani; **Manchester Bidwell Corporation:** Jeff Guerrero; **Sustainable Pittsburgh:** Ginette Walker Vinski; **Twin Rivers Council of Governments:** John Palyo; **Quaker Valley Council of Governments:** John Jakiela; **Steel Valley Council of Governments:** An Lewis; **Pittsburgh Technical Institute:** Ruth Delach; **Pittsburgh Community Reinvestment Group (PCRG):** Chris Sandvig; **Gateway Engineers:** Ruthann Omer; **Sustainable Pittsburgh:** Jake Buechle; **Port Authority of Allegheny County (PAAC):** David Wohlwill; **Mon Valley Initiative:** Marie Jaffe; **Montour Trail:** Ned Williams; **Cycling Community:** Alan Miller		
	Submitted by : Regina Del Vecchio – Project Manager, **Baker**		

Purpose: To present components of the Draft Plan including the Complete Streets Prototypes, Bicycle Route Cue Sheets and Survey Results Summary Addendum

Topic	Action Items
1. Welcome, Introductions & Meeting Purpose	➢ None
2. Scope of Services Progress 1) Draft Plan Review Process Detailed for Study Advisory Committee	➢ Submit Draft Plan to Advisory Committee for review on September 8, 2010

3. Presentation of Draft Plan Components 1) System Improvements	➢ Illustrate on cue sheets existing v. proposed ➢ Add municipality names to each roadway/trail on cue sheets ➢ Complete roadway ownership data on cue sheets
2) Complete Streets Pilot Projects	➢ None
3) Toolboxes for Bicycle, Pedestrian and Complete Street Improvements	➢ Toolboxes would be helpful as a separate download online once available.
4) Implementation	➢ Recommendation to PennDOT in plan for a Full Time Bicycle/Pedestrian Coordinator
4. Public Outreach 1) Survey Results Filtered by Municipality of Residence a. Survey Addendum Presented	➢ None
2) Upcoming Events and Opportunities	➢ SPC Bicycle and Pedestrian Meeting in October
5. Draft Plan Review Process	➢ September 7, 2010: Draft to PennDOT ➢ September 8, 2010: Draft to Core and Study Advisory ➢ September 22, 2010: Comments from Core and Study Advisory Due ➢ September 29, 2010: Draft out for Public Comment ➢ October 29, 2010: All Draft Comments Due ➢ December 15, 2010: Final Plan Submittal
6. Next Steps, News and Updates	➢ Draft Plan Submittal to PennDOT ➢ Draft Plan Submittal to Core and Study Advisory

Appendix D

Survey Results Summary & Filter by Municipality Addendum

ACTIVEALLEGHENY

ONLINE SURVEY RESULTS SUMMARY

June 23, 2010 – July 26, 2010

Executive Summary

As part of the Public Outreach Task for ACTIVEALLEGHENY, an online survey was designed and administered. The purpose of the survey was to gather public input and assist the Study Team in identifying active transportation deficiencies, opportunities and locations for potential improvement.

The survey was available online from June 23, 2010 through July 26, 2010 through www.surveymonkey.com. During that time, a total of 738 responses were received from the online survey. Nearly half (48%) of the survey respondents were residents of the City of Pittsburgh. A second tier survey analysis is in process to filter residents by municipality and identify additional locations for improvements in the county.

How Allegheny Commutes

Forty-seven percent (47%) of respondents indicated that driving alone (single occupancy vehicle travel) was their primary mode of commuting to work, school or social visit. This was followed by commuting by bicycle (approximately 22%), public transportation (20%) and walking (approximately 6%).

To obtain information regarding the frequency of pedestrian trips in Allegheny County, survey participants were asked how many trips they had made by walking in the past 24 hours (1 day). Sixty-five percent (65%) indicated a walking trip was made in the past 24 hours. Pedestrians were asked if they felt safe during their most recent walking trip and if they did not feel safe, what contributed to this feeling. Nearly half (48%) of the pedestrians surveyed felt "Completely Safe" making their most recent trip by walking.

Sixty-three percent (63%) of respondents made at least one (1) trip by bicycle in the month prior to answering the survey. Of those who made a trip by bicycle in the past month, 82% also made a bicycle trip in the week prior to answering the survey. Bicyclists were asked the primary purpose of their most recent bicycle trip. Forty-eight percent (48%) stated that recreation/exercise was the primary purpose. Bicyclists were also asked what barriers affect their decision to bike. The top three (3) barriers were weather, topography, and aggressive drivers.

*When asked to list only one roadway for bicycle facility improvements, **Penn Avenue** was identified the most number of times.*

Active Transportation Comments

The survey concluded with an open-ended question asking participants to list comments they may have regarding active transportation in Allegheny County. The top ten (10) issues identified from a review of the comments were: motorist behavior; roadway maintenance; traffic law enforcement; education, public awareness and promotion; transit connections and/or accommodation; desire for bicycle lanes; desire for bicycle racks; kayak access and parking; ADA compliant curb ramps and sidewalks; and, desire for specific locations to be improved.

Introduction

Allegheny County has been awarded a PCTI grant, and has partnered with PennDOT's Bureau of Public Transportation, to develop a comprehensive active transportation plan, ACTIVEALLEGHENY, to integrate travel modes, specifically walking and biking, into the existing transportation system. ACTIVEALLEGHENY focuses on accessibility and connectivity of active transportation with other elements and aspects of ALLEGHENYPLACES, Allegheny County's (adopted) Comprehensive Plan. The primary objective of the ACTIVEALLEGHENY Plan is to encourage and accommodate walking and biking as a mode of commuting in Allegheny County.

As part of the Public Outreach Task for ACTIVEALLEGHENY, an online survey was designed and administered. The purpose of the survey was to gather public input and assist the Study Team in identifying active transportation deficiencies, opportunities and locations for potential improvement.

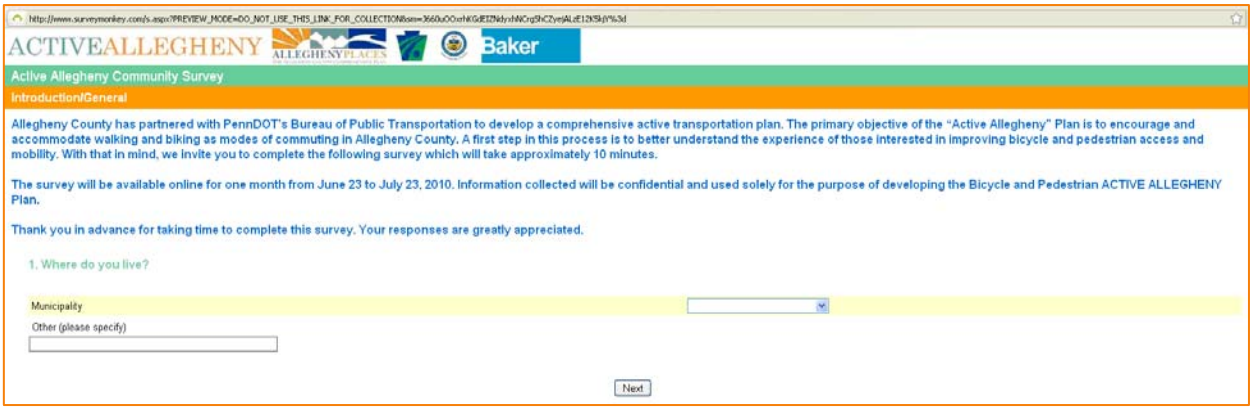
The survey was available online from June 23, 2010 through July 26, 2010 through the survey host site www.surveymonkey.com. A web link to the survey was provided to public agencies, including Allegheny County, for posting on their website. Additionally, an email link to the survey was emailed to the Core Committee and Study Advisory Committee members for distribution to their respective agencies.

Survey Design and Administration

Online surveys offer several advantages over traditional survey methods (e.g., paper, telephone). For example, the survey administrator has the ability to view the survey results on a daily basis and if a specific question causes confusion to participants, the survey can be manipulated to clarify the question.

The ACTIVEALLEGHENY online survey was designed to take approximately 10 minutes to complete. Although the majority of questions were designed in multiple-choice format, respondents were provided an opportunity to identify specific locations, opportunities and concerns regarding active transportation in several open-ended questions.

When the survey closed, data was downloaded from the website and imported into Microsoft Excel, which was used to manage and process the responses. Data variables were then assigned to create tabular and graphical output of survey results.



Online Survey Introduction Page

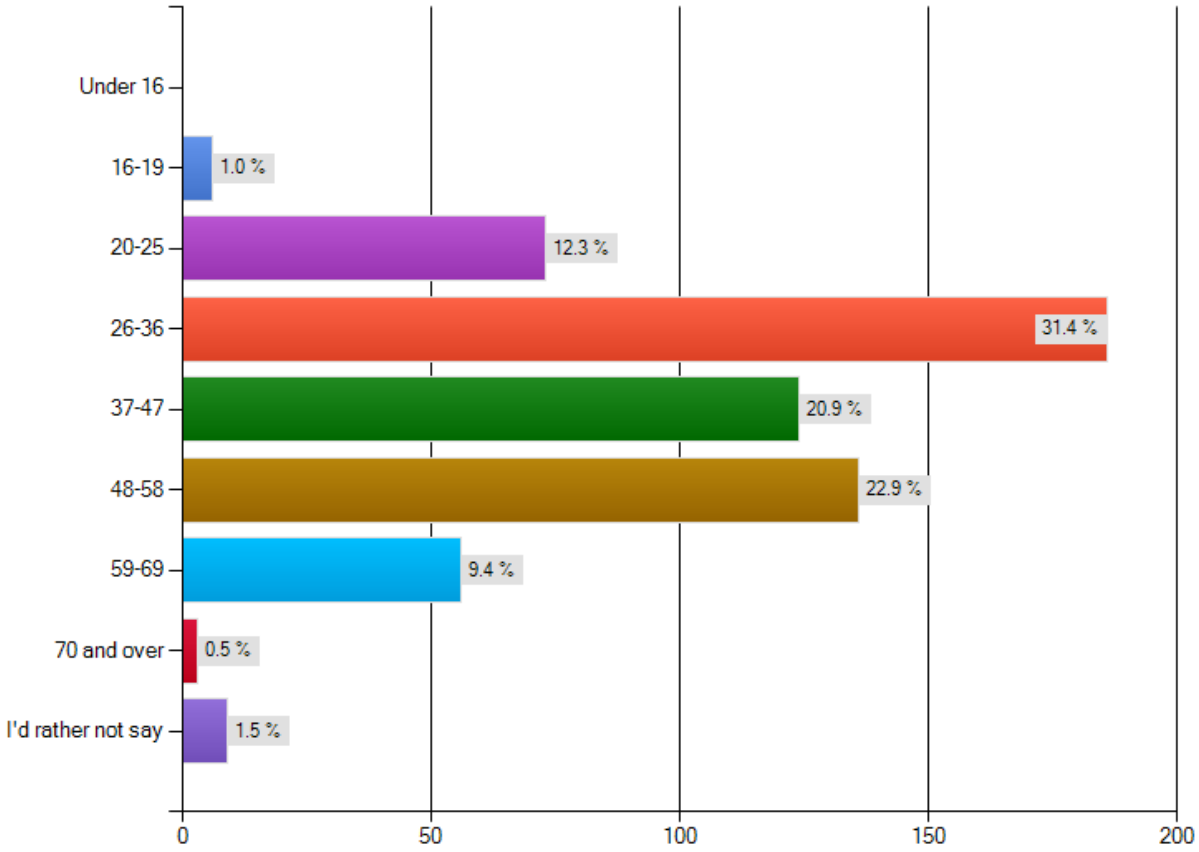
Survey Results

A total of 738 responses were received from the online survey. Nearly half (48%) of the survey respondents were residents of the City of Pittsburgh.

Demographics

Respondent's gender was nearly equal: 50% female, 48% male and 2% preferring not to respond to the question. Ages ranged from 16 years old to 70 years old and over, with the "26-36" age group accounting for over 30% of respondents (see **Figure 1**).

Figure 1: Age



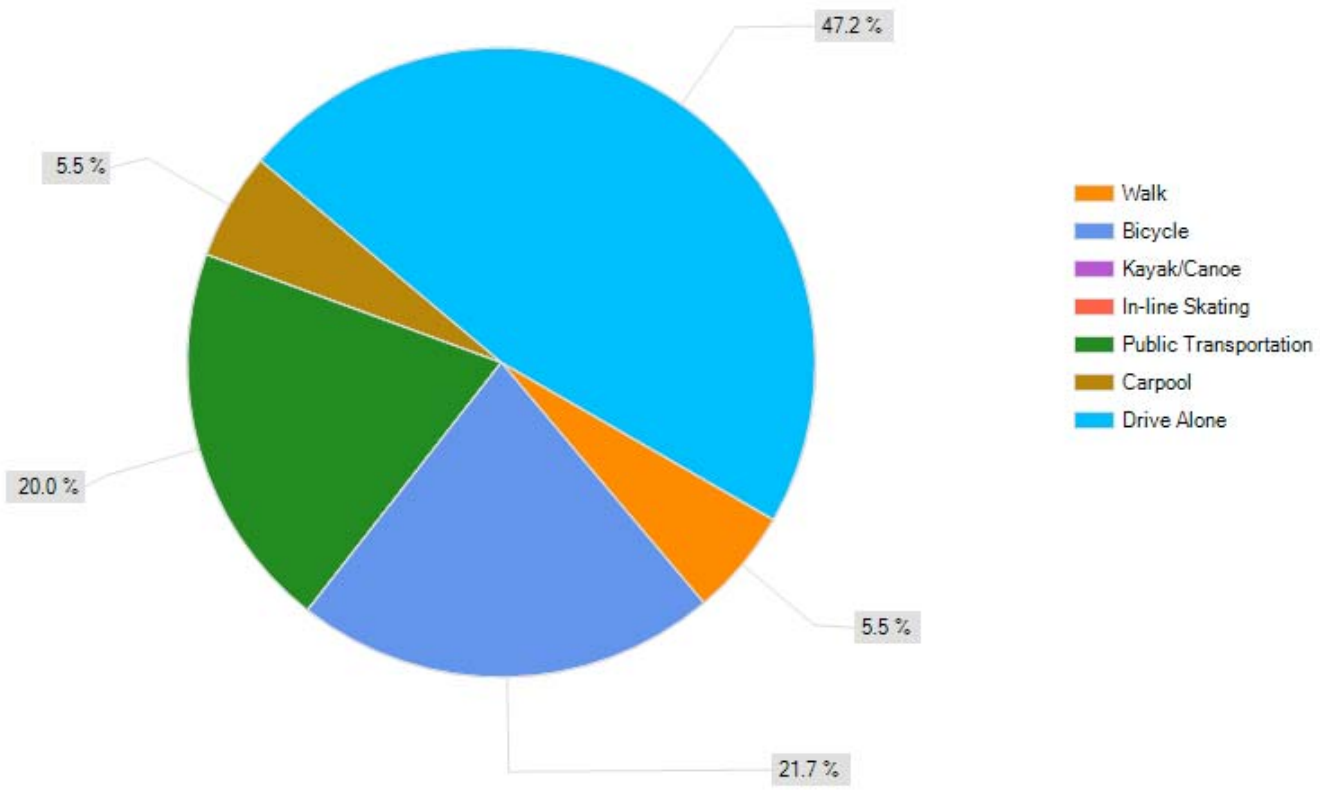
Vehicle/Bicycle Ownership

Forty-seven percent (47%) of respondents indicated they have two (2) motor vehicles residing at their household, and 77% own a bicycle in working condition.

How Allegheny County Commutes

Approximately 47% of respondents indicated that driving alone (single occupancy vehicle) was their primary mode of commuting to work, school or social visit. Commuting by bicycle (approximately 22%) and public transportation (20%) were listed second and third respectively (**Figure 2**). None of the respondents indicated commuting by kayak or in-line skating (0%).

Figure 2: Primary Mode of Commuting



Survey participants were asked in a follow up question, "What are the major roadways you use when commuting?" The top three (3) roadways listed by bicyclists, public transportation users and pedestrians are illustrated in **Figure 3**.

Figure 3: Roadways Used When Commuting by Bicycle, Public Transportation or by Walking

Mode of Commute	Roadways Used	% of Respondents	# of Respondents
Bicycle	1) Penn Avenue	33%	50
	2) Liberty Avenue	27%	41
	3) Fifth Avenue	15%	22
Public Transportation	1) Fifth Avenue	19%	26
	2) Liberty Avenue	14%	19
	3) Penn Avenue AND Forbes Avenue	13%	18
Walk	1) Forbes Avenue	29%	11
	2) Penn Avenue	18%	7
	3) Fifth Avenue	13%	5

Walking Trips

To obtain information regarding the frequency of pedestrian trips in Allegheny County, survey participants were asked how many trips they had made by walking in the past 24 hours (1 day). Sixty-five percent (65%) indicated a walking trip was made in the past 24 hours. When asked, "What was the primary purpose of your most recent walking trip," 37% indicated an errand and/or shopping, followed closely by recreation and exercise at 32%.

Those who made a walking trip (pedestrians) were then asked a series of questions regarding the availability and condition of sidewalks/paved paths. These results are illustrated in **Figures 4 – 7**.

Figure 4: "Was there sidewalk or paved path available (to walk on)?"

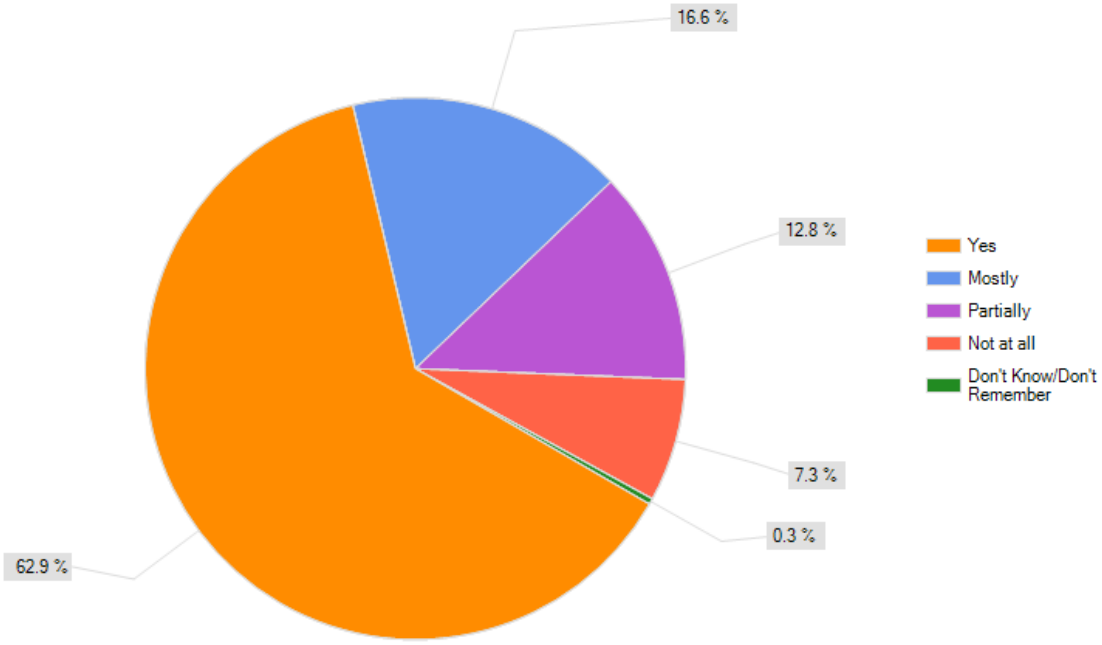


Figure 5: "Was the sidewalk or paved path of adequate width?"

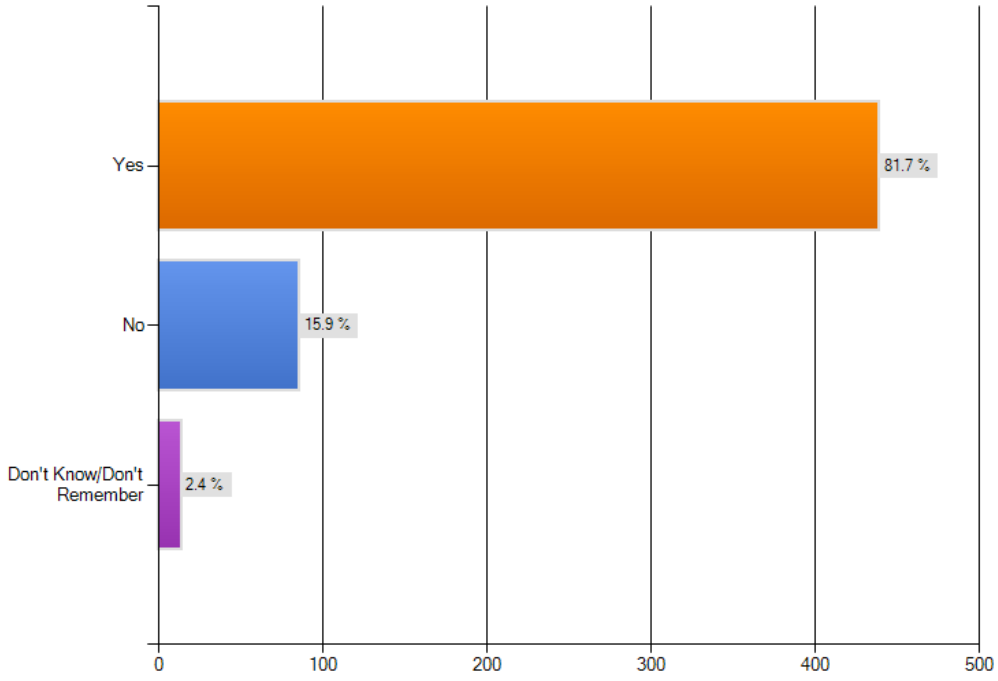


Figure 6: "What was the condition of the sidewalk or paved path?"

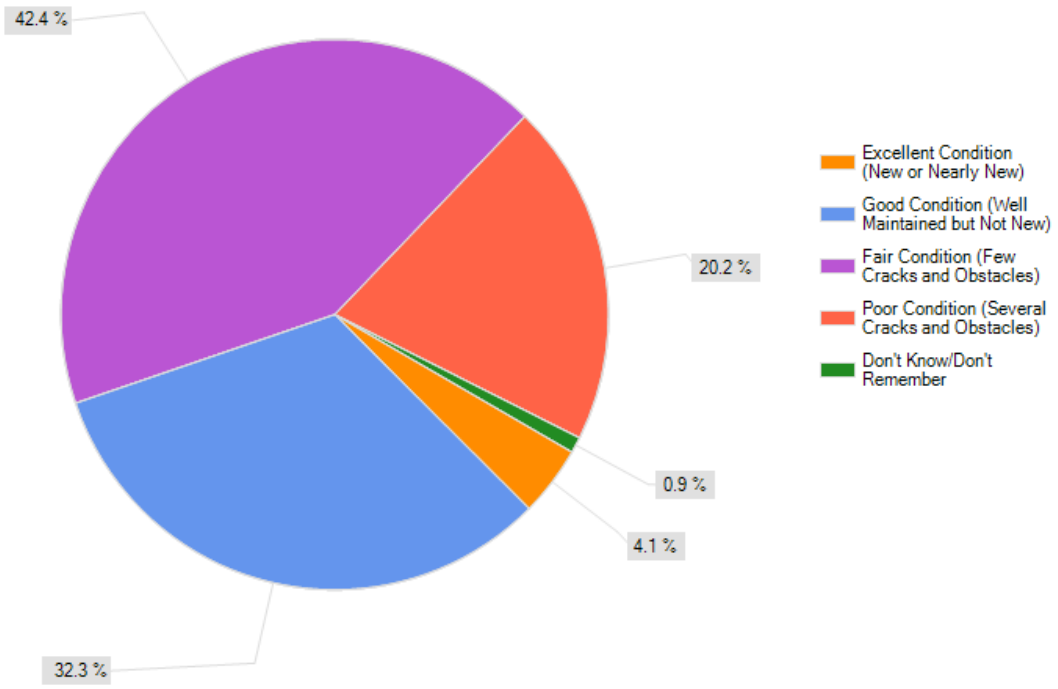
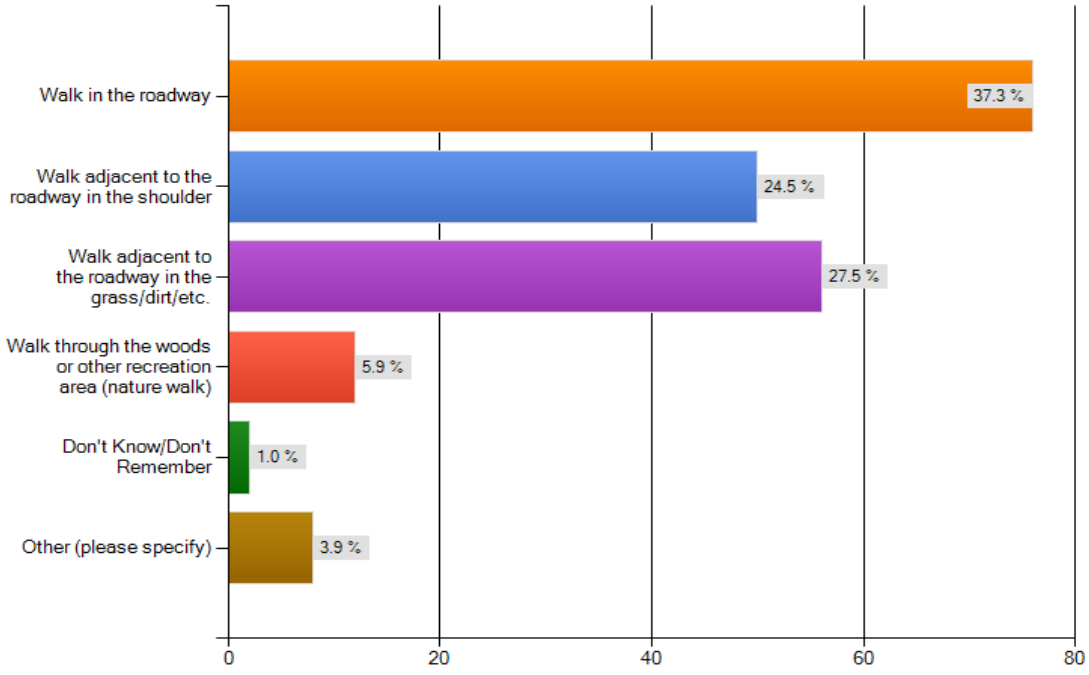


Figure 7: "If there was no sidewalk or paved path...did you?"



Pedestrians were asked if their most recent walking trip included transit connections. Twenty-three percent (23%) replied "Yes," with the majority (90%) connecting to bus transit. Over half (56%) also indicated that the transit stop did not include accommodations such as shelter, bench or waiting pad.

Pedestrians were asked if they felt safe making their most recent walking trip and if they did not feel safe, what contributed to this feeling. Nearly half (48%) of the pedestrians surveyed felt "Completely Safe" making their most recent trip by walking, while 40% felt "Somewhat Safe," 10% felt "Somewhat Unsafe," and 1% felt "Not Safe at All." Contributing to the unsafe feeling was high speed motor vehicle traffic, high volume motor vehicle traffic, and lack of sidewalks and/or paved paths.

When survey respondents were asked what would encourage them to walk more often, the top three answers were:

1) More or improved recreational trails and paths
2) More or improved sidewalks
3) Improved pedestrian accommodation at intersections

Pedestrian Facility Improvements

Survey participants were asked in an open-ended question which roads they would like to see improvements for pedestrians. Roadways listed frequently (four or more times) include:

- Ardmore Boulevard
- Bigelow Street
- Braddock Avenue
- Butler Street
- Centre Avenue
- Forbes Avenue
- Fifth Avenue
- Frankstown Road
- Freeport Road
- Penn Avenue
- Negley Avenue
- Washington Avenue
- West Liberty Avenue
- Smallman Street
- Second Avenue
- McKnight Road

ADA Access

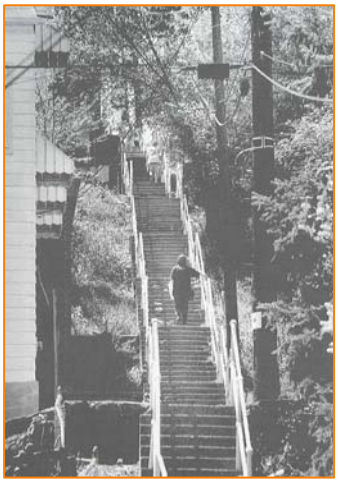
Three (3) roadways were identified by respondents as difficult to navigate by wheelchair due to a lack of sidewalk, condition of the sidewalk or a lack of ADA compliant curb ramps:

- **Evergreen Road**
- **Hiram Road**
- **Friday Road**

Public Steps

Survey respondents were asked how frequently they use public stairs/steps in Allegheny County (including steps at transit stops and stations). Thirty-four percent (34%) indicated they almost never use public steps, 27% never use them and 25% sometimes use them. When asked what steps they use most often, South Side Slopes were noted most frequently.

Respondents were also asked where steps need maintenance. The most frequently identified steps needing maintenance included steps in the South Side Slopes, Troy Hill, Mt. Washington, and at the Negley Avenue Bus Station.



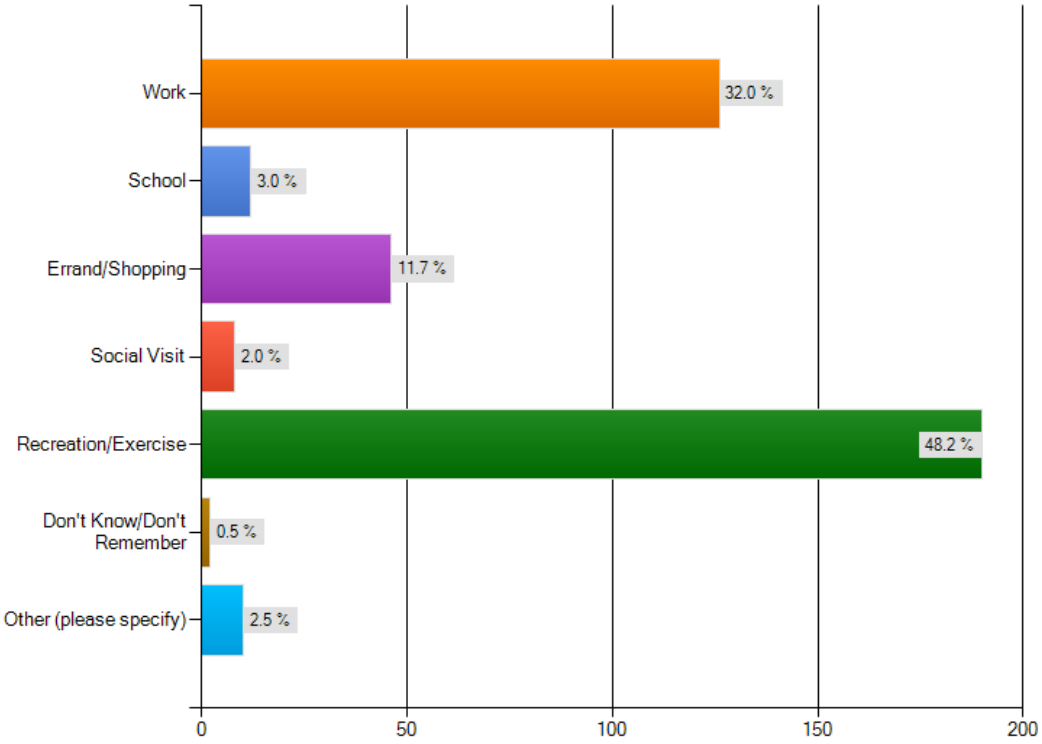
Yard Way, South Side
Steps of Pittsburgh Book by Bob Regan with Photos by Tim Fabian

Bicycle Trips

Sixty-three percent (63%) of respondents made at least one (1) trip by bicycle in the month prior to answering the survey. Of those respondents who made a trip by bicycle in the past month, 82% also made a bicycle trip in the week prior to answering the survey.

Bicyclists were asked the primary purpose of their most recent bicycle trip. Forty-eight percent (48%) stated that recreation and/or exercise was the primary purpose, while 32% commuted to work and 12% were running errands. **Figure 8** illustrates the results.

Figure 8: Bicycle Trip Purpose



Bicyclists were asked how many miles they traveled on their most recent bicycle trip (roundtrip). Nearly half of bicyclists (48%) rode seven (7) miles or more on their most recent trip. Over half (55%) of bicyclists made their trip on road (not separated from motor vehicle traffic) and 75% shared a lane with motor vehicles (no pavement markings to facilitate their travel).

Bicyclists were asked if their most recent trip included transit connections. Ninety-five (95%) replied "No," while 5% replied "Yes." Of those that did connect to transit, 79% connected to bus transit, and indicated that the bus accommodated their bicycle through a rack.

Bicyclists were asked if they felt safe making their most recent trip and if they did not feel safe, what contributed to this feeling. Thirty-eight percent (38%) felt "Somewhat Safe" making their most recent trip by bike, while 25% felt "Somewhat Unsafe," 14% felt "Completely Safe," and 10% felt "Not Safe at All." Contributing to the unsafe feeling was the condition of pavement surfaces (potholes, cracking, etc.), lack of paved shoulders and bicycle lanes, and high speed motor vehicle traffic.

When survey respondents were asked what would encourage them to bike more often, the top three answers were:

1) More bicycle lanes
2) More recreational trails and paths
3) Wide paved shoulders

*Participants were asked if there are **barriers** that affect their decision to bike.*

Top Three Answers:

-Weather-

-Topography-

-Aggressive/Hostile Drivers-

Bicycle Facility Improvements

Survey participants were asked in an open-ended question which five (5) roadways they would like to see improvements for bicycle travel. The top five (5) roadways were:

1. Penn Avenue
2. Fifth Avenue
3. Forbes Avenue
4. Liberty Avenue
5. Negley Avenue

When asked to list only one roadway for bicycle facility improvements, **Penn Avenue** was identified the most number of times (22).

Intersection Improvements

Survey participants were asked if there are locations where it is difficult or uncomfortable to cross the road by bike or walking. Seventy-one percent (71%) indicated that there are locations where it is difficult or uncomfortable to cross the road. 367 participants identified specific intersections of concern. The following intersections were identified for further review and potential plan inclusion following a field investigation:

- Fifth Avenue and Penn Avenue (school crossing)
- Braddock Avenue to Finance Street to Wilkinsburg Bus Stop (transit crossing)
- Beachwood Boulevard to bus stop at 376W (transit crossing)
- Route 19 at West View Savings (school crossing)
- Valleybrook Road at Montour Trail (trail crossing)
- Braddock Avenue at Edgewood Town Center (elderly crossing)
- Route 910 at Banes School
- Wyoming Street at the Mon Incline (transit crossing)
- Smithfield Bridge at the Eliza Furnace Trail (trail crossing)
- McLaughlin Run Road and Bethel Church Road (school crossing)
- Bates Street (ADA compliance)

General Survey Comments

The survey concluded with an open-ended question asking participants to list comments they may have regarding active transportation in Allegheny County. The top ten (10) issues identified after reviewing the 326 comments were:

1. Motorist behavior
2. Roadway maintenance
3. Traffic law enforcement
4. Education, public awareness and promotion
5. Transit connections and/or accommodation
6. Desire for bicycle lanes
7. Desire for bicycle racks
8. Kayak access and parking
9. ADA compliant curb ramps and sidewalks
10. Desire for specific locations to be improved

Samples of comments received from the final survey question are listed below.

"I would love to see Fifth Avenue from Oakland to Mellon Park closed to pedestrian/bicycle traffic only on weekend hours."

"I am an enthusiastic Kayaker. A big problem is lack of access and lack of parking."

"Currently, many neighborhoods that are within rolling distance of my home are inaccessible to me because of no sidewalk, sidewalks in poor condition, and sidewalks without curbcuts."

"Need to educate both drivers and cyclists on how to share the road responsibly."

"It would be great to be able to take my bike on the T at peak times."

ADDENDUM TO SURVEY RESULTS SUMMARY

Introduction

A second tier survey analysis was performed to filter survey respondents by municipality of residence and identify additional locations for improvements in the county. Pittsburgh residents were filtered out of the analysis to determine improvement locations outside of the city limits. Three (3) open ended questions relating to routes/facilities were analyzed and are summarized below.

Results

Question #1: Please list the top 5 route/facilities, if any, on which you would like to see improvements made with regards to bicycle travel.

Answer #1: **Top 5 Answers**

1. Penn Avenue (City of Pittsburgh)
2. Liberty Avenue (City of Pittsburgh)
3. Route 28 (City of Pittsburgh, Reserve Township, Millvale, Shaler, Etna, Sharpsburg, Aspinwall, O'Hara, Borough of Blawnox)
4. East/West Carson Street (City of Pittsburgh)
5. Route 19 (Mount Lebanon, City of Pittsburgh, McCandless, West View, Ross Township)

Question #2: If you could only select one route/facility for improvements with regards to bicycle travel, which route or facility would you improve?

Answer #2: **Top 3 Answers**

1. Penn Avenue (City of Pittsburgh)
2. Allegheny River Boulevard (Penn Hills)
3. Route 19 (Mount Lebanon, City of Pittsburgh, McCandless, Pine Township)

Question #3: On which road(s), if any, would you like to see improvements made with regard to pedestrian travel?

Answer #3: **Top 3 Answers**

1. Route 19 (Mount Lebanon, City of Pittsbugh, West View, Ross Township)
2. Frankstown Road (Penn Hills)
3. Braddock Avenue (Braddock)

Appendix E

Public Meeting Comments

COMMENT FORM

PUBLIC MEETINGS
June 23-24, 2010

Meeting Attendees:
June 23- 21
June 24- 13

Comment Forms Received (as of June 25, 2010):
June 23- 7
June 24- 7

1. **Please indicate your interest in the *"Active Allegheny"* Plan.**
(Check all that apply)

	June 23	June 24	Total
I am a resident of Allegheny County interested in the project.	5	7	13
I represent a stakeholder organization or agency that supports walking/bicycling.	3	3	7
I am a public official.	1	0	1
Other (Please specify): -disabled veteran (2)	1	1	2

		Agree	Somewhat Agree	Somewhat Disagree	Disagree	Not Applicable	No Answer
2.	**The open house displays were informative.**	11	1	1	0	0	1
3.	**Information was presented clearly.**	10	1	1	0	0	2
4.	**Project team members were knowledgeable and helpful.**	10	1	0	1	0	2

5. Active transportation is "human-powered transport," including bicycling and walking. It could also include in-line skating and kayaking. Please share with us any focus areas, opportunities, improvements, or general comments that you have regarding active transportation in Allegheny County.

June 23

- Walking and biking need a big boost in overall priority in planning, design and maintenance. Sidewalks that dead end because road and structure projects pay no attention to connections to existing facilities; sidewalks and roads so disintegrated that they are unsafe except for trucks and SUVs; walks and paths that don't get cleared for days or weeks after a storm; on-street bike route markings that just go away where they would be most helpful because the road narrows or a turn lane happens; these are priority issues that if solved would promote non-motorized transportation.
- Trails that dead end
- More river access points
- Specific location with connectivity problems: Polish Hill to Oakland via Goldway and Bigelow Blvd. Bigelow: Small sidewalks adjacent to fast moving traffic, not accessible to

mobility impaired, not bike friendly, traffic speeds. Goldway: No sidewalk, used as commuter cut-through. Lots of bikes and peds use these: the only two ways to connect the communities.

- Not all trails are equally suitable for bicycling and ADA access. For example, Rachel Carson Trail is only suitable for hiking.
- Airport access: If construction of the off-road alternative remains stalled (and maybe even if it is), get the highway shoulder for McLaren interchange to terminal authorized for arriving bicycles. Likewise, get the shoulder from the terminal out to Clinton Road authorized for departures.
- Work on these critical connections:
    - W. end of Chateau Trail at Alcosan to McKees Rocks using sidewalk of McKees Rocks Bridge
    - Dead end of South Side Trail near Glenwood Bridge through Sandcastle to Waterfront
    - West end of South Side Trail at Duquesne Incline across West End Bridge to North Shore Trail
    - West End Circle to McKees Rocks as part of Route 51 reconstruction (in design)
    - Millvale to Freeport on W. side of Allegheny River. Likewise, to Freeport on E. side
    - Extend Panhandle Trail to Carnegie then down Chartiers Creek to McKees Rocks
    - Complete "East End Loop" from Beechwood bike lanes to Lawrenceville
    - Educate police about rights of vulnerable road users, especially bicycles. In particular, establish criteria for filing accident reports and raise priority of dealing with cars harassing bicyclists.
    - After identifying bicycle routes, fix the road surfaces (fill potholes)
    - Require use of bicycle-friendly rumble strips, and raise the threshold for rumble strips installation
    - Make the in-pavement detector loops that trigger traffic signals recognize bikes
    - Establish a process for genuinely involving bike/ped interests in early stages of road and bridge project designs
    - Getting from South Hills to Downtown (the Mt. Washington problem)- Get PAT to allow bikes at all times between Palm Garden and Station Square stops. If the bikes board last and get off first, they should not cause congestion in the cars (it's only one stop). Do it free, or charge a quarter.
- ADA upgrades are vital for older neighborhoods and especially for older residents. Walking to parks – ACCORD park in Kilbuck is a perfect example of a park with no walkways or bike lanes that connect the park.
- Bike trail = walking, wheelchair, rollerblade trail/lane
- Duck Hollow Trail to Eliza Furnace Trail- connect with safe bike trail or dedicated lane
- Glen Hazel/Glenwood Bridge- connect to Duck Hollow Trail and to Waterfront.
- Trail or dedicated lane connecting Hazelwood business district to top of Hazelwood Ave. (on Hazelwood Ave., through Greenway, or on side streets).
- Please keep the disability groups in mind when improving trails. This would bear advantage for wheelchairs to be off of roads with the use of trails.
- We are working on completing the sidewalk network in the City of Pittsburgh. Please contact Luci Spriull at United Cerebral Palsy and Victoria Campbell at Three Rivers Center for Independent Living.

<u>June 24</u>

- Mostly concerned with sidewalk network. The Robinson retail area desperately needs sidewalks for transit users and shoppers. Policy issues include general maintenance and lack of property owners taking care of sidewalks including tending to overgrown vegetation.
- Please include the disabled in your plans and improvements. Connecting the Panhandle Trail to Carnegie Bus Station. This would eliminate us having to use Noblestown Rd. as only means of pedestrian, bicycles or electric wheelchair of sharing a narrow roadway. As a safety concern, the Trail would be beneficial to all parties involved and decrease the potential of accidents.
- Strong interest in urban-suburban long hiking opportunities, long looped routes

with connectivity. I serve on Board of Friends of the Riverfront.

- Condition of roads. Speaking to Driver Education Classes on what to do when they encounter a cyclist.
- The proposed trail along Chartiers Creek is of most interest to me. My opinion is that it would be very much used for recreation with some limited use for commuting.
- I think it is important to see what other bike-friendly cities have done to improve their cycling routes. Why reinvent the wheel? If we can learn from others' mistakes and successes, it should help accelerate improvements in Pittsburgh's attempt to become more bike-friendly.

6. **Contact Information –** Nine (9) persons provided contact information to be added to the mailing list.
7. **How did you learn of the Public Meeting?**

Email- 4	Website- 1	Mailed Invitation- 0
Newspaper- 6	Word-of-mouth- 3	Other- 0 No Answer- 2

8. **Were you able to express your concerns or opinions about the "Active Allegheny" Plan?**
   Yes- 10
   No- 0
   No Answer- 4
9. **Were your questions and/or concerns addressed?**
   Yes- 7
   No- 1
   No Answer- 5
   [Somewhat]- 1

   If not, what additional information do you need?
   - Who will finish the proposed changes or additions and when?
   - Unprepared to deal with issues around people with disabilities.

Appendix F

Allegheny Green Festival Word Find & Memory Game

ACTIVEALLEGHENY

ACTIVEALLEGHENY

WORD FIND

A	N	D	W	A	L	K	P	U	T	S	B	W	M	S
O	C	A	U	I	P	H	B	Y	A	L	U	A	C	R
S	N	T	D	C	A	R	O	U	T	E	S	Y	E	A
W	M	B	I	H	S	N	N	E	R	S	W	P	H	C
H	U	C	K	V	K	I	U	S	A	K	A	Y	A	K
E	F	E	G	R	E	X	D	I	D	H	Y	O	W	E
E	E	H	C	L	U	I	T	E	S	M	O	T	U	E
L	G	L	E	O	G	R	I	R	W	L	I	A	R	T
C	D	I	Z	U	M	A	D	W	Q	A	C	S	L	E
H	I	T	L	U	B	M	W	A	B	D	L	D	I	M
A	R	E	N	T	V	P	U	Y	X	O	O	K	N	L
I	B	I	K	E	E	S	K	T	I	M	R	A	U	E
R	O	P	K	A	O	T	S	T	E	P	S	R	W	H

ACTIVE BUSWAY KAYAK ROUTES TRAIL

BIKE COMMUTE RACK SIDEWALK WALK

BRIDGE HELMET RAMPS STEPS WHEELCHAIR

Find the words listed in the puzzle above.
Words can be forward, backward or diagonal!


BIKE LANE


MAY USE
FULL LANE


RIDE
WITH
TRAFFIC


USE
PED
SIGNAL


RAIL ROAD
CROSSING


SHARE
THE
ROAD

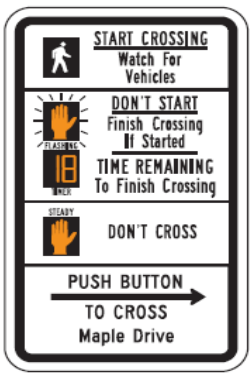

Downtown


BIKE ROUTE


S3


USE
CROSSWALK


WALK
ON LEFT
FACING
TRAFFIC


START CROSSING
Watch For
Vehicles
DON'T START
Finish Crossing
If Started
TIME REMAINING
To Finish Crossing
DON'T CROSS
PUSH BUTTON
TO CROSS
Maple Drive

ACTIVEALLEGHENY ACTIVEALLEGHENY ACTIVEALLEGHENY ACTIVEALLEGHENY ACTIVEALLEGHENY ACTIVEALLEGHENY ACTIVEALLEGHENY ACTIVEALLE

Appendix G

Bicycle Crash Summary & Crash Map

ACTIVEALLEGHENY

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan for Allegheny County

REPORTED BICYCLE AND PEDESTRIAN CRASHES

As part of the study data collection task, bicycle and pedestrian crash data for the previous five (5) years in Allegheny County was requested from PennDOT. The crash data received identified 2,571 bicycle and pedestrian crashes between January 2005 and December 2009. Approximately 30% of the crash data were geocoded by PennDOT and could be mapped to specific locations. Presented below are preliminary findings for the bicycle and pedestrian crash review for Active Allegheny.

BICYCLE CRASHES

- There were a total of **457 reported bicycle crashes**
- A majority of crashes (68%) were recorded as an 'Angle Crash'
- 3 Fatalities were reported; 40% of crashes resulted in minor injury
- ***Crash Locations:***
  - Crashes occurred on 348 unique roadway corridors
  - There were 2 or more crashes on 56 roadways corridors

Top 10 roadways with reported bicycle crashes were:

1. ***Penn Ave*** *– 10 crashes*
2. ***Forbes Ave*** *– 9 crashes*
3. ***Freeport Rd*** *– 8 crashes*
4. ***Fifth Ave*** *– 7 crashes*
5. ***Liberty Ave*** *– 7 crashes*
6. ***Butler St*** *– 6 crashes*
7. ***E Carson St*** *– 5 crashes*
8. ***Wilkins Ave*** *– 5 crashes*
9. ***Smithfield St*** *– 5 crashes*
10. ***Craig St*** *– 4 crashes*

PEDESTRIAN CRASHES

- There were a total of **2,114 reported pedestrian crashes**
- 58 Fatalities were reported; 32% of crashes resulted in minor injury
- ***Crash Locations:***
  - Crashes occurred on 947 unique roadway corridors
  - There were:
    - 2 or more crashes on 266 roadways corridors
    - 5 or more crashes on 78 roadways corridors
    - 10 or more crashes on 36 roadway corridors

Top 21 roadway corridors for crashes were:

1. ***Fifth Ave*** *- 55 crashes*
2. ***Penn Ave*** *- 46 crashes*
3. ***E Carson St*** *- 41 crashes*
4. ***Forbes Ave*** *- 40 crashes*
5. ***Carson St*** *- 30 crashes*
6. ***Liberty Ave*** *- 30 crashes*
7. ***Brownsville Rd*** *- 28 crashes*
8. ***Baum Blvd*** *- 23 crashes*
9. ***Butler St*** *- 22 crashes*
10. ***Centre Ave*** *- 22 crashes*
11. ***6th Ave*** *- 20 crashes*
12. ***Blvd Of The Allies*** *- 20 crashes*
13. ***4th Ave*** *- 18 crashes*
14. ***Washington Rd*** *- 17 crashes*
15. ***Bigelow Blvd*** *- 15 crashes*
16. ***2nd Ave*** *- 14 crashes*
17. ***Clairton Blvd*** *- 14 crashes*
18. ***Main St*** *- 14 crashes*
19. ***Negley Ave*** *- 13 crashes*
20. ***Smithfield St*** *- 13 crashes*
21. ***William Penn Hwy*** *- 13 crashes*

ACTIVEALLEGHENY

BUTLER COUNTY

ARMSTRONG COUNTY

BEAVER COUNTY

WESTMORELAND COUNTY

WASHINGTON COUNTY

N

W E

S

Miles

0 1 2 3 4 5

LEGEND

Bicycle Crashes[1]

- Geocoded Crashes (PennDOT)
- Identified Corridors with 2 or more reported crashes

Trails

- Existing Trails
- Proposed Trails
- Water Trails

Transportation

- Roadways
- Busways (East, North Shore, South, West)
- T

Physical Boundaries

- County Boundary
- Municipal Boundaries

Water Features

- Rivers and Lakes

Land Cover

- Residential
- Commercial
- Industrial
- Transportation
- Recreation / Conservation
- Parks
- Community Facilities
- Agriculture
- Cemetery
- Undeveloped
- Vacant

[1] Identified crash corridors are based on crash data provided by PennDOT for 2005 - 2009. Geocoded locations for 142 locations (approximately 30% of reported crashes during this period) were also provided by PennDOT.

JUNE 2010

Baker

Public Transportation and Multimodal Open End II, Contract # 358R10

ALLEGHENY COUNTY ECONOMIC DEVELOPMENT
COORDINATING SUCCESS

Allegheny County
Geocoded Bicycle Crashes and Identified Crash Corridors

ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

Appendix H

System Improvements Map for Countywide Bicycle Routes

ACTIVEALLEGHENY

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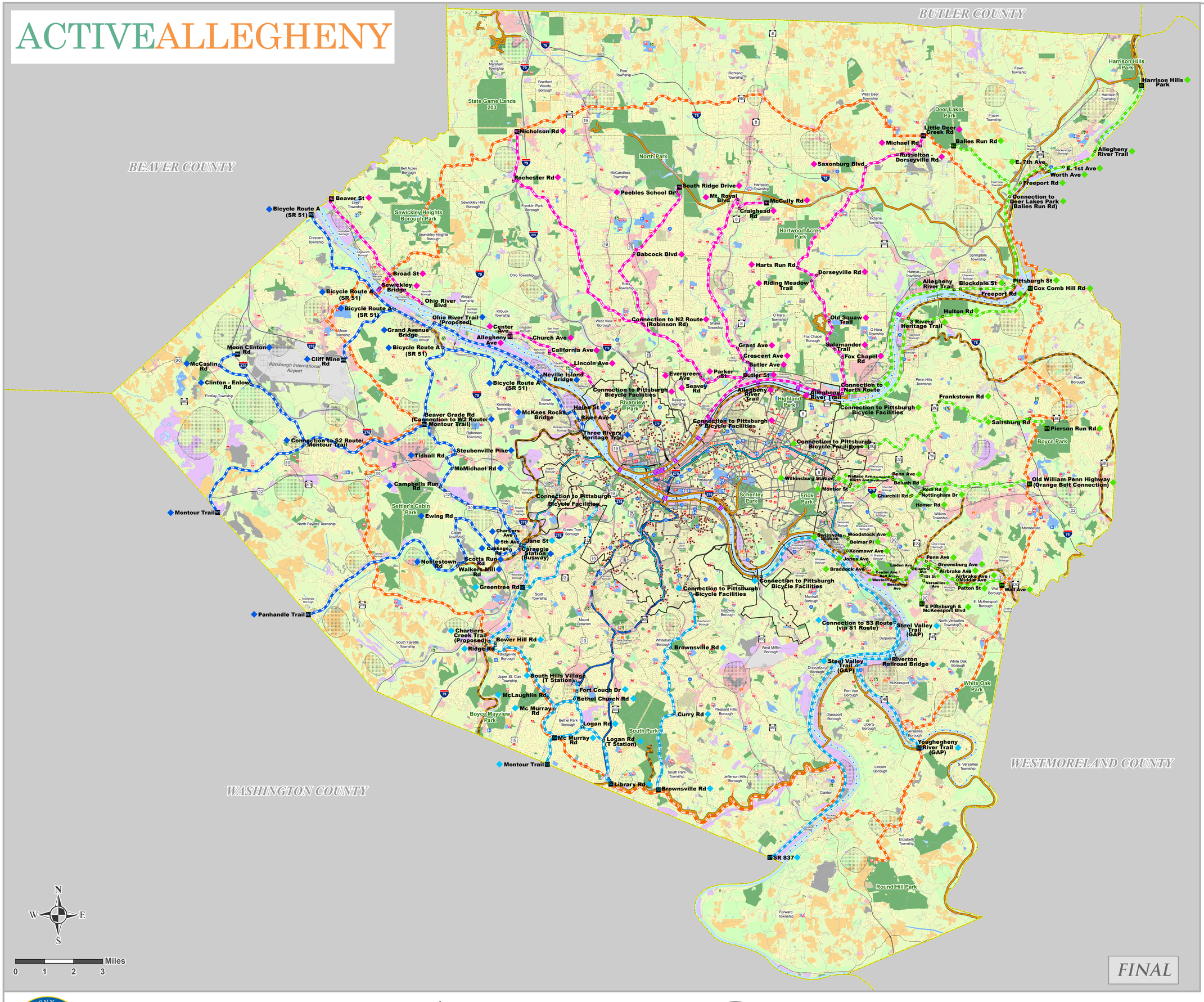

Legend

Proposed Bicycle Routes
- North Bicycle Routes
- West Bicycle Routes
- East Bicycle Routes
- South Bicycle Routes
- City Bicycle Routes
- Beltway Bicycle Route
- Route Transitions

Trails
- Existing Trails
- Proposed Trails
- Trail Under Development
- Three Rivers Water Trail

Transportation
- Higher Order Roadways
- Local Roadways
- Bridges
- Busways and Stations (East, North Shore, South, West)
- T and Stations

Focus Area Attractors
- Focus Area Bridge
- Bike Rental
- Cycle Track
- Sports Legacy
- Hospital
- Senior Center
- Library
- Park and Ride Lots
- Private School
- Public School
- College / University
- Potential TOD Sites

Physical Boundaries
- County Boundary
- Municipal Boundaries

Source for boundaries: Allegheny Places municipal boundaries - Assessor Territory

Water Features
- Rivers and Lakes

Land Uses (Allegheny Places)
- Economic Growth Areas
- Residential
- Commercial
- Industrial
- Transportation
- Recreation / Conservation
- Parks
- Community Facilities
- Agriculture
- Cemetery
- Undeveloped
- Vacant

N W E S

0 1 2 3 Miles

FINAL

October 2010
Rev. 11/30/10

Baker

Public Transportation and Multimodal Open End II, Contract # 358R10

Allegheny County
Preliminary System Improvements
Countywide Bicycle Routes

ALLEGHENY COUNTY ECONOMIC DEVELOPMENT COORDINATING SUCCESS

ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

Appendix I

2009 City of Pittsburgh Bicycle & Pedestrian Initiatives

ACTIVEALLEGHENY

2009 Cyclist & Pedestrian Initiatives

2009 CYCLIST AND PEDESTRIAN INITIATIVES

ENGINEERING

- Announce the hiring of a Bike-Pedestrian Coordinator for the City of Pittsburgh.
- Tax credits to encourage businesses to provide facilities for cyclists. Such tax credits would support provisions already in the zoning code which encourage these accommodations.
- Designate and mark with clear signage Bike Routes across the City and have a complete system in place by 2010.
- Commit significant additional resources for reinvestment in the steps of the City of Pittsburgh.
- Establish more warranted pedestrian crosswalks with high visibility signage.
- Work with business districts to seek creative ways to increase availability of bicycle parking. (The case of the Lawrenceville request can serve as the model for this concept.)
- Work with the Pittsburgh Parking Authority to provide accommodations for bicycles and bicyclists in Parking Authority lots.
- Increase bicycle facilities to accommodate commuters.
- Establish a "Mayor's Complete Streets Task Force" to formulate and adopt a "Complete Streets Policy" for the City of Pittsburgh.

EDUCATION

- Advocate for changes in driver's manual to emphasize bicycle/pedestrian safety.
- Partner with Bike Pittsburgh, the region's largest bike advocacy group, to increase bicycle commuting among City employees.
- Work with organizations to establish and coordinate a "Commuter Partnership Program" so that those who already commute to work on a bicycle can help others see how easy and safe it can be.
- Make an official application for "Bike Friendly Community Status" no later than 2010.

ENFORCEMENT

- Use police traffic violation forms to better track cyclist and pedestrian incidents.
- Increased enforcement, especially along bike routes, of laws regarding motor vehicle speed, pedestrian safety, and cyclist rights of way.

EVENTS

- Showcase a City street or boulevard by closing it to vehicular traffic. Allow pedestrians and cyclists to enjoy a safe and otherwise impermissible ride.
- Establish a volunteer bike registration promoted through sign-up days and other events.
- Attract national and international bicycle events to the City of Pittsburgh.

Appendix J

City of Pittsburgh
Bicycle Routes Map

ACTIVEALLEGHENY

ACTIVEALLEGHENY

Highland Park

Schenley Park

Frick Park

N
W E
S

0 Miles 1

FINAL

LEGEND

PROPOSED BICYCLE ROUTES
- NORTH BICYCLE ROUTES
- WEST BICYCLE ROUTES
- EAST BICYCLE ROUTES
- SOUTH BICYCLE ROUTES
- CONNECTION TO PITTSBURGH BICYCLE FACILITIES

EXISTING FACILITIES
- BIKE PGH BICYCLE ROUTES
- CITY OF PITTSBURGH MARKED BIKEWAYS

TRAILS
- EXISTING TRAILS
- PROPOSED TRAILS
- TRAIL UNDER DEVELOPMENT
- THREE RIVERS WATER TRAIL

TRANSPORTATION
- HIGHER ORDER ROADWAYS
- LOCAL ROADWAYS
- BRIDGES
- BUSWAYS AND STATIONS (EAST, NORTH SHORE, SOUTH, WEST)
- T AND STATIONS

FOCUS AREA ATTRACTORS
- FOCUS AREA BRIDGE
- BIKE RENTAL
- CYCLE TRACK
- SPORTS LEGACY
- HOSPITAL
- SENIOR CENTER
- LIBRARY
- PARK AND RIDE LOTS
- PRIVATE SCHOOL
- PUBLIC SCHOOL
- COLLEGE / UNIVERSITY
- POTENTIAL TOD SITES

PHYSICAL BOUNDARIES
- COUNTY BOUNDARY
- MUNICIPAL BOUNDARIES

Source for boundaries: Allegheny Places municipal boundaries - Assessor Territory

WATER FEATURES
- RIVERS AND LAKES

LAND USES (ALLEGHENY PLACES)
- ECONOMIC GROWTH AREAS
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION
- RECREATION / CONSERVATION
- PARKS
- COMMUNITY FACILITIES
- AGRICULTURE
- CEMETERY
- UNDEVELOPED
- VACANT

AUGUST 2010
REV. 11/30/10

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Public Transportation and Multimodal Open End II, Contract # 358R10

ALLEGHENY COUNTY
CITY BICYCLE NETWORK

ALLEGHENY COUNTY ECONOMIC DEVELOPMENT
COORDINATING SUCCESS

ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

Appendix K

Publication 10 A
PennDOT Roadway Design Manual

ACTIVEALLEGHENY

APPENDIX J

BICYCLE AND PEDESTRIAN CHECKLIST

BLANK PAGE

Planning and Programming Checklist

Project_____
SR_____ Segment_____ Offset_____
Team Members_____
_____ Date_____

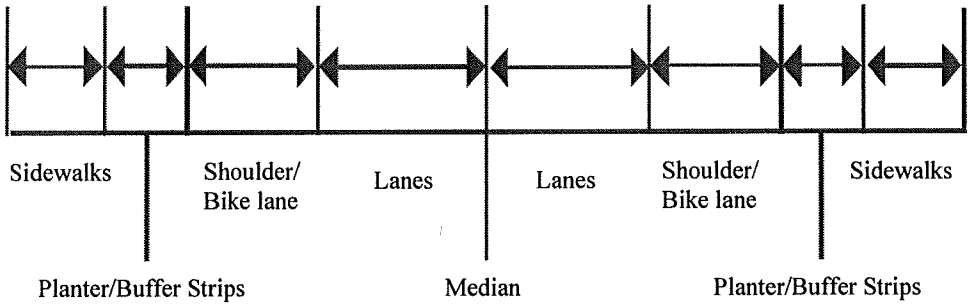
Item	Considerations	Check	Comments
1. Consistency with Bicycle/Pedestrian Planning Documents	Is the transportation facility included in or related to bicycle and pedestrian facilities identified in a master plan? • MPO/RPO bike/ped plan. • Local planning documents. • BicyclePA Routes. • Statewide Bicycle and Pedestrian Master Plan.		
	Will the transportation facility provide continuity and linkages with existing or proposed bicycle/pedestrian facilities?		
	Is the transportation facility included in or related to a regional/local recreational plan? • Rails-to-Trails. • Greenways. • Local, State, National Parks.		
2. Existing and Future Usage	Do bicycle/pedestrian groups regularly use the transportation facility? • Bike clubs. • Bicycle commuters. • Hiking, walking, or running clubs. • Skateboarding or rollerblading groups. • Bicycle touring groups. • General tourism/sightseeing.		
	Does the existing transportation facility provide the only convenient transportation connection/linkage between land uses in the local area or region?		
	Could the transportation facility have favorable or unfavorable impacts upon the bike tourism/economy of an area/ region? Consider: • Local businesses • Chamber of Commerce • Tourism Promotion Agencies.		
	Are there physical or perceived impediments to bicycle or pedestrian use of the transportation facility?		
	Is there a higher than normal incidence of bicycle/pedestrian crashes in the area?		
3. Safety	Is the transportation facility in a high-density land use area that has pedestrian/ bike/motor vehicle traffic?		

3. Safety (continued)	Is there a high amount of crossing activity at intersections? • Midblock • Night crossing activity • Adequate lighting.		
	Would the transportation facility (and all users) benefit from widened or improved shoulders or improved markings (shoulders, crosswalks)?		
4. Community and Land Use	Is the transportation facility in a city, town, or village?		
	Is the transportation facility within/near a community or neighborhood?		
	Is the transportation facility the "main street" in a community or town?		
	Could bicycle or pedestrian usage impact economic development?		
	Are sidewalks needed in the area? • Presence of worn paths along the facility. • Adjacent land uses generate pedestrian traffic. • Possible linkages/continuity with other pedestrian facilities.		
	Is the transportation facility a link between complimentary land uses? • Residential and commercial. • Residential and business.		
	Is the transportation facility in close proximity to hospitals, elderly care facilities, or the residences or businesses of persons with disabilities?		
	Is the transportation facility within or near educational buildings?		
	Is the transportation facility in close proximity to transit stops or multi-modal centers (including airports, rail stations, intercity bus terminals, and water ports)?		
5. Transit	Is the transportation facility on a transit route?		
	Is the transportation facility near park-and-ride lots?		
	Are there existing or proposed bicycle racks, shelters or parking available? Are there bike racks on buses?		
6.Traffic Calming	Is the community considering traffic calming as a possible solution to speeding and cut-through traffic?		

Scoping Checklist

Project_____
SR_____ Segment_____ Offset_____
Team Members_____
_____ Date_____

Right-of-Way Needs Diagram



Element	Number Required	Width Required	Total Width
Sidewalks			
Buffer Strips			
Shoulders			
Lanes			
Median			
Total Right-of-Way Required			

Pedestrian Facilities

Item	Considerations	Check	Comments
1. Sidewalks	Appropriate width: • 1.5 m – 2.1 m (5'-7') for residential, commercial, and industrial. • 2.5 m (8') minimum for high use areas/CBD. • 2.1 m (7') width for bridges. • 0.6 m (2') shy distance for vertical barriers. • 1.2 m – 2.1 m (5' – 7') barrier separating traffic from pedestrians on bridges.		

Sidewalks (cont'd)	Applicability of planter or buffer strips.		
	Connectivity with other pedestrian facilities.		
	Proximity to transit bike/ped generators: • Transit stops. • Schools. • Park & rides. • Nursing homes. • Offices. • Business environments. • Athletic fields. • Recreation facilities.		
	Observe pedestrian patterns for special needs such as: • Midblock crossings. • Islands and refuges. • Night crossing activity.		
	ADA needs and concerns.		
2. Signalized Intersections	Crosswalks provided and marked.		
	Intersection bike/ped crash history reviewed.		
	Is there a dedicated pedestrian phase, if so how long?		
	Crossing distance is minimized.		
	Ped heads and ped pushbuttons provided.		
	ADA needs and concerns.	Retirement homes Schools Medical facilities	
3. Traffic Calming	Is the community considering traffic calming as a means to curb speeding and cut-through traffic?		

Bicycle Facilities

Item	Considerations	Check	Comments
1. Bikelanes/Paved Shoulders	Appropriate width of bike lane: • 1.5m (5') adjacent to curb • 1.8m (6') standard.		
	Connectivity with other facilities. • Bike lanes • Shared use trails • Trail heads/parking areas.		
	Maximize width of shoulders and provide appropriate markings as per *AASHTO Green Book.*		
	3 m (10') vertical clearance from fixed obstructions (excluding road signs).		
	Angle and smoothness of railroad crossings. Avoid angles of incidence of <70 degrees or re-design.		
	Bridge accesses provided/pinch points avoided.		
	Parking parallel or angled.		
2. Signalized intersections	Inventory existing bicycle facilities.		
	Intersection bike/ped crash history reviewed.		
	Crossing distance is minimized.		
	Considerations for bikes making turns.		
	Bike detection.		
	Elevated push buttons.		
3. Traffic Calming	Is the community considering traffic calming as a means to curb speeding and cut-through traffic?		

Final Design Checklist

Project_____
SR_____ Segment_____ Offset_____
Team Members_____
_____ Date_____

Pedestrian Facilities

Item	Considerations	Check	Comments
1. Sidewalks and Signalized Intersections	Crosswalks are at least 3 m (10') wide.		
	Crosswalks are prominently marked using at least 6" line.		
	Pedestrian signals are provided.		
	Pushbuttons are provided and accessible.		
	Minimize crossing distance.		
	Maximize pedestrian visibility at crossings.		
	Coordination of turn phases with walk/don't walk signs.		
	Proper lighting type and placement.		
2. ADA Requirements	Pushbuttons accessible.		
	Pushbuttons height 1.0m – 1.1m (3.5'-4.0').		
	Large pushbuttons used.		
	1.5m (5') recommended passage (sidewalks).		
	5% maximum grade recommended (sidewalks).		
	2% cross-slope maximum.		
	Textured curb cuts.		
	2 curb cuts per corner at intersections.		
	Curb cuts flush with street surface 0.6cm (1/4" tolerance).		
	Running slope of new curb cuts 1 in 12 max.		
	Longer signal cycles.		
	Audible crossing signals.		
	Level landings on perpendicular curb ramps.		
	Proper head/shoulder clearance for visually impaired.		
	Coordinate utilities with ADA requirements.		
	Proper lighting.		
	Analyze landscaping growth potential for future obstructions.		
	Any conflicts with minimal distance that should be included in the project.		
	Coordinate and minimize signage conflicts.		
3. Traffic Calming	Consider traffic calming as a means to improve pedestrian and general traffic safety.		

Bicycle Facilities

Item	Considerations	Check	Comments
1. Bikelanes/Bikeways	Bicycle safe grates, RC-34, Sheet 3 of 9.		
	Manhole covers flush with roadway surface.		
	Inlets flush with roadway surface.		
	Rumble strips type and placement.		
	Driveway aprons.		
	Conflicts eliminated with: • Turns at intersections. • Through movements. • Bicycle and pedestrian conflicts. • Parked cars, angled vs. parallel. • Driveway aprons.		
2. Signage	3m (10') vertical clearance from signs and structures.		
	"Share the Road Signs."		
	"Wrong Way Signs."		
	Lane stenciling.		
	Bike lane designation signs.		
	No parking signs.		
	Bike lane striped.		
	Transition from bike lane to bikeway.		
	Consistent width on roadways, bridges, and intersections.		
	Overlap bike lane/shoulder stripe over pavement joints.		
	Meet or exceed AASHTO criteria.		
3. Traffic calming	Consider traffic calming as a means to improve pedestrian and general traffic safety.		

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Appendix L

Pedestrian Crash Summary & Pedestrian Crash Map

ACTIVEALLEGHENY

A Comprehensive Commuter Bicycle and Pedestrian Transportation Plan for Allegheny County

REPORTED BICYCLE AND PEDESTRIAN CRASHES

As part of the study data collection task, bicycle and pedestrian crash data for the previous five (5) years in Allegheny County was requested from PennDOT. The crash data received identified 2,571 bicycle and pedestrian crashes between January 2005 and December 2009. Approximately 30% of the crash data were geocoded by PennDOT and could be mapped to specific locations. Presented below are preliminary findings for the bicycle and pedestrian crash review for Active Allegheny.

BICYCLE CRASHES

- There were a total of **457 reported bicycle crashes**
- A majority of crashes (68%) were recorded as an 'Angle Crash'
- 3 Fatalities were reported; 40% of crashes resulted in minor injury
- ***Crash Locations:***
  - Crashes occurred on 348 unique roadway corridors
  - There were 2 or more crashes on 56 roadways corridors

Top 10 roadways with reported bicycle crashes were:

1. ***Penn Ave*** *– 10 crashes*
2. ***Forbes Ave*** *– 9 crashes*
3. ***Freeport Rd*** *– 8 crashes*
4. ***Fifth Ave*** *– 7 crashes*
5. ***Liberty Ave*** *– 7 crashes*
6. ***Butler St*** *– 6 crashes*
7. ***E Carson St*** *– 5 crashes*
8. ***Wilkins Ave*** *– 5 crashes*
9. ***Smithfield St*** *– 5 crashes*
10. ***Craig St*** *– 4 crashes*

PEDESTRIAN CRASHES

- There were a total of **2,114 reported pedestrian crashes**
- 58 Fatalities were reported; 32% of crashes resulted in minor injury
- ***Crash Locations:***
  - Crashes occurred on 947 unique roadway corridors
  - There were:
    - 2 or more crashes on 266 roadways corridors
    - 5 or more crashes on 78 roadways corridors
    - 10 or more crashes on 36 roadway corridors

Top 21 roadway corridors for crashes were:

1. ***Fifth Ave*** *- 55 crashes*
2. ***Penn Ave*** *- 46 crashes*
3. ***E Carson St*** *- 41 crashes*
4. ***Forbes Ave*** *- 40 crashes*
5. ***Carson St*** *- 30 crashes*
6. ***Liberty Ave*** *- 30 crashes*
7. ***Brownsville Rd*** *- 28 crashes*
8. ***Baum Blvd*** *- 23 crashes*
9. ***Butler St*** *- 22 crashes*
10. ***Centre Ave*** *- 22 crashes*
11. ***6th Ave*** *- 20 crashes*
12. ***Blvd Of The Allies*** *- 20 crashes*
13. ***4th Ave*** *- 18 crashes*
14. ***Washington Rd*** *- 17 crashes*
15. ***Bigelow Blvd*** *- 15 crashes*
16. ***2nd Ave*** *- 14 crashes*
17. ***Clairton Blvd*** *- 14 crashes*
18. ***Main St*** *- 14 crashes*
19. ***Negley Ave*** *- 13 crashes*
20. ***Smithfield St*** *- 13 crashes*
21. ***William Penn Hwy*** *- 13 crashes*

ACTIVEALLEGHENY

BUTLER COUNTY

ARMSTRONG COUNTY

BEAVER COUNTY

WESTMORELAND COUNTY

WASHINGTON COUNTY

N
W E
S

0 1 2 3 4 5 Miles

[1] Identified crash corridors are based on crash data provided by PennDOT for 2005 - 2009. Geocoded locations for 694 locations (approximately 30% of reported crashes during this period) were also provided by PennDOT.

Legend

Pedestrian Crashes[1]

- Geocoded Crashes (PennDOT)
- Identified Corridors with 2 or more reported crashes

Trails

- Existing Trails
- Proposed Trails
- Water Trails

Transportation

- Roadways
- Busways (East, North Shore, South, West)
- T

Physical Boundaries

- County Boundary
- Municipal Boundaries

Water Features

- Rivers and Lakes

Land Cover

- Residential
- Commercial
- Industrial
- Transportation
- Recreation / Conservation
- Parks
- Community Facilities
- Agriculture
- Cemetery
- Undeveloped
- Vacant

JUNE 2010

Baker

Public Transportation and Multimodal Open End II, Contract # 358R10

ALLEGHENY COUNTY ECONOMIC DEVELOPMENT
COORDINATING SUCCESS

Allegheny County

Geocoded Pedestrian Crashes and Identified Crash Corridors

ALLEGHENYPLACES
THE ALLEGHENY COUNTY COMPREHENSIVE PLAN

Appendix M

ACCESS Transportation Board Origins & Destinations

ACTIVEALLEGHENY

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

Address	*Area*	*Zip*	*TripCount*
4424 Penn Ave	Bloomfield	15201	3
212 44th St	Lawrenceville	15201	4
229 Friendship Ave	Lawrenceville	15201	2
27 51st St	Lawrenceville	15201	1
3424 Liberty Ave	Lawrenceville	15201	1
3937 BUTLER ST	Lawrenceville	15201	2
3938 BUTLER ST	Lawrenceville	15201	4
3939 BUTLER ST	Lawrenceville	15201	16
3940 BUTLER ST	Lawrenceville	15201	2
3941 BUTLER ST	Lawrenceville	15201	2
3942 BUTLER ST	Lawrenceville	15201	2
3943 BUTLER ST	Lawrenceville	15201	5
3944 BUTLER ST	Lawrenceville	15201	2
3945 BUTLER ST	Spring Hill	15201	18
3946 BUTLER ST	Avalon	15202	2
3947 BUTLER ST	Avalon	15202	1
3948 BUTLER ST	Avalon	15202	1
3949 BUTLER ST	Avalon	15202	1
3950 BUTLER ST	Avalon	15202	32
3951 BUTLER ST	Avalon	15202	15
3952 BUTLER ST	Avalon	15202	8
3953 BUTLER ST	Bellevue	15202	1
3954 BUTLER ST	Bellevue	15202	1
3955 BUTLER ST	Bellevue	15202	2
3956 BUTLER ST	Bellevue	15202	14
3957 BUTLER ST	Bellevue	15202	2
3958 BUTLER ST	Bellevue	15202	11
3959 BUTLER ST	Bellevue	15202	31
3960 BUTLER ST	Bellevue	15202	40
3961 BUTLER ST	Bellevue	15202	1
3962 BUTLER ST	Bellevue	15202	2
3963 BUTLER ST	Bellevue	15202	1
3964 BUTLER ST	Bellevue	15202	1
3965 BUTLER ST	Bellevue	15202	1
3966 BUTLER ST	Bellevue	15202	1
3967 BUTLER ST	Bellevue	15202	11
3968 BUTLER ST	Bellevue	15202	100
3969 BUTLER ST	Bellevue	15202	5
3970 BUTLER ST	Bellevue	15202	1
3971 BUTLER ST	Bellevue	15202	2
3972 BUTLER ST	Bellevue	15202	23
3973 BUTLER ST	Bellevue	15202	1
3974 BUTLER ST	Bellevue	15202	4
3975 BUTLER ST	Bellevue	15202	1
3976 BUTLER ST	Bellevue	15202	1
3977 BUTLER ST	Bellevue	15202	7
3978 BUTLER ST	Bellevue	15202	1
3979 BUTLER ST	Bellevue	15202	3
3980 BUTLER ST	Bellevue	15202	1
3981 BUTLER ST	Bellevue	15202	4

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

3982 BUTLER ST	Bellevue	15202	1
3983 BUTLER ST	Bellevue	15202	1
3984 BUTLER ST	Bellevue	15202	2
3985 BUTLER ST	Bellevue	15202	4
3986 BUTLER ST	Bellevue	15202	31
3987 BUTLER ST	Ben Avon	15202	1
3988 BUTLER ST	Ben Avon	15202	23
3989 BUTLER ST	Ben Avon	15202	1
3990 BUTLER ST	Ben Avon Heights	15202	11
3991 BUTLER ST	Emsworth	15202	4
3992 BUTLER ST	Ross	15202	14
3993 BUTLER ST	South Shore	15203	1
3994 BUTLER ST	South Shore	15203	1
3995 BUTLER ST	South Side	15203	2
3996 BUTLER ST	South Side	15203	15
3997 BUTLER ST	South Side	15203	2
3998 BUTLER ST	South Side	15203	67
3999 BUTLER ST	South Side	15203	1
4000 BUTLER ST	South Side	15203	2
4001 BUTLER ST	South Side	15203	1
4002 BUTLER ST	South Side	15203	11
4003 BUTLER ST	South Side	15203	10
4004 BUTLER ST	South Side	15203	1
4005 BUTLER ST	South Side	15203	1
4006 BUTLER ST	South Side	15203	2
4007 BUTLER ST	South Side	15203	2
4008 BUTLER ST	South Side	15203	5
4009 BUTLER ST	South Side	15203	2
4010 BUTLER ST	South Side	15203	1
4011 BUTLER ST	South Side	15203	2
4012 BUTLER ST	South Side	15203	7
4013 BUTLER ST	South Side	15203	8
4014 BUTLER ST	South Side	15203	15
4015 BUTLER ST	South Side	15203	7
4016 BUTLER ST	South Side	15203	1
4017 BUTLER ST	South Side	15203	84
4018 BUTLER ST	South Side	15203	3
4019 BUTLER ST	South Side	15203	40
4020 BUTLER ST	South Side	15203	2
4021 BUTLER ST	South Side	15203	18
4022 BUTLER ST	South Side	15203	20
4023 BUTLER ST	South Side	15203	74
4024 BUTLER ST	South Side	15203	7
4025 BUTLER ST	South Side	15203	22
4026 BUTLER ST	South Side	15203	63
4027 BUTLER ST	South Side	15203	1
4028 BUTLER ST	South Side	15203	1
4029 BUTLER ST	South Side	15203	21
4030 BUTLER ST	South Side	15203	2
4031 BUTLER ST	South Side	15203	1
4032 BUTLER ST	South Side	15203	1

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

4033 BUTLER ST	South Side	15203	7
4034 BUTLER ST	South Side	15203	13
4035 BUTLER ST	South Side	15203	1
4036 BUTLER ST	South Side	15203	5
4037 BUTLER ST	South Side	15203	16
4038 BUTLER ST	South Side	15203	1
4039 BUTLER ST	South Side	15203	6
4040 BUTLER ST	South Side	15203	2
4041 BUTLER ST	South Side	15203	9
4042 BUTLER ST	Sheraden	15204	5
4043 BUTLER ST	Sheraden	15204	22
4044 BUTLER ST	Sheraden	15204	7
4045 BUTLER ST	Sheraden	15204	1
4046 BUTLER ST	Sheraden	15204	19
4047 BUTLER ST	Sheraden	15204	1
4048 BUTLER ST	Sheraden	15204	1
4049 BUTLER ST	Sheraden	15204	8
4050 BUTLER ST	Sheraden	15204	4
4051 BUTLER ST	Sheraden	15204	49
4052 BUTLER ST	Crafton	15205	13
4053 BUTLER ST	Crafton	15205	10
4054 BUTLER ST	Crafton	15205	1
4055 BUTLER ST	Crafton	15205	2
4056 BUTLER ST	Crafton	15205	10
4057 BUTLER ST	Crafton	15205	1
4058 BUTLER ST	Crafton	15205	1
4059 BUTLER ST	Crafton	15205	3
4060 BUTLER ST	Crafton	15205	76
4061 BUTLER ST	Ingram	15205	25
4062 BUTLER ST	West End	15205	72
4063 BUTLER ST	West End	15205	1
4064 BUTLER ST	West End	15205	132
4065 BUTLER ST	West End	15205	2
4066 BUTLER ST	Bloomfield	15206	1
4067 BUTLER ST	Bloomfield	15206	4
4068 BUTLER ST	Bloomfield	15206	9
4069 BUTLER ST	Bloomfield	15206	1
4070 BUTLER ST	Bloomfield	15206	1
4071 BUTLER ST	East Liberty	15206	1
4072 BUTLER ST	East Liberty	15206	1
4073 BUTLER ST	East Liberty	15206	1
4074 BUTLER ST	East Liberty	15206	3
4075 BUTLER ST	East Liberty	15206	2
4076 BUTLER ST	East Liberty	15206	16
4077 BUTLER ST	East Liberty	15206	10
4078 BUTLER ST	East Liberty	15206	4
4079 BUTLER ST	East Liberty	15206	1
4080 BUTLER ST	East Liberty	15206	1
4081 BUTLER ST	East Liberty	15206	2
4082 BUTLER ST	East Liberty	15206	17
4083 BUTLER ST	East Liberty	15206	1

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

4084 BUTLER ST	East Liberty	15206	5
4085 BUTLER ST	East Liberty	15206	3
4086 BUTLER ST	East Liberty	15206	162
4087 BUTLER ST	East Liberty	15206	8
4088 BUTLER ST	East Liberty	15206	1
4089 BUTLER ST	East Liberty	15206	2
4090 BUTLER ST	East Liberty	15206	1
4091 BUTLER ST	East Liberty	15206	4
4092 BUTLER ST	East Liberty	15206	35
4093 BUTLER ST	East Liberty	15206	1
4094 BUTLER ST	East Liberty	15206	5
4095 BUTLER ST	East Liberty	15206	6
4096 BUTLER ST	East Liberty	15206	62
4097 BUTLER ST	East Liberty	15206	66
4098 BUTLER ST	East Liberty	15206	1
4099 BUTLER ST	Lincoln	15206	1
4100 BUTLER ST	Lincoln	15206	30
4101 BUTLER ST	Lincoln	15206	11
4102 BUTLER ST	Lincoln	15206	3
4103 BUTLER ST	Lincoln	15206	1
4104 BUTLER ST	Lincoln	15206	1
4105 BUTLER ST	Lincoln	15206	1
4106 BUTLER ST	Lincoln	15206	2
4107 BUTLER ST	Lincoln	15206	244
4108 BUTLER ST	Lincoln	15206	1
4109 BUTLER ST	Lincoln	15206	26
4110 BUTLER ST	Morningside	15206	3
4111 BUTLER ST	Morningside	15206	3
4112 BUTLER ST	Morningside	15206	44
4113 BUTLER ST	Morningside	15206	2
4114 BUTLER ST	Morningside	15206	8
4115 BUTLER ST	Morningside	15206	1
4116 BUTLER ST	Point Breeze	15206	1
4117 BUTLER ST	Shadyside	15206	1
4118 BUTLER ST	Shadyside	15206	11
4119 BUTLER ST	Shadyside	15206	17
4120 BUTLER ST	Shadyside	15206	1
4121 BUTLER ST	Shadyside	15206	5
4122 BUTLER ST	Shadyside	15206	1
4123 BUTLER ST	Shadyside	15206	2
4124 BUTLER ST	Shadyside	15206	85
4125 BUTLER ST	Shadyside	15206	11
4126 BUTLER ST	Shadyside	15206	1
4127 BUTLER ST	Greenfield	15207	1
4128 BUTLER ST	Hays	15207	6
4129 BUTLER ST	Hays	15207	8
4130 BUTLER ST	Hazelwood	15207	4
4131 BUTLER ST	Hazelwood	15207	67
4132 BUTLER ST	Hazelwood	15207	2
4133 BUTLER ST	Hazelwood	15207	4
4134 BUTLER ST	Hazelwood	15207	3

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

4135 BUTLER ST	Hazelwood	15207	2
4136 BUTLER ST	Hazelwood	15207	1
4137 BUTLER ST	Hazelwood	15207	3
4138 BUTLER ST	Hazelwood	15207	9
4139 BUTLER ST	Hazelwood	15207	28
4140 BUTLER ST	Homewood	15208	33
4141 BUTLER ST	Homewood	15208	1
4142 BUTLER ST	Homewood	15208	2
4143 BUTLER ST	Homewood	15208	1
4144 BUTLER ST	Homewood	15208	4
4145 BUTLER ST	Homewood	15208	2
4146 BUTLER ST	Homewood	15208	114
4147 BUTLER ST	Point Breeze	15208	1
4148 BUTLER ST	Point Breeze	15208	2
4149 BUTLER ST	Point Breeze	15208	1
4150 BUTLER ST	Point Breeze	15208	2
4151 BUTLER ST	Arlington	15210	2
4152 BUTLER ST	Arlington	15210	1
4153 BUTLER ST	Carrick	15210	9
4154 BUTLER ST	Carrick	15210	14
4155 BUTLER ST	Carrick	15210	16
4156 BUTLER ST	Carrick	15210	1
4157 BUTLER ST	Carrick	15210	13
4158 BUTLER ST	Carrick	15210	2
4159 BUTLER ST	Carrick	15210	1
4160 BUTLER ST	Knoxville	15210	2
4161 BUTLER ST	Knoxville	15210	1
4162 BUTLER ST	Knoxville	15210	1
4163 BUTLER ST	Knoxville	15210	13
4164 BUTLER ST	Knoxville	15210	1
4165 BUTLER ST	Knoxville	15210	11
4166 BUTLER ST	Knoxville	15210	1
4167 BUTLER ST	Mount Oliver	15210	108
4168 BUTLER ST	Mount Oliver	15210	1
4169 BUTLER ST	Mount Oliver	15210	14
4170 BUTLER ST	Mount Oliver	15210	1
4171 BUTLER ST	Mount Oliver	15210	1
4172 BUTLER ST	Mount Oliver	15210	14
4173 BUTLER ST	South Side	15210	3
4174 BUTLER ST	Mt Washington	15211	1
4175 BUTLER ST	Mt Washington	15211	38
4176 BUTLER ST	Mt Washington	15211	1
4177 BUTLER ST	Mt Washington	15211	1
4178 BUTLER ST	Mt Washington	15211	1
4179 BUTLER ST	Mt Washington	15211	1
4180 BUTLER ST	Mt Washington	15211	1
4181 BUTLER ST	North Shore	15212	2
4182 BUTLER ST	North Shore	15212	21
4183 BUTLER ST	North Shore	15212	1
4184 BUTLER ST	North Shore	15212	1
4185 BUTLER ST	North Shore	15212	1

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

4186 BUTLER ST	North Shore	15212	5
4187 BUTLER ST	North Side	15212	3
4188 BUTLER ST	North Side	15212	1
4189 BUTLER ST	North Side	15212	57
4190 BUTLER ST	North Side	15212	4
4191 BUTLER ST	North Side	15212	4
4192 BUTLER ST	North Side	15212	1
4193 BUTLER ST	North Side	15212	1
4194 BUTLER ST	North Side	15212	19
4195 BUTLER ST	North Side	15212	4
4196 BUTLER ST	North Side	15212	4
4197 BUTLER ST	North Side	15212	97
4198 BUTLER ST	North Side	15212	16
4199 BUTLER ST	North Side	15212	1
4200 BUTLER ST	North Side	15212	9
4201 BUTLER ST	North Side	15212	2
4202 BUTLER ST	North Side	15212	23
4203 BUTLER ST	North Side	15212	2
4204 BUTLER ST	North Side	15212	1
4205 BUTLER ST	North Side	15212	1
4206 BUTLER ST	North Side	15212	91
4207 BUTLER ST	North Side	15212	1
4208 BUTLER ST	North Side	15212	2
4209 BUTLER ST	North Side	15212	1
4210 BUTLER ST	North Side	15212	15
4211 BUTLER ST	North Side	15212	1
4212 BUTLER ST	North Side	15212	3
4213 BUTLER ST	North Side	15212	3
4214 BUTLER ST	North Side	15212	5
4215 BUTLER ST	Perry North	15212	1
4216 BUTLER ST	Perry South	15212	12
4217 BUTLER ST	RESERVE	15212	1
4218 BUTLER ST	ROSS	15212	87
4219 BUTLER ST	Shadeland	15212	4
4220 BUTLER ST	Shadeland	15212	1
4221 BUTLER ST	Shadeland	15212	5
4222 BUTLER ST	Shadeland	15212	20
4223 BUTLER ST	Shadeland	15212	1
4224 BUTLER ST	Shadeland	15212	18
4225 BUTLER ST	Spring Hill	15212	21
4226 BUTLER ST	Spring Hill	15212	2
4227 BUTLER ST	Spring Hill	15212	1
4228 BUTLER ST	Spring Hill	15212	28
4229 BUTLER ST	Bloomfield	15213	7
4230 BUTLER ST	Bloomfield	15213	1
4231 BUTLER ST	Bloomfield	15213	83
4232 BUTLER ST	Bloomfield	15213	4
4233 BUTLER ST	Bloomfield	15213	1
4234 BUTLER ST	Central Oakland	15213	30
4235 BUTLER ST	Central Oakland	15213	61
4236 BUTLER ST	Central Oakland	15213	1

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

4237 BUTLER ST	Central Oakland	15213	2
4238 BUTLER ST	Central Oakland	15213	1
4239 BUTLER ST	Central Oakland	15213	42
4240 BUTLER ST	Central Oakland	15213	1
4241 BUTLER ST	Central Oakland	15213	2
4242 BUTLER ST	Central Oakland	15213	5
4243 BUTLER ST	Central Oakland	15213	3
4244 BUTLER ST	Central Oakland	15213	3
4245 BUTLER ST	Central Oakland	15213	1
4246 BUTLER ST	Central Oakland	15213	2
4247 BUTLER ST	Hill District	15213	4
4248 BUTLER ST	Hill District	15213	3
4249 BUTLER ST	Lower Oakland	15213	47
4250 BUTLER ST	North Oakland	15213	1
4251 BUTLER ST	North Oakland	15213	6
4252 BUTLER ST	North Oakland	15213	1
4253 BUTLER ST	North Oakland	15213	7
4254 BUTLER ST	North Oakland	15213	2
4255 BUTLER ST	North Oakland	15213	1
4256 BUTLER ST	North Oakland	15213	1
4257 BUTLER ST	North Oakland	15213	1
4258 BUTLER ST	North Oakland	15213	1
4259 BUTLER ST	North Oakland	15213	17
4260 BUTLER ST	North Oakland	15213	45
4261 BUTLER ST	North Oakland	15213	1
4262 BUTLER ST	North Oakland	15213	5
4263 BUTLER ST	North Oakland	15213	27
4264 BUTLER ST	North Oakland	15213	7
4265 BUTLER ST	North Oakland	15213	81
4266 BUTLER ST	North Oakland	15213	2
4267 BUTLER ST	North Oakland	15213	1
4268 BUTLER ST	North Oakland	15213	16
4269 BUTLER ST	North Oakland	15213	4
4270 BUTLER ST	North Oakland	15213	294
4271 BUTLER ST	North Oakland	15213	4
4272 BUTLER ST	North Oakland	15213	1
4273 BUTLER ST	North Oakland	15213	15
4274 BUTLER ST	North Oakland	15213	2
4275 BUTLER ST	North Oakland	15213	1
4276 BUTLER ST	North Oakland	15213	4
4277 BUTLER ST	North Oakland	15213	27
4278 BUTLER ST	North Oakland	15213	5
4279 BUTLER ST	North Oakland	15213	65
4280 BUTLER ST	North Oakland	15213	2
4281 BUTLER ST	North Oakland	15213	146
4282 BUTLER ST	North Oakland	15213	1
4283 BUTLER ST	North Oakland	15213	46
4284 BUTLER ST	Oakland	15213	1
4285 BUTLER ST	Oakland	15213	1
4286 BUTLER ST	Oakland	15213	1
4287 BUTLER ST	Oakland	15213	61

City of Pittsburgh
ACCESS Transportation Board
Origins and Destinations

4288 BUTLER ST	Oakland	15213	2
4289 BUTLER ST	Oakland	15213	25
4290 BUTLER ST	Oakland	15213	25
4291 BUTLER ST	Oakland	15213	1
4292 BUTLER ST	Oakland	15213	12
4293 BUTLER ST	Oakland	15213	14
4294 BUTLER ST	Oakland	15213	1
4295 BUTLER ST	Oakland	15213	12
4296 BUTLER ST	Oakland	15213	2
4297 BUTLER ST	Oakland	15213	1
4298 BUTLER ST	Oakland	15213	2
4299 BUTLER ST	Oakland	15213	7
4300 BUTLER ST	Oakland	15213	4
4301 BUTLER ST	Oakland	15213	6
4302 BUTLER ST	Oakland	15213	1
4303 BUTLER ST	Oakland	15213	5
4304 BUTLER ST	Oakland	15213	6
4305 BUTLER ST	Oakland	15213	18
4306 BUTLER ST	Shadyside	15213	16
4307 BUTLER ST	Shadyside	15213	1
4308 BUTLER ST	Shadyside	15213	1
4309 BUTLER ST	Shadyside	15213	1
4310 BUTLER ST	Shadyside	15213	6
4311 BUTLER ST	Shadyside	15213	1
4312 BUTLER ST	South Oakland	15213	8
4313 BUTLER ST	South Oakland	15213	3
4314 BUTLER ST	South Oakland	15213	3
4315 BUTLER ST	South Oakland	15213	2
4316 BUTLER ST	South Oakland	15213	9
4317 BUTLER ST	South Oakland	15213	2
4318 BUTLER ST	South Oakland	15213	1
4319 BUTLER ST	South Oakland	15213	1
4320 BUTLER ST	South Oakland	15213	1
4321 BUTLER ST	South Oakland	15213	5
4322 BUTLER ST	South Oakland	15213	1
4323 BUTLER ST	South Oakland	15213	9
4324 BUTLER ST	South Oakland	15213	10
4325 BUTLER ST	South Oakland	15213	10
4326 BUTLER ST	South Oakland	15213	1
4327 BUTLER ST	South Oakland	15213	1
4328 BUTLER ST	South Oakland	15213	1
4329 BUTLER ST	South Oakland	15213	42
4330 BUTLER ST	South Oakland	15213	8
4331 BUTLER ST	South Oakland	15213	3
4332 BUTLER ST	South Oakland	15213	1
4333 BUTLER ST	South Oakland	15213	4
4334 BUTLER ST	South Oakland	15213	4
4335 BUTLER ST	Squirrel Hill	15213	3
4336 BUTLER ST	Perry North	15214	58
4337 BUTLER ST	Perry North	15214	4
4338 BUTLER ST	Perry North	15214	8

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Origins and Destinations

4339 BUTLER ST	Perry North	15214	3
4340 BUTLER ST	Perry North	15214	45
4341 BUTLER ST	Perry North	15214	1
4342 BUTLER ST	Perry South	15214	1
4343 BUTLER ST	Perry South	15214	55
4344 BUTLER ST	Perry South	15214	4
4345 BUTLER ST	Perry South	15214	38
4346 BUTLER ST	Perry South	15214	18
4347 BUTLER ST	Perry South	15214	11
4348 BUTLER ST	Aspinwall	15215	3
4349 BUTLER ST	Aspinwall	15215	2
4350 BUTLER ST	ASPINWALL	15215	1
4351 BUTLER ST	Aspinwall	15215	1
4352 BUTLER ST	Aspinwall	15215	1
4353 BUTLER ST	Aspinwall	15215	2
4354 BUTLER ST	Aspinwall	15215	9
4355 BUTLER ST	Aspinwall	15215	2
4356 BUTLER ST	Aspinwall	15215	8
4357 BUTLER ST	Aspinwall	15215	1
4358 BUTLER ST	Aspinwall	15215	20
4359 BUTLER ST	Aspinwall	15215	3
4360 BUTLER ST	Aspinwall	15215	2
4361 BUTLER ST	Aspinwall	15215	7
4362 BUTLER ST	Lincoln	15215	1
4363 BUTLER ST	Lincoln	15215	2
4364 BUTLER ST	Lincoln	15215	17
4365 BUTLER ST	pittsburgh	15215	1
4366 BUTLER ST	Beechview	15216	82
4367 BUTLER ST	Beechview	15216	3
4368 BUTLER ST	Beechview	15216	2
4369 BUTLER ST	Beechview	15216	25
4370 BUTLER ST	Hazelwood	15217	2
4371 BUTLER ST	Hazelwood	15217	4
4372 BUTLER ST	Hazelwood	15217	7
4373 BUTLER ST	Hazelwood	15217	10
4374 BUTLER ST	Hazelwood	15217	1
4375 BUTLER ST	Hazelwood	15217	4
4376 BUTLER ST	Hazelwood	15217	10
4377 BUTLER ST	Hazelwood	15217	27
4378 BUTLER ST	Point Breeze	15217	1
4379 BUTLER ST	Squirrel Hill	15217	4
4380 BUTLER ST	Squirrel Hill	15217	4
4381 BUTLER ST	Squirrel Hill	15217	1
4382 BUTLER ST	Squirrel Hill	15217	10
4383 BUTLER ST	Squirrel Hill	15217	1
4384 BUTLER ST	Squirrel Hill	15217	5
4385 BUTLER ST	Squirrel Hill	15217	41
4386 BUTLER ST	Squirrel Hill South	15217	1
4387 BUTLER ST	Squirrel Hill South	15217	1
4388 BUTLER ST	Squirrel Hill South	15217	1
4389 BUTLER ST	Squirrel Hill South	15217	6

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4390 BUTLER ST	Squirrel Hill South	15217	18
4391 BUTLER ST	Squirrel Hill South	15217	3
4392 BUTLER ST	Squirrel Hill South	15217	4
4393 BUTLER ST	Squirrel Hill South	15217	2
4394 BUTLER ST	Squirrel Hill South	15217	2
4395 BUTLER ST	Squirrel Hill South	15217	1
4396 BUTLER ST	Squirrel Hill South	15217	26
4397 BUTLER ST	Squirrel Hill South	15217	2
4398 BUTLER ST	Squirrel Hill South	15217	5
4399 BUTLER ST	Squirrel Hill South	15217	74
4400 BUTLER ST	Squirrel Hill South	15217	1
4401 BUTLER ST	Squirrel Hill South	15217	12
4402 BUTLER ST	Squirrel Hill South	15217	1
4403 BUTLER ST	Squirrel Hill South	15217	2
4404 BUTLER ST	Squirrel Hill South	15217	17
4405 BUTLER ST	Squirrel Hill South	15217	1
4406 BUTLER ST	Squirrel Hill South	15217	5
4407 BUTLER ST	Squirrel Hill South	15217	2
4408 BUTLER ST	Squirrel Hill South	15217	1
4409 BUTLER ST	Squirrel Hill South	15217	2
4410 BUTLER ST	Squirrel Hill South	15217	1
4411 BUTLER ST	Squirrel North	15217	2
4412 BUTLER ST	Squirrel North	15217	1
4413 BUTLER ST	Squirrel North	15217	1
4414 BUTLER ST	Squirrel North	15217	2
4415 BUTLER ST	Squirrel North	15217	61
4416 BUTLER ST	Squirrel Hill South	15218	65
4417 BUTLER ST	Squirrel Hill South	15218	2
4418 BUTLER ST	Squirrel Hill South	15218	1
4419 BUTLER ST	Bluff	15219	3
4420 BUTLER ST	Bluff	15219	1
4421 BUTLER ST	Bluff	15219	1
4422 BUTLER ST	Bluff	15219	3
4423 BUTLER ST	Bluff	15219	72
4424 BUTLER ST	Bluff	15219	1
4425 BUTLER ST	Bluff	15219	6
4426 BUTLER ST	Bluff	15219	2
4427 BUTLER ST	Bluff	15219	1
4428 BUTLER ST	Bluff	15219	1
4429 BUTLER ST	Bluff	15219	2
4430 BUTLER ST	Bluff	15219	9
4431 BUTLER ST	Bluff	15219	3
4432 BUTLER ST	Bluff	15219	7
4433 BUTLER ST	Bluff	15219	2
4434 BUTLER ST	Golden Triangle	15219	1
4435 BUTLER ST	Golden Triangle	15219	4
4436 BUTLER ST	Golden Triangle	15219	2
4437 BUTLER ST	Golden Triangle	15219	31
4438 BUTLER ST	Golden Triangle	15219	1
4439 BUTLER ST	Golden Triangle	15219	17
4440 BUTLER ST	Golden Triangle	15219	3

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4441 BUTLER ST	Golden Triangle	15219	5
4442 BUTLER ST	Golden Triangle	15219	1
4443 BUTLER ST	Golden Triangle	15219	1
4444 BUTLER ST	Golden Triangle	15219	30
4445 BUTLER ST	Golden Triangle	15219	1
4446 BUTLER ST	Golden Triangle	15219	1
4447 BUTLER ST	Golden Triangle	15219	3
4448 BUTLER ST	Golden Triangle	15219	1
4449 BUTLER ST	Golden Triangle	15219	2
4450 BUTLER ST	Golden Triangle	15219	1
4451 BUTLER ST	Golden Triangle	15219	1
4452 BUTLER ST	Golden Triangle	15219	47
4453 BUTLER ST	Golden Triangle	15219	1
4454 BUTLER ST	Golden Triangle	15219	9
4455 BUTLER ST	Golden Triangle	15219	1
4456 BUTLER ST	Golden Triangle	15219	1
4457 BUTLER ST	Golden Triangle	15219	10
4458 BUTLER ST	Golden Triangle	15219	81
4459 BUTLER ST	Golden Triangle	15219	1
4460 BUTLER ST	Golden Triangle	15219	2
4461 BUTLER ST	Golden Triangle	15219	1
4462 BUTLER ST	Golden Triangle	15219	44
4463 BUTLER ST	Golden Triangle	15219	1
4464 BUTLER ST	Hill District	15219	9
4465 BUTLER ST	Hill District	15219	47
4466 BUTLER ST	Hill District	15219	45
4467 BUTLER ST	Hill District	15219	15
4468 BUTLER ST	Hill District	15219	1
4469 BUTLER ST	Hill District	15219	1
4470 BUTLER ST	Hill District	15219	3
4471 BUTLER ST	Hill District	15219	4
4472 BUTLER ST	Hill District	15219	6
4473 BUTLER ST	Hill District	15219	1
4474 BUTLER ST	Hill District	15219	61
4475 BUTLER ST	Hill District	15219	80
4476 BUTLER ST	Hill District	15219	5
4477 BUTLER ST	Hill District	15219	1
4478 BUTLER ST	Lawrenceville	15219	1
4479 BUTLER ST	Lawrenceville	15219	3
4480 BUTLER ST	Pittsburgh	15219	2
4481 BUTLER ST	Pittsburgh	15219	2
4482 BUTLER ST	South Oakland	15219	4
4483 BUTLER ST	South Oakland	15219	1
4484 BUTLER ST	South Oakland	15219	50
4485 BUTLER ST	South Oakland	15219	1
4486 BUTLER ST	South Shore	15219	12
4487 BUTLER ST	South Shore	15219	5
4488 BUTLER ST	South Shore	15219	1
4489 BUTLER ST	South Side	15219	1
4490 BUTLER ST	Beechview	15220	1
4491 BUTLER ST	Beechview	15220	72

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Origins and Destinations

4492 BUTLER ST	Beechview	15220	2
4493 BUTLER ST	Beechview	15220	53
4494 BUTLER ST	Beechview	15220	54
4495 BUTLER ST	Beechview	15220	1
4496 BUTLER ST	Beechview	15220	1
4497 BUTLER ST	Beechview	15220	1
4498 BUTLER ST	Sheraden	15220	1
4499 BUTLER ST	West End	15220	3
4500 BUTLER ST	West End	15220	1
4501 BUTLER ST	West End	15220	1
4502 BUTLER ST	Homewood	15221	60
4503 BUTLER ST	Homewood	15221	1
4504 BUTLER ST	Homewood	15221	25
4505 BUTLER ST	Pittsburgh	15221	1
4506 BUTLER ST	Pittsburgh	15221	7
4507 BUTLER ST	Point Breeze	15221	49
4508 BUTLER ST	Point Breeze	15221	1
4509 BUTLER ST	Golden Triangle	15222	1
4510 BUTLER ST	Golden Triangle	15222	1
4511 BUTLER ST	Golden Triangle	15222	2
4512 BUTLER ST	Golden Triangle	15222	4
4513 BUTLER ST	Golden Triangle	15222	12
4514 BUTLER ST	Golden Triangle	15222	1
4515 BUTLER ST	Golden Triangle	15222	1
4516 BUTLER ST	Golden Triangle	15222	1
4517 BUTLER ST	Golden Triangle	15222	1
4518 BUTLER ST	Golden Triangle	15222	1
4519 BUTLER ST	Golden Triangle	15222	1
4520 BUTLER ST	Golden Triangle	15222	1
4521 BUTLER ST	Golden Triangle	15222	1
4522 BUTLER ST	Golden Triangle	15222	2
4523 BUTLER ST	Golden Triangle	15222	1
4524 BUTLER ST	Golden Triangle	15222	7
4525 BUTLER ST	Golden Triangle	15222	30
4526 BUTLER ST	Golden Triangle	15222	2
4527 BUTLER ST	Golden Triangle	15222	2
4528 BUTLER ST	Golden Triangle	15222	2
4529 BUTLER ST	Golden Triangle	15222	9
4530 BUTLER ST	Golden Triangle	15222	1
4531 BUTLER ST	Golden Triangle	15222	1
4532 BUTLER ST	Golden Triangle	15222	1
4533 BUTLER ST	Golden Triangle	15222	21
4534 BUTLER ST	Golden Triangle	15222	1
4535 BUTLER ST	Golden Triangle	15222	1
4536 BUTLER ST	Golden Triangle	15222	2
4537 BUTLER ST	Golden Triangle	15222	1
4538 BUTLER ST	Golden Triangle	15222	5
4539 BUTLER ST	Golden Triangle	15222	5
4540 BUTLER ST	Golden Triangle	15222	10
4541 BUTLER ST	Golden Triangle	15222	7
4542 BUTLER ST	Golden Triangle	15222	2

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4543 BUTLER ST	Golden Triangle	15222	105
4544 BUTLER ST	Golden Triangle	15222	7
4545 BUTLER ST	Golden Triangle	15222	3
4546 BUTLER ST	Golden Triangle	15222	17
4547 BUTLER ST	Golden Triangle	15222	6
4548 BUTLER ST	Golden Triangle	15222	2
4549 BUTLER ST	Golden Triangle	15222	1
4550 BUTLER ST	Golden Triangle	15222	85
4551 BUTLER ST	Golden Triangle	15222	2
4552 BUTLER ST	Golden Triangle	15222	1
4553 BUTLER ST	Golden Triangle	15222	34
4554 BUTLER ST	Golden Triangle	15222	2
4555 BUTLER ST	Strip District	15222	3
4556 BUTLER ST	Strip District	15222	1
4557 BUTLER ST	Strip District	15222	1
4558 BUTLER ST	Strip District	15222	1
4559 BUTLER ST	Strip District	15222	2
4560 BUTLER ST	Strip District	15222	1
4561 BUTLER ST	Strip District	15222	2
4562 BUTLER ST	Strip District	15222	64
4563 BUTLER ST	Strip District	15222	2
4564 BUTLER ST	Strip District	15222	1
4565 BUTLER ST	Strip District	15222	1
4566 BUTLER ST	Strip District	15222	2
4567 BUTLER ST	Bloomfield	15224	11
4568 BUTLER ST	Bloomfield	15224	5
4569 BUTLER ST	Bloomfield	15224	11
4570 BUTLER ST	Bloomfield	15224	21
4571 BUTLER ST	Bloomfield	15224	3
4572 BUTLER ST	Bloomfield	15224	5
4573 BUTLER ST	Bloomfield	15224	2
4574 BUTLER ST	Bloomfield	15224	6
4575 BUTLER ST	Bloomfield	15224	7
4576 BUTLER ST	Bloomfield	15224	34
4577 BUTLER ST	Bloomfield	15224	2
4578 BUTLER ST	Bloomfield	15224	2
4579 BUTLER ST	Bloomfield	15224	48
4580 BUTLER ST	Bloomfield	15224	6
4581 BUTLER ST	Bloomfield	15224	2
4582 BUTLER ST	Bloomfield	15224	5
4583 BUTLER ST	Bloomfield	15224	1
4584 BUTLER ST	Bloomfield	15224	1
4585 BUTLER ST	Bloomfield	15224	38
4586 BUTLER ST	Bloomfield	15224	1
4587 BUTLER ST	Garfield	15224	8
4588 BUTLER ST	Lawrenceville	15224	1
4589 BUTLER ST	Shadyside	15224	2
4590 BUTLER ST	Brookline	15226	72
4591 BUTLER ST	Brookline	15226	75
4592 BUTLER ST	Brookline	15226	4
4593 BUTLER ST	Brookline	15226	4

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Origins and Destinations

4594 BUTLER ST	Brookline	15226	65
4595 BUTLER ST	Brookline	15226	76
4596 BUTLER ST	Brookline	15226	4
4597 BUTLER ST	Brookline	15226	1
4598 BUTLER ST	Brookline	15226	10
4599 BUTLER ST	Brookline	15226	2
4600 BUTLER ST	Bloomfield	15232	1
4601 BUTLER ST	Bloomfield	15232	2
4602 BUTLER ST	Bloomfield	15232	1
4603 BUTLER ST	Shadyside	15232	4
4604 BUTLER ST	Shadyside	15232	1
4605 BUTLER ST	Shadyside	15232	2
4606 BUTLER ST	Shadyside	15232	31
4607 BUTLER ST	Shadyside	15232	2
4608 BUTLER ST	Shadyside	15232	44
4609 BUTLER ST	Shadyside	15232	9
4610 BUTLER ST	Shadyside	15232	2
4611 BUTLER ST	Shadyside	15232	49
4612 BUTLER ST	Shadyside	15232	36
4613 BUTLER ST	Shadyside	15232	6
4614 BUTLER ST	Shadyside	15232	7
4615 BUTLER ST	Shadyside	15232	2
4616 BUTLER ST	Shadyside	15232	2
4617 BUTLER ST	Shadyside	15232	2
4618 BUTLER ST	Shadyside	15232	1
4619 BUTLER ST	Shadyside	15232	4
4620 BUTLER ST	Shadyside	15232	30
4621 BUTLER ST	Shadyside	15232	39
4622 BUTLER ST	Shadyside	15232	1
4623 BUTLER ST	Shadyside	15232	2
4624 BUTLER ST	Shadyside	15232	2
4625 BUTLER ST	Shadyside	15232	1
4626 BUTLER ST	Squirrel North	15232	1

Appendix N

System Improvements Map for Pedestrian Corridors & Intersections

ACTIVEALLEGHENY

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BUTLER COUNTY

BEAVER COUNTY

WASHINGTON COUNTY

WESTMORELAND COUNTY

Identified Intersections

1. Thorn Run Road & State Hwy 51
2. Beadling Road & Washington Road
3. Negley Run Boulevard & Washington Boulevard
4. Foster Street & 40th Street
5. Route 19 Truck & Brookline Boulevard
6. Cochran Road & Washington Road
7. Bethel Church Road & Broughton Road
8. Smithfield Street & Carson Street
9. Campbells Run Road & Steubenville Pike
10. State Hwy 837 & Amity Street
11. Belmar Place & Woodstock Avenue
12. Braddock Avenue & 4th Street
13. Braddock Avenue & 7th Street
14. Brinton Avenue & Ridge Avenue
15. Boulevard of the Allies & Bates Street
16. Boulevard of the Allies & Halket Street
17. S. Bellefield Avenue & 5th Avenue
18. Ardmore Boulevard & Yost Boulevard
19. Castle Shannon Boulevard & Mt. Lebanon Boulevard

Top 10 Intersection Crash Concentrations

1. 10th Street & E. Carson Street (6)
2. E. Ohio Street & Cedar Avenue (5)
3. 18th Street & E. Carson Street (5)
4. Baum Boulevard & Roup Avenue (3)
5. Cherry Way & Boulevard of the Allies (3)
6. 17th Street & E. Carson Street (3)
7. Main Street & 4th Avenue (3)
8. Butler Street & 45th Street (3)
9. S. Main Street & Wabash Street (3)
10. E. Ohio Street & Middle Street (3)

N W E S

0 1 2 3 Miles

FINAL

Legend

Focus Areas

- Pedestrian Intersections
- Pedestrian Corridors
- Major Pedestrian Crash Locations
- Low Income, Disabled, & Minority Population Concentrations*
  *2005 SFC Population by Census Block Maps
- Elderly /Older Adult Population Concentrations*
  *2005 SFC Population by Census Block Maps

Trails

- Existing Trails
- Proposed Trails
- Trail Under Development
- Three Rivers Water Trail

Transportation

- Higher Order Roadways
- Local Roadways
- Bridges
- Busways and Stations (East, North Shore, South, West)
- T and Stations

Focus Area Attractors

- Focus Area Bridge
- Bike Rental
- Cycle Track
- Sports Legacy
- Hospital
- Senior Center
- Library
- Park and Ride Lots
- Private School
- Public School
- College / University
- Potential TOD Sites
- Steps

Physical Boundaries

- County Boundary
- Municipal Boundaries

Source for boundaries: Allegheny Places municipal boundaries - Assessor Territory

Water Features

- Rivers and Lakes

Land Uses (Allegheny Places)

- Economic Growth Areas
- Residential
- Commercial
- Industrial
- Transportation
- Recreation / Conservation
- Parks
- Community Facilities
- Agriculture
- Cemetery
- Undeveloped
- Vacant

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Baker

Public Transportation and Multimodal Open End II, Contract # 358R10

Allegheny County
Preliminary System Improvements
Pedestrian Corridors and Intersections

Allegheny County Economic Development — Coordinating Success

AlleghenyPlaces — The Allegheny County Comprehensive Plan

Appendix O

Complete Streets Prototypes

ACTIVEALLEGHENY

COMPLETE STREETS PROTOTYPES

Criteria

To illustrate complete streets principles, the study team has selected three sites to serve as example projects. Following are the criteria used in selecting the sites:

- Arterial or collector roadway
- Average daily traffic greater than 5,000
- Volume demand does not exceed capacity
- At least minimal pedestrian activity
- Proposed bike route and/or existing transit route
- Existing pedestrian and bicycle facilities are not ideal
- Economic growth area (identified as "places" in the ActiveAllegheny Land Use Plan)or otherwise identified for economic development

As these projects are advanced, it is recommended that municipalities focus on those areas that meet vital planning goals, and thus consider the additional criteria below:

- *Alignment of other public investments:* Is the county, municipality or another public entity planning on making investments in the areas under study?
- *Land use impacts:* Will the complete street designation impact land use decisions in the areas adjacent to the designated streets?
- *System preservation and enhancement*: Are other transportation investment scheduled for the areas being proposed, and if so, can a complete streets approach be incorporated into the planned improvement?
- *Density and capture area*: Is the roadway in proximity to a good population base of pedestrians and bicyclists?

Complete Streets Prototypes

The complete streets prototypes are:

- **Freeport Road, Blawnox Borough and O'Hara Township**
- **South Braddock Avenue/Belmar Place, Swissvale Borough**
- **Broadway Avenue, Beechview, Pittsburgh and Dormont Borough**

These roadways were selected from the candidate list as representative projects (see **Table 1**). The three prototypes were selected based on diversity in location and roadway type to serve as examples for the other candidates.

The roadways represent three different types. Broadway Avenue has more roadway capacity than needed to accommodate vehicular traffic, and has potential to upgrade bicycle accommodations, in particular. Freeport Road dramatically changes character as it transitions from the traditional downtown center of Blawnox Borough to the strip commercial corridor of O' Hara Township (just west of the Waterworks Mall); solutions discussed for this corridor can be applied to many other locations in the region where urban areas adjoin busy suburban retail corridors. South Braddock Avenue is a constrained roadway in an older urban neighborhood, with a poorly maintained pedestrian infrastructure in Swissvale. Options for major roadway reconfiguration are limited, but the pedestrian infrastructure can be upgraded, making a clear difference in the lives of the many residents that depend upon walking (including walking to transit) as their primary mode of transportation.

TABLE 1. COMPLETE STREETS CANDIDATES

Roadway	Municipality	AADT	Roadway Cross-Section	Sidewalk	Pedestrian Corridor in Plan	Proposed Bike Route in Plan	Transit Route	"Economic Growth Area"	Proximate to Trail
Route 837	Clairton	8,500-9,300	Two 18-ft lanes; parking both sides	Narrow/deteriorated	Y	Y	Y	Y	Y
Route 837	Homestead	15,000-17,000	Two 11-12 ft lanes; 9 ft parking lane	Sidewalks both sides	Y	N	Y	Y	Y
Route 837	Duquesne	19,000	Four 11-ft lanes; physical median	On one side of street, narrow in segments	Y	Y	Y	Y	Y
Ridge Avenue	Rankin	NA	Four 11-12 ft lanes	Both sides, good condition	Y	Y	Y	Y	Y

Roadway	Municipality	AADT	Roadway Cross-Section	Sidewalk	Pedestrian Corridor in Plan	Proposed Bike Route in Plan	Transit Route	"Economic Growth Area"	Proximate to Trail
Kenmawr Avenue	Rankin	NA	Above Ridge: two 14-ft lanes; below Ridge: 28 ft, parking one side	Both sides, good width	Y	Y	Y	Y	Y
South Braddock Avenue/Belmar Place	**Swissvale**	**NA**	**Upper section: 34 ft, two lanes, parking one side; Lower section: two 14-ft lanes**	**Both sides, narrow**	**Y**	**Y**	**Y**	**Y**	**Y**
Chartiers Avenue	McKees Rocks	NA	Two-lane, 34 ft, parking both sides.	Both sides	Y	N	Y	N	Y
Furnace Street	McKees Rocks	NA	Eastern section: two-lane, 58 ft, angle parking; western section: two-lane, 28 ft, no parking	Both sides, but missing segments	Y	N	Y	N	Y
Island Avenue	McKees Rocks	8,500	Two-lane, 38 ft, intermittent parking both sides	Both sides, but missing segments, poor condition	Y	N	Y	Y	N

Roadway	Municipality	AADT	Roadway Cross-Section	Sidewalk	Pedestrian Corridor in Plan	Proposed Bike Route in Plan	Transit Route	"Economic Growth Area"	Proximate to Trail
Braddock Avenue	Braddock	NA	Two-lane, 40 ft, parking both sides	Both sides	Y	Y	Y	Y	Y
Beadling Street	Mt. Lebanon	NA	Two 12-ft lanes	Narrow, typically present only one side	Y	N	N	N	N
River Road	Haysville	NA	22-24 ft	None	Y	N	N	N	N
Beaver Road	Glen Osborne	NA	32 ft, parking one side	Both sides	Y	Y	Y	Y	N
McLaughlin Run Road	Bridgeville	6,900	Outside village - Two 11-ft lanes, 3-5 ft shoulders; Inside village – Two 14-ft lanes	Outside village – none; inside village – both sides	Y	Y	N	N	N
McLaughlin Run Road	Upper St. Clair	15,000	Two 11-ft lanes, 5-6 ft shoulders	Narrow sidewalk, present one side	Y	Y	N	N	N
Brownsville Road	Brentwood	NA	38 ft, parking both sides	Both sides	Y	N	Y	N	N
Campbells Run Road	Robinson	NA	Two 11-ft lanes, 3-4 ft shoulders	None	Y	Y	Y	N	N
Steubenville Pike	Robinson	NA	Multilane, 12 ft lanes	None	Y	N	Y	Y	N
Park Manor Drive	Robinson	NA	Multilane, 12 ft lanes	Present on portions	Y	Y (connection)	Y	Y	Y

Roadway	Municipality	AADT	Roadway Cross-Section	Sidewalk	Pedestrian Corridor in Plan	Proposed Bike Route in Plan	Transit Route	"Economic Growth Area"	Proximate to Trail
Robinson Town Center Boulevard	Robinson	NA	Multilane, 12 ft lanes	None	Y	N	Y	Y	N
Business Route 22	Monroeville	44,000	Multilane, 12 ft lanes, auxiliary lanes	Sidewalk missing along much of corridor	N	N	Present in segments	No, but identified for development	N
McKnight Road (Truck Route 19)	Ross Township	44,000	Multilane, 11 ft lanes	Sidewalk missing along much of corridor	N	N	Y	Y	N
University Boulevard	Moon Township	14,000	Multilane, 11-12 ft lanes, shoulders	Sidewalk missing along much of corridor	N	N	Y	No, but identified for development	N
West Liberty Ave (Route 19)	Dormont	22,000	46 ft roadway, 2 lanes, parking both sides	Sidewalk both sides, good width in some sections	N	N	Y	Y	N
Washington Road (Route 19)	Mt. Lebanon	19,000	Four 11 ft lanes	Narrow sidewalk, immediately adjoining road	N	N	Y	No, but identified for development	N
Main Street	Carnegie	14,000	34 ft roadway, 2 lanes, parking	Sidewalk present, bulbouts, streetscaping	N	N	Y	N	N

Roadway	Municipality	AADT	Roadway Cross-Section	Sidewalk	Pedestrian Corridor in Plan	Proposed Bike Route in Plan	Transit Route	"Economic Growth Area"	Proximate to Trail
Allegheny River Boulevard	Pittsburgh, Verona, Oakmont	13,000-24,000	Two 12 ft lanes in Pittsburgh; 44 ft roadway, 2 travel lanes and parking, Verona; 40 ft two lanes and parking, Oakmont	In boroughs	N	Y	In Oakmont and Verona	In Oakmont	Y
Broadway Avenue	**Pittsburgh**	**NA**	**52 ft upper segment; 2 20 ft sections lower segment**	**Present, typically 5 ft**	**N**	**N**	**Y**	**N**	**N**
Freeport Road	**O' Hara Township and Blawnox Borough**	**16,000-32,000**	**40 ft with 2 travel lanes in Blawnox, 40-44 ft with 2-4 travel lanes in O' Hara**	**In Borough**	**N**	**Y**	**Y**	**Y**	**Y**
Mt. Royal Boulevard	Etna Borough	13,000	Two 11 ft lanes, minimal shoulders	Present in segments	N	N	Y	N	N
Babcock Boulevard	McCandless Township	NA	Two 10 ft lanes, 3-6 ft shoulders	None	N	Y, in parts	Y, in parts	N	Y

Roadway	Municipality	AADT	Roadway Cross-Section	Sidewalk	Pedestrian Corridor in Plan	Proposed Bike Route in Plan	Transit Route	"Economic Growth Area"	Proximate to Trail
West Carson Street (Route 51)	Pittsburgh	19,000	Varies – 3 to 4 lanes, 12 ft width; minimal shoulders	None	N	Y	Y	N	Y
Bigelow Boulevard	Pittsburgh	24,000	Four 11 ft lanes	Present in segments	Y	Y	Y	Y	N
Steuben Street	Pittsburgh	NA	28 ft; 10 ft lane, and 18 ft lane with parking permitted	Both sides	N	N	Y	N	N
Gold Way	Pittsburgh	NA	30 ft, parking permitted both sides	Present in segments, poor condition	Y	Y	N	Y	N
Thomas Boulevard	Pittsburgh	NA	52 ft, 2 lanes, parking permitted both sides	Both sides	Y	Y	Y	N	N