SECTION V: PILOT PROJECTS

INTRODUCTION

The pilot projects described below represent a set of actions that will initiate the management recommendations in Section III. In addition, many of the projects respond to issues identified by the community as important to local residents. In many cases, these projects span several of the recommendations in an integrated effort to address the environmental needs of the area. These projects were identified directly from the natural resources assessment and analysis conducted by WPC staff and with guidance from the CDC Board and Open Space Task Force. The following pilots have been selected to help the community make measurable progress on improving and securing the green infrastructure of Mount Washington, to provide models for additional future work, to offer visible examples of action to upgrade the community's green spaces, to build support for continued implementation of the plan and to build local expertise in the key action areas. (See Figure 9. Pilot Project Sites for Master Implementation Plan.)

Figure 9. Pilot Project Sites for Master Implementation Plan

PILOT # 1: Improving Habitat: Restoring Forests & Creating Corridors

Issue: There are areas within the Study Area that have been maintained in a largely unforested condition and may be worthy of consideration for reforestation. However, less commonly, there are sections that have been recently cleared or partially cleared for a variety of purposes and it is one of these areas that is the focus of this pilot project.

Goal: Restore degraded forest and thereby improve the quality of "core" forest within this section of the Study Area.

Project Description: This site is oriented along the west side of the major unnamed tributary valley that drains Chatham Village and the land surrounding it. This city-owned area is indicated as a yet-to-be developed residential area on parcel maps but is not slated for development. However, accesses and adjacent land were cleared in recent years, possibly during a period when development plans were first made. Although not completely cleared, parts are lacking significant canopy and weedy and invasive species have moved into the area. Re-establishing canopy and controlling invasive species will not only improve this section of degraded forest but also potentially extend quality forest toward the high quality forests surrounding Chatham Village. The forest across the tributary from this site can be used as a reference for species composition and general conditions. Herbaceous flora on the pilot site is sometimes sparse. Planting plans may benefit from including other common herbaceous species found within the Chatham Village site.

The scope of this project will be larger than for other pilot projects described although the visibility will be lower. Also, this area is more likely to be impacted by deer browsing and harder to monitor. A planting design will need to be developed indicating planting locations, densities and species mixes. Trees and shrubs can be planted and protected with fences or tree tubes. Herbaceous plants can be seeded in, perhaps with hydroseeding techniques. Landscapers experienced in restoration can furnish more details about technique and equipment and that information can be included in the planting design and plan. (See Figure 10. Location of Pilot Project "Restoring Forest," South of Olympia Park, Duquesne Heights Greenway.)

Timeline: This is a long-term project with at least several seasons of intensive work followed by periods of evaluation and monitoring. Initially, the site should be cleared of as many non-native invasive plants, especially woody plants, as possible. This work could be accomplished over the course of a growing season. Plantings can then take place in the following year, preferably in the spring months when moisture is abundant and planting stock is still dormant. Selection of native trees and shrubs should reflect the composition of the adjacent forests and arrangements for sufficient stock may require significant lead times. Once plants are in place, herbaceous seeding, perhaps some hand planting, can be undertaken. The plantings will need to be checked the following year in mid-spring and those that have failed should be replaced as quickly as possible. A similar schedule should be followed for the shrubs and herbaceous plants. Also, invasive plants can be pulled or sprayed during these monitoring visits to keep populations in check while waiting for strong growth of the new plantings and seedings. The cycle of monitoring, replacement and invasive control should continue for several years until establishment is deemed successful.

Benefits: Restoring this section of forest will increase the effective interior forest proportion, provide some buffer against non-native invasive plants and help stabilize the steep slopes along this small valley.

Challenges: This is a large project requiring long-term follow-up and cooperation among several partners. Coordination of volunteers and work crews will require concerted efforts and planning. Animal damage may prove challenging even if precautions are taken.

Cost Parameters: Expenses for this project are likely to be moderately high although potential labor costs may still be the single most costly component. Fortunately, this site is very conducive to volunteer labor given good access, more shallow slopes and better footing than for other areas suggested as pilot projects. Planting material, plant protection devices, and tools represent the bulk of the capital costs.

Cost Estimates: Rough estimates for some materials used in similar projects are listed below.

PILOT COSTS	**Estimates Only**
seed	$1.58/lb
hydro-seed mix	$1.09/lb
hydro-mulch	$8.72/40lb bag
jute netting	$.07/SF
straw/hay	$4.50/bale
landscape staples	$2.75/bag
topsoil	$15.50/CY
native grasses	$9.10/ea
native shrubs	$25/ea
compost	$34/CY
hand mulch	$27/CY
wild flower seed mix	$13/lb
laborer	$33/hr
one ton truck	$68/day
tri-axle truck	$47/hr
*Volunteers can lower costs	

Source: Kovacik, 2005.

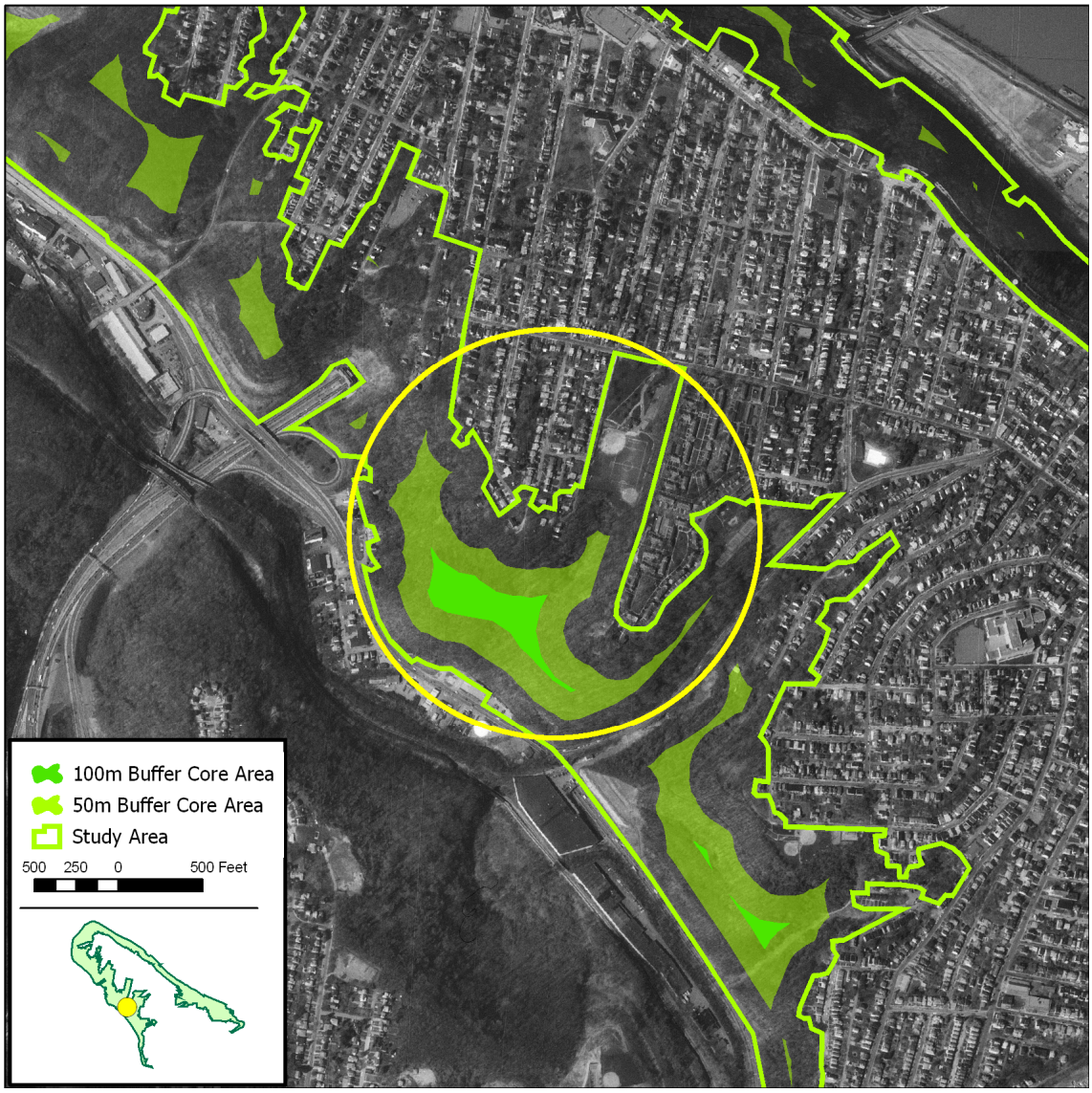

Figure 10. Location of Pilot Project "Restoring Forest," South of Olympia Park, Duquesne Heights Greenway

PILOT # 2: Improving Habitat: Revegetating Open Waste Areas

Issue: There are many unvegetated waste areas within publicly owned parcels of the Study Area. These areas provide little value to wildlife species, often contain compacted soils and debris, and often are ideal for the establishment of invasive plant species. These areas are also used for the dumping of garbage and building debris, creating dangerous and unsightly conditions for all other users.

Goal: Revegetate open/waste land using native plants in publicly owned parcels to improve environmental quality and aesthetics. Highly manicured lawns and gardens, although high in aesthetic value, are costly and labor intensive. Landscaping using plant species native to the area will minimize maintenance costs while improving the aesthetic quality of the open area.

Un-vegetated area along north face of Mount Washington, adjacent to the Monongahela Incline, Grandview Ave. This site would be a highly visible area for restoration with native vegetation.

-- Photo by WPC staff

Project Description: Adjacent to the Monongahela Incline and Station sits an open parcel of minimally managed land. Bare soil, grass, and small saplings represent most of the cover. Some miscellaneous trash accumulates and access is limited given that the area is fenced. Use of this area is consequently limited. The area is steep and the erosion that is obvious along many sections of the incline right-of-way begins here. Although large trees may not be appropriate for this site, small trees and shrubs should be compatible with the maintenance and use of this area. Once established, the vegetation on this site would supply superior habitat to that now existing and link to downslope forest. Also, the aesthetic quality of the site would be much improved. The project would involve initial removal/control of invasive plants, planting and seeding of native plants and possibly use of innovative substrate enhancement with locally generated compost. (See Figure 11. Location of Pilot Project "Improving Habitat," near Monongahela Incline, Grandview Avenue.)

Timeline: The physical implementation of this project could happen very quickly. Early to mid-spring during cool, moist weather would be the preferable time to begin planting efforts. Control of existing invasive plants, although not a large problem, could be accomplished later in the growing season of the previous year and followed up at the time of planting.

Benefits: Improvement of habitat, reduction of erosion and superior aesthetics would be the desired outcomes of this project.

Challenges: The biggest issue confronting this project will likely be in persuading the owner to undertake such an effort. This site may be used as access to the mechanics of the

incline and other not so apparent purposes. Also, as with other pilot projects described here, the use of compost may be perceived as difficult or experimental. However, this is one of the most accessible and amenable areas to work in and may also be one of the most controllable when it comes to piloting new techniques.

Cost Parameters: Capital costs of this project should be modest given its small size. Transportation of materials should also be a modest expense. Labor costs could be moderate depending upon the arrangement that can be made with Pittsburgh Department of Public Works to accommodate volunteers. Overall, this should be a relatively inexpensive project.

Cost Estimates: Rough estimates for some materials used in similar projects are listed below.

PILOT COSTS	**Estimates Only**
seed	$1.58/lb
hydro-seed mix	$1.09/lb
hydro-mulch	$8.72/40lb bag
jute netting	$.07/SF
straw/hay	$4.50/bale
landscape staples	$2.75/bag
topsoil	$15.50/CY
native grasses	$9.10/ea
native shrubs	$25/ea
compost	$34/CY
hand mulch	$27/CY
wild flower seed mix	$13/lb
laborer	$33/hr
one ton truck	$68/day
tri-axle truck	$47/hr
*Volunteers can lower costs	

Source: Kovacik, 2005.

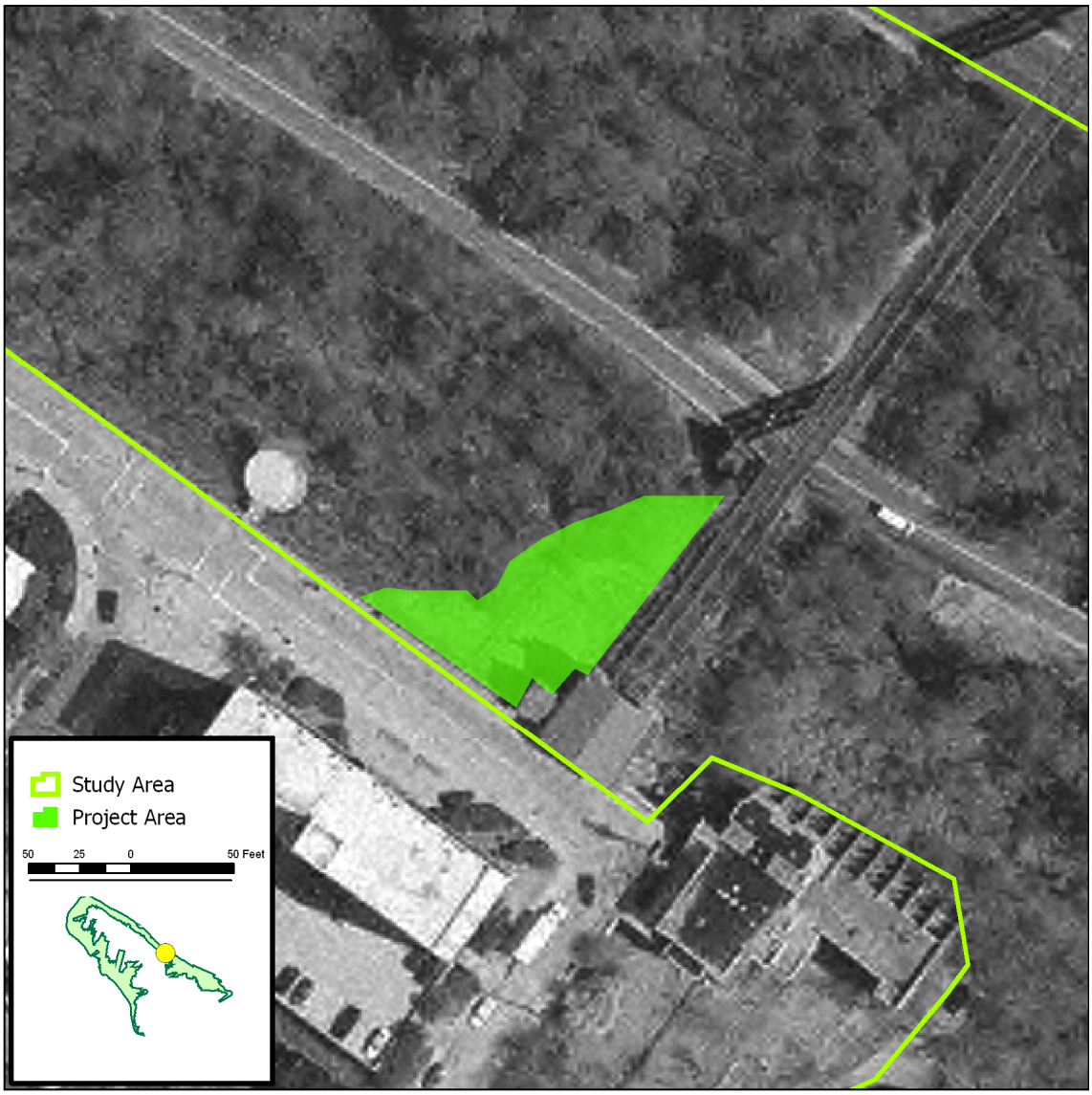

Figure 11. Location of Pilot Project "Improving Habitat," Near Monongahela Incline, Grandview Avenue

PILOT # 3: Controlling Invasive Species

Issue: Mount Washington Park is unique within the Study Area for its high percent cover of native tree species (especially red oak) in the canopy and subcanopy forest layers. However, non-native plant species threaten native plants and reduce habitat quality. This area is relatively free of major invasive problems unlike other sections of the Study Area where invasive species have a much stronger presence in the woodlands. Invasive plant removal/control strategies should be part of forest restoration, landscaping using native plants, and slope stabilization projects in the area. The oak mixed hardwood forest patches of Mount Washington Park were selected for the potential positive benefits of removal/control measures to habitat quality, high potential for success, and high potential for visibility by visitors and users of the areas. Target species include multiflora rose, bush honeysuckle, Japanese knotweed, Japanese honeysuckle, oriental bittersweet, tree of heaven, and Norway maple.

Goal: Increase the number and diversity of native plants within the mixed oak hardwood forest areas of Mount Washington Park by controlling key and abundant non-native invasive plants.

Project Description: The first step in the process is identification of the plants and areas on which control efforts will directed. Someone familiar with the species to be controlled should be involved to ensure that native plants are not unnecessarily sacrificed and that all target plants are identified and delineated. A variety of control strategies can be employed (as described above in the Recommendations section), depending upon the species and site conditions. Any application of herbicide will require a licensed person. Persistence will be key and results of the effort may take a few growing seasons to assess. Also, as invasive species are brought under control, the response of native vegetation will need to be measured. Seeding and plantings of native forest vegetation may be necessary to re-establish cover where invasive plants have been eliminated. Consultation with ecological professionals is advisable at all stages of the control projects. (See Figure 12. Location of Pilot Project "Invasive Species Control," Mount Washington Park.)

Benefits: The benefits of the project will be largely related to improved habitat conditions and increased native diversity. However, the aesthetics and potential community involvement aspects of the project may be the easiest to convey to the general public.

Challenges: In some way, this is one of the most challenging of the pilot projects, reflecting the pervasive nature of the problem and the need for management in perpetuity. For this reason, the measures of success will need to be clear and the presentation to and follow-up with the public well thought out. Also, maintenance of the area will need to involve an organized group of individuals (Community Stewardship Team) who will monitor the area as directed by the plans developed with the assistance of ecological professionals.

Cost Parameters: Most of the cost of this project will be associated with consultation, labor (at least some of which would likely be supplied by the city) and other needed assistance. Herbicide, tools and volunteer equipment would be additional expenses. Plant material, if plantings are warranted, would add to the costs, especially in the second or third growing seasons.

Cost Estimates: Similar invasive control efforts in this region cost up to $2000/acre for severely infested sites. This cost includes one year of initial treatment and four years of follow-up monitoring and treatment (Tracey, 2005). Volunteers could substantially reduce costs.

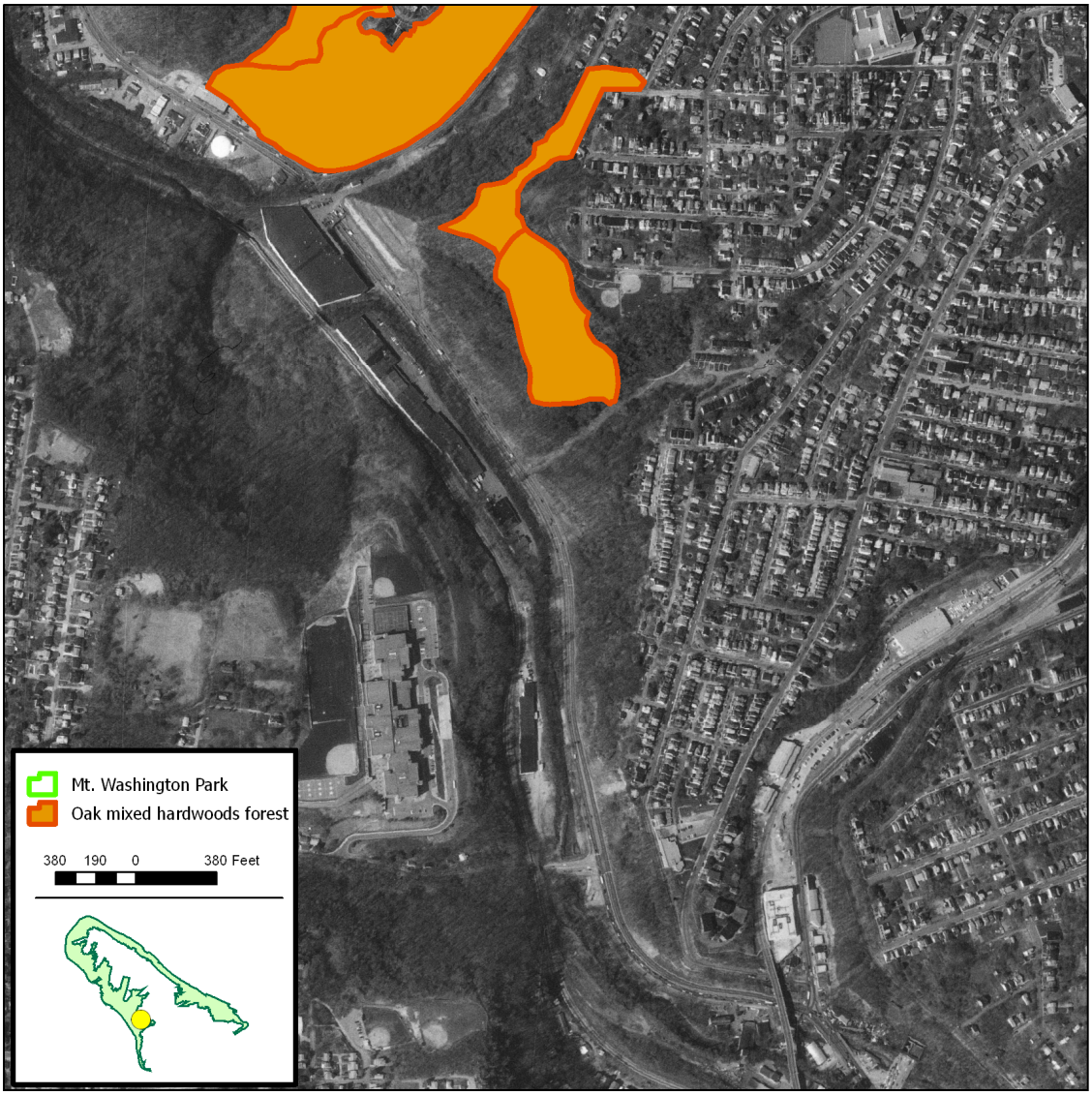

Figure 12. Location of Pilot Project "Invasive Species Control," Mount Washington Park

PILOT # 4: Define View and Use of Natives for Landscaping

Option 1: Grandview Viewing Platforms

Issue: Grandview Avenue viewing platforms provide highly prized views of the city and surrounding landscape. Although elevated above the immediate landscape, non-native and native trees and tall shrubs grow higher than the platforms and eventually obstruct the view. They are periodically cut and the area from the sidewalk to a point approximately 20 yards downslope. The result has been increased density of vegetation as woody vegetation re-sprouts and the surviving trees produce unattractive forms, especially during the winter months.

Goal: Establish sustainable landscape of native plants surrounding one viewing platform, approximately 20 yards (down slope) x 50 yards (across the slope) from Grandview Avenue to allow for long-term unobstructed views of the city with minimal maintenance.

Project Description: The project will involve removal of existing (native and non-native) trees and shrubs of mid to tall stature and replacement with native shrubs and small trees that do not obscure views from Grandview Avenue viewing platforms and from houses and business along Grandview Avenue. Maximum normal growing height of vegetation for this project should be under 20 feet. (See Figure 13. Location of Pilot Project "Define Views" Option 1, Grandview Overlook Park.)

Severely pruned vegetation on north face of Mount Washington, Grand view Overlook Park.

--Photo by WPC staff

The details of the project will require consultation with landscapers and arborists familiar with native plant and plantings as well as innovative treatments of steep slopes. In general, the process should be as selective as possible, focusing on the cutting and treatment of tall-growing woody vegetation while keeping low-growing, native woody plants intact. Painting of cut stumps with an herbicide will be necessary, especially when controlling species like tree-of-heaven that have a propensity to sprout and reestablish. Compost, biodegradable fabrics, and other slope stabilization measures should be used for erosion control. A native seed mix that includes perennial herbaceous plants and grasses should be used following cutting and treatment and can include quick growing but minimally persistent cover like annual rye. Small tree and shrub species that can tolerate dry, compacted conditions include: Red bud, serviceberry, chokeberry, fragrant sumac, ninebark, dogwoods, and viburnums. Big and little bluestem grasses and other native tall grasses will provide fall and winter color. If plantings fail, new plantings may be necessary to establish a good vegetation cover that will help to check erosion and further plantings should be carried out as soon as possible. Invasive and non-native plant species should be monitored and periodically removed.

Timeline: This project will require a great deal of coordination, but the initial phase of vegetation control and planting could be relatively fast. An early season treatment (March – April) followed by plantings (April – May) and follow-up fall plantings (September – October) would substantially complete the project. The subsequent year would focus on the monitoring

of plantings, further treatment of invasive woody vegetation and further plantings, if necessary. The first year of the project might even be considered a decline in aesthetics. Significant improvement would take two to three years to achieve.

Benefits: This approach provides a management solution that reduces maintenance costs over the long term, uses native plant species and improves aesthetics around viewing platforms.

Challenges: In addition to the somewhat difficult working conditions and issues with erosion control, public perception would need to be carefully guided. An information/education effort would be an essential part of the project and need to take place before and during the execution.

PILOT COSTS	**Estimates Only**
Demo/Prep	$4,000
Seeding/Mulch	$500
Plantings	$10,000-based on 3,000 sq. ft.
*Volunteers can lower costs	

Source: French, 2005.

Cost Parameters: Although materials would be relatively inexpensive, labor could be costly and volunteers may not be suitable for the difficult terrain, use of herbicides and hard soils likely to be encountered. Overall, this would likely be a moderately costly project to implement.

Figure 13. Location of Pilot Project "Define Views" Option 1, Grandview Overlook Park

Define Views and Use of Native Plants in Landscaping

Option 2: Base of Stone Stairs at Grandview Park

Issue: Approximately half an acre of successional woodland surrounds the entrance to the Grandview Park trail system. Public usership and access are high in these areas. Much of the half-acre area is composed of non-native and native tree and tall shrub species that when left alone, obstruct the views and must be maintained by periodically cutting. In addition, the aesthetic quality of the viewing areas is compromised by the unattractive spring and winter shapes of the established plants.

Goal: Establish sustainable landscape of native plants in the half-acre area surrounding the entrance to the Grandview Park trail system to allow for long-term unobstructed views of the city from the open area of the park with minimal maintenance and improved environmental and aesthetic quality.

Project Description: The project will involve removing existing non-native trees and shrubs and native trees and shrubs of medium to tall height and replacing with native shrubs and small trees that do not obscure views of the city and surrounding landscape from the top of Grandview Park (no taller than 20 feet in height). The area should be seeded with annual rye immediately following removal of tree and shrubs to prevent erosion. Compost, biodegradable erosion control fabrics, and other slope stabilization measures should be used to control soil erosion. Small tree and shrub species that can tolerate dry, compacted conditions include: Red bud, serviceberry, chokeberry, fragrant sumac, ninebark, dogwoods, and viburnums. Native herbaceous species such as aster species and other natives should be used for ground cover. Big and little bluestem grasses and other native tall grasses will provide fall and winter color. Invasive non-native plant species should be monitored and periodically removed. (See Figure 14. Location of Pilot Project "Define Views" Option 2, Grandview Park)

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Timeline: This project has a relatively long time frame due to the need to proceed slowly with removal of current vegetation and the need to repeat clearing of invasives or undesirable natives.

Benefits: Reduces maintenance costs over the long term, uses native plant species and improves aesthetics at the entrance to the trail system on the slopes of Grandview Park.

Challenges: Information on the project must be available to the public and support for the project will determine success and long-term stewardship of the area. Erosion control

measures must be in place (see Management Recommendations). Removal efforts may involve both chemical and mechanical methods.

Cost Parameters: Materials would be relatively inexpensive. Labor could be costly and because of the high visibility of the project area, technical assistance will be essential. Volunteers may be able to assist with portions of the plan, but should not be considered a primary source of labor. Overall, this would likely be a moderately costly project to implement.

PILOT COSTS	**Estimates Only**
Demo/Prep	$10,000
Seeding/Mulch	$3500
Plantings	$15,000
*Volunteers can lower costs	

Source: French, 2005.

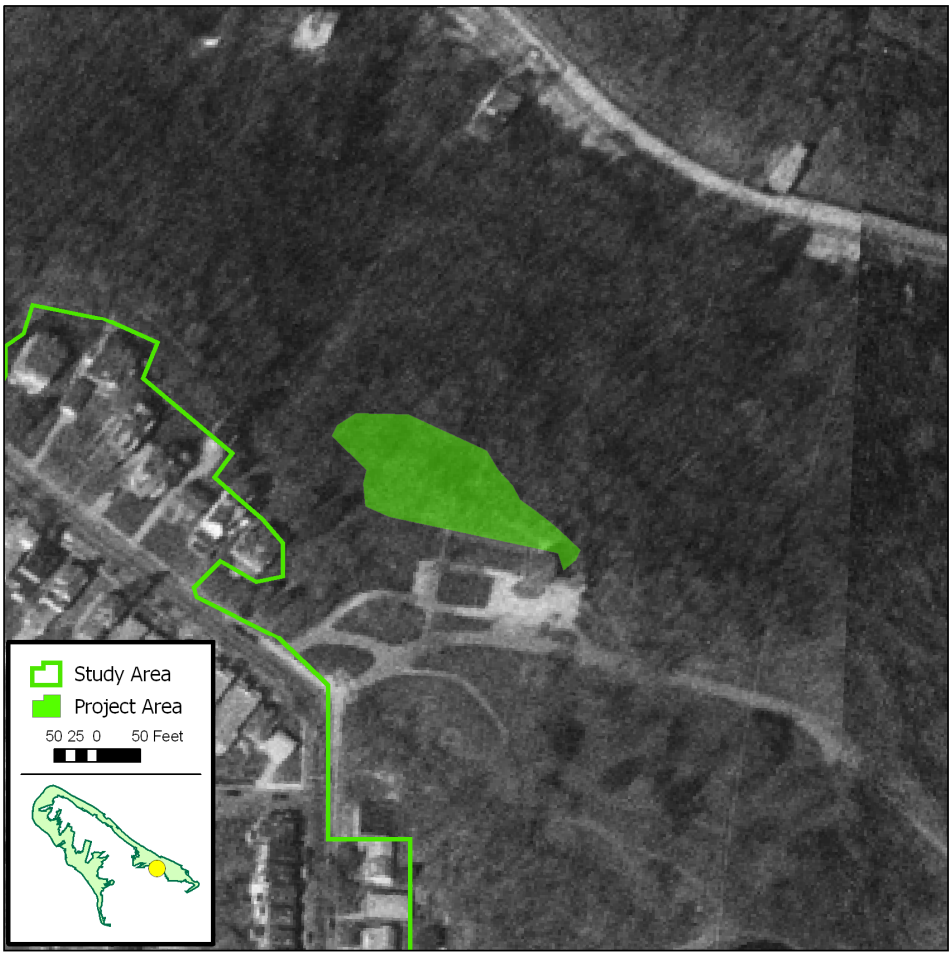

Figure 14. Location of Pilot Project "Define Views" Option 2, Grandview Park

Define Views and Use of Native Plants in Landscaping

Option 3: Maintained Shrubland Surrounding Bigbee Field, Grandview Park

Issue: Approximately six acres of successional shrubland and woodland surrounding Bigbee Field are maintained in a perpetual shrubland state so tree species do not interfere with views of the city and surrounding landscape from houses along Bigbee Avenue. A majority of these shrubland and woodland patches are on publicly owned parcels, including a section of Grandview Park. Public use and access are high in these areas. Much of the six-acre area is composed of non-native and native tree and tall shrub species that when left alone obstruct the views and must be maintained by periodic cutting. In addition, the aesthetic quality of the viewing areas is compromised by the poor winter shapes of currently established plants.

Goal: Establish sustainable landscape of native plants in the six-acre area surrounding Bigbee Field to allow for long-term unobstructed views of the city with minimal maintenance and improved environmental and aesthetic quality.

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Project Description: The project will involve removing existing non-native trees and shrubs and tall native trees and shrubs and replacing them with native shrubs and small trees no taller than 20 feet that do not obscure views of the city and surrounding landscape from houses on Bigbee Avenue. (See Figure 15. Location of Pilot Project "Define Views" Option 3, Bigbee Field, Grandview Park.) The area should be seeded with annual rye immediately following removal of trees and shrubs to prevent erosion.

Compost, biodegradable erosion control fabrics, and other slope stabilization measures should be used to control soil erosion. Small tree and shrub species that can tolerate dry, compacted conditions include: Red bud, serviceberry, chokeberry, fragrant sumac, ninebark, dogwoods, and viburnums. Native herbaceous species such as aster species and other native plant species should be used for ground cover. Big and little bluestem grasses and other native tall grasses will provide fall and winter color. Invasive non-native plant species should be monitored and periodically removed.

Timeline: This project has a fairly long time frame due to the need to remove undesirable species and then repeat the removal as needed over several years.

Benefits: Reduces maintenance costs over long term, uses native plant species and improves aesthetics for residents of and visitors to the area, particularly anyone using trails.

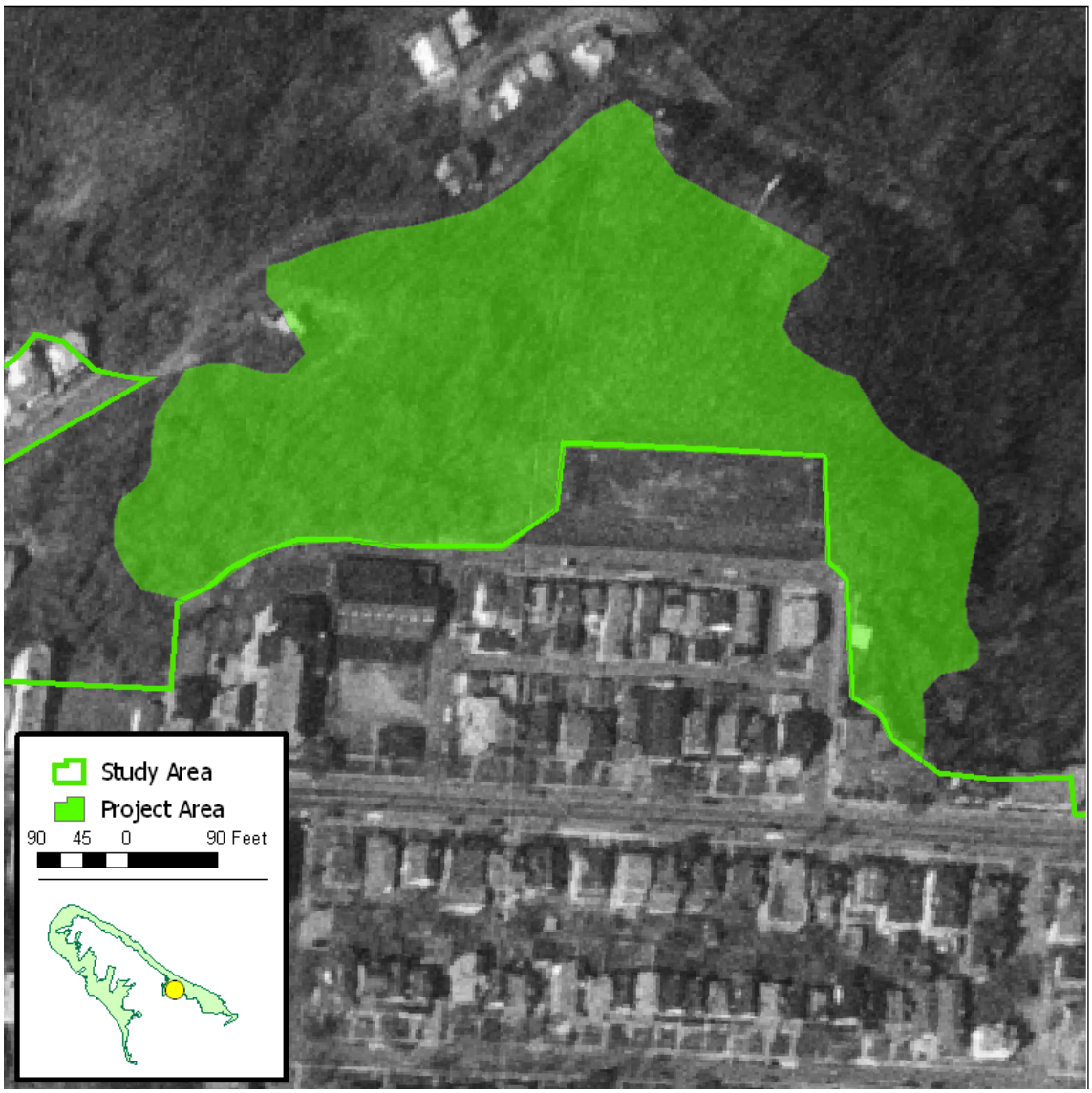

Figure 15. Location of Pilot Project "Define Views" Option 3, Bigbee Field, Grandview Park

Challenges: Potentially high costs in the short term; public information would be essential to keep neighbors and the community informed; and erosion control would be necessary (see Management Recommendations). Plant removal efforts may need to involve both chemical and mechanical methods.

Cost Parameters: Materials would be relatively inexpensive. Volunteers may be able to play a larger role in this project than in Options 1 and 2 because it is neither as steep nor is it as visible. Volunteers could be a primary source of labor for project implementation and maintenance. Overall, this would likely be a moderately costly project to implement.

PILOT COSTS	**Estimates Only**
Demo/Prep	$36,000
Seeding/Mulch	$14,000
Plantings	$50,000 (based on 6 acre site)
*Volunteers can lower costs	

Source: French, 2005.

Severely pruned summer vegetation below Bigbee Field, Grandview Park
--Photo by WPC Staff

Severely pruned winter vegetation below Bigbee Field, Grandview Park
--Photo by WPC Staff

PILOT # 5: Create New Views/Destinations: Overlook in the Saddle

Issue: Areas outside of the Grandview Avenue corridor are generally not sought after for views or other amenities. Most of these areas are visited by local residents only and the trails are not maintained to provide a viewing experience. Views are one of the attractions that have the ability to bring people into other parts of the proposed Byway Park. However, those views must be defined and made accessible. (See Figure 16. Proposed New View Overlooking Station Square and the Monongahela River from the Saddle.)

Goal: Create a new view and use that view to attract people into the proposed Grand View Scenic Byway Park.

Project Description: One area that is particularly amenable to that purpose is an area off of Sycamore Street already receiving some visitation. (See Figure 16. Proposed New View Overlooking Station Square and the Monongahela River, The Saddle.) Several trails weave through the area and a spur trail ends in a steep hillside above McArdle Roadway. This site holds a very interesting view of the city – not a panorama but a substantial and satisfying look that takes the eye slightly down river to the Point and beyond. Developing this view destination would involve improving a section of trail, developing a defined viewing area, adding safety features (e.g., a railing), and creating the necessary signage to direct people to the area. The viewing area surface should be firm and level but permeable (not concrete or asphalt). The signage would fit into the category of permanent rather than flexible since the destination, once developed, will be permanent. As with many of the projects outlined here this pilot will further more than a single recommendation.

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Timeline: Because this project involves a suite of components— trails, viewing platform/railings, signage—it may take some time to accomplish. The order of activities should be: defining the view and developing the viewing area, building the trail and producing signage. The development of the viewing area will likely represent the bulk of the project time.

Benefits: This project will add interest and opportunities for those interested in exploring Mount Washington and its green space.

Challenges: The biggest challenge will be the design and approval of a viewing area. Safety considerations and eventually viewshed management will need to be addressed. Development of a trail should be straight-forward with no substantial obstacles or topography to contend with and many opportunities for placement of signage.

Cost Parameters: Design and construction of viewing area railings, grading, and other site preparation will represent the major expense of this project. Although a hard surface is not advised, some grading may be necessary to create a level surface for pedestrians. Permanent signage will also be of moderate expense, depending upon the format used. Trail construction can be a mostly volunteer effort, directed by CDC staff or Stewardship Committee members.

Cost Estimates: Rough estimates for some materials used in similar projects are listed below.

PILOT COSTS	**Estimates Only**
excavation cut	$17/CY
excavation fill	$17/CY
ornamental railing	$125/LF
chain link fencing (4' black vinyl)	$26/LF
asphalt pavement	$23/SY
trail pavement (AASHTO #10	$5/SF or $20/LF for 4' wide trail
interpretive signs	$2,500 allowance/ 3' x3' x 3' sign (includes research, fab, support, install)
*Volunteers can lower costs	

Source: Kovacik, 2005.

Figure 16. Proposed New View Overlooking Station Square and the Monongahela River, The Saddle

PILOT # 6: Establish New Trail Link(s)

Issue: There are many trails in segments of the Study Area that do not connect features, other trail segments or access points. The result is minimal pedestrian use and poor perception of the condition and value of existing trails. Development of new "linking" trails would facilitate pedestrian movement through the proposed Park segments by turning dead-end or spur trails into linking trails or loop, joining segments of the proposed Park, lessening user dependence on paved surface streets and bringing people closer to the green spaces.

Goal: Create a new trail linking two trail segments to demonstrate the feasibility and desirability of reducing dependence on surface roads and focusing pedestrian use within green spaces.

Option 1: Grandview Park to the Saddle

Project Description: The project will develop a 500-600 foot long trail between the western portion of Grandview Park (block number 4-M-242), running north (down slope) from Bigbee Ave to the eastern portion of the Saddle Segment via Neff St. and passing through through a number of parcels (4-H-199, 4-H-77-3, 4-G-300). The trail will cross William Street; crosswalks and appropriate signage must be developed for pedestrian use. (See Figure 17. Location of Pilot Project "New Trail Linking Grandview Park and The Saddle.") Related trail implementation projects are noted on the Map "Opportunities to Increase Pedestrian Linkages."

Timeline: The physical aspects of this project could be accomplished quickly with dedicated effort over the course of one to several weeks. The best time for clearing and building trails will depend upon weather and soil conditions, but early in the spring season before the major growth period for vegetation may work well. Periodic inspection and maintenance over the year would help to correct any use issues and to maintain good trail conditions.

Benefits: The new linking trail will provide pedestrian access between the Saddle and Grandview Park segments, bringing pedestrian use closer to the green space.

Challenges: The design of the trail will be critical and an experienced trail developer should be consulted or retained to help with this phase. Maintaining a maximum grade of 8% or less will require a switch-back design and result in a trail length of over 550 feet. Stairs may be an option if slopes are too steep or unstable. Signage will be important for directing people and highlighting the project and its goals. Erosion prevention measures will need to be incorporated into the design.

Cost Parameters: This could be a relatively low cost project with major expenditures being project planning/consultation and labor. This project could be carried out entirely by volunteers if guidance and supervision is available. Pro bono design work may also be possible to obtain. Other costs would include tools and materials and, if needed, construction of stairs or other stabilizing structures.

Cost Estimates: For excavation, grading, and construction of a trail using common materials such as a 6-inch stone base topped with 2 inches of limestone dust, new 4 foot wide trails will cost approximately $20/linear foot (Vavro, 2005 and French, 2005.)

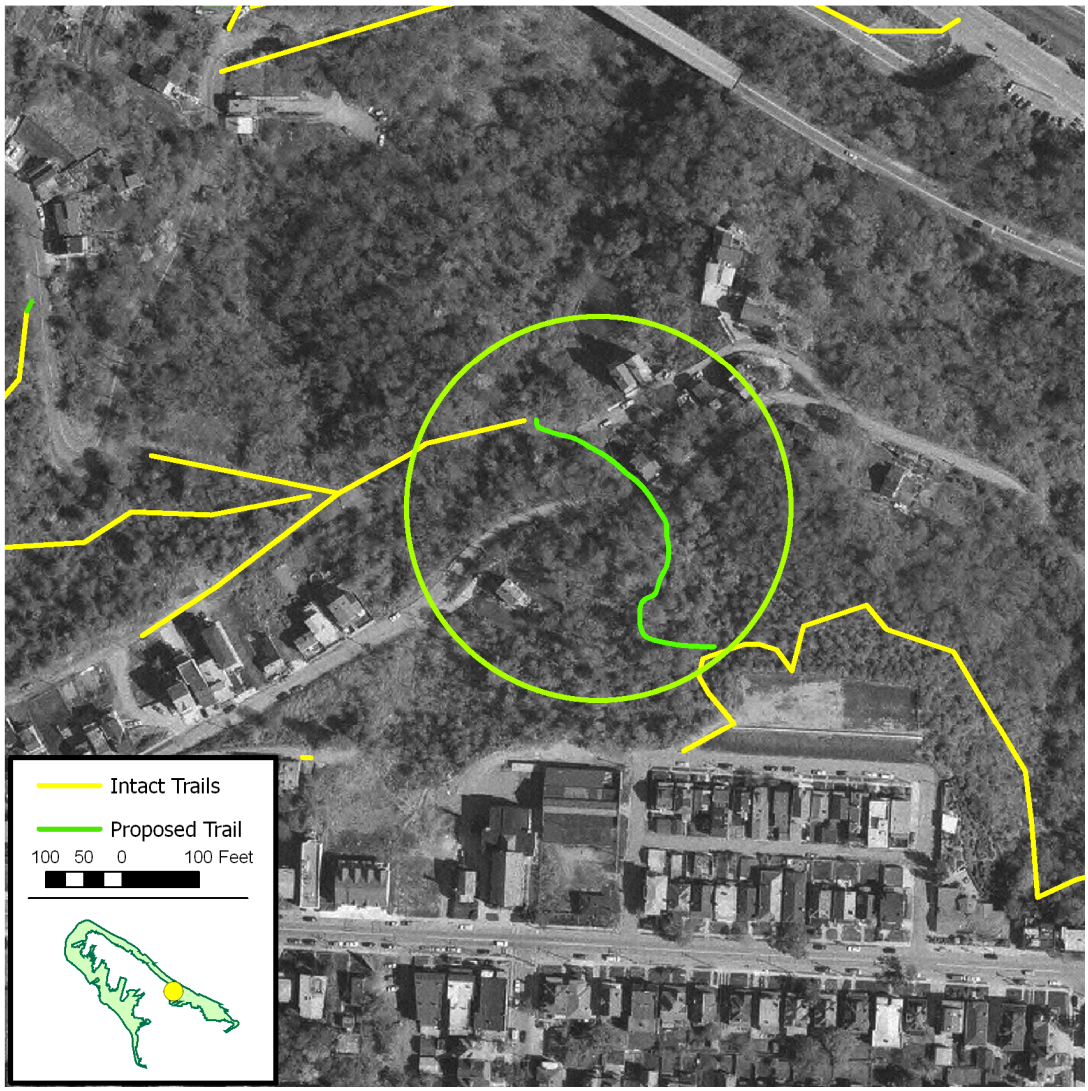


Figure 17. Location of Pilot Project "New Trail Linking Grandview Park and The Saddle"

Option 2: Skookum Field to Greenleaf Avenue, Duquesne Heights Greenway

Project Description: A new 300-400 ft trail will unite two trail sections linking the privately owned Skookum baseball diamond with a trail running parallel to Greenleaf Avenue through parcels 6 E 174, 6 E 74, and 6 E 28. The trail will cross Greenleaf Avenue where crosswalks and appropriate signage must be developed for pedestrian use. (See Figure 18. Location of Pilot Project New Trail Linking Skookum Field to Greenleaf Avenue.) Related trail implementation projects are noted on the Map "Opportunities to Increase Pedestrian Linkages."

Timeline: The physical aspects of this project could be accomplished quickly with dedicated effort over the course of one to several weeks. The best time for clearing and building trail will depend upon weather and soil conditions, but early in the spring season before the major growth period for vegetation may work well. Periodic inspection and maintenance over the year would help to correct any use issues and maintain good trail conditions.

Benefits: The new linking trail will provide pedestrian access between the well-used baseball field and an underused but very interesting trail overlooking the West End. The trail runs parallel to Greenleaf Avenue and brings pedestrians closer to the green space.

Challenges: The design of the trail will be critical and an experienced trail developer should be consulted or retained to help with this phase. Maintaining a maximum grade of 8% or less will require a switch-back design and may result in an increased trail length. Stairs may be an option if slopes are too steep or unstable. Signage will be important for directing people and highlighting the project and its goals. Erosion prevention measures will need to be incorporated into the design.

Cost Parameters: This could be a relatively low cost project with major expenditures being project planning/consultation and labor. This project could be carried out entirely by volunteers if guidance and supervision is available. Pro bono design work may also be possible to obtain. Other costs would include tools and materials and, if needed, construction of stairs or other stabilizing structures.

Cost Estimates: For excavation, grading, and construction of a trail using common materials such as a 6-inch stone base topped with 2 inches of limestone dust, new 4 foot wide trails will cost approximately $20/linear foot (Vavro, 2005 and French, 2005)

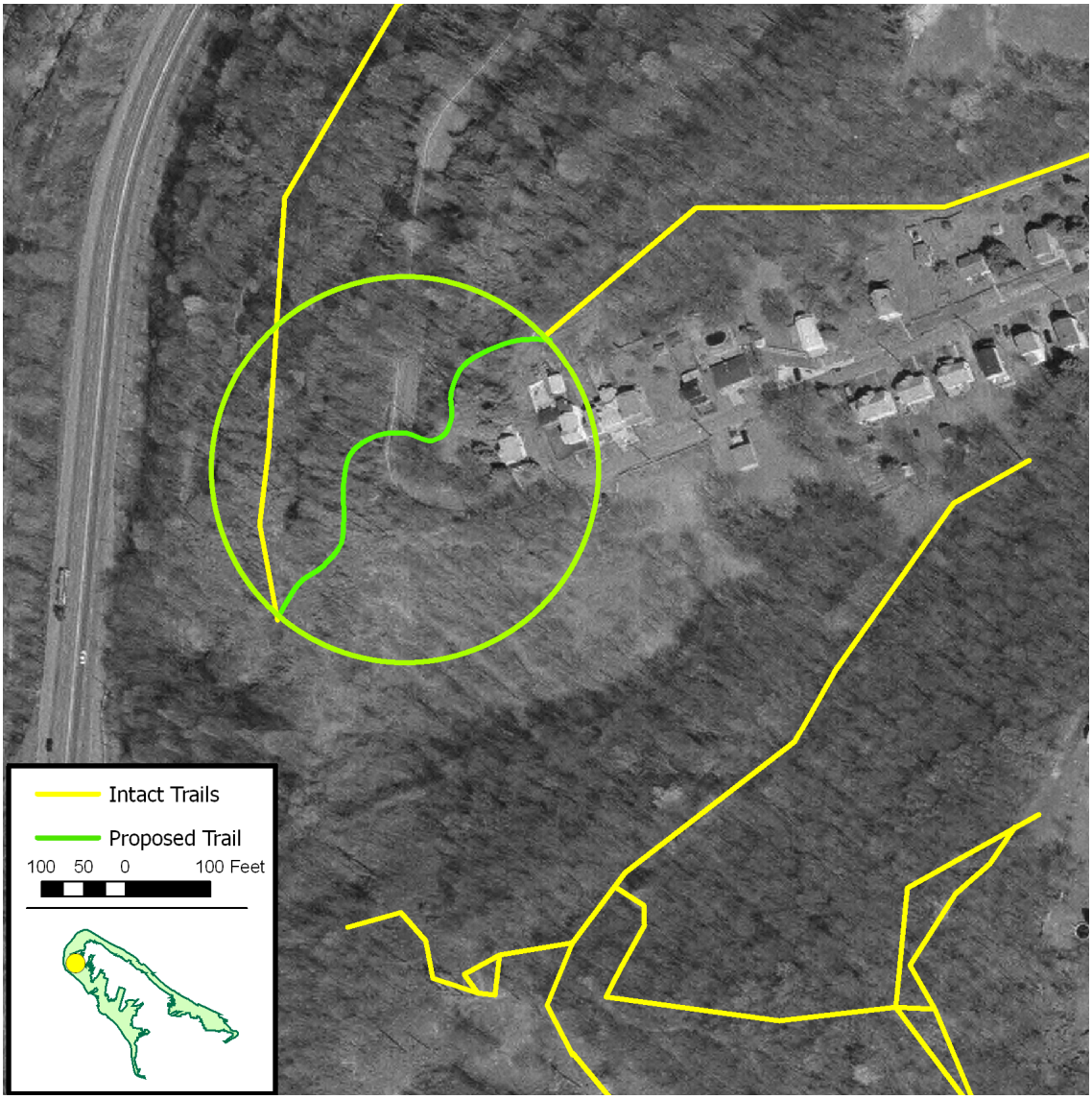


Figure 18. Location of New Trail Linking Skookum Field to Greenleaf Avenue, Duquesne Heights Greenway

PILOT # 7: Eliminating Hazards

Issue: The health and safety of Mount Washington residents and visitors is compromised in several areas by illegal dumping. Removal of household waste, automobile parts, tires and rusted metal would improve habitat quality and pedestrian access and raise the aesthetic quality of the green spaces. (See Figure 18. Eliminating Hazards in the Duquesne Heights Greenway and The Saddle.)

Goal: Work with local residents to clean up dumping sites.

Project Description: Clean up projects range from picking up paper, cardboard and soda cans to removal of automobiles and household appliances; all can be accomplished with volunteer support. For this pilot, two sites were chosen that have a high degree of visibility and should generate community support. (See Figure 19. Eliminating Hazards in the Duquesne Heights Greenway and The Saddle.)

Timeline: Clean-up projects should take place over the course of a day or part of a day with dedicated effort.

Benefits: Clean green spaces will improve the safety of users, improve aesthetic quality of the open space, and instill a stewardship ethic in the minds of the participants. This will work to create champions for green space in the Mount Washington area and work to connect residents with nature.

Challenges: Eliminating the cause of the dumping is something that may take longer to combat and possibly something that a one-day clean up activity will not affect. Increased police presence would prevent illegal dumping. The sites would have to be inspected to determine the potential threats to participant safety, and the potential costs of the project would be based on the amount of garbage present and the size of the items. In a number of areas, trails continue through privately owned property and this presents the option for expanding clean-up efforts and establishing positive relationships with land owners. One area, in particular would lend itself to a cooperative clean-up effort involving a stretch of trail that appears quite important to establish linkage in a section of Duquesne Heights.

Cost Parameters: This would be a predominately or all-volunteer effort that could be done at a relatively low cost. The major costs would be project planning, equipment rental, and hauling fees for large objects.

Cost Estimates: According to the City of Pittsburgh Department of Engineering, current costs for a one-ton truck or a tri-axle truck for removal are $68/day or $47/hour. This does not include any non-volunteer labor, or additional equipment that may be needed such as a backhoe, bulldozer, or bobcat (Kovacik, 2005).

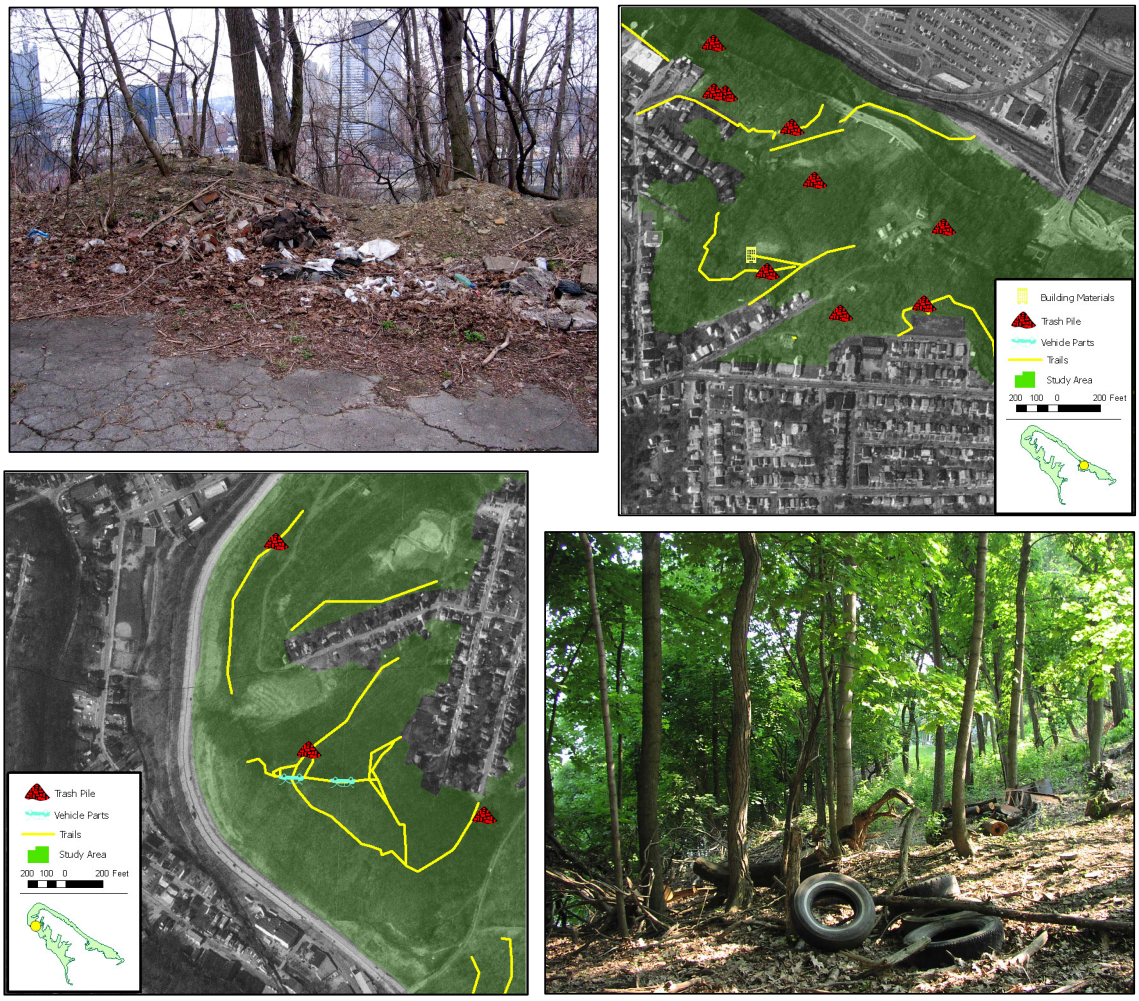


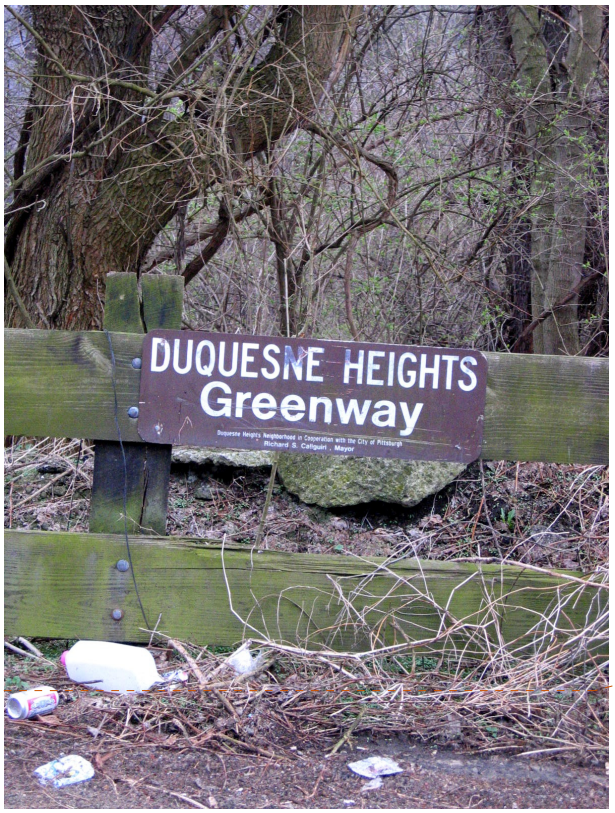
Figure 19. Eliminating Hazards in the Duquesne Heights Greenway (upper photo and map) and The Saddle (lower photo and map)

PILOT # 8: Improving Access to Open Spaces within the Duquesne Heights Greenway

Issue: There are a number of trails through different parts of the Duquesne Heights Greenway. However, access is often limited.

Goal: Provide access, signage and information for trails in the Duquesne Heights Greenway.

Project Description: Develop access points at Republic and Bradley (intersection with Greenleaf) streets to trails in the Duquesne Heights Greenway. Work with adjacent land owners to educate them to the benefits of open publicly accessible green space. Improve fences, gates, and signs along sections of the Greenway. (See Figure 20. Selected Pedestrian Access Points to Trail System of Duquesne Heights Greenway.)



Timeline: This project could be quickly accomplished with volunteer effort. Costs would come in the form of materials (paint, wood, etc.) and labor to establish the access points. Professionals would be needed to remove trees and limbs that have fallen or overgrown the access points. New signs would add to the cost.

Benefits: Access to the green spaces in the Duquesne Heights Greenway will increase use and reduce confusion, especially in concert with development of a trail system through the Park. Like other projects, this will instill a stewardship ethic in the minds of the participants and work to create champions for green space in the Mount Washington area.

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Challenges: Establishing a good working relationship with adjacent land owners may prove to be quite challenging since this project will increase the visibility and access to visitors. Adjacent landowners may be leery of loiterers and vandalism. It is important that law enforcement officials routinely monitor newly established access points.

Cost Parameters: This is a volunteer effort that could be done at a relatively low cost. The major costs would be project planning, equipment rental, and materials costs.

Cost Estimates: Costs to create signage for trails is difficult to approximate due to variables such as sign materials, number of signs, size of signs, etc. Estimates for similar way-

finding signs ordered by the Pittsburgh Parks Conservancy ran between $1000 and $2000 per sign. Professional services for signage design can run upwards of $5000 (Enz, 2005).

Figure 20. Selected Pedestrian Access Points to Trail System of Duquesne Heights Greenway