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McKees Rocks
Borough of Coraopolis
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Township of Moon
Township of Robinson
City of Pittsburgh

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Executive Summary

Purpose:

The purpose of this feasibility study is to determine the viability to extend a trail connector route between the Three Rivers Heritage Trail in the City of Pittsburgh, west along the Ohio River, toward Coraopolis Borough. The route traverses through several neighboring communities and connects to the Montour Trail at Allegheny County’s Sports & Athletic Complex at Montour Junction.

The project is a collaboration between Stowe Township, Friends of the Riverfront, the Pennsylvania Environmental Council and Allegheny County to bring together seven local communities, municipal leaders, residents, trail and cycle enthusiasts, community groups, developers and business owners. This multi-municipal effort encompasses the City of Pittsburgh, McKees Rocks, Stowe, Kennedy, Neville, Robinson, and Coraopolis and includes many local community groups.

This project serves all members of the community by providing safe and accessible facilities for people who walk and people who ride bikes to work, to school, to shops and to services. This project is a key link between interstate trail networks, and it also connects Pittsburgh’s west end neighborhoods to the City. The west end includes many people who do not own a car and, with the reduction of transit routes, these neighborhoods are in need of other transportation choices.

Constructing roadways for all modes of travel (including walking and bicycling) increases access opportunities to employment centers and community resources. A walkable and bikeable community offers multiple transportation choices to all citizens regardless of age, ability or socio-economic status, and provides for healthier travel choices. This is low cost infrastructure to ‘move’ your community.

The feasibility study proposes improvements to the existing sidewalk system, upgrades at intersections and crossings, and an on-road system for cyclists using shared lane markings, separated bike lanes, and regulatory signing. The recommended improvements comply with the American Association of State Highway and Transportation Officials (AASHTO), the Manual of Uniform Traffic Control Devices (MUTCD) standards, and the Americans with Disabilities Act (ADA) regulations.
Existing Corridor Conditions:

The Ohio River valley corridor is confined by steep cliffs, railroads, river banks, narrow roadway corridors, and heavy traffic conditions including trucks and buses. Traffic speeds along State Route 51 are greater than posted limits and volumes are high during peak use hours. The property along the river is owned by multiple owners and by CSX Railroad. The riverbank geography is steeply sloped, wooded and narrow; several river locations are used by barge traffic for docking and access; and the banks are separated from the adjacent community by an active railroad. Given these conditions, an ‘on-road’ bike route connector was investigated.

The proposed trail connector route is an on-road system that accommodates walkers and bicyclists. The bike route alignment proposes two types of routes:

- Preferred Route
- Local Loop Route

Each route offers pedestrians and bicyclists a choice to travel- ‘straight through’ or to ‘connect to community services/facilities’. This project is an opportunity to reconnect communities through improvements for both walkers and bikers to safely link our homes to places of employment, services, shops and points of interest.

Municipalities should consider all new road projects, including resurfacing projects, as an opportunity to provide for all modes of transportation- pedestrian, bicycles and automobiles. This will ensure a complete system for transportation and offer our citizens choices to move through the community and between communities. Many of the improvement can be accomplished through a ‘road-diet’ and the addition of a bike lane, or a shared lane marking.

Recommendations:

The 11.79 mile alignment is proposed as an on-road bicycle route extending through neighboring communities. The route travels through each community as opposed to bypassing the community along the river bank or along a hillside terrace. This provides each town with needed infrastructure improvements, safety upgrades, and the opportunity to capitalize on being a ‘trail town’ and benefiting from commuters, and a growing outdoor recreation and heritage tourism market.
Executive Summary

Recommendations include attainable route solutions for implementing the project:

1. Preferred Route – directs walkers & bicyclists between Pittsburgh and Coraopolis. This route includes a combination of on-road bike lanes and bike shared lane markings; along with sidewalk and accessible crossing improvements.

2. Local Loop Route – connects walkers and bicyclists to homes, restaurants, shops and businesses in the community.

Specific Improvements Include:

1. ADA Improvements for Pedestrians
2. Repaired Sidewalks
3. Intersection Upgrades at Crossings
4. Shared Lane Markings (SLM)- a share the road condition
5. Bike Lanes
6. Bicycle Tracks (a protected & separated track)
7. Regulatory & Wayfinding Signs
8. Trailheads
9. Bicycle Parking

The study includes estimates for construction, potential funding sources, and links to organizations offering technical data, education, enforcement, and fund raising assistance. The report also provides contact information for communities to adopt a complete streets policy, to become a bicycle friendly and walk-able community, and to market themselves as such.

The majority of the route, 9 miles, from the McKees Rocks to Coraopolis is estimated at $1 million. Most of the improvements include a ramp connection to the Montour Trail, and roadway signs, pavement markings, sidewalks, intersection crossings, shoulder paving, and traffic signal improvements. The study also includes a detailed cost estimate for a protected pedestrian-bicycle track along a portion of West Carson Street- from the Pacific Pride Gas station to the beginning of the new West Carson Street design.

A vital link in the project, and most costly, is the 2.5 mile section from Pittsburgh’s Station Square driveway to the McKees Rocks. This section includes the newly designed West Carson Street by PennDOT. The preferred bicycle route improvements are estimated at an additional $2.5 and $5 million for the construction of a protected pedestrian-bicycle track or a combination track and shared lane marking system. Completion of a protected and separated track would significantly increase the bicycle level of service and the number of users, both local commuters and visitors, traveling to and spending money in the City of Pittsburgh and in it’s neighborhoods.

Benefits of the Project:

Why provide for bicycling and walking in your community? Many of our western Pennsylvania town’s have been bisected by railroads and highways projects. Providing safe places to walk and ride bicycles helps to re-connect communities and offers alternatives for people get to work, to school, to shops, and to commute locally. And, encouraging walking and bicycling is a simple way towards improving public health. With more people walking and biking, a community experiences reduced traffic demands, improved air quality and greater physical fitness.
Once complete, this project will become THE LINK in a multi-state trail system, placing Pittsburgh Pennsylvania in the middle- the keystone- between the states of Maryland, Ohio, West Virginia and New York. Completion of the Three Rivers Heritage Trail Connector will strengthen the link between our nation’s capital and our great Midwest.

Creating a safe and convenient pedestrian and bicycle route between Pittsburgh’s west end neighborhoods and the downtown is a low cost infrastructure improvement that will serve all citizens in our community. This is truly a project that can help people commute to places of employment, education, services and shops.

In addition, communities with walk-able and bike-able streets become places with a higher quality of life, where people want to visit, live and work. Rebuilding such a place can translate into a more connected, physically active, and an environmentally sustainable community that enjoys increased property values, business growth, increased tourism, and more transportation choices for all citizens.

Implementation:

We recommend municipalities consider all new infrastructure projects, roadway maintenance, resurfacing, repair projects, and site development projects as an opportunity to improve community connections for all modes of transportation.

Roadway projects should consider provisions for ‘road diets’ (to 11’ lanes), wider shoulders, bike lanes, bicycle shared lane markings, intersection crossing (ADA) improvements, and sidewalk extensions to re-connect the street grid. Some projects can be completed by local volunteer groups, others by local departments of public works and larger projects by the State Highway Administration- depending on the roadway jurisdiction and total project impact and cost. The report lists specific projects, costs, priorities, and funding sources for implementation.

The Next Steps:

- Promote and host bicycling events in your town
  - Dove-tail cycling tours with existing events (festivals, carnivals & fundraisers)
  - Coordinate with Bike Pittsburgh, SPC, the ORT and MTC Councils, and local cycling enthusiasts to help promote, lead and educate during the event
- Begin fund raising and implementation of the walking and cycling projects
- Appoint responsible members to implement and maintain designated routes
- Plan, permit and construct bike and walking routes

Mackin Engineering Company, 412.788.0472
www.mackinengineering.com
The purpose of the feasibility study is to determine the viability to extend a trail connector route west along the Ohio River corridor between the existing Three Rivers Heritage Trail in the City of Pittsburgh and the Borough of Coraopolis. The proposed trail connector route is both a walking system and an on-road bicycling system. The route traverses through several neighboring communities and connects to the Montour Trail at Allegheny County’s Sports Legacy Facility in Coraopolis Borough and Robinson Township.

This project is a collaboration between Stowe Township, Friends of the Riverfront, the Pennsylvania Environmental Council and Allegheny County to bring together seven local municipalities, residents, bicycle and trail enthusiasts, developers, and business owners to participate in the planning of the trail connector feasibility study.

The feasibility study recommends walking and cycling improvements in each community, connections between communities, and route improvements to connect Pittsburgh to Coraopolis; and Pittsburgh’s trail systems to other regional and interstate trails and cycling routes.

The study offers many improvement projects for communities. It proposes reconnecting our street grids, extension of sidewalks, ADA accessible route upgrades, safer roadway crossings, and safe walking and cycling routes to connect people to school, work and to shops. It provides for improved pedestrian and bicycle connections within each community and improved connections between communities.

The report includes mapped routes showing the Three Rivers Heritage Trail Connector: preferred routes and local loop routes within the community. The mapping also indicates bus stop locations and important roadway information to understand the traffic conditions- average daily trips (ADT) and posted speed limits (MPH). The report delineates an on-road walking & bicycle facility including:

- Bike Routes
- Bike Shared Lane Markings (SLM), ‘Sharrows’
- Bike Lanes
- Sidewalk, curb ramp, and crossing improvements at key intersections

Once complete, this project will become THE LINK in a multi-state trail initiative, connecting Pittsburgh Pennsylvania to the states of Ohio, West Virginia and Maryland. Additionally, this Link will connect our nation’s capital to our great Midwest.

Completion of this project would link together the following trail systems:
1. Great Allegheny Passage Trail and C&O Canal Towpath Trail to Wash DC, (335 miles)
2. The Montour Trail, (46 miles and airport connector)
3. Erie to Pittsburgh Trail
4. Ohio River Trail (Part of the Tri-State Trail System- OH, PA, WV),
5. BicyclePA Route-A
6. Great Ohio Lake to River Greenway
7. Ohio and Erie Canal Towpath

Creating roadways for all modes of transportation - automobiles, pedestrians (peds), and bicycles- raises the hierarchy of peds and bikes in the corridor, increases ped-bike awareness for motorists, promotes the construction of traffic calming measures in the corridor, and increasing roadway safety for all travelers and members of the community.
2.2 Three Rivers Heritage Trail: Pittsburgh to Coraopolis Feasibility Study

Until this time, bike trails have not been developed in this corridor; and for good reason. This section of the Ohio River valley is very narrow with steeply sloped hillsides and riverbanks, traversed by a heavily traveled West Carson Street (State Route 51), two active railroad lines, and a very busy Ohio River, active with tow boat and barge traffic. Additionally, the properties throughout are owned by the railroad and several private interests.

The feasibility study began with the Mackin Trail Team (Robert Genter- Project Manager, Chuck Jones- Traffic Engineer, Amy Wiles- Planner and Bill Moldovan-Landscape Architect) and Sam Thomas of Friends of the Riverfront cycling the entire alignment on a Tuesday, early in the month of May 2012. The trip included exploration of several alternative routes both on and off-road. The ride began at Station Square at 7:30 am, extended to Coraopolis, and then returned back to Station Square around 5:30 pm.

The field investigation helped the team to gauge many conditions of the corridor—pavement surfaces and conditions; traffic speeds, volumes, and shy-distances; shoulder conditions; intersection conditions; surrounding property uses; active users in the corridor (walking, carrying groceries, cycling and commuting to work); and views along the corridor—of the river valley, urban conditions, railroads and steep hillsides. A photo log and mapping notes were recorded.

Following the field investigation, a kick off meeting was held to introduce the project’s purpose and benefits to neighboring communities and municipal leaders. A second public meeting was held in June in McKees Rocks to review route alignment options with the public. Meeting summaries can be found in the Appendix.

Phone interviews with twenty key stakeholders were conducted and recorded. The interview questions and the list of person can be found in the report appendix. Special meetings were also held with adjacent landowners, businesses, and local developers to review how this project could benefit the community and how they may get involved.

During the winter, background documents and past planning reports were reviewed for coordination. Documents included PennDOT’s West Carson Street (SR 51) roadway improvement plans, Riverlife’s plan for a ped-bike crossing and landing at the West End Bridge, Stowe Township’s comprehensive plan, Ohio River Trail’s water trail & riverfront access plan, Allegheny County’s cursory report for the Preston Bridge, and local traffic reports.

At the end of winter and into the Spring of 2013 follow-up field meetings were conducted with Coraopolis, Neville, Stowe and McKees Rocks to review draft routes alignments within each community. Participants traveled to key intersections and trail segments to field review and discuss options and alternatives.

The findings and recommendations were drafted and presented to the steering committee for review and revision. Additional community review meetings were conducted by Friends of the Riverfront; alignments were revised for the McKees Rocks area. The draft was completed and posted on the project’s FTP site for final review. Once complete the final reports were issued to the sponsor for adoption in June 2013.
Project Description – Existing Conditions

The project investigated walking and bicycling routes along the urban Ohio River valley. The Ohio River valley corridor is confined by steep cliffs, railroads, river banks, narrow roadway corridors, and heavy traffic conditions including trucks and buses. The property along the river is owned by multiple owners and by CSX Railroad. Due to the corridor conditions, an ‘on-road’ bike route connector was investigated.

This 11.5 mile ‘on-road’ bicycle and pedestrian project is proposed to connect the City of Pittsburgh with the town of Coraopolis and the Montour Trail System. In Coraopolis the system can extend off-road to the Montour Trail, on-road as BicyclePA Route-A, or west toward the State of Ohio along the proposed Ohio River Trail extension. The Montour Trail is a 46 mile trail that connects to the Great Allegheny Passage Trail and the C&O Canal Towpath Trail (an interstate trail totaling 335 miles as it reaches Washington D.C.). Additionally, the Montour Trail is a connection for cyclist to travel to Pittsburgh’s International Airport, with a trail leading directly to the landside terminal.

Bike PGH’s 2009 Pittsburgh Bike Map delineates a ‘Cautionary Bike Route’ along West Carson Street, State Route 51, from the City of Pittsburgh to Island Avenue in McKees Rocks/Stowe Township. The route is then listed as ‘On-Street Bike Route’ along Island Avenue, through Stowe, to Neville Island and along Neville Road. This study recommends variations to those routes with a municipal preferred route through the McKees Rocks ‘Bottoms’ to avoid the heavily traveled truck route along SR51 (Stanhope, Chartiers Avenue, and Island Avenue). The preferred route uses portions of Island Avenue and enters Neville Island along Neville Road and Grand Avenue.

When in Coraopolis, the preferred route mimics BicyclePA Route-A along Fourth and Fifth Streets. The preferred route will connect to the Ohio River Trail, a planned trail extension westward along the Ohio’s north shore to Wheeling, West Virginia and then into the State of Ohio.

BicyclePA Route-A is a north-south extension along western Pennsylvania roadways. BicyclePA Route-A already exists through the study area in Coraopolis; it’s along Fourth and Fifth Avenues and connects to the Montour Trail. Route-A is a signed, on-road route system extending north and south through western Pennsylvania, from Erie County to Greene County and into West Virginia.
BICYCLEPA ROUTE - A Explanatory Statement

“BicyclePA routes were designed by experienced bicyclists to provide bicycling members of the traveling public who wish to traverse the state with a guide to some of the Commonwealth's highways and rail-trails. Few of these routes contain bike lanes or other facilities designed specifically for bicyclists traveling within the four corners of the Commonwealth. The Pennsylvania Department of Transportation cannot guarantee the safety of bicyclists as they access those roads and rail-trails. Every bicyclist is responsible for his or her personal safety and welfare and for remaining alert and mindful of conditions on the roads or trails. BicyclePA users are expected to be licensed drivers or persons at least sixteen years of age who have several years of road bicycling experience.” Source - Pennsylvania Department of Transportation

This project proposes to enhance BicyclePA Route-A by adding signs and pavement markings to the existing route. This will help to alert motorists and will better delineate the route for cyclist.

This study recommends improvements for each community including maps of the bike route, photo enhanced images, safety and engineering standards, and project costs. The study proposes improvements for cyclists and pedestrians within each town. Project improvements include the addition of bike lanes and bike routes, traffic calming measures, upgrades to sidewalks and pedestrian crossings, and signing for safety, trail identification, trail orientation, regulations, destinations and wayfinding.

These recommendations propose safer pedestrian and bicycle facilities, provide for all modes of transportation, provide for ADA upgrades and complete streets, increase safety for walkers and cyclists within the community, and provide for walk and bike friendly amenities.

User Types - Pedestrians & Bicyclists

There are many types of users. People who walk along roads or ride bicycles represent all age groups; from children to adults, and senior citizens. During our field visits, people were seen commuting to the city on bike, walking and cycling carrying groceries, and walking and cycling on the sidewalks within each town. Trail users and cyclists represent all experience levels; from novices riders to experienced cyclists.

Recommended project improvements are for all people in our community

Each user has a different comfort level walking along, or riding in and around automobile traffic. This study therefore recommends alternatives to serve a variety of user types and provides options to link to points of interest. The study identifies preferred routes and local loop routes to accommodate different user types. Below are descriptions of route types, walking route improvements, and a definition of terms.
Walking Route Improvements

Sidewalks and accessible curb ramps exist within the corridor; many of them can be improved to comply with current ADA standards including resurfacing and compliance upgrades to the curb ramps, pedestrian push buttons, pedestrian traffic signals, and the crosswalk markings. The report proposes improvements at key roadway intersections and crossings along the route. Refer to Opinion of Probable Costs–Intersection Improvements.

Bicycle Route Types & Definition of Terms

There are both on-road and off-road bicycle routes in Pittsburgh. The rail-trails along our rivers are good examples of off-road routes. On-road facilities share the roadway corridor and may include bike lanes (marked outside of the travel lane), two-way bicycle tracks (outside of the travel lane), or shared lanes (shared lane markings within the travel lane).

This feasibility study utilizes an on-road bicycle route to connect the City of Pittsburgh to Coraopolis. An off-road bike route, or separated trail, was not an option due to the geography, infrastructure and property ownership along the corridor.

Off-Road Bike Routes

Typically, off-road bike routes are shared use paths on a separate right-of-way for pedestrians and bicycles only. The Montour Trail is a local example of an off-road bike route. This 46 mile project was the conversion of a former railroad into a trail; the Montour Trail also includes an on-road route leading directly into Pittsburgh’s international airport. The Montour Trail connects many local communities together with a safe corridor for walking and bicycling, free of automobiles.

A second potential and local off-road bike route is at Neville Island’s- RMU Sports Center. The Sport Center has plans to extend its recreation facility with a new river walk and trail.

On-Road Bike Routes

Bike Pittsburgh is currently installing on-road routes throughout the city of Pittsburgh. These routes include signing, pavement markings, and sometimes ‘road-diets’ and re-stripping of lanes to accommodate cyclists.

On-Road Bikeway systems include a variety of facility types. Below are descriptions and definitions of on-road proposed facilities:

- **Bike Lanes**
  - **Conventional Bike Lane**
    - Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and signage. The bike lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic.
    - Bike lanes in urban areas are recommended to be signed for NO Parking.
    - Conventional Bike Lane Benefits
      - Increases bicyclist comfort and confidence on busy streets.
      - Creates separation between bicyclists and automobiles.
      - Increases predictability of bicyclist and motorist positioning and interaction.
      - Increases total capacities of streets carrying mixed bicycle and motor vehicle traffic.
      - Visually reminds motorists of bicyclists’ right to the street.

Source: National Association of City Transportation Officials (NACTO) website (http://nacto.org/cities-for-cycling/design-guide)
Buffered Bike Lane

- Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.

Buffered Bike Lane Benefits

- Provides greater shy distance between motor vehicles and bicyclists.
- Provides space for bicyclists to pass another bicyclist without encroaching into the adjacent motor vehicle travel lane.
- Encourages bicyclists to ride outside of the door zone when buffer is between parked cars and bike lane.

Source: NACTO website (http://nacto.org/cities-for-cycling/design-guide)

Bike Routes (signed- shared roadways)

- A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes.

Source: NACTO website (http://nacto.org/cities-for-cycling/design-guide)

There are limited locations in the study area that have wide (5'-8') shoulders, adjacent to the lanes of travel that provide the bicyclist an opportunity to ride outside the vehicular traffic flow where a bike lane is not present. This scenario can increase safety along the posted bicycle route, but provisions should be made to keep the shoulders clear of debris as to not introduce a new hazard to users.
Bike Shared Lane Markings (SLM) “Sharrows”

- Description Shared Lane Markings (SLMs), or “sharrows,” are road markings used to indicate a shared lane environment for bicycles and automobiles. Among other benefits shared lane markings reinforce the legitimacy of bicycle traffic on the street and recommend proper bicyclist.

Source: NACTO website [http://nacto.org/cities-for-cycling/design-guide](http://nacto.org/cities-for-cycling/design-guide).

Shared Lane Markings should not be used on shoulders or bicycle lanes. Below is guidance from Manual of Uniform Traffic Control Devices (MUTCD) Chapter 9B, MUTCD 2009 Edition, for Shared Lane Markings.


- Assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist’s impacting the open door of a parked vehicle.
- Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane.
- Alert road users of the lateral location bicyclists are likely to occupy within the traveled way.
- Encourage safe passing of bicyclists by motorists.
- Reduce the incidence of wrong-way bicycling.

Guidance - The Shared Lane Marking should not be placed on roadways that have a speed limit above 35 mph. The MUTCD further recommends SLM’s be reserve for roadways with posted speeds no greater than 35 mph and placed immediately after the intersection and spaced 250 feet apart or less. *Effects of Shared Lane Markings on Bicyclists and Motorist Behavior along Multi-Lane Facilities*, City of Austin Bicycle Team, 2010.

It is our recommendation that a SLM is painted at each turning point- a mark ahead of the turn and a mark directly following the turn. This will enhance the wayfinding ability for cyclists at decision points.

Also, the project sponsor may want to consider hot-thermo applied marking at locations of heavy vehicle travel to increase wear and reduce maintenance needs for repainting.

CURRENT LAWS

State law allows cyclists to use all roads in Pennsylvania unless they are otherwise posted. Pedestrians and cyclists typically are not allowed on the interstate or on the PA Turnpike. Although, the section of Interstate-79 at Neville Island (within the project corridor) is allowed for ped-bike use to cross over the Ohio River and access its northern shores.

SECTIONS OF TITLE 75 (VEHICLE CODE) PERTAINING TO PEDALCYCLES

Title 75 of the Pennsylvania Consolidated Statutes contains the laws which govern the operation of vehicles on Pennsylvania roads. In Pennsylvania, a bicycle is considered a vehicle and, as such, is governed by a general set of rules (common to all vehicles) and a specific set of rules (designed for bicycles). [ftp://ftp.dot.state.pa.us/public/PubsForms/Publications/PUB%20380.pdf](ftp://ftp.dot.state.pa.us/public/PubsForms/Publications/PUB%20380.pdf)
“Bicycles are considered vehicles under Pennsylvania Laws and must obey all the rules of the road which apply to vehicles.”

“A bicycle may be operated on either a shoulder or on the roadway (the travel lanes). The locations will be based upon traffic volume, the physical condition of the travel lanes or the shoulder, traffic speed, the bicyclist's intended direction, and other safety factors.”

State law prohibits bicycle riding on sidewalks in business districts unless permitted by official traffic control devices. “A person shall not ride a pedalcycle upon a sidewalk in a business district unless permitted by official traffic-control devices, nor when a usable pedalcycle-only lane has been provided adjacent to the sidewalk.” - Source: Pennsylvania State Bicycle Laws
Description of Route Segments and Recommendations

GENERAL DESCRIPTION OF PLANNED PEDESTRIAN AND BICYCLE ROUTE ALIGNMENTS

The recommendations propose two types of walking and cycling route alignments. The options provide cyclists and pedestrians with alternatives for travel and connections into communities for services and to link to points of interest.

Preferred Route: The preferred route directs cyclist between Pittsburgh and Coraopolis— to the Montour Trail and BicyclePA Route A. The route is recommended to be constructed as a shared lane marking or as a bike lane condition, depending on the road width and need for adjacent parallel parking.

Local Loop Route: The local loop route connects users to community shops, services, facilities and recreation sites within each town. The local loop route is proposed to offer pedestrians and bicyclists a connection to local services, parks & river access, and historical or cultural points of interest.

During the planning process there were some routes along SR51 that were rejected, not preferred by the local municipality. These routes were originally mapped from Bike Pgh routes and proposed to be enhanced as bike lanes, shared lane markings, and delineated with route and safety signing. The rejected route descriptions and images can be found in the Appendix. The revised, preferred alignments were routed away from SR51 along less traveled roadways.

This project also included suggestions for local trail parking and trailhead development sites to help spur economic development and promote existing businesses.

Trailhead Parking Areas

Trailheads not only provide parking to access the bike route or trail system, but are information centers and potential economic links to the community. These locations can serve trail users and act as information centers. Trail parking areas may be located at parks, near shops, or shared use parking lots that are open for trail access during the week and Church service during the weekend; or business and office lots that are open after 6pm for trail use and for employees during working hours.

Trailhead parking numbers vary depending on anticipated use, location, and ease of access. Many trailheads function well with as little as 5-10 spaces; others will need to be larger to accommodate a variety weekend user types.

KEY PERSONS INTERVIEW SUMMARY

Over twenty (20) key person interviews were conducted. Interview questions ranged from knowledge of the project, to a detailed review of the alignment itself, to bikeway safety, security, maintenance and operations, and potential persons or groups willing to provide assistance in project planning, development, or maintenance.

Most respondents were willing to provide technical assistance for planning and development. Many respondents are already active with other area trails, bike routes, and/or community groups and were willing to lend to the project their assistance, experience and public support from their associated group.

Montour Trail representatives provided safety and security information, Ohio River Trail representatives shared maintenance and operation information, Neville Green representatives provided willingness to support implementation efforts, and Bike Pittsburgh representatives were willing to provide technical support and experience to the effort.

A list of key persons, sample surveys, and submitted documents can be found in the Appendix-Key Person Interviews.
CONNECTOR ROUTE DESCRIPTIONS

**Pedestrian Routes**

Each of the below route segments already include a sidewalk system, either on one side of the roadway or both sides. Some of the walks are in need of surface repairs, others are in need of surface repairs and accessibility upgrades at intersections. We have detailed and priced the proposed improvements at key intersections in the *Opinion of Probable Costs– Intersection Improvements*.

Planned improvements at key intersections include:

- 1600 Gateway View Plaza
- Chartiers Avenue at Furnace & Linden St. (Eat-n-Park in McKees Rocks) - *Local Route to shops and restaurants*
- Chartiers Ave & Island Ave (RR Overpass in McKees Rocks) - *REJECTED Local Route to shops and restaurants*
- McKees Rocks Bridge at SR 51
- Fleming Park Bridge (west side on Neville Island)
- Grand Avenue & Second St. (Neville Island)
- I-79 Bridge Ramp (Neville Island)
- I-79 Bridge Ramp, Northbound on and off ramps (Neville Island)
- Coraopolis Bridge at Fourth Ave and Ferree Street (Coraopolis)

**Bicycle Connector Route Description by Segment**

The bicycle connector route is described in a west bound direction beginning at the Station Square access roadway in the City of Pittsburgh and extending toward Coraopolis where it links to BicyclePA Route-A and the Montour Trail.

The metrics listed for route segment length, posted speed limit and average daily trips (ADT) describe the preferred route only unless otherwise noted. The local loop routes are typically posted for equal or lesser speeds and with lower ADT numbers. The ADT source is from PennDOT’s Individual Traffic Volume Mapping, 2010 data, or from Allegheny County.

State Route 51 (SR51) is West Carson Street from Pittsburgh to McKees Rocks and has many other names as it travels west to Coraopolis. The below descriptions use the various road names and include a (SR51) for clarification. The preferred route is posted at 35 mph in the city (West Carson Street), and drops to 25 mph through the municipalities of Stowe, McKees Rocks, Neville and Coraopolis.

**CITY OF PITTSBURGH– (SR51) WEST CARSON STREET, STATION SQ. TO WEST END BRIDGE**

West Carson Street (SR51), Segment Length 2,861 LF (0.54 miles); Posted Speed Limit= 35 MPH; 20,000 ADT; 54-feet width and curbed.

The corridor is confined by steep cliffs, railroads, river banks, narrow roadway corridors, and heavy traffic conditions including trucks and buses.

Routes considered in the study were:

* West Carson Street (SR51): Pedestrian and bicycle access is limited along this segment of SR51. SR51 consists of 2-westbound lanes of 11’ each, a 5’ wide sidewalk, retaining wall and private property. Eastbound the road is 2- lanes of 11’ each, a 10’ left turning lane, no sidewalk, adjacent private property and a mountain side. Traffic speeds and volumes are high and the corridor includes significant bus and truck traffic. A shared lane marking system along this segment would remain at a below average condition for cycling and not be usable by a majority of cyclists.
Active CSX Railroad property along Ohio River: The active CSX rail corridor is directly behind the 1600 Gateway View Building, within 30 feet of the building with an active rail line, and a rail spur accessing the back of the building. Additionally, the railroad bridge east of the West End Bridge, the TWIC barge access, cuts off ped-bike access along the railroad. This corridor is not being considered since rail freight access is an asset to the property, and rail freight is estimated to increase with improvements to the Panama Canal and increased rail demand locally with the Marcellus industry.

Steep riverbank between railroad and Ohio River: The steep banks along the Ohio River would be extremely costly to construct and would be subject to U.S. Army Corps and Port of Pittsburgh approvals. In addition, the alignment would have to cross railroad property twice; any new rail crossings of CSX railroad property would be very costly and may eventually preclude trail development. Also, river bank construction may conflict with barge traffic and docking locations and would be subject to potential flood damage. TWIC hold barges along this portion of the riverbank - TWIC access to river, under the railroad, is show below.

Existing sidewalk (along north side of SR51) - currently the existing sidewalk is being used by pedestrians and bicycles: The walkway along SR51 is 4.5’ to 5’ wide and the roadway is 54’ wide. The walkway widens under the West End Bridge. SR51 consists of two 11’ lanes eastbound, a 10’ center turning lane and two 11’ lanes westbound. As stated above, the existing conditions, narrow lanes and heavy bus and truck use prevent bike lanes from being established in the roadway.
1600 Gateway View Plaza Building - the property is owned by the Buncher Company: At this time the Buncher Company is not interested in entertaining a bicycle facility through their 1600 Gateway View Plaza property due to the narrow parcel size, the parking & truck docking facility in the front of the property and rail access at the building rear. These amenities all add value to the marketability of the property.

Norfolk Southern Railroad corridor; cliff / hillside above SR51; off road route: Norfolk Southern Railroad corridor is the active railroad along a hillside bench, south and high above SR51. Using this corridor would be difficult to ascend and descend because of its elevation. Furthermore, the existing, narrow, active railroad condition rules out a safe and economical bike trail development in this shared corridor. Even if land ownership would change in the future, access to this elevation and the safe crossing of roadways and streams would remain costly for development.

Recommendations

Option #1: The preferred route recommendation is the construction of a separated and protected pedestrian walk and 2-way bike lane (a ped-bike track) along the northern side of SR51. The protected ped-bike track would accommodate both westbound and eastbound cyclists and pedestrians. The track would include a barrier between the road and the track to increase the Bicycle Level Of Service (BLOS) and increase use for all ages and all abilities of cyclists and walkers.

The construction of the protected ped-bike track would require significant changes to the SR51 right-of-way and roadway between the Station Square driveway and the western property line of 1600 Gateway View Plaza due to the geography, adjacent private properties, and narrow roadway conditions. To maintain the current SR51 lane configuration, the preferred Option #1 route would include property purchase, relocation of businesses, and a relocation of the roadway toward the south to provide for the separated ped-bike track along the north shoulder.

The width of the ped-bike track is recommended to be 18’-20’ clear between barriers and be constructed in place of the existing sidewalk and along the north side of SR51. The track is proposed to include two-7’ wide bike lanes, a 5’ sidewalk, and a barrier. The ped-bike track is to include pavement markings and signs to separate east-west cycling traffic and to delineate a pedestrian walking space. Separation of the walking space may occur with a rolled edge-vertical separation, or simply with a pavement stripe marking.

The barrier protection is necessary to increase the BLOS due to excessive automobile speeds and traffic volumes during peak traffic hours. The protected ped-bike track is proposed to extend along the north side of SR51 from the Station Square roadway, under the West End Bridge and to the West Busway driveway; with an option to extend the facility to the Corliss Tunnel. Refer to Figure 1 in Appendix— Rt.51-Separated Trail Under The West End Bridge for example of separated and protected ped-bike track.

The protected ped-bike track would allow pedestrians and cyclists to traverse safely along West Carson Street (both east and west bound users) and travel under the high traffic conditions of the West End Bridge intersection, and not have to make any crossings along the busy West Carson Street- SR51.

Option #2 would be to change the lane configuration within the template of the 54’ wide roadway. The lanes would be designed similar to the planned West Carson Street improvement project, from the West End Bridge to McKees Rocks. The planned improvement project is designed as a 38’ wide road, plus sidewalk on one side. The Option #2 typical section would include two-14’ outside lanes and a 10’ center turning lane; providing for a 16’ ped-bike track and keeping the existing sidewalk. This option will require significant traffic modeling to prove the viability for this recommendation.

Option #3 would require much greater investigation, discussion and negotiations with the private property owners, the Buncher Company. This option would consider the construction of a cantilevered deck extending into private property, over a portion of the parking lot and truck dock, connecting the 2-way ped-bike track at the West End
Description of Route Segments and Recommendations

Bridge to the Station Square Driveway. This option would require a great deal of redesign for parking and truck movement within the property, as well as significant costs for construction and property impacts. Refer to Figure 2 in Appendix- Rt.51-Alternative at 1600 Gateway View Plaza for example of cantilevered structure- ped-bike track.

Option #4 would be do nothing. This recommendation would not improve the condition for cyclists or walkers, or the bus stops located on this narrow stretch. The narrow width would require cyclist to dismount and walk as ‘pedestrians’ along the 5’ wide sidewalk; a significant length of approximately 2,000 feet to the Station Square Driveway.

The Station Square to West End Bridge Segment does not have an Alternate Route or Local Loop Route for consideration.

CITY OF PITTSBURGH- (SR51) WEST CARSON ST., WEST END BRIDGE TO CORLISS TUNNEL

West Carson Street (SR51), Segment Length 4,387 LF (.83 miles); Posted Speed Limit= 35 MPH; 16,000 ADT.

The existing corridor already includes sidewalk along at least one side and sometimes both sides of the roadway. PennDOT has completed new roadway plans for West Carson Street, between the West End and McKees Rocks. The alignment is along the very busy West Carson Street- SR51 corridor and includes steep cliffs, active railroads, and riverbanks all restricting alignment access.

PennDOT District 11-0 and the City of Pittsburgh just completed reconstruction designs (August 2012) for the SR51 roadway from the West End Bridge to Stanhope Street (SR51) in McKees Rocks. The roadway is designed for 35 MPH use and is composed of one east bound lane and one west bound lane, each at 14’ width, and a 10’ center turning lane for the entire length of the project.

The City is proposing a ‘Share the Road’ condition along the wide outside travel lanes. This is to include shared lane markings and signs. It is our opinion that the bicycle level of service (BLOS) rating would remain below average for cycling due to wider automobile lanes; typically allowing for higher actual traffic speeds. The proposed share the road condition will not increase the safety and comfort level for most users and may deter users from using this segment.

Recommendations

The preferred route recommendation would extend the above described protected ped-bike track. The track would be proposed to extend under the West End Bridge, along the north side (river side) of West Carson Street, past the signalized bus way intersection, and reach the Corliss Tunnel intersection. This recommendation would provide for the greatest BLOS and encourage cyclists and walkers of all ages and abilities to use the system.

Although, once reaching the bus way traffic signal options may be considered. In our opinion the BLOS rating would still remain below average for all of these options. The safety and comfort level for most users will not improve unless a separated track can be developed.

Option #1- Continue the ped-bike track from the west end to the bus way signalized intersection. Construction of the ped-bike track in this segment would require less construction costs and roadway impacts since the planned 10’ center turning lane space could be appropriated for much of the ped-bike track widening. The center turning lane is only needed for bus stacking westbound at the bus way traffic signal. Once reaching the bus way's traffic signal, the Option #1 ped-bike track could become a one way, protected, cycle track westbound and a bike lane eastbound; therefore reducing the need for a cantilevered structure. The
signalized intersection would allow cyclists to cross SR 51 and access the proposed protected ped-bike track from the eastbound bike lane.

The eastbound bike lane is proposed to be 5’ wide and include a three foot painted buffer space. The buffered bike lane would be constructed along the eastbound lane of SR51 from the Corliss Tunnel to the bus way intersection; then allow users to cross West Carson and enter the protected ped-bike track.

**Option #2**— between the bus way and the Corliss Tunnel considers provisions for a buffered bike lane uphill (westbound) and a shared lane downhill (eastbound). This option would not impact the total road template width, but would require removal and remarking of automobile lanes and adding a bike lane and share lane markings. This condition, of a buffered bike lane westbound and ‘sharrows’ eastbound, could be installed from the Corliss Tunnel to the bus way intersection with little impact to the roadway template.

**Option #3**— A ‘Share the Road’ condition could be constructed for both westbound and eastbound cycling between the bus way and the Corliss Tunnel; using the signalized bus way intersections to cross safely to and from the proposed protected ped-bike track.

*Refer to Figure 3 in Appendix— Rt.51-Alternative Roadway Sections* for examples of modifications to West Carson Street typical sections to accommodate of a separated and protected ped-bike track; two way track vs. one way track.

**CITY OF PGH- (SR51) CORLISS TUNNEL TO MCKEES ROCKS**

West Carson Street (SR51), Segment Length 5,754 LF (1.09 miles); Posted Speed Limit= 35 MPH; 16,000 ADT.

The existing corridor is narrowed by the railroad property to the north and a steep hillside/private property to the south. The current PennDOT-City of Pittsburgh plan is proposed to be an on-road route marked with SLM’s along SR 51 from the Corliss Tunnel toward Stanhope Street (SR51) at Chartier’s Creek in McKees Rocks.

**Recommendations**

**The preferred route** would be to extend the separated and protected ped-bike track from the Corliss Tunnel to McKees Rocks at Chartiers Creek. The extension of the ped-bike track to McKees Rocks would require ‘taking’ one of the two westbound lanes (along the river side of the road). Alternatives to the lane taking would require property ‘takes’, ROW and cantilevered structures at the railroad property.

Between May of 2012 and May of 2013, this section of roadway was barricaded to a single lane westbound; and hence, functioning as listed above.

**Option** – an option to the preferred is enhancing the PennDOT and city proposed plan with a buffered bike lane uphill (eastbound) and a SLM downhill (westbound). The travel lanes would require a ‘road diet’ to accommodate the bike lane. Cyclists would cross at the Corliss traffic signal and separate into either eastbound or westbound routes. Walkers would use the existing sidewalk system along the south side of SR51.
Description of Route Segments and Recommendations

**MCKEES ROCKS ‘BOTTOMS’- WEST CARSON STREET, RIVER AVENUE, HELEN STREET TO MCKEES ROCKS BRIDGE**

Segment Length 6,300 LF (1.19 mile); Posted Speed Limit= 25 MPH; local streets.

The existing corridor is through the ‘Bottoms’ of McKees Rocks- a river community of shops, homes and churches, and light industry. The Bottoms have been cut off from the rest of McKees Rocks by active railroad lines; the only access is River Avenue at Chartiers Creek and the McKees Rocks Bridge. Another corridor through McKees Rocks is along SR51– Stanhope, Chartiers, Linden, Island Avenue- a busy roadway and truck route.

**Recommendations**

**The municipal preferred route** through McKees Rocks is to use River Avenue through the ‘Bottoms’ and the ramp connection to West End Bridge. The route extends from West Carson Street over the Chartiers Creek Bridge and turns right onto River Avenue. The on-road connector route traverses under the railroad overpass and into the Bottoms. The preferred route follows Helen Street into the business district, turns into a parklet (green space) along the bridge ramp- does not enter the intersection of the bridge ramp and bridge underpass- and accesses the West End Bridge ramp via Munson and George Streets.

This will place you on the westbound sidewalk of the bridge. The McKees Rocks Bridge links to the south shore and SR51 westbound. The McKees Rocks Bridge also offers access to the north shore trail system toward Pittsburgh. Helen Street and River Avenue would be marked as a ‘share the road’ condition with bike SLM’s and signs to alert motorists and to direct trail users. *Refer to Figure 5 of Appendix, Bicycle Routes– At ‘The Bottoms’.*

**The local loop route** would extend along Robb, Shingiss, Sproule, Hamilton and Ella Streets to connect to the local park and neighborhood homes. These roads are low volume, and low speed and would be ideal for on-road cycling to connect homes, shops, and points of interest.

**The local loop route into McKees Rocks** extends along Chartiers Avenue through the Shoppes at Chartiers Crossing and stops when reaching the signalized intersection of Linden and Furnace. *Refer to Appendix for the extension of a route along Chartiers Avenue; Figure 6, Local Loop Route – Shoppes at Chartiers Crossing.* Future efforts are recommended to extend the local loop route into the business district of McKees Rocks. Users could cross safely at the signalized intersection and enter the business district. Future development of an on-road bike route is recommended to be planned once the main street project is completed.

**Gateway and Destination Signs**-

Gateway and destination and wayfinding signs are recommended at the intersections West Carson and Stanhope and at Furnace and Linden, offering trail users travel choices and directions to shops and services.

Other opportunities include the following:

- **Trailhead Parking**

  Trailhead parking areas may include the following locations with permission by landowners:

  - Eat-n-Park Restaurant parking lot, southwest corner of the parking lot
  - Trinity Development’s Chartiers Creek Crossing Shoppes, creek side of parking lot
Parking lots south of Furnace Street
- The Bottoms
  - Munson Municipal Park - the parking lot opposite the park
  - Rangers Field parking - off of Shingiss Street
  - On street parking (Munson, Nichols, Helen, Olivia)

Trailheads should be situated in locations where trail users can spend money on food, water, small items needed for commuter and weekend/recreation rides.

- **Development Opportunities**
  - McKees Rocks also has multiple bus stop locations, river access points (Ohio River and Chartiers’ Creek) and opportunities for redevelopment.
  - Redevelopment of Railroad Property: The proposed Trinity Commercial Development project for light industrial and warehousing space is a great opportunity to re-connect the community street grid and include all modes of transportation into the design. A walk-able and bike-able community offers multiple transportation choices to all citizens regardless of socio-economic status. We recommend that town council approve a *Complete Streets Policy* directing all new construction and reconstruction of roadways to be designed for safe travel by all (peds, bikes, automobiles).
  - McKees Rocks Welcome Center: A proposal by Trinity Commercial Development is for the construction of a 5,000 gross square feet, two story building that could house a first floor welcome center office and vendor spaces with a potential for bike and boat rentals below, and office space above. The facility could act as a trailhead, river access, and vendor space for food, services, and rentals. *Refer to Figure 7 of Appendix, Parcel Redevelopment Concept at Chartiers Avenue.*
  - Kim Perl, AGF property co-owner, presented a possible opportunity for reuse of a railroad locomotive. This may be relocated at a trailhead and used as an interpretive artifact.

- **Community connections**
  - Father Ryan Community Arts Center – central to the community as a center for education, art and culture, this facility could be used as a catalyst for cycling tours, fund raisers and education sessions to promote bicycle safety and safe routes to school programs.
  - Local artisans and craftsmen could be employed to create bicycle corrals, bike racks & lockers and artwork to enhance the community spaces and transit stops.
Description of Route Segments and Recommendations

STOWE TOWNSHIP- LOCAL ROADS OFF OF McKEES ROCKS BRIDGE TO ISLAND AVENUE (SR51) AND FLEMING PARK BRIDGE

Segment Length 8,100 LF (1.53 miles); Posted Speed Limit= 25 MPH on local streets (NIC McKeess Rocks Bridge)

The preferred route exits the McKeess Rocks Bridge along the west sidewalk, and is proposed to travel down a future steel ramp system to the lower streets of O’Donovan, Page, Robinson and Margaret before reconnecting with Island Avenue (SR51). This part of the preferred municipal alignment guides users around the busy section of Island Avenue (and future industrial park entrance at Bradley Street), McKeess Rocks intersection and the Tunnel Way approach. Refer to Appendix, Figure 10, Route – At the McKeess Rocks Bridge. The alignment then links back to Island Ave at Margaret Street.

The preferred route traverses SR51 between Margaret Street and Duke Street; this section of SR51 is curbed and includes sidewalks and parallel parking spaces being used sporadically in segments along the north and south road shoulders. From Duke Street to the Fleming Park Bridge (the bridge to Neville Island) the roadway includes wide paved shoulders along each side. Commercial and residential properties are located along the north shoulder and, for the most part, the south shoulder is against a steep wooded hillside.

Recommendations

The preferred route will require a substantial structure to allow users to ramp up and down from the lower local streets to the bridge sidewalk system. This structure could be constructed in the area adjacent to the southwest bridge abutment/retaining wall; and a similar construction to a steel structure with a poured concrete deck at Washington’s Landing. Land acquisition and structure engineering would be required.

The preferred route extends along SR51 from Margaret Street toward the Fleming Park Bridge at Neville Island as on-street bike route.

Improvements from Margaret Street to Duke Street are recommended as a share the road condition for both eastbound and westbound cyclists. The 32’-35’ wide road corridor is to be signed as a bike route and marked with shared lane pavement markings ‘sharrows’ in the travel lanes. This recommendation will allow for parallel parking along the south shoulder (at the residences) and maintain the travel lanes. The road is to be remarked with line striping to delineate 2-11.5’ minimum travel lanes and parallel parking along the south shoulder.

SR51, from Duke Street to the Fleming Park Bridge, widens to 2-lanes of 11.5’ each including wide 8’ plus shoulders along each side of the road. At this location, the pavement markings are recommended to be shifted south to maintain the travel lane widths, provide for a 5’ wide bike lane eastbound and a wide shoulder along the commercial and residential side of the road (north shoulder). Westbound cyclists would share the road; the road is recommended to be marked with ‘sharrows’. This would allow cyclists the ability to travel up-hill from the Fleming Park Bridge in the bike lane; the bike lane is to be marked as ‘No Parking’. Refer to Figure 12 of Appendix, Island Ave – East of Fleming Park Bridge. Westbound cyclists would share the travel lane and, or, use the wide shoulder.

The intersection with the Fleming Park Bridge is recommended for improvements to allow cyclist to dismount and enter the sidewalk, or to share the road and traverse the bridge onto the island. A curb cut is recommended to allow cyclist access to and from the sidewalk. Bicyclists using the sidewalk would be signed to ‘dismount and walk’ as a pedestrians due to the narrow sidewalk width and potential for two-way ped-bike traffic.
Currently, the Southwest Planning Commission (SPC) rates the route along Island Avenue and Robinson Boulevard as above average for experienced cyclists.

The alternate route would offer cyclist traveling west to enter Fleming Avenue once passing Duke Street. This is a low traffic, neighborhood road connecting Fleming to Glenn and then back to Island Avenue at the Fleming Park Bridge.

**NEVILLE ISLAND- NEVILLE ROAD AND GRAND AVENUE (COUNTY ROADS)**

County Road, Segment Length 24,636LF; 4.67 miles, Posted Speed Limit = 25 MPH.

Neville Road is a County roadway surrounded by several industrial properties, and includes automobile and sometimes heavy truck traffic during the week. Grand Avenue changes from industrial properties to commercial and residential as it reaches west. Traffic counts are provided below.

The ADT counts are as followed (Allegheny County 2005 source data):
- Fleming Park Bridge- 21,037
- Neville Road, East of 1st Street- 16,522
- Grand Avenue, East of I-79- 16,494
- Grand Avenue, east of 4th Street- 2,527
- Coraopolis Bridge- 13,888

The existing 48’ wide Neville Road includes 2-12’ westbound and 2-12’ eastbound lanes divided by a 4’ concrete median, and includes 8’ paved road shoulders.

Grand Avenue is a 4 lane road, 2, 12’-westbound lanes and 2, 12’ eastbound lanes. Grand Avenue is posted at 25mph and includes a sidewalk along either the north or south side of the road.

**Recommendations**

The preferred route recommendation is proposed to be an on-road system extending through Neville Island using Neville Road and Grand Avenue to reach Coraopolis.

Options for pedestrian & bikeway improvements to include:
- Reconstruct the existing roadway shoulder as a bike lane and walking lane. The shoulder is recommended to be improved by resurfacing the area to create a smooth lane with 2% cross-slope; walkers would use the outside shoulder. The lane is to be signed for No Parking. Future maintenance of the bike lane would be required to keep clear of rocks and debris. Refer to Figure 13 of Appendix, Neville Road. This image delineates shoulder improvements to create a bike/walk lane at both sides of the road.
- A ‘road diet’ and the installation of 4’ bike lanes on each side of the road is the second option. The road lanes would be repainted to 11’ wide each- still providing four lanes of traffic, a median, and road shoulders. The bike lanes would be constructed to overlap 2’ of the road and 2’ on the shoulder; walkers would use the shoulders.

The alignment would travel Neville Road to Second Street. At Second Street walkers and cyclists would be signed to turn right and travel to the signalized intersection of Second and Grand Avenue. Walkers would use the existing sidewalks. At this intersection users could safely cross Grand and continue westbound travel.
Description of Route Segments and Recommendations

Eastbound cyclists traveling along Grand Avenue would pass under Interstate-79 (I-79) and continue right onto Neville Road at the Neville-Grand road split. Walkers would be directed to the northern side of Grand Ave at the I-79 off ramp, at the signalized intersection with Nebraska Street. Walkers can then travel the sidewalks to the Second Street signalized intersection.

The route is proposed as a share the road condition along Grand Avenue. Refer to Figure 14 of Appendix, Grand Ave, West of I-79 Interchange. This figure shows shared lane markings, share the road sign and bike route signing. Parking would be allowed along Grand to accommodate current residential use. Users would either ride the shoulder or the travel lane, depending on individual comfort and experience and road and shoulder use.

Intersection improvements include:

- Fleming Park Bridge
  The northwest end of the Fleming Park Bridge requires pedestrian crossing improvements at the Calgon driveway and signalized intersection. Improvements are recommended for both pedestrians and cyclists.
  
  Eastbound cyclists could cross Neville Road at the existing signalized intersection and use the sidewalk; or share the road and traverse the bridge with traffic. Cyclists would be signed to walk if using the bridge sidewalk.

  Recommended improvements at Fleming Park Bridge (County Road- Neville Road) include:

  Crossing Improvements at West end- (Neville- ‘on the island’)
  - ADA upgrades at shoulder and curb ramps
  - Push buttons
  - Countdown pedestrian signal heads
  - Pavement markings
  - Ahead and crossing signs (to alert motorists for peds and bikes at crossing)

  Cycle improvements would include a widened curb ramp to access the bridge sidewalk and signs to ‘dismount and walk bikes’. The bridge is recommended to be marked with share the road pavement markings (‘sharrows’) and signed- Share the Road, and as a bike route.

  Crossing Improvements at East end- (Stowe Twp, existing 4-way stop condition)
  - ADA upgrades at shoulder and curb ramps
  - Pavement markings
  - Ahead and crossing signs (to alert motorists for peds and bikes at crossing)

- Other intersection improvements are recommended at Second Street/Grand Ave. to upgrade the curb ramps, crossings, pedestrian signals and bush buttons. Intersection improvements are also recommended at the Interstate-79 ramp signalized intersections. Refer to Opinion of Probable Costs- Intersection Improvements.

The alternate route is proposed along Grand Avenue, east of I-79. This route is proposed to be marked as an alternate route and serve to connect the island community together. The alternate route is best used on weekends when truck traffic and industrial work is off-peak. This route was not chosen as the preferred route due to truck access into adjacent industrial sites and truck turning movements, several driveway curb cuts, parked cars along road shoulders, and rail spurs crossing the alignment.
Trailhead Parking

Trailhead parking areas may include the following locations with permission by landowners:

- Proposed Municipal Park along back channel of river, off of Grand, east of I-79.
- Port Authority Park-N-Ride under I-79 Bridge; with direct access to food, lodging, bus service, and with an overhead cover with parking.
- RMU Sport Center- west side of Coraopolis Bridge (former batting cage area)

A proposed development for new riverfront is east of I-79 Bridge/ramp. This is an opportunity for a connection to river access, and extension of the local loop system. The Aliquippa and Ohio RR and local adjacent landowners are players in this project being pursued.

Local loops are proposed along Neville Islands back roadways and at Robert Morris University (RMU) Sports Center river walk and trail.

Currently, SPC rates the route along Neville Island, Neville Road and Grand Avenue, as above average for experienced cyclists.

CORAOPOLIS- (SR51) FOURTH AND FIFTH AVENUES

Westbound SR51 is called Fourth Avenue, Segment Length 5,141 LF, Posted Speed Limit = 35 MPH; 9300 ADT.

Eastbound SR 51 is called Fifth Avenue, Segment Length 5,123 LF, Posted Speed Limit = 25 MPH; 9000 ADT.

Fourth Avenue is a 40’ wide road and includes 2-lanes of one way traffic and parallel parking on both sides of the road.

Fifth Avenue is a 36’ wide road and includes 1-lane of one way traffic and parallel parking on both sides.

Note that in Coraopolis, BicyclePA Route-A currently extends from the Montour Trail onto SR51 as an on-road bike route. The route follows SR51 and the Ohio River north-west into Moon Township.

BicyclePA Route-A

BicyclePA Route A is a signed, on-road, state bike route extending north and south through western Pennsylvania, from Erie County to Greene County. There are eight other state routes signed across the commonwealth. The Montour Trail is signed as South BicyclePA Route-A. BicyclePA Route-A is currently signed to direct users from SR51 to the Montour Trail at State Street.

Recommendations

The preferred route recommendation is proposed to be an on-road system extending westbound along Fourth Avenue from the Coraopolis-Neville Bridge to Watt Street; eastbound travel will be along Fifth Street from Watt Street to Ferree Street. At Watt Street the proposed routes connect to the Ohio River Trail extending into Moon Township and the ORT North Shore Trail.

Parking is to remain on both the eastbound and westbound routes to support the residential and business uses along the corridor. The bikeway improvements include recommendations for traffic calming measures (road diet with delineated traffic lanes at 11’ wide, marked parallel parking spaces at 7’x22’ and marked centerlines, and pedestrian
Description of Route Segments and Recommendations

bump-outs and refuge islands at crossings where appropriate), signing for ‘share the road’, and SLM’s along both Fourth and Fifth Avenues. The location of the sharrows should consider the proximity to parked vehicles and be installed clear of car doors. Refer to Enhancement Rendering, Figure 15 of Appendix, 5th Street Bike Route.

Intersection Improvements

There are six signalized intersections along Fourth Avenue: Coraopolis Bridge/Ferree St., Broadway Street, Mulberry, Mill, Main and Watt Street. There are five signalized intersections along Fifth Avenue: Main Street, Mill, Broadway, Montour, and Ferree Street. Each crossing is an opportunity to implement traffic calming measures and improved pedestrian safety and accessibility.

Refer to example image of crossings- note the visibility of markings, green bike lane/bike box, refuge islands for ped safety; these all improve safety and add to traffic calming.

The Coraopolis Bridge intersection (Fourth Ave./Ferree St.) is proposed for pedestrian and bikeway improvements by upgrading the pedestrian signals and adding curb ramps for peds and bikes to access the east sidewalk and the proposed connection to Montour Trail via the Montour Junction Sports Complex Property.

Montour Trail Connection

The bikeway on-road system is proposed to connect to the off-road Montour Trail system via the Montour Junction Sports Complex at the Coraopolis Bridge- the intersection of Ferree Street and Montour Street.

The alignment would enter the sports complex from traffic signal at Ferree Street/Coraopolis Bridge. Travelers coming from Neville Island would turn right at the signal and right again at Montour Street and enter the complex from under the bridge. Travelers exiting the complex would ramp-up to the signaled intersection and continue west along Fourth Avenue or east and traverse the Coraopolis Bridge.

Connections to the Coraopolis Bridge are from the intersection and ramp and as underpass. The underpass would connect the Montour Trail to Montour Street and then to BicyclePA Route-A (Fourth Ave) going west toward Moon. The ramp would connect the Montour Trail to the Coraopolis Bridge sidewalk and extend the system onto Neville island and east toward Pittsburgh. Constructing both the underpass and the ramp would eliminate the need to cross the roadway. We believe this offers trail users the safest alignment possible by providing access to-and-from the existing sidewalk at the Coraopolis Bridge (the sidewalk is only on the east side of the bridge). Refer to Appendix, Figure 16, Connections to the Montour Trail.

The local loop route proposes to guide pedestrians and bicyclists towards the Ohio River along Broadway Avenue and to the community green space at First Avenue. The route would continue west along First Avenue to Main Street and back towards Fourth Avenue.

The local loop utilizes both on and off-road systems and connects to the Ohio River Trail. The local loop would be signed for local travel destinations- connecting users to points of interest, shops, parks, river access, and offering lower ADT routes through the community.

The Main Street and Broadway Street alternate routes are proposed to continue south through Fifth Avenue and intersect with State Street. State Street is a lower volume and slower traffic corridor that would offer an alternate route to PABicycle Route-A. State Street is adjacent to neighborhood homes and directly links residential to commercial use in the town- part of the local loop system. State Street can be signed to direct
cyclist to the shops and services at Fifth and Fourth Avenues. Proposed locations for these wayfinding signs are at Mill Street, Mulberry, Broadway, and Chestnut Streets.

The local loop and alternate route systems would be signed as ‘Share the Road’.

- **Development Opportunities**

  An opportunity exists for the redevelopment of riverfront property near the Coraopolis Bridge. This property can be made viable if Third Street can be reopened and the parcel is provided with access. The benefits are many to the community including a new development, river access, increased property value and tax base, and recreation and community connection opportunities. This future property can be linked to the Three Rivers Heritage Trail system and connected to the Montour Trail and the Montour Junction Sports facility.

  **Coraopolis has the potential to become a successful trail town.**

  With its proximity to the Montour Trail, the Montour Junction Sports complex, Robert Morris University, and at the nexus of the Three Rivers Heritage Trail Connector and the Ohio River Trail, Coraopolis should do all it can to become a bicycle friendly community (BFC), and begin to benefit from increased economic opportunities related to trail towns.

  *We recommend Coraopolis conduct a trail town master plan and apply for BFC status.*

- **Trailhead Parking**

  Trailhead parking areas may include the following locations with permission by landowners:
  - Former railroad station and Main St
  - Business parking areas (after hours) near former RR station and Main St
  - Business parking areas (after hours) near former RR station and Mill Street
  - Saturday negotiated parking only - Church at Broadway
Opinion of Probable Costs

PROJECT COSTS

The total project length is 11.79 miles from Pittsburgh to Coraopolis. The majority of the connector route, 9 miles between McKees Rocks and Coraopolis, is estimated at $1 million for improvements. Of that amount, $100,000 is for accessibility and ADA compliance upgrades at key intersections and $500,000 is for a ramp/underpass connection to the Montour Trail at the Montour Junction Sports Complex. The remaining cost includes shoulder pavement widening, roadway signs, pavement markings, and sidewalks.

The study recommends a separated and protected cycle-walking track along West Carson Street. This is vital link in the project. The 2.5 mile section from Pittsburgh’s Station Square driveway to the McKees Rocks includes the newly designed roadway by PennDOT. The preferred bicycle route improvements, a separated and protected pedestrian-bicycle track, are estimated at an additional $2.5 and $5 million. Since PennDOT just completed plans for West Carson Street (West End Bridge to McKees Rocks), the study includes only detailed cost estimates for a portion of a protected cycle track along West Carson Street- ($500,000) from the Pacific Pride Gas Station to the beginning of the new road design.

Completion of a separated and protected track along the entire length of West Carson Street would significantly increase the bicycle level of service and the number of users, both local commuters and visitors, traveling to and spending money in the City of Pittsburgh and in it’s neighborhoods.

<table>
<thead>
<tr>
<th>Three Rivers Heritage Trail Connector</th>
<th>Summary: Opinion of Probable Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared By: Mackin Engineering Company</td>
<td>6/10/2013</td>
</tr>
<tr>
<td>ROUTE DESCRIPTION/LOCATION</td>
<td>LENGTH (MILES)</td>
</tr>
<tr>
<td>City of Pittsburgh- (SR51) West Carson Street, Pacific Pride Gas Station to beginning of PennDOT Project- near West End Bridge</td>
<td>0.54</td>
</tr>
<tr>
<td>City of Pittsburgh (SR51) West Carson Street, West End Bridge to McKees Rocks</td>
<td>1.92</td>
</tr>
<tr>
<td>McKees Rocks- Bottoms - West Carson Street, River Avenue, Helen St. to McKees Rocks Bridge</td>
<td>1.19</td>
</tr>
<tr>
<td>Stowe Township- Local Roads off of McKees Rocks Bridge to Island Avenue (SR51) and Fleming Park Bridge</td>
<td>1.53</td>
</tr>
<tr>
<td>Neville Island- Neville Road and Grand Avenue (Allegheny County Roadways)</td>
<td>4.67</td>
</tr>
<tr>
<td>Coraopolis- (SR51) Fourth Avenue and Fifth Avenue</td>
<td>1.94</td>
</tr>
<tr>
<td>Coraopolis- Montour Trail Connection</td>
<td>N/A</td>
</tr>
<tr>
<td>Intersection Improvements</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Miles:</td>
<td>11.79</td>
</tr>
</tbody>
</table>

NOTES:
1 All 4" white and yellow linear pavement markings have been priced using waterborne paint. The use of hot thermoplastic pavement markings will increase the longevity of the pavement markings and decrease maintenance requirements, but the cost of hot thermoplastic markings is significantly higher (approx 10X the paint cost).
2 All pavement symbols (Shadows and Bike Route) in high traffic areas have been priced using hot thermoplastic pavement markings to maximize longevity.
3 Additional concrete sidewalk repairs and sidewalk extensions would add to subtotal costs. Concrete sidewalk costs can range between $8-$10/SF for materials and labor.
4 West Carson Street (SR51) separated and protected ped-bike track ranges in cost based on options listed in route description.
CONCLUSIONS

In conclusion, the Three Rivers Heritage Trail Connector is feasible in the communities between McKees Rocks and Coraopolis. The recommended projects for pedestrians and bicycling routes will provide improved access for all citizens, and promote safety and wayfinding for trail users. These improvements will lead to an increase in cycling activity and create a focus on the promotion of pedestrian and bicycle connections, pedestrian oriented developments and walkable communities.

In addition to implementing the proposed projects, and to help move this project forward, we recommend each community plans, promotes, and implements the following:

- Complete Streets Policy
- Traffic Calming Measures in business districts and residential roads
- Trail Town Master Plan
- Bicycle Friendly Community Status

We recommend each town council adopt a Complete Streets Policy directing new and reconstructed roadway projects to be designed for safe and accessible travel for pedestrians, bicycles and automobiles, www.completestreets.org.

In general, all communities in this corridor should consider new and reconstructed roadway projects as an opportunity to improve the transportation system for all modes: people who walk, people who bicycle and people who drive a car—many times the same person does all three in the community in which they live.

General Roadway Improvements for
Local, State and County Road Resurfacing & Reconstruction Projects

Please consider the following when repairing, repaving or reconstructing roadways along the Three Rivers Heritage Trail Connector Route (the following will provide for improved walking and cycling access):

1. When resurfacing roadways or reconstructing roadways- repave the surface from the outside edge of the shoulder to the outside edge of the opposite shoulder (Resurface ‘out-to out’). This will provide a consistent cross slope for the roadway and the shoulder; and provide an accessible bicycling & walking lane.

2. Restripe roadways to 11’ lanes. Implementing a ‘road diet’ along the cycling/walking route will help to cull speeds to the posted limits (25 or 35 mph) and provide for wider shoulders for pedestrians and cyclists.

3. Sign the route and mark the pavement as a bike route- as described in the report.

4. Repair existing sidewalks.

5. Extend sidewalks to connect from intersections, along at least one side of the road, to community facilities.

6. Upgrade intersection sidewalks, curb ramps, and crossings to meet current ADA standards for accessible routes.
Furthermore, traffic calming measures are recommended to help manage automobile speeds to the posted limits. Most of the route corridor is posted at 25 mph and only West Carson Street is posted above, at 35 mph. We recommend traffic calming measures be implemented at business districts and residential roadways:

1. Pedestrian bump-outs at some crossings – decreases walking distance across roadway and protects parallel parked cars
2. Pedestrian safety islands – offers people who walk a refuge at multiple lane crossings
3. Highly visible pedestrian crossings and intersections
4. Road Diets – delineate the travel lanes at 11’ wide; mark the road edge and center line; increase shoulder widths for cycling
5. Install pavement markings at parallel parking spaces – helps to delineate the road edge
6. Traffic speed tables at pedestrian crossings (must consider snow removal and drainage)

Images show a raised pedestrian crossing, bump-outs at crossing & delineated bike lane through intersection

The communities located along this connector route have an opportunity to become successful trail towns by implementing cycling and walking projects, educating motorist and trail users about the laws of the road and bicycling safety, educating businesses to provide ‘what trail users want’, and promoting rides and walking events. Each community should investigate becoming a trail town (Mackin, www.mackinengineering.com) and becoming a bicycle friendly community through the League of American Bicyclists, www.bikeleague.org.

“Trail Towns also add value and benefit to the entire City: Trail Towns are places with a high quality of life, where people want to live, work, and visit. Community redevelopment is focused on street corridors and community spaces: outdoor eateries, sidewalk cafes, town centers, and gardens spaces. Trail town projects add value and improve the safety, and the aesthetic to the streets.” Mackin-McCollom Trail Town Master Plan Reports

Most important to the success of this project are improvements to the West Carson Street route (between the Station Square driveway and Stanhope Street in McKees Rocks). Completion of a successful route between Pittsburgh and its west end neighborhoods will require a separated and protected pedestrian & cycle track for most people to safely and comfortably use the system. This project is critical to Pittsburgh’s future as the ‘keystone’ for cycling between our nations capital and our western states.
Planning must continue to fund and construct a protected and separated ped-bike track between the City of Pittsburgh and McKees Rocks. This work will require significant funding to recreate the roadway template or for acquisition and reconstruction of future abandoned/railroad property, including structures to reach those properties.

**Future plans to continue efforts to add a cycle/walking track along SR 51 or to acquire land are critical to the success of this important cycling and walking connector route.**

To truly increase the safety and the level of service for most users a protected and separated bicycle and walking track is required along West Carson Street (State Route 51) from Pittsburgh to McKees Rocks.

We recommend this project first be implemented in the communities of McKees Rocks, Stowe, Neville and Coraopolis, followed by continued campaigning and planning for a separated and protected cycling & walking track along West Carson Street.

Short Term Infrastructure Recommendations:

1. Sidewalk repairs, pedestrian crossing improvements, road diet, and installation of bicycle lanes/shared lane markings in McKees Rocks, the ‘Margins’ and Stowe Township
2. Sidewalk repairs, road diet, and installation of bicycle lanes/shared lane markings along Island Avenue in Stowe toward the Fleming Park Bridge; and along Neville Road and Grand Ave. on Neville Island.
3. Sidewalk repairs, pedestrian crossing improvements, road diet, and bicycle lanes/bicycle shared lane markings along SR 51 (Fourth and Fifth Streets) in Coraopolis

Long Term Infrastructure Recommendation:

1. Separated and protected cycle and walking track along State Route 51, West Carson Street, from Station Square in Pittsburgh to McKees Rocks

A connected, and safe walking and cycling route will increase opportunities for all citizens regardless of physical ability, cycling experience, age, or income; this is truly low cost infrastructure, and a sustainable transportation project that the people of Pittsburgh can and will use.

A separated cycle track throughout the entire alignment would best suit all cyclists, but the space required makes this plan not feasible. Therefore, to construct the on-road bicycle system, we recommend that **buffered bike lanes** first be tried. Buffered bike lanes will provide a higher level of service for most on-road cyclists. They include a designated and separated lane for cyclists and create a division between motorist and users. A buffered bike lane will require between 6’ (4’ lane w/o curb, 2’ buffer) and 8’ (5’ lane w/curb, 3’ buffer) for a single lane direction of cycling traffic. A road diet and shoulder widening may be needed to gain the required space.

The second choice is a **bike lane without the buffer**; this will require between 4’ and 6’ of width.

The third choice is to improve the road shoulder and mark the road as a ‘route’. This will allow cyclist to share the road and have a shoulder space to move into during heavy traffic. A wide shoulder will provide separation for cyclist choosing to use the shoulder. Use of shoulders will require continued maintenance to keep them clear of debris and cinders. The sharrows system (**Shared Lane Marking – SLM**) is the third choice alternative if no shoulder exists. This will provide experienced cyclists wayfinding and alert motorists of bicycle users in the roadway.
All recommended improvements are to comply with the American Association of State Highway and Transportation Officials (AASHTO), the Manual of Uniform Traffic Control Devices (MUTCD), and the Americans with Disabilities Act (ADA) regulations.

The Next Steps:

- Promote and host bicycling events in your town
  
  Dove-tail cycling tours with existing events (festivals, carnivals & fundraisers)
  
  Coordinate with Bike Pittsburgh, SPC, the Ohio River Trail Council, the Montour Trail, Friends of the Riverfront, and local cycling enthusiasts to help lead, promote cycling and walking, and educate the public about motor safety and cycling operations.

- Begin fund raising and implementation of the walking and cycling projects

- Appoint responsible trail associations, ‘Friends of...’ organizations, and municipal public work departments to implement and maintain designated routes

- Plan, permit and construct bike routes, lanes, and SLM’s along the designated route. Coordinate with roadway owners (local, county and state) for implementation and maintenance

The Mackin Team would like to thank all of the volunteers, agencies and public officials who provided ideas, guidance and leadership to this feasibility study.

We would welcome future opportunities to work with all of the local municipalities in the implementation of the walking and cycling projects. We look forward to the successful construction of the Three Rivers Heritage Trail Connector and all it has to offer the surrounding communities and the City of Pittsburgh.

Sincerely,
Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
Phone: 412.788.0472
rwg@mackinengineering.com
Potential Project Partners and Funding Partners

The following is a list of potential funding partners, resources and grant opportunities available:

» US Department of Transportation, Moving Ahead for Progress in the 21st Century Act (MAP-21), [map21@dot.gov](mailto:map21@dot.gov), Transportation Alternative Program (TAP)


» PCTI- Pennsylvania Community Transportation Initiative (PennDOT) [smart-transportation.com](http://smart-transportation.com)


» Department of Conservation and Natural Resources (DCNR) Community Conservation and Partnership Programs (C2P2) - [http://www.dcnr.state.pa.us/brc/grants/indexgrantsinstruct.aspx](http://www.dcnr.state.pa.us/brc/grants/indexgrantsinstruct.aspx)

» Pennsylvania Downtown Center - [http://www.padowntown.org/](http://www.padowntown.org/)


» The Sprout Fund – [http://www.sproutfund.org](http://www.sproutfund.org)

Other Potential Funding Sources

» Grants (government funding programs, corporate grants, and private foundations)

» In-Kind Services/Donations

» Corporate Giving

» Fundraising Programs and Private Donations

Grants - There are a number of public and private grant sources, including foundations that provide funding for trails. However, it is important to note that most trails are constructed as a result of local efforts and it will take a strong commitment to raise money to provide the matching funds often required.

In-Kind Services/Donations - Many grant sources will accept in-kind services as a replacement for cash matches. The project sponsor, municipal department of public works, and the local trail association may have resources at their disposal that can be turned into in-kind services. Examples of in-kind services/donations for a trail project include:

» Building materials

» Equipment use/rental/purchase

» Professional expertise

» Meals for volunteers

Corporate Giving - The National Trails Training Partnership ([http://www.americantrails.org/resources/funding/Funding.html](http://www.americantrails.org/resources/funding/Funding.html)) provides useful information regarding asking corporations to donate money for trail projects.

“Treat them exactly the same way you would a private donor or a foundation. Do not overlook the biggest and the smallest businesses in your community. Corporate citizens like to be a visible, viable part of where they do business. Really, really keep an open mind when approaching businesses. All types of ‘givers’ generally receive MANY more requests than they can fund. Being turned down does not mean the ‘ask’ wasn't worthwhile— only that there were too many projects for them all to be funded.”
Technical Sources

Technical Sources for Safety and Regulatory Compliance

» AASHTO, American Association of State Highway and Transportation Officials, Guide for the Development of Bicycle Facilities

» NACTO, National Association of City Transportation Officials, (http://nacto.org/cities-for-cycling/design-guide)

» FHA, Federal Highway Administration

» PennDOT, Pennsylvania Department of Transportation

» ITE- Institute of Transportation Engineers

» ADAAG- United States Access Board, for the revised ADA Accessibility Guidelines

» US Department of Transportation


» All signs and markings are to comply with MUTCD standards, PennDOT Publication 236, Publication 111, and any applicable PennDOT Publications

Bicycle Sources - Planning, Design and Promotions

» Advocacy Advance (passionate advocates for bicycling and walking): www.advocacyadvance.org

» Southwest Planning Commission (SPC) Bicycle Maps


» Bikes Belong.org and People for Bikes.org

» Bike Commuting 101, Bike Pittsburgh web page at www.bikepgh.org;
   Bike Pittsburgh - 188, 43rd Street, Suite 1, Pittsburgh, PA 15201

» Bike Pittsburgh- ‘animated’ on street bike infrastructure system

» Adventure Cycling Association: www.adventurecycling.org

» Pro Walk, Pro Bike: www.bikewalk.org

» America Walks: www.americawalk.org


» Active Transportation Alliance: www.activetrans.org

» Association of Pedestrian and Bicycle Professionals: www.apbp.org

» National Complete Streets Coalition: www.completestreets.org

» Bicycle Parking Guidelines: www.apbp.org

» Bicycling (how to, rules, safety programs) at PA Commutes: www.pacommutestes.com

» Smart Growth America, Complete Streets (http://www.completestreets.org).

Grant Writing Ideas
Keep the following things in mind when preparing grant applications to obtain funding for improvement projects:

» Multi-municipal plans are favored.
» DCNR favors connecting regional bicycle trail systems and favors projects along regional trail systems.
» Volunteer and in-kind services should be utilized as matching funds when applying for State grant funding.
» Green infrastructure and sustainable design projects are preferred.
Proposed Alignment, Pittsburgh to Coraopolis (1-4)
Trail Connector Route Maps (Part-1 and Part-2)
McKees Rocks to Stowe Township Section
Neville Island to Coraopolis Section
Figures

Figures 1 - 16, Enhancement Renderings
F .17, Description of Rejected Connector Routes
Three Rivers Heritage Trail
Pittsburgh to Coraopolis Feasibility Study

FIGURE 1

RT. 51 - SEPARATED TRAIL UNDER THE WEST END BRIDGE CITY OF PITTSBURGH

EXISTING CONDITIONS

RELOCATED STAIRWAY
NEW CONCRETE BARRIER

EXISTING WIDTH - 21'/-

DEDICATED SIDEWALK FOR PEDESTRIAN CIRCULATION

12' WIDE (2 LANES) SEPARATED TRAIL

14' WIDE LANE

DEDICATED SIDEWALK FOR PEDESTRIAN CIRCULATION

EXISTING CONDITIONS

EXISTING WIDTH - 21'/-

DEDICATED SIDEWALK FOR PEDESTRIAN CIRCULATION

12' WIDE (2 LANES) SEPARATED TRAIL

14' WIDE LANE

DEDICATED SIDEWALK FOR PEDESTRIAN CIRCULATION

EXISTING CONDITIONS

EXISTING WIDTH - 21'/-

DEDICATED SIDEWALK FOR PEDESTRIAN CIRCULATION

12' WIDE (2 LANES) SEPARATED TRAIL

14' WIDE LANE
FIGURE 2

THREE RIVERS HERITAGE RAIL ENHANCEMENT RENDERINGS

ROUTE 51 - ALTERNATIVE AT 1600 GATEWAY VIEW PLAZA

CITY OF PITTSBURGH

FIGURE 2

Pittsburgh to Coraopolis Feasibility Study

Mackin Engineering Company
RIDC Park West
117 Industry Drive
Pittsburgh, PA 15275-1015
info@mackinengineering.com

Friends of the Riverfront, Inc.
33 Terminal Way
Suite 333B
Pittsburgh, PA 15219
friends@friendsoftheriverfront.org

OHIO RIVER
SR837 (CARSON ST.)
CSX RAILROAD
CONTEXT VIEW
MOUNT WASHINGTON
WEST END CIRCLE
DUQ. INCLINE

TRAIL BEHIND BUILDING
- ACTIVE BK LANE/STEP IN REAR
- BK LANE TO PITTSBURGH EAST
- EXTREMELY LIMITED SPACE

TRAIL ALONG RIVER BANK
- LIMITED SPACE/STEP BANKS
- BARRED TRAFFIC/TOOKING
- CROSS RIVER TRAVEL TIMES; INCLINE NEAR IN ENDF DE GATED

ELEVATED TRAIL, GATED ACCESS TO ELDRED
EXISTING SIGNS RELOCATED ABOVE TRAIL
BACK TO GRADE AT WESTERN END OF LOT
CAR PORT STRUCTURE ALONG ENTIRE LENGTH OF LOT (MINIMAL PARKING LOT)
PHASED LINE INDICATES EXISTING PARKING LOT BOUNDARY
PHASED CONCRETE DECK ABOVE GATEWAY VIEW PLAZA
ELEVATED DECK "AT" GATEWAY VIEW PLAZA
PHASED OUT AT ENTRANCE/EXIT (COMMON)

CONCEPTS

CONTENT VIEW
**PREFERRED ALTERNATIVE**

A 2-way protected bike lane at 12’ wide, including a 5’ sidewalk - road diet from 14’ outside lanes to 12’ outside lanes

**OPTION**

A 1-way protected bike lane at 6’ wide, including a 5’ sidewalk - no road diet, but install the lane pavement markings (sharrows) and share the road signs along the westbound (downhill) lane

---

*Typical sections were taken from the Commonwealth of Pennsylvania, Department of Transportation, Drawings for Construction of State Route 003, Section A63 in Allegheny County; Prepared by Johnson, Mirrirm & Thompson (Plans labeled not for construction).*
FIGURE 4

Three Rivers Heritage Trail
Pittsburgh to Coraopolis
Feasibility Study

Rejected Route - Direct Route Along
SR51 & Local Loop at the Bottoms

McKees Rocks Borough

Legend

- Direct Route: East to McKees Rocks & Pittsburgh, West to Neville Island & Coraopolis
- Local Loop
- Alternate Route
- Destination/Wayfinding Sign Location

Map showing different routes and locations.
THREE RIVERS HERITAGE TRAIL
Pittsburgh to Coraopolis
Feasibility Study

ROUTE - AT 'THE BOTTOMS'
McKees Rocks Borough

FIGURE 5

TO NEVILLE ISLAND & CORAOPOLIS
TO INDIAN MOUND & RANGERS FIELD
TO PITTSBURGH

LEGEND

PREFERRED ROUTE
EAST TO MCKEES ROCKS & PITTSBURGH
WEST TO NEVILLE ISLAND & CORAOPOLIS

LOCAL LOOP ROUTE

DESTINATION/WAYFINDING
SIGN LOCATION

McKees Rocks Bridge
TO NEVILLE ISLAND & CORAOPOLIS
TO INDIAN MOUND
& RANGERS FIELD
THREE RIVERS HERITAGE TRAIL

FIGURE 6

Pittsburgh to Coraopolis Feasibility Study

EXISTING CONDITIONS

EXISTING CARTWAY - 30'

Bike Lane and Pavement Marking at Eastbound Lane

Sharrow at Westbound Lane

EnHANCEMENT RENDERINGS

Local Loop Route - Shoppes at Chartiers Crossing

McKees Rocks Borough
THREE RIVERS HERITAGE TRAIL
Pittsburgh to Coraopolis Feasibility Study
McKees Rocks Borough

PARCEL REDEVELOPMENT CONCEPT AT CHARTIERS AVE.

FIGURE 7

ACCESS DRIVE & PARKING (30 SPACES)

5,000 GSF BLDG. (2-STORY)

OUTDOOR PATIO AND RIVER OVERLOOK

BIKE ROUTE

CHARTIERS CREEK

CANOE/KAYAK RACK AT PARKING LOT; ADJACENT TO RAMP

RAMPS/LANDINGS TO CREEK

OUTDOOR PATIO AND RIVER OVERLOOK

5,000 GSF BLDG. (2-STORY)

ACCESS DRIVE & PARKING (30 SPACES)
Fig 8 - Pittsburgh to Coraopolis Feasibility Study

Three Rivers Heritage Trail

**REJECTED ROUTE - ISLAND AVENUE AT BOUQUET STREET**

**STOWE TOWNSHIP**

**EXISTING CONDITIONS**

**EXISTING ROAD WIDTH - 36’**

**BIKE LANE SIGN**

‘ROAD DIET’ & BIKE LANE CONDITION:
- TWO CARTWAYS & 2-5’ BIKE LANES/PAVEMENT MARKINGS, EACH SIDE ROADWAY

ENHANCEMENT RENDERINGS
EXISTING CONDITIONS

BIKE ROUTE & “SHARE THE ROAD” SIGNS

EXISTING ROAD WIDTH - 36'

'SHARROWS': BOTH SIDES ROADWAY

EXISTING CONDITIONS

ENHANCEMENT RENDERINGS

REJECTED ROUTE - ISLAND AVE.

EAST OF MCKEES ROCKS BRIDGE

STOWE TOWNSHIP

FIGURE 9

THREE RIVERS HERITAGE TRAIL

Pittsburgh to Coraopolis Feasibility Study

Mackin Engineering Company
RIDC Park West
117 Industry Drive
Pittsburgh, PA 15275-1015
info@mackinengineering.com
FIGURE 10

Pittsburgh to Coraopolis Feasibility Study

ROUTE - AT THE MCKEES ROCKS BRIDGE
STOW TOWNSHIP

ENHANCEMENT RENDERINGS

LEGEND

PREFERRED ROUTE
EAST TO MCKEES ROCKS & PITTSBURGH
WEST TO NEVILLE ISLAND & CORAOPOLIS

DESTINATION/WAYFINDING
SIGN LOCATION

SIGN AT ISLAND AVE. AND MARGARET ST.
"TO NEVILLE ISLAND & CORAOPOLIS"
"TO MCKEES ROCKS & PITTSBURGH"
Figure 11

**Pittsburgh to Coraopolis Feasibility Study**

**Three Rivers Heritage Trail**

**Enhancement Renderings**

**Reject Route - Island Avenue, West of Tunnel Way**

**Stowe Township**

- **Existing Conditions**
  - Bike Route & "Share the Road" Signs
  - Install No Parking Signs
  - 'Sharrows'; Both Sides Roadway

**Figure 11**

*Three Rivers Heritage Trail*

Pittsburgh to Coraopolis Feasibility Study

**Reject Route - Island Avenue, West of Tunnel Way**

**Stowe Township**

- **Existing Conditions**
  - Bike Route & "Share the Road" Signs
  - Install No Parking Signs
  - 'Sharrows'; Both Sides Roadway

**Figure 11**
**EXISTING CONDITIONS**

**SHIFT PAVEMENT MARKINGS SOUTH.**

**MAINTAIN ON- STREET PARKING AT RESIDENCE:**

**ADD SHARED LANE MARKING WESTBOUND & 5' BICYCLE LANE EASTBOUND**

**BIKE LANE & NO PARKING SIGN**

**ISLAND AVE. - EAST OF FLEMING BRIDGE**

**STOWE TOWNSHIP**

**FIGURE 12**

**THREE RIVERS HERITAGE TRAIL**

**Pittsburgh to Coraopolis Feasibility Study**
**FIGURE 13**

Pittsburgh to Coraopolis Feasibility Study

**THREE RIVERS HERITAGE TRAIL**

**NEVILLE ROAD**

**NEVILLE ISLAND**

- **EXISTING CONDITIONS**
- **BIKE LANE & NO PARKING SIGNS**
- **PEDESTRIAN ROUTE SYMBOL W/ DIRECTIONAL ARROW**
- **CONVERT EXISTING PAVED SHOULDERS TO BIKE LANES, INSTALL PAVEMENT MARKINGS (TYP.) BOTH SIDES OF ROADWAY**
EXISTING CONDITIONS

FIGURE 14

Bike Route & “Share the Road” Signs

Shoulder used for on-street parking; bike lane would not be feasible

Sharrows: install in right travel lane

Three Rivers Heritage Trail
Pittsburgh to Coraopolis Feasibility Study

Enhancement Renderings

Grand Ave. West of I-79 Interchange

Neville Island
Bike route & “Share the Road” signs

Existing conditions

Sharrows: Install clear of car doors.
Delineate edge of road parking spaces at 7’ x 22’
Three Rivers Heritage Trail
Pittsburgh to Coraopolis Feasibility Study

Figure 16

Connections to the Montour Trail

Montour Junction Sports Complex Property

Intersection Improvements at Neville Island Bridge and 4th Ave. Crosswalks & ADA Improvements

Construct new ramp & embankment along at existing retaining wall: 10’-12’ width trail, 2-way travel

Extend trail beneath Neville Island Bridge to Montour St.; 10’ width trail, 2-way travel

Enforcement renderings
Coraopolis Borough

Image file courtesy, Google Maps 2012
Description of Rejected Connector Routes

Rejected Route: McKees Rocks Alignment

The alternative route using Stanhope Street was rejected. This option explored implementation of a road diet of the 54’ wide Stanhope Street roadway (SR51) and installation of 5’ wide bike lane on each side of the road. Modifications would include decreasing lane widths from 12.5’ to 11’ each and removing the 4’ center median. The bike lane condition would change to a ‘share the road condition’ once reaching the traffic signal at the intersection of Linden Avenue & Furnace Street and entering the downtown business district (parking would be maintained along the walks).

Pedestrian improvements include traffic signal upgrades at intersections, a sidewalk extension to the bus stop on Stanhope and marking pedestrian crossings at Chartiers Avenue, to delineate pedestrian crossings at the Shoppes at Chartiers Crossing.

A curb ramp is recommended at the sidewalk of the west bound lane of Chartiers (at Locust) to allow cyclist access onto the sidewalk behind the protection barrier and through the Chartiers-Island Avenue intersection. The walk would be signed to ‘dismount and walk bicycles’. The sidewalk option will offer cyclist a chance to traverse the narrow intersection and stay clear of truck turning movements as they pass under the narrow railroad structure. A second curb ramp would be installed west, and clear, of the intersection to re-enter the bike lane condition along Island Avenue.

Cyclists heading east, through the same intersection, would exit a bike lane condition at Island Avenue and enter a ‘shared road’ condition- and take the travel lane- to Furnace Street. The travel lane is recommended to be marked with ‘sharrows’.

The one way, 40+ foot wide road of Furnace Street is recommended for a road diet and an eastbound bike lane installed directing travelers back to the intersection of Furnace, Linden, and Chartiers Crossing Shoppes. Once reaching the Furnace / Linden intersection, the bike lane would offer a through lane to the Chartiers Crossing Shoppes and continue right as a bike lane toward Stanhope, West Carson and Pittsburgh.

Rejected Route: Island Avenue (SR51) Stowe Township; Chartiers/Island Ave. Intersection to McKees Rocks Bridge

Segment Length 3,157 LF (0.60 miles); Posted Speed Limit= 25 MPH; 16,000 ADT.

Island Avenue is a 36’ wide road with a single travel lane in each direction and sidewalks on each side of the road. Parallel parking exists along each side of the road near the residential and business district just east of the McKees Rocks Bridge intersection.

Recommendations

The direct route recommendation extends along Island Avenue (SR51) toward the McKees Rocks Bridge and then west to the Fleming Park Bridge and Neville Island (a total distance of 2 miles).

Improvements are recommended as a bike lane condition between the signalized Chartiers / Island Ave intersection and railroad overpass westbound to Bradley Street and eastbound to John Street. Bike lane installation on the roadway includes a ‘road diet’ with the addition of 5’ bike lanes, pavement markings and signs on each side. Refer to Figures 8, Rejected Route- Island Avenue at Bouquet Street (McKees Rocks).

Extending west, the road includes a parallel parking condition. Parking is to remain to support the adjacent residential and business use and a ‘shared the road’ condition is the direct improvement. Refer to Figures 9, Rejected Route- Island Ave. East of McKees Rocks Bridge (Stowe Twp).
Island Avenue includes multiple bus stop locations. Each could provide alternate access to transportation. Refer to Figure 4, Rejected Route- Direct Along SR51, Local at Bottoms.

Notice that an alternate route proposes to guide bicycle traffic under the McKees Rocks Bridge intersection. The alternate route would extend from Island Avenue, down Churchill Street to Harriet Street and through the existing underpass at the McKees Rocks Bridge. We examined both Bradley and Cutler Streets; Bradley didn’t connect and Cutler was too narrow with limited sight distance, poor pavement surfacing, and too steep.

The alternate route allows users to follow local roads and alleys and re-enter the direct route at Margaret Street outside of the 20,000 ADT McKees Rocks Bridge, Tunnel Way and McCoy Street intersections. Conversely the alternate route would offer the same for eastbound cyclists. The alternate route is approximately 3,200 LF, or 0.61 miles.

Rejected Route: McKees Rocks Bridge (SR51) to Tunnel Way in Stowe Township

Segment Length 1,777 LF (0.34 miles); Posted Speed Limit= 25 MPH; 20,000 ADT.

Recommendations

The direct route recommendation would traverse the intersection of the bridge and allows users to enter the bridge and access the north side of the Ohio River. Note that this segment is a much higher ADT and is rated below average for cycling by SPC.

The direct route is meant to offer experienced cyclists the most direct route; and the above described proposed alternate route is recommended for less seasoned cyclists and for locals to avoid this intersection.

A proposed bike lane is recommended through the intersection for westbound and eastbound travelers. This may provide traffic calming- by decreasing the travel lane width and provide for a visible route for cyclists.

As Island Avenue (SR51) extends west, the roadway is 36’ wide with 8’ sidewalks. The roadway segment reaches toward McCoy Road and Tunnel Way. After Tunnel Way the ADT drops to 8,900.

Improvements to the roadway, between the McKees Rocks Bridge and Tunnel Way, include a ‘sharrow’ pavement marking in the travel lane for both westbound and eastbound cycling.

Rejected Route: Island Avenue (SR51) Stowe Township, Tunnel Way to Fleming Park Bridge

Segment Length 5,730 LF (1.09 miles); Posted Speed Limit= 25 MPH; 11,000 ADT.

The section of SR51 between Tunnel Way and Duke Street is curbed and includes sidewalks and parallel parking spaces being used sporadically in segments along the north and south road shoulders. Refer to Figures 11, Rejected Route- Island Ave. West of Tunnel Way, (Stowe Twp).
Summary of Key Person Interviews, Questions and List of Contacts

- Copy of ORT Maintenance Statement
- Copy of MTC Security and Operations Statement
Ohio River Trail - Pittsburgh to Coraopolis
Key Interview List
Selected by Steering Committee - 20 total

1. City of Pittsburgh  Pat Hassett
2. Coraopolis        Dick Wolf (Bike Shop Owner)
3. Kennedy Township  Anthony Mollica
4. McKees Rocks      Jack Murh/Tricia Levander
5. McKees Rocks Comm Dev. Corp  Taris Vrcek
6. Trinity Development  Craig Rippole
7. Neville Island    Rick Rutter
8. Neville Island- Neville Green  Dorothy Antonelli
9. PennDOT           Todd Kravitz
10. Robinson Township  Samuel Abatta
11. Stowe Township   Marie Incorvati
12. Twp of Robinson- Montour Trail Security  Jesse Forquer
13. West End of Pittsburgh Community (W.E. Village) Theresa Kail-Smith
14. Buncher Company  Brian Goetz, VP
15. McKees Rocks Industrial  Jim Lind
17. West Carson Business Owner  Chuck Schneider
18. Montour Industry Supply (Coraopolis)  Matt Ondrasik
19. Stowe Block Watch  Brian Collosimo
20. Bicycle Commuter  Bill Edmonds
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<td>26. RMU</td>
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<td>27. JMT</td>
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<td>28. AGF property owner, McKees Rocks Bottoms</td>
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<td>29. Cyclist interview on Fourth St. Coraopolis</td>
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<td>30. Resident Council Hays Manor</td>
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<td>31. Bike Pittsburgh</td>
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Ohio River Trail Feasibility Study
Municipalities Interview Questions
(Phone Interviews)
Written- June 4, 2012

1) What is your level of knowledge about the Project?
   a) Have you received and reviewed the alignment maps? *(We intend to send them to them for their review prior to calling)*

2) This is a Feasibility Study for a ped-bike system from Station Square to Coraopolis
   a) This is a 6-9 month project (May 2012-Jan 2013)
   b) Our efforts are to review the alignment options for safety, security, mobility and functional use.
   c) We will be having a follow-up field meeting in 2-3 weeks- are you interested in attending? If so, please provide your contact information via email (email to the callers email).

3) Do you have any questions about the document received or the study itself?
   a) …Any revisions to the alignment?
   b) …Do you have any issues with Safety and Security?
   c) …Land Ownership issues?
   d) …Other Alignments Opportunities to Connect the Community?

4) What is the *(your organization’s) (municipality’s)* level of support for an improved pedestrian and bicycle way through the community?

5) Do you know of or have past documents that would be helpful to this project?
   a) Comprehensive plan
   b) Greenway plan
   c) Ped-bike improvement plan or ADA upgrades to sidewalks
      i) Can you bring them to field meeting in 2-3 weeks?

6) Does the municipality (or private owner) own land near or adjacent to the alignments or as a potential connection to the waterways?

7) *(MAY SKIP IF N/A)*- Does your organization (municipality) have any upcoming Capital Improvement Projects in the Alignment?
   a) Utility relocation/repairs- Authority Contact?
   b) Roadway widening, road repairs
   c) Sidewalk replacement, repairs
   d) Signal and crossing updates; ADA compliance updates
      i) Could any of your current capital projects, in the alignment, include:
         (1) widening for a paved shoulder
(2) a “road diet” (restriping of the existing road to allow for a 4’ wide bike lane on each side)

8) (MUNICIPAL Q)- Who owns the sidewalks along the alignment?  
   a) Who maintains sidewalks along alignment?

9) (ONLY FOR Railroad Areas)- (City of Pgh, Kennedy, Esplen, McKees R, Stowe) Do you have any contacts with the RR?

10) Do you have available personnel and equipment to support maintenance and operation for improved ped-bike system?  
    a) List kinds of Equipment? (street sweeper, backhoe, line painter?)

11) Are you interested in a possible Bicycle Commission (volunteers appointed by council) to operate and maintain system?

12) …Knowledge of other organizations that may want to get involved?  
    a) Operations  
    b) Maintenance  
    c) Safety-Security  
    d) Grant Writing  
    e) Fundraising  
    f) Events to raise Awareness and Funding Support

13) What phone number and email could we use to stay in touch with you about future meetings, and draft plan reviews?
MTC Security Policy

1.0 Mission Statement:

In 1998 the Montour Trail Council (MTC) recruited and organized a group of civilian patrols to patrol the Montour Trail. The clear mission of the volunteers engaged in the “Trail Monitor Patrol Program” then and now has been to provide help to trail users in case of emergencies. The trail monitors also serve to provide surveillance of the Montour Trail and its parking areas. Another part of the mission of trail monitor patrols is to establish a presence on the trail. The MTC believes that the establishment of this presence by the patrols sends a strong message to anyone looking to cause problems, which is “not in our backyard”.

2.0 Trail Monitor Patrol Program Mission

The most important mission of a trail monitor patrol (trail monitor) is to assist in the event of emergencies. Further, an emergency could be defined as a situation when anyone is experiencing physical distress requiring medical help or protection from harassment. An emergency can also be defined as any situation where an incident is occurring that creates a dangerous condition to the safety of our trail users or the trail monitor. If any emergency arises, trail monitors are to dial 911, give their location, describe the situation and request emergency help.

The MTC in no way is suggesting that trail monitors put themselves at personal risk at any time. Trail monitors are not law enforcement. Their function is to provide another layer of surveillance. If, for example, an altercation of harassment involving physical threats were to occur, a trail monitor is to exit the area to a safe location and then dial 911.

2.1 Trail Monitor Training and Instructions

We strongly encourage all trail monitors to take the American Heart Association or Red Cross Program Course for First Aid/ CPR/ AED and to maintain current certification. However, it is a personal decision whether to perform CPR. For those who chose to perform CPR make sure consent is obtained if possible per the recommendations of the American Heart Association or the American Red Cross Manuals. The procedures in their manuals should be followed in every respect. Particular attention should be given to wearing surgical gloves if any blood is encountered and wearing face shields if resuscitation is to be performed.

2.2 Reporting incidents

After an emergency is dealt with it should then be reported to the Director of Trail Security via email or telephone. The necessary contact information is in Appendix A. Incidents reported will be compiled and incorporated into the Trail Security Report given to the Board of Directors each month.

2.3 Trail Monitor Comportment

A trail monitor will create a presence of the MTC to trail users. Anyone who serves in this group will monitor trail activity during their own regular trail use. A trail monitor will not be expected to patrol on any imposed schedule. The trail monitors will report any emergencies to the local police or ambulance authority (dial 911) and trail deficiencies in a timely manner.
• A trail monitor should conduct themselves in such a way to let trail users know of their presence and that help is there if an emergency might occur.

• A trail monitor should familiarize themselves with and politely remind trail users to obey the trail rules. See Appendix B for official trail rules.

• A trail monitor should attempt to greet, smile and make eye contact with everyone who passes in order to create a relationship between the MTC and trail users.

• Trail monitors should familiarize themselves with the trail map and be prepared to give directions to trail users when asked.

• Trail monitors are ambassadors for the Montour Trail Council and should be polite to trail users at all times.

2.4 Trail Monitor Equipment:
Each trail monitor shall be given a gate key. Patrols are expected to wear bright “Trail Monitor Patrol” tee shirts or vests to identify themselves to trail users.

3.0 Duties of the Director of Trail Security:
The Director of Trail Security reports directly to the Montour Trail Board of Directors, and has duties as follows:

1. Prepare a monthly consolidated security report for the MTC Board of Directors meeting.

2. Provide oversight, supervision, recruiting and training of trail monitors. This duty is shared with the emergency contacts listed in Appendix A.

3. Maintain a database with contact information of all trail monitors in cooperation with the MTC membership chair and Emergency contacts shall provide all contact information for new Patrols to the Director of Security for inclusion in the “Trail Monitor Patrol Data Base”.

4. Work in cooperation with the emergency contacts listed in Appendix A to offer any assistance required on request.

5. Acts as the 911 liaison with both Washington and Allegheny Counties, providing them with whatever information (updated maps, etc.) they need to be able to respond effectively to trail emergencies.
Appendix A: Director of Trail Security & Emergency Contact Information

Jesse J. Forquer
60 Eichelberger Drive
Coraopolis, Pa 15108
Home Phone: 412 859-3737
Cell Phone: 412 897-9256
e-mail: jjforquer@comcast.net

Security contacts are as follows for these municipalities:

Moon, Robinson and Findlay Townships: Jesse Forquer
Cecil and Mt. Pleasant Townships: Dennis Sims
Peters Township: Mark Imgrund or his appointee
Bethel Park Borough: Peter Kohnke or his appointee
South Park Township & City of Clairton: Paul McKeown or his appointee
Appendix B: Official Trail Rules

1. No Motorized Vehicles
2. Keep Right, Except to Pass
3. Warn Before Passing
4. Stay on Trail
5. Trail Open Daily, Dawn to Dusk
6. No Fires or Camping
7. Leash Your Pet
8. No Hunting
Appendix C: Trail Monitor Questionnaire

TRAIL MONITOR QUESTIONNAIRE

NAME AND ADDRESS

PHONE NUMBER(s)

E-MAIL ADDRESS

DO YOU HAVE A CELL PHONE? IF YES, COULD YOU CARRY IT WHEN ON THE TRAIL?

ARE YOU A RUNNER, WALKER OR BIKER?

HOW MANY TIMES A WEEK ARE YOU USUALLY ON THE TRAIL?

BETWEEN WHAT HOURS?

BETWEEN WHAT MILE MARKS ARE YOU NORMALLY ON THE TRAIL?

DO YOU KNOW ANYONE ELSE THAT WOULD BE INTERESTED IN OUR TRAIL MONITOR'S PROGRAM?

Do you have a police record for anything other than traffic Violations?

Would you object if we did a background check on you?

I hereby agree to abide by the MTC Security Policy & return any materials given to me upon request of a representative of the Montour Trail:

_________________________
Signature of Applicant
Ohio River Trail Maintenance Policy

The Ohio River Trail Council (ORTC) shall manage and administer the operation and management of the Ohio River Trail pursuant to this policy in conjunction with each municipality (Participant).

1. **Ownership** – The Participant retains ownership of its portion of the Ohio River Trail within its municipality limits.

2. **Grants** – The ORTC in partnership with all or some of the Participants, will pursue grant funding for the cyclic costs and all capital improvements.

3. **Planning** – The ORTC shall be responsible for all planning related to the operation and management of the trail. The ORTC shall involve the Participants in the planning process.

4. **Directing** – The ORTC shall be responsible for directing the operations of the trail through coordination with the Participants. This includes:
   a. Development and establishment of planned maintenance management system for the Ohio River Trail.
   b. Scheduling and implementation of seasonal trail cleanup programs.
   c. Inspecting the trail at regular intervals and coordinating any maintenance needs with the respective Participant.
   d. Contracting for high tree pruning and herbicide spraying.
   e. Replacement of equipment.
   f. Contracting for any repair that is “capital” in size and scope.
   g. Serving as the single point of contact for the trail and responding to all citizen concerns and requests for information.
   h. Coordinating the development of volunteer training.
   i. Developing and implementing a trail volunteer program.
   j. Responding to requests for assistance from the Participants regarding trail operations.
   k. The ORTC will be responsible for soliciting and entering into contracts for trail resurfacing.

5. **Evaluating** – The ORTC shall be responsible for annually evaluating trail operations in collaboration with the Participants and making recommendations on operational improvements.

6. **Communication** – Each participant shall inform the ORTC about the trail with respect to conditions or incidents that require ORTC response. Identify and report the trail needs of their respective municipality to the ORTC, as well as monitoring the progress of the ORTC in addressing those needs. Each participant shall designate an official contact for the Ohio River Trail for communication with the ORTC and attend ORTC Meetings.

7. **Insurance** – The ORTC shall purchase liability insurance for the Ohio River Trail.
ORT Field View 8.16.12 at 2pm
Visited Coraopolis, Fourth Avenue and Fifth Avenue- Bicycle PA Route-A alignments.

Interviewed cyclist on Fourth Ave, heading west-

Mr. Jim Flook (jflook218@comcast.net)

Jim rides Bicycle PA Route-A from Aliquippa to Pgh and other routes in the river valley, including the Montour Trail. He commented that the Coraopolis ride (4th and 5th Ave) was not bad at all (including traffic speed and volume), but the shoulder condition west of Coraopolis is terrible- he has to ride on the road; on these roads the auto speeds increase.

He wanted to know how the new alignment would connect to Pgh, and was interested in the Neville Route, he currently rides through the hills along BikePA Route-A (between Coraopolis and McKees Rocks).

Jim was interested in the project and receiving information about the outcome.

signed: RWG
Meeting Notes and Comments from RWG:

1. Around 35-40 attended the meeting
2. County Executive Rich Fitzgerald supports the plan and opened the event
3. Congressman Mike Doyle sent Domenick Carroll to attend
4. Local municipalities support the concept
5. Allegheny County, PEC, Friends and Mackin presented
6. Montour Trail has a well established security group that tours the alignment- volunteer members working with Police- contact Jesse Forquer (Robinson Twp Vice Chair- Board of Commissioners)
7. Trinity Commercial Development has plans to building an industrial park in McKees Rocks; along the railroad from the shopping center toward and into the Bottoms- contact Craig Rippole. They own Eat-n-Park, shopping center and portions of future industrial park land. Trinity also has an interest in creating a boat launch(s) area along Chartiers Creek at confluence and/or behind Eat-n-Park.
   a. Mackin to set meeting to review alignment and Trinity plans for development.
8. Neville Island contact- Dorothy Antonelli represents Neville Green (group to beautify roads, and public space on Neville Island). She lives on the island and husband owns a civil engineering firm- Nire Engineering?
   a. Mackin to set meeting to review alignment and ped-bike-traffic data already collected by Neville Green (review parallel parking along roads too).
9. The RED alignment along Neville is owned by many others (alignment along channel side) and is not feasible according to participant at meeting.
10. Next Steps:
    a. Committee Meeting to officially begin the project (Kick-Off Meeting)
       i. Refer to Scope for items in Kick-Off Mtg
    b. Collect Data:
       i. Maps-
          1. County GIS Data
          2. PennDOT
3. Local Municipal Maps
4. SPC- future projects
5. Bike Pgh
6. Friend of the Riverfront
7. Developer’s future projects

c. Quantify and Qualify Alignment Segments with the following:
   i. Road Classification- Speed, ADT, “collectors, locals, etc”
   ii. Road Ownership
   iii. Right of Way and Roadway Dimension
   iv. Sidewalk Dimension/Corridor Dimensions (façade to façade)

d. Meet with locals to review details of proposed alignments
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MEETING MINUTES
Ohio River Trail: Pittsburgh to Coraopolis Feasibility Study
Stakeholder Meeting, June 18, 2012
St. Mary Ukrainian Orthodox Church

- Attendance- REFER TO ATTACHED
- General Description of the Project and the Schedule (Tom Baxter and Hannah Hardy)
- Review Project Status and Brief Members on Current Alignments- “on-road alignments with local loops in community” (Bob Genter)
  - Completed and Current Tasks
    - Field view of alignments, Municipal Meeting with County Executive, Data Collection
    - PRIORITY ALIGNMENT- CONTINUE DISCUSSION WITH DOT FOR WEST END RAILROAD ALIGNMENT- INVESTIGATE OPTIONS FOR USE (ELEVATED BIKEWAY)
  - Next Tasks
    - Interviews (SEND PKG TO INTERVIEWEES PRIOR TO CALL)
    - Property Ownership and Easements Investigation. PROP OWNERS ADDED TO LIST AND OWNERSHIP OF RT 51 STONE WALL TO BE INVESTIGATED (THERESA S.); ALSO P&LE EASEMENT- SPACE BTWN ROW TO BE INVESTIGATED (CRAIG R.).
    - Field Reviews of Alignments with local communities
    - Draft Plan then Final Plan- FINAL DOC TO DESCRIBE EASEMENT FOR USE AND MAINTENANCE
- Confirm and Complete Stakeholder List (THE LIST WAS REVIEWED, EDITED, SUMMARIZED AND COMPLETED- HANNAH TO DISTRIBUTE)
- What are we missing? Who else should be involved? (NO COMMENTS OR ADDITIONS)
• Meeting Dates- Tentative dates for 2 public meetings. TWO DRAFT MEETINGS TO BE SCHEDULED IN LATE JULY OR EARLY AUGUST, AT TWO DIFFERENT LOCATIONS IN CORRIDOR. 1-FINAL MEETING TO BE SCHEDULED LATER- MAY BE CENTRAL TO CORRIDOR.
Name

Robert Sender  Machine Engineering enginesend@enginesend.com
Craigh Rippolec  Trinity Commercial  craig.rippolec@trinitycommercial.com

Mary Incorlati  Stowe Twp  MaryStoweRD@comcast.net

Harriah Hardy  PEC
Tom Toomey  Coraopolis  harriah@pecfa.org
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S.M. Stevenson  CSinh@verizon.net

Thomas Baxter  F.O.R  thomas@friendsoftheriverfront.org
Sam Thomas  F.O.R  sam@swardss.com thomas@gmail.com

Theresa Kail Smith  theresa.kail-smith@pghcity.gov
MEETING MINUTES
Three Rivers Heritage Trail Connector Feasibility Study
(Pittsburgh to Coraopolis)
Re- Committee Steering Meeting; December 11, 2012 at 9 am @ 555 Broadway Avenue, McKees Rocks, PA

Attendance- REFER TO ATTACHED

Presentation of Feasibility Study Findings and Recommendations (PowerPoint presentation by Bob Genter)

Discussion of findings and recommendations – with suggested modifications

1. The Shoppes at Chartiers Crossing – Notes and graphics should be added to the rendering that show improved pedestrian pathways from the parking spaces to the building frontage. Signs alerting pedestrians that they are entering the bike lane may also be warranted. It was noted that The Shoppes at Chartiers Crossing are a part of the McKees Rock’s “Downtown District” and that ped/bike improvements should be implemented.

2. Suggestion was made to incorporate an “OK” painted below the Sharrow to indicate to drivers that it is acceptable for bicyclists to share the roadway with vehicles.

3. Suggestion to include “Zips” in the bike lane striping to warn motorists if they encroach; similar to what the State has incorporated into their center lane striping.

4. A question was asked as to why the stretch of Grand Avenue (from Memorial Park eastbound) was not chosen as the Direct Route. Response was- The heavy industrial use of this roadway, several driveway curb cuts, heavy truck traffic, and multiple railroad crossings made this stretch less feasible than continuing the bicycle lane condition on Neville Road. Saturday traffic vs weekday traffic is different; we can recommend this route be signed as local loop route for weekend use.

5. Discussion of the proposed route along West Carson (SR51) between McKees Rock and the City of Pittsburgh- the newly designed S.R. 51 that has been submitted for final approval by PennDOT (JMT). The design delineates 2- 14’ wide lanes, an east and a west
bound; and a center 10’ turning lane. The City is to mark ‘sharrows’ and install signs after construction.

a. Mackin requested the committee direct what the report will state about the subject Rt 51 design section- accept the design or make recommendations for improvements?

b. Mackin recommends the study show improvements to make the ped-bike facility safer.

i. Options 1- construct a separated/protected two-way cycle track and pedestrian sidewalk on the river-side of S.R. 51. Change traffic lanes from 14’ to 12’ wide each and eliminate the 10’ center lane except at the Bus Way and Corliss Tunnel; to reduce length of impact to current design section.

ii. Options 2- construct a separated/protected 5’ wide bike lane adjacent to sidewalk, westbound direction, and a sharrow condition eastbound. This will require widening of the current design section.

iii. The recommended design between Corliss and McKees Rocks- consider a 5’ bike lane up hill, a sharrow down hill; roadway to be 2-11’ lanes with 10’ center turning lane; all within the same 38’ wide section.

c. The Committee discussed strategies on how to approach the City/PennDOT regarding this segment of S.R. 51.

i. Mackin is to contact the ped/bike coordinator at PennDOT Central Office to discuss the matter and request he comes to PGH for the City meeting.

ii. Tom Baxter to contact the City of Pittsburgh and Allegheny County to contact Local State Representatives. The Strategy is to gain acceptance from local Municipal Leadership with the alignment between McKees Rocks and Coraopolis, and approach the City/PennDOT to discuss improved ped/bike facilities on upcoming roadway project.

6. Sara Walfoort (SPC) discussed her involvement on the Transportation Technical Committee, specifically that the Fleming Bridge will be re-decked in the upcoming year.
7. Sara suggested that this report indicate the importance of incorporating ped/bike facilities into the design and construction to provide safe and accessible accommodations for all users.

8. Sam Thomas is to set the public open house meeting date and secure the location sometime in January.

9. There will be a Public Meeting (open house) to present the feasibility study findings and recommendations in January 2013 at the Father Ryan Arts Center in McKees Rocks; a specific date and time have not been set. Mackin will make a brief formal presentation to the participants at the onset of the meeting, and administer break-out groups to allow individuals to view and discuss the Direct Route, Alternate Route and Local Loop within their specific communities.
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<thead>
<tr>
<th>Name</th>
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Field Meeting Minutes with Municipalities
Three Rivers Heritage Trail (Ohio River) Feasibility Study

Re- Field Review with municipal and local leaders
August 29, 2012; 8 am @ Neville and 9.30 am @ Coraopolis

This field meeting is to review the draft alignment and gather opinions, issues, and concerns for consideration and improvement.

This is an extension of the Three Rivers Heritage Trail- a bicycle system connecting the City of Pittsburgh, west toward Coraopolis and the Montour Trail. The alignment is an on-road system.

Neville Island- the alignment proposes to use the road shoulder along Neville Road and a ‘share the road’ condition, on Grand Ave. Each bridge will be proposed for pedestrian crossing improvements and upgrades.

Coraopolis- the alignment is an enhancement to BicyclePA Route-A, along Fourth and Fifth Avenues, for safety and wayfinding. Also, alternative routes and local loops are proposed throughout the community. State Street is proposed as an alternative route (less traffic) to BicyclePA. And the connection to the Montour Trail is proposed as a split route system (ramp and underpass) to connect to the off-road trail.

Improvements to include:

1. Sign and Pavement Markings-
   a. BIKE ROUTES
   b. BIKE ‘SHARROWS’
   c. BIKE LANES
2. Routing Signs- Distance, Direction, Destinations, (Confirmation of Turns)
3. Pedestrian signal and cross walk upgrades and enhancements
4. MUTCD Safety and Warning Signs- Alert Motorists
5. Alternate Routes- offer users a lower traffic volume route
6. Local Loops- lower traffic volume routes & connections to community facilities.
Example of Sharrow- Share the Road Markings

Example of Bike Lane- 5’ min. width at curb (4’ min. without curb)
Three Rivers Heritage Trail (Ohio River) Feasibility Study

Re- Field Review with municipal and local leaders
September 21, 2012; 11 am @ McKee’s Rocks and 1 pm @ Stowe Township

This field meeting is to review the draft alignment and gather opinions, issues, and concerns for consideration and improvement.

This is an extension of the Three Rivers Heritage Trail; an on-road bicycle system connecting the City of Pittsburgh, west toward Coraopolis and the Montour Trail.

McKees Rocks- The Main Bicycle Route Alignment traverses Route 51 (Stanhope & Chartier’s Avenue) and proposes Local Loop and Alternative Routes as options to cyclists (as lower traffic volume routes and community connections respectively). The Local Loop is along River Road and through the ‘Bottoms’ and the Alternative Route is Locust.

The Main Alignment traverses Route 51 (Island Avenue). Island Ave. is proposed for a “road diet” to accommodate bike lanes on each side. The bikeway becomes a Shared Lane Marking (‘Sharrows’), to maintain parking and travel lane width, as it approaches the McKeeks Rocks Bridge.

Stowe Township- An Alternative Route is proposed under the bridge to clear the high traffic intersection. The Alt. Rt. follows Harriet, Page, to McKee, to Margaret Streets, and back to Island Ave. (Rt 51). A ‘Sharrow’ marking system is used to continue the alignment toward the Fleming Park Bridge.

The proposed bike facility uses both Bike Lanes and Shared Lane Markings.
- Bike Lanes would be used where the roadway is wide enough to accommodate the current auto traffic and allow a 4’-5’ bike lane; typically used where traffic volumes and speeds are higher.
- Shared Lane Markings are proposed at narrow corridor conditions, to maintain parallel parking, and where speeds are 35 MPH or less.
Recommended Improvements:

1. **Sign and Pavement Markings**
   - a. BIKE ROUTES (SIGNED ONLY ALIGNMENTS)
   - b. BIKE ‘SHARROWS’ (SHARED LANE MARKING- ON THE ROAD)
   - c. BIKE LANES (OUTSIDE OF THE TRAVEL LANE)

2. **Routing Signs** - Distance, Direction, Destinations, (Confirmation of Turns)

3. **Pedestrian signal and cross walk upgrades and enhancements**

4. **MUTCD Safety and Warning Signs** - Alert Motorists

5. **Alternate Routes** - offer cyclist a lower traffic volume route

6. **Local Loops** - connections to communities

![Example of 'Sharrow'- Shared Lane Markings](image1)

![Example of Bike Lane- 5’ min. width at curb (4’ min. without curb)](image2)
Additional Letters to Municipalities
April 11, 2013

Mr. Patrick F. Hassett  
Deputy Director  
City of Pittsburgh  
Department of Public Works  
414 Grant Street  
Pittsburgh, Pennsylvania 15219

RE: Three Rivers Heritage Trail Connector  
Draft Report Documents  
Mackin Project No. 4920

Dear Mr. Hassett:

Tom Baxter of Friends of the Riverfront requested that we send you draft copy excerpts from the Three Rivers Heritage Trail Connector Feasibility Study. This is for your review and comment for the connector trail segments within the City. Please find enclosed the Executive Summary, trail segment descriptions, and three (3) renderings.

The report recommends a separated trail system and offers alternatives for lane changes similar to the new design between the West End Bridge and Stanhope Street in McKees Rocks.

A safe trail connection for walkers and cyclists between Pittsburgh and the City’s west end neighborhoods will offer multiple transportation choices to all citizens regardless of age, ability, or socio-economic status; provide for healthier travel choices; and increase access to employment centers and community resources.

Your continued support in making our communities better places to live, work and play is appreciated. Thank you for your assistance.

Sincerely,

MACKIN ENGINEERING COMPANY

Robert W. Genter, RLA, ASLA  
Director- Land Development Services  
rwg@mackinengineering.com

RWG/nal

cc: Mr. Thomas Baxter

Enclosure
September 26, 2012

Taris A. Vrcek, Executive Director
McKees Rocks Community Development Corporation
711 Chartiers Avenue
McKees Rocks, PA 15136

Mr. Vrcek,

Thank you for attending the Three Rivers Heritage Trail Feasibility Study field review last week in McKees Rocks.

The purpose of the feasibility study is to determine the viability for an on-road bicycle system to connect the City of Pittsburgh to Coraopolis and the Montour Trail system. The study proposes improvements for cyclists and pedestrians within each town along the project corridor.

As we discussed, municipalities should consider all new developments, infrastructure projects, and roadway maintenance projects as opportunities to better link community facilities. Capital projects should consider provisions for bike lanes, share the road markings, and sidewalk extensions to re-connect the city street grid.

A walk-able and bike-able community offers multiple transportation choices to all citizens regardless of socio-economic status. This is an opportunity to re-create a complete street system and connect the community by providing transportation choices from homes to places of business, to shops, to community centers, and to recreation sites.

Your continued support in making our communities better places to live, work and play is commendable.

Sincerely,

Bob

Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
117 Industry Drive, RIDC Parkwest
Pgh, PA 15275
rwg@mackinengineering.com
December 17, 2012

Mr. Thomas Baxter  
Friends of the Riverfront  
33 Terminal Way  
Pittsburgh, PA 15219

RE: Three Rivers Heritage Trail Connector  
Fleming Park Bridge Repairs and Upgrades  
Mackin Engineering Company  
Mackin Project No. 4920

Dear Mr. Baxter:

This letter is in response to Sarah Walfoort’s notice that construction work has been scheduled for the Fleming Park Bridge. We recommend the committee draft a letter of support for the needed pedestrian and bicycle improvements on this important structure prior to the County beginning their plans.

Listed below is information to help you craft a letter of request for improvements, for both pedestrian and bicycle facilities:

As you may be aware, the Fleming Park Bridge is a critical link in the Three Rivers Heritage Trail Connector- a pedestrian and bicycle connector trail system linking together seven communities between Pittsburgh and Coraopolis; and directly connecting to the Montour Trail (a 45 mile trail connecting to the 300+ mile Great Allegheny Passage Trail).

**Pedestrian and Bicycle Recommendations for the Fleming Park Bridge**-

The west end of the Fleming Park Bridge requires pedestrian crossing improvements at the Calgon driveway and signalized intersection. Improvements are recommended for both people who walk and people who ride bikes.

Eastbound bicyclists could cross Neville Road at the existing signalized intersection and use the sidewalk; or share the road and traverse the bridge with traffic. Cyclists would be signed to walk if using the bridge sidewalk.

The bridge is recommended to be marked with share the road pavement markings (’sharrows’) and signed- Share the Road, and as a bike route. The bridge lanes are recommended to be re-marked as 11’ wide lanes and with wider shoulders.

Intersection improvements to include:

- ADA upgrades at shoulder and curb ramps
- ADA accessible routes from the sidewalk to road shoulder
Bicycle improvements would include a widened curb ramp to access the bridge sidewalk and signs to ‘dismount and walk bikes’.

**Recommendations for the Neville Road Approach**

The direct route is proposed to be an on-road system extending through Neville Island using Neville Road and Grand Avenue to reach Coraopolis.

Options for pedestrian & bikeway improvements to include:

1. **Sign and mark the existing roadway shoulder as a 5’ bike lane.** The shoulder is recommended to be improved by resurfacing the area to create a smooth lane with 2% cross-slope; walkers would use the remaining shoulder. The lane is to be signed for No Parking.

2. **A ‘road diet’ and the installation of 4’ bike lanes on each side of the road is the second option.** The road lanes would be repainted to 11’ wide each- still providing four lanes of traffic, a median, and road shoulders. The bike lanes would be constructed to overlap 2’ of the road and 2’ on the shoulder; walkers would use the shoulders.

A walk-able and bike-able community offers multiple transportation choices to all citizens regardless of age, ability, or socio-economic status; provides for healthier travel choices (walking and bicycling); and, increases access to employment centers and community resources.

Your continued support in making our communities better places to live, work and play is commendable.

Please contact me, if you have questions or comments.

Sincerely,

**MACKIN ENGINEERING COMPANY**

Robert W. Genter, RLA, ASLA
Director- Land Development Services
rwg@mackinengineering.com
December 18, 2012

Mr. Patrick F. Hassett
Assistant Director, Bureau of Engineering and Construction
City of Pittsburgh
Department of Public Works
414 Grant Street
Pittsburgh, PA 15219

RE: Three Rivers Heritage Trail Connector
Draft Report Documents
Mackin Project No. 4920

Dear Mr. Hassett:

Please find enclosed the draft executive summary, corridor maps, and recommendation graphics for the subject feasibility study. The report is not finished, but we wanted to supply you with some background information and ask for your support of this important project.

The purpose of the feasibility study is to determine the viability for an on-road bicycle system to connect the City of Pittsburgh to Coraopolis and the Montour Trail system (11.25 mile alignment). The study proposes improvements for people who walk and people who bike within each town and along the project corridor.

Completing this project is of particular benefit to those living in Pittsburgh’s west neighborhoods due to transit cut backs and since many here do not have access to a car. A walkable and bike-able community offers multiple transportation choices to all citizens regardless of age, ability, or socio-economic status; provides for healthier travel choices (walking and bicycling); and increases access to employment centers and community resources.

The study recommends improvements to intersection crossings, ADA upgrades, sidewalk extensions to reconnect each town’s street grid, and the addition of bike lanes, bicycle ‘share-the-road’ markings, and a separated bicycle track from the Corliss Tunnel to Station Square.

The completion of a safe route for walkers and bicyclists will provide opportunities for all. Your continued support in making our communities better places to live, work and play is appreciated.

Sincerely,

MACKIN ENGINEERING COMPANY

Robert W. Genter, RLA, ASLA
Director- Land Development Services
rwg@mackinengineering.com

RWG/pak
Enclosure
M:\49xx\4920001\REPORTS\Three Rivers Heritage Trail (Ohio River) Feasibility Study\Appendix\Additional Letters to Municipalities\Hassett Draft.doc
ORT Project Report May 23, 2012

Tom,

Project Activities:
1. As you know, the Mackin Team rode the entire alignment: field notes, photographed, and reviewed alternatives alignments in the field.
2. Attended and presented at municipal meeting with Committee and County Executive - May 2, 2012
3. Received GIS data from the County
4. Received Preston Bridge email report from Dave Wright
5. Received SGA plan files for Coraopolis Alignment
6. Received digital plans from Riverlife. Shows access under RR, pad and ramp to bridge crossing. Most of their work was on North Shore. It looks like they are using the existing barge access underpass to get to the other side of the RR tracks- which is currently posted as No Trespassing- used for barge tie-off and access. Attached is scanned image of what was sent.
7. JMT is sending the Rt 51 plans after their June 7 meeting with the City. It will show pedestrian access routes, walks and crossings; and a share the road sign for bikes on a 14’ wide lane. The new road is to be 14’ lane west, center turning lane to Corliss Tunnel, 14’ lane east. I questioned JMT why not ‘sharrows’ and Lisa Cooper said Bike Pgh didn’t want them; they wanted a 4’ bike lane. DOT said no bike lane.
8. We requested traffic signal permit plans from PennDOT for appropriate intersections- not received yet
9. I met with Kim Perl of AGF in McKees Rocks- Bottoms. They own a 4 ac. parcel and a supply business adjacent to RR and were interested in the project. AGF has two railroad trail engines and a car and is interested in opportunities for their reuse.

Next- we will be meeting with:
- Trinity Commercial Development- McKees Rocks developer
- Neville Green for coordination of alignments on island

Can the committee provide the following?
1. List of Key Stakeholders (20 person max) with contact information
2. Kick Off Meeting Date? (We would like to begin discussion with Key Stakeholders prior to Kick Off)
3. Tentative dates for 3 public meetings
4. We requested SPC GIS data for the pedbike map alignments along SR 51- did not receive any yet (pdf is on web- can not use in GIS mapping system).

Also, we want to have a discussion with Committee (City, RR, SPC,?) about Land Ownership between RR and Ohio River. What are your thoughts for organizing a meeting?
Are you attending PennDOT Rt 51 project meeting on June 7?

Thanks,
Bob

Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
117 Industry Drive
RIDC Park West
Pittsburgh, PA 15275
V-412.788.0472
C-412.496.9210
rwg@mackinengineering.com

---

From: Bob Genter
Sent: Friday, May 04, 2012 11:17 AM
To: Thomas Baxter
Subject: Re: FOR - Ohio

Thank you
Sent on the Sprint® Now Network from my BlackBerry®

---

From: "Thomas Baxter" <thomas@friendsoftheriverfront.org>
Date: Fri, 4 May 2012 10:04:18 -0400
To: 'Bob Genter'<rwg@mackinengineering.com>
Subject: RE: FOR - Ohio

Let me know if you don’t get what you need by Tuesday. I called and they said it shouldn’t be an issue.

Tom

Thomas E. Baxter IV
Executive Director
Friends of the Riverfront, Inc.
33 Terminal Way, Suite 333B
Pittsburgh, PA 15219
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412.488.7716 f
412.559.0806 m
www.friendsoftheriverfront.org
thomas@friendsoftheriverfront.org

Connect with Friends of the Riverfront
Facebook | Twitter | friendsoftheriverfront.org
From: Bob Genter [mailto:rwg@mackinengineering.com]
Sent: Thursday, May 03, 2012 12:18 PM
To: Thomas Baxter
Subject: RE: FOR - Ohio

Yes I will

Can you contact PennDOT (JMT) to get their plans for the bikeway along SR 51? I think this request would be better first coming you- I can follow up once they agree to sending info/maps to Friends of the Riverfront.

We want their improvements plans; and the following data: ADT's, average speed analysis, and crash data if available.

Thank you,
Bob

Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
117 Industry Drive
RIDC Park West
Pittsburgh, PA 15275
V-412.788.0472
C-412.496.9210
rwg@mackinengineering.com

From: Thomas Baxter [mailto:thomas@friendsoftheriverfront.org]
Sent: Thursday, May 03, 2012 12:12 PM
To: Bob Genter
Subject: FOR - Ohio

Bob, just spoke with Lisa Schroeder, Director, of Riverlife. They have done some work around the West End Bridge that may plan into our Ohio Trail Plan. Will you reach out to Ed Patton to discuss. He knows you are contacting him concerning this project. Thanks

Edward Patton
Director of Capital Projects
Riverlife
707 Grant Street, 35th Floor
Pittsburgh, PA 15219
(412) 258-6636
edward@riverlifepgh.org

Tom

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Connect with Friends of the Riverfront
Facebook | Twitter | friendsoftheriverfront.org
Ohio River Trail (ORT) Feasibility Study
Project Report July 10, 2012

ORT Committee:
Listed below are activities that have been completed and Next activities:

1. Mackin Team rode the entire alignment: field notes, photographed, and reviewed alternatives alignments in the field.
2. May 2, 2012- Municipal Meeting with Committee and County Executive
3. June 18, 2012- Committee Steering Meeting Kick-Off
4. Revised alignment maps based on field reviews and interviews to date
5. Received the following data:
   - Traffic signal plans from PennDOT
   - GIS data from the County
   - Preston Bridge email report from Dave Wright
   - SGA plan files for Coraopolis alignment
   - Route 51 PennDOT plans
   - Riverlife plans- the plan show access to subject alignment under existing RR; it looks like they are using the existing barge access underpass to get to the other side (land side) of the RR tracks- underpass is currently posted as No Trespassing and used for barge tie-off and access operation. Current Riverlife Plans will not connect to this alignment.
   - Received CSX easement from Craig Rippole for RR property
6. Issued Key Person list & interview questions to committee for review and comment. Have not received any formal comments on interview questions. Have received finalize list of contact persons- Sam is completing 2-contact phone numbers.

Next:
- Continue phone interviews
- Set field meeting times with communities- (following phone interviews)
- Meet with PennDOT to review West End alignment- Committee to organize the meeting.
- Begin Draft Report

Thank you,
Bob

Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
Ohio River Trail (ORT) Feasibility Study
Project Report August 7, 2012

ORT Committee:
Listed below are activities that have been completed:
1. Continue to complete Key Person phone interviews
   - 11 of the 20 interviews have been completed; some emails have been returned; we will have to follow up with phone calls.
2. Alignment mapping has been updated with details for the ORT main line, local loops, bus stops, ADT, and posted MPH.
   - Alignment maps will indicate type of proposed bicycle facility
     1. BIKE ROUTE
     2. BIKE ‘SHARROW’
     3. BIKE LANE
3. Received the Preston Bridge report from Dave Wright. A Second alternative alignment has been delineated using McKee’s Rocks Bridge to access ‘Bottoms’.
4. An alternative (low volume) route under the McKees Rock Bridge has been delineated to avoid high speed and high volume traffic from Bridge to Tunnel Way.
5. Received Route SR 51 PennDOT plans- SR 51 plans allow for 3-14’ wide lanes from West End Bridge to Corliss Tunnel and continuing from Corliss to McKees Rocks; there are no bike lanes, routes or sharrows marked. We did not receive signing or pavement marking plans.
6. Received Riverlife plans- Current Riverlife Plans will not connect to this alignment.
7. The proposed alignment uses State & Local Road ROW’s. These alignments are all on-street facilities; there are no off-street trails proposed due to the existing conditions of hillside, roads, railroads, private property and river.

Next Activities:
- Complete phone interviews
- Set field meeting times with communities- (following phone interviews)
- Meet with PennDOT to review West End alignment- Committee to organize the meeting.
- Committee to set tentative dates for 2 public meetings
- Begin Draft Report

Thank you,
Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
Three Rivers Heritage Trail (3RHT) Feasibility Study  
Ohio River Section  
Project Report October 19, 2012

ORT Committee:

Listed below are activities that have been completed:

1. Completed Key Person phone interviews

2. Alignment mapping has been updated with details for municipal names, 3RHT main line, alternative routes, local loops, bus stops, ADT, and posted MPH. Alignment maps will indicate an on-road bicycle facility including:
   a. BIKE ROUTES
   b. ‘SHARROWS’- BIKE SHARED LANE MARKINGS (SLM)
   c. BIKE LANES

3. Completed Neville, Coraopolis, Stowe and McKees Rocks field reviews with project sponsor, municipal and neighborhood representatives

4. Draft Report is approx. 75% complete, less committee review & edits

Next Items:

1. Submit Draft for committee review

2. Meet with PennDOT to review West End alignment- Committee to organize the meeting

3. Committee to set tentative dates for public meeting

4. Complete Report

Thank you,  
Robert W. Genter, RLA, ASLA  
Director- Land Development Services  
Mackin Engineering Company
Three Rivers Heritage Trail (3RHT) Feasibility Study
Ohio River Section
Project Report November 6, 2012

ORT Committee:
Listed below are activities that have been completed:

1. Completed the following meetings:
   a. Kick-Off Meeting with 7-Municipalities at Father Ryan Arts Center- May 2, 2012
   b. Stakeholder Meeting at St. Mary Ukrainian Orthodox Church- June 18, 2012
   c. Municipal Field Meetings
      i. August 29, 2012 with Neville and Coraopolis
      ii. September 21, 2012 with McKee’s Rocks and Stowe Township
   d. Direct Steering Committee Meting- Draft Review at Friends of Riverfront Office- November 5, 2012

2. Completed 20-Key Persons phone interviews

3. Alignment mapping has been updated with details for municipal names, 3RHT connector route, alternative routes, local loops, bus stops, ADT, and posted MPH. Alignment maps will indicate an on-road walking & bicycle facility including:
   a. BIKE ROUTES
   b. ‘SHARROWS’- BIKE SHARED LANE MARKINGS (SLM)
   c. BIKE LANES
   D. WALK AND CROSSING IMPROVEMENTS AT KEY INTERSECTIONS

4. Draft Report is approx. 75% complete, less committee review & edits

Next Items:
1. Project Steering Committee Meeting to be held December 3, 2012- Committee to set final arrangements (review recommended routes and draft report findings).

2. Submit Final Draft to committee for review

3. Public Meeting (open house forum)- Committee to finalize arrangements; tentative date in January 2013

4. Mackin to send aerial image maps of West End to Tom; Tom to set meeting with PennDOT to review West End alignment (Steering Committee to organize the meeting)

5. Complete and Submit Final Report

Thank you,
Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
Three Rivers Heritage Trail (3RHT) Feasibility Study
Pittsburgh to Coraopolis
Project Report December 31, 2012

Ohio River Trail (ORT) Committee:
Listed below are activities that have been completed:

1. Completed the following meetings:
   a. May 2, 2012- Kick-Off Meeting with 7-Municipalities at Father Ryan Arts Center
   b. June 18, 2012- Stakeholder Meeting at St. Mary Ukrainian Orthodox Church
   c. Municipal Field Meetings
      i. August 29, 2012 with Neville and Coraopolis
      ii. September 21, 2012 with McKee’s Rocks and Stowe Township
   d. November 5, 2012- Direct Steering Committee Meeting; Draft Review at Friends of
      Riverfront (F.O.R.) Office
   e. December 11, 2012- Project Steering Committee Meeting; Review of Draft Plans at
      McKeesport Borough Office
2. Completed 20-Key Persons phone interviews
3. Alignment mapping has been updated with details for municipal names, 3RHT connector route,
   alternative routes, local loops, bus stops, ADT, and posted MPH. Alignment maps will indicate an
   on-road walking & bicycle facility including:
   a. BIKE ROUTES
   b. ‘SHARROWS’- BIKE SHARED LANE MARKINGS (SLM)
   c. BIKE LANES
   D. WALK AND CROSSING IMPROVEMENTS AT KEY INTERSECTIONS
4. Draft Report is approx. 90% complete, less committee review & edits. The executive summary,
   maps, & improvement images were posted on project FTP site and a hard copy mailed to F.O.R.
5. Draft letters were sent to F.O.R. for submission to City and County notifying each about project
   specifics; Route 51 proposed improvements and Fleming Park Bridge respectively.

Next Items:

1. F.O.R. to set meeting with City to review trail proposal at Rt 51 between Pgh and McKees Rocks
2. Mackin to submit completed Draft to committee for Final Review
3. Public Meeting (open house forum)- Committee to finalize arrangements; tentative date in
   January 2013
4. Complete and Submit Final Report

Thank you,
Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
Ohio River Trail (ORT) Committee:
Listed below are activities that have been completed:

1. Completed 20-Key Persons phone interviews
2. Completed the following meetings:
   a. May 2, 2012- Kick-Off Meeting with 7-Municipalities at Father Ryan Arts Center
   b. June 18, 2012- Stakeholder Meeting at St. Mary Ukrainian Orthodox Church
   c. Municipal Field Meetings
      i. August 29, 2012 with Neville and Coraopolis
      ii. September 21, 2012 with McKee’s Rocks and Stowe Township
   d. November 5, 2012- Direct Steering Committee Meeting; Draft Review at Friends of Riverfront (F.O.R.) Office
   e. December 11, 2012- Project Steering Committee Meeting; Review of Draft Plans at McKeesport Borough Office
   f. April 4, 2013- Direct Steering Committee Meeting Friends of Riverfront (F.O.R.) to review changes to alignment by Stowe/McKees Rocks and review the project status.

3. Completed and posted the feasibility study- executive summary, graphics, maps, costs in November 2012; updated FTP in Dec, Jan, March & April.
4. Completed and submitted a draft copy of the report and provided hard copy plans, graphics, costs to F.O.R., Tom Baxter, for submission to Patrick Hassett at City of Pittsburgh; December 18, 2012.
5. Extra draft letters were sent to F.O.R. for submission to City and County notifying each about project specifics; Route 51 proposed improvements and Fleming Park Bridge respectively. Extra letter were sent to Taris Vrcek & Trish Lavander at McKees Rocks to notify planning commission for a ‘complete streets’ approach when approving developments, and for additional route reviews respectively.
6. The project was scheduled for completion in January 2013- Additional meetings, correspondence, project management, and map printing requests will be invoiced as additional costs under billing code -002.
7. After this April meeting, the report is to be amended for the Stowe-McKeees Rocks alignment and then posted on FTP site for F.O.R. distribution and final review.

Next Items:
1. Extra meeting was requested- to meet with Steve Shanley at County on April 23, 2013.
2. Public Meeting (open house forum)- Committee to complete arrangements for final meeting
3. Edit and submit final report

Thank you,
Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
Three Rivers Heritage Trail (3RHT) Feasibility Study
Pittsburgh to Coraopolis
Project Report MAY 2013

To: Ohio River Trail (ORT) Committee

Status:
Completed- same as April Report with below additions

Recently completed:
   a. Agreement was reached to show the ‘Rocks’ local loop route stopped at the intersection of Chartiers, Linden, Furnace; and to just write about future extension of the route into central business district.
   b. Agreement was reached to show preferred route in ‘Bottoms’ along Helen to the green space-parklet at McKees Rocks Bridge ramp and cross to Munson, George and enter bridge sidewalk system. The Bottom’s local loop was submitted by Craig Rippole and approved by others.
2. Attended extra meeting with Steve Shanley, et.al at County on April 23, 2013.
3. Report completion was pending review and comments from City- Pat Hassett (April).
4. Executive Summary was completed and posted on FTP site (April).

Next Items:
1. Public Meeting (open house forum) to be held at the Stowe Municipal Bldg at 6pm on Wednesday, June 19, 2013.
2. Post final report on FTP for review and comment.

Thank you,
Robert W. Genter, RLA, ASLA
Director- Land Development Services
Mackin Engineering Company
### Three Rivers Heritage Trail Connector

**Summary- Opinion of Probable Costs**

Prepared By: Mackin Engineering Company  
11/8/2012

<table>
<thead>
<tr>
<th>ROUTE DESCRIPTION/LOCATION</th>
<th>LENGTH (MILES)</th>
<th>COST Between</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR51, Station Square to West End Bridge (City of Pittsburgh)</td>
<td>0.54</td>
<td>$438,000.00 &amp; $526,000.00</td>
</tr>
<tr>
<td>* West End Bridge to Corliss Tunnel (City of Pittsburgh)</td>
<td>0.83</td>
<td>-</td>
</tr>
<tr>
<td>* Corliss Tunnel to McKees Rocks</td>
<td>1.09</td>
<td>-</td>
</tr>
<tr>
<td>West Carson Street, Stanhope Street, Linden Avenue, Chartiers Avenue to Island Avenue (all SR51) in McKees Rocks</td>
<td>0.48</td>
<td>$39,000.00 &amp; $46,000.00</td>
</tr>
<tr>
<td>Island Avenue (SR51) Stowe Township; Chartiers / Island Ave Intersection to McKees Rocks Bridge</td>
<td>0.6</td>
<td>$11,000.00 &amp; $14,000.00</td>
</tr>
<tr>
<td>McKees Rocks Bridge (SR51) to Tunnel Way in Stowe Township</td>
<td>0.34</td>
<td>$11,000.00 &amp; $13,000.00</td>
</tr>
<tr>
<td>Island Avenue (SR51) Stowe Township, Tunnel Way to Fleming Park Bridge</td>
<td>1.09</td>
<td>$29,000.00 &amp; $35,000.00</td>
</tr>
<tr>
<td>Neville Road along Neville Island</td>
<td>4.67</td>
<td>$290,000.00 &amp; $348,000.00</td>
</tr>
<tr>
<td>State Route 51 Coraopolis</td>
<td>1.94</td>
<td>$24,000.00 &amp; $29,000.00</td>
</tr>
<tr>
<td>Montour Trail Connection</td>
<td>N/A</td>
<td>$442,000.00 &amp; $530,000.00</td>
</tr>
<tr>
<td>Intersection Improvements</td>
<td>N/A</td>
<td>$95,000.00 &amp; $113,000.00</td>
</tr>
</tbody>
</table>

**Intersection Improvements include only major intersections along the Direct Route**

Total Miles 11.58

TOTAL $1,379,000.00 & $1,654,000.00

**NOTES:**

1. All 4" white and yellow linear pavement markings have been priced using waterborne paint. The use of hot thermoplastic pavement markings will increase the longevity of the pavement markings and decrease maintenance requirements, but the cost of hot thermoplastic markings are significantly higher (approx 10X the cost).
2. All pavement symbols (Sharrows and Bike Route) in high traffic areas have been priced using hot thermoplastic pavement markings to maximize longevity.
3. Additional concrete sidewalk repairs and sidewalk extensions would add to subtotal costs- Concrete sidewalk costs can range between $8-$10/SY for materials and labor.
4. This connector segment cost is not listed in summary total- this segment is being constructed by PennDOT.
## Three Rivers Heritage Trail Connector

**Opinion of Probable Costs**

SR51, Station Square to West End Bridge (City of Pittsburgh)

Prepared By: Mackin Engineering Company

11/8/2012

Segment length - 2,861 LF (.54 miles)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Main Alignment Route</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific Pride Gas Station to Start Work Station of JMT RT51 Construction Project - 1,900 LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>AC</td>
<td>0.5</td>
<td>$4,000</td>
<td>$2,000.00</td>
<td>misc. material removal adjacent to proposed ped-bikeway track</td>
</tr>
<tr>
<td>Class 1 Excavation</td>
<td>CY</td>
<td>800</td>
<td>$55</td>
<td>$44,000.00</td>
<td>sidewalk and curb removal, entire length</td>
</tr>
<tr>
<td>Concrete Median Barrier</td>
<td>LF</td>
<td>1,700</td>
<td>$50.00</td>
<td>$85,000.00</td>
<td>entire length, less 200’ for curb cuts/entrance drives</td>
</tr>
<tr>
<td>4” White Waterborne Pavement Markings</td>
<td>LF</td>
<td>3,800</td>
<td>$0.12</td>
<td>$456.00</td>
<td>edge line at concrete median barrier (both sides), entire length</td>
</tr>
<tr>
<td>4” Yellow Waterborne Pavement Markings</td>
<td>LF</td>
<td>2,850</td>
<td>$0.12</td>
<td>$342.00</td>
<td>edge line at concrete median barrier and center yellow, entire length</td>
</tr>
<tr>
<td>Asphalt Paving - full depth, including stone base</td>
<td>SY</td>
<td>1,800</td>
<td>$80.00</td>
<td>$120,000.00</td>
<td>approx. 1/2 of the ped-bikeway track width</td>
</tr>
<tr>
<td>Asphalt Paving - resurfacing</td>
<td>SY</td>
<td>1,500</td>
<td>$14.50</td>
<td>$21,750.00</td>
<td>approx. 1/2 of the ped-bikeway track width</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>4</td>
<td>$240.00</td>
<td>$960.00</td>
<td>stop signs at curb cuts/driveways</td>
</tr>
<tr>
<td>Crosswalk Pavement Markings</td>
<td>EA</td>
<td>2</td>
<td>$300.00</td>
<td>$600.00</td>
<td></td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>4</td>
<td>$240.00</td>
<td>$960.00</td>
<td>bike route sign</td>
</tr>
<tr>
<td>White Hot Thermoplastic Legend (Arrows, Turn/Straight)</td>
<td>EA</td>
<td>8</td>
<td>$150.00</td>
<td>$1,200.00</td>
<td>approx. 500’ O.C.</td>
</tr>
<tr>
<td>Cement Concrete Sidewalk</td>
<td>SY</td>
<td>175</td>
<td>$75.00</td>
<td>$13,125.00</td>
<td>length below the West End Bridge</td>
</tr>
<tr>
<td>Cement Concrete Sidewalk Heavy Section</td>
<td>SY</td>
<td>40</td>
<td>$100.00</td>
<td>$4,000.00</td>
<td>at driveways (2)</td>
</tr>
<tr>
<td>Concrete Curb</td>
<td>LF</td>
<td>300</td>
<td>$35.00</td>
<td>$10,500.00</td>
<td></td>
</tr>
<tr>
<td>Pack Lighting</td>
<td>EA</td>
<td>2</td>
<td>$1,800.00</td>
<td>$3,600.00</td>
<td>enhanced safety lighting beneath West End Bridge</td>
</tr>
<tr>
<td>Street Tree</td>
<td>EA</td>
<td>8</td>
<td>$600.00</td>
<td>$4,800.00</td>
<td>north side of proposed improvements; along bldg. frontage</td>
</tr>
<tr>
<td>Ornamental Plant</td>
<td>EA</td>
<td>120</td>
<td>$50.00</td>
<td>$6,000.00</td>
<td>north side of proposed improvements; along bldg. frontage</td>
</tr>
<tr>
<td>Relocation of Stairway Structure</td>
<td>EA</td>
<td>2</td>
<td>$7,500.00</td>
<td>$15,000.00</td>
<td>east and west staircases from West End Bridge to RT51 below</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>SUBTOTAL</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$334,293.00</strong></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>MAINTENANCE AND PROTECTION OF TRAFFIC (2%)</strong></td>
<td><strong>$6,685.86</strong></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td><strong>MOBILIZATION (8%)</strong></td>
<td><strong>$26,743.44</strong></td>
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<tr>
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<td></td>
<td></td>
<td><strong>CONTERNGENCY (10%)</strong></td>
<td><strong>$33,429.30</strong></td>
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<td></td>
<td></td>
<td><strong>ENGINEERING AND DESIGN (11%)</strong></td>
<td><strong>$36,772.23</strong></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>$437,923.83</strong></td>
</tr>
</tbody>
</table>
## Three Rivers Heritage Trail Connector

**Opinion of Probable Costs**

**West End Bridge to Corliss Tunnel (City of Pittsburgh)**

Prepared By: Mackin Engineering Company

11/8/2012

Segment length - 4,387 LF (.83 miles)

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<td>apprx. 500' C.C.</td>
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<td>length below the West End Bridge</td>
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<td>$3,600.00</td>
<td>enhanced safety lighting beneath West End Bridge</td>
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<tr>
<td>Street Tree</td>
<td>EA</td>
<td>8</td>
<td>$600.00</td>
<td>$4,800.00</td>
<td>north side of proposed improvements; along bldg. frontage</td>
</tr>
<tr>
<td>Ornamental Plant</td>
<td>EA</td>
<td>120</td>
<td>$50.00</td>
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<td>$10,000.00</td>
<td>$20,000.00</td>
<td>east and west staircases from West End Bridge to RT51 below</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>$323,233.00</td>
<td></td>
</tr>
</tbody>
</table>

- Maintenance and Protection of Traffic (2%) $6,464.66
- Mobilization (8%) $25,858.64
- Contingency (10%) $32,323.30
- Engineering and Design (11%) $35,555.63

**TOTAL** $423,435.23
### Three Rivers Heritage Trail Connector

**Opinion of Probable Costs**

**Corliss Tunnel to McKees Rocks**

Prepared By: Mackin Engineering Company

11/8/2012

Segment length - 5,754 LF (1.09 miles)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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<tr>
<td>Pacific Pride Gas Station to Start Work Station of JMT RT51 Construction Project - 1,900 LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>AC</td>
<td>0.5</td>
<td>$4,000</td>
<td>$2,000.00</td>
<td>misc. material removal adjacent to proposed ped-bikeway track</td>
</tr>
<tr>
<td>Class 1 Excavation</td>
<td>CY</td>
<td>800</td>
<td>$55</td>
<td>$44,000.00</td>
<td>sidewalk and curb removal, entire length</td>
</tr>
<tr>
<td>Concrete Median Barrier</td>
<td>LF</td>
<td>1,700</td>
<td>$50.00</td>
<td>$85,000.00</td>
<td>entire length, less 200’ for curb cuts/entrance drives</td>
</tr>
<tr>
<td>4” White Waterborne Pavement Markings</td>
<td>LF</td>
<td>1,900</td>
<td>$0.12</td>
<td>$228.00</td>
<td>edge line at concrete median barrier, entire length</td>
</tr>
<tr>
<td>4” Yellow Waterborne Pavement Markings</td>
<td>LF</td>
<td>2,850</td>
<td>$0.12</td>
<td>$342.00</td>
<td>edge line at concrete median barrier and center yellow, entire length</td>
</tr>
<tr>
<td>Asphalt Paving - full depth, including stone base</td>
<td>SY</td>
<td>2,100</td>
<td>$80.00</td>
<td>$168,000.00</td>
<td>approx. 1/2 of the ped-bikeway track width</td>
</tr>
<tr>
<td>Asphalt Paving - resurfacing</td>
<td>SY</td>
<td>2,100</td>
<td>$14.50</td>
<td>$30,450.00</td>
<td>approx. 1/2 of the ped-bikeway track width</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>4</td>
<td>$240.00</td>
<td>$960.00</td>
<td>bike route sign</td>
</tr>
<tr>
<td>White Hot Thermoplastic Legend (Arrows, Turn/Straight)</td>
<td>EA</td>
<td>8</td>
<td>$150.00</td>
<td>$1,200.00</td>
<td>approx. 500’ O.C.</td>
</tr>
<tr>
<td>Cement Concrete Sidewalk</td>
<td>SY</td>
<td>175</td>
<td>$75.00</td>
<td>$13,125.00</td>
<td>length below the West End Bridge</td>
</tr>
<tr>
<td>Pack Lighting</td>
<td>EA</td>
<td>2</td>
<td>$1,800.00</td>
<td>$3,600.00</td>
<td>enhanced safety lighting beneath West End Bridge</td>
</tr>
<tr>
<td>Street Tree</td>
<td>EA</td>
<td>8</td>
<td>$600.00</td>
<td>$4,800.00</td>
<td>north side of proposed improvements; along bldg. frontage</td>
</tr>
<tr>
<td>Ornamental Plant</td>
<td>EA</td>
<td>120</td>
<td>$50.00</td>
<td>$6,000.00</td>
<td>north side of proposed improvements; along bldg. frontage</td>
</tr>
<tr>
<td>Relocation of Stairway Structure</td>
<td>EA</td>
<td>2</td>
<td>$7,500.00</td>
<td>$15,000.00</td>
<td>east and west staircases from West End Bridge to RT51 below</td>
</tr>
</tbody>
</table>

**SUBTOTAL** | | | | $374,705.00 |

**Maintenance and Protection of Traffic (2%)** | | | $7,494.10 |
**Mobilization (8%)** | | | $29,976.40 |
**Contingency (10%)** | | | $37,470.50 |
**Engineering and Design (11%)** | | | $41,217.55 |

**TOTAL** | | | $490,863.55 |
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Main Alignment Route</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stanhope St. (to intersection of Linden and Furnace Ave.) - 1,300 LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1 Excavation</td>
<td>CY</td>
<td>30</td>
<td>$55</td>
<td>$1,650.00</td>
<td>median island at Stanhope Street; 2' depth</td>
</tr>
<tr>
<td>4&quot; Pavement Marking Removal</td>
<td>LF</td>
<td>3,100</td>
<td>$0.80</td>
<td>$2,480.00</td>
<td>approx. 600 LF dashed lane lines and 2,500 LF yellow at median</td>
</tr>
<tr>
<td>4&quot; White Waterborne Pavement Markings</td>
<td>LF</td>
<td>5,200</td>
<td>$0.12</td>
<td>$624.00</td>
<td>(o) lines each side of bike lane, entire length</td>
</tr>
<tr>
<td>4&quot; Yellow Waterborne Pavement Markings</td>
<td>LF</td>
<td>150</td>
<td>$0.12</td>
<td>$18.00</td>
<td></td>
</tr>
<tr>
<td>Asphalt Paving - full depth, including stone base</td>
<td>SY</td>
<td>45</td>
<td>$80.00</td>
<td>$3,600.00</td>
<td>at median island</td>
</tr>
<tr>
<td>Asphalt Paving - resurfacing</td>
<td>SY</td>
<td>450</td>
<td>$14.50</td>
<td>$6,525.00</td>
<td>removal of centerline rumble strips (snaps)</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>4</td>
<td>$240.00</td>
<td>$960.00</td>
<td>bike route sign</td>
</tr>
<tr>
<td>Bike Lane Symbol Marking, Bicycle and Arrow</td>
<td>EA</td>
<td>8</td>
<td>$250.00</td>
<td>$2,000.00</td>
<td></td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>4</td>
<td>$250.00</td>
<td>$1,000.00</td>
<td>at Linden and Furnace intersection</td>
</tr>
<tr>
<td>Linden and Furnace Intersection (Eat-n-Park) to the Railroad Underpass at Island Ave., including Furnace Ave. - 1,000 LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Along Chartiers Ave.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>3</td>
<td>$240.00</td>
<td>$720.00</td>
<td>bike route sign</td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>6</td>
<td>$250.00</td>
<td>$1,500.00</td>
<td>approx. 200' O.C. along Chartiers Ave.</td>
</tr>
<tr>
<td>Charters (at railroad underpass)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Curb Ramp</td>
<td>EA</td>
<td>1</td>
<td>$800.00</td>
<td>$800.00</td>
<td>westbound lane of Charters (at Locust)</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>1</td>
<td>$240.00</td>
<td>$240.00</td>
<td>dismount and walk bike sign for sidewalk</td>
</tr>
<tr>
<td>Charters to Locust (eastbound)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>2</td>
<td>$240.00</td>
<td>$480.00</td>
<td>bike route sign</td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>2</td>
<td>$250.00</td>
<td>$500.00</td>
<td>approx. 200' O.C. along Locust</td>
</tr>
<tr>
<td>Furnace St.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&quot; Pavement Marking Removal</td>
<td>LF</td>
<td>400</td>
<td>$0.80</td>
<td>$320.00</td>
<td>dashed lane lines</td>
</tr>
<tr>
<td>Pavement Marking Removal (Legends and Symbols)</td>
<td>EA</td>
<td>10</td>
<td>$110.00</td>
<td>$1,100.00</td>
<td></td>
</tr>
<tr>
<td>4&quot; White Waterborne Pavement Markings</td>
<td>LF</td>
<td>2,300</td>
<td>$0.12</td>
<td>$276.00</td>
<td>(o) lines each side of bike lane, entire length and dashed lane lines</td>
</tr>
<tr>
<td>Bike Lane Symbol Marking, Bicycle and Arrow</td>
<td>EA</td>
<td>4</td>
<td>$250.00</td>
<td>$1,000.00</td>
<td></td>
</tr>
<tr>
<td>White Hot Thermoplastic Legend (Arrows, Turn/straight)</td>
<td>EA</td>
<td>10</td>
<td>$150.00</td>
<td>$1,500.00</td>
<td></td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>2</td>
<td>$0.12</td>
<td>$0.24</td>
<td>bike route sign</td>
</tr>
<tr>
<td>Charters Crossing Shoppes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&quot; White Waterborne Pavement Markings</td>
<td>LF</td>
<td>2,300</td>
<td>$0.12</td>
<td>$276.00</td>
<td>(o) lines each side of bike lane, entire length and dashed lane lines</td>
</tr>
<tr>
<td>Bike Lane Symbol Marking, Bicycle and Arrow</td>
<td>EA</td>
<td>4</td>
<td>$250.00</td>
<td>$1,000.00</td>
<td></td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>4</td>
<td>$250.00</td>
<td>$1,000.00</td>
<td>approx. 200' O.C.</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>4</td>
<td>$240.00</td>
<td>$960.00</td>
<td>bike route sign</td>
</tr>
</tbody>
</table>

| SUBTOTAL | $30,529.24 |

Maintenance and Protection of Traffic (2%)  $610.58
Mobilization (8%)  $2,442.34
Contingency (10%)  $3,052.92
Engineering and Design (5%)  $1,526.46

| TOTAL | $38,161.55 |
# Three Rivers Heritage Trail Connector

## Opinion of Probable Costs

**McKees Rocks Bridge (SR51) to Tunnel Way in Stowe Township**

Prepared By: Mackin Engineering Company  
11/8/2012

Segment Length 1,777 LF (0.34 miles)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Main Alignment Route</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&quot; White Waterborne Pavement Markings</td>
<td>LF</td>
<td>1,200</td>
<td>$0.12</td>
<td>$144.00</td>
<td>(2) lines each side of bike lane, at McKees Rocks Bridge</td>
</tr>
<tr>
<td>Bike Lane Symbol Marking, Bicycle and Arrow</td>
<td>EA</td>
<td>6</td>
<td>$250.00</td>
<td>$1,500.00</td>
<td></td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>4</td>
<td>$240.00</td>
<td>$960.00</td>
<td>bike route sign</td>
</tr>
<tr>
<td><strong>McKees Rocks Bridge to Tunnel Way</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>7</td>
<td>$240.00</td>
<td>$1,680.00</td>
<td>bike route and share the road sign</td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>16</td>
<td>$250.00</td>
<td>$4,000.00</td>
<td>apprx. 200’ O.C.</td>
</tr>
</tbody>
</table>

| SUBTOTAL | $8,284.00 |
| Maintenance and Protection of Traffic (2%) | $165.68 |
| Mobilization (8%) | $662.72 |
| Contingency (10%) | $828.40 |
| Engineering and Design (5%) | $414.20 |

| TOTAL | $10,355.00 |
### Three Rivers Heritage Trail Connector
**Opinion of Probable Costs**

**Island Avenue (SR51) Stowe Township, Tunnel Way to Fleming Park Bridge**

**Prepared By:** Mackin Engineering Company  
11/8/2012

Segment Length 5,730 LF (1.09 miles)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Main Alignment Route</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunnel Way to Duke Street - 3,200 LF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&quot; White Waterborne Pavement Markings</td>
<td>LF</td>
<td>6,400</td>
<td>$0.12</td>
<td>$768.00</td>
<td>outside lane edge lines, entire length</td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>16</td>
<td>$250.00</td>
<td>$4,000.00</td>
<td>approx. 400’ O.C.</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>8</td>
<td>$240.00</td>
<td>$1,920.00</td>
<td>bike route sign</td>
</tr>
<tr>
<td><strong>Duke Street to the Fleming Park Bridge - 2,500 LF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4&quot; Pavement Marking Removal</td>
<td>LF</td>
<td>10,000</td>
<td>$0.80</td>
<td>$8,000.00</td>
<td>approx. 5,000 LF lane edge lines and 5,000 LF yellow at median</td>
</tr>
<tr>
<td>4&quot; Yellow Waterborne Pavement Markings</td>
<td>LF</td>
<td>150</td>
<td>$0.12</td>
<td>$18.00</td>
<td>new double yellow center line</td>
</tr>
<tr>
<td>4&quot; White Waterborne Pavement Markings</td>
<td>LF</td>
<td>7,500</td>
<td>$0.12</td>
<td>$900.00</td>
<td>(2) lines for eastbound bike lane, entire length and edge line westbound</td>
</tr>
<tr>
<td>Bike Lane Symbol Marking, Bicycle and Arrow</td>
<td>EA</td>
<td>6</td>
<td>$250.00</td>
<td>$1,500.00</td>
<td></td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>14</td>
<td>$250.00</td>
<td>$3,500.00</td>
<td>approx. 200’ O.C.</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>10</td>
<td>$240.00</td>
<td>$2,400.00</td>
<td>bike route and share the road sign</td>
</tr>
</tbody>
</table>

**SUBTOTAL** $23,006.00

- Maintenance and Protection of Traffic (2%) $460.12
- Mobilization (8%) $1,840.48
- Contingency (10%) $2,300.60
- Engineering and Design (5%) $1,150.30

**TOTAL** $28,757.50
Three Rivers Heritage Trail Connector  
Opinion of Probable Costs  
Neville Road along Neville Island  
Prepared By: Mackin Engineering Company  
11/8/2012

Segment Length 24,636 LF (4.67 miles)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Main Alignment Route</td>
<td></td>
<td></td>
<td></td>
<td>289,400.00</td>
<td></td>
</tr>
<tr>
<td>Neville Road from the Fleming Park Bridge to 2nd Street - 2.70 MILE</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Asphalt Paving - resurfacing</td>
<td>SY</td>
<td>13000</td>
<td>$15</td>
<td>$188,500.00</td>
<td>apx. 2.70 miles, bike lane each side of road</td>
</tr>
<tr>
<td>4&quot; White Waterborne Pavement Markings</td>
<td>LF</td>
<td>31,000</td>
<td>$0.12</td>
<td>$3,720.00</td>
<td>outside lane edge line of bike lane, entire length (including eastbound at Neville Grand Split)</td>
</tr>
<tr>
<td>Bike Lane Symbol Marking, Bicycle and Arrow</td>
<td>EA</td>
<td>32</td>
<td>$250.00</td>
<td>$8,000.00</td>
<td>approx. 1,000' O.C.</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>12</td>
<td>$240.00</td>
<td>$2,880.00</td>
<td>bike route sign, approx. 0.5 miles O.C.</td>
</tr>
<tr>
<td>Grand Avenue from 2nd Street to Neville Island Bridge - 1.5 MILE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>2</td>
<td>$250.00</td>
<td>$500.00</td>
<td>(2) northbound on 2nd Street only</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>2</td>
<td>$240.00</td>
<td>$480.00</td>
<td>bike route and share the road sign</td>
</tr>
</tbody>
</table>

| SUBTOTAL | $ 231,520.00 |
| Maintenance and Protection of Traffic (2%) | $ 4,630.40 |
| Mobilization (8%) | $ 18,521.60 |
| Contingency (10%) | $ 23,152.00 |
| Engineering and Design (5%) | $ 11,576.00 |

TOTAL $ 289,400.00
Three Rivers Heritage Trail Connector  
Opinion of Probable Costs  
State Route 51 Coraopolis  
Prepared By: Mackin Engineering Company  
11/8/2012

Segment Length 10,264 LF (1.94 miles)

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Main Alignment Route</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Westbound SR51, Fourth Avenue - 5,141 LF</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>26</td>
<td>$250.00</td>
<td>$6,500.00</td>
<td>approx. 200' O.C</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>10</td>
<td>$240.00</td>
<td>$2,400.00</td>
<td>bike route and share the road sign, after each cross-street intersection</td>
</tr>
<tr>
<td><strong>Eastbound SR51, Fifth Avenue - 5,123 LF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharrow</td>
<td>EA</td>
<td>26</td>
<td>$250.00</td>
<td>$6,500.00</td>
<td>approx. 200' O.C</td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>14</td>
<td>$240.00</td>
<td>$3,360.00</td>
<td>bike route and share the road sign, after each cross-street intersection</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>$18,760.00</td>
<td></td>
</tr>
<tr>
<td>Maintenance and Protection of Traffic (2%)</td>
<td></td>
<td></td>
<td></td>
<td>$375.20</td>
<td></td>
</tr>
<tr>
<td>Mobilization (8%)</td>
<td></td>
<td></td>
<td></td>
<td>$1,500.80</td>
<td></td>
</tr>
<tr>
<td>Contingency (10%)</td>
<td></td>
<td></td>
<td></td>
<td>$1,876.00</td>
<td></td>
</tr>
<tr>
<td>Engineering and Design (5%)</td>
<td></td>
<td></td>
<td></td>
<td>$938.00</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td></td>
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<td>$23,450.00</td>
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</tbody>
</table>
### Three Rivers Heritage Trail Connector

#### Opinion of Probable Costs

**Montour Trail Connection**

Prepared By: Mackin Engineering Company

11/8/2012

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Segment Length - N/A

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthen Ramp and Trail to Montour Junction Sports Complex</td>
<td>AC</td>
<td>1</td>
<td>$4,000.00</td>
<td>$4,000.00</td>
<td>Earthen Ramp approximately 500 linear feet in length and 20-30' width;</td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>CY</td>
<td>600</td>
<td>$55.00</td>
<td>$33,000.00</td>
<td>Ramp begins at grade and climbs approx. 30' height; includes benching.</td>
</tr>
<tr>
<td>Class 1 Excavition</td>
<td>CY</td>
<td>2,000</td>
<td>$25.00</td>
<td>$50,000.00</td>
<td>Assumes both on-site and off-site material for ramp construction.</td>
</tr>
<tr>
<td>Class 6&quot; Pipe Underdrain and Backfill</td>
<td>CY</td>
<td>5,000</td>
<td>$30.00</td>
<td>$150,000.00</td>
<td></td>
</tr>
<tr>
<td>Foreign Borrow Excavation, Fill Material</td>
<td>CY</td>
<td>5,000</td>
<td>$30.00</td>
<td>$150,000.00</td>
<td></td>
</tr>
<tr>
<td>Toe of Slope Drainage Material, R-3 Rock</td>
<td>CY</td>
<td>600</td>
<td>$90.00</td>
<td>$54,000.00</td>
<td>Toe of slope drainage to tie into stormwater management plan of the Montour Junction Sports Complex</td>
</tr>
<tr>
<td>6&quot; Pipe Underdrain and Backfill</td>
<td>LF</td>
<td>500</td>
<td>$20.00</td>
<td>$10,000.00</td>
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</tr>
<tr>
<td>Asphalt Paving - full depth, including stone base</td>
<td>SY</td>
<td>75</td>
<td>$80.00</td>
<td>$6,000.00</td>
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</tr>
<tr>
<td>Timber Fence</td>
<td>LF</td>
<td>500</td>
<td>$45.00</td>
<td>$22,500.00</td>
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</tr>
<tr>
<td>Maintenance and Protection of Traffic (2%)</td>
<td></td>
<td></td>
<td></td>
<td>$6,590.00</td>
<td></td>
</tr>
<tr>
<td>Mobilization (8%)</td>
<td></td>
<td></td>
<td></td>
<td>$26,360.00</td>
<td></td>
</tr>
<tr>
<td>Contingency (10%)</td>
<td></td>
<td></td>
<td></td>
<td>$32,950.00</td>
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<tr>
<td>Engineering and Design (11%)</td>
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<td></td>
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<td>$36,245.00</td>
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<tr>
<td>Erosion and Sedimentation Control (3%)</td>
<td></td>
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<td></td>
<td>$9,885.00</td>
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</tr>
</tbody>
</table>

**SUBTOTAL** $329,500.00

**TOTAL** $441,530.00
Three Rivers Heritage Trail Connector
Opinion of Probable Costs
Intersection Improvements
Prepared By: Mackin Engineering Company
11/8/2012

Segment Length - N/A

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 Gateway View Plaza Driveway</td>
<td></td>
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<tr>
<td>LED Countdown Pedestal Signal Head, Type A</td>
<td>EA</td>
<td>2</td>
<td>$550.00</td>
<td>$1,100.00</td>
<td></td>
</tr>
<tr>
<td>Pedestrian Push Button</td>
<td>EA</td>
<td>2</td>
<td>$275.00</td>
<td>$550.00</td>
<td></td>
</tr>
<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
<td>4</td>
<td>$240.00</td>
<td>$960.00</td>
<td></td>
</tr>
</tbody>
</table>

Sub-Total $2,610.00

| Chartiers Avenue at Furnace & Linden (Eat-n-Park) |   | | | | |
| LED Countdown Pedestal Signal Head, Type A | EA | 8 | $550.00 | $4,400.00 | |
| Pedestrian Push Button | EA | 2 | $275.00 | $550.00 | |
| Concrete Curb Ramp | EA | 2 | $800.00 | $1,600.00 | |
| Cement Concrete Sidewalk | SY | 14 | $75.00 | $1,050.00 | (2) at 65 SF each |
| Pedestrian Stub Pole, Type A (Earth Mounted) | EA | 1 | $1,300.00 | $1,300.00 | |
| Post Mounted Sign, Type B (with post) | EA | 4 | $240.00 | $960.00 | |

Sub-Total $9,860.00

| Chartiers Avenue & Island Avenue (RR Overpass) |   | | | | |
| LED Countdown Pedestal Signal Head, Type A | EA | 4 | $550.00 | $2,200.00 | |
| Pedestrian Push Button | EA | 2 | $275.00 | $550.00 | |
| 24” White Hot Thermoplastic Pavement Markings | LF | 100 | $11.50 | $1,150.00 | |
| Concrete Curb Ramp | EA | 4 | $800.00 | $3,200.00 | |
| Post Mounted Sign, Type B (with post) | EA | 4 | $240.00 | $960.00 | |

Sub-Total $8,060.00

| McKees Rocks Bridge at SR 51 |   | | | | |
| Pedestrian Push Button | EA | 2 | $275.00 | $550.00 | |
| 24” White Hot Thermoplastic Pavement Markings | LF | 100 | $11.50 | $1,150.00 | |
| Concrete Curb Ramp | EA | 1 | $800.00 | $800.00 | |
| Post Mounted Sign, Type B (with post) | EA | 4 | $240.00 | $960.00 | |

Sub-Total $3,460.00

| Fleming Park Bridge (west side on Island) |   | | | | |
| LED Countdown Pedestal Signal Head, Type A | EA | 2 | $550.00 | $1,100.00 | |
| Pedestrian Push Button | EA | 2 | $275.00 | $550.00 | |
| 24” White Hot Thermoplastic Pavement Markings | LF | 150 | $11.50 | $1,725.00 | |
| Concrete Curb Ramp | EA | 1 | $800.00 | $800.00 | |
| Post Mounted Sign, Type B (with post) | EA | 4 | $240.00 | $960.00 | |

Sub-Total $5,135.00

| Grand Avenue & Second (Neville Island) |   | | | | |
| LED Countdown Pedestal Signal Head, Type A | EA | 4 | $550.00 | $2,200.00 | |
| Pedestrian Push Button | EA | 4 | $275.00 | $1,100.00 | |
| 24” White Hot Thermoplastic Pavement Markings | LF | 100 | $11.50 | $1,150.00 | |
| Concrete Curb Ramp | EA | 4 | $800.00 | $3,200.00 | |
| Post Mounted Sign, Type B (with post) | EA | 4 | $240.00 | $960.00 | |

Sub-Total $8,610.00

| I-79 Bridge Ramp at Neville Island (Kings Restaurant and Fairfield Inn & Suites) |   | | | | |
| LED Countdown Pedestal Signal Head, Type A | EA | 4 | $550.00 | $2,200.00 | |
| Pedestrian Push Button | EA | 4 | $275.00 | $1,100.00 | |
| 24” White Hot Thermoplastic Pavement Markings | LF | 50 | $11.50 | $575.00 | |
| Concrete Curb Ramp | EA | 4 | $800.00 | $3,200.00 | |
| Post Mounted Sign, Type B (with post) | EA | 4 | $240.00 | $960.00 | |

Sub-Total $8,035.00
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
<th>UNIT COST</th>
<th>SUBTOTAL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-79 Bridge Ramp at Neville Island (Northbound On &amp; Off Ramps)</td>
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<tr>
<td>LED Countdown Pedestal Signal Head, Type A</td>
<td>EA</td>
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<td>$2,200.00</td>
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<tr>
<td>Pedestrian Push Button</td>
<td>EA</td>
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<td>$1,100.00</td>
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<td>24&quot; White Hot Thermoplastic Pavement Markings</td>
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<tr>
<td>Detectable Warning Surface</td>
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<td>Neville Bridge at Coraopolis</td>
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<td>LED Countdown Pedestal Signal Head, Type A</td>
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<td>24&quot; White Hot Thermoplastic Pavement Markings</td>
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<td>Pedestrian Stub Pole, Type A (Earth Mounted)</td>
<td>SF</td>
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<td>$5,200.00</td>
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<tr>
<td>Post Mounted Sign, Type B (with post)</td>
<td>EA</td>
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<td>$240.00</td>
<td>$960.00</td>
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<td>Maintenance and Protection of Traffic (2%)</td>
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<tr>
<td>Mobilization (8%)</td>
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<td>$5,616.00</td>
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<tr>
<td>Contingency (10%)</td>
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<tr>
<td>Engineering and Design (11%)</td>
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<td>$7,722.00</td>
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<td>Erosion and Sedimentation Control (3%)</td>
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<td>$2,106.00</td>
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<td>TOTAL</td>
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