“ *Perhaps the most striking opportunity noted for a large park is*
the valley of Nine Mile Run.
Its long meadows of varying width would make ideal playfields;
the stream, when it is freed from sewage,
will be an attractive and interesting element in the landscape;
the wooded slopes on either side give
ample opportunity for enjoyment of the forest,
for shaded walks and cool resting places.”

—Frederick Law Olmsted, Jr., 1910



The Nine Mile Run development site

Acknowledgements

A large number of individuals and organizations contributed significantly to the evolution and success of Ample Opportunity: A Community Dialogue.

Carnegie Mellon University
Patrick Keating, Vice President for Business and Administration
Martin Prekop, Dean, College of Fine Arts
Edward Hydzik, Project Manager, Facilities Svc.
Richard Palladini, Project Manager, Facilities Svc.

STUDIO for Creative Inquiry
Research Assistants
Choli Lightfoot, technical and design research; Richard Pell, computer research and production; Sean Lyons, history research and production; Lynette Little, funding and administration, and Tom Birdsey, Chris Frankland, Sharona Jacobs, Elif Konuk, Amy Marino, Cat Mazza, Niambi Sims, Lorne Colon, Gern Roberts, Peter Schwartz, Doug Lambert, John Paul

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Joe Plummer, *Environmental City Initiative*
Mark Schneider, *The Rubinoff Company*
John Shields, *Swisshelm Park Community Assoc.*
Kenny Steinberg, *Squirrel Hill Urban Coalition*
Jeff Wagner, *Western Pennsylvania Conservancy*

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Editing: Christine Simony, Jennifer Brodt, Karen Pryor
Production Assistance: Susan Murray, Jessica Cobert, Choli Lightfoot, Richard Pell

Supporting Organizations
Pittsburgh Department of City Planning
The Environmental City Initiative
The Pittsburgh Children's Museum
Carnegie Museum of Natural History
The Carnegie Mellon University-University of Pittsburgh Brownfields Center

Ample Opportunity: A Community Dialogue, was made possible by a grant from the Heinz Endowments.

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Pennsylvania



Allegheny County



Nine Mile Run Watershed





Pittsburgh

Ample Opportunity: A Community Dialogue

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The STUDIO for Creative Inquiry is an interdisciplinary research center in the Carnegie Mellon College of Fine Arts. The STUDIO provides an interdisciplinary research environment for artists. The goal of the STUDIO is to encourage work that bridges creative activity and intellectual inquiry within the context of community.



The Community Resource Trailer

Introduction

The STUDIO for Creative Inquiry, a research facility in the College of Fine Arts at Carnegie Mellon University, is the home of the Nine Mile Run Greenway Project (NMR-GP). This project is a research initiative which considers the issues of post-industrial (post-modern) culture, ecology, and ideology. An initial component of this research initiative is entitled "*Ample Opportunity: A Community Dialogue*," which has been made possible with the generous donation of funds from the Heinz Endowments. *Ample Opportunity* is directed by three artists and an environmental activist/attorney. Colleagues and advisors from academia, industry and municipal government have worked closely with the project co-directors to develop the programs. Pittsburgh's Department of City Planning and the Environmental City Initiative have been invaluable partners providing access to information and planning discussions about the development. None of the work would have been possible without the support of our graduate research assistants and the administrative staff of the STUDIO for Creative Inquiry.

Over the last 12 months, the STUDIO has worked to create an informed public discussion about a specific open space opportunity on a brownfield (or post-industrial property) that is about to be developed into a mix of housing and public greenway. This discussion has considered the question of "how" the site has evolved and what the real potential and problems are in terms of reclamation, revegetation, and social reuse. This final report outlines our philosophical approach, and presents the historical precedents. We then assembled the sum of material from the *Community Dialogue* series and close with a final synthesis and analysis of the work by trying to answer the question: "How do we begin to measure the value of a conversation?"

The first two chapters introduce the project philosophy and historical precedents for an interdisciplinary inquiry in art, science and ecology. Four chapters follow which correspond to events and subject matter specific to the Nine Mile Run open space opportunity. Each of these subject chapters introduces and analyzes the event and presents the advisory board members.

The subject chapters include the following information:

1. Background document created by the advisory board and distributed to a 600 person mailing list.
2. A transcript of the speech by a nationally recognized professional in the field invited to present the keynote address.*
3. A transcript of the community dialogue at each event's breakout tables.

The final chapter includes a synthesis of the year's efforts.

Our goals for the past year were laid out in the initial program proposal:

1. Coordinate a series of educational workshops intended to inform, expand and enable discourse about public space and sustainable development.
2. Develop programs, tools and systems which promote individual expression and discussion about public space.
3. Document the process and disseminate the results.

This document is testament to the tools we developed and the information we compiled. The larger challenge is to examine how WELL we accomplished our goals.

* We chose not to include the local advisory team presentations in workshops 2, 3 and 4 due to the replication of material.



Site overview looking northeast

"One might say that while a site represents the constituent physical properties of place—its mass, space, light, duration, location, and material processes—a place represents the practical, social, cultural, ceremonial, ethnic, economic, political and historical dimensions of a site. Places are what fill them out and make them work."

—Jeff Kelley quoted in Mapping the Terrain, Lacy, S,. ed. (1995)

Project Philosophy

"Ample Opportunity: A Community Dialogue" is an experiment in public discourse. A post-industrial brownfield property (which is under consideration for development) is the subject of the conversation. As we monitored the discussion, we observed that while a significant team of private housing specialists was focused upon housing development, no one was paying attention to the recommended open space component. No funds were being expended to assess, test, model or plan the open space. The context is a 360 acre tract of slag-filled valley bisected by the remnants of an urban stream flowing from a major city park, to its mouth on the Monongahela River. It was clear to us, however, that Nine Mile Run would provide an opportunity to consider the meaning and function of post-industrial public space. The primary goal of this year's efforts is to explore the potential for an issues-based public discussion that would produce a motivated and informed constituency prepared to participate in public decision-making about open space opportunities at Nine Mile Run.

The question we are asked time and time again is how artists became involved in a research program focusing on the reclamation of post-industrial brownfield properties. Brownfields are a subject area which some individuals regard as better suited to engineers, economists, and public policy analysts who have been on the forefront



Looking at aquatic organisms with Dr. Mary Kostalos, Chatham College

of solving the brownfields problem. We came to this project with an awareness of the interdisciplinary complexity of our endeavor. We also came to it aware of what was missing from the discussion—an analysis of the open space opportunity. Kirk Savage's paper, "Art, Science and Ecological Inquiry: The Case of 19th-Century American Landscape Painting" (which follows) provides the historic context of artists considering landscapes, using the tools and concepts of science and ecology to inform their inquiry. The Nine Mile Run Greenway Project (NMR-GP) team is also considering landscape; our concept of reclamation is informed by some of the current ideas in systems/restoration ecology. Our program method is informed by theoretical ideas in the arts and philosophy, as well as by some practical examples from early brownfields reclamation. We will outline some of the precedents for our approach in the following paragraphs as an introduction to this report.

The unifying theory of the NMR-GP is reclamation as an integrated ecosystem restoration that embraces the complex goal of "nature" in the context of contemporary urban culture. The latest issue of *Society for Ecological Restoration* reflects this interdisciplinary complexity, "restoration practices which hold firm to ecological fidelity and embrace social and cultural goals are much more likely to prosper and endure."[1] A.D. Bradshaw, a restoration biologist involved in the reclamation of the Sudbury region of Canada comments, "The primary goal of restoration is an aesthetic one—to restore the visible environmental quality of the area."[2] Bradshaw also outlines specific scientific methods for ecological restoration: soil-chemical balance, initial vegetative stability and long-term biodiversity. It is quite clear from the preceding statements that these scientific methods are operating within a set of cultural options. Do we identify the "original condition" and return our brownfields to that standard? At Nine Mile Run, the question of original condition is answered by millions of tons of slag dumped upon a broad floodplain. We need to work within the community to identify a socially acceptable solution that is economic, aesthetically rich, and ecologically sound. We must define what nature means within the context of our urban community. The immediately adjacent model is Frick Park. The NMR-GP would suggest that the baseline for our work is circumscribed in the flora, fauna, soils, and the remnant natural hydrology we see in Frick Park. The starting point and comparative bio-data can be found in the variation of plant succession that is occurring on the slag and shale slopes of the property today.

The integration of the reclamation into the social fabric of the community is essential. The previously mentioned Sudbury project is an interesting model to examine in this respect. The topography and soils of the damaged property were judged unsuitable for mechanical reclamation. At the same time, the community was devastated by the social and economic factors of post-industrial life. Working with a technical committee of industry, academia, non-profits, and municipal government, the Sudbury community was able to outline a program for reclamation, revegetation, and test sites were begun. Meanwhile, funds were obtained to hire a significant portion of the unemployed populace in the reclamation program. The program ultimately employed three thousand individuals over a 15-year period. In the process they reclaimed 480 square miles, planting grasses and 1,692,000 trees.[3]

How do we reclaim portions of our brownfield sites to restore the

[1] Higgs, E., (1997) "What is Good Ecological Restoration?", excerpts from an article originally published in the Journal of Conservation Biology. Society for Ecological Restoration News, Vol.. 10 No. 2-1997.

[2] Bradshaw, A.D., (1995) "Goals of Restoration", published in "Restoration and Recovery of an Industrial Region" Ed., Gunn, J.M., Springer-Verlag N.Y. Inc.

[3] Lautenbach, W.E., Miller, J., Beckett, J., Negusanti, J.J., Winterhalder, K., (1995) "Municipal Land Restoration Program: The Regreening Process", published in "Restoration and Recovery of an Industrial Region" Ed., Gunn, J.M., Springer-Verlag N.Y. Inc.

[4] McDonough, W., (1992) "The Hannover Principles", published electronically at, http://minerva.acc.Virginia.EDU/~arch/pub/hannover_list.html

ecological function to our cities? How do we "build in" a sustainability that will allow these natural interventions in the urban landscape to endure the changes in politics, economics, and adjacent environments? How do we manufacture land stewardship in a community that was weaned on the extraction of resources? How do we learn to "recognize the interdependence of humanity and nature, to treat nature as a model and mentor, rather than an inconvenience to be used, evaded or controlled?"[4] These questions begin to circumscribe our challenge and the evolving meaning of nature in an urban setting.

Another important theoretical foundation can be found in our artistic intent which is informed by evolving contemporary ideas of socially based art practice and the last 30 years of reclamation art. Our process is rooted in ideas of reconstructive postmodern practice. The attempt is to move the dominant model of humans in opposition to nature toward a more integrated aesthetic of interconnectedness, social responsibility, and ecological attunement.[5] This paradigm shift is also described in the context of evolving artist media and expanding public practice, as new genre-public art. Suzanne Lacy clarifies this approach, "new genre-public art-visual art that uses both traditional and nontraditional media to communicate and interact with a broad and diversified audience about issues directly relevant to their lives—is based on engagement." [6] The history of this work is rooted in some of the early ideas of "social sculpture" developed by the German artist Joseph Bueys (1921-1986). "He sets out from the premise that although great and definitive signals have emerged from the traditional concept of art, the great majority of human beings have remained untouched by this signal quality." Social art, or social sculpture, Bueys believed, is art that sets out to encompass more than just physical material. "We need a foundation of social art, on which every individual experiences and recognizes himself as a creative being and as a participant in shaping and defining the world. Everyone is an artist."[7]

Reclamation Art, is a term used in an electronic document examining "artworks proposed or constructed by contemporary artists as a means to reclaim landscapes that have been damaged by human activities." [8] This type of artwork goes back as far as the '60s when a significant number of artists moved outside their studios and galleries in a movement known as Earthwork. Initial work in the field, relative to reclamation art practice, was done by Robert Smithson who actively searched out industrial land users for collaboration on his projects which explored formal/sculptural reclamation solutions to strip mine sites, slag piles, etc. [9] Another important artist with a more ecologically integrated approach would be Allan Sonfist, who actively "reclaimed" the native vegetation of New York City in a public park/art work begun in 1965. This "Time Landscape," as it is known, is still flourishing at Houston and La Guardia Place in New York City.[10] Numerous artists have followed this path of contemporary practice. Common names in the field include: Helen and Newton Harrison, Agnes Denes, Donna Henes and Buster Simpson.

Municipalities have also recognized the value of reclamation artists. In 1979, the city of Kent, Washington brought in a team of artists to consider various quarry and dumping sites, resulting in two celebrated works. Robert Morris created an elegy to the industrial use, while Herbert Bayer created a "sculpted" park which is more integrated into the community. In 1990, the meaning of reclamation art was debated at



The Nine Mile Run team participated in *Art and Nature,* an international overview of ecological artwork curated by Patricia Watts, at the Rico Gallery in Santa Monica, California in January 1998.

Exhibition design by: Bob Bingham, Tim Collins and Reiko Goto.

[5]Gabelik, S., (1991) "The Reenchantment of Art." Thames and Hudson, 500 Fifth Avenue, NY, NY.
[6]Lacy, S., (1995) "Mapping the Terrain: New Genre Public Art." Bay Press, Seattle, WA.
[7]Stachelhaus, H., (1987) "Joseph Beuys." Abbevile Press, 488 Madison Avenue. NY, NY.
[8]Frost-Kumpf, H.A., (1995) "Reclamation Art: Restoring and Commemorating Blighted Landscapes" Published electronically on the Pennsylvania State University, Geography Department server. http://www.geog.psu.edu.Frost/Frost/HTML/FrostTop.html
[9]Hobbs, R., with contributions by; Alloway, L., Coplans, J., Lippard, L., (1981) "Robert Smithson: Sculpture." Cornell University Press, Ithaca, NY, London, England.
[10]Oakes, B., (1995) "Sculpting with the Environment." Van Nostrand Reinhold, NY, NY.



A mixture of citizens, academics, professionals, state representatives and children attended the tours.

the National Endowment for the Arts (NEA). The NEA awarded, rescinded, and then reinstated funding for "Revival Fields." Artist Mel Chin, had developed the project proposal in collaboration with USDA agronomist, Rufus L. Chaney. This is an art-science work that explores how plants can safely remove metals and materials from contaminated soils. Chin sees his work in two forms: as a formal planting on the landscape and as a complex series of "systemic sculptures" that occur as the plants and roots act on the contaminants in the soil. An interesting component of the "Revival Field" is that it has traveled to a variety of highly contaminated sites around the country and recently to Europe. The integrated work has been used as a tool to acquaint new populations with the relationships and concepts of bio-remediation aesthetics.

The final theoretical approach is defined as "Community Dialogue." Our process is based on the philosophy and ideals of democratic empowerment through discourse. We are a culture that has fractured the complex experiences and understanding of life into specific disciplines and independent specialties. (In other words, the quantitative evaluation of experts has taken precedence over the layman's ability to use experience and general qualitative analysis as a method of making decisions.) We have learned to leave our decisions in the hands of experts, yet at the same time we have learned to mistrust those experts depending on who is paying for their opinion. The NMR-GP team would argue that brownfield sites provide an ideal environment to "reclaim" the individual's role in the discursive public sphere. We need to reclaim our relationship to complex public issues. The enormous potential for significant changes in thinking about urban development, public space, ecology, and sustainability make brownfield properties ideal subjects for democratic discourse. The real and perceived contamination issues surrounding most brownfield sites suggests that informed public discourse is a prerequisite for brownfield development. Recent brownfield literature identifies community involvement as an essential component of brownfield development. [11] The NMR-GP *Ample Opportunity* program has used academic, municipal, and private resources to enable and inform the public discussion.

Jurgen Habermas, author of a groundbreaking work on the historic evolution of the public sphere,[12] suggests the autonomous self emerges and democracy is enabled by participation in the discursive context (public discussion). "Participation develops an individual's capacities for practical reasoning, as well as the kind of mutual respect ...entailed in the very possibility of discourse." [13] This notion of autonomous self or "public man" has been suggested by some theorists to be a psychological function of humanity increasingly lost to modern culture.[14] We attempted to devise a program that would provide context, method, and opportunity to explore the function of public discourse in relationship to Nine Mile Run. We see this public discussion as an important precursor to the spatial development of a greenway and its goal of sustainable stewardship. To accomplish this, we needed to re-orient the position of the expert in relationship to the community. Our process was to enable interdisciplinary discussion, by which we clarified the issues and language that permeate the "expert" discipline specific discussions. With this new public language (freed of

[11] Pepper, E., (1997) "Lessons From the Field, Unlocking Economic Potential with an Environmental Key" Northeast-Midwest Institute, Washington D.C.

[12] Habermas, J., (1962) "The Structural Transformation of the Public Sphere" Translated by Burger, H. (1989) MIT Press, Cambridge Mass.

[13] Warren, M. "The Self in Discursive Democracy", published in; "The Cambridge Companion to Habermas", White, S.K., ed.. Cambridge University Press, N.Y., N.Y.

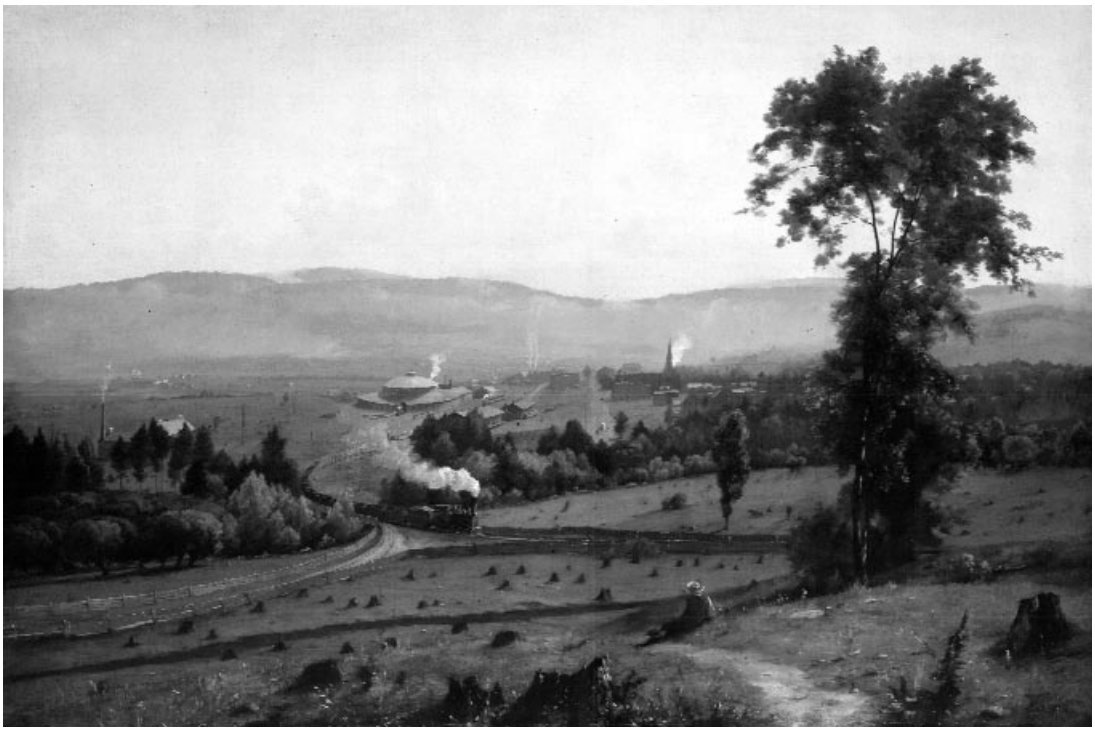
[14] Sennett, R., (1972) "The Fall of Public Man" W.W. Norton and Co. 500 Fifth Avenue, N.Y., N.Y.

jargon) we then devised a series of workshops, tours, and public discussions in which we manipulated the normal client-expert relationship. We tried to provide the information tools to help the public understand the complexity of the issues and then devised events where the experts and the public could interact on a basis of shared interests. The reclamation of urban, post-industrial or brownfield sites provides an enormous cultural challenge and opportunity. The industrial revolution was an economic, cultural, and environmental revolution, a revolution of both the public and private realm. Privately: fortunes were made, families had jobs, and made a living. Publicly: museums, libraries and schools were built, parks were donated, unions struggled with the industrialists, the environment suffered and public access to our rivers was lost.

We have the chance to reconsider the forces that created post-industrial brownfield properties and how we can better integrate production goals with environmental health and quality. We have the chance to reconsider the role of public space and waterfront access. We have the opportunity to reconsider the split between nature and culture, how the city has come to mean "no nature" and how the perception of natural places is defined by a lack of human culture. In the words of William McDonough, "Imagine a world full of hope and promise, where we measure our positive progress and celebrate the fecundity of our creative imaginations. In a world perceived to be reaching its critical limits we are now asking not how few songbirds we will leave in the world for our children to enjoy, but how many."



Fourth and fifth grade children from Homewood Montessori School came to Nine Mile Run for a tour.



George Inness, *The Lackawanna Valley,* 1856, oil on canvas 33 7/8" x 50 1/4"
Gift of Mrs. Hultleston Rogers, ©Board of Trustees, National Gallery of Art, Washington, D.C.

Art, Science, and Ecological Inquiry: The Case of 19th-Century American Landscape Painting

Kirk Savage
University of Pittsburgh

Introduction

One of the consequences of the professionalization of disciplines over the past century has been the almost complete isolation of the arts from the sciences. By contrast, the research currently in progress at Nine Mile Run seeks to build bridges between these now remote islands of inquiry. A basic premise of the Nine Mile Run Greenway Project is that the study of both natural and social systems requires a more integrated approach than the logic of specialization and sub-specialization allows. We are therefore interested in what can be learned by returning to earlier methods of inquiry that flourished before the hardening of disciplinary boundaries.

This paper will turn its attention to one historical case of cross-fertilization between the visual arts and the natural sciences: American landscape painting of the mid-nineteenth century. This case is especially important to us because it coincides with the beginnings of ecological consciousness in the U.S. and because it is implicated in the struggle between the competing demands of "nature" and development.

Landscape painting was practiced in this country from its founding, but it did not become widely popular until the 1820s and 1830s when artists such as Thomas Cole—originator of the so-called "Hudson River School"—pioneered a "national" style of landscape painting that depicted distinctively American scenery allied with almost microscopically close observation of nature. Cole and his kindred spirits treated natural scenery reverentially, as God's own creation, and accordingly they placed great stress on sketching from and in nature. By the 1850s, the painter Asher B. Durand, Cole's successor as leader of the Hudson River group, rejected the whole idea of conventional art instruction and recommended instead "the STUDIO of Nature."[1] This attitude toward

[1] Asher B. Durand, "Letters on Landscape Painting," *Crayon 1* (January 1855), 2.
[2] William H. Truettner and Alan Wallach, eds., *Thomas Cole: Landscape into History* (New Haven: Yale University Press, 1994), 29-31.

the natural landscape was part of a larger phenomenon that recent scholars have dubbed "landscape tourism."[2] Landscape tourism became more popular as the virgin [i.e., pre-European contact] landscape[3] increasingly disappeared: the subjugation of Native American populations, the development of the railroad, and the ever-expanding frontier of new settlement and development made "nature" less remote, safer and easier to reach and enjoy for both artists and tourists. The reverence for nature, therefore, cannot be disentangled from the very forces that were encroaching upon nature and destroying it.

We will examine the work of mid-century American landscape painters in three different ways—each of these relevant to our inquiry.

The artist as scientific observer

Through much of the nineteenth century, artists were included in scientific expeditions exploring the North American continent. They were considered critical to the task of scientific documentation; they drew and painted little-known landscapes and the flora and fauna (and sometimes native inhabitants) within them. As Barbara Novak has written, "the artist [on such expeditions] was explorer, scientist, educator, frontiersman, and minister."[4] Perhaps the most astonishing example is the work of the Swiss artist Karl Bodmer, part of the scientific expedition through the Northwest in the 1830s led by the German Prince Maximilian, who was himself a student of the great scientist Alexander von Humboldt. Bodmer's watercolor drawings record with exceptional clarity and freshness the particular beauty of people, plants, animals, and geological formations along the upper Missouri River.[5]

Artists played an important role in such enterprises because they were in effect the instruments of empirical observation. Careful visual observation underlay the natural classification systems developed and refined since the eighteenth century; since visual artists were trained to observe and record their observations, their work merged with scientific inquiry.

The same could be said of landscape painting with no explicit scientific purpose. Cole and other artists walked the landscape extensively and studied it minutely on site. They were interested in both macro and micro processes—the geological forces that shaped the landscape and the botanical diversity that flourished within it. Landscape painters kept books on geology and botany in their libraries and sometimes even corresponded with leading scientists of the day. (Cole, for example, helped procure a collection of fossils for the eminent scientist Benjamin Silliman;[6] while Cole's most celebrated pupil, Frederick Church, was an avid enthusiast of Humboldt.[7]) Typically, Hudson River School artists painted a detailed foreground to showcase local flora and often represented views with striking geological features to suggest the processes of change. Their work amounted to a kind of scientific expedition of the landscapes they visited. One critic in 1859 went so far as to declare that the landscape painter *"is a geologist. Continually meeting with different strata, the query naturally arises, why this diversity? He meets with immense fissures and volcanoes, and he asks himself whence did they originate and by what convulsions were they produced? To him, therefore, belongs the study of geology, as he more thoroughly than any other can imitate what nature has produced."*[8]

[3]We know from recent scholarship that Native Americans did not leave the landscape untouched but actively altered it, through controlled burning of forests, agriculture, etc.

[4]Barbara Novak, *Nature and Culture: American Landscape and Painting 1825-1875*, rev. ed. (New York: Oxford University Press, 1995), 137.

[5]William H. Goetzman, *Karl Bodmer's America* (Lincoln: University of Nebraska Press, 1984).

[6]Novak, 57.

[7]Kevin J. Avery, *Church's Great Picture: The Heart of the Andes* (New York: Metropolitan Museum of Art, 1993).

[8]"Relation between Geology and Landscape Painting," *Crayon* 6 (August 1859), 256.

This notion that artists had a special closeness to nature, by virtue of their ability to recreate nature's own creations, was commonplace in the mid-19th century. Landscape painters were trained not only to observe the landscape but to convey its feel, to suggest the experience of being in it. Scientific observation in the modern sense suggests detachment, an emotional distance from the object under investigation; landscape painters following Cole were interested instead in collapsing distinctions between observation and emotion. Thus the changing moods of the landscape, in different atmospheric conditions and times of the year, were equally if not more important than its topographical facts.



Frederick E. Church, *The Heart of the Andes,* The Metropolitan Museum of Art, Bequest of Margaret E. Dows, 1909 (09.95). © 1979 by the Metropolitan Museum of Art

The artist as ecologist

These reflections prompt us to wonder whether the work of landscape painters led them (or their audience) to an ecological understanding of the landscapes they studied. Amy Myers has argued that much of nineteenth-century scientific illustration was essentially anti-ecological, focused instead on the classification of "specimens" isolated from context or habitat. Yet she identifies an important "subcurrent" running from the work of William Bartram in the 1810s to the illustrations of Audubon in the 1840s, which employed landscape to suggest the organic unity of living things.[9] Recently ecologist William Graf has argued more strongly that landscape painters created an ecological view of nature. Painters such as Bodmer and George Catlin, Graf writes, tacitly brought a "systems" perspective to the study of nature, especially of rivers. Instead of breaking down riparian environments into isolated components, these painters "depicted western rivers as complex, interactive mosaics of physical landscapes and biological communities with human significance."[10]

Water was indeed a crucial element in most landscape painting of the period (Cole in a famous essay declared water to be that element "without which every landscape is defective"[11]). Flowing water introduced narrative complexity (movement, time, change) but also suggested the natural interaction of geology, biology, and meteorology. This was commonplace not only in America but in perhaps the most venerable of landscape painting traditions, that of China, in which for centuries artists have been depicting water draining from mist-wrapped mountains into lakes or river basins that sustain variegated riparian ecologies. The impulse to show complex natural processes as an organic unity seems so deeply ingrained in the notion of landscape painting that it is hard to see how painters could avoid depicting rivers as "complex, interactive" systems. Certainly rivers were of endless fascination to nineteenth-century Americans, and some artists even published portfolios of views exploring certain rivers from their source to their mouth.[12]

Perhaps the most ambitious attempt by any American artist to represent a “complex, interactive" ecological system was the work of Frederick Church, particularly his celebrated painting *Heart of the Andes* (1859). Church was specifically inspired by Humboldt's book *Cosmos* (1849) and by his belief in nature as "a unity in diversity of phenomena; a harmony, blending together all created things, however dissimilar in form and attributes."[13] That belief led Humboldt to explore the equator in South America, where the global range of biodiversity—from polar ice cap to tropical rainforest—could be surveyed in one single region. Following in Humboldt's footsteps, Church made his own expedition

[9]Amy R. W. Myers, "Imposing Order on the Wilderness: Natural History Illustration and Landscape Portrayal," in Edward J. Nygren, *Views and Visions: American Landscapes Before 1830* (Washington, D.C.: Corcoran Gallery, 1986), 121.

[10]William L. Graf, "Landscapes, Commodities, and Ecosystems: The Relationship between Policy and Science for American Rivers," in *Sustaining Our Water Resources*, 11-35.

[11]Thomas Cole, "Essay on American Scenery" (1835), in John W. McCoubrey, ed., *American Art: Sources and Documents* (Englewood Cliffs, N.J.: Prentice-Hall, 1965), 103. For a survey of watery landscapes see John Wilmerding, *The Waters of America: 19th-Century American Paintings of Rivers, Streams, Lakes, and Waterfalls* (Historic New Orleans Collection, 1984).

[12]Nygren, Views and Visions, 49-54.

[13]Alexander von Humboldt, *Cosmos: a Sketch of a Physical Description of the Universe*, 5 vols. (London, 1849), I:24.



Asher B. Durand, *Progress,* The Warner Collection of Gulf States Paper Corp., Tuscaloosa, AL

through South America in the 1850s and from hundreds of painstaking studies created a composite panoramic image of the equatorial region—leading the viewer from a highly detailed tropical foreground through a temperate grassland to the snow-capped, cloud-swept Chimborazo peak (20,000 feet) in the distance. Not surprisingly, a spectacular river occupies the center of the picture, linking the distant snow to the tropical dampness and suggesting one great meteorological cycle of evaporation and precipitation that holds the diverse climates and their ecologies in delicate balance.

Humboldt himself was very interested in landscape painting, and his eloquent meditation on the subject in *Cosmos* was certainly an inspiration to Church. Humboldt actually called for landscape painters to move beyond the familiar scenery of Europe and explore the tropical world, because there, he declared, was "the true image of the varied forms of nature."[14] He recognized that the art of landscape was not simply one of observation but of deep thought as well: "the combined result of a profound appreciation of nature and of [an] inward process of the mind."[15] This description of the painter's process could apply equally well to his own process of ecological exploration.

The artist as developer

The preceding discussion seems to fly in the face of much of the recent scholarship on American landscape painting. That scholarship emphasizes the complicity of landscape painting in the dominant nineteenth-century ideology of national "progress" which justified not only the subjugation of native inhabitants but also the wholesale destruction of virgin forests, wetlands, and other longstanding ecologies of the continent. Cole was perhaps the only artist of the period who did not accept the gospel of progress and who openly lamented the onrush of development.[16] Cole's successor Asher B. Durand, while extolling nature as the artist's true studio, painted a panoramic vision entitled *Progress* (1850), which optimistically charts the taming of the landscape by industry and transportation and relegates the foreground wilderness to the "primitive" (and therefore defunct) era of the Native American. The creation of a "national" landscape was part of the larger drive to claim the continent for the forces of "civilization"; in this view, landscape painting was an act of possession and domination, hardly an ecologically friendly embrace of the environment.[17]

Probably the most famous landscape image of technological progress in the nineteenth century is George Inness's *Lackawanna Valley* (c. 1855), a fresh green pastoral view of the river valley in Scranton, Pennsylvania dominated by the railroad roundhouse in the middleground (the railroad of course commissioned the painting). Rows of tree stumps in the foreground attest to the recent clearing of land, but the removal of the trees at the same time creates the pastoral view and allows the figure reclining in the foreground meadow to enjoy the sweep of the landscape. This is a vision in which nature, properly tamed and removed of inconvenient obstructions, can coexist with industrial development. Photographs taken from roughly the same spot during this period are not nearly so pastoral; they show several buildings in the foreground space that mar the meadow and block the fictional view Inness created.[18]

Within a few years, the rapid industrialization along the Lackawanna River in Scranton made Inness's view seem decidedly old-fashioned, as

[14]Ibid., 2: 452.
[15]Ibid., 2: 94-95.
[16]For Cole's ambivalence toward progress, see Truettner and Wallach, Thomas Cole, 72-77; and Cole's "Essay on American Scenery."
[17]For a wonderfully sensitive and nuanced account of landscape painting as nationalist, see Angela Miller, *Empire of the Eye: Landscape Representation and American Cultural Politics 1825-1875* (Ithaca: Cornell University Press, 1993).
[18]The standard sources on the painting are Nicolai Cikovsky, Jr., "George Inness and the Hudson River School: The Lackawanna Valley," *American Art Journal* 2 (Fall 1970): 36-57; and Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (New York, 1964).

the river became an industrial sewer and the surrounding landscape fed the needs of development. Interestingly, in the early 1990s, Inness's picture came back into ecological consciousness when it was used by a citizen's group, the Lackawanna River Corridor Association, organized to bring the river back to life. The group used the image to help argue for an industrial heritage site in the river corridor; for them the painting made the landscape of Scranton emblematic of a larger national history of transition from rural countryside to urban industry, and it inspired their efforts to make a new transition to a post-industrial landscape.[19]

The efforts of this citizen's group pose the question: what are we to make of such images as *Progress* and *Lackawanna Valley?* Do they negate the evidence of ecological insight that seems to permeate much landscape painting of the period? This is not a question that has been posed in recent literature, so my own answer must be somewhat provisional. I would suggest that the nationalist ideology of conquest, although inescapable, does not cancel the ecological perspective on nature offered in the pictures themselves. There is, I think, a profound duality in the nineteenth-century enterprise of landscape painting—an art form that generally accommodated itself to the prevailing norms of "progress" but at the same time offered viewers a kind of experiential merger with the organic unity of nature. The impulse to dominate nature, to impose the human will on nature, coexisted with the competing impulse to merge with nature, to become part of its interactive system. Ecological consciousness arises from the conjunction of these two impulses; the love of wilderness is fueled by the forces that are destroying wilderness and "civilizing" it. It was commonplace in the mid-nineteenth century to remark that the people who actually worked and struggled to survive in nature were heedless of its charms; the romantic impulse to merge with nature was therefore an urbane impulse, coming from within the very "civilization" that was clearing nature for profit.[20] Both impulses can be seen at work in the paintings; yet what we might call the "ecological impulse" offers us today a way of learning from the paintings, finding ways to understand and perhaps transform places that have been marred by the hand of civilization.

Conclusion

Despite the role of landscape painting in the possession and control of nature, we have identified a powerful cross-current of ecological inquiry built into the very enterprise of landscape painting. This cross-current of inquiry interacted in certain ways with scientific research, but it also broadened the scope of scientific inquiry and humanized it. The painter's inquiry involved:

1. Close, sustained observation of particular sites, from geology to botany;
2. An equal emphasis on the subjective experience of natural places, as dynamic, changing environments;
3. A faith in the interrelatedness of living things and natural systems, in other words, in the modern notion of ecology.

This list points to ways in which artistic and scientific inquiry can reciprocate and enrich one another as the two domains of creativity confront real environments shared by human and natural systems. Nine Mile Run is certainly such an environment, and the kind of integrated inquiry we have been discussing will be essential to cope with its particular challenges.

[19]Telephone conversation with Alex Camayd, former vice president of the Lackawanna River Corridor Association, August 13, 1997.
[20]See Nygren, 56.

HISTORY, CONTEXT AND PUBLIC POLICY

Ample Opportunity: A Community Dialogue 1

Wednesday, July 2, 1997

Introduction: In this first workshop, two panels of experts presented background issues on the history and policy associated with open space in the Nine Mile Run valley. After the panel presentations, the workshop divided into two roundtables and one site hike to encourage small group discussions. Scanners and cameras were set up to collect historical materials and oral histories from the community throughout the event.

Review: Upon completion, we felt this event had too many presentations and too few opportunities for public discussion and comment. Some community members felt that the NMR-GP decision to focus on the public space question was a short-sighted approach to the larger development process. We decided to remain focused on the public space issues.

Attendance: 78 participants

Advisors:

Don Berman, *Solid Waste Consultant, former Director of the Allegheny County Division of Waste Management*
Mr. Berman has over 40 years experience in the fields of environmental and public works engineering, including preparation of regional solid waste, sewage, water and stormwater management plans.

Andrew McElwaine, *Program Officer and Director of Environmental Programs, the Heinz Endowments*
During the '80s, Mr. McElwaine served as legislative assistant and subcommittee staff director to the late U.S. Senator John Heinz. He is currently pursuing a doctorate in history, focusing his research on Nine Mile Run.

Ted Muller, *Head, Department of History, University of Pittsburgh*
Author of a two-part series on the work of the Olmsteds in Pittsburgh published in *Pittsburgh History* (1991).

Joe Plummer, *Executive Director, Environmental City Initiative*
The Environmental City Initiative was created by Pittsburgh Mayor Tom Murphy and the Chair of the Howard Heinz Endowment, Teresa Heinz, as a unique central resource to position our region as a world center of environmental solutions. Mr. Plummer was formerly Vice-President, Public and Community Affairs, for the Duquesne Light Company.

Ray Reaves, *Planning Consultant, former Director, the Allegheny County Planning Department*
During his directorship, the Planning Department produced the Allegheny County Greenways Plan, the Allegheny County Natural Heritage Inventory, a Stormwater District Analysis, and the Allegheny County Bikeway Plan.

Joel Tarr, *Richard S. Caliguiri Professor of Urban and Environmental History and Policy, Carnegie Mellon University*
Dr. Tarr has been a member of several National Research Council committees investigating urban infrastructure. His present research includes studies of industrial and municipal pollution. A collection of his essays, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective,* was recently published by the University of Akron (Series in Technology and the Environment).



" Perhaps the most striking opportunity noted for a large park is the valley of Nine Mile Run. Its long meadows of varying width would make ideal playfields; the stream, when it is freed from sewage, will be an attractive and interesting element in the landscape; the wooded slopes on either side give ample opportunity for enjoyment of the forest, for shaded walks and cool resting places."

—Frederick Law Olmsted, Jr., 1910



View in Nine Mile Run valley, 1923



General view looking up Nine Mile Run valley from Calvary Cemetery.



Same view of Nine Mile Run, 1997

I. Public Participation in the Nine Mile Run Greenway Project

The STUDIO for Creative Inquiry

The STUDIO for Creative Inquiry is an interdisciplinary center in the College of Fine Arts at Carnegie Mellon University. The mission of the STUDIO is to support cross-disciplinary and exploratory work in the arts.

The Objective of the Nine Mile Run Project

The STUDIO is working in partnership with the Pittsburgh Department of City Planning, the Pittsburgh Urban Redevelopment Authority, and the Environmental City Initiative to realize the following objectives at Nine Mile Run:

- develop stewardship for the Nine Mile Run **Greenway**
- identify and model sustainable approaches to public greenway development
- utilize contemporary methods and technologies to communicate about complex environmental problems
- promote ecological standards for **brownfields** reclamation

The Nine Mile Run Greenway Project connects the expertise and concerns of artists, scientists, engineers, historians, the public, and planners in a broad-ranging interdisciplinary effort to address challenges and opportunities faced in transforming an urban, industrial waste site into a sustainable urban greenway.

The interdisciplinary process will inform the greenway planning with alternatives which are normally not presented in the public development process. The STUDIO's public participation process will parallel the housing development planning process, which is set forth in chart 1.

Greenway — 1. A linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route. 2. Any natural or landscaped course for pedestrian or bicycle passage. 3. An open space connector linking parks, nature reserves, cultural features, or historic sites with each other and with populated areas. 4. Locally, certain strip or linear parks designated as a parkway or greenbelt. From Charles Little, *Greenways for America*, p.1, (John Hopkins University Press, 1990). See also, Jack Ahern's Discussion at the Sustainable Open Space Workshop.

Brownfield — The Environmental Protection Agency's definition of a brownfield is "an abandoned, idled or underused industrial or commercial facility, where expansion or redevelopment is complicated by real or perceived environmental contamination.

II. History/Context

The value shifts that transformed the site

An inspection of the history, the land use values, and the changing landscape of Nine Mile Run provide a reflection of Pittsburgh's social, political and cultural heritage. Chart 2 on page 23 presents a summary of the changing character of Nine Mile Run during five generalized historic periods. Additional discussion on the history of Nine Mile Run can be accessed at the project's website http://noumenon.cfa.cmu.edu/nmr/.

The History of Nine Mile Run

by Joel A. Tarr

The history of Nine Mile Run provides a classic example of a clash between those who held values of **utilitarianism** and those who focused on the preservation of areas of natural beauty for use as urban recreational facilities. Nine Mile Run and its watershed area forms a natural drainage basin of the Monongahela River. The **watershed** has a land area of approximately 5 square miles and the stream valley consists of approximately 250 acres. During the 19th century, portions of the valley had been used variously for farming, as a **salt works,** as the location for several natural gas wells, and as a golf course. While the lower valley leading to the Monongahela River was relatively undeveloped as of 1910, areas of Pittsburgh, as well as the boroughs of Swissvale, Wilkinsburg, and Edgewood, had shaped the upper valley for residential purposes and had placed portions of Nine Mile Run into **culverts** to accommodate development.

During the early part of the 20th century, Pittsburgh underwent a period of civic reform. As part of this process, in 1910 Frederick Law Olmsted, Jr., son of the famous landscape designer, prepared a report for the Pittsburgh Civic Commission, making a number of suggestions for urban betterment. In his report, Olmsted identified Nine Mile Run as the "most striking opportunity...for a large park," but no action was taken on his proposal. In 1923, the Citizens' Committee on Civic Plan, another elite group attempting to improve the Pittsburgh environment, issued a report on parks. In this report, the Committee proposed the development of Nine Mile Run as a waterfront park with a range of recreational facilities. Like Olmsted's recommendation, however, this one was never implemented. In fact, in 1922 the Duquesne Slag Company, which had purchased 94 acres in the valley in that year, began filling it with **slag** from neighboring steel mills.

Duquesne Slag's land purchase occurred just before passage of the Pittsburgh Zoning ordinance. While all 238 acres of Nine Mile Run valley were zoned residential, the 94 acre land purchase and Duquesne Slag's use of it for slag dumping "grandfathered" the firm's activities in the valley. Between 1922 and 1962, Duquesne Slag purchased further acreage in the valley, filling it with millions of tons of slag even though the valley was zoned "residential." Duquesne Slag acted on the justification that it had owned property in the valley prior to the creation of zoning and that its slag dumping was a "non-conforming use." Protests over the years about the firm's dumping activity, primarily by the Swisshelm Park Civic Association, had little effect in reducing its dumping or controlling nuisances. By 1972, when slag dumping ceased, approximately 17 million cubic yards of slag filled the valley.

Utilitarianism — A doctrine that the useful is the good and that the determining consideration of right conduct should be the usefulness of its consequences.
Watershed — A region or area bounded peripherally by a water parting and draining ultimately to a particular watercourse or body of water.
Salt works — Historic sites where salt was mined commercially.
Culvert — A pipe used to encase a stream or river usually placed underground.
Slag — The refuse from melting of metals or reduction of ores.

Because Nine Mile Run is the largest area of undeveloped land within the Pittsburgh city boundaries, several attempts have been made in recent decades to develop it. In 1982, for instance, the Department of City Planning explored the possibilities for residential and light industrial development, but could not attract a developer. In 1987, J. J. Gumberg, a shopping center developer, obtained an option to buy the site and proposed to build a shopping and office center on it. Citizens from nearby residential areas, however, objected to highway construction
related to the Gumberg plan and were able to block development. Finally, in October of 1995, the city of Pittsburgh purchased the 238 acre site for $3.8 million and selected a development team to begin the transformation of Nine Mile Run into a residential complex and an associated greenway.

Issues to be addressed at the workshop:

- Who made the decisions that transformed the landscape at Nine Mile Run?
- What were the dominant values influencing those decisions?

Sustainability and Site Context

The original values of respect for the valley environment should be explored to inform a public greenway design today. The residents of the East End continued to experience the Nine Mile Run valley in many ways even while its use as a slag dump dominated the landscape. Understanding history is a first step to developing a renewed sense of place. Through public participation and interdisciplinary research, the Nine Mile Run Greenway Project will encourage a convergence of ecological, community, and economic interests in the public greenway.

Nine Mile Run provides an important opportunity to link the **Three Rivers Heritage Trail** and **Steel Industry Heritage Trail** networks with greenways reaching into the neighborhoods on the hills. Homewood, Regent Square, Park Place, Point Breeze, and Squirrel Hill can all have easy non-motorized connections to the growing greenway network via Frick Park.

Issues to be addressed at the workshop:

- How can we use history and fine arts to regain a sense of place on a damaged landscape?
- How can we make the public more aware of the availability and opportunity of the greenway?

Those that live, work and play in and around Nine Mile Run are most intimately familiar with the site. The project team continues to gather

Three Rivers Heritage Trail and the Steel Industry Heritage Trail — Riverfront trails along the Monongahela River being developed by the Friends of the Riverfront and the Steel Industry Heritage Corp., respectively. These trails make up the urban northern corridor (McKeesport to Pittsburgh) of the 340 mile rail/trail extending to Washington D.C.

information, experience and insight from those who know the site first-hand.

III. Public Policy

The benefits of intermunicipal cooperation and geographic resource management in the watershed

Municipal boundaries are one of the greatest obstacles to the treatment of pollution in the watershed. Because of the lines drawn for municipal boundaries, public resources are not shared widely enough to address the sewage, garbage, urban runoff, industrial contamination and land use pollution issues that flow across the boundaries of the 130 municipalities of Allegheny County.

State and federal environmental programs encourage public participation and a geographic focus on watersheds that often encompass several municipalities. Nine Mile Run, with its proposed urban in-fill development and relatively small scale, provides an opportunity to model this new program focus.

In fact, Pennsylvania has a number of programs which can potentially fund urban watershed projects. The project team has identified the following programs as having potential to fund infrastructure improvements in the Nine Mile Run watershed: Department of Environmental Protection's (DEP) Stormwater Management Program, DEP's Nonpoint Source Management Program, Department of Conservation and Natural Resources' Rivers Conservation Program, and infrastructure loans through the Pennsylvania Infrastructure Investment Authority. These are all very competitive programs with rigorous review processes.

Issues to be addressed at the workshop:

- How do we overcome the conflicting responsibilities and lack of communication which has contributed to the damaged landscape at Nine Mile Run?
- How can we become more efficient through multi-municipal cooperation?

Public finance mechanisms to fund the ongoing maintenance of the greenway

Urban greenways have an economic value which is hard to measure and easy to overlook. Chart 3 represents a number of studies which have measured the economic value of urban greenways. The Nine Mile Run Greenway can have a valuable economic impact.

The decisions made with regard to the Nine Mile Run development project can overcome the continuing conflict between commercial and environmental values and bring these values together in a project that works. For this to happen, the economic measures have to be corrected to include quality of life and the public sector must be the catalyst. Examples of funding strategies demonstrate how commercial and environmental values can be combined in programs that fund greenways.

Issues to be addressed at the workshop:

- What are the economic benefits of public greenways?

Chart 1
The Built Environment: PUBLIC PROCESS FOR RESIDENTIAL DEVELOPMENT

JULY-OCT. 1997 **1. Issue-Oriented Community Meetings**

Purpose: To inform the community of findings regarding residential development.

Community Participation: Community interacts directly with Urban Redevelopment Authority and its consultants.

NOV.-DEC. 1997 **2. Preliminary Plan Approval**

Purpose: To express concerns to the developer and impose conditions within the bounds of the City Code.

Community Participation: Planning Commission takes action and places conditions on plan approval after taking public testimony.

MARCH. 1997 **3. Zoning Change**

Purpose: To change the zoning to allow for a planned development district.

Community Participation: City Council takes action after public hearing(s).

SPRING 1998 **4. Final Development Plan Review**

Purpose: To complete a final review of the project details proposed by the developers.

Community Participation: Planning Commission takes action after hearing public testimony.

Note: This schedule is provided by the Pittsburgh Department of City Planning and the Pittsburgh Urban Redevelopment Authority. City Council has scheduled a public hearing on March 12, 1998 to hear testimony on the the zoning change. The schedule is subject to change.

Chart 2
Historical Periods and Land Issues

	PREVALENT LAND USE ISSUES	CITIZEN'S ROLE IN LAND-USE DECISION-MAKING	INFRASTRUCTURE DEVELOPMENT IN THE WATERSHED	EFFECT ON NINE MILE RUN/FRICK PARK AREA
European Settlement	Taming the wilderness Creating utility out of nature's chaos	Individual within the boundary of law Squatters	Trails and paths	Remains a "natural valley"
Early Industrial Development	Inconsistent pattern of infrastructure development Natural beauty "recreated" in a few formal gardens		Covered streams Sewer lines Railroads and trolleys Local road systems	Hunting clubs, salt wells, gas wells
Steel and the Expanding City	Parks and natural beauty as a social tool Relief from urban stress	Top-down by the elite for the worker The Pittsburgh Survey The Citizens' Committee on Parks	Intensive development of transportation network and utilities	Frick Park created with an endowment Golf course A large portion of the valley is purchased for slag dumping
Economic Utilization	Economic enhancement of urban development The privatization of public space	The business community makes decisions for the public Allegheny Conference on Community Dev.	Parkway East and Squirrel Hill Tunnels Maintenance needs of parks begin to exceed resources	Continued slag dumping in valley
Sustainability	Restoring economic activity on post-industrial sites	Elected officials in public-private investment (bond issues) The citizen advocate	Infrastructure requires extensive maintenance repair New greenways are considered	Reclamation of economic use and public space

Chart 3
Economic Benefits of Greenways

	EXPLANATION	EXAMPLE	SOURCE
Increase Private Property Value	Studies show that property located near or adjacent to greenways increases in value.	A study in Boulder, Colorado revealed that the average value of property adjacent to a greenway would be 32% higher than property 6/10 of a mile away.	Correll, Lillydahl and Signell, 1978
Increase Property Tax Revenues	Higher property values that result from location near greenways, increased revenues from property taxes.	The same Boulder study revealed that the aggregate property values for one neighborhood was $5.4 million more because of the greenway.	Correll, Lillydahl and Signell, 1978
Provide Business Opportunities	Greenways provide opportunities for concessions, equipment sales and rentals, and lodging.	An economic benefits analysis of a completed urban riverfront trail estimates that trail users will spend over $10 million each year on food and drink, entertainment, local transportation, and retail purchases.	Tripp, Umbach & Associates, Inc. "Economic Impact of the Proposed Three Rivers Heritage Trail on the City of Pittsburgh," 1993
Attract New Businesses	High quality of life attracts businesses. Greenways increase quality of life and encourage employee fitness.	An annual survey by Cushman and Wakefield revealed that the quality of life for their employees was the third most important factor in locating a business, according to chief executives polled.	Governor's Committee on the Environment, 1988
Expenditures by Residents Contribute to Economic Activity	Outdoor recreation is a major component of leisure. Leisure and recreation expenditures can account for a substantial part of people's discretionary spending.	In Pennsylvania, residents spent approximately 12.6% of their personal consumption dollars on leisure pursuits. Of this, over 47% was spent for outdoor recreation.	National Park Service, 1983



J. Glenn Eugster
Office of the Administrator,
Environmental Protection Agency

J. Glenn Eugster of the U.S. Environmental Protection Agency, currently works within the Office of Sustainable Communities & Ecosystems in Washington, D.C., where he is Co-Chair of an EPA Workgroup to develop a Community-Based Environmental Protection Fund and is leading a Metropolitan Ecosystem Action Strategy to help communities identify and implement alternatives to sprawl development.

The following is a transcription of his keynote address.

J. Glenn Eugster
Office of the Administrator,
Environmental Protection Agency

Thank you for inviting me to join your discussion tonight. I've had the opportunity to visit your watershed and listen to a lot of people talk about the Nine Mile Run Greenway work. I have also learned about the many other exciting community environmental protection initiatives underway such as the Pittsburgh Environmental City Initiative and the Steel Industry Heritage Project. My visit here is not so much to suggest things you should do, but to share some experiences I have gained working in other communities. I hope some of these ideas will contribute to what you are doing.

I'm here to talk about sustainability or sustainable development. Many people say it is a nebulous term. To some it means everything to others it doesn't mean anything. My experience with the concept of sustainability has changed over time. I received my academic training in 1976 at the University of Pennsylvania studying under Ian McHarg, the ecological planner and author of *Design With Nature.* At that time the word sustainability wasn't being used but many of us were trying to find a better way to achieve environmental quality and economic prosperity. In recent years as more and more attention was given to sustainability and sustainable development, I wasn't sure how to react to it. Working in Washington, you look at new initiatives with a certain amount of suspicion. Is it the slogan of the day, is it a "boutique term," as we call it in the bureaucracy, or is it something more substantive? A movement that's going to last? As I thought about sustainability and the work that I do, I wondered how does my training relate to this new direction? On one hand it is a new generation of environmental protection and economic development. On the other hand it is also an approach to the way we plan our land, water and communities that has been developing for quite some time.

Sustainable development seems to be an idea and a movement which reflects an evolution of our thinking about environmental protection and economic development. This revolution is a change in the way we view environmental protection and economic development; their individual meaning has changed and they can no longer be considered as separate areas of interest. This evolution and convergence offers great promise for the future of our communities, watersheds, states and the Nation.

When I talk about this convergence of thinking which has led us to sustainability, I am talking about how all of us have been moving in the same direction, whether you are in environmental protection, historic preservation, in civic organizations in your neighborhood, in the business of managing the city, or in economic development. I think we have all come to the conclusion that there's a formula that goes into making decisions about places like Pittsburgh and Nine Mile Run that we're all pretty much agreeing to. We may use different terms and we may in fact at times have a little different approach for how we make those decisions, but I think there are some common elements in this convergence and I'd like to highlight them. By and large we're all at a point where we agree we need to:

- Base the setting of goals and the selection of actions on the best available science. Science about the ecology and also science about the people.
- Empower people to help them, provide information and access to a broad-based consensus process of decision making.
- Look at opportunities for what we call place-based protection, development and management. Those places may be a neighborhood, they may be a community, they may be a watershed or a river corridor, or some subset of some larger geo-political region.
- Foster community-based action. Local leadership is essential to all of these ideas and there may in fact be a role for federal, state, and private sector involvement. Actions are best begun with communities and local officials.
- Work toward environmental, community, and economic goals, simultaneously. This is a keystone concept of sustainability.

- Use a full range of financial, technical and information approaches, tools, programs and laws to be successful. We have all learned that no one agency, no one organization, and no one program can in fact carry out strategies like this initiative you are undertaking.

- Measure programs to monitor whether or not we are achieving results. Take that measurement and monitoring and feed it back into our processes.

If you've been following the literature and dabbling in this work or delving into sustainable development work, you know that the general definition is "*to meet the needs of the present without compromising the ability of future generations to meet their own needs.*" That's a pretty broad goal that you could interpret in any number of ways. Inherent to this general definition is the concept of concurrently meeting multiple objectives, including environmental, economic and community based goals. In order to achieve those goals a sustainable development approach needs to recognize all legitimate beneficial public and private uses which have the least adverse impact on environment, community, and economic resources which reflect a high degree of public involvement and consensus at all stages of decision making.

In the Environmental Protection Agency's Sustainable Development Challenge Grant Program, we have tried to better define what sustainable development means for us by defining nonsustainable behavior. What we've said is—and this is reflective in the recent grant guidance that we've put out— that nonsustainable behavior is development or land and water activities, management or uses, which limit the ability of humans and ecosystems to live sustainably by destroying or degrading ecological values and functions, diminishing the material quality of life and diverting economic benefits away from where they are most needed.

The more you research and learn about sustainability you will see that there is no one approach or definition for how you go about this work. For example, at EPA we are trying to reinvent the way we go about protecting the environment. Part of this reinvention process involves trying to develop a better understanding of what sustainability means to us. I think through projects like Nine Mile Run, and others going on in your community you have the same reinvention challenge.

What you are doing here is very important, not just for the specifics of the Nine Mile Run watershed, but also because of the context of Nine Mile Run within the city of Pittsburgh and the Pittsburgh metropolitan area. Eighty percent of the U.S. population resides within metropolitan areas. EPA is working on the recently announced Presidential Urban Initiative which is targeting urban areas. We are in the beginning of a process to attempt to better identify how EPA can contribute to the priorities that the President has set for urban areas.

The Urban Initiative recognizes that if the patterns of metropolitan growth and development (i.e., investment and divestment, mobility and access to jobs, services, transportation systems, the amount of impervious surface, etc.) continue, environmental quality will be significantly diminished. The current metropolitan trends indicate that if current growth and development patterns are unchanged they will virtually guarantee further increases in vehicular miles traveled, declining air quality, degradation and loss of critical habitat, increased urban runoff, diminished access to nature, and growing environmental justice concerns.

EPA believes the cities and metropolitan areas of the U.S. are critically important and that efforts like the development initiative here are in fact a way to address some of the problems. Cities and metropolitan areas constantly change and I think what we have experienced in many urban areas is an outward migration; I think you have seen that here—the creation of edge cities and in some cases, the creation of sprawl development. What we are also seeing, and Pittsburgh is an excellent example because of its brownfields work, is a reallocation of uses. This turnover in land use is an opportunity for cities and communities to look at how we use our areas—a second chance.

We've seen some very exciting efforts going on here and in other cities through programs like brownfields, waterfront restoration and heritage areas. The reallocation of uses in urban areas is extremely important not only for what possibilities it generates within your urban areas, but also for the impact it will have on the surrounding countryside. We feel that the efforts within the cities will have a major influence over the future of countryside areas. The two are inseparable although we often talk about urban sprawl in one context, and talk about regeneration efforts in another.

Let's take a look at the three points around which sustainability pivots: environment, community and economics. It is an equation that does in fact need to be met for us to have any chance of achieving sustainability. First, from an ecological perspective there is an opportunity for you to look at the values and functions of the natural resource systems and how they fit into the future uses of the watershed. Whether it be the stream you are focusing on or the watershed as a whole you need to understand

ecological function to maintain environmental quality. To be sustained in the future, these natural resource systems need to be recognized and managed as a type of natural resource infrastructure.

This green, natural infrastructure should be planned, implemented and managed in a way similar to other types of infrastructure which provide the public with economic value and environmental services. This type of natural resource infrastructure approach requires an effort like yours, always thinking one size larger than your project area. If you are working on a river or greenway corridor, think about your watershed. If you are working on the watershed, think about the relationship of the watershed to the larger community.

There are a number of excellent examples of stream restoration and greenway efforts which you might want to look at. Groups and governments in West Eugene, Oregon, the Woodlands Development in Texas, and the Suwannee River Water Management District in Florida are testing these ideas and actually applying sustainable development approaches. Another excellent example for you to examine is the Lackawanna River Valley in Scranton, Pennsylvania, which in some ways has similar problems to those you are tackling. Exciting work in a larger context, in that case, in a county-wide context, looking at economic development, historic preservation, and open space. At the local and community levels, there is some wonderful work going on looking at alternative economic uses that make the protection of open space and riparian systems possible. One example is the Port of Cape Charles in Virginia, which was one of four areas selected by the President's Council on Sustainable Development to test the idea of an ecological industrial park. The Port of Cape Charles is coming up with a strategy to rebuild an industrial park that is ecologically sound, and do it in concert with a sustainable development strategy that encourages the protection of certain rural qualities and agriculture and allows them to achieve a zero discharge goal for water that goes into the Chesapeake Bay.

Second, from a community perspective, it is important for an effort like this to take community attitudes and people's relationships with natural values very seriously. Increased attention is being given to human ecology, understanding the relationship people have with watersheds and greenways as well as natural values. Never underestimate the importance of private property owners, users' attitudes, and the attitudes of local officials towards the work that you are doing. I think you also need to factor in local interest, people's connection, be it recreational or access: fishing, boating or scenery. You need to understand the human relationships to the area you are working on...and certainly Nine Mile Run has a lot of people that care about it.

Part of what you are doing is taking local initiative. Your approach can help the city and county to empower people at the community level and at the local government level to make more decisions about their future. What's exciting about that, is that it does put you in a position to shape the future of your area. The challenge that comes with that is to step up and assume that leadership, and it will test your local capacity to work out differences of opinion; to take on tough decisions and figure out ways to come up with solutions that will bring the community together rather than drive it apart. You will find as you go through this that you have to hone your conflict management skills and this idea of multiple objectives will become a second language.

One example to look at is the work of the Pennsylvania Heritage Park Program in Lackawanna County, Pennsylvania. The Lackawanna Valley Heritage Area is one of the flagships of the Pennsylvania Program and it offers demonstrable results you can in fact take a look at and see if they apply to what you are doing here, ideas about greenways, ideas about compatible development.

The third perspective, is the economic part of this equation. As we look at the land, especially in places like Pennsylvania, we have to understand that with the land comes an intrinsic economic value. That a private property owner does look at their property and believe that they in fact have the right to prosper from that property at some point in time; as we look at natural values, we have to understand and respect that. There is a growing movement looking at areas to determine what resource-based economics might be possible in the future and an exciting thing about sustainability is the land uses that are coming out of these projects. Ecological and cultural tourism, industrial ecology, recycling, converting agricultural waste to energy, and so on.

This idea of industrial ecology, where the principles of nature (waste equals food) is being embraced by many communities. Bill McDonough, who served on the President's Council for Sustainable Development, uses Pittsburgh examples to illustrate how industries are changing their industrial processes to eliminate the idea of waste and change the equation from waste being something that you have to bury somewhere at the public expense, to waste equaling energy, very exciting work going on.

Let me highlight three specific programs EPA

offers that provide opportunities to support your efforts:

1. Community-Based Environmental Protection: We have been going through a reinvention effort in our agency away from command and control and away from a top-down type of environmental protection. That change has been underway for quite awhile. One of the driving forces of that change has been community-based environmental protection. Our deputy administrator is partially behind that, and he is in fact charging our headquarters and regional offices to work more with communities, helping them to achieve environmental protection solutions. It's a redirection and it embraces this idea of sustainable development. It has empowered our region to work with groups like yours and to provide technical and financial assistance. EPA leadership envisions that in a couple of years most of us will be spending 80 percent of our time on community-based environmental protection work.

2. EPA Sustainable Development Challenge Grant Program: EPA provides small grants to community organizations to pursue sustainable development projects. As a demonstration project last year, the program was an attempt to help EPA figure out what sustainable development is and create a source of funding assistance for community-based projects. You had an application in last year. Unfortunately, it wasn't selected and I hope you reapply this year. They have increased the funding; it is still small, it is five million nationally, but these funds can be used to leverage other public and private funds. It is in fact a program that is specifically aimed at what you are trying to do here.

3. Regional Geographic Initiative Program: Each year, Congress gives us money which we in turn pass on to our regional offices to use on community-based and geographic-based efforts. This money is discretionary; it's used based on the priorities of the regional office. I have been talking with your leadership about conversations you should have with our leadership in Philadelphia about your work and priorities. The money is used to address risks to human health and ecosystems and achieve multiple objectives; again, the work here in this watershed and in Pittsburgh certainly would qualify for this assistance.

Let me summarize by saying that the Nine Mile Run effort is very much part of this new approach to environmental protection and economic development. As a locally initiated sustainability project, you are one of the incubators of these ideas. You have to define and demonstrate the best way to do this. At times, it will be frustrating because you will look to others, the Commonwealth or agencies like us, for policies and clarification. We are looking to you to let us know what works and what is the appropriate role.

The challenge is for you to test these efforts and to communicate that to policy organizations like ours and for us to glean those rich insights and experiences and fold it into a policy that makes sense. The context of your work is terribly important and I encourage you to think one scale larger than the focus of the project. As you look inward to your project area, be looking outward and be mindful of the context you are working in. You do have to combine the lessons of the past and the present with those of the future. Build on your rich history of cooperative work here, in this metropolitan area.

This is not so much a new idea, but, rather, a different way of working and it's a new arrangement of ideas. It challenges us to take down the boxes we put ourselves in, the stereotypes we create as we look at different organizations and different disciplines and different jurisdictions, and realize that by working together you have a chance for this area to be successful. Compete with the rest of the Nation, don't compete amongst yourselves.

The process is extremely important. Incorporate ecological, community, and economic values into your decision-making. Be sure you listen to everybody in terms of the issues and what the priorities are and go through the difficult process of coming up with a consensus-based approach. At times, you will want to act independently and you will want to have your differences and your good fights, but there will be times especially when you're competing for resources, where you speak as a unified group.

As you interact with each other, starting tonight, look at everyone as a designer of this plan and for the strategy of this area. Stuart Cohen, a sustainable development practitioner and author of the book *Sustainable Design* says, "Listen to every voice in the design process. No one is a participant only, or a designer only. Everyone is a participant designer."

Explicit goals and objectives are essential. If you do that, you will be able to measure progress. It is important that you are mindful of what you want to accomplish. That you have a sense of what success is going to look like so that you can go back and say, "How are we doing and are we doing the right thing for what we hope to accomplish?" Sometimes in general goals and objective statements, those important directions get lost. I encourage you to communicate in a way that connects people with the place that you are interested in.

I am thrilled with the University, the Carnegie Mellon effort, because it does in fact bring an

opportunity to increase and diversify the type of communication that you use in your community to help make decisions about the future.

When I first came to Lackawanna Valley in 1987, I was there to help carry out plans for the Steamtown National Historic Site and, also, I was invited to help with community interest in the Lackawanna River. In one of my first visits, people held up a painting by George Innes called, *The Lackawanna Valley.* They actually brought it to the meeting. They said, "This is our vision for the Lackawanna Valley." Some of you are very familiar with that painting. It is a vision of what was going on in the Lackawanna Valley at that time, it's partially pastoral landscape qualities and also, the industrial landscape in that particular valley; it is an important part of the history. What was fascinating about it was the reference to that painting and the use of fine arts to make such a point with everybody. It crystallized the beginnings of a vision that ultimately led to shaping their plan for Steamtown, Scranton, and the Lackawanna River Valley. It got me very interested in the relationship of fine arts to environmental protection. So I applaud your effort here. I think you add something significant to the community perspective by going in the direction you are going.

Thank you. Good luck with your efforts.



A view of Nine Mile Run just before construction of a culvert circa, 1923.
This section of the stream presently lies under Greendale Avenue in Edgewood.
Photo courtesy of Ted Rakovsky

Policy Panel Discussion

Joe Plummer, Moderator
Don Berman, Ray Reaves, Panelists

The following is a transcription.

THE POLICY PRESENTATIONS

Joe Plummer, Moderator

One of the guiding values of an environmental city is that it provides new models of public participation so community values can be connected with the developments that are occurring and so that we can define ways to live in a sustainable manner. We have heard that there is great importance in looking at the larger picture, I think that specifically in the context of the greenway here we need to be looking at the watershed issues that will ultimately effect the beauty and health of Nine Mile Run. We also have heard that we are working in the context of many discussions around the country that are going on in the area of sustainable development. It falls then to us after hearing the history of NMR to examine the aspects of developing what is at times an enormous and daunting project to create a green space and extension of Frick Park to the Monongahela River, where there is now a slag heap and an open sewer. How we convert that space into something that is green, something embedded in our values and the amenities of our community, is a challenging task.

Don Berman on sustainable government and the nature of cooperation

One of the questions posed in this workshop is: "What public policy tools exist or are needed to encourage intermunicipal cooperation in the management of environmental resources on the basis of geographical factors?" For the purpose of this discussion I would like to broaden the scope of that question just a little, adding to the subject the cooperation of all the affected parties—municipal officials, the developers and the public at large.

First to intermunicipal cooperation. I have given this talk at a number of seminars where public officials have been in attendance and I always begin by asking five questions:

1. Can governments cooperate?
2. When should governments cooperate?
3. What types of cooperative programs should be considered?
4. Why should governments cooperate?
5. Will governments cooperate?

First Question: Can governments cooperate?

There is no question that the answer is certainly yes. I have witnessed past efforts such as joint purchasing, equipment sharing, emergency response, provision of sewer and water services. The list can go on and on. As far as public policy is concerned local governments already have the legal authority through existing legislation which permits them to enter into an agreement, a contract or an environmental compact. They can cooperate in any number of ways—should they chose to do so. As a result, no additional legislation is required. Only the effort.

Second Question: When should governments cooperate?

It seems to me that they should cooperate where cooperative agreements hold promise of addressing a legislative requirement or where cooperation would address an environmental problem in a more advantageous manner than going it alone. The solid waste management program, where plans are mandated and are required to be drawn on county boundaries, is an example where cooperation can address a legislative requirement. In a similar manner, stormwater management plans must be based on watershed boundaries. This particular legislative requirement was put into the law in recognition of the difference between the existing topography of the hills and valleys and man's superimposition of his territorial ownership lines on those features.

Third Question: What types of cooperative programs should be considered?

The specific program will depend on the particular situation being looked at and could include any of the types of cooperative approaches I've mentioned

before. With regard to the Nine Mile Run Project, there is no doubt that the area is beset with water related problems of both a water quantity and water quality nature. From a regularity standpoint both the Department of Environmental Protection (state) and the County Health Department (local) are looking for drainage basin wide solutions for both of those situations. Thus the entire watershed from the top of the ridges to the Monongahela must be included in all planning and implementation activities. The total area includes portions of four separate municipalities and in addition the potential problems associated with air, water quality and increased traffic do not respect municipal boundaries. As a result, intermunicipal cooperation will be required and the old fear of any single municipality getting the "dirty end of the stick" syndrome is going to have to be put in abeyance.

Fourth Question: Why should governments cooperate?

Because the economies of scale are evident. Environmental amenities in the general area can normally be enhanced by working together. With regard to public policy, many grant and low interest loan programs now give priority points to multi-municipal projects.

Fifth Question: Will governments cooperate?

With your forbearance, I'll hold the answer to that question for a minute and, instead, get to the second half of my subject of cooperation. Here, instead of questions I'd like to give you three definitions:

1. Cooperate: to me that means teamwork and mutual assistance;
2. Participation: have a hand in, share in;
3. Stakeholders: all persons and agencies potentially impacted.

In the Nine Mile Run area there are a number of groups of stakeholders and each has its own agendas and concerns. For example, municipalities are concerned with growth and tax revenue. Developers are concerned with the ability to proceed on time and on schedule in order to make a profit when and if they undertake a particular project. Neighbors are fearful that a given project may negatively effect their property values, their health, the aesthetics of the area or all of the above.

With all of these differences it is understandable that there is doubt, mistrust and a feeling of being put upon by all parties concerned. Yet there is a light at the end of the tunnel and the line of sight to that light starts with a willingness of every single stakeholder, all of them to sit down at a table where everyone agrees to play with an unmarked deck, all the cards are played face up and no player has an ace up the sleeve in the form of a hidden agenda.

An example of how that works: I recently served as a member of a solid waste stakeholders group sponsored by the State Department of Environmental Protection. At the table there were about 23 representatives from the solid waste industry, county and local governments or various environmental groups. A conglomeration of interests if ever there was one. While there were tough questions addressed and in some instances hard language used, we always came back to the basic theme: What can we agree on? We could not reach consensus on every point and some points were so contentious they were put off to another time. But on the whole most participants did find that the other side had valid arguments and there was no shame in compromise. As a result, the group came out with a document that now forms the basis for the Department's legislative program dealing with solid waste management issues in Pennsylvania. The Nine Mile Run Project is at the beginning of a process which could lead to the same kind of mutually agreeable conclusion. Whether that results in implementation with some of the more important conditions agreed to or whether it results in the project being canceled because there are too many major problems which cannot be addressed in any manner. It's up to the stakeholders to reach a mutually agreeable endpoint. Let me finish by getting back to an expanded version of the last of the five original questions: Will governments cooperate?

I can only answer in the same way that I do everytime I give this presentation...I sure hope so.

Ray Reaves on financing Nine Mile Run improvements.

The subject of my remarks is how to finance the construction and maintenance of improvements in the Nine Mile Run valley floor, commonly thought of as a greenway extension of Frick Park to the Monongahela River.

People part with their money more willingly in their role as consumer than they do in their role as taxpayer. We don't hassle too much about spending money at the supermarket or the clothing store. We know about how much these things cost and we select our goods and pay the price. But when it comes to paying for government goods and services there is more resistance. People have doubts about value received for the taxes and fees they pay. Therefore, we need to construct a financing approach to the greenway which will link its value to

the expenditure we ask people to make in their role as consumer. Fortunately a great deal of work has been done to quantify the benefits of maintaining or enhancing the natural environment and to assign the costs to those who benefit from this work.

Two types of costs must be quantified: construction and maintenance. The quantification will be forthcoming as the project moves forward into the design phase. However, lack of details is not a problem at the conceptual level we are discussing today. On the benefits side of the equation, greenways yield many. These include economic, environmental, recreational, educational, health and safety. So, our challenge is to link costs to those who will benefit from the greenway.

There are at least three ways this can be done:

1. Tack a charge on the purchase price of each unit built in the proposed development above the greenway.
2. Set aside a portion of the annual real estate taxes from each new unit plus existing units adjacent to the greenway. These two approaches rest on the evidence that property values are greater the closer a dwelling is to a park, greenway, or similar natural amenity assuming quality design and good maintenance.
3. Establish a stormwater benefit district.

With respect to the first option, it is fairly common in some areas to levy impact fees on new construction. The logic of this is clear when, for example, a large new development adds substantial new cars to the road system. However, in the case of the greenway which is to be dedicated as a city park, many more people than live in the new development will impact and benefit from a well-managed greenway.

The second option broadens the base to include more beneficiaries of the park and greenway. However, the beneficiaries of a well-designed and managed Nine Mile Run greenway are, again, even more numerous and the basis on which the greenway will be constructed and managed should be broadened even further.

Also, with respect to options one and two, the city needs all the taxes it can realize from the development and it is not necessary to covet their anticipated income to accomplish our goal with respect to the greenway. Therefore, we should look for a broader base of beneficiaries.

The third option captures these broader benefits and is based on the fact that the proposed greenway is the terminus of the entire Nine Mile Run watershed. Everyone who lives in the watershed whether in the city of Pittsburgh, Edgewood, Swissvale or Wilkinsburg is a beneficiary of sound watershed management and, consequently, should pay for the benefits.

Accepting this logic requires the understanding that rainwater which does not get absorbed into the ground does not disappear. When we discharge wastewater from our homes we realize, if we think about it, that the stuff also does not magically disappear but instead goes to ALCOSAN, a utility, and is treated before being put into the river. In the same manner, the watershed provides a utility which, in an urban setting, requires management to be effective.

Another problem in Nine Mile Run is that storm and sanitary water gets mixed and overflows into the stream at times causing pollution. Fortunately the proposed approach can also deal with this problem.

Thus, we have the opportunity to achieve four goals with a stormwater district approach:

1. Ensure that stormwater is managed without causing damage or pollution;
2. Eliminate the existing pollution problem;
3. Build the greenway; and
4. Maintain the greenway.

The technique to achieve all of this is the Storm Water Management (Benefit) District. This approach is common in other states primarily in the West. However, a brief description of the project in the Dayton, Ohio area will illustrate the success of the approach. Following a disastrous flood in 1913 leaders of that area decided to prevent future flooding. They formed the Miami (Ohio) Conservancy District under state law. Today, the District serves five counties and manages the watershed of the Great Miami River and its tributaries. The District is financed by assessments on all property in the watershed.

A few years ago after the disaster in the Pine Creek watershed in the North Hills of Allegheny County, the County Planning Department and a consultant designed a Storm Water Management District to be tried in the County. After numerous meetings with the affected communities, the county and various state departments and legislative committees, a bill was introduced to permit the creation of districts. Under the proposed legislation, an average homeowner would pay between $1.00 and $2.00 per month to finance the administration and maintenance of the district. If major construction projects were undertaken this amount would go up to pay for them. However, even in

light of such modest costs the legislation has never been passed due to unfounded fears by municipalities that the county would gain power at their expense. Nevertheless, as demonstrated successfully in other parts of the nation, the approach is a good one.

Nothing as dramatic has happened in the Nine Mile Run watershed. However, the broken sewers and polluted stream are problems which should be addressed in any case. Granted, construction of a new sewer will add costs to the property owners in the watershed in addition to estimates for watershed management alone. But, on the positive side, we can solve the infrastructure problems and at the same time we can build a magnificent greenway which will benefit us and our grandchildren.

Creation of a stormwater management district, the repair of the sewage problem, cleaning the stream, building and maintaining the greenway will require intermunicipal cooperation. This, of course, is extremely difficult in our region but the potential benefits are worth the try. State funds available through sewer and storm water legislation can help us in our work, although the primary responsibility for organizing, planning, and action is ours. (Act 167, the Storm Water Management Act; PennVest water and sewer loans and grants; Act 537, sewer planning matching grant).

The key to action is the willingness of the citizens to grasp the opportunity and push our leaders to lead.



The current approach to a 100-year-old problem of municipal water pollution in a public park.

History Panel Discussion

Andrew McElwaine, Moderator
Joel Tarr, Ted Muller, Panelists

The following is a transcription.

Andrew McElwaine, Moderator

The Heinz family and Heinz Endowments became interested in Nine Mile Run because they came full circle with it. H.J. Heinz, the founder of the Heinz Company, was vice-chairman of the Pittsburgh Civic Commission in 1909 when that entity recommended a public park at Nine Mile Run. His son, Howard Heinz, the founder of the Heinz Endowments in 1923 was vice-chairman of the Citizens' Committee on City Plan which similarly recommended a very detailed public park and waterfront space at Nine Mile Run. So for the Heinz family, this is coming home. As we discuss the history of this site, I think it's important to keep in mind that the cycle that this particular parcel of land has gone through is significant, indeed, nationally and internationally significant. The reuse of this site perhaps represents a part of a very changing economic strategy, not only regionally, but on a much larger basis. The destruction of this site clearly represented a much older strategy, that of extraction of natural resources to produce both products and vast quantities of waste which in turn created jobs and growth. The waste had to go somewhere, namely, where we are sitting. As Pittsburgh enters a new renaissance and as that renaissance looks at the value of open space, and greenways as part of the redevelopment of the city, Pittsburgh is pioneering a different economic strategy— one based on amenities, attractiveness, and high quality of life. In turn this strategy attracts people and opportunity to a region which in turn creates jobs and growth. Perhaps that is part of fulfilling Glenn Eugster's vision of sustainable development. I hope so. As a historian "wanna be", I'm particularly honored to be on this panel, in that you have two of Pittsburgh's most distinguished historians and two of the leading authorities on Pittsburgh's history with you tonight. Ted Muller is the Chair of the History Department at the University of Pittsburgh and a frequent and prolific author on our history. Joel Tarr is the Richard Caliguiri Professor of Urban and Environmental History and Policy and the former Dean of the Heinz School at Carnegie Mellon University. Joel and Ted will alternate with Joel discussing the remarkable history of this site and Ted discussing the role of the Olmsted family in Pittsburgh planning.

Joel Tarr: Six Stages of Development

Thank you. I'm delighted to be here today for several reasons. One is it gives me an opportunity to wear my frog tie which I don't get many opportunities to wear. But I think it fits in as a very appropriate piece of wearing apparel when we talk about green design and a beautiful natural area that has been despoiled over many years. I'd like to start by talking about the larger context of the Nine Mile Run project. I begin with a very simple aphorism that is, "Humans will alter their environment." How they alter it, however, depends upon their values and belief systems and the amount of power that they can bring to their efforts to shape or change the landscape. Today, society often faces issues of developing or not developing that provoke large conflicts among stakeholders. The environmental history of the Pittsburgh region has been actually shaped to a large extent by such clashes between opposing value systems, economic interests and various stakeholders in the population. The history of Nine Mile Run in terms of human uses extends for hundreds of years. It is an excellent case study of the conflicts and clashes that have shaped our landscape. These changes can be discussed in terms of overlapping stages of development affecting both Pittsburgh and Nine Mile Run. I am going to sketch out six stages of development.

We can characterize stage one as an indefinite period of time when the region was occupied by Native Americans, such as the Delaware and Shawnee tribes. These tribes likely used Nine Mile Run and the valley in a variety of ways. We could also say that these Native Americans who occupied the region made minimal alterations. I'm not saying that they "didn't alter their environment"—there is documented evidence of Native Americans using

fire to clear extensive areas of land, but the point that is important here is they didn't have the tools to accomplish the changes that we see in later years with European colonization.

Stage two of the development of Nine Mile Run and the greater Pittsburgh region is characterized by European colonization and American settlement. In this period of time extending into the middle of the nineteenth century we have the exploitation of natural resources: the cutting of timber, the regions mining of its coal and the construction of salt works and, of course, farming. Where does Nine Mile Run fit in this period? It is primarily through the development of salt works. Early maps from 1841 show two salt works at the mouth of Nine Mile Run along the Monongahela River. There was also extensive coal mining in the area, primarily above the hills which define Beechwood Boulevard and this no doubt also had an effect on the stream. A subsequent aspect of natural resource development, still in stage two, involved the development and tapping of natural gas wells. In the 1880s and 1890s the Pittsburgh region had a major natural gas development boom. Records from 1886 show that natural gas wells were drilled in the Nine Mile Run area; and they probably date back further than that. In the late 1940s Duquesne Slag was considering sinking six wells to capture the natural gas from the site.

In the third stage of development, Pittsburgh became a center for industrialization. The impacts of these developments came to Nine Mile Run rather early and in the 1841 map you can see a glassworks at the mouth of the river. We don't know how long that glassworks functioned, we are still in the process of investigating that. Undoubtedly the most significant impact of industrialization in the valley was the dumping of slag beginning in 1922. I'll talk about that more later in my comments.

Stage four of the development is marked by increasing urbanization. The city spread throughout the region by annexing contiguous territories. In 1867 Pittsburgh annexed a huge area of land in the East End, increasing the city's land area 14 times. Up to that time Nine Mile Run was not in the city of Pittsburgh but rather in Pitt township. Urbanization brought with it the creation of a built environment. This built environment included streets, water supply pipes and sewers. In the process of sewering the East End of Pittsburgh and the neighboring towns of Wilkinsburg, Edgewood and Swissvale, many of the streams were culverted or placed underground. These were (and are) the original tributaries and upstream parts of Nine Mile Run. The stream becomes part of the sewerage network of Pittsburgh and the neighboring towns. As early as 1909, the head of the Pennsylvania Department of Public Health was trying to issue orders to the city of Pittsburgh and neighboring communities to cease polluting the Nine Mile Run but with no effect. Such pollution has continued without mitigation to this day.

Stage five is marked by the beginnings of a negative reaction to the excesses of industrialism and its environmental impact. Women played the largest role in this movement to clean up the environment in the early 20th century. There was also a greater concern with leisure type activities and recreation possibilities for urbanites.

The increasing emphasis on leisure activities led in 1901 to the construction of a 9-hole golf course at Nine Mile Run. In 1904 the Pittsburgh Country Club constructed a club house which stood on the site until 1913 when it burned down. In 1914 a new club house was built in Frick Park overlooking the valley. Later removed, its foundations are still visible. The concern for more popular leisure activities, not just for the elites but the rest of the population was also reflected in the Olmsted Plan of 1910. Ted Muller will discuss this, then I will return to talk about stage six.

Ted Muller: The Olmsteds in Pittsburgh

I'm going to look at the context within which Olmsted made proposals for the inclusion of Nine



In the 1920s, Nine Mile Run was only partially culverted just east of Braddock Avenue in Edgewood.

Photos courtesy of Ted Rakovsky



By 1928, private development interests along the frequently flooding stream had instigated work that would eventually become the stream bed and base for Greendale Avenue.

Mile Run in a parks system for the city. Frederick Olmsted, Sr. is often considered the father of American urban parks. His design principals have carried on and had an enormous impact/legacy on the landscape architecture of American cities. The story of the Olmsteds picks up with John C. and Frederick Law Olmsted, Jr. In 1895, the Olmsted firm was invited to plan the model industrial town, Vandergrift, on the Kiskimenitas River. Within 15 years this firm lands a number of important contracts to landscape civic institutions (if you will permit the broadening of the definition) such as the Schenley Hotel in Oakland, to provide a revised plan for the upgrading and modification of Allegheny Cemetery, and to landscape a number of private residences including H.J. Heinz' home on the East End, and Greenlawn, W.L. Mellon's residence.

John C. Olmsted, was in charge of the Olmsted brothers private residential landscaping activity. An example of this is W.L. Mellons residence that formally stood at the head of the Schenley Park Golf Course on Darlington Road; the stone walls can still be seen. They did a number of these kinds of residences—Elizabeth Thawes summer retreat in Sewickly is another example.

It was the invitation for the Olmsted brothers and, particularly, Frederick Law Olmsted, Jr. in 1909 that brings us around to the issue at hand. This is one of those value clashes that Joel was talking about. In effect the progressive reformers in the city had been waging a battle against the environmental, social and political consequences of excessive (in their view) urban industrialization. By the middle of the first decade of the century they were beginning to have some success on the political front; they were establishing significant institutional, physical, health and related human services and they were also beginning to have some impact on environment issues. As a part of this effort, the reform mayor at the time created a civic commission to tackle several of these physical issues; as referred to earlier, H.J. Heinz was the chairman of this commission. One of these issues was to create a comprehensive plan. The urban planning profession in April of 1909 was just emerging. The keynote speaker at their first national conference was none other than Olmsted, Jr. The Pittsburgh Civic Commission traveled to Washington for this conference and asked him to take on this plan for the city. By 1909 the Olmsted brothers were well known in the city and well connected through their private contacts. Frederick Law Olmsted said what the commission wanted to hear and they trusted him. The plan was undertaken. The brothers opened an office in the city with permanent staff, and they went about developing a plan that was issued in 1910. It focused mostly (at the civic commissions direction) on issues of traffic congestion, circulation, the downtown and finally parks.

Nonetheless, in looking at the downtown and the surrounding area, Olmsted proposed numerous features for the city many of which have in one form or another been realized. These include a plan for parks along the rivers, a point park and a downtown civic center. Most importantly, he saw in Pittsburgh's topography great opportunity for the future of the city. He argued strenuously in the report for reforesting of hillsides, to capture these hillsides as public space whether owned as private or public.

He planned for the filling of the ravine at Schenley Plaza in Oakland to create a nice entry into Schenley Park, a site that today is a parking lot! When he turned to looking at the larger topography, he thought of special opportunities for parks. Here he considered such things as the Saw Mill Run Valley, you know where we are with that, we have a road but not much of a parkway. He identified special opportunities for the Squaw Run Parkway and the Guyasuda Parkway north of the Allegheny River which have significantly materialized. Allegheny River Parkway also was created. But when he came to Nine Mile Run he saw an opportunity for creating a park much closer to the larger concentration of the urban and industrial population. I am simply going to read to you most of what he wrote on Nine Mile



Panoramic photograph depicting gasbelt along Nine Mile Run. (Commercial Avenue appears on the right.)

Run. It's not very much, but it is significant in the context of what developed.

"Perhaps the most striking opportunity noted for a large park is the Nine Mile Run. Its long meadows of varying width would make ideal play fields. The stream when it is freed from sewage will be an attractive and interesting element in the landscape. The wooded slopes on either side give ample opportunity for enjoyment of the forest for cool walks and resting places. Above all it is not far from a large working population in Hazelwood, Homestead, Rankin, Swissvale, Edgewood, Wilkinsburg, Brushton and Homewood. And yet, it is so excluded by its high wooded banks that the close proximity of urban development can hardly be imagined. The entire valley from the top of one valley to the other should be included. For upon the preservation of these wooded banks depends much of the real value of the park."

Moreover, he went on to argue that this park along with others in the Saw Mill Run Parkway would eventually fit into the creation of an extended park system. That was the vision of Olmsted for Nine Mile Run, and as Glenn Eugster has pointed out, the next larger scale outward.

Joel Tarr: The Sixth and Current Stage of Development

It's true that while some of the elements of the Olmsted plan were put into effect, many of them weren't. Nothing was done as far as Nine Mile Run was concerned. In 1918 another group of Pittsburgh elites (as you know a lot of the decision-making in this town over time has been top down) came together to consider city planning and talk about various changes that could be made to make Pittsburgh a more liveable city. This group produced a series of six reports called "The Citizens' Committee on Civic Plan" between 1922 and 1924. In the first of the six they considered parks and this report devoted a number of pages to a discussion of the possibilities of building a water based park at Nine Mile Run.

Very little comes out of the Citizens' Committee on Civic Plan reports and nothing happens in regard to Nine Mile Run. At the same time as the Citizens' Committee was considering the Civic Plan, the city was working to pass the first zoning ordinances in Pittsburgh in order to improve land use patterns. (This was passed in 1923.) The zoning ordinance designated Nine Mile Run as a residential area. But this was too late, because the Duquesne Slag Products Company, founded in 1906 to take advantage of the economic opportunities relative to the disposal of slag, had purchased 94 acres of land at Nine Mile Run in September of 1922. The company began dumping slag in 1922 before the zoning ordinance designating Nine Mile Run as a residential area. Duquesne Slag was protected from regulation under the zoning ordinance because they owned and used the property before it was zoned. They had what is called a "non-conforming use." Over the years, they were also able to acquire more land in the valley on the basis of the fact that they already owned land. Between 1922 and 1972, a 50 year period, Duquesne Slag dumped something like 17 million cubic yards of slag in Nine Mile Run. The slag came from the iron and steel making activities primarily at the Jones & Laughlin Mill in the city of Pittsburgh, from the J & L Mill in Aliquippa and likely from the Homestead works as well. The disposal of slag at a low cost was a major objective of the mills. Cheap nearby disposal sites were important considerations, when you consider that each ton of steel produces 1/2 to 3/4 of a ton of slag. There were significant transportation costs to move the material away from the mill. Slag was originally brought in by rail and by barge; dumped hot, it was watered while being dumped, releasing heat and steam. This was a major industrial activity creating enormous problems for the residents of communities surrounding Nine Mile Run. Complaints about these activities came primarily from the



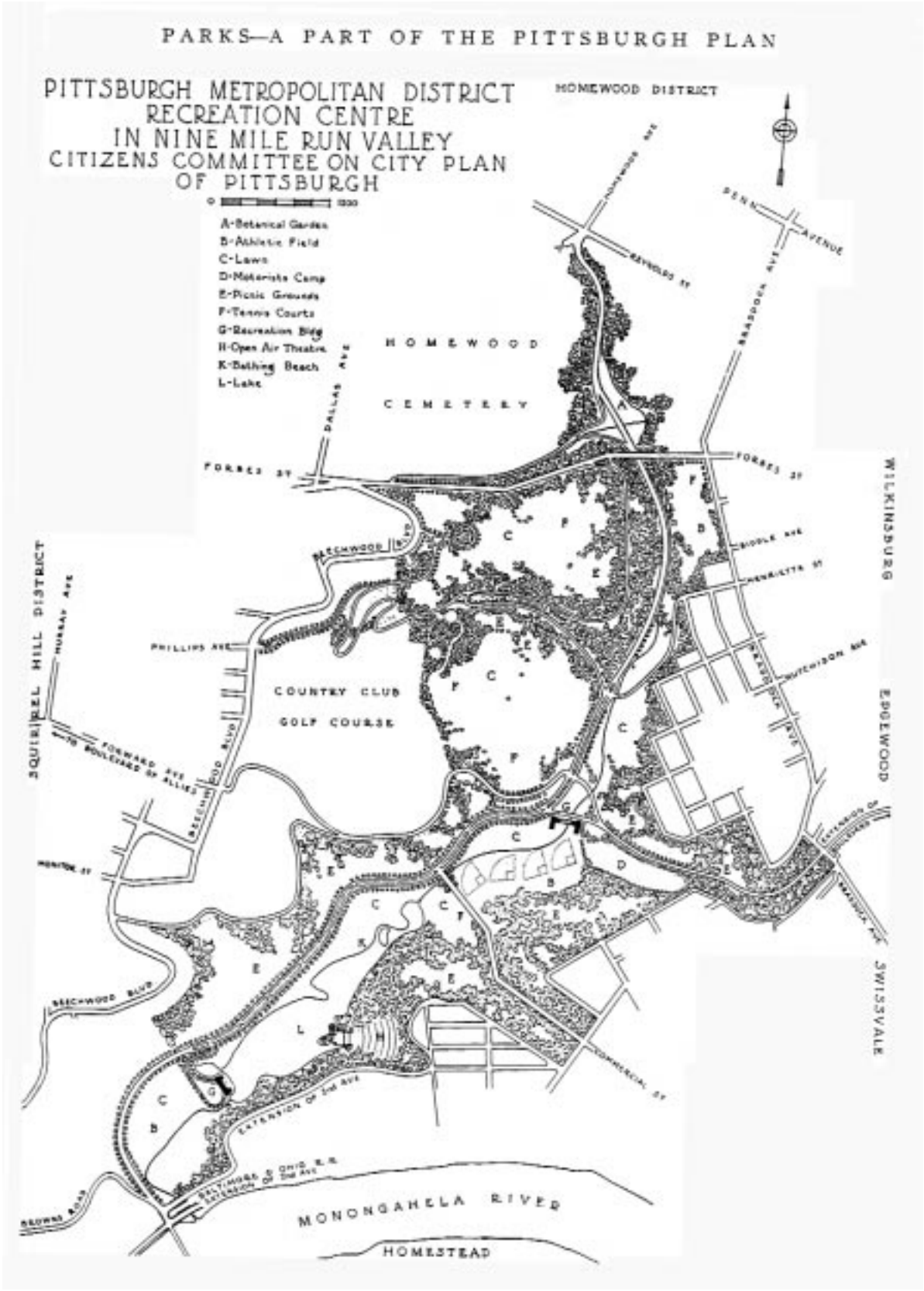
Photo courtesy of Nancy Horrocks Thomas

Swisshelm Park Civic Association formally founded in 1937. Between 1937 and the 1970s, the Swisshelm Park Civic Association made a number of complaints to the City Council and the Board of Zoning Adjustment that Duquesne Slag was acting without a permit and creating a nuisance. All these protests were to no avail. The Citizens Association in the 1950s went as far as to talk to the law firm of Thorpe, Reed and Armstrong to see about bringing a suit. They were discouraged by the law firm, and we think there may have been a conflict of interest on its part because there exist reports of work with another client with an interest in slag disposal. Again nothing happened. What you have then during the 50-year period in which Duquesne Slag was dumping was a series of protests but no action taken by civic authorities.

This brings us to the sixth stage of development, our situation today. It wasn't until the 1980s and 1990s, after its use as a slag dump had ended, that the city began to reconsider the property. This culminates in 1995 when the city of Pittsburgh bought the 238 acres of land primarily for residential development. Now in our own time, plans that were made in the past to utilize the valley for environmental goals may come to fruition through creation of a greenway and restoration of some of the natural ambiance that exists there. In a sense we are being given a second chance to realize the vision for Nine Mile Run held by Frederick Law Olmsted, Jr. and the authors of the Citizens' Committee on Civic Plan.



On the new Beechwood Boulevard, one of the splendid views, Homestead and up the Monongahela



A civic plan by the Citizens' Committee, 1923

Project

Don Berman, Consulting Engineer
David Dzombak, Carnegie Mellon University
Chris Frankland, NMR-GP
Reiko Goto, NMR-GP
Joe Plummer, Environmental City Initiative
Ray Reaves, Planning Consultant

Community

Gundi Caginalp, Citizens for Responsible Development
David Kriska, Squirrel Hill resident
Jonathon Robison, Public Interest Attorney
Jack Solomon, Squirrel Hill resident
Kenny Steinberg, Attorney and Chair, Long Range Planning Committee of the Squirrel Hill Urban Coalition
David Tessitor, Town and Country Alliance
Alan Wertz, Squirrel Hill resident

Government

Joan Blaustein, Department of City Planning
Glenn Eugster, Environmental Protection Agency

Public Policy Roundtable Discussion

Plummer: In reflecting on what Don and Ray presented, I was impressed with their homework and presentation examples of how governments have created agreements on very difficult public processes. We also heard from Ray on some very creative financing mechanisms that could be put in place. Maybe we can pick up the conversation at that point, of the examples that we heard tonight that are particularly apt to the situation we are looking at here, and do we have a chance to take those as models or should we be looking at some entirely new models?

Caginalp: Are we talking about greenspace or housing?

Plummer: We are talking about greenspace.

Caginalp: We are assuming there is no housing basically.

Plummer: We can assume that there is a housing development that will be built, but we are not talking about the financing of the housing and we are not talking about the governmental agreements that need to be developed to allow the housing to occur. We are looking at the financing mechanisms that are needed to put a public greenspace in place and the type of cooperative agreements that are needed to address the environmental issues related to Nine Mile Run.

Robison: I would like to suggest that we step backward from what you said. Ray and Don discussed how to get financing and at least basic principles with government cooperation. Especially from the point of view of the citizens the public policy question is money for what? cooperation for what? And, I thought we had agreement on this. Because I am not from Squirrel Hill. I would have thought that what Eloise said about wanting a park was enough. And it might be enough for me, I may take it on faith that we will have a nice linear park and now let's talk about how to raise money. But what I hear around this room and last night at the Squirrel Hill Urban Coalition meeting is that there is a great deal of

unreadiness; people are not willing to take these things on trust. I suggest, unfortunately, before we can seriously move on to issues of financing, how to encourage intergovernmental cooperation, we have got to get some kind of consensus on what 'it' is, what it is we are trying to do.

Dzombak: Can't we just address the greenway without any consideration, at least initially, of what is going to be on the plateau?

Robison: Well maybe, but the question is, what is the greenway? I would take it on faith, but I don't hear that around the room. I don't think there is a readiness.
Caginalp: Can I ask a question, that I think is very fundamental, of the people sitting at the table, who is a resident of Squirrel Hill and not an interested party in the sense of being a developer or a member of the STUDIO or whatever?
Robison: Four of us.

Reaves: I agree with Jonathon, I cannot imagine anyone opposing a greenspace running down the middle of the valley, why can we not accept that and then, we can look at that as an opportunity in fact. In preparation I spoke with landscape architects working with the city. This is an opportunity through the process to decide what that is going to be. I don't think it is going to be an active waterfront. At the same time, it is not going to be covered with gravel, it is going to be something in between. Is it at least enough that we can settle on that. So let's go with it.

Robison: That's enough for me, but I don't think it is enough for Squirrel Hill. I fear it is not enough for a lot of people in this room.

Reaves: I have not heard anyone object to what I just laid out or Eloise's idea of a park.
Berman: I don't know if we can exactly define what the greenway is going to look like at this point because it depends on a number of things. Will the sewage problem be corrected? Will there be a development? Will there be slag movement? What type of slag movement? All of these things will influence what is going to be there.

Robison: That is the exact opposite of what he said.

Berman: No, no, no. There is going to be some type of greenway there if it is done through some type of cooperative program. I think the two key questions we are trying to address tonight are can it be done through cooperation, if needed and where needed, and how are you going to pay for it.

Robison: That woman in the back of the room asked from the very beginning, what is the greenway?
Solomon: That question was adequately answered.

Plummer: Can I take a stab at the question? I think what it is, is a work in progress. There are two general concepts we are working with and they are being refined through this process of discussion, and identification of issues, management of issues and fact, and a public discourse. We know that this work in progress has two general objectives. One, is the creation of a residential community that fits into the community that is already existing in the East End. The other objective is to take advantage of this private development and extend the greenspace we have at Frick Park to the Monongahela River and in doing that to really capture a vision of the city of Pittsburgh that is deeply embedded in our history. So what that greenspace is going to look like in terms of the types of plants to grow in which place and the dimensions of it are to be decided. We are really addressing so many issues as we go through this.

Wertz: I would like to add something to this: the concern that this fellow mentioned. Could it not be more defined early on? Another person mentioned the marriage between the greenway and the community. I have a concern that has been expressed. I think it would be advantageous if a philosophy could be defined early on. I think it relates to the slope mainly. The sloping that will be done to make it more gradual and how much that is going to bring the development into the view of the stream. Is it going to be like, oh my god, we lost what little bit of nature we had and now we have suburban development imposing on us at the stream level? Or is it going to be preserved in a way that the development is somehow out of sight or blends in so much so that the sense of nature is preserved in the valley? I do agree that if that can be more defined early on it can be reassuring to many people. That this development is not going to encroach and impose itself on that nature. Even if the details are not worked out yet, some of that philosophy about how the slopes can handle some of that will go a long way toward reassuring some people.
Tessitor: The concern that I have, in being involved in many projects and seeing them go, some of them extremely bad, is that when you package the financing in such a way that you say we are not going to worry so much about how much you are going to

get, we are only going to worry about getting. By the time it has to be got, too often what you are getting is something you don't want, but then it is too late because you have been working on this and everything is in motion. We see this with the Mon Valley bypass. And so maybe we are putting the cart before the horse in doing this. And I am concerned from the standpoint that this is such a major project with major environmental impacts and sociological impacts. Yesterday the Urban Redevelopment Authority had their meeting and one of the things that was talked about was unintended consequences. When you are talking about unintended consequences you have to be evaluating secondary impacts and cumulative effects, that is part of an Environmental Impact Study (EIS) process. So I would ask of the EPA, will an Environmental Impact Study be required of this? If the development is using federal moneys, and it has some very serious environmental impacts, physiological issues and there are sociological issues. And there are alternatives in that there are other sites within close proximity that are also usable, perhaps more usable, and the only issue they may raise is the complexion of the people who live near there, which is not a valid issue to be raised. I would suggest that the EPA should be requiring before one step goes forward that, yes, there has to be an EIS on this, because the Mayor is going to want to run in and get started on this in a few months.

[Note: An Environmental Impact Statement is required by law for major federal projects and programs that may have an impact on the surrounding environment. See 42 U.S.C.A. §4332. To date, an EIS has not been requested by the EPA.

Plummer: I would like to suggest that we keep the discussion focused on the greenway.

Tessitor: But this is because you are tying into [the development]. If you are looking at a tract of land and what you are going to do with this tract of land and you are moving this thing ahead without an EIS process, which is to look at alternatives, to look at these things, to look at alternatives as far as costs, etcetera, and lay something down that you can work with....

Plummer: Well, for the discussion, we are looking at the greenspace and the opportunity that is presented by the greenspace. You have made a good point in terms of having a process that looks at the issues that relate to the development itself.

Tessitor: But you made the point that they are not to be divorced, that they are tied together and if that is so, then, you must evaluate.

Plummer: I don't believe I made that point. They are two projects that are occurring side by side and we are looking for the opportunity for the greenway while this other project is also being examined.

Reaves: You are right that they are linked, no one is denying that. But Alan makes some very good points. For the first time someone started to define some of the issues with respect to the greenway. Part of what I was thinking about in my remarks was that, if we can find a funding stream, to deal with the greenway and the problems and opportunities in the valley, divorced from the housing, not as an add-on, and you are right, too often these things get built as, "Well, we will add on a few trees; it will look good." If we can find a way to define that piece of it and work cooperatively through the process then I think we are further ahead in reflecting the values that Alan and others mentioned. I think that is where some progress can be made.

Dzombak: You can decide what you want in the greenway, maybe you don't want the slopes to be touched and then that goes forward to possibly impact the development project. Focus now on what you want in the greenway and then you can argue later with how the development does or does not concur with your vision of the greenway.

Goto: I have been working on soil, slag, and habitat issues. People think park and see lawns trees and manicured gardens. But these days some people with an environmental background are thinking about ecosystem function, in relationship to education.... This could be an educational focus for university, high school, junior high even grade school. You can explain how an ecosystem works. How we reclaim land from the history of industry. The second thing is: we would all like to find out what is the best solution and vision about the greenway, but before that we should be finding out what is there. Nine Mile Run is very mysterious. It has been abandoned for over 40 years. Two weeks ago we walked the site with Sue Thompson of the Carnegie Museum of Natural History and we found a hop tree, a threatened species in Pennsylvania and we found it growing in slag. Neighbors know that there are turkey there; we have seen beaver. Something has happened, little by little species have

been introduced into the community. So I am concerned that if the development changes the surface of the slag and the slopes, we will lose that vegetation. Animals and birds will lose their food source and place to hide and place to make babies. We would like to somehow enhance or improve the existing living things for the future. Unless we know what is there we cannot make plans. It is not simply, "These plants are good, so let's plant." Slag must also be tested for what will grow. We cannot simply say this is the best way, we need some type of test and research.

Plummer: What is the endangered species?

Goto: Hop tree, it is just a threatened species.

Caginalp: Basically, I agree that without scientific studies it is speculative to discuss that we can do this or we can do that. And it is nice to see artists thinking through a different perspective than someone like me, a scientist. But you can discuss making a nice park on the moon or whatever and then you find out there is no oxygen and then, gee, you can't have a park. At this moment, we have only a dozen borings and in those dozen borings, without getting too technical, they have chromium, in hot well three in numbers like thousands per million and then in the next one down, it's ten. Those are ridiculous numbers, they vary by a factor of a hundred. I am willing to bet anyone, I will pay for the drilling there, that the spot they found ten is closer to a thousand. Anyone that wants to take the bet, the companies that did the studies, I will shell out a couple thousand to show you that that is not ten there. Even if you assume they are right, you already have a factor of a hundred, so the next one may be by ten thousand per million and you almost have Superfund status, I believe.

Blaustein: The point that Reiko was making is that there are plants growing in the slag, the same slag that you are saying are contaminated to these quantities. Threatened plants in the state of Pennsylvania are growing there and are surviving in the slag and in the slopes. We are continuing to study and document what those plants are, but, even in these most adverse conditions, where plants of these magnitude and variety can grow, this is the same slag.

Caginalp: I am not worried about the plants or the animals, I am saying that there are some constraints imposed on what the scientific study would show in this area.

Now, on 238 acres, all of the environmental people I have spoken to say that you need hundreds, at least, of drillings to find out what has been deposited over many, many years. You don't know what is there. I would suggest that there will be some constraints on this. One of the constraints is that you won't be able to move lots of slag. This two million, five million cubic yards whatever that will be out because it will endanger those of us that live close to it and others. That is one constraint. The stream is so heavily polluted that their own study says that the stream represents the primary restriction, how do they phrase it, the primary restriction to developing residential housing.

Plummer: Can I just interrupt here? I have been with this process for many months and have been to virtually all of the public meetings that have been held on this, there have been several that have occurred, and this particular set of issues has been aired at every one of these meetings. So I am confident, as an observer of this process, that these questions are in fact being heard and that they are being discussed in a serious way. They are recognized as questions that do need to be addressed. I think it takes us away from...

Caginalp: I will ignore those points, and—

Plummer: I think we have another question or comment to be made.

Robison: I think what I said was seriously mis— I failed to make myself clear. Joe, when you said there are two points when defining what the 'it' is, the work in progress, you were looking at me as if I was one of the people you have to convince, and I am not. In the first place, I don't even live in Squirrel Hill and in the second place, I am so anxious to see both the greenway and the housing community succeed, I am willing to take it on trust. My concern is political, I am hearing so much unwillingness to take things on trust and so much dispute about what the 'it' is, that it undermines the public support we need. I think the environmental questions as well as the financing and the intergovernmental can only be dealt with after we have a consensus on what the 'it' is. Then we could say, now we know what it is we want, this is what we have to find out environmentally, this is what we have to do about it, and this is the money we have to raise, that the possibilities [are] for doing it. I may be wrong, but I have heard a lot of dubiousness from people who I would have thought would have been absolute cheerleaders for this project.

Reaves: Can we ask around the table what people's values are for the greenway?

Caginalp: Those that live outside of Squirrel Hill or—

Reaves: Let's hear from those that live inside first. I don't care. I live inside.

Caginalp: Do you want me to start with what I envision? Basically, there are two severe constraints. One is that you can't put a large housing development there because it's housing and what is under there. And the second constraint, without getting too deeply into it, that material is toxic.

Reaves: No, no, no, what is in the greenway?

Caginalp: Okay, the greenway. Okay, I'll skip that part. I would like to see maybe a thin layer of topsoil, some grass, some shrubs, whatever, make it pretty and then bike pathways and stuff like that assuming it's not too toxic to do that safely and then 20 years later, with new technology, clean it up.

Reaves: Clearly passive uses, a trail?

Steinberg: I'll second that. That's what I would like to see but also enough of the greenway so that you can be inside it at some point and not know that the housing is there.

Reaves: Accentuate the valley nature of the thing.

Steinberg: Exactly.

Blaustein: But no remediation? Just putting things on top to seal it up?

Steinberg: I'm not sure.
Caginalp: You see, when you say remediation, I really dislike this abuse of terms like reclamation, remediation. Remediation means taking 12 million cubic yards truckloads by truckloads to Ohio and cleaning it up and so on. I am concerned more with people than with a few insects or whatever. Just by mixing up the soil and doing this and seeing this or that plant grow does not eliminate the chromium or ten other substances I will avoid listing.

Plummer: For example, is there any sense that the waterway needs to be cleaned up?
Berman: Is there one thing that we can agree on, that the sewer system needs to be cleaned up?

Everyone: Yes, yes, yes.

Caginalp: The sewer system needs to be cleaned up.

Reaves: I would like to see the stream open through its entire course, not culverted at any point, that is one of my values.

Everyone: Yes, yes, absolutely.

Reaves: Could it be fishable? Should it be fishable?
Goto: People are seeing some fish and crayfish there.

Robison: Fishable means fish that you can eat.

Goto: There are some gilled snails, planarium and scud in Nine Mile Run Creek. In Fern Hollow Creek, which runs through Frick Park, there is more aquatic life. Caddisfly is one of them.
Reaves: Should there be ways to get to it except at the mouth and way up in Frick Park? Should there be trails into it?

Steinberg: Yes, there needs to be a way to give Swisshelm Park people and Squirrel Hill people a feeling that it is their park too.

Reaves: What should happen at the mouth of the river?
Dzombak: Some other access, twelve-year-old kids have the guts to go down it on bikes, but no reasonable people would do it.
Plummer: Should it be a park which people are really and truly encouraged to use and to take advantage of from a recreational and a relaxation standpoint?

Steinberg: Absolutely. Water does that. Water gives a sense of relaxation that nothing else can give.

Reaves: Should it be lit at night?

Steinberg: I have dual concerns about that. You don't want to mess with nature, but at the same time you don't want people to be afraid to use it.

Blaustein: Frick Park is closed at night.

Dzombak: It would be hard to police too. If you light it, then you feel obligated to protect the people in there.

Kriska: It is the extension of Frick Park.
Wertz: Schenley doesn't have lit trails.
Kriska: Schenley is kind of a commercial park; it has the golf course.
Steinberg: I think it would be a mistake to light it.

Plummer: Should the park be integrated into the larger plan for bike trails and the connecting of the whole park system all the way down to the point ultimately?

Steinberg: Absolutely, yes. You want to encourage people to use it for commuting, if necessary, as well as recreation. It is part of an overall city plan that would attract people, keep people here.
Kriska: I see Schenley and Frick as two different entities. Schenley is more open, while Frick is more of a preserve.
Robison: You can get lost in Schenley. You can be in there and not be sure if you are in West Virginia.
Kriska: That's a question. Do you want to have baseball fields like the corner of Frick Park at Forbes and Braddock, the playground? Is it safe enough? On this side of the river, away from the slag, you can have those things but for kids, six- or five-year-olds—is topsoil going to help protect them from the slag?

Reaves: One problem with playing fields, for me, is that they are going to have little leagues, or beer leagues or whatever, and a lot of cars are going to need to access nearby parking, with asphalt.

Caginalp: It seems that the park has another constraint in that whatever you put there has to be minimum parking, like a museum might be okay, an art gallery, all those things because there is a little bit of traffic on occasion. But, I think the traffic is a very major issue. Whatever we can put there that is not going to attract much traffic would be very useful.

Berman: My eleven-year-old grandson is visiting us, that's my daughter's son, and my son is home with his two little kids, and the three of them with my daughter-in-law's young nephews and nieces all went down to a little creek today near where we live and they had a hell of a good time. They just waded in the creek with shoes on. That's the kind of thing I see here, out in the West Hills. They must have been there for three hours, and they just enjoyed it. They had little boats. They skipped stones across the creek a little bit. That's the kind of thing I see here and this kind of defiled landscape. I don't see an active place. I don't see little league ballfields. It's a place to commune with nature, to get close to nature, to see plants and see bunnies.

Kriska: Let nature take its course, like it does at Frick. The deer come out; the raccoons come out.
Caginalp: One thing I sense from what everyone is saying is that if you put one thousand families there, all of these ideas can be thrown out the window.

Berman: The question is that you are looking at one tract which may or may not be impacted simply because another tract

is going to have some impact on what's going on.

Solomon: You have to start somewhere.
Caginalp: I agree with what everyone is saying, it's wonderful. I am just saying that this vision is in direct conflict with apartment buildings.

Berman: Not necessarily.

Steinberg: I don't know if it is necessarily true either only because I use Schenley Park and Frick Park all the time; there are times you go there and there is absolutely no one there. They are certainly surrounded by many, many, many more thousands of houses. But it is something that must be looked at and considered.

Reaves: Well, I would like to see a greenway even if the development never takes place.

Caginalp: Absolutely, that would be wonderful to see a greenway without a development.

Frankland: You know, in effect, there is a greenway there now. It may not be a nice one or a fancy one. But it has biking trails and hiking trails, there is something there now.

Tessitor: It is not as if we are going to be putting something there that is not there now. You are going to be transforming. What are you going to transform it into is the question. Or maybe you just leave it as it is. The Seldom Seen Greenway for instance. Very little has been done with it. Now, it wasn't as severe. But it did have some major things happening there, but they just let it grow. It is fairly recent, according to the history that we are hearing now that it has been left. That is an option too that has to be put on there for analysis. That is, just let it go.

Goto: At the Seldom Seen Greenway, the community works very hard to keep it clean. Their place is pristine, like an old, mature forest. Nine Mile Run has a different situation. Some people who grew up there told me the place used to be their playground. Then, the slag dumping started. They felt their place became a dump. People don't really want to take care of it. So it is a little different than Seldom Seen.

Caginalp: What would be the cost—the kind of thing that we were discussing—to have some paths and green areas, whatever, that does not seem to me to be a very costly thing, on the scale of a city. I mean, just to have some wild grass and bushes. If you look at something like Phipps, although it is a much smaller thing, there is a very rich flower

exhibit, four times a year, it is only a forty dollar per family contribution. It is really a very trivial amount. I really wonder if this kind of thing was done and financed by private contributions, perhaps by the companies that polluted it in parts or other industrial companies. Would that be a very costly thing, you think?

Berman: You have the sewage, first thing first.

Caginalp: I know, you have the sewage, but suppose that is cleaned up, just the idea of doing these kinds of green things.

Dzombak: Yes, you can take the cost minimal approach, fix up the trails with some kind of gravel.

Caginalp: But also some green things there, you know, some topsoil, perhaps add some wild grass, bushes and trees, whatever.

Blaustein: What would be the extent of this, how wide?

Caginalp: The whole area.

Blaustein: The whole 238 acres?

Reaves: No, no, no.

Caginalp: Let's just take the valley first, just the valley perhaps.

Goto: I think you can have more diverse species. That would make it less artificial. In 1954, Dr. Black from Pitt University studied Frick Park and he identified 250 different species [of plants]. Now at Nine Mile Run, about half of them exist. Of these about 60 percent are native plants. We should have more diverse plant communities.

Plummer: Can I pose another question related to the values driving this? And keeping the idea of taking a look at one domain larger, I guess, than the one we are taking. Is this park, this greenspace opportunity, does that enable us to do something about the way that Pittsburgh itself is viewed? In other words, many people coming into Pittsburgh go by Nine Mile Run, they see a slag heap there; they see this kind of uncertainly utilized piece of property that, at least in my view, is not very aesthetically pleasing. Is one of the values we are working toward here an improvement in how Pittsburgh receives it visitors and the way the outside world perceives our community?

Caginalp: I don't think it has as much impact as you think. I mean, I live on Beechwood and Rosemont and it would be nice to see something green there. I don't actually see the slag heap. But if I walk

down the road or whatever, it does not really look that bad to me. A lot of areas in this world have rocky formations, whatever, it really does not look that ugly. But if you look at it from the point of view, if we are going to take this as part of the package where we have immensely more traffic so that the street becomes a two-lane highway, that would have a negative impact. I see some gain that we have some parkland or whatever, but not so much that it outweighs other things.

Tessitor: I think the excavations for Route 28, for example, along the Allegheny River are much more a horrendous scar upon the landscape than a slag heap where it is now, covered with some vegetation so it is green during the growing season. We see more and more of these highway gouges, even with what they were doing with the busway. So I don't think this is as big a factor as what we are doing with our transportation rights-of-way.

Robison: I would like to make a suggestion based on what I have heard and then express a problem. There seems to be consensus around that we would like some passive park development in the valley and we would like the stream cleaned up. We probably agree on a gradual minimalist restoration of the slag heap, using the ability of the land to reconstitute itself. And, we can probably have consensus on that. But, the minimalist reconstruction of the slag is not a big dollar item, the passive park is not a big dollar item, but the cleaning of the stream is a very big dollar item. Although, legally it should have been done decades ago, the fact is there wasn't money then and we will have to be really creative to get the money, or fight like the devil, or both, to get the money now.

Dzombak: Well actually, that process has kind of started. The EPA is interested in reducing sewer overflow discharges across the whole county. And that process is sort of starting for Nine Mile Run.

Robison: It started 25 years ago, when I was a reporter covering the first discussion of how the city was going to improve its sewer system.

Berman: Don't forget now that we have consensus on a number of items but you don't have all the stakeholders at the table. You don't have the city at the table, you don't have the developer at the table, but even so, there are a few things that [a group as diverse] as this can agree on. Cooperation.

Frankland: I think we have all highlighted that this is a multi-faceted process and that

it is going in one direction, but it is going in different lanes. We have the financing, we have the flora and fauna, and I think we are trying to address all of those issues individually but bring it together at some point. And that is where we all need to meet at that point where we can all agree right now.

Dzombak: I think Ray's suggestion of looking at the values of the greenway was a useful one, we agreed on some things there. Anyone want to volunteer to summarize that for the group?

Plummer: I will be glad to do it, unless there are any other volunteers.

Dzombak: Do you want to go through that list? We talked about passive development with paths.

Plummer: Cleaning up the stream; reconstruction of the slag.

Caginalp: What do you mean 'reconstruction'?

Dzombak: I don't think we agreed on that.

Caginalp: The only thing I agreed to was very minimal movement of the slag. If you want my opinion that's it. If you don't want it, that's fine too.

Plummer: How do you want to describe what was said about the slag as part of the greenspace?

Robison: Incremental restoration using natural processes.

Dzombak: Minimal movement of slag.

Robison: I'm not expressing my position necessarily. This is what I heard. Reliance on natural processes. That seems to be one area of consensus.

Dzombak: Minimal disturbance of the slag. Clean up the stream.

Reaves: Include trails going down the middle, maybe, increase the number of access points.

Wertz: May I make a couple of suggestions? In terms of what my vision would be, a couple of major points to include. There is a great view. I think it is as nice as Mount Washington, but in a different sort of way; it is not an urban skyline, but it is an expansive natural view down the river valley. I would really like to see that included.

Plummer: You made a point in the beginning, and I thought I would preface with your notion of defining a philosophy.

Wertz: Can I mention also, you asked us before if we thought the park could be an attraction beyond Pittsburgh. I don't know if that was how you phrased it, but to reflect on Pittsburgh.

Plummer: In doing the park project, can we make a bigger statement about the beauty of the city of Pittsburgh itself.

Wertz: I think there is an opportunity, when you are going down to the riverfront there is a parking lot, if you could have a place where boats could access this. I think that would be so wonderful and that would be an attraction to out of town visitors. I often see a river or I see a stream somewhere, but I almost never see where a stream meets a river. I think that is such a rare thing to come across that if you could actually boat up to that and then have a nice little riverside restaurant or something, then take a little walk to see the stream flowing into the river. I think that would really be something to see in the city.

Dzombak: It really is something fairly unique. It is a rare observation opportunity.

Wertz: And if they did want to uncover parts of the stream, if there were needs for funding, if there could be some kind of concessions, some kind of refreshments, there could be a fundraising element to it.

Dzombak: One more point is to capture Reiko's comment that there needs to be more diversity.
Plummer: Yes, and the mystery of the site, what was the name of that threatened species?
Goto: Hop tree.



A view of Nine Mile Run looking upstream from Commercial Ave. 1947

Project

Sean Lyons, NMR-GP
Amy Marino, NMR-GP
Andrew McElwaine, Heinz Endowments
Ted Muller, University of Pittsburgh
Joel Tarr, Carnegie Mellon University
Sue Thompson, Carnegie Museum of Natural History

Community

Dean Benjamin, Wilkinsburg resident
Julie Murphy, Park Place resident
Jon Smith, Beechview Area Citizen Council
Jack Solomon, Squirrel Hill resident
Ned VanderVen, Squirrel Hill resident
Six unidentified community participants

Government

Eloise Hirsh, Department of City Planning

History and Context Roundtable Discussion

McElwaine: This program is on the history and the long-term context of Nine Mile Run. We have had presentations by Ted Muller on the work of the Olmsteds in Pittsburgh, and by Joel Tarr on the history of the site. I also have been working on the history of the site. Do we have any particular questions or issues that anyone wants to bring up?

Benjamin: A matter of curiosity, does Duquesne Slag Company still exist, and is there any way to retroactively fine them for their crime?

McElwaine: Duquesne Slag Products Company was acquired in '85-'86 by Standard Lafarge Corporation of Cleveland, Ohio. All the assets of Duquesne Slag went to Standard Lafarge. The site has since been acquired by the City of Pittsburgh, in total. The city is the party responsible for the site. Were this a state or federal superfund site, past owners such as Standard Lafarge, would have to defend themselves against liability for the site. However, the state statute was revised very significantly about a year and a half ago. In terms of significant liability, my sense is that there would be very little unless this was declared a state superfund site. The likelihood of becoming a federal superfund site at this point is minimal because there have been no federal superfund sites for a number of years. Funding has been significantly reduced. Also, the level of the contamination on the site, in terms of just raw toxicity and particularly what the EPA looks for in the mobility of the toxins to leave the site, is low compared to similar superfund sites. There are only three superfund sites in all of Allegheny County: Neville Island, Mon Valley near Clairton which is a waste dump, and the third site is in the Alle-Kiski area up toward Tarentum that was an industrial dump site. The five county Philadelphia area, by contrast, has about 60 superfund sites. Our region has relatively few. Most

of the industries in the Philadelphia area processed their waste and disposed of them, while our industries volitalized their waste mainly by heating things to such an extent that they became airborne problems. Philadelphia never had to have their street lights on at noon like we did. So all our problems went into the air and theirs went into the groundwater. As a result, they have superfund sites and we don't. That's my guess anyway.

Tarr: One more point, even though there are only three superfund sites, there are many brownfield sites that have been impacted on industries and so on. That implies a significant amount of clean-up before they can utilize them.

Community Participant: It sounds like there is some federal responsibility to clean up a superfund site. What does being a "brownfield site" imply?

McElwaine: A brownfield site contains a level of contamination which is not significant enough to prompt EPA to intervene. It is a somewhat subjective criteria. When EPA intervenes, they will draw funds from the federal superfund and sue the responsible parties to refill the fund. In other words, EPA will intervene and spend it's own money to clean up a superfund site to the extent they have the resources to do so. They will sue those who are responsible to the extent that they can fine them to recover those funds and refill the superfund. With a brownfield site, such as the Homestead Works, there is an obligation in state statute for the owner of that site to insure that there is no public health risk from that site. However, recent statutes have left that in fairly broad interpretation. The Duquesne Works and the McKeesport Tube Sites are undergoing a $22,000,000 clean-up. You're paying for that because the RIDC (the Allegheny County's Regional Industrial Development Corporation) owns that site.

Smith: Why, in 1922, was the site cheap enough that its best use was for a garbage dump? Farther up in Edgewood, the Rockwoods bought for an estate and, further up into Point Breeze, Frick bought for an estate. Did it have a big enough watershed and enough water and sewage that it wasn't really valuable property? I wonder why it was able to be purchased for a dump so cheaply?

Tarr: A lot of buying was surreptitious, in that, small pieces of parcels of property were picked up over time until they got 60,70, or so acres.

McElwaine: Ninety-four acres was the first purchase in the fall of 1922. They were able to acquire those sites, which were in an estate at that time, fairly cheap. There was some desire, and here I am speculating, on the part of the estate to sell. The land, which was right by the riverfront, did not have much road access, and did not have any real amenities. It was not a place you would build an estate.

Benjamin: In the Homestead Library, there is a 1900 engraving of the Homestead Hillside. You can see Second Avenue, the trolleys and the Browns Hill Road that went across the river there. It looks like there were trolley tracks across the Bridge. I guess there was a wagon road along the river.

Muller: This is highly speculative but, by the '20s, river site locations within the urban areas were, generally speaking, not ideal residential locations. People would look back on the watersheds. By then, our rivers were industrial, they were filled with coal barges and they were dirty. This is not where people were building nice homes.

Marino: When was Duck Hollow community developed?

Smith: It was in place in 1900; it was before the dumping.

McElwaine: There were some small tracts of houses in the valley at that time. In fact, Duquesne Slag in the '30s and '40s acquired some of those properties by sheriff's sale. In fact, there was a plat, although I don't think it was ever developed. This is according to the Chester Engineer's Phase I of the site; they found a plat for some more housing and it was for lower income, but it was never built.

Benjamin: I talked to a resident who lived there his entire life. He said that the Homestead Grays Baseball Stadium is buried beneath the slag. Do you know when the baseball stadium was buried beneath the slag?

Tarr: We figure it is there somewhere, but we really don't know. But we figure there was a practice field there somewhere. I don't think their main stadium was there.

Muller: They tended to play in Forbes Field on off-days.

Tarr: The question of access is a very interesting one and of where the trolley lines were. There were extensive lines but, the point that Ted made, those riverfront areas had changed and had become completely open sewers by that time. Take a look at Hazelwood, which had been a blue book living area in the middle to late nineteenth century, it entirely turned into mill worker housing. That happened from the mill on the Homestead side too.

Smith: There was less mill on the Homestead side. We think of it now as all mill but it wasn't always that way. Maybe there was no better use. I live by a stream drainage near Banksville, which is about 15 acres, it has a lot of water when you don't want it and it has a whole lot of sewage from Dormont. It is sort of hard to develop. The question of what one should do with a hollow, it is harder to think to figure out how to develop it.

Community Participant: There is the inverse question too, if not there then where (for the dumping)?

McElwaine: That's an excellent point and I wanted to address that. A research assistant for Joel, Megan Mosher, interviewed one of the surviving managers for Duquesne Slag. He managed the site for some 20 odd years. He noted that because that site was so close to the Jones & Laughlin Mills, Duquesne Slag got a very significant advantage in the cost and competition of slag disposal because the chief component of the cost was transportation. The material was worthless: the further you had to move it, the more expensive it got. So, even if Duquesne Slag had to pay an above market price for that site, it still would be made good in very short order because the barge and rail cost were so cheap compared to having to take it somewhere further away.

Muller: Was there an ownership overlap between Duquesne Slag and J&L?

McElwaine: There is nothing in the titles of the property. J&L never had any title or role in the titles to those properties. The total number of acquisitions Duquesne Slag bought over were probably 20 different parcels in the valley. They did it over a 40 year period, so that it was a very gradual process. But at no time did J&L ever enter into any of those direct purchases.

Muller: I wonder if there was much overlap in the board of directors of Duquesne Slag and J&L because that was such a common practice in the railroads and everything, directors made money at both ends.

McElwaine: It's an interesting question. There was competition for J&L's slag. For instance, there was a company named Allegheny Asphalt that also used the slag and competed for the slag and used it as bed and other material. In fact, they were sued in the late '40s and '50s by Hazelwood over some of their slag use activities. I need to research it more to see how it turned out. But there were competing uses and competing companies that J&L used to get rid of the slag. I need

to look over the corporate records of Duquesne Slag more carefully to see if there was a role there. I will say that when the Swisshelm Park Civic Association was trying to get the slag dump operations shut down in the '50s, the defense that the president of Duquesne Slag Products, R.L. Dercker, used was to say that it would severely damage J&L. However, J&L was not a witness and wasn't on the list of people who attended those hearings. He used the adverse impact on J&L as the reason to try and badger city council into not taking any action.

Muller: Of course at that very time, the city was trying to help J&L survive by buying up property in both the South Side and Hazelwood so they could modernize. You can see that's a fine defense.

Tarr: There's one counter intuitive thing that I haven't figured out yet. That is about why dump there rather than somewhere else. Well, it's cheaper, less transport cost. But isn't the real cost of transportation the loading and unloading? Isn't the basic cost of shipping on the riverfronts by the mile once you get it into the barge? It really ought to be small. That may have initiated that argument and I haven't worked that out yet.

McElwaine: Until 1950, rail was the primary means of moving slag. They shifted in 1950 to barge because the rail rates went through the roof. The rail transport by the mile was an issue. They actually pulled the rail lines for the most part out. Some were still there which was another source of contention for the community that surrounded it.

Smith: One time I saw a list of principals of Duquesne Slag and it occurs to me that I saw a familiar name or two but I don't know who was with J&L or anyone else I would have noticed. They were apparently major players in the Pittsburgh area. In terms of cost of shipping slag, if you can put it on a railroad then presumably you can put it on an lolly car take it on out and just dump it. Whereas, if you put the slag in a barge, what do you do with it next? You don't have good access to a strip mine or any other hole where you could float it in and turn it over.

McElwaine: They built a wharf there on the site in 1950. In fact, they started doing it without a permit. The Swisshelm Park Civic Association saw that happening and quickly notified the federal government that there was construction taking place in the waters of the United States, which the Mon technically is, without a permit. So

they forced them to go get a permit. Then they were able to challenge the zoning because that area was still zoned as residential. The construction of a wharf and a loading bay and everything else they had to put in there for the barges really gives you a sense of how expensive rail had become to make them go to this effort. They had to get a zoning change. They actually had to get legislation from city council to change the zoning in 1950 from residential to industrial in order to construct all this infrastructure on the riverfront to unload the barges. It was a big undertaking and there was a lot of expense associated with it. Rail must have been very expensive.

Smith: It's just that it's easier to dump from a rail car than a barge. You use a "Watson dumping car" which withdraws the bottom of the car to dump a load. It is hard to do that from a barge.

McElwaine: The loads have to be put on a truck and driven up to the dump from the wharf which was another source of contention for Swisshelm Park because you suddenly have a lot of noise and a lot of traffic.

Smith: Didn't they have a railroad that ran up the pile of slag and just towed it like the lolly cars?

Muller: They stopped doing that in 1950.

Tarr: Another important point is the top-down decision-making process in this area. The Civic Commission really had a lot of important people on it, Richard B. Mellon and so on. These are really very important people but, when push came to shove and decisions had to be made about using the valley, none of the elites wanted to stand up. You can imagine if the Mellons or Armstrongs stood up and said, "No," it might not have happened. They obviously were willing to go along, maybe they had moved out to Ligonier by then. Even so, they put forth these various plans of different kinds, they were opposed by different interests, maybe the steel industry, and they backed off and we get what the valley is today.

McElwaine: These public-private partnerships had big agendas. Nine Mile Run lacked the priority that the main thoroughfares and the downtown district had comparatively.

Tarr: With the Citizens Committee in 1921, the situation was a little different because Nine Mile Run was a much larger part of the recommendations.

Benjamin: In the American Southwest, cities routinely, every ten years, annexed communities to sprawl out. What has

prevented Pittsburgh from doing that? When I first arrived here and looked at the map and saw all these micro municipalities dotting the periphery of Pittsburgh, it seemed so obvious that Pittsburgh should be about four times its current radius.

Tarr: Every single major annexation by the city of Pittsburgh was opposed by the area that was being annexed. There was one in 1846, '57, '67, '72 and then Allegheny City in 1907. In 1907, it was very interesting. Allegheny City, which is the North Side today, was a separate industrial city which had 125,000 people and was annexed against its will. There was state enabling legislation that said annexation could occur by a majority vote of the combined municipalities. More people in Pittsburgh voted than that of Allegheny, so it then was annexed. At that time, a League of Municipalities formed in the county to oppose any further extension by the city of Pittsburgh by annexation. There was a small bit of annexation that occurred in the '20s, but it was small pieces that were being chewed up. There are 131 separate municipalities in the county. Legislation exists in the southwest that allows you to go ahead and annex, but here, forget it.

Community Participant: Also, unlike those other areas, Pennsylvania gives government jurisdiction over every parcel of land; every piece of land in Pennsylvania is inside of a local government. Many governments that were meant to be farm land eventually became strong governments of suburbs. Pittsburgh wasn't the only city in this region, the others really didn't adjoin this site very much. At one time it was the third or fourth largest in southwestern Pennsylvania.

McElwaine: In terms of your question about the land use issue, one of the major differences between the states of the southwest and of the southern states with these large, very powerful counties is that they were slave states. They didn't need a lot of municipalities. Very large, powerful counties had developed because land holding in those regions was fairly large. There was no desire for large municipalities. This land was settled with small holders. Small municipalities made a great deal of sense in terms of managing with those frontier communities. So we never developed those large powerful counties that, for instance, could implement their own land use. This county's land use authority is essentially meaningless because counties in Pennsylvania have no power.

Smith: They developed here river by river and stream by stream. Each municipality was it's own settlement. You start at the West End, you go up Saw Mill Run, you then go from West End to McGann's Corner to Shalerville to Seldom Seen to West Liberty to Smithson Station. If you go out to Albuquerque, the Rio Grande runs through the middle of it, there is nothing else. The only place in Albuquerque you have any trouble annexing is right up and down the river. You have little bands of people fighting for independence. Other than that, they annex five or ten thousand acres because there is nothing there except horned frogs.

Thompson: However, there are models for annexing here in the eastern states. I grew up in Indianapolis, Indiana and the house I first lived in was a rural route but now it is within the city limits of Indianapolis. It was a series of small communities. I am not sure of the model because this happened after I left. The city took over the entire limits of Marian County.

Smith: Philadelphia did that; they took over Philadelphia County. The same idea was offered to Pittsburgh, but the city did not want it because there were too many fractious people. They turned it down and they never got another chance.

Muller: Well we came real close, actually. In 1928 or 1927, it would of been a federated city model if it hadn't been rigged by the state legislature, it would have passed. It had the majority vote; it just didn't have the majority vote in the majority of settlements. The idea flew again in about 1937 and was shot down very quickly. The people that were pursuing it backed away for other priorities. It's a give and take issue.

Benjamin: The reason I ask is because it seems like anything that comes up in this region inevitably involves turf battles between rather small municipalities. It just seems that it is a major impediment to almost any kind of problem solving.
Community Participant: And some communities do things that are outrageous because they have the power to do whatever they want with their land.

McElwaine: The University of Pittsburgh's Institute of Politics did a forum on land use in Pittsburgh about a month ago. The secretary of environment of Pennsylvania, Jim Seif, was the closing speaker. Two models were presented. One was in

Oregon which was a land use bound model where you can't develop outside a specific geographic area. The other was in the Minneapolis area where they have tax-sharing. If you move out of the city, you still have to pay the taxes to support the regional infrastructure. So, you get no benefit, particularly, tax-wise from moving one place to another. Seif didn't endorse either model but he did note that, at a minimum, a county should be empowered to manage their own lands and be able to establish regional land use authorities that could set binding regulations on all these municipalities.

Benjamin: Who made the Nine Mile Run proposal and what historical forces formed it? Is it a push from CMU or other interests? Who are the movers and shakers? What is the history of the past five years leading up to this date?

Tarr: On the one hand, there is the intention of the city of Pittsburgh to develop Nine Mile Run in order to create new housing there and to sell housing to bring people back in to the city. Open space issues and the green belt issues and so on, really came out of the interest of two individuals not of this region. They are Tim Collins and Reiko Goto from San Francisco who are visiting artists here. They looked at the early plans and they saw that the initial plans were to culvert the stream. They did not feel there was enough attention being paid towards greenbelt issues and natural issues. They began to try to get together a team of people to meet on their own time and so on, to think about this and plan for open space. We put together a plan with a lot of people at CMU. We got Andrew involved (the Heinz Foundation) and put together a plan we presented to the city to deal with the open space-type issues. We tried to raise and install higher priority and the city, basically, responded positively.

Benjamin: That is where I see my own interests channeled. I had always thought of the slag heaps as an extension of Frick Park. It's sort of stunning to realize that no one else, not even Frick Park Nature Center staff, notices. Basically, they only see that world ends at the bridge. It's sort of stunning to me because I grew up in Minneapolis and the riverway and the waterway is the whole guiding principle of the park system there. For me, it was stunning to see this amazing potential to be sort of squandered by a sewer and being ignored by everybody. When I found out about this project I said, "Yeah, let's go that way."

Muller: Both of your questions have very important cultural issues. I think, personally, the first one speaks to political culture and I think that's ultimately what everybody was saying here. There is a local municipality mind set that is very hard to bang up against. We explored that in many different ways. I saw this in the early '80s from different angles when I got involved in riverfront promotion to try to get the city to think about the riverfront as quality land and as quality opportunity for life in the city. The reaction I received everywhere I went, except for people here and there, but in the civic leadership, by that I mean private and public, was, "You've got to be kidding me." They were polite, usually, but the question was, "Why?" I believe the cultural issue is this. (By the way, I grew up in Regent Square and used Frick Park and the area as a kid.) Up until the mid 1980s, most Pittsburghers, by that I mean the larger metropolitan region and not necessarily Southwestern Pennsylvania, did not view our rivers as amenities. Our rivers were industrial, utilitarian. Beginning with the development of principally steel but also glass works and so on, we began to turn our backs on these rivers. For 75 to 100 years, three or four generations or more never viewed that as real water other than those teenagers who would sneak down to trespass across the railroad and jump in the water (as Michael Weber is always proud to say). On the one hand, I found the last 15 years of looking at the conception of our waterways, tributaries, and riverfronts to see it improve as a highly frustrating event. On the other hand, I can say until 1988 or 1989 there's absolutely no willingness to understand this. It's only since 1988 or 1989 where you can publicly feel these civic leaderships begin to change their view on this. They have a ways to come. I believe you've come smack into that cultural barrier and it's one that I think we are changing. I don't think there is any question, much more so than the political issues.

Benjamin: The first plan that I saw on the wall map in the trailer down the road showed the sketches of the developers. These are the preliminary projects. Their idea is to culvert over the stream for two to three hundred yards and then sort of bury the rest of Nine Mile Run. When I saw that, I was slackjaw stunned.

Community Participant: They were just extending the culvert. They were also proposing to clean up the entire site with that option. They were also talking about

redirecting the sewage, taking it out of the water that was going into that culvert. There was just going to be the stream to a point and then it would flow naturally down to the river. You get pluses; you get minuses.

Smith: It seems to me that we are trying to do two things. We are building a housing development on the slag mountain and developing it as a, what we'll call a greenway, defined for better or for worse as a linear park more or less side by side and without falling all over one another. I'm not all together sure that that's being made clear to everybody as well as the problems that are involved in putting them together side by side. I was as dismayed as Dean was that all of a sudden this is the Nine Mile Run Greenway. Where is Nine Mile Run? "Well, it's in the culvert there." That just doesn't make sense. It is very difficult to develop a place like this. Somehow if we're going to call Nine Mile Run a focus of a greenway, there's got to be a Nine Mile Run there. You've got to be able to see it from one end to the other and maybe that means bridging over. Well, if you're going to go from Swisshelm Park to Squirrel Hill, you'll need a big bridge in the center. Homestead does a whole lot of things with vertical parks and stuff. You need to figure out how to police it. Living next to a stream takes a whole lot more time than you think.

Muller: Restoration is not out of the question nor is the concept of drainage basin to try to deal with the sewage issues. One of the things Friends of the Riverfront have been developing, in terms of their riverfront trail that's slowly starting to make its way around the outer edges of our rivers in Pittsburgh, is, of course, neighborhood ownership. The idea of 'adopt a highway'. You have neighborhoods that take ownership of parts of the stream and those people of the communities will be damn vigilant if, in fact, they embrace that concept. I don't know if that's being proposed or even a good idea but it's very doable. John Stephen is very much an architect of that concept with Friends of the Riverfront. I agree with you about the traditional Western Pennsylvania view of tributaries and creeks.

Benjamin: It may be the cultural thing. When I arrived here, my first experience of this whole area was a hike down the riverbed. Sure, the idea of hiking down Nine Mile creek was probably anathema to everybody. It was a smelly day, but for me, that is where my interest radiates, from the creek outward. As opposed to something

like Beechwood Boulevard across the slag heap downward, that's my boyhood growing up in the land of ten thousand lakes perhaps.
Community Participant: Where does the development plan stand at this point?

Hirsh: A plan has not been chosen. This is all work in progress.

Tarr: There are issues that relate to the sewage and stream, the upstream communities, Wilkinsburg, Edgewood, and so on, and their responsibilities. What is the function of the EPA going to be here and whether that's going to impair the sewers that are leaking and take care of stormwater surge problems, and so on. It's tied up not only in local issues but the role of national policy, in terms of the EPA and their responsibility.

Solomon: There are two models on the effect of bridges on greenways and what the effect on green space might be. The Parkway bridge and up in the park at the Forbes Avenue bridge, hawks nested under the old bridge at Forbes Avenue. Now, there is nothing nesting. Under the Parkway bridge, it's kind of sterile. Smelly slag heaps are a remarkable gathering place for mocking birds and great for the endangered tree down there. So, it's an area that will stand a lot more resurgence.

Thompson: I'm from the Carnegie Museum of Natural History and we're involved in the flora and fauna study but we are constantly monitoring the plants. The key indicators of all diversity are the insects which nobody's looked at in that area. We want to run one set of light trap samples and, in fact, one of the light trap samples is on the slag top up above the bridge and it has a sample.
Marino: Maybe this whole process has to deal with how everyone perceives a park. Eloise has said that the objective here is to make a park. But the fact that there is already a trail and the people recognize that there are endangered species, all this seems to me that there is a park there. It's just that most of the people don't know about it because there's a gate that stops at Commercial Street so nobody really passes there. When you're on top of Forbes Avenue, and you look out over that bridge and you see all of that green, you know that Frick Park is under there. There's all the trails; people explore there. When you're on top of the Parkway, likewise, it's right over Nine Mile Run. It's equally beautiful and green. People don't realize that there is a trail through there that's really exotic with interesting discoveries to make.

Thompson: I had the same thought. When people were asking about creating a greenway, I thought in a sense, it already is a greenway. The times I've been out, there's always people using it as a trail to go from the city down to the river. Maybe it doesn't go directly to the river and you cross a road and go through some parking in the end. In a sense, it already is a greenway.

Marino: So what makes it a greenway? Some signage and commissioned park benches?

Smith: Let's be practical and say what is really driving this whole proposal is the thought that the city of Pittsburgh is going to get a lot of $100,000 houses with a $100,000 valuation into the treasury which will help it to stay afloat as a city. Let's not lose track of that. Part of this whole project is to balance the various interests and to be careful of what we are doing and not get carried away by one thing or the other. Well it's fine to say a developer sees land and he wants to make it as flat as he can as quick as he can and put as many developmental units on it, and many of them do. But, on the other hand, if you come in and say, "Well, I don't want to do that," then it may make you noble but that doesn't mean you automatically have a viable plan. Your plan has to work if you want a greenway. It has to work in and of itself. It won't work just because your motives are noble.

McElwaine: The economic benefits of the greenway are not just the construction of the housing. Recent studies have shown that existing housing close to a greenway, increases in value and appreciates in value by about 30 percent.

Smith: I live next to one and I know the number of people who want to drink beer there and dump trash there.

McElwaine: Well, that is a fair complaint.

Smith: That is why there is a gate there, so people won't love it in that way.

McElwaine: Well, we ought to be wrapping up. Any final thoughts on context and history? If not, we'll report something back in a few minutes. Thank you.

STREAM REMEDIATION

Ample Opportunity: A Community Dialogue 2

Saturday, July 19, 1997

Introduction: The second workshop was designed to provide greater on-site experience for participants. On Saturday morning, stream tours were led by workshop advisors. A heavy summer storm the previous day resulted in combined sewer overflows and sewer failures, providing topics for the roundtable discussions. The afternoon session started with each of the advisors providing a ten minute report introducing the problem from their perspective. The keynote speaker presented a national overview of the issues. After the keynote speaker, three roundtable discussions followed on the subjects of Regulation and Reality, Stream Ecology and the Urban Aesthetic, and Stream Banks and Floodplains.

Review: The tours helped provide context and a lead-in to group discussion. The presentation times were approximately of equal length leading to requests for more discussion time at the end of the event. The relatively poor attendance at this event was noted, some community members requested less technical language on our announcements. Changes were made in the planning for the next event.
Attendance: 50

Advisors:
David Dzombak, *Associate Professor, Department of Civil and Environmental Engineering, Carnegie Mellon University*
Dr. Dzombak's area of research interests include fate and transport of chemicals in water, water and wastewater treatment, and hazardous waste site remediation.

Mary Kostalos, *Ecologist, Chatham College, co-founder of the Rachel Carson Institute*.
Dr. Kostalos first tested the waters of Nine Mile Run for her doctoral thesis in the late '60s and has returned to the site with her students in the intervening years.

Nancy Racham, *Water Pollution Biologist, Southwestern Region, Department of Environmental Protection*
Ms. Racham, a graduate of Slippery Rock University, manages environmental impacts associated with water obstructions and encroachments to streams and wetlands.

John Schombert, *Chief, Public Drinking Water and Waste Management, Allegheny County Health Department*
The Health Department has regulatory authority over community sewage disposal systems in Allegheny County.

Kathy Stadterman, *Environmental Scientist, Allegheny County Sanitary Authority*
Ms. Stadterman monitors ALCOSAN's compliance with pertinent regulations and completes public research associated with combined sewer overflows and cryptosporidium and giardia in urban streams. She is also producer of the environmental news show, *Allegheny Frontier.*

Mark Young, *Environmental Scientist and Project Manager*, *Pennsylvania Department of Transportation*

The stream is unfit for human contact because of high concentrations of Fecal Coliform bacteria, an indicator of the presence of disease-causing microorganisms. The waters of the stream are often far above the standard set by the Environmental Protection Agency for human contact. Contact with the stream provides the potential for infection by viruses including hepatitis, bacteriological illnesses, and parasites such as Cryptosporidium and Giardia. It is important to minimize the exposure to young children, the elderly, and individuals with compromised immune systems.

—Allegheny County Health Department

The People have a right to clean air, pure water, and to the preservation of the natural scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

—Article I, Section 27
Pennsylvania Constitution



A *fecal fountain*, a chronic sanitary sewer discharge, draining into Nine Mile Run. 1997



The Wilkinsburg culvert



The Wilkinsburg culvert after rainfall

Introduction

Nine Mile Run is in many ways a typical urban stream. It is polluted with excessive amounts of sewage and goes from a trickle to a torrent with rain events. At the same time, Nine Mile Run is unique because it is about to be surrounded by a continuous public space. This offers opportunity for development of a greenway with Nine Mile Run as the central feature for aesthetic enjoyment and recreation. However, the reclamation of an urban stream is a difficult and challenging process. The following document is intended to provide a background for the discussion at the July 19th Ample Opportunity: A Community Dialogue workshop on urban stream water issues. We will begin with a summary of Nine Mile Run, then move into the history of water and sewers, and finish with an overview of the options for remediation.



Two immature beavers were recently sighted on Nine Mile Run!

I. Water: the aesthetic element that defines and defiles Nine Mile Run

Is there anything special about Nine Mile Run?

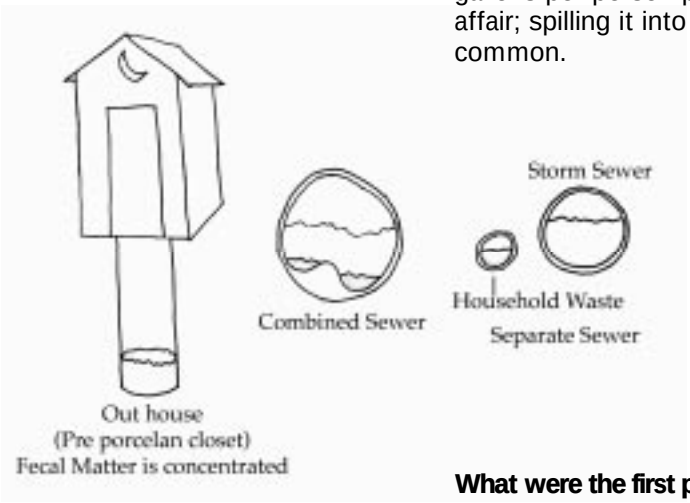
The Nine Mile Run stream originates in the hills and slopes of Pittsburgh, Edgewood, Swissvale and Wilkinsburg. It flows through Frick Park, is squeezed between the slag piles then flows into the Monongahela at Duck Hollow. Nine Mile Run is the last relatively large, free-flowing stream within the original borders of the city of Pittsburgh. The area has a wide variety of habitats, including the stream, the **riparian** area along the stream, wetland areas, a variety of open and wooded areas, and the slag dump slopes as well. Nine Mile Run is not the normal pristine environment that we are trained to value, but with its proximity to bus lines and hiking and biking trails it provides a rich environment for human experience.

Riparian: Living on, relating to, or located along the banks of a stream, river, lake or tidewater.

The area contains a surprisingly wide variety of plant and animal life including rare and threatened species such as the hop plant (Ptelea trifoliata). The valley forms a corridor which presently allows wildlife to move between Frick Park and the river. Numerous birds, deer, turkeys, butterflies, and other fauna are found in this area. The stream, cleaned of pollution and managed to prevent large flows, will have the potential to become a fishable urban stream, if we care enough to insist that this be so.

II. The history of water and sewers on the East End of Pittsburgh

What was it like in the "good old days"?
The first water systems in Pittsburgh consisted of a network of household wells. The capacity of these wells was soon surpassed and in 1824 a city waterworks was established on the Allegheny River. The initial system was fraught with technical difficulties but by 1853 the system was supplying the city's inhabitants with approximately 60 gallons per person per day. Disposal of water continued to be a casual affair; spilling it into the yard, street gutter, cesspool or alley was common.



What were the first priorities?
Piping in pure drinking water was a priority for most major cities across the county in the early 1800s. In contrast it was widely believed that a constructed sewer system was both unnecessary and costly. However with increased urban development, the traditional spilling of waste water into yards, gutters, and cesspools created standing pools of fetid water. These practices and events began to take a toll on the citizens of Pittsburgh. There were signs of a disturbing deterioration in health and aesthetic standards. Pittsburgh was the site of a number of devastating typhoid and cholera epidemics right through the first decade of the 20th century.

What was the effect of the modern toilet?
A complicating factor in all this was the increasing popularity of the water closet (the modern toilet) patented in the U.S. in 1833. The cesspools and vaults designed to hold human waste were seriously overburdened by the increase in volume of water mixed with fecal matter. The means to collect and dispose of this domestic waste was still dominated by individuals and municipally-licensed scavengers who hand collected the liquid and solid matter in barrels on horse drawn carts to be transported to the outskirts of the city.

When did problems first show up on Nine Mile Run?
The problems of increased water mixed with fecal matter became so bad in the East End of Pittsburgh (where Nine Mile Run is located) that local residents were forced to lay private sewers and dig open ditches to carry off stormwater.[1] "In warm weather," reported city councils in 1882, "many parts of the East End are absolutely unfit for habitation owing to the polluted atmosphere arising from open runs of filth of every description."

1 Tarr, J. and McClelland, J.H. "Dangers to Health in Suburban Districts," Fifth Annual Report of the State Board of Health (Harrisburg, Pa. 1891), p. 41.

What are the ideas behind combined and separate sanitary sewers?
In the late 1800s there was a national discussion about the merits of combining storm/street **runoff** with sanitary (household waste) sewers versus the virtues of separate systems. In Pittsburgh, the Board of Health supported the separate systems for economic, maintenance, and health reasons. They argued that the separate, smaller scaled system for sanitary removal provided "limited quantity and uniformity of sewage, making its ultimate disposal easy and reliable." They intended to rely on surface gutters for stormwater management.

The public works officials and members of the engineering community came to different conclusions. Engineers felt that the increased size and heavy flows of stormwater events would provide a self cleaning capacity to the city sewer systems. They argued that the construction of a single combined system diminished the complications in engineering and plumbing which could occur when building separate systems although the per mile costs of sanitary sewers were cheaper. In cities like Pittsburgh, where stormwater needed to be eliminated along with human waste, it was more economical to adopt the combined system.

Runoff: Rain or melted snow which passes over the surface of land and enters a stream. Runoff from a city street is different than runoff from a forested hillside. Street runoff is usually filled with litter and moving at a higher rate of speed than water falling over a more irregular surface.

Watershed: A land formation that drains into a singular stream, river or lake. The Nine Mile Run watershed includes portions of the communities of Pittsburgh, Edgewood, Swissvale, and Wilkinsburg.

What instigated the construction of the first sewers?
Climactic conditions subject the city of Pittsburgh to short but intensive cloudbursts. Because of the steep hillsides, early drainage channels and stream beds were often backed up and overflowing. The paving of streets and the change from cobblestones to smooth asphalt surfaces increased the runoff flow and concentration of water into stream channels and storm conduits. These conditions of climate and landscape made it easier for the engineers' argument for combined sewers to take precedence. (Combined sewers will be reconsidered in our discussion of the contemporary issues facing the Nine Mile Run watershed.) Construction of combined sewers began in Pittsburgh in the mid- to late 1880s. By 1909 there were 542 miles of combined sewers in Pittsburgh. Like municipalities across the nation, these combined sewers were designed to discharge directly (untreated raw flow) into the Monongahela or Allegheny, usually following old stream beds in the ravines.
Note: Initial service to the Nine Mile Run watershed communities would not be established until the period between 1911 and 1915.

What happened once the sewage went directly into the rivers?
Pittsburgh built a sewer system that took untreated household wastes to the rivers by the shortest route, as did each municipality upstream and downstream. Unfortunately each municipality also took their drinking water from these same rivers. In Pittsburgh, once the municipal sewer system was underway the next link in the water system was protecting the water supply. There were two choices: filter the wastewater providing a clean product for the next city down river and hope the upstream communities would do the same, or filter the drinking water. Cities across the United States and in Europe primarily practiced **"downstream management"** of sewage, discharging untreated sewage directly into the rivers and in turn filtering drinking water (drawn from upstream sources) from these same rivers.

Downstream management: Moving water problems downstream so they don't effect the source community (a common practice).

Pittsburgh held the dubious record of having the highest rate of water borne typhoid mortality of any city in the United States in epidemics that raged between 1873-1912.[2] In the first years of the

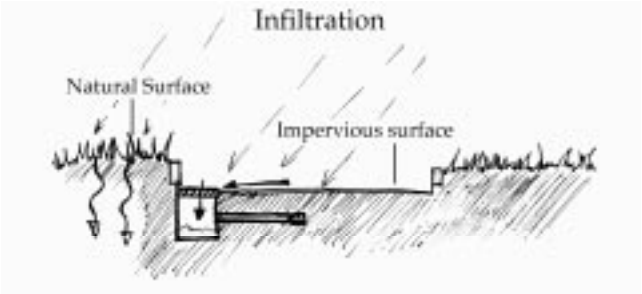
[2] Yosie, T. *Retrospective Analysis of Water Supply and Wastewater Policies in Pittsburgh, 1800-1959,* p.120.

20th century, sanitary engineers took the position, expressed editorially by the *Engineering Record*, "It is often more equitable to all concerned for an upper riparian city to discharge its sewage into a stream and a lower riparian city to filter the water of the same stream for a domestic drinking water supply, than for the former city to be forced to put in sewage treatment works."[3] Nationally respected engineers like Allen Hazen argued that "the discharge of crude sewage from the majority of cities is not locally objectionable in any way to justify the cost of sewage purification."[4] In light of this, Pittsburgh, like every major city in the nation, began to filter and chemically purify the drinking water supply in 1907.

When did we start treating sewage in Pittsburgh?

In 1905, the Purity Water Act was passed by State Legislature to address abatement of untreated sewage discharge throughout Pennsylvania. A subsequent report in 1912 indicated that the economic burden prevented enforcement of the laws only in instances where a downstream water intake was directly jeopardized.[5] (These same arguments are still in use throughout Allegheny County, and have stalled clean up of Nine Mile Run for over 90 years!) In 1937, the Clean Streams Act was passed in Pennsylvania. It wasn't until 1946 that its goals would start to affect Pittsburgh.

In 1946, the State Sanitary Board ordered 102 municipalities and 90 industries in Allegheny County to quit discharging untreated sewage into area waterways. On March 13, 1946, the Allegheny County



Sanitary Authority was formed through incorporation under the 1945 Pennsylvania Municipality Authorities Act. Widely know today as ALCOSAN, the authority was created to provide sewage collection and treatment on a county-wide basis to meet the requirements of the Pure Streams Act of 1937 which dictated pollution abatement of streams and rivers. On October 1, 1959 ALCOSAN went into operation after six years of preparatory work, four years of design, and three years of construction.

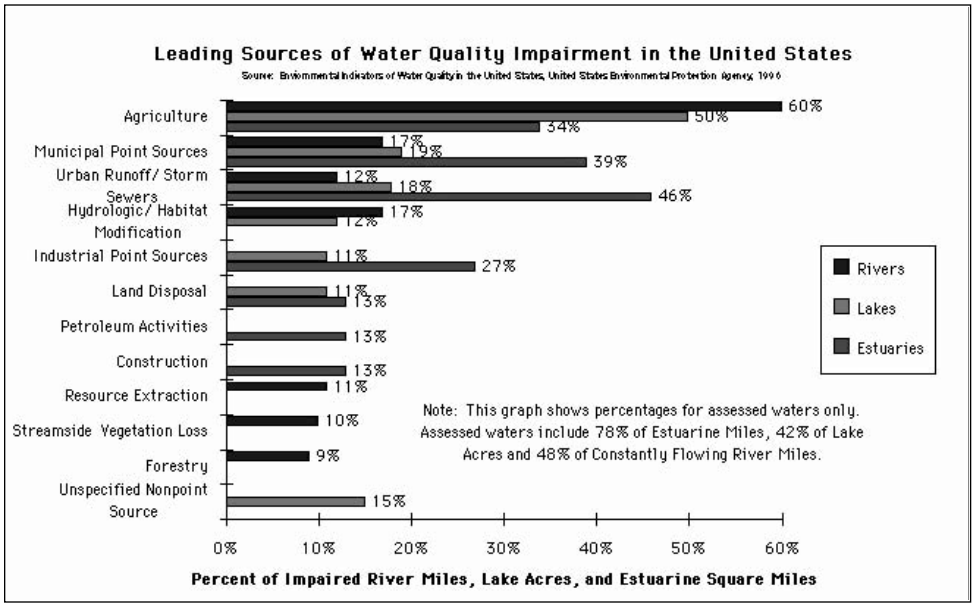
Is Nine Mile Run getting better?

Residential and commercial development in the Nine Mile Run watershed has had a number of significant effects on the flow characteristics and water quality of Nine Mile Run. Urban streams across America are affected by the same problems we find on Nine Mile Run; excess sewage and powerful flow events during storms. We have to consider the historic buildup of the East End watershed and its effect on the water moving through Nine Mile Run. Development of the communities in the watershed led to the paving over of a significant fraction of the watershed area, thus reducing infiltration and increasing runoff to the stream. The result is a stream that has low flows during dry weather but which rises very rapidly and substantially in response

[3] Tarr, J., McCurley, J., Mc Michael, F., Yosie, T. "Water and Wastes: A Retrospective Assessment of Wastewater Technology in the United States, 1800-1932.," in *Technology and Culture,* vol. 25, no. 2, April 1984, p. 243.
[4] Hazen, A. "Clean Water and How to Get It," 1907.
[5] Yosie, T., p. 307.

to rainfall events. Nine Mile Run undoubtedly was subject to flash floods in its natural state, but this problem has been made much worse by development. (This is not to suggest that development is bad, simply that the historic development on the watershed has ignored the effect on the stream.) High flows increase stream bank erosion, which has been significant in NMR during this century, and have substantial impacts on stream biology. Suspended particles of dirt and sand scour the insects, algae and other organisms that support higher life forms in the stream.

Culvert: A pipe used to encase a stream or river usually placed underground.
Floodplain: Land that is periodically submerged as a river or stream rises and expands beyond its normal channel.



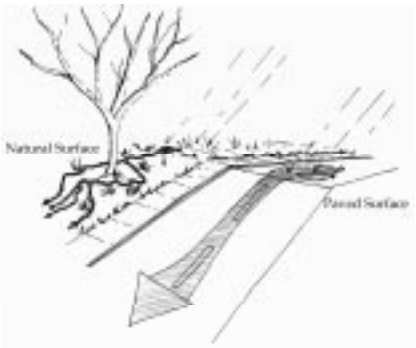
Up until the 1920s, Nine Mile Run ran open to the air in two major valleys: the Frick Park valley, as well as the valley leading up into Edgewood and Wilkinsburg. The culverting of Nine Mile Run through Wilkinsburg and Edgewood prevented any retention/control of water in that floodplain. Another development related factor contributing to the rapid rise in Nine Mile Run during storm events is the loss of access to floodplain in the area beneath the slag piles. The slag dumping has consumed floodplain and created a narrow stream channel in that portion of the watershed. With less floodplain and increased paving, flow events in Nine Mile Run are no doubt worse than they were 100 years ago. See the historic watershed map on page 296.

Why is there still sewage in Nine Mile Run?

Four municipalities: Pittsburgh, Swissvale, Edgewood, and Wilkinsburg have independent sewer lines along Nine Mile Run. Because of the history of poor maintenance and sewer line mismanagement, the city of Pittsburgh provides a sewer through Frick Park that the communities tie into. You can imagine the political challenge the upstream communities face when they consider raising user fees to alleviate pollution problems in Pittsburgh! Until recently, sewage in Nine Mile Run has been neglected by everyone from the municipalities and community members to the regulatory agencies.

Within the Nine Mile Run watershed, two types of sewer systems are present: combined and separate. Separate sewers have one smaller

pipe for sanitary sewage and a larger, separate pipe for storm water. There are three storm sewers draining into Nine Mile Run, contributing to the extreme high flows described above during rain events. One of these storm sewers which holds the remnants of the upper Nine Mile Run watershed flow from Wilkinsburg is 16 feet across! These three sewers also have extremely high levels of sewage in dry weather flow which they shouldn't have.



Combined sewer systems, as discussed above, convey both sanitary sewage and stormwater in the same pipe. They are designed to discharge this combined sewage and stormwater into Nine Mile Run when the lines run at capacity during a rainstorm, known as a CSO event, or a Combined Sewer Overflow. All existing sanitary sewer lines and combined sewers are connected to a city of Pittsburgh trunk sewer at Commercial Avenue which then connects to an ALCOSAN interceptor at Duck Hollow. (CSOs are currently not against the law.)

Problems in Nine Mile Run exist because the combined and separate sewer systems have not been well maintained and as a result have deteriorated. Cracked sewer pipes, illicit tie-ins from home sewer lines to storm sewers, and culverted streams deep underground make leakage of sewage matter into the stream difficult to find and resolve.

In the past, even separate sanitary systems were designed to discharge into the stream when flows exceeded the capacity of the sewer lines. All discharges of sewage from separate sanitary sewers into streams and rivers are called SSOs or Sanitary Sewer Overflows. They are illegal.

According to the EPA, municipal point-source pollution is the number two source of pollution in rivers, lakes, and estuaries.

Are there any other problems on Nine Mile Run?

The proximity of the slag on two sides of Nine Mile Run also presents some problems. Slag is a porous, highly alkaline material. (Alkaline material is dissolved in water creating a base, or a pH higher than 7.) Pittsburgh drinking water is around 8.0-8.2; the water below the slag piles is as high as 10.7! Plants and other living organisms have a hard time sustaining life at pH values greater than 9.0.

What grows in Nine Mile Run under these conditions?

Surprisingly the flora and fauna of Nine Mile Run has proven fairly resilient. Recently a few fish, crayfish, and a variety of benthic (bottom dwelling) organisms have been found in the stream. The stream has enough dissolved oxygen to support most fish populations. The stream has a variety of naturally occurring algae which feed off the nutrient matter in the stream. (Human waste, like cow and horse manure, is a very good plant nutrient!)

How can this be so?

During much of the year the physical and chemical parameters in the stream are quite compatible with a diverse assemblage of aquatic organisms. However, periodic discharges of high volumes of water greatly reduce the numbers and diversity of organisms that are able to establish populations in the stream. (So much water, silt and stone comes down the stream that they just can't hang on!) Many of the insects and crustacean groups (animals which have an exo-skeleton like crayfish) which are typical of streams the size and character of Nine Mile Run are not present in this stream.

III. Possible Solutions

Slowing down the water rushing through the stream during storms.
As described above, water resource and stream bank degradation in NMR is related to flash flooding. Some alleviation of the flash flooding problem could be accomplished by increasing the floodplain area (e.g., removing some of the slag) or by increasing the water retention capacity of the existing floodplain (e.g., by increasing wetland areas throughout the watershed). Another possibility is that some fraction of high flows could be captured in a retention tank or basin, but such a retention unit would have to be very large.

The other major problem to resolve is the sewage running into the stream from leaking and overflowing sewers. Improvement of the water quality would require:

1. Reduction or elimination of sewage discharges.
This approach addresses the problem at its source and would involve repair or replacement of part of the sewer infrastructure in the watershed by each of the communities involved. The combined sewers in the watershed communities could be replaced with separate sewers, or repaired such that overflow would be less frequent and less substantial. Restoration and upgrade of the sewer infrastructure would be costly. The most important step in addressing the sewage discharges is obtaining the cooperation of all municipalities involved to begin to document and determine the condition of their sewer systems, and begin rehabilitation.[6] Illicit connections need to be identified and removed, cracked and collapsed lines need to be repaired, and Sanitary Sewer Overflows need to be eliminated.

2. Treatment of the sewage upon discharge (end of pipe).
The sanitary and combined sewer overflows could be captured and directed to a device for partial treatment at the point of discharge. Point of discharge sewage treatment usually involves removal of large particles and floatables (street trash) via swirl/vortex separators, and/or disinfection. Such technologies are relatively inexpensive (compared to sewer infrastructure restoration and replacement), but provide only partial treatment.

3. In-stream treatment of the sewage-contaminated stream water.
NMR is affected both by leaking sewers and by overflow discharges from sewers located along the stream. If partial treatment of the major overflow points is not sufficient to improve water quality to the desired degree, then another option would be to divert NMR or a significant fraction of it into a treatment facility. This would most likely be done at the end of the culverted stream section, just downstream of the Braddock Avenue culvert termination. The treatment facility would require disinfection capability at a minimum, as pathogenic bacteria are the most significant NMR water quality concern from the standpoint of human health. A wetland could be used in conjunction with a conventional treatment facility, e.g., for removal of particles by sedimentation. Active or passive treatment facilities would be moderately expensive to construct, maintain, and operate. Design of an effective treatment facility for NMR would be complicated by the wide range of stream flows experienced.

[6] With a grant from the Pennsylvania River Conservation Program, the Nine Mile Run Greenway team has begun a program to accomplish this. The most recent meeting was June 27th. [Representatives from] Pittsburgh, Swissvale, Wilkinsburg, Edgewood, The County Health Department and ALCOSAN all came to Nine Mile Run to attempt to identify the stream problems.

Wetlands: Wetlands are often referred to as marshes, bogs, swamps, wet meadows and shallow ponds. Wetlands are those areas that are flooded or saturated by surface or ground water often enough to support vegetation typically adapted for life in saturated conditions.

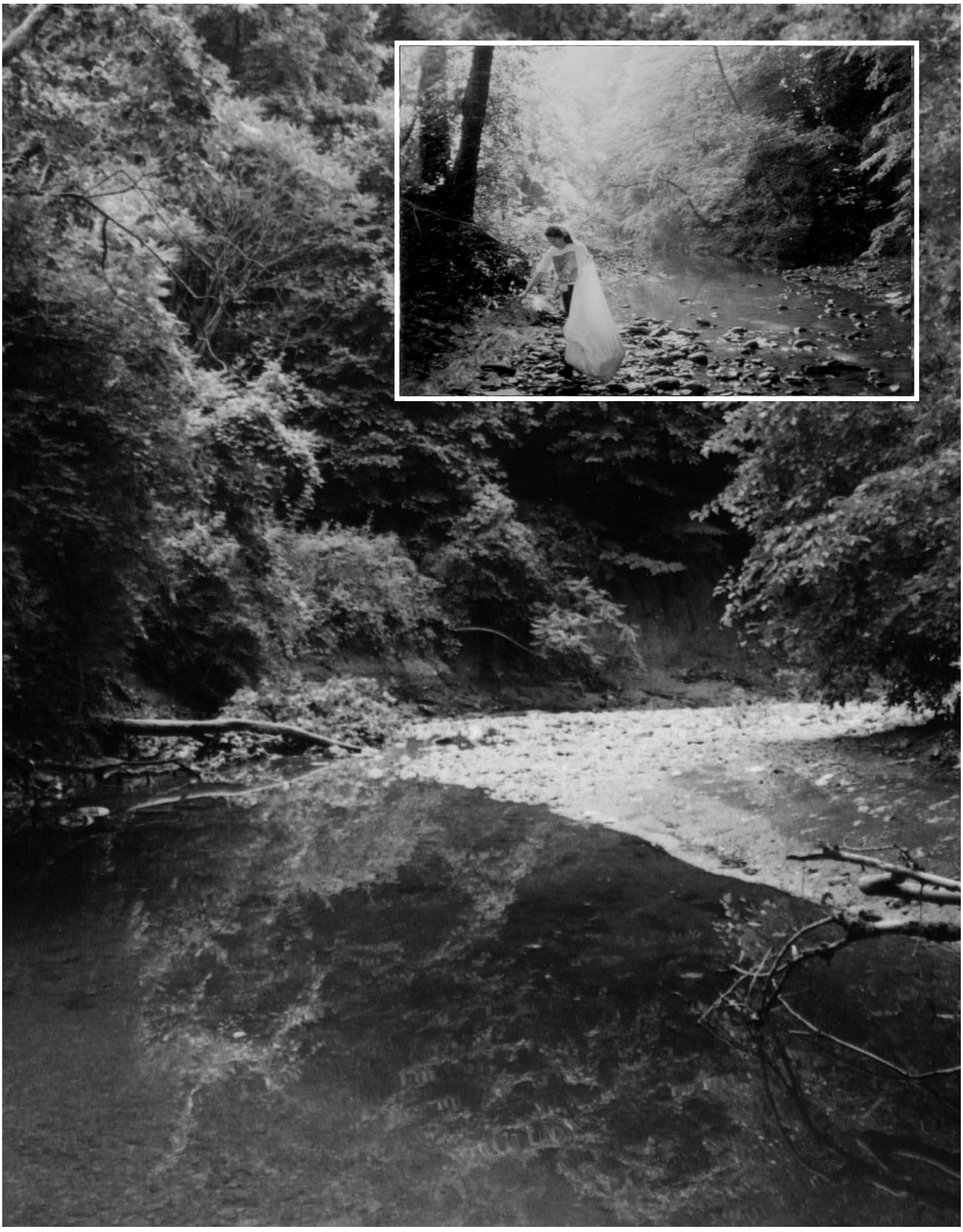
3a. Wetlands as an approach to both flow and water quality.
There are a variety of benefits that can be derived from **wetlands** including the following: wildlife habitat, water quality improvement, nutrient absorption, flood control, sediment retention, and ground water recharge. As a source of sewage treatment, wetlands can provide some nutrient retention, filter solids and remove contaminants and pathogens. Along Nine Mile Run, wetlands could be used in conjunction with other remedies (e.g., reduce/eliminate CSOs and SSOs, fix leaking sewer pipes, eliminate illegal discharges) to reduce the sewage load in the stream and improve the water quality of the stream.

4. Culvert the entire stream to its point of discharge into the Monongahela.
This is the historical approach as indicated by the culverting of Nine Mile Run through Wilkinsburg and Edgewood. Within the culvert, a number of "out of sight" illicit tie-ins and maintenance problems have occurred and the resultant water quality problems are then transferred to downstream municipalities. Each of the participating agencies at the July 19th workshop will explain why this approach is no longer deemed satisfactory.

5. Implementation of one or all of options 1-3 would involve use of the Environmental Protection Agency approach to CSO problems.
In 1989, the U.S. EPA created its Nine Minimum Controls policy to address CSOs (Combined Sewer Overflows). These "best" management practices include controls that can be implemented without major capital expenses:
1. Proper operation and maintenance of sewer systems;
2. Maximum use of the collection system for stormwater storage;
3. Review of industrial and commercial sites in the watershed area for effects;
4. Removal of debris from sewers to provide maximum conveyance to the treatment plant;
5. Prohibition of CSO discharges during dry weather;
6. Control of solids and floatables (litter) from entering the sewers (street cleaning);
7. Pollution prevention in households and on the roads;
8. Public notification of CSO events and impacts; and
9. Monitoring to understand the impact of the CSO and its eventual control mechanism.

The Pennsylvania Department of Environmental Protection is now requiring communities to apply for discharge permits (NPDES or National Pollutant Discharge Elimination System) for their CSO structures and to begin to implement the Nine Minimum Controls.

6. A final issue to address is the alkaline leachate from the slag.
The alkalinity is drawn out of the slag as runoff passes through the porous material. There are two approaches to resolve this:
1. Cap or cover the slag with a soil and plant growth that will reduce infiltration (flow through) into the slag.
2. A more aggressive approach would include the placement of interceptor trenches lined with an acidic substance to neutralize the alkalinity. The approach to the alkalinity problem will require some tests.



Urban stream wonders require stewardship.



Ann Riley

Director of the Waterways Restoration Institute and Western Regional Director of the Coalition to Restore Urban Waters

Ann Riley has years of experience organizing, funding, designing, and executing urban stream restoration projects throughout the United States.

During her keynote address, Ann Riley showed slides of other urban stream restoration projects. The slides she used are copyrighted for her book, "Restoring Streams in Cities: A Guide for Planners, Policymakers, and Citizens", published by Island Press in January 1998. The transcript was revised to take out direct references to her slides.

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It's nice to be in Pittsburgh. Coming from California, being in Pittsburgh means automatically that I am an expert because the definition of an expert is somebody who's from out of town. Now actually, it's difficult for somebody from out of town, from a completely different landscape to be able to sit here and tell you what you need to do to fix all of your problems. So I think there's two things I'm going to concentrate on here. One is to inspire you with what other people are doing across the country so that you discover you are not alone—that you are one of many in the "Trashed Rivers Club." Another thing I think I need to do is to give you my professional perspective on some of your restoration options. But I'm going to talk about the physical aspects of the watershed. You've been very pollution oriented, as you should, but there is the physical aspect of the watershed, the stream and the floodplain and the terrace that runs along Nine Mile Run and I want to talk about that a little bit.

First, let me tell you about the Coalition to Restore Urban Waters. It was people coming together for the first time from 24 states in San Francisco in about 1992. The conference was called Friends of Trashed Rivers. Now I think all of you qualify to be members of Friends of Trashed Rivers. We have subsequently had conferences in New York and Chicago and next June, in New Orleans, we will have Trashed Rivers IV. These are people from the Los Angeles River, the Chicago River, from New York City, from the Lake Pontchartrain Foundation in New Orleans, Friends of the Don (Toronto — we are going international as part of our group), and what we do is we talk about horse trading. We are folks who get on the ground and clean up the pollution and replace the floodplains and replace the riparian forests and we talk shop. The group has expanded to 375 local citizen organizations nationally. A rule of our conferences is that only citizens are presenters at the workshops. We very much invite our government friends and our consulting friends and they are very important to us, and they're a part of the audience. Most of our conference expenditures are for a scholarship fund so that citizens who normally don't get to go to a conference and normally don't get to present or speak, get to do that. As a result, they are very high energy kinds of conferences.

Yesterday, Tim Collins asked, "How trashed out is Nine Mile Run, really? How bad is it?" I said, "Hey, I think you're only about a six point five or a seven on the trashed rivers scale." Just take a look at the Los Angeles River for comparison. The Friends of the Los Angeles River is working with the Army Corps of Engineers to try to actually jackhammer up the concrete lining and to restore many of the environmental values along the Los Angeles River. The Los Angeles River is restoring itself, through a concrete lined channel which we will talk about a little later on. I want to talk about the long-term maintenance that you face in terms of keeping massive concrete structures, even like this, in one piece because it's the old "Nature bats last" maxim that concrete and water end up being two not very compatible mediums. The water generally wins in the end. On the Los Angeles River, the water and the plant material are breaking up the concrete.

The Hackensack Marshes in New York/New Jersey are ending up that just like yourselves, the remaining wetlands and the remaining rivers in urban areas are becoming exceedingly important to people because there are so few left. I think there is no accident that this coalition of urban environmentalists from around the country formed in 1992 at a time when we have very few of these environments left. So, when Mary [Kostalos] this morning said, "Look, this is our one open waterway in Pittsburgh. This is one of our most important open spaces and greenbelts...." I think you need to treat this resource as a treasure.

One of the issues, too, is whether the urban waters are safe for recreation and fisher people. One thing that is characteristic of this movement is that those cities, like Pittsburgh, that are concerned about losing people to the suburbs, are focusing on their waterways large and small to increase the

quality of life in the urban centers to bring people back or keep the population in the central city areas. Now, this is a huge concern to Pittsburgh, but you share it with all these other cities in the United States from which our membership comes.

In Chicago, on the Chicago River, when you visit that area, all the buildings have put their backs to the river, even the huge 1930s art deco opera house. So people are turning their buildings around to face the rivers and even putting in trails. There's a trail between that brick building and the Chicago River, and there are now riverbank luxury lofts coming back to downtown Chicago.

The Friends of the Chicago River are building accesses to the Chicago River. This is something for you to think about. The more trails and the more stairways and the more observation points you can build with conservation corps or volunteer groups (this was done by a neighborhood group in Chicago) increases people's awareness of the rivers and waterways and their use. Laurene Von Klan is Executive Director of the Friends of the Chicago River. I was recently invited to speak before the Chambers of Commerce in a community forum in St. Paul, Minnesota along with the Mayor of Chattanooga, Tennessee to talk about, for this area, a river-based identification for St. Paul, Minnesota.

In Cleveland, the Cuyahoga River that burned in the 1960s. Makes Nine Mile Run look pristine. They had similar kinds of problems (to yours) and they put in a city-wide effort with the participation of the Minority Environmental Association to clean up the river. So, here we all are now with a new tourist industry on the banks of the Cuyahoga River that had been on the front page of *Time* magazine in the '60s. It was actually—this river was credited with the start of the Clean Water Act in 1972.

Then there's the Endangered Mermaid Restoration Movement of downtown Boulder. Again, another one of these cities who wanted to bring back recreation, bring back the life of the downtown economy. They had flood issues and they had terrible erosion issues. They wanted to restore their fisheries. They replaced an Army Corps Flood Control Project with this restoration project, and it has now greatly increased the quality of life for the city of Boulder. It now has an Olympic run for kayaking down this river.

Probably one of the keystones of the urban restoration movement is the San Antonio River. Actually, some little old ladies in tennis shoes in the 1920s saved this river from being put under a huge concrete culvert that would have been a highway. Later on, you see the WPA (Works Progress Administration) type rock work along the river banks. So the '30s was the next wave of restoration. And then, the last one really began in the '70s when the city of San Antonio said, "Gee, we better do something about the quality of our life in downtown San Antonio. We need to prevent this middle class flight to the suburbs." They started to restore sections of a very, very urban river in the '70s. They did surveys of the population, where over 90 percent of them said, "Hey, I'm starting to come downtown to do shopping now. Downtown is a nice place. I'm gonna go visit this because the river has been restored." The bonus was it brought in an unexpected tourist industry.

Ketchikan, Alaska has a small creek, Ketchikan Creek, which ran through the town's famous red light district, which was active in the '30s. The creek was very polluted. It's where the sex industry was located. It was filled—it was full of garbage. They restored it. And that's the way it is today; it's a tourist trap. Of course, they moved all the whores to the outlying area and opened whorehouse museums in the old town around the creek.

Napa Creek in Napa, California—the wine belt. You've got housing and all kinds of urban development on top of a large concrete culvert in upper Nine Mile Run, and this area here was a housing development on top of a concrete culvert over this creek. In the 1970s the City Council of Napa said, "It's very difficult to keep housing on top of culverts from cracking and settling." They basically tore everything down, moved the housing, lifted the lid off the culvert, and restored Napa Creek and downtown...again, as a way of restoring the economy.

The city of Berkeley, California has lost most of its creeks underground to culverts. They were relegated to flying flags with the creek names on them in the downtown area. Now the city of Berkeley is doing what they call "daylighting" their culverts. In a derelict part of West Berkeley, with drug trading, uhm, anything you wanted, you could get there. It's along an old industrial area which now has an abandoned railroad right-of-way. Keep your eye on the center of the slide. The city has sent in bulldozers to dig up the culvert underneath the railroad right-of-way. The culvert is about six feet thick because it was put in before reinforced concrete. I think some of your culverts are just like that too.

Strawberry Creek [in Berkeley] was what existed after they "daylighted" from the culvert beneath the railroad right-of-way. That's where my office is now. The area has completely gentrified as a result of opening up that creek and turning it into a park. It is almost counter intuitive—people go, "Oh, you're

gonna have an open space in this drug dealing zone? Your gonna dig up a creek and expose people to sewage and the hazards of a creek?" The history of this site is that once the park came into being, people collected there because it was attractive. Industrial buildings were rehabilitated; new offices were put in and a youth employment program was started to maintain the park.

San Luis Obispo, California, is trying to stem middle-class flight to the suburbs. The Chamber of Commerce organized a Downtown Creek Restoration project. They turned their business fronts around to face the creek. They put sidewalks along the creek, and they brought back downtown San Luis Obispo. What is so interesting to me, is that the leaders in these creek and river restoration movements are often the Chambers of Commerce in the business communities. I'm on a retainer right now by the Napa Valley Economic Development Corporation and the Napa County Flood Control District to stop an Army Corps channelization project on the Napa River, and restore the floodplains and the channel of the Napa River so that they can bring in a tourist industry from San Francisco and the Napa Valley Area. Concrete lining of streams and rivers has been common. It was the rage in the 1930s through the concrete era of the 1950s and '60s, trapezoidal channels were preferred. We have discovered (and the Army Corps knows this now, as well as local districts) that you do not need to put waterways in concrete, for either handling flood flows or erosion. We have a much more sophisticated knowledge now of the dynamics of waterways and how to keep them stable without using concrete.

At Wildcat Creek, instead of being put in a trapezoidal channel, we designed a natural low flow channel on a floodplain and riparian forest and berms. It helps protect the adjacent residents and has a natural environment. We don't have any erosion problems. We could restore some floodplain along Nine Mile Run. This is an example of a floodplain in which there has been a restoration project and we bulldozed some of the floodplain to restore it. The native riparian vegetation has grown back in. This is something we could do at Nine Mile Run, the lower areas. It appears to me that you have such an entrenched channel because of how the floodplain has been intruded on by the slag filling in the floodplain in the lower areas. The only way the channel has been able to adjust to all the urban runoff is to degrade. So the stream channel doesn't overflow onto the floodplain like it used to. We do have ways of figuring out how we could shape that channel, so that it would be more natural and to shape the floodplain so we could return the function of it overflowing more. It could provide you with water quality benefits as well.

We recommend watershed councils and team approaches to solving these problems. Throw everybody in the same room together. You could even bring in the Army Corps. These days they have a new restoration mission. In the 1996 Water Resources Development Act, Sections 206 and 503, provides the Army Corps with new missions to do restoration. You can bring them on and cost share with them 50/50 to come up with watershed restoration plans. Put that on your list of possibilities. We have the Army Corps, the National Resources Conservation Service, the U.S. Fish and Wildlife Service, the EPA on the Wildcat Creek team. We have about five state agencies, neighborhood groups, environmental groups, staff from our local congressmen and our state representatives all in one room to come up with a watershed plan.

Now, my other recommendation to you is, DO NOT plan to plan. NO. Plan to ACT. If you are going to set up a watershed council and throw all the players into the room—GIS systems are great. What you are doing here is good. Mapping is good. You need your inventories, but your reason for being is to have projects. You want to go out immediately and put in a demonstration project, so that people can see you are actually doing something. There's something to go see and there's something to do. You can pull in the school kids and you can pull in the Girl Scouts and the Boy Scouts and you can pull in your grandmothers, the gray panthers and whoever else, and go out and plant trees. You will capture people's imaginations because you are doing something. Water quality monitoring is something people can do. That's important. You've already started that and I would continue it.

In the Pacific Northwest all the fisheries have been decimated. I don't know how relevant that is for Nine Mile Run, but sometimes you can really bring people together by saying we want to bring back the animals or we want to bring back the fish. There is this attachment, this emotional attachment, people have to that. Also, you need a "there there" (a local identity or landmark). In Pittsburgh, your rivers are the "there there". They're who you are—a river city—you are a stream city. It helps people to reattach to where they live and identify with their local geography. Observation platforms. You can put these along Nine Mile Run. You can put them along the river. Reconnect people with the resource; it creates jobs, too, to build these things and for raising money. People like to fund projects. Government agencies like projects. Foundations like

projects. Politicians like projects; they get to cut ribbons. Don't just study. Do things. Education. Several people have brought up the importance of schools. We have reached families through their schools. The kids will come out to clean up the garbage. The kids will come out and do water quality monitoring. The kids will come out and plant trees. The kids will come out and work on trails, and their parents find out about it. So it goes beyond the value of the kids. It's a way you can infiltrate the community.

Typical treatment of streams. Rip-rap. Concrete that is failing because concrete fails over time. The water pressure builds up behind the concrete and ends up breaking it apart. You could build that big culvert on the bottom of Nine Mile Run and you could regrade those slag slopes, and you could pile housing on top of it, but you're going to have a long, long-term maintenance regime to keep that huge concrete tunnel going. Do you really want to do that? Along Lincoln Creek in Milwaukee, they stopped the maintenance for two years and got three inch tree trunks starting to grow through the concrete channel with roots attacking it.

Some restoration alternatives to consider. We're taking cuttings off of branches (much as you might take a cutting off a coleus or a houseplant and put it in a pot to start a new plant). That is the basis of many of our river restoration projects. One of the best things you have going on Nine Mile Run is your riparian forest. It's very valuable. Whatever ills Nine Mile Run has—your pollution, your flash flows, your detritus, your sewage. I'm going to add a fourth, which is that the shapes of your channels and your floodplains are pretty badly screwed up. But the trees, the forest, can help with all of that. They can slow down the erosion, they can slow down the widening, they can slow down the deepening. They can help your stream attain what we call a new equilibrium and be in balance with itself, so it's no longer excessively eroding or depositing. The trees are doing the work for you to hold that watershed together. If something were to happen where you were to start stripping those out or cutting them down, Lord help you. The best thing you can do, is just keep planting those things in your floodplain and in your watershed.

We have planted completely denuded river with cuttings. You can do that. You can take cuttings from your nearby riparian trees and stick them in the ground. They don't cost anything and they'll start to grow. Willows grow very well. But you can use willows, dogwood, some species of—I don't think you have alder here. Uhmmm, anyway, we can get into more of the species if you want to talk about that later. Some of them you can start from seed and some of them you can start from pots.

We use a fascine where we bundle native riparian plants together and plant them in trenches on stream banks. They will cover the entire stream bank and grow very quickly.

We also use what we call poles. Remember I was talking about cuttings before? In Minnesota we used large branches cut off of native riparian trees, then sticking them in the ground. We're planting these huge branches in these very destroyed environments. These sites completely revegetated in three to four months, by using what are called soil bio-engineering techniques.

We have also worked on completely caved in stream bank. If you can imagine a vertical bank, like you have on Nine Mile Creek, a vertical bank five feet high, caving in. We've come in with a neighborhood group and some local conservation corps people. We've regraded it using brush layering that sticks out of the ground. We've put some organic fabric made out of coconut on the slopes.

We've saved a lady's house from falling in and we've trained the neighborhood in how to help each other all along the creek. Now, these could be community projects; they don't have to be big government projects.

In an inner city area of Oakland, California, a creek was bulldozed by the public works department. They were going to put in a retaining wall. Now we're rebuilding this stream bank. You do not have to use rip-rap. You do not have to use concrete. You do not have to use gabions. You do not have to use rock. Plant-based systems help take out the pollutants and they are more sustainable and they are more long term than concrete. It's the concrete that keeps me in the business of river restoration.

We work on a very large scale using these plant systems along rivers. In some areas, we emulate the old WPA work. We're bringing a staircase down to a creek. We use a log cribwall, that is alive. It's built with logs, soil and plants. The project was built with youth from Oakland, who brought their parents to come see their work on the weekend. They're at risk youth, dropping out of high school who are getting real restoration skills and now finishing their high school careers.

Those sewer lines that are going across Nine Mile Run are acting as reservoirs or dams. They're collecting sediment and they're creating erosion immediately downstream. It is being impacted by huge velocity flows and the trees are falling over. It's all storm sewer impact. What we need to do is allow the creek to widen itself, allow the trees to fall

over, keep those forests intact. Keep planting trees. It will help the river establish a new equilibrium based on your conditions here. I want to talk about the shape of your river a little bit on Nine Mile Run.

Active channels is where the water is flowing in a creek. We call the point that the stream reaches during high storm flows as the 'bank full discharge' or the 'bank full flows'. It ends up that your creek is formed by the frequent one and a half year storm. You've all heard of the one every 100 years flood? That's a very rare storm; it only happens, on the average, once every one hundred years. So it means any given year you have a one in 100 chance of that size happening. It's a very big storm. Okay. A one year flood would happen, on the average, once every year. So, the flood that happens on the average of two times every three years is the flood that forms your creek channel and that is a good national average that we can apply to many places in North America. Now, what's happening to your river right now is that it has gotten much, much deeper because of the huge urban runoff from the culverts upstream. The channel has been squeezed too much in the lower part, and the floodplain has been cut off from those flows. So, maybe, now the floodplain area is flooded on the average once every five years or once every ten years instead of the average of twice every three years. I don't know. That's something you need to find out. So, what I think you should do, down by your trailer or down toward Duck Hollow is put up a stream gauge and go out when it's raining and measure how high the water gets. Then measure how fast its going and then you're going to have some discharge quantity information. You have some good pollution parameters, I think, but you want to know how high the flows get, how often. Once you figure out where that one and a half year storm is, you're going to know where that floodplain should be. In that area where your trailer is—in that meadow—you could start creating more floodplain, and if you need to, lower some of the landscape so you get more river or stream overflows to recreate the floodplain, and put in some riparian plantings.

This is an incredibly boring graph to put up here. I'm seeing how many people are going to doze off. Everyone seems to be awake. I'm not going to explain this graph to you, except to say this: that we fluvial geomorphologists study the relationships of the shapes of creek channels and river channels and their watersheds. You have a six square mile watershed. According to regional averages that I got off this graph, Nine Mile Run should be about 20 feet wide and about two feet deep. We went out and measured (by eye) yesterday (we didn't use tapes) but the creek is about 30 feet wide and about four to five feet deep. So you can tell your creek has been greatly, physically, impacted in addition to being polluted.

Okay? So I'm going to wrap up. Wetlands for water treatment. Other communities are doing this. Maybe there's some—you could create some wetlands on the south—I don't know which bank that would be, it's the opposite bank of Duck Hollow as Nine Mile Run enters the river area. You could do a bottom land restoration environment down there. I don't know how practical that would be. Sewage can be treated by wetlands. Youth are getting jobs in wetland and river restoration.

So, you have many challenges ahead of you. My advice to you is to enjoy Nine Mile Run and have a good time restoring it because restoring it will pull the community together and will attract the attentions of the agencies and money and resources to you. Thank you.



Figure right, Henry Prellwitz, a Ph.D. candidate in geology at the University of Pittsburgh, examining an unstable stream bank.

Project

John Buck, Civil & Environmental Consultants
Reiko Goto, NMR-GP
Amy Marino, NMR-GP
Nicole Newburn, Environmental City Initiative
John Schombert, Allegheny County Health Department
John Stephen, NMR-GP

Community

Paul Boas, resident
Doug Chaffey, Wilkinsburg resident
Julie Murphy, environmentalist
Tom Sheridan, resident
Bill Wekselman, resident

Government

Paul Brown, Allegheny County Health Department
Jonathon Kass, intern, Department of City Planning
Kathy Stadterman, ALCOSAN

Regulation and Reality Roundtable Discussion

Schombert: The Environmental Protection Agency currently has an enforcement action which is focussed on Sanitary Sewer Overflows problems. Communities in the watershed, with combined sewer overflows and sanitary sewer overflows, are in phase two of the EPA action. The regulatory hammer is prepared to fall. The County Board of Health is preparing new sewage management regulations which gives the County more authority to make municipalities work together on a watershed basis. This will discourage situations like Nine Mile Run where each municipality has a sewer line through the valley. The County wants to see the formation of more authorities and believes the new regulations should be implemented in September.

Murphy: Why has the City not stepped forward as a watershed leader for Nine Mile Run?

Schombert: No one wants to make a commitment which may cost money.

Murphy: Would one of the advantages of forming a watershed authority be raising money?

Schombert: Yes, it is easier to raise money for joint projects. Wilkinsburg is a distressed community; they can leverage that.

Murphy: All it takes is someone to coordinate all of that.

Buck: An inherent conflict exists if political officials (who are elected for two-year terms) have authority over sewer maintenance (which requires long-term oversight).

Marino: What will the municipality do to resolve the sewer block that was discovered this morning?

Schombert: Hire a contractor who will remove the manhole covers and high pressure jets, if necessary, to break through the blockage.

Kass: Please clarify the difference between sewershed management and the EPA enforcement action.

Schombert: The EPA is keyed on stopping the SSO and is currently measuring flows to gather information. They want to see no more than 250 gallons/person/day, which is ALCOSAN's design capacity. What goes into houses, as measured through household meters, is approximately 60 to 80 gallons/person/day. What is being measured in reality is up to 600, 1,000 to 1,500 gallons/person/day. The EPA also wants mapping.

Buck: Are there new easy technologies that will eliminate leaks?

Schombert: Yes (if you don't ask for easy technologies) there are technologies, including lining the sewers with epoxy socks. In fact, there is a technology transfer workshop on trenchless technologies next week.

Sheridan: I have a question and in some ways it is because of question number six, "What issues were not adequately addressed?" The question I have is: Tim Collins and the folks at the STUDIO have indicated explicitly that the greenway project is inseparable from the building project, yet at both the previous meeting and this meeting and during private conversation with Tim, you cannot address any linkage in terms of what is the affect upon the greenway project of moving 5 million cubic yards of slag, infected with the toxics that are, by the drillings, the core samples of the environmental analysis, that were done first and indicate there are hazardous chemicals here which become more hazardous when moved. First question of two questions: why do you, and other speakers affiliated with the greenway project, refuse to acknowledge that there is an interface, a mutual impact, of both? You are speaking here today as if there is not a building project, there is not a construction project. Tim has said clearly that there is not a greenway project if hypothetically the building project goes to Kansas City.

Schombert: I am an advisor to the greenway project. Allegheny County's role is completely separate from the greenway project.

Sheridan: The county is cited in the conclusion to the background document: "A warning from the Allegheny County Health Department: pathogenic and chemical sampling has confirmed that the most significant public health issue

connected to Nine Mile Run is recreational exposure with sewage contaminated waters." By the report released by the URA themselves, that is a lie, a misrepresentation. There are additional hazards. The Allegheny County Health Department, if it's issuing this kind of proclamation, should itself have looked over the URA environmental assessment.

Schombert: Those are issues more related to air quality. I am concerned about Nine Mile Run as it exists now. If they are moving slag, we have a whole new ballgame.

Sheridan: What Tim has said clearly, and others representing the project have said, is that there is no project if there is no building project. He is on record as saying this publically. So when we are talking about the greenway, we have to address this issue. And I am puzzled and a little skeptical at the persistent avoidance of answering this question.

Buck: There are people rigorously addressing dust management, and construction-related issues are being addressed in a risk assessment by the URA and its contractors.

Sheridan: They haven't released their findings.

Newburn: Can we talk about stream remediation?

Sheridan: I have two questions on the table. This roundtable addresses "Regulation and Reality". I am asking a question that deals with that.

Buck: The statement says that the greatest issue is with the water. If you are talking about arsenic and chromium, those are in the soils as well. The question is are people going to get a hazardous dose and how are people going to respond to that? These issues are being addressed in a risk assessment.

Sheridan: We have been trying to get that information for a couple of weeks and he has inside data. Where did he learn that?

Newburn: The answer to your question cannot be answered here.

Sheridan: If we did not raise the questions, there would not have been questions. They would not have been doing this additional research. You are speaking as if there is a utopia on which you are going to put a greenway.

Newburn: There are not any experts here who can address your questions.

Sheridan: We have two experts here. They are speaking as if there are not going to be five million cubic yards of slag moved. If the slag is not moved there is no greenway project.

Schombert: I don't care about the greenway project. What we have to talk about here has to go forward with or without a greenway project.

Sheridan: Fine, that's the point.

Buck: Slag has been moved in many places for a very long time. People have considered the environmental affects of moving slag.

Sheridan: The reality is that you have to be very careful here. I will give you the bibliography on zinc, chromium, lead, and sulpher.

Schombert: In all honesty, you are taking away from time we need to spend on other issues. I am not a fan of culverting and moving slag or covering the stream. That is exactly what we have upstream, if you do it downstream you will have the exact same problems. That is a reality.

Goto: The STUDIO only has permission from the URA to research the area. If the development was not happening we are not allowed to be there even studying it. That is why Tim is saying that to you. We have permission to be there, that is all. Researching, studying, and sharing the information with the public.

Sheridan: Does that mean that you are restricted from researching the question I posed? That if you address that, you lose your permission to stay on site? Because no one is addressing it, John Buck just told me something I did not know and I am glad to hear it.

Stephen: The most effective authorities are those that combine the top down authority of public officials with the grass roots of communities. Is the county, in its new regulations, considering strategies for encouraging more citizen participation?

Schombert: The problem is that elected officials last for only two years and then they are gone. We need to have the Regent Square Civic Association or other community groups to take the lead in this, dragging the municipal officials to these meetings. There is another way and that is the regulatory way. The county is pursuing issuing orders to these communities, again, frankly DEP refused to issue the orders a few years ago because of a case load problem. They have reconsidered. If you let EPA control the situation, you lose control of the method.

Stephen: One idea that has already been floated is to paint storm sewer grates with a mark that identifies it as connected to Nine Mile Run.

Schombert: The county has stencils to remind people not to dump down the storm drains. We have a problem with carpet cleaning companies, and it is useful to give people notice so they don't go out there and dump motor oil.

Newburn: Have you been able to identify the biggest problems as far as prioritizing the fix? Is there one problem affecting Nine Mile Run that can be identified as greater than others? Is there one project you can identify that would solve 60 percent of the problem in the first year?

Schombert: Often you get that type of bang for the first buck on these projects. Here at Nine Mile Run, it is the Braddock Avenue culvert, the problem is that everything upstream, which is half the area. The focus of a collaborative effort could be upstream of the culvert.

Stadterman: The city has a trunk line sewer downstream and CSOs. A recent study revealed that the trunk line is decaying as well and would need about $3,000,000 of repairs.

Schombert: When we are talking about sewage problems, we are talking about upstream. If we don't address the problems upstream, we are dealing with the symptoms rather than the cause. If you do that, the cause continues to decay. I am not a fan of wetlands; it avoids the real problem, the sewers.

Buck: The other problem is the flow surges wildly. A wetland can work for base flow, but during a stream event, the wetland will be overwhelmed.

Brown: You will have to put the wetland in a place where you would not get a surge, but by that point the water quality is significantly improved from the mouth of the culvert.

Chaffey: Who owns the sewers? It appears that they are no longer a municipal asset and that they would be willing to transfer ownership.

Stadterman: ALCOSAN's responsibility does not start until the interceptor at the river. ALCOSAN has established the agreements for the municipality to keep their own lines and ALCOSAN is not ready to take over the lines. That is a political issue.

Schombert: The sewers are a county-wide $1.2 billion problem. Someone has to oversee that and make it happen, and I believes ALCOSAN has the resources to make it happen. But that will require a political change. The ALCOSAN board would have to be told to make that change and the communities have to agree to that.

Stadterman: ALCOSAN has three board members appointed by the county, three by the city and one joint member.
Schombert: Wilkinsburg has a $1,000,000 sewer fund.

(Note — Recently, Edgewood enacted a sewer surcharge which is estimated to raise $28,000 per year.)

Sheridan: The municipalities are in clear violation of statutes that provide up to $25,000/day fines. Could an independent citizen suit force the municipalities to fix the problem?

Newburn: An environmental group is perched to file such a suit.

Schombert: I have talked with the Pennsylvania Environmental Defense Foundation about Nine Mile Run. Although a citizen suit may very well be the motivation, these lawsuits often end up taking money that could otherwise be part of the solution. A citizen's group which initiates a lawsuit needs to be diligent in managing the suit so that the money is actually used to solve the problem.

Sheridan: The fines are $25,000 per day, they would rather pay the penalties than fix it up.

Schombert: No, what has occured is that the citizen group has taken the penalties and the attorney fees and walked away. We do not want to make the municipalities pay the fines. Also, if the municipalities are asked to pay the fine, it is the taxpayer who is ultimately on the hook.

Buck: We must take into account that water runs downhill regardless of political boundaries. Regional authorities can play a role on addressing local needs.

Chaffey: What made the municipalities come together at other watersheds?

Schombert: It was this type of issue and also the possibility of leveraging dollars (for instance, Girtys Run Authority formed in part because of funds available from the development of West View Park).

Buck: A problem is how to fairly assess the users among different municipalities.

Schombert: ALCOSAN rates today are the second lowest in the nation.

Buck: What about looking at this with an electric utility analogy: One fee for use of the pipes and another for the end-of-pipe transmission.

Stadterman: Municipalities may also use a surcharge.

Schombert: Wilkinsburg had one ($.50/1,000 gallons) that accumulated $1,000,000; but as the money accumulated, they stopped collecting. The politicians wanted to get credit for a tax break. Political officials should not be in the sewage business because financing decisions get made for the wrong reason. Sewer bills are getting to about $50 per month. That is the reality—the real cost of hooking to ALCOSAN. We are now paying because of the years of neglect of the sewer lines.

Chaffey: In the case of Nine Mile Run, they show no concern for sewers beyond their borders.

Schombert: I invited each municipality to attend the workshop and none showed.

Newburn: Is there any downside to forming an authority?

Schombert: The problem of equitably spreading expenditures among the municipalities. If you find that there are significant problems in Edgewood, stress may develop between municipalities if too much money is being channeled to solve that problem.

Newburn: If a coalition is put together, maybe there will be some sort of memo of understanding?

Schombert: By the new regulations, municipalities that share a watershed must have joint management agreements that are revisited every five years. This is a minimum. The ideal may be operating authorities that can finance, manage and maintain projects.

Newburn: So these issues are going to need to be taken to this site, because the tendency will be for the municipality to pull out if money is being spent in other municipalities.

Schombert: The County Health Department has assumed responsibility over the County's GIS system primarily because of the sewer problems. The Department has committed to the EPA to map these sewer systems to develop a sewer inventory.

Buck: I am thinking of some equitable way of distributing the burden. What if one more municipality is putting out more flow than the others?

Schombert: If we can get one municipality's flow down farther than others and achieve on a watershed basis the 250 gallons/day/person ALCOSAN design capacity, this process will spread the benefits of initial investments to the areas that need it most.

Newburn: What about public education about the use and care of water—water conservation education? Is there value in changing public view?

Stadterman: Conservation would help in eliminating excess flow. ALCOSAN does hope to expand its conservation education.

Schombert: The real problem here is wet weather flow. Conservation does not help in wet weather because it is such a small percentage of the flow.

Buck: Any way to divert water from roof drains from the sanitary sewer?

Schombert: You need to be careful in rerouting storm drains because you may just be shifting the problem from the sanitary to the storm system. That is difficult in a built-up area with all of the direct flows into storm sewers.

Kass: Also, we should consider more permeable paving.

Schombert: Yes, think of Regent Square with its roofs and streets: 50, 60, 70 percent of the area is impermeable surface. We need to consider more permeable surfaces on new developments.

Newburn: What about the use of storage tanks and releasing slowly into a wetland? The EPA wants storage facilities for excess sewer flows. Sewage should not be funnelled into the wetland. Stormwater flows are the problem. The culvert at Braddock Avenue looks like the outlets at the bottom of Hoover Dam.

Stephen: How do we get municipal officials more attendant to the issues? What are the steps we take to get the officials to prepare to work on a watershed basis as the proposed county regulation encourages?

Schombert: We need to get community groups involved to push elected officials to make the right decisions. The regulatory approach is failing.

Newburn: There are not many solutions except fixing the issue. Is there any value in getting the county commissioners down to the site?

Schombert: The county and ALCOSAN are making a series of meetings with each commissioner, separately, to address these issues. The issue needs to be kept in the newspaper all the time. Keep it in the public eye all the time. Then they won't forget. There should be an article that Swissvale had a million gallon discharge into Frick Park this morning.

Buck: Labeling the storm sewers would make it more visible. Also a sign for toilets: "To ALCOSAN on Sunny Days, to the Mon when it rains."

Newburn: Is there a public awareness program from the Health Department to bring a focus to the health issues?

Buck: Do the advisories reveal sewage pollution violations in the river?

Newburn: Is there a citizen watch group which monitors the condition of our rivers, publicizing the condition of our waters?

Newburn: Perhaps that is one suggestion, a citizen monitoring group.

Schombert: We have had a good response from federal officials to the general issue of sewer problems in Allegheny County. We hope to pick a project and make it work.

Schombert: That is what the CSO flags are about.

Stadterman: Yes, the River Water Advisory program is warning that Combined Sewer Overflows are occurring in the rivers. One of the EPA's Nine Minimum Controls is public notification of CSO events. The advisory program is a public notification.

Stadterman: ORSANCO and the Allegheny County Health Department are the only organizations that I know of that regularly monitor the river water quality. I don't know of any citizen watch group.

Kass: Earlier today, a comment was made that sewage problems cannot be measured in the big rivers.
Stadterman: In smaller streams, you see more of an impact from CSOs than in the main rivers. In the main rivers, impacts are harder to measure, you need to address the issue that untreated sewage is getting into the rivers.

Project

Tim Collins, NMR-GP
John Paul, NMR-GP
Mary Kostalos, Chatham College, NMR-GP Advisor
Joe Plummer, Environmental City Initiative

Community

Gundi Caginalp, Rosemont resident, Squirrel Hill Urban Coalition, Citizens for a Responsible Development at NMR
Patty Carr, HS math and environmental studies teacher
Mo Dawley, urban environmentalist
Katarzyna Klich, Polish ecological biologist
Lois Liberman, resident
Betty Mullock, resident
Mark Remcheck, SW PA Penn State Co-op Extension
Scott Sjolander, Crawford Co. Brownfields
Jack Solomon, Squirrel Hill resident

Government

Joan Blaustein, Department of City Planning
Dan Sentz, Department of City Planning
Claire Staples, Urban Redevelopment Authority board member
Jerry Williams, Urban Redevelopment Authority

Stream Ecology and the Urban Aesthetic Roundtable Discussion

Collins: Goals and ideals of this roundtable: What are the best opportunities for the use of the site? What are the largest of our constraints?

Caginalp: My groups are worried about swamps or wetlands with mosquitoes spreading disease. The sewage from four communities needs to be cleaned up - the creation of wetlands won't solve the whole sewage problem. The trunk lines are probably 100 years old - this is a difficult problem to solve. The wetlands would only create a dumping ground for this sewage which would be unhealthy for present or future residents.

Collins: So, some of the constraints which you see are sewage in the stream and a potential mosquito problem. Do you realize there are two wetlands which presently exist on the property?

Caginalp: Well, there is presently a small mosquito problem at the site. And there is presently a risk for small children to contract diseases. We want to reduce that risk of disease to a zero percent chance, and with the creation of wetlands at the site, that would not happen.

Sentz: The greatest source of mosquitoes in the local area is tires.

Caginalp: I am not in favor of dumping tires at the site either.

Sentz: Actually, the creation of a wetlands at the site with a diverse population of bird species would mean mosquitoes would not be a problem.

Caginalp: I've been to many areas where they made a big effort to create wetlands and the entire community has been inundated with mosquitoes. No one can enjoy being outside anymore.

Sentz: If your are ever in the swampy areas of Naples, Florida, you will notice that there is not a mosquito problem because they have a very diverse bird population.

Collins: If we are talking about mosquitoes, then they must be associated with stagnant waters. The nature of a good functioning wetland is that there is no stagnant water. Let's not get into the details of this without professionals at the table. How about some opportunities that we see along the stream in terms of ecological and aesthetic properties.

Solomon: We have a 'golden opportunity' at our hands. If the stream is not culverted, I see the opportunity to take a walk from Frick Park to the Mon in a park setting as an encouragement for residents to remain in the city. I disagree with Professor Caginalp, I enjoy and spend time in wetlands. The professor needs to clarify what he is speaking about, because there are many designations for wetlands, swamps, bogs, marshes, etc. They differ substantially. He doesn't use insect repellent at Nine Mile Run. I dream of the day when I can walk Nine Mile Run and not smell sewage. As a resident of the area, a little further away than Rosemont, I looks forward to the expansion of wetlands at the site.

Several other table members agreed.

Dawley: I recently visited San Antonio, where they had restored and preserved river banks with sidewalks, shops, and old growth trees and wildlife. This breaks the typical urban, city-life stereotype and began to change my mind about what an urban landscape can be. I would move away from Pittsburgh if the green areas begin to disappear.

Remcheck: These natural green areas are a very attractive amenity or good selling point to incoming residents to the area. Right now, Nine Mile Run is agreeably not the most pristine place on the planet, but it has potential to be cleaned up. The question which remains to be answered is where the money will come from.

Mullock: Will there be concrete and roads on the site affecting the stream? Where will the houses be?

Collins: The housing project would be constructed on the slag plateaus and the slopes and stream valley would remain open space. The details are not worked out as of yet. As of now, we can count on at least 100 acres of open space at the site in the valley.

Caginalp: There will be 1,000 new homes on the plateaus and, according to the city's study distributed in March, 14,000 car trips each day.

Collins: Professor Caginalp has a packet he can distribute; You can also contact Mark Knezevich at the URA for more information at 255-6656.

Carr: I would like to see a creative setting and atmosphere at the site. I envision terracing the slopes of the slag, planting and revegetation of the slopes, trails and bridges over the stream. A different atmosphere can be created.

Collins: Opportunity for a more intimate, aesthetically pleasing atmosphere with multiple trail crossings - a focus on the pedestrian experience, instead of the transportation path.

Sjolander: The asset you have inherited has a great tree cover already in place. You do not have to worry about the time to grow and establish park trees. The path would wind around this shady area. You are not starting with a concrete causeway, like San Antonio.

Carr: The San Antonio project was centered in their downtown, so they are really two different kinds of projects, but both focus on changing the urban environment.

Sentz: Should we have bridges or a natural crossing with people getting their feet wet?

Carr: A treated wood or suspension bridge, because the treatment of the stream is not in place yet.

Collins: As we consider reclaiming our access to nature in the city, we can't just run a trail and somehow expect people to, by osmosis, understand that this is a dynamic natural system. We need to come up with an interface where it explains the flashes in the stream and provides an opportunity for people to understand the unusual, unique functioning of the area.

Sentz: I would like to see wood or stone bridges and water access points.

Caginalp: Are we forgetting that this stream is filled with sewage and a warning is issued by the Allegheny County Health Department for no contact in the stream? Who would want a water access point to a polluted stream? The five members of the DEP I met with downtown all agreed that the swamp or wetlands would only solve, in my impression, one or two percent of the sewage problem. They said the solution is to have the Swissvale, Edgewood, and Wilkinsburg communities repair the old trunk lines. There is a $25,000/day fine which is not being imposed and there is no initiative for these places to rebuild their

systems. Someone should pursue the legal course of action, to force the line's repair. In the meantime, people should be deterred from coming in contact with the area because it will spread the diseases. I lived in a third world country where these diseases exist.

Collins: The group is all in agreement that the sanitary sewer problems at the site need to be solved. It makes no sense to sit here at this table with an artist, stream ecologist, an engineering student, architects and landscape architects and talk about the disease issues related to water problems. I better than anyone know about the fecal coliform problems at the stream. That is not a static reality. There are days when this is a completely normal stream with fecal coliform levels within a legal range and it is perfectly fine to have people in the stream.

Caginalp: I doubt that, I really do.

Collins: Whether or not you doubt it, I have the data.

Caginalp: I bet all the water people at DEP doubt it, too.

Sentz: You are not speaking for all the people at DEP, you are speaking for yourself. Don't quote them unless they are here to quote themselves.

Caginalp: You can ask them.

Collins: After the meeting, I will take you up and show you on our chart, the fecal coliform testing that I have done over the last four months with the help of the County Health Department. I have collected the samples—it doesn't take a rocket scientist to go down there with a 500mL bottle and get it filled. I take it to the County Health Department; they send it to DEP for testing. We will discuss this later.

Solomon: His major premise was a non sequitur anyhow. In fact, it is perfectly okay to talk about what it might be like and what we might do if and when the stream is clean enough.
Caginalp: If and when it's cleaned up, yeah.
Solomon: But the discussion of one does not necessarily, in my mind, have to follow the other.
Caginalp: When you see the minutes of this meeting, you will see how this is distorted in time.
Solomon: Maybe I will and maybe I won't, but just because you say so, doesn't make it so.
Caginalp: Look at the last meeting.
Solomon: I was at the last meeting. I don't need to look at it.

Collins: We have a lady here who would like to speak.

Liberman: This parcel can be a valuable draw for people to come to this side of the city. There is also educational value in this project, which is not being pursued by the Pittsburgh Public School District. There is an environmental program within the district which is not being pushed by the district's teachers. Student programs can draw people to the city. Public relations is the key to drawing people. Governmental priorities, policy needs to be defined, less red tape, don't let government be an obstacle. I would like to create interest with a small concrete project like building a bridge or replanting a slope.
Sjolander: I suggest a new deck on the railroad bridge.
Remcheck: On the tour we saw several areas where the stream bank was eroded. We could do a project with some planting, some remediation to stop that erosion.

Paul: PR is the key because the more people that are aware of the issues, the more people who bring new ideas to the project. The more people who experience the site and understand the issues, the better. It's one thing to read about it in the papers, but when you are there, you can see the balance between the hard facts from the paper and the actual reality of nature. This is the kind of project which you need to see to appreciate. The more people see it, the more they will support it.

Liberman: Sometimes, the media won't support it, though, because they are looking for negative news. They can twist the news.

Plummer: What about forming Friends of Nine Mile Run, a group of people supporting the development of public space?

Dawley: We could make this a grassroots movement to show our friends the site—make people aware of it.
Liberman: That is difficult to do because some friends may see the site as a dump with a polluted stream, but the STUDIO is changing the way people look at the area.

Paul: As we saw on the tour today, some of the areas of the trail were difficult to get through. Maybe an objective should be to fix the trail by moving stones around, lessening erosion.
Collins: Once people get out to the site, they can experience the life at the site—there are fish in the stream, there are crayfish in the stream. We saw beavers in the stream. All of these things are an

interface between the natural world and the human world. And it's those things that encourage us to want to resolve problems of this scope. Joe, you brought up the notion of Friends of Nine Mile Run. With the city very involved in a DCNR Rivers Planning Grant, they actually need to put together a citizens watershed group. What might be the goals of an interest group like Friends of Nine Mile Run? Perhaps a bioremediation group to look at the five major stream bank problems. Are these the kind of issues that a Friends group would look at?
Plummer: Educational opportunities would be a priority.

Liberman: An environmental curriculum in the Pittsburgh Public Schools is already in place. It is now up to someone to push it through.

Sentz: You may want to contact the Pittsburgh Voyager. They need a landing site for their boat.

(People agreed, however, it would not be able to bank at Nine Mile Run due to dredging problems.)

Plummer: Concerning the design of the greenway, there could be a focus on teaching about the changing urban ecology in Pittsburgh.

Carr: The construction of a boardwalk down to the river would be nice—easier access to watch the stream. I may not walk the trail again because it is so difficult and awkward.
Solomon: People do go down to the stream, but not all the way down. There, you would run into some pollution problems. Other recreation uses at the site are prevalent, such as cycling, bird-watching, hiking—these uses need to be accentuated. You can take a walk all the way down to Duck Hollow without getting into the stream.

Kostalos: A social studies curriculum on policy and biochemistry could be a part of the educational opportunities at the site. Chatham has a couple of on-going projects using the Nine Mile Run site as a laboratory for their students. The educational opportunities are beginning.

Remcheck: It seems like half of the people at the table are experts. How was this workshop promoted? Did you do a mass mailing, or just a mailing to the 14th ward and what percentage showed up?

Collins: A pretty small percentage showed up, out of a 550-person mailing. We also postered the neighborhoods in the perimeter of the project. We are, quite honestly disappointed in the turn-out today.

Remcheck: Advertising these events is of great importance, because attendance is critical. The more people who are here, the more people to learn and act as volunteers, such as the Friends proposal. I promote educational opportunities and realize it is a very difficult task. There is a core audience who is interested in environmental issues—it is just a matter of getting the word out. The summer is a tough time of year to draw a large audience. The PR needs a strategy. This was a great workshop. It deserves better attendance because the issues discussed have a direct impact on these neighborhoods.

Blaustein: Ann Riley said that demonstration projects spark people's imaginations. There is only a small constituency which this project effects (small geographic area), because it is not a Frick or Schenley, which has been used for a long period of time. We need to, through the demonstration project, show the community that we are doing something, not just talking about issues. The formation of the Friends of Nine Mile Run would be a beginning to something tangible.

Sjolander: Is the web promoting the workshops?

Collins: Yes, all the background documents which are sent out to the mailing list are available on the web. On the weekends, people stop by the trailer and tell us they caught our site on the web.

Mullock: If an interest group was formed, what area would it cover, all of the stream's run, the entire watershed, or just the part around the slag dump?

Collins: The entire creek's run from the culvert would be covered.

Mullock: When you say you saw beavers and fish, what part of the stream are you referring to?

Collins: The places we have seen a lot of these things is right below the trailer. The oxygen levels in the stream at that point are good enough to potentially support a trout population. However, variations in water temperature, stormwater and flooding have a significant negative effect on life. Every time the stream floods, the smaller stream organisms are swept away. These storm flow events scour things out of the bottom of the stream.

Sentz: Temperature does decrease the amount of oxygen in the stream. Additionally, when you do have sewage pollution in the stream, associated bacteria

use the oxygen in the stream and reduces the total amount of sewage. Even if you have a pristine stream, the stream will probably be too warm ever to support a trout population for very long. There are other warm water species which may be able to inhabit the area.

Collins: Bass are being caught just upstream from the mouth of NMR. They may be better suited if the variations in flow could be resolved.

Sentz: We need to work through people in the good news portion of the media. Since we are working with a small vicinity, we need to reach beyond this area to create interest. Maybe everyone could bring one friend to the meetings next time.

Caginalp: A lot of people have heard about these meetings, but are staying away because they are completely dominated by people who are going to make money on the project.

Sentz: You seem to be able to speak for other people so often with great authority. Did these people tell you that's why they are not coming? Did these people give you an affidavit to speak?

Caginalp: As a matter of fact, I do have some affidavits.

Blaustein: Who at this meeting is going to make money?

Caginalp: In many of these meetings I have been to, there is always a developer's presence or interest in the discussions.

Blaustein: Those are different process meetings.

Solomon: Anybody here going to make any money on this? Raise your hand if you're going to make a buck. Looks like nobody.
Caginalp: Does Tim Collins have a financial interest in gaining grants to continue research?

Blaustein: No, there is no financial interest.

Collins: I am working 60-hour weeks. I have some funding through the STUDIO for Creative Inquiry to do what I'm doing.

Caginalp: Exactly. And if things turn out a certain way, you make money. And if they turn out another way, you don't.

Collins: That's not true.

Sentz: He makes money regardless of which way it turns out. He is involved in the process.

Collins: Professor Caginalp, do you...I'm not even going to get into this. The bottom line is we have many volunteers. Everybody that's here...

Caginalp: I know you have volunteers...

Collins: Professor Caginalp...

Carr: This defeats the purpose of accomplishing anything of value. I don't think arguing over money issues serves...
Caginalp: I'm trying to give you a reason why 550 people got mailings and only, you know, four or five people...
Solomon: But, you've given us the reason, and I don't think anyone here agrees with you. I certainly don't. I'll speak for myself.
Caginalp: It still doesn't answer why there are very few people here.
Mullock: Are as many people (citizens) here as you wanted to be here? Would you like to see more people attend?
Caginalp: Yes.
Mullock: My son is up in the East End Co-op. I read over the information 15 times, trying to understand, and my husband said it was just educated babble. Why don't they say they want to clean the stream out—I really didn't know what it meant.
Remcheck: If you only did 500 mailings and got 25 people, that's a pretty good turn-out. The last mailing I did, we sent out 5,000 mailings and got about five back. Simplify the language.

Collins: These are really good comments. We need further outreach. Kathy Stadterman is taking the lead on publicizing on the Allegheny Front in order to rally people to attend these discussions.
Plummer: This turn-out is good. The people who were here spoke their mind and asked questions. This workshop is intensive and gives an interesting picture of what the opportunities are at the site. Quality information is good; getting people to the table to share ideas is the best approach.

Solomon: Why don't we get the Eagles to do the opening for us next time? Ha, ha! By what standards have we all decided that there aren't enough people here? I've been participating in volunteer activities for a long time, and a meeting this size looks good to me. I don't know what standard says this is a small meeting. Who says this isn't enough people?
Liberman: I went on the first walks of the site. These workshops are a tribute to the dedication of those people who held the vision and took action, like the STUDIO.

Collins: We will take all these criticisms and attempt to improve. More diverse voices at the table.

Remcheck: At what point is the project moving along presently? Is this going to be continual process of public input? What effect will this process have on the final decision?

Blaustein: There are two parallel tracks of public involvement. One that concerns itself with the development. There were a series of public meetings in the spring and those meetings will start up again in the fall when we go through the process of changing the zoning for the site. That involves a very intense public process. But that will concern itself with the grading and the master plan for the development of housing. You can't separate the two, but right now, they are going along parallel tracks. The STUDIO has organized a series of four workshops in the summer to talk about the open space and the issues associated with that. The plans for the housing will be finalized in the next six to nine months and that's when the plan will be adopted and construction will begin. And so, there will not be continued public debate about that. The debate and the work on the open space will go on for a long time because the issues there are much more complicated. The city is the one who is developing the site. It will take us another year or more to figure out how we are going to solve the environmental problems associated with the stream and then what the best way to develop the open space is. There are a lot of alternatives out there, not just for greening what is here, but how much should we green, what should be the configuration of this open space. So, now we are doing the assessment to determine the real numbers and real values. Then we'll go about, in January, determining what kind of open space we need, what are people looking for, what are the qualities they want, what do they want to use this space for, and how are we going to build it. Unless there is enormous opposition during the public process, we have to assume that the houses will be built. If the houses are not built, I don't know that the city will go ahead and build a park here. How could we financially do that? It is not financially feasible for us to do that. We can barely maintain the acreage we have in public parks now. So, they are inextricably linked. What the confirmation of all that ends up being is how many houses, where the lines are, how one flows into another, is still being debated and will be for the next several months.

Sentz: Additionally, before there is any development on the site, there must be a zone change. There are a series of hearings on many levels as this occurs.

Blaustein: There is a series of state permits which must be obtained to meet the criterion they have in place to address

the environmental problems on the site. Everything needs to be in order before anything can happen.

Caginalp: Three separate groups have hired lawyers to block the development with injunctions, so the process won't be easy.
Liberman: There will be a Turnpike Commission meeting to discuss the Mon-Fayette Toll Road on Monday, July 21 at St. Steven's School in Hazelwood at 7:30 pm.

Paul: In the Civil Engineering Department at Carnegie Mellon, each year the entire senior class spends a semester doing all the planning and labor to build a small park or beautify something on campus. Learning at the site is already occurring. We now need to learn from the site. CMU students could incorporate this as part of their curriculum.

Mullock: Does Friends of Nine Mile Run exist?

Collins: No, but as of this meeting, yes, we thought of it—it exists!

Mullock: What about adding in Friends of Nine Mile Run and Frick Park?

Collins: One thing we kicked around at the beginning stages was calling the project Nine Mile Run - Frick Watershed Project. That would include the upstream communities of Wilkinsburg, Swissvale, Edgewood, and Pittsburgh.

Mullock: Forbes Bridge has wildlife as it empties underneath past Swissvale School. I saw a rat snake and birds on a little path.

Remcheck: There are grants for tree planting through the State Forestry division for projects that Friends of Nine Mile Run might want to take on.

Project

Bob Bingham, NMR-GP
Doug Lambert, NMR-GP
Choli Lightfoot, NMR-GP
Larry Ridenour, landscape architect
Ann Riley, Waterways Restoration Institute
Ken Tamminga, Pennsylvania State University

Community

Rodney Harkness, resident
Ned Vander Ven, resident

Government

Mike Benton, Urban Redevelopment Authority
Nancy Racham, Department of Environmental Protection
Claire Staples, Urban Redevelopment Authority board member

Stream Banks and Floodplains Roundtable Discussion

Tamminga: You didn't mention bio-regions and artists' role.
Riley: Artists tend to be the first involved in environmental efforts. Friends of the Ohio River was started by artists making a concrete sculpture of a sycamore tree in a concrete lined river. Friends of the Chicago Rivers started with making elaborate floats down the river in boats to publicize it. In Chicago, artists asked people to photograph their favorite parts of the river and made collages out of them which were printed in the newspaper. Gary Snyder and other poets started making one-line bumper stickers, "Think globally, act locally." It captures people's imaginations.
Tamminga: In Toronto and the Don River, the first thing we did was to get business people to give away some throw-away cameras, and a local photographer knew a place in a river that was so polluted, he developed the film in it.
Ridenour: Do you have an update on the Platte River in Denver? Is it still successful?
Riley: Yes, very. One community opted for a floodplain restoration trail channeled for flood control. Bob Searns, Urban Edges and community groups got together and did massive treatment, now people visit and jog. The idea of trails really caught on in Denver. I understand that it's a real hook here. If you are looking for a model, use Denver. They started making trails everywhere.
Ridenour: Boulder and Denver are about 50 miles apart; are they connected via trails or greenways?
Riley: I'm not sure.
Ridenour: I remember some reference to the Army Corps Act in '96.
Riley: It's called the Water Resources Redevelopment Act section 206, Aquatic Ecosystem Restoration, also, Section 305 or 503...possibly 305, which is the watershed planning section, and the Army Corps can partner with locals, like watershed council type things, and you can

come up with comprehensive watershed plans which can be funded 50/50. So, you would work with the Pittsburgh district.
Ridenour: The Corps has a major office right here; it covers a big area, maybe 100 miles down the Ohio.
Riley: Each different district in the Army Corps has a different nature, a different character. The Pittsburgh district may or may not have personnel that you think are good. If you don't think that the personnel is together, forget it.

Racham: What branch in the Corps is responsible for the watershed planning program?

Riley: Planning. Baltimore is a really good district. I don't know about Pittsburgh.
Ridenour: They're marginal.
Riley: The best programs to use if you are looking for government partners is the Natural Resources Conservation Service, which is the new name for the SCS. Those guys will help. Again, locally it will depend upon the personalities there and the talents. When we get together nationally all in one room, they get very high marks. They have landscape architects, they have hydrologists, they have conservationists. They can send you a technical person.
Ridenour: But the problem is that they mostly work in agriculture and when you get into an urban county, like Allegheny, you can forget about it.
Riley: Sometimes that's true and sometimes it isn't. I work in very urban counties in California and NRCS is very successful with that transition, and they've been very good in Chicago and Seattle. It really depends on the staff.
Ridenour: They depend on local funding and we've consistently had a bad situation here. There's been hardly any money spent in Allegheny County. Once you cross the county line into Westmoreland, Cambria etc., it is a different story.
Riley: You are right that a lot depends on very local issues. A new federal program has been established in fifteen cities called the Urban Resources Partnership. It combines the EPA, NRCS, and the Fish and Wildlife Service and other groups. You don't have this in Pittsburgh. They can direct you to grants and technical assistance. The EPA is kind of lost in the wilderness. They want to help and promote watersheds. Their weak point is that the staffs vary. There doesn't seem to be an agency consistency or personality. They are starting to improve, however, with a sustainable communities program, which is kind of replacing its watershed program. It does get kind of fad-ish. Trying to get

resources to cities and impoverished communities. It can be bureaucratic. Have you tried section 309 grants? There are grants available for non-point pollution. You can ask the state to consider you for non-point pollution problems like stormwater. The grants can also be used for riparian restoration.

Ridenour: Have you done restoration for storm channels?

Riley: Speaking of which, that issue is being considered by Congress right now. Talk to a local congressman about the Brownfields Act. I am a big fan of this. Make sure the Brownfields Act includes some waterway restoration grants and is user friendly.

Bingham: Is this speaking directly to water issues?

Riley: Yes, because there is so much toxicity in the rivers. It is often hard to separate the river pollution from the toxicity. I am personally involved with the Napa River in California. The group working on the river gets a team of experts to work with them. There is a group of people working on a creek in St. Paul doing the same. You must start raising money.

Bingham: How much?

Riley: This depends. You could start with a small demonstration project and bring in a local expert. Plant trees by your trailer and call it a restoration project. [Ann draws a diagram of possible restoration.] You may want to make space near the trailer and excavate two or three feet. Bring in experts, do a little bit, and see how it works. Why hasn't the floodplain become reforested?

Bingham: There was much rock and concrete dumped on the site.

Tamminga: It has started to revegetate with clover and vetch. Nancy, do you think this area, dropped a few feet, would be considered a wetland? I am trying to understand what could happen there, and what should happen there contextually.

Racham: There are streams going across the area. The overflow of storm events is not enough to support a wetland.

Tamminga: I've had an opportunity to see the area, and I agree that it cannot be sustained on stormwater.

Racham: In a lot of places with a riparian buffer, it looks like a wetland but it is not.

Lightfoot: For our purpose, is that distinction important?

Tamminga: When one is thinking about semantics: if hydric soil is not originally there can it be created?

Riley: The background document goes into the 1800s and states that Nine Mile Run was previously forest. We must take history into consideration.
Tamminga: But this may not make a difference.

Racham: If we are creating wetlands as a benefit for some other project, regulations say that if a wetland was not naturally created, it cannot be regulated as such.

Riley: This puzzles me...if it is not a wetland by definition, what is it?
Ridenour: I'm confused about the difference between riparian buffers, wetlands, and floodplains.

Racham: The floodplain is the area that becomes inundated by water during flood events, the 100 year flood. A floodway is the area that carries the flow. A floodplain gets inundated but it doesn't carry flow.
Staples: Like farms out west.
Racham: We regulate floodways for flooding impacts and the impacts on the stream. We regulate the floodway as public entities. If we are filling a wetland, it is a wetland impact and also a floodway impact.

Ridenour: Not all floodplains are wetlands. Do riparian buffers pretty much correlate to the floodplain?

Racham: Yes.

Riley: A friend of mine refers to "God's floodplain" Banks were probably two feet high and things periodically flowed over. And the species would be different across the spectrum. If we were to go to the trailer and try to appreciate the species differentiation, it would be cool to try to visualize this.
Lightfoot: In our stream with no floodplain, are our trees in a riparian zone?
Tamminga: The floodplain is very narrow.

Staples: The stream digs deeper.

Ridenour: There are places where the 100 year floodplain is on the bank.
Tamminga: I wanted to add that I am interested in the meandering of the stream. If we were to make projects [draws]...Some jurisdictions are beginning to limit development in the meander corridor so the stream is given a natural opportunity to meander.
Lambert: Of course, in Nine Mile Run we have two bottlenecks, upstream, the urban buildup and downstream, the slag pile.

Staples: Is it possible to use core drillings to see how far down the floodplain was?

Tamminga: At Penn State's Watershed Cooperation Center, they are using cesium and its radioactive decay rate and can relate to nuclear bomb testing.
Ridenour: It's like counting the rings of a tree or ice layers in a glacier.
Lightfoot: People are looking at the maps, drawing the floodplain.

Racham: What part of the sewer line are you talking about?

Riley: That one did have a date on it—from the 1930s. About how many feet is it up from the stream?
Bingham: Six feet, exposed.

Racham: We don't know where it was to begin with.

Riley: May we have a construction date or a map giving elevation information?
Lightfoot: John Schombert would be the one to ask.

Racham: It seems like the city's maps are just atrocious....

Tamminga: What failures do you know about, specifically when it comes to the pilot projects? Have they always been so carefully designed, especially on such flashy streams, where they may get blown away? What was the outcome if the bank was torn away after being "restored"? Was it a setback?
Riley: Great question! We learn more from the failures than from our successes. All restoration projects are not designed with such great knowledge that they are infallible. Adaptive management is another buzz word, it is a wonderful concept. All you can do is get your historic records, interview people, measure distances from old sewer lines and what they are now, and you become a detective. You always act with imperfect information. That's part of the business. There is an art to this. Make adjustments and watch them, and they usually adjust accordingly. This is very different from the paradigm we're used to in the public works world. If you think you need to excavate to restore the flood plain, then go ahead. Try it.
Tamminga: Test depth to groundwater. There's a copper-wire technology where you stick it in the ground water and the HP calculator takes an infrared reading, then you download it on the computer. Costs about $900 each.

Lightfoot: What about places where there is no hope to repair the stream bank?
Riley: Not politically and economically feasible to alter slag. It is okay to work with a modified environment. Instead of this channel geometry, which is natural, you have a new stream type essentially which is a confined stream channel you can work with that. And right now, you have a forest trying to occur in this crappy stuff. Is there something we can do to hasten the succession or get a more climax forest?
Tamminga: Your stream setting [while drawing] and channelized section, it would have had a meander pattern, you would have had pools and riffles, right? Straight-aways at the tangent points are generally pool and riffles. You can generally translate that across if you know the sort of theoretical design size of that corridor. And come up with a pool-riffle sequence in that channel.
Lightfoot: Is it shallow, deep, shallow, deep?
Tamminga: Right. It brings around a lot of these aquatic dynamics. They are hydraulic jumps, you know where water goes over rocks, while little critters hang on. Even though you can't restore the meander pattern, you can easily restore the pool-riffle sequence.

Staples: What is the effect of restoring floodplain upstream?

Tamminga: It would take up flow and reduce downstream impact.
Riley: Sometimes, the best restoration is no restoration at all. One of my key recommendations is the sewer line condition. A public works project can turn into a restoration project. If a culvert is really in bad shape, that is your first opportunity to try it a different way. If you get your fluvial geomorphologists to spend some time at the site, they can inventory your meandering path and see how far off you are. The gradient - it has to meander over time differently than it does historically because its gradient is changed, because it has been confined and because its gradient is steeper, its meander will be narrower. So, dealing with your confined environment, the slope is x amount, read some of the river classification systems to determine what meander will be in this new river type. Then if it is really far off, you might want to do the kinds of things Ken was talking about. I have a feeling it is doing a kind of decent job meandering on its own. Rivers adjust on their own. Sometimes, we discover we have thrown a lot of money at a project which wasn't necessary.

Ridenour: What was the EPA term?
Riley: Adaptive management. Divide your watershed up into regions and set your goals. Restoration goal may be a historic floodplain experiment as a demo and maybe you'll find how much it has adapted. Sometimes, you may find that if you lower the floodplain, the stream may just want to fill it in again.
Tamminga: If we have an urbanized upper watershed, and controlled sedimentation, it should be okay, probably?
Ridenour: (to Nancy) If we were going to use a wetland to help clean up the pollution, where would you put that, beside the main channel? Or otherwise it won't collect the pollutants.

Racham: Obviously, you have to get the water from the stream into the wetland, wherever it is. You may not want it in the channel, because then you may not have a way to divert around it during the high floods—you'd lose all your work.

Ridenour: The CSO storm effect would be in the channel, so you could have wetlands raised up?

Racham: Right, but you need to keep the higher flows out of there, which means you are bypassing a lot of the stuff you are trying to get out. You have more dilution during a storm event, so its moving and it keeps on going. So, it gets to the Mon real quick.

Lightfoot: Our fecal coliform levels are through the roof during storm events, but not as bad for low flow.

Racham: How long did you have those elevated levels? Those are short-term, then you are back down to base levels.

Lightfoot: What about stormwater wetlands to control the flooding and high flows? As opposed to treating it as wastewater.

Racham: Yeah, but you're going to be limited by space to control all that water.

Ridenour: Do you feel in man-made wetlands that we have arrived to a point where we know a lot about how to make these things? And make them work and be successful?

Racham: A lot is a relative term. There have been a lot of failures. We will learn from them. There are people out there who are very good. They know what data needs to be collected in order to determine what they're going to have to do to a particular site for it to hold water. There is a wetland constructed as mitigation, and they had 17 acres there. They went through some nightmarish techniques. You can go to great lengths to get there, but the bottom line is how to keep water. The rest is easy after that; then you have choices.

Tamminga: There are seven wetland types, with ascending difficulty to achieve. Coastal salt marshes being the easiest to restore and freshwater wetlands as one of the most difficult to restore (because of the difficulty to return species diversity).
Ridenour: Somerset and Cambria County use passive treatment wetlands to treat the acid mine drainage.
Tamminga: Those are constructed and are really living sewage treatment plants.

Racham: There is no magic to getting wetlands plants (cattails) to grow. In a constructed or contained environment, not as much goes on compared to a naturally functioning environment. DEP is trying to identify what works and what doesn't. Overbank flow from streams and stormwater collection does not work as a hydrologic source—not reliable enough. It's hard to keep them where you want them and it's hard to know when they'll come back. They may be used as secondary sources.

Ridenour: So you have constructed wetlands and sometimes they may also act as natural wetlands, but not always?

Racham: Yes, you have to go out there and make a determination of how the wetland is performing.

Tamminga: Some of the jargon is that if they are man-made, they are created wetlands, imaginatively restored wetlands, some of which are because of mitigation. If it's putting a wetland where there never was a wetland, that is a constructed wetland.
Riley: It seems to be a flood plain restoration—best for our site—get the wetland language out of there, creating a historic flood plain, use as much information as possible.
Tamminga: Probably, there was not an open water system, very likely there was no standing water, it might have been swamp.
Lightfoot: There are two sections we are not sure about, one with standing water and one without.
Riley: Try the demo site and see what happens. With interest level—more urban realities.
Lightfoot: Is streambank restoration necessary? What about letting Nine Mile Run run its course?
Riley: Sometimes where there is a conflict.

Staples: We need access to the stream.

COMMUNITY AND ECOLOGY: SLAG, SOIL, PLANTS AND WILDLIFE

Ample Opportunity: A Community Dialogue 3

Saturday, August 2, 1997

Introduction: The Community and Ecology Workshop placed more emphasis on direct interaction between the advisors and participants. There were two site tours in the morning: one led by scientists John Oyler and John Buck which crossed the slag plateau and one through the stream valley with ecologists from the Carnegie Museum of Natural History. The afternoon workshop was organized around a series of exhibitions prepared by the advisors, a kind of 'ecology fair'. A guest advisor, Chris Logelin of Advanced Technology Systems ("ATS"), was added at the last minute to address questions associated with slag toxicity. ATS is the Urban Redevelopment Authority's risk assessment consultant. Roundtable topics addressed: (1) Public Access and Habitat Corridor, (2) Vegetation, Habitat and Environmental Education, and (3) Soil, Slag and Geology.

Review: Participants were becoming familiar with the workshop format. Some audience members came for the tours, or the discussion separately. The major change in approach, the ecology fair, appeared successful although it was hard to ascertain if the information provided in one-on-one discussion was as widely shared as if it were a group presentation. The new approach facilitated in-depth discussions for audience members with increasing sophistication about the specific issues.
Attendance: 100

Advisors:
John Buck, *Soil Scientist with Civil & Environmental Consultants, Inc.*
Mr. Buck has designed successful direct (soil-less) revegetation plans for coal refuse, coal spoil, slag, and coal fly ash disposal sites, including approximately 100 acres of a barren slag disposal site using locally available sewage sludge. Mr. Buck also designed and implemented a plan to vegetate a conspicuous 0.7 acre barren slope on the Nine Mile Run slag heap in 1986.

John Decker, *Assistant Professor of Architecture at Carnegie Mellon University.*
Professor Decker also is trained as a Landscape Architect and is currently working on the development of innovative computer modeling tools for urban planning.

Court Gould, *Consultant for the Wildlife Habitat Council, and Director of the Three Rivers Habitat Partnership.*
Most recently, Mr. Gould was Executive Director of the Audubon Society of Western Pennsylvania at Beechwood Farms. Previously, he worked for the Air & Waste Management Association and was a policy analyst for Allegheny County.

Indira Nair, *Department of Engineering and Public Policy, Carnegie Mellon University.*
Ms. Nair is an award-winning educator at the University. She was a Faculty Advisor for an undergraduate systems class in the Spring of 1997 which produced the report, "Nine Mile Run: A Study of the Reclamation and Sustainable Redevelopment of a Brownfield Site."

Henry Prellwitz, *Ph.D. candidate in Geology at the University of Pittsburgh.*
Mr. Prellwitz's thesis topic is a geochemical and environmental study of the Nine Mile Run slag area.

Kirk Savage, *Public Art Historian at the University of Pittsburgh*, *formerly worked in land-use planning for the California Coastal Commission and the California Coastal Conservancy.*
His book, *Standing Soldiers, Kneeling Slaves: Race, War, and Monument in 19th-Century America* is forthcoming from Princeton University Press.

Chuck Tague, *Publisher of The Nature Observer News.*
Mr. Tague is a naturalist with expertise in birds and owls, and is actively involved in education programs from child to adult level.

Sue Thompson, *Assistant Curator, Section of Botany, Carnegie Museum of Natural History.*
Dr. Thompson has professional interests in plant systematics, plant-insect interactions, and documentation of plant biodiversity. Another project with which Dr. Thompson is involved is a habitat survey of the Southcentral Pennsylvania barrens.

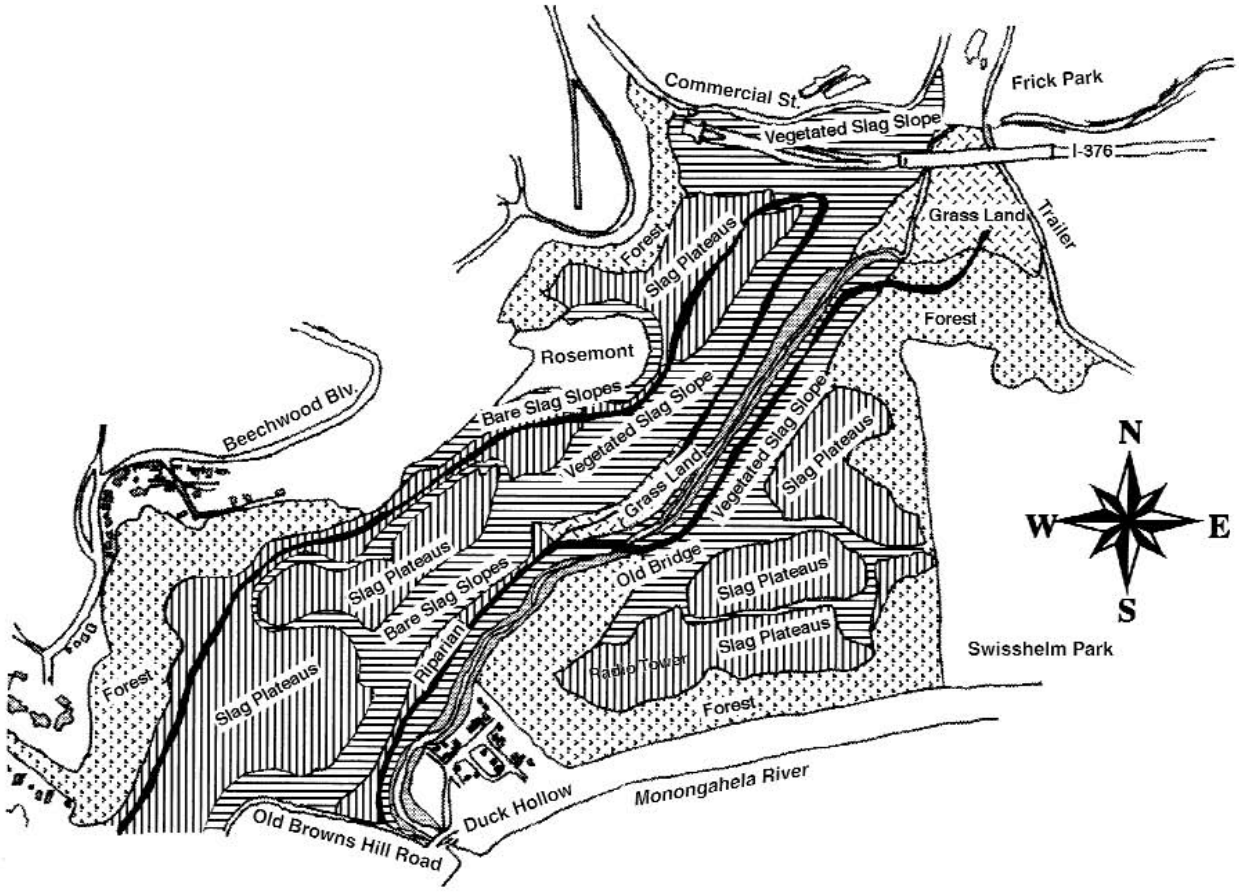
The relationship between living things and their environment is the subject of ecology, a term coined less than 100 years ago from two Greek words that mean "the study of home." The term is an apt one, for all living things have their own particular homes in nature, to which they are tied by many invisible strands. These strands are the various physical conditions found on the surface of this wrinkled and constantly changing planet.

—Peter Farb, *Ecology*



Hop tree, *Ptelea trifoliata* listed in the Pennsylvania Wild Plant Conservation Act

Types of Vegetation in Nine Mile Run



Grass Land: Areas of herbs and grasses without significant woody vegetation (grass, goldenrod, teasel, thistle).

Forest: Areas covered by trees with a distinctive understory and forest floor component, including both disturbed and relatively undisturbed forests (oaks, maples, elms, tulip tree, spice bush).

Vegetated Slag slopes: Areas of slag and soil debris with varying slopes and attendant development from short woody plant (successional species: aspen, sumac, box elder, locust, honeysuckle, grapes).

Riparian: Plant growth along the stream and in the stream valley, including trees, shrubs and grasses (willow).

Bare Slag Slopes: Very little plant growth

Slag Plateaus: Areas of slag and soil debris with varying slopes and attendant development from short woody plants (succession species).

Introduction

To begin this dialogue background document, we have assembled a series of questions and answers concerning community access (for people and other living things) and educational possibilities for the site. To promote a better understanding of the site issues, we have compiled a series of questions (and partial answers) that discuss the fundamental components of the site which have shaped its character and use over time — the geology, soils, slag, plants and wildlife.

Overview

The stream of Nine Mile Run flows through the watershed, and into the Monongahela River. An old photograph shows how wide and flat the valley was in the past. In 1923, the Duquesne Slag Company began to buy land in the valley, and dumped 20 million tons of slag over the next 50 years. We all know the Nine Mile Run site is no longer a pristine natural area. Two large slag piles rise sharply, and the stream of Nine Mile Run is still polluted with sewage. In 1972 the last slag was dropped, and the area became a large undeveloped open space for over 20 years. Nature has been slowly returning to the slag slopes, migrating from adjacent natural-soil hill sides and Frick Park.

Nine Mile Run is one of the biggest undeveloped areas in Pittsburgh. Coming to the site for the first time provides visitors with numerous questions and impressions. The view along the valley from the slag plateau and up the slopes from Duck Hollow presents very different experiences. What is the gray substance at the site? Where did it come from? When and why did it happen? Questions differ depending on each visitor's previous experiences. Some of the questions are easily answered, others indicate the need for more study and assessment. The ultimate goal of this workshop of the Nine Mile Run Greenway Project's "Ample Opportunity: A Community Dialogue" program is to provide an objective process for the discussion of issues and goals for greenway/public space development on post-industrial properties (steel mill manufacturing or refuse sites).





Spring 1986: Another element of the remediation plan involved surface remediation and application of seeds. A mixture of mushroom compost and fertilizers was laid down by volunteers working in bucket brigade style. Black locust, grasses, wildflowers, buckwheat and birdsfoot trefoil seeds were spread in seed form. The image on the right shows the same site six years later. Note the 12 foot high black locust established from seed.

I. Public Access

How is Nine Mile Run a community?
The Nine Mile Run valley has been buried with **slag,** polluted by sewage, and criss-crossed by urban development. Yet it remains a vital community, inhabited not only by people who use it for recreation but by a diverse array of plants and wildlife. We use the term community in the broadest sense to encompass human beings and the other living things with which we share space. It is often easy to forget, in the midst of a city, that humanity and nature are always interwoven; our survival ultimately depends on theirs. Nine Mile Run teaches us that even if we pollute, transform, and bury nature, we still remain a part of it — part of a larger "web of life."

Slag: The refuse from the melting of metals or the reduction of ores.

How has the community used Nine Mile Run in the past?
Nine Mile Run has had a variety of industrial and recreational uses over the past 150 years. Salt and natural gas were extracted in the 19th century, while in the early 20th century the site became home to a hunting club and a golf course. When Duquesne Slag began to dump in the 1920s, some of these recreational uses were driven out and a great deal of wildlife habitat was destroyed. However, plants, animals, and people have adapted to the changing conditions and have continued to find ways to inhabit or use the site.

How is the site being used now?
People use the site in many, often surprising, ways: for birdwatching, fishing, hunting, gardening, dog walking, hiking, jogging, mountain biking, motorbiking, and even partying. The relatively open, unregulated quality of the site enables a multiplicity of uses, some of which would be inappropriate or even illegal in a traditional public park setting. Even now there are obvious conflicts between certain uses (e.g., motorbiking and birdwatching). As this list indicates, many of the human uses are already dependent on the continuing presence of plants and wildlife at the site.

What are the possibilities for the future?
The Urban Redevelopment Authority (URA) plans to build a residential development on the slag plateaus of the Nine Mile Run valley. The future possibilities for continuing community use of the site depend in part on development decisions that are still pending—in particular, how much of a greenway will remain, and where it will be located. The possibilities also depend on the design and use of the public space, in other words, what mix of habitat, recreation, educational initiatives, and other uses will be accommodated. Not all the possible uses may be equally desirable, nor are they always compatible with one another. One of the major goals of this workshop is to open a dialogue with the community on these future possibilities, to see what mix of human and ecological uses is appropriate and desirable in this vital community resource.

What is a greenway?
A greenway is a corridor of open space covered with some form of vegetation. Greenways vary greatly in scale. Some greenways follow streams shorelines or wetlands. While others follow old railways, ridgetops or other land based features. Greenways can provide



Pittsburgh Greenway Map—including parks, cemeteries, hillsides, and greenway. (From the 1980 brochure *Greenways for Pittsburgh,* produced by the Department of City Planning with funding assistance provided by the Richard King Mellon Foundation.)

recreation, alternative transportation, habitat for wildlife or simply natural beauty.

Pittsburgh's parks and cemeteries are historic greenways that have been used for generations. In the 1980s the city established a greenway program that was designed to consolidate publicly owned wooded slopes into continuous belts of land assigned to Parks and Recreation. Five such greenways were created, the most recent in 1989.

Nine Mile Run offers the unique opportunity to extend the existing greenway of Frick Park and Homewood Cemetery to the Monongahela River. This vast interconnected expanse of park, woodland, and riparian corridor would become the single largest greenway in the city.

What are the likely major impacts to the greenway?

This is impossible to answer with any specificity right now. The size and placement of the housing development and the ultimate regrading of the site is still under discussion. The master plan clearly shows a roadway which will cut across the valley putting part of the stream in culvert. While roads can provide access and parking within the greenway, they can also divide and separate habitats and trails. Nearby Frick Park has one major roadway into it, but none through it. Schenley Park, on the other hand, has numerous roadways through it.

PennDot is currently planning the Mon-Fayette Expressway, and one of the suggested possible routes would follow the north shore of the river and cut across the mouth of Nine Mile Run as an elevated highway.



Composition and pH of a slag particle (Buck 1997)

II. Geology, Soil and Slag

To understand the possibilities for future community use, we must first understand the natural and human processes that have shaped the site and will shape any future greenway. Here we focus on the geology and soils of the site, including the slag which is now such a major part of the land formation.

What is the geological history of Nine Mile Run?

The bedrock that underlies the Nine Mile Run slag area consists of nearly horizontal layers of sandstone, shale, siltstone, claystone, limestone, and coal. These beds were deposited about 300 million years ago, under tropical climatic conditions similar to those seen in the present day Amazon River delta:

- the sandstone layers represent a river environment,
- the limestone a shallow marine deposit,
- the coal beds are a result of the decay and fossilization of plant material in vast swamps, and
- the siltstone, shale, and claystone beds were formed in a large river delta.

Evidence for these depositional environments is found in the plant and animal fossil records these rock layers show. The Nine Mile Run stream valley, along with Fern Hollow valley in Frick Park, was formed by stream erosion starting 15,000 to 20,000 years ago and continuing to the present time.

What soil types are found in Nine Mile Run?

There are three major soil types found in the Nine Mile Run slag area. These include: 1) clay-rich soils derived from direct weathering of the bedrock, 2) sand-rich soils found in the streambed and floodplains of Nine Mile Run, and 3) any soils that result from the weathering of slag. Because of the vast scope of geological time, little soil has formed as a result of slag weathering. (Geological time is often recorded in thousands of years.)

Refractory brick: brick designed to withstand high temperatures, used in steel furnaces and replaced with great regularity.

What is slag?

In producing steel, iron ore is introduced into a blast furnace along with limestone and coke. The limestone decomposes and melts into a slag that removes phosphorous and sulfur impurities from the liquid iron. It has been widely used in the construction industry. In its current state at Nine Mile Run, it is not toxic. You can walk on it, ride on it, and touch it without risk. The reason is that metals such as chromium and nickel are contained in the slag but trapped inside its rock structure, much as they are in nature. Risk may arise if the slag is pulverized or crushed so that certain metals are released in the form of airborne dust.

Assessment: Exploration, quantification, evaluation and import.

Testing of the slag at Nine Mile Run[1] has shown that it contains various metals. Particular concern has been focused on the presence of chromium, arsenic, cadmium, and nickel. The presence of chromium in the slag is not unusual due to the presence of chrome in **refractory brick** (brick designed to withstand high temperatures, used in steel furnaces and replaced with great regularity). However, there are two types of chromium; hexavalent chromium presents a greater risk to the human population as a cancer producing substance. Test results[2]

[1] "Phase II Environmental Site Assessment, Nine Mile Run Slag Area, Pittsburgh Pa. November 1995," Chester Environmental Ground Water Technology, Advanced Technology Systems, *et al.*

[2] "Risk Assessment/Assessment Cleanup Plan, Nine Mile Run Slag Area, Pittsburgh Pa." Draft, June 1997. Advanced Technology Systems Inc.

indicate that levels of hexavalent chromium at Nine Mile Run are at or below the detection limit and will not pose a health risk to anyone working or living on the site.

In terms of the other metals found in the Nine Mile Run slag, none of the cadmium or nickel concentrations exceed residential standards established by Pennsylvania. In other words, if the same concentration of these materials were found in someone's backyard there would be no risk to human health. The level of arsenic is below the most recent health standard established by the state. In addition, the concentrations of arsenic are also within the state's background range.

A risk **assessment** of the site,[3] following Environmental Protection Agency (EPA) and State Department of Environmental Protection (DEP) guidelines, indicates that the risks to human health for individuals working on the site, living on the site or living near the site are below those which the EPA would find acceptable. It is unlikely that those persons would experience adverse health affects.



Geologist, Henry Prellwitz, soil scientist John Buck, and a community member examine an excavated area of slag.



Steam rises from the slag on the northern end of the property.

III. Soil, Slag and Plants

The Nine Mile Run slag disposal site (NMR) has often been described as a barren "moonscape," or, simply a "dump." Although the slag does not support the robust vegetation typical of undisturbed soils in the area, many adapted plant communities (and associated animal communities) do thrive at the site. Thus, the NMR slag is a "soil" supporting adapted plant communities.

To provide a framework to visualize the opportunities to vegetate the NMR greenway, we will provide a broad definition of soil that includes slag and other alternative growing media. To that end, we will first discuss universal requirements of soils as systems that support the growth of plants, then discuss limitations to plant growth on the NMR slag, and finally address means of meeting plant requirements while minimizing the need to import soil and other non-renewable resources.

[3] Ibid.

What do plants need to survive?
- Absence of intolerable physical stress (e.g., landslides)
- Absence of intolerable chemical stress **(phytotoxicity)**
- Soil that retains water (storage) to help plants avoid drought
- Adequate nutrient availability
- Soil that is penetrable by roots, stable support (anchorage)
- Free exchange of soil gases with the atmosphere (aeration)

Every soil (and alternative growing medium) has assets and deficits with regard to the above plant-support criteria. In response to the range of soil conditions, particular plant species have evolved adaptations to less than ideal soil conditions. Adapted plant communities have sprung up on the NMR slag.

It is important to note that although non-ideal soils can support plant growth, it comes at the expense of species diversity[4] (different kinds of plants living in one place). Soils that present more stress to plants tend to be colonized by plants that are specially adapted to those conditions, resulting in lower species diversity than possible in "ideal" soils.

Phytotoxicity: Poisonous to plants

Why is species diversity important?
The simpler (less diverse) an ecosystem is, the greater the opportunity for disruption of one kind or another. Consider mono-systems like orchards where stability is maintained by active pest and nutrient management. We do not want to create a greenway that is easily threatened, disrupted, or in need of extensive maintenance.

What are the effects of slag on the existing plant life?
- Steepness and associated "creep" (downward movement of slag)
- Fused slag impenetrable by plant root
- Poor water holding capacity
- Poor nutrient availability (the alkalinity raises **pH**)

pH: Measure of acidity/alkalinity on a scale between 1 and 14. Greater than 7=alkalinity; less than 7=acidity.

Is there anything about slag that is good for plants?
- NMR slag is not toxic to plants or beneficial microorganisms.
- Slag is an excellent growing media for adapted species when enhanced by nutrient addition, mulching, and seeding.

So what has to be done if we are to grow plants in slag?
Successful vegetation establishment requires a combination of the following: 1) introduction of species adapted to soil conditions, and 2) modification of soils to allow a wider range of species to become established. To that end, the soil treatment options include the following:
- Regrading slag to reduce slag/soil creep.
- Breaking up fused slag (by bulldozer) to increase root penetration
- Mixing materials into the slag to improve water retention. Water retention amendment systems could be temporary, lasting long enough to establish plants with deep root systems, or permanent, widening the range of species.
- Adding fertilizers, chemical additives, and/or organic nutrient sources (e.g. compost, manure) to improve nutrient availability.
- Introducing nitrogen-fixing plants (legumes) to naturally maintain nitrogen fertility. Examples include: clovers, birdsfoot trefoil, black

[4]Species diversity is important for a variety of reasons. It provides the most potential habitat for attendant wildlife, it provides a diversity of experience for the greenway audience, and it has proven to be the most tolerant of catastrophic natural events.

locust, and bristley locust.
• Covering or "capping" the slag with topsoil, or use of slag/soil mixtures as growing media.
• Heavy mulching to minimize erosion, shelter seed and seedlings, and reduce moisture losses.
• Use of adapted plant species, and a **successional process** (starting with fast growing plants and transitioning over time to more desirable species).



IV. Habitat and Vegetation

What are the essential elements for wildlife habitat?
Habitat = food, water and shelter. Habitat is the place that birds, mammals, amphibians, reptiles, fish, insects, and other invertebrate live and the environment where each of them finds at least the minimum requirements for its existence.

What kind of wildlife are we likely to find in Nine Mile Run?
The best information on this to date is found in a search of literature on Frick Park. The best is found in the doctoral thesis, "The Ecology of a City Park, Frick Park, Pittsburgh, Pennsylvania" by Dr. William LeRoy Black. Dr. Black identified species of plants and other living things found in Frick Park in 1947:

Introduced plant (species)	42
Native plants	201
(134 species were observed on NMR in 1996)	
Moss and lichens	4
Birds observed (species)	107
Birds nesting	41
Mammals (species)	13
Amphibians and reptiles	6
Fish (families)	0
Insects (families)	78
Other invertebrate studied (kind)	12

Wild turkey, white tailed deer, and mocking birds were not identified in 1947. They are commonly seen in both Frick Park and the Nine Mile Run site today.

Successional growth: A natural transition from the early pioneer weedy species to the hardy large-growth climax forests. Successional growth as a management process utilizes naturally occurring growth to remediate soils, mitigating the costs and effort necessary to create an environment that can support a climax forest. Successional growth also provides some interesting ecosystem education opportunities.
Successional species: A species which is succeeded or displaced by another, which is assumed to be of higher value.

Dr. Black also identified five issues that are still relevant to the area:

1. Remove the contaminants in Nine Mile Run, and prevent their return.
2. Increase the amount of water available to plants and animals by:
   (a) blocking the passage of surface streams into sewers,
   (b) building artificial pools and check dams, and
   (c) constructing trails and other works without interference to watertables.
3. Replant as much of the original type of flora as possible; introduce other plants to take the place of the native flora that will not survive; and remove no dead trees or underbrush because they provide additional escape and nesting cover.
4. Control or stop human traffic in those areas susceptible to erosion and abnormal wear and tear by:
   (a) temporarily closing off areas,
   (b) removing trails from critical slopes and areas of sensitive or tenuous plant growth, and
   (c) planting dense shrubbery along the trails, especially at the loops, to discourage "short cuts."
5. Institute nature recreation programs in individual city parks to make individuals conservation conscious; and intensify nature education of children in schools and parks throughout the city, with special emphasis on leaving everything just as it is. (The Frick Park Nature Center had been established with funding provided by Helen Clay Frick in the 1930s.)

Climax species: Native hardwood trees (oaks, basswood, etc.) with a mixed understory.

What kind of vegetation do we find in the Nine Mile Run valley?

The Nine Mile Run area contains a mosaic of vegetation types, heavily influenced by the activities of man over many decades, including remnants of native vegetation types to areas almost completely devoid of plant growth. Five basic vegetation types occur in the Nine Mile Run area:

Riparian: Plant growth along the stream and in the stream valley, including trees, shrubs, herbs, and grasses.
Meadow: Areas of herbs and grasses without significant woody vegetation.
Forest: Areas covered by trees with a distinctive understory and forest floor component, including both disturbed and relatively undisturbed forests.
Slag Slopes: Areas of slag and soil debris with varying slopes and attendant development from short, woody plants **(succession species)** to bare (fused) slag.
Slag Plateaus: Areas of slag with little humus (decomposing plant material or topsoil) with only scattered grasses and pioneer species.

Within all five of these vegetation types, both introduced and native plants occur, although in different proportions.

Quantified data: Data/information with real numerical values.

What kind of plants do we find at Nine Mile Run?

Many of the plant species found at Nine Mile Run are introduced plants and weeds, but a substantial proportion are species that are native to this area, including many native "weedy" species. The native weed species play an important role in a normal successional growth and include species such as staghorn sumac *(Rhus typhina)* and black locust

(Robinia pseudoacacia) that readily colonize bare open areas. In areas of Nine Mile Run, these plants compete with introduced successional species, such as the tree of heaven *(Ailanthus altissima)* which can even grow in cracks in sidewalks!

Relatively undisturbed forest areas of Nine Mile Run contain native hardwoods **(climax species)** such as the tulip-tree *(Lirodendron tulipifera),* basswood *(Tilia americana),* various species of oaks *(Quercus spp.)* and sugar maple *(Acer saccharum)* and a mixture of introduced and native species in the understory and forest floor. The dynamics of this mixture must be monitored to maintain this vegetation type within Nine Mile Run.

Are there any studies of the plant life underway?
Biologists from the Carnegie Museum of Natural History (CMNH) are presently conducting a study of plants and insects found in Nine Mile Run. Plants and insects are valuable tools for assessment of environmental quality and the general "health" of ecosystems. Plants, because they are immobile and thus impacted by whatever occurs on site, can often indicate subtle (or not so subtle) changes in environmental quality. Insects, because of their diversity and specific life patterns, are one of the best groups of creatures to look at when trying to understand land- or water-based ecosystems. Understanding the existing plants and insects on site today can help us set biologically-informed goals for reclaiming or replanting the slag slopes.

Later this summer, a temporary line will be drawn from one slag plateau, through the stream, to the adjoining slag plateau. This "transect" will provide biologists with an opportunity to sample the plant life and its transitions as it moves through the range of soil types and slopes on the property. The overall objective of this assessment is to provide plant specimen-based biological information that will be critical to informed conservation and land management decisions that will affect the development of the Nine Mile Run Greenway. Specific objectives include:

• a list of all plants in the area;
• assessment of the overall conditions affecting plant growth;
• provide contextual information, including historical perspectives from museum specimens and comparative data from similar less-disturbed areas;
• provide **quantified data** on ecological association between insects and the vegetation of Nine Mile Run;
• identify and provide assessment of species of special consideration or concern (e.g., rare, endangered, and threatened species);
• document the occurrence of pests and introduced plant species as well as comment on both present and potential pest problems; and
• provide resource data on the natural systems of Nine Mile Run and offer recommendations, linking the results of this survey to land-use practices.

Summary of Potential Greenway Remediations / REVEGETATION APPROACHES AND LIMITATIONS

GREENWAY SYSTEM COMPONENTS	DRIVING FACTORS	SPLIT PERSPECTIVE SCENARIO: EXISTING NMR CONDITION	SPLIT PERSPECTIVE SCENARIO: ORIGINAL MASTER PLAN
A. SLAG • The constraining factors on plant selection • Available revegetation/ remediation methods • Economic feasibility	Slope	Flat to very steep	Regrade all to 2 horizontal to 1 vertical.
	Water Retention	Poor	Proposed 30-36 inches deep soil remediation provides good water retention.
	Slag/Soil Remediation Methods	Existing soils vary from barren to poor on the slopes, good on the lower plateaus and very good in the remnant sections of shale and floodplain.	Soil/slag mixture to 36 inches, fertilization, seeding, root insulation.
B. VEGETATION • Utility of succession plants • Traditional park space vs. wildlife corridor • Developing biological standards for revegetating a slag dump	Planting Strategies	Slow natural colonization and succession.	Traditional landscaping with soil, other inputs to establish climax, vegetation community upon demand.
	Plant Types	A surprisingly high diversity and some very robust vegetation. Nitrogen-fixing forbes (e.g., sweetclover) and trees (e.g., locust and sumac) have advantage over other species.	Traditional and ornamental species, turfgrass in yards, native climax species to the extent possible.
C. HABITAT • Identify existing species • Wildlife corridor between Frick Park and the river • Human interface with wildlife	Habitat	A riparian (stream side) habitat plus relatively sparse shrubs/scrub and herbaceous habitat on slag pile. Old growth forest on undisturbed hillsides.	Radically regrade and culvert up to 1000 feet of stream. Potential loss of riparian habitat. Creation of some wetland habitat proposed. Preserve old growth forest on undisturbed hillsides.
D. PUBLIC ACCESS • Into and through property • Stream valley and attendant slopes	Public Access	Informal access to and through the site. Inadequate road crossings and trails in need of light maintenance.	Access into the property is good. Access through the property is interrupted by culvert and roadway. Separation between development users and through users.
E. WILDLIFE CORRIDOR	Effect of roads and culvert on wildlife corridor	Existing conditions are unimproved trails with some motorized vehicle use. Wildlife corridor function appears to be good with the passage of deer, turkey and at least one bear.	Riparian stream corridor and slopes interrupted by culvert and roadway.
F. HUMAN-NATURAL INTERFACE	Compatibility of recreation use and habitat	Existing recreation (hiking, biking, jogging) appears to be compatible with some habitat. Motocross bikes and ATVs are somewhat disruptive of habitat.	Culverted plateau may provide for increased organized recreational use. Habitat value is potentially null.
G. ACCESS TO THE NINE MILE RUN STREAM CHANNEL	Riparian corridor access and trails	Currently difficult stream access, good trail access.	Riparian corridor is undermined. East-west trails improved.

ALTERNATIVE REMEDIATION OPTIONS

NO REGRADING	lighter—REGRADING—radical		REGRADING IMPACT
Existing flat to very steep. Mitigate danger on steep slopes with fences and planting.	Create short terraces for safety, access and storm water management. Terracing creates excess cut material.	Regrade all to 2 horizontal to 1 vertical	Construction-phase dust suppression issues. Post-construction revegetation starts from zero growth. Existing flora and fauna wiped off the site. No current standards for revegetation.
Apply veneer of water-retaining designer-soil. Experiment with drip irrigation or plateau stormwater management to speed succession.	Same as previous, potential for depth remediation. Excellent water retention.	Deep soil remediation means excellent water retention.	Improved water retention.
Fertilize, apply veneer of water-retaining designer-soil with aero-spreader. "Designer-backfill" for plantings. Inoculate plantings/seed.	Site-specific approach. Create on-site mix of soil/subsoil and slag up to 36 inches in depth.	Clean slate, strip mining equipment, potential for a deep soil remediation, providing excellent growing medium.	Expensive, but immediate significant improvement of the soil column.
Seeding using veneer of designer-soil and aero-spreader, plus spot planting using light excavation equipment.	Seeding, plus spot planting using light excavation equipment.	Seeding, plus spot planting. Fewer equipment. and irrigation limits. Cost is only mitigating factor.	Ease of access for replanting
Successional colonizing (e.g., locust) with spot planting or seeding of climax (e.g., oak) species to provide successional seed-source managed succession.	Same as previous, or more climax-oriented planting in a site-specific approach.	Successional or climax planting. Broader range of upland landscaping options.	Plant cost is the only mitigating factor.
Riparian (stream side) habitat protected. Slopes need to be managed for successional growth.	More existing habitat preserved with lighter grading than in radical regrading scheme. Potential for robust habitat forest planting.		Significant loss of riparian habitat due to the need to move excess slag into the valley, culverting the stream.
Access into the property and through the property is good.	Massive regrading means massive fill. Road through the property provides potential point of access and point of conflict. Good flat park potential.		Culvert/plateau provides good access to east-west travelers, but vertical interruption of north-south travel.
Probability for no interruption of riparian stream corridor.	Riparian habitat and north-south wildlife corridor access between Frick Park and the Monongahela severely interrupted. Light site-specific grading will produce less fill/culvert potential.		Roadway built on fill, wildlife corridor interruption, significant wildlife impacts.
Same as existing use.	New plateau created by fill provides recreational options that are not conducive to habitat.		Promotes recreational use while denying habitat values.
Same as existing condition, potential for new trails and access.	Riparian access is likely lost, north-south trails need redesign, direct east-west trail opportunities are created.		Introduces another massive artificial landform into the stream valley.



John Oyler
Zinc Corporation of America

Mr. Oyler spoke on the practice and principles of restoring damaged landscapes. Mr. Oyler has been a plant materials specialist on a number of damaged sites, including the Palmerton, PA Zinc Superfund Site and the remediation of the area around Mt. St. Helens. He has also developed plants and technologies to solve many environmental problems.

The following is a transcription of Mr. Oyler's keynote address.

John Oyler
Zinc Corporation of America

Good afternoon everybody. It's good to be here. I think what I'm going to do, the best thing I could do, would be to try to put the Nine Mile Run slag project into a bit of perspective. It's a large project, but it's not the largest. And it's an ugly place to some people's eyes, but not necessarily the ugliest. I'd like to go through some slides real quickly. I've got a lot of them and very little time. But I'll show you some other projects I've worked on and what we have done on those. I'll start off with a real interesting little project a few years ago at Mt. St. Helens.

This is looking at it prior to the 1980 eruption, of course, across Spirit Lake. It's about 9,600 feet at that point. In early 1980 you start to see some bulges on the northwest face of the mountain. Some fumaroles are opening and there are early steam vents. Unlike what we think of as a "typical" volcano which is a nearly vertical movement of molten material, we had a lateral blast. The north and northwest quadrants just collapsed and about a cubic kilometer of material erupted on May 18th, 1980, blowing out that whole corner. It was real quick when it happened. Earthquakes triggered the north face to collapse and it blew out. There was about 150 square miles of land that was devastated within just a few seconds. The air temperature as far as 15 to 18 miles northwest of the mountain was over 700° F. Lots of numbers. It was very impressive. I've heard that over 500 Hiroshima blasts—I've heard over 3,000 Hiroshima type blasts as far as amounts of energy that were released.

Now, on that mountain was about 120,000 acre feet of water tied up in snow and ice, and that melted within—I've heard about a millisecond or two milliseconds. A lot of that went up in steam, but most of it just melted and mixed with that cubic kilometer of material. So you had incredible amounts of water and hot mud coming down the mountainside. The mud at the base of the mountain was over 700 to 800 feet deep, and it was boiling when it was placed. Many months later, you still couldn't walk on that yet. As the blast proceeded down the valleys it carried solid material, built an instantaneous dam, and created lakes. So Blackwater Creek became Blackwater Lake with a very unstable dam that could go at anytime.

It is really interesting what happened after the blast. Little water holes appeared throughout the first four to five miles from the mountain, and different microbes appeared in different ones. We called them the primordial soup. There were green bacteria in some, red bacteria in others. Yellow, even black water. Very interesting. There were human health problems. The trees were blown down. Well, all the trees from four to five miles from the mountain literally evaporated. They were just—gone! You had a falling dead zone then that began around five miles from the crater and that proceeded out as far as 10 to 15 miles, and then you had a standing dead area. The trees that you're looking at here, those are old growth and virgin Douglas Fir. They're anywhere from 200 to 300 feet in height. Each one of those just lying like toothpicks. The amount of energy is just awe inspiring—to see how much damage in just a few seconds.

Probably about eight miles from the mountain there are some remnant dead trees. Lots of ash. Lots and lots of ash. The ash cloud carried primarily to the east and northeast. Luckily, the eruption



Mt. St. Helens in Washington

occurred on a Sunday morning and there weren't that many people in the blast zone. Normally, there would have been several hundred loggers and other people that would have just been wiped out instantly. The tally was actually 59 people, campers and hikers that were in there. These people didn't get out. They said that the people died probably pretty quick. Air temperatures of 700 or more degrees Fahrenheit—one breath of that superheated air took them out. So, people just didn't get out at all. This area was an old clear-cut. Deposition of ash in the area. We actually had five separate depositional eruptions in 1980 between May and October and you can see different layers of the ash. They each have their own character. Very, very erosive material. Just like a pile of sugar.

As we get further away from the blast, probably about 20 miles away, you had this tremendous amount of mud and water that had been the snow pack and the mountain itself. This was boiling as it proceeded down. Very, very sandy and very erosive. It cooked a lot of the trees—just from the high temperatures—boiled water inside the trees. As it went around the outside of curves (where the water has to speed up along a stream), because it was so sandy and grainy, it just ate the riverbanks back taking roads that had been probably 150 feet away from the river at that time, and just ate the banks back rapidly. Took a lot of bridges out. Filled up a lot of floodplain. Just lots of problems. Major problems.

We had to put cinch straps on lots of cattle and lift them out with helicopters. It was just—you know—what DO you do? People as far away as Spokane (which is over on the eastern side of Washington about 300 miles away) tell me that it was a sunny afternoon and the sky absolutely went black. That you, literally, could not see your hand in front of your face. It just came up on the horizon and dropped. You could see the pre-eruption soils out on the range land. So, this effected the entire state in different ways, and ash on top of it. Decimated standing crops or existing crops. On the crop land, it wasn't a big problem because farmers could plow it in. It actually helps the soil when it's mixed in. On the range land, which covers most of eastern Washington, though, you can't afford to do anything like that. The land has such low productivity that you can't afford to even fence it much less plow it or anything else. So there's lots of problems across that area. The white fields haven't yet been turned under. The farmers are out plowing it in now. Very abrasive material—it ate all this mechanical equipment that farmers tried to use. If the lentil crop tasted grainy for a couple of years, you know why now.

Back in the blast zone and nearby, we had to do something. We had to do it fairly quick. The climate out there, basically, from September or October it rains and rains all winter. This eruption occurred on May 18th, which is perfect. The rains were just stopping, so we had a whole summer to do something. We wanted to do it quickly. There's about 100,000 people who live immediately downstream along the Toutle and Cowlitz Rivers and we needed to get this material out of it so, we had to fly on grass seed as quickly as possible. Nothing toxic about the material; pH was near neutral. It was just a logistics and fertility problem. All the roads had been taken out; we had to do it all by air. So we got started as close as we could, as I said, there were eruptions throughout the year. Every once in awhile we had to turn around and head back—the mountain spooked up on us. We got about 25,000 acres seeded in the first two seasons and what we were trying to do was stabilize the areas closest to the streams, get the streams dug out, so that they had room for the water when the rains resumed in the fall.

Just a fertility problem. Very sterile soil. This is similar to the slag pile here at Nine Mile Run. We lost the microbes, okay? We had sterile material



"The eruption cooked a lot of trees—just from the high temperatures—actually boiled the moisture inside the trees."

placed on top (anywhere from a few inches to hundreds of feet deep) and we had no microbial activity. We had very few macronutrients. We had a real nice seed distribution here from the helicopters. Everything came up and started looking pretty good. We had a grass/legume mixture. We had several different mixtures, depending on elevation. Fireweed came in in a lot of areas. It's a natural invader in the Northwest. Suddenly, about 45 days after planting, the whole mountain turned red! What are we gonna do? We couldn't afford to keep going up and re-fertilizing. This material was so porous, nitrogen was just leaching right through the profile. Everything that we put on was deeper than the roots.

Each eruption had a different character and you could see the different layers from the different eruptions. They each have their own character; some were black, sandy material, some were gray or whitish popcorn-like material. We had a few thousand acres of new grass cover that was just sitting there looking like it was about to die and we needed to do something to get longer lasting sources of nitrogen up there. There are several slow-release nitrogen forms up there, including dead elk. You know, we'd find a green spot suddenly in this red field and we'd walk over and there'd be a dead animal. So that was the nitrogen source there. Most of the main types of slow release nitrogen are all dependent upon bacteria. Generally, it's a sulfur-coated pellet with soluble nitrogen inside. You have to have bacteria that can eat that sulfur away. Here, we had none. So what we ended up doing, was that we found a slow-release material called IBDU, Isobutyl Idene Diurea. It's a long chain of nitrogen and you only need moisture in the soil. Luckily, in the Pacific Northwest, you've got moisture. We put that on and the grass took off. You can get that in eight to nine month release form. So, beyond that point, we used IBDU.

We really emphasized the legumes for natural nitrogen fixation and we didn't have any further troubles. Up, higher up on the watershed, Weyerhauser Company in particular was interested in replanting a lot of this area as soon as possible. They came up with a "rhino", it looks like a cow catcher, placed on these dozers. These dozers were running back and forth across the slopes on the contour mixing the ash in with some of the soil, and they were planting in the furrows. So, a lot of people were trying different things. Digging holes didn't really work. The trees drowned. Further downstream, we had several rivers. The Green River and the north and south forks of the Toutle River dumping into the Cowlitz River, which flows down to the Columbia and out to the Pacific. All the side streams along those rivers just filled up with dead trees. Water couldn't get out. We had several hundred of these little tributaries that we had to dig out. The material that backed up into the streams was almost like quicksand—you could walk across it at times and if you stopped and wiggled your feet, you went down to your knees. (Or down to your dozer.) So we had to work from the sides, but we were able to get them cleared out.

We used drag lines that had 15 to 20 buckets on them and generally you could stand anywhere along the river and see at least three of them in your view wherever you were. These were working about 24 hours a day for about 18 months digging the Cowlitz, and particularly, the Columbia River. The Columbia River from Portland, Oregon to the Pacific is 110 river miles. Normally, it has a 45 foot deep, 65 foot wide channel for ocean going ships, the ships just shoaled out and lifted ocean going freighters up—tipped them on their sides. It all had to be dug back out. It was just incredible—the scale of the project. They say that it was second only to the Panama Canal in the amount of material that was moved out. Lots of problems elsewhere down the rivers.

Homes that were, for example, about 200 feet back from the water were affected. Again, as I mentioned, on the outside of the turns the highly erosive material just ate it away. Unfortunately, homeowners insurance wouldn't even touch these places. They couldn't do anything until the house fell in. So people just had to sit there until the house just physically fell for the insurance to give them some money. Lots of houses like that.

About a year later, the lava dome started forming again. There was a real strong smell of sulfur. The dome was growing at about an inch per hour. You could just stay out for a couple weeks and go back and physically see how the earth had grown since



The Blue Mountain site was contaminated by heavy metals.

temperature regimes. It's very cold at night and it's very hot in the daytime. That's not conducive to growing tiny seedlings.

Near constant wind turbulence moving the fine materials around on the surfaces that bruises and girdles these seedlings. It doesn't matter if it's a grass or a legume or a tree, when it's short it's very tender and susceptible to agents like that. Very stony, broken, uneven surface—no nutrients, essentially. High levels of the heavy metals and absence of insects or microbes. The column on the left lists the problems broken down into physical, biological, and chemical. Without looking at the magnitude of any one problem, just the sheer numbers....

This was my "eureka!" thing. Wait a minute! All the literature talks about failure of vegetation because of these toxic, heavy metals, but what about the physical problems here? About two-thirds of those problems on that chart are physical problems. So then I said, "Well, I know that there are metals-tolerant ecotypes of vegetation out there, so just for the purpose of argument, here, let's take anything related with toxicity off the table right now. Let's not even talk about it. Let's just assume we can deal with that. What else is going on?" Well, we needed to use some sort of organic amendment. What I chose for this particular site (for a number of reasons) was municipal sewage sludge. Bio-solids it's called now.

Sludge alone would not work on this site. We needed to be able to put it on the surface and not incorporate it—not plow it in because of the slopes and because of the amount of rock and dead trees up there. We needed something else. Rather than putting sludge on the site and incorporating it with the soil, why don't we first incorporate it with something similar to soil and then apply it? Just the opposite. Alright, so we're looking for a light colored, alkaline, granular waste. Cement kiln dust came to mind. Power plant fly ash came to mind. We looked at different things; we tried them. Power plant fly ash was selected. Now, what else do we need to do to this thing? So this was becoming a designer soil. If you look at the column on the right, you can see that for each of those problems, we found some component of this that lent a solution. So what we ended up with was a sewage sludge, power plant fly ash, limestone, tweak it with a little supplemental potash. Then, we had to get a delivery system that could get it up on that mountain. Well, we thought we might have some system that could work. So we proposed doing greenhouse studies to EPA at that point. How much sludge? How much fly ash?

What I wanted to do was supply 2,000 pounds per acre of organic nitrogen through the sludge. So that was the driving force. And then, you back calculate how much sludge you need to supply that amount and then, how much fly ash do you need? I wanted to use the minimum amount of fly ash necessary. There's no need to put more than we need, but we didn't know how much that was yet. So we had equal volumes in a one-to-one mix, and then the sludge remained a constant amount with half as much fly ash, and then the same amount of sludge with one-third of that, or one to one, two to one, three to one mix (we called them).

We selected about a dozen herbaceous species. Grasses or legumes that were either known or suspected to be tolerant to metals. We grew them in half gallon milk cartons so we could split them open real easy and see what's happening to the roots. We had Blue Mountain soils on the bottom. There's the equivalent of ten tons per acre of limestone and 80 lbs/acre of potash in there—that little gray stripe—and then the sludge/fly ash mixture on top in the various ratios. Looked like two to one or three to one was the best ratio. On the second from the right, there's three to one plus humus. What you see there, that would be the hottest treatment. What I mean by that is, on the surface of Blue Mountain (probably five to ten percent of the face of the mountain) is a black material on top of the soil. That's undecomposed bark and leaves, and those have the highest metal content of anything on the mountain—maybe, ten times higher than the soil itself. So we put that in just to see if that would be any particular difficulty.

What in fact happened is that in the greenhouse, the humus with the highest metals content actually had the best growth in a lot of pots, and we thought it would fail. Well, okay. The legumes did not perform as well as the grasses. We had both warm season and cool season grasses. Warm season



A truck designed to blow flyash and sludge up to 100 feet up the slope.

grasses are slower to establish. Little blue stem actually took up about 1/100 as much metals as tall fescue (or rye grass) so there's big differences in the amount of uptake. Based on those results, this was May 1986, we proceeded to the mountain and we installed ten, one-acre test plots using three acres of the one to one, two to one, and three to one ratios, and the one acre control (that received the same amounts of limestone, potash, seed, and mulch but no sludge or fly ash).

The truck that you are looking at is the real key to this. It's similar to a salt truck or a cinder truck, but instead of having spinners that throw material out to the side, it has a fan that literally blows the material out. This is critical because you have to be able to apply solid material on slopes like this. We found that we can apply with consistency 100 feet uphill or downhill from the terrace routes. We brought in fly ash and sludge, mixed them up on site transported them up the mountain. Here we are blowing on the sludge and fly ash.

It's about 54 percent, 55 percent solids after it's mixed. We can lay it down. We're putting on about 200 wet tons per acre or product tons per acre. That's about two inches deep on completion. It would lay down five foot, 30 foot, 70 foot, 90 foot—two inches deep all the way back. It was like a lawn sprinkler.

After the application we had a nice neutral color. We wanted something to lighten the black color of the sewage sludge. The black on the surface would absorb excess amounts of heat and it would crust and it would dry, and it wouldn't re-water well. The fly ash neutralized that, and this light gray color that we have does not absorb large amounts of heat, and also, the sandy texture of the fly ash keeps the mixture open.

We narrowed down the list of species based on the earlier greenhouse test. We hydroseeded just because they were small plots—and hydromulched. Even the mulch we are using is shredded newspaper (trying to recycle materials). Within a few weeks following that again, back in 1986, we had decent germination. This photo would have been, probably, October of 1986 after one growing season.



This test plant (little bluestem) grew differently in varying mixtures of existing soil and nutrient additives.

We're outside a couple different Pennsylvania DEP sludge application regulations. They require that the sludge is plowed in or incorporated within 24 hours of application. We could not do that here. They have a slope max of 15 percent for land that receives sludge. That's only about like a beach. It's quite flat. We had much steeper slopes. We found this material is very non-erosive. This is after the third wettest year on record at Palmerton, and we were 13-1/2 inches above the normal 40 inches of precip that they get. You'll see the sludge and fly ash mix clinging to dead trees. Those trees have been sanded in the wind and they're almost as smooth as furniture, but the material stays on them for a couple of years. It did not move. Since then we have been through (up to 2.87') rainstorms in just a couple of years. Even with that intensity, this material did not move, so we're real pleased with it. In 1987, after two growing seasons, EPA said, "Yeah, that's the way to go. We will now do that on the whole mountain."

When I began this project, I was working for the U.S. Department of Agriculture and during that time, I switched over to the company. So we now had to go through lots of legal proceedings and, basically, what we did was we had to negotiate a consent decree or court order with EPA and the company then took the lead for this work away from EPA. Beginning in 1988 then, we took these few original test plots that you can see, and we began doing the design work for the entire project. That began full scale, then, in 1991—lots of legal problems and it took several years to work them all out.

You can only apply sewage sludge in Pennsylvania between April 15 and October 15 of each year, so we're limited to that half year window. We broke roughly 1,000 acres of this unit into five phases to be completed over five years and we ended up having to put in 66 miles of roads on the face of the mountain. There are two types of roads. We have access roads that head up across the slopes, and then we have the working terraces which are spaced 200 lineal feet apart, and from each terrace, we have about 100 feet down and 100 feet up. That was one of the major problems, just building all those roads. The Appalachian National Scenic Trail runs right on the crest here, so there's additional PR problems associated with that. It's the only Superfund site for the whole 2,000 miles of the trail.

It's funny, if I've got a minute here. I was working with the people in Harper's Ferry at the

National Trail Office. We stay in touch and just in my own mind, I had assumed that these folks would want a complete site restoration—everything the way it used to be. They said, "Well, we know you probably have to revegetate it and do all that, but will you do us a favor?" And I said, "What's that?" They said, "Please don't plant any trees up there." I said, "What are you talking about?" They said, "For the whole 2,000 miles, you can never get a good view. There's nothing but trees in the way and this is one of those few areas...." (Audience laughter). Yeah! You never know where people are going to come from! That's something to keep in mind here.

Here's a shot from across the valley, on an area called Stoney Ridge, actually, a terminal moraine from the last glacier, looking at the north face of Blue Mountain. This is May of 1996. You can see that we have greened it up. We are real pleased with it. Because of the regulatory considerations on a Superfund site, we had to plant more grass than I like and now we're paying the price for that. We don't have as many trees as I would like yet, but I suspect that as the grass competition decreases in the future that more trees will be coming out. We closed out our terraced roads on the way out. We just treated them so they're all vegetated again, too. We still have the access roads open, though.

I guess in closing, the one thing I'd like to say is that we all want to think our sites are unique. There's thousands of sites around the world—they are all unique in their own little bit, but they are fixable.

They are fixable. Technology exists out there to do whatever we need to do on the Nine Mile Run site. Just don't think in your own head that we can't do something. Thank you.



The Blue Mountain project began in 1988. This photo shows an area called Stoney Ridge in May of 1996.

Project

Tim Collins, NMR-GP
Court Gould, Wildlife Habitat Council
Sharona Jacobs, NMR-GP
Doug Lambert, graduate student, Carnegie Mellon University
Nicole Newburn, Environmental City Initiative
Kirk Savage, University of Pittsburgh
John Stephen, NMR-GP
Ken Tamminga, Pennsylvania State University

Community

Elizabeth Barrow, Sierra Club
Jerry Kruth, Audubon Council of PA
Bill Lawrence, Friends of the Green and Seldom Seen
Richard St. John, Community Design Center of Pittsburgh
Rita Schaier, Friends of the Riverfront
Jon Smith, Banksville Civic Association
Kathryn Vincent, Chartiers Nature Conservancy
Residents: Jack Solomon, Claire Staples, Ned VanderVen, Linda Whitney, Lois Liberman, Paul L. Peffer, Jr., Jeff Rothschild, Kenneth Kotovsky

Government

Mike Benton, Urban Redevelopment Authority
John Doyle, Advisor, Allegheny County Parks
Jonathon Kass, Intern, Department of City Planning

Public Access and Habitat Corridor Roundtable Discussion

Stephen: My name is John Stephen, I'm with Friends of the Riverfront as well as with this Nine Mile Run Greenway Project. I hope that this discussion will resolve one conflict that I have: that of active use versus passive use. When I first discovered the valley, I was on a bicycle—I bicycle here often—and I see the wonderful recreation opportunities that exist here in a great network of greenways throughout the city, first and foremost being the Three Rivers Heritage Trail along the river. There are other uses for the property. The habitat there is coming back to life. There are many access points. Court Gould is here to help as well. He is a consultant for the Wildlife Habitat Council...if you would like to explain what that organization is, Court.

Gould: The Wildlife Habitat Council, allied with Nine Mile Run, promotes greenways as habitat corridors not only for wildlife, but also for the benefit of communities, reattaching people to the watershed, and also the material benefits related to quality of life and regional economics as well. We are working on a project to have a more collaborative approach to Pittsburgh's three rivers, greenways, and their habitats.

Stephen: To begin with, I'd like people to talk about how they use the site now, how they access the site, and describe a little bit about how you would like to use the site in the future. Please discuss what you feel are the most valuable resources within the valley.

Lawrence: I don't live in the East End now, I moved here 15, 20 years ago and I used to visit the site fairly regularly when I lived in East Liberty. I space my visits out now. There is fairly heavy undocumented use. The city doesn't think that anything that they don't pay for exists; if they don't have to pay the Parks Department, there isn't any recreation. I feel that I use it less, because it would be nicer as a park, but it would be less "messy" nature, more manicured and kept, there will be a less "bushy" nature.

Stephen: There are a lot of wonderful greenways that have a kind of back woods nature.

Lawrence: Yeah, I'm not saying it shouldn't be there, it's probably useful actually.

Stephen: It's interesting to think of this project as a greenway project. A greenway has a rather vague definition at this point in time; the meaning of this word has different natures at different sites. But the city does have an existing greenway programs where some of the hillsides are set aside and adopted and used for very passive recreation.
Collins: Could everyone state their name and what they did the last time they were on the site?

Benton: I'm a runner, and I've run through the site several times.

Liberman: I like walking through the site and having it as an access to the riverfront where I can see the city.
Barrow: I use it as an access to the river and on down to Schenley.

Kass: The last time I was on the site, I took a tour of the combined sewer overflows.

Lambert: Before the tour this morning, I rode down the site last night on a bike, had a good time. I'd like to be able to read a book down by the river.

Peffer: I live in the neighborhood on Mt. Royal Rd. We don't really use the site because of the pollution and because it is very hard to access it conveniently. It is rather unattractive and polluted the way it is.
Kotovsky: I access it usually through Frick Park, I hike through there to visit friends, and I use it for access to the river as well as to Schenley Park.
Rothschild: I live along Frick Park and my major concern is the impact of this project.
Whitney: I live in Regent Square. I like using the area for running. The last time I was in it, however, I brought friends to see it—friends from the Allegheny National Forest—and they thought it was great. They'd never seen a slag dump up close. They were surprised by the amount of vegetation on the site.
Vincent: I'm here from the Chartiers Nature Conservancy. I'm here to learn.

Newburn: The last time I walked the sight I saw a ratsnake; I was surprised to see it on the site.

Kruth: I'm from Squirrel Hill. I'm interested in wildlife corridors and greenways. I'm interested in people and nature.

St. John: I'm interested in the interconnectivity of the greenways and parks; I am a runner. I'm also involved with the Community Design Center of Pittsburgh which is interested in parks and open spaces.

Doyle: I'm a naturalist at the Allegheny County Parks, and this is my first time here. I have yet to completely explore the area, and I was very impressed with how the slag piles look; I wasn't expecting nearly as much vegetation. You've got a real opportunity here. I hope it is used not for political reasons, but for ecological and recreational reasons.

Tamminga: I teach landscape architecture at Penn State, and I'm involved in the site in terms of a small student research project looking at landscape ecology, open space, and greenway issues and some of the social concerns involved with Duck Hollow. I have five students working on this.

Staples: I'm from Squirrel Hill. I'm involved with mountain biking and walking on the site; it's great access to the river. I bring my out-of-town guests to see the site.

Schaier: I'm with Friends of the Riverfront. I'm curious as to the business aspects of this, and how the housing will affect the site.

Collins: I'm with the STUDIO for Creative Inquiry and the Greenway Project and I guess my favorite way to see the site is through my bike rides through the site to get home to the South Side from CMU. You can get lost on the way home.

Smith: I was born and raised in Pt. Breeze and Frick Park. I'm a resident of Banksville now, which is really a small run corridor and I live right on the edge of 15 acres of woods.

VanderVen: I'm a resident of Squirrel Hill, and I'm within easy walking distance of the north end of Frick Park. I like walking into the site from Fern Hollow and go on down to the river. I'd very much like this changed into a corridor which leads me all the way to the river.

Solomon: I'm a former chemist, currently a lawyer, Squirrel Hill resident. I started walking down here almost as long ago as Jon did, a half century ago. I typically bird watch and botanize down there. I think it's beautiful in a stark and amazing kind of way. It reminds me of the far west, of the Badlands. That kind of ugly/pretty is what I mean.

Savage: The last time I used the site was for biking. I'm interested in how to reconcile all the various ways people use the site and try to maintain the site, but not in a manicured fashion.

you'd been gone. Real eerie. No place to park up there, either.

This second site I want to mention is a little closer to home. It is Blue Mountain. It's about 15 miles north of Allentown over on the eastern side of the state, in Southern Carbon County. It's an EPA Superfund Site, currently. We have four operable units: the Blue Mountain; the cinder bank (which is a slag pile that's about two and a half miles long and about 33,000,000 tons of material); offsite soils (which are all the soils in every direction from the zinc smelters that are above background in heavy metals, that's still to be determined in area—looks like it's going to be in the area of 30 to 35,000 acres of land, though); and then, area surface and ground water. We do have a contaminated aquifer at that site and we are beginning to work on that.

I'm going to limit myself today to the Blue Mountain unit. That unit has moved along a little bit faster and we have more to report. In 1898, the first smelter opened there and a second in 1911. The early ores they were working were a smithsonite mineral which is a zinc silicate and there weren't a whole lot of pollution problems associated with it. That played out in their mines, and they had to switch to sphalerite minerals in 1915, zinc sulfide. So you had lots of sulfur that needed to come off these ores as they were being processed. Estimates that we have today, suggest that between 1918 and 1970 when the first scrubbers were installed, we averaged about 3,300 to 3,600 pounds of sulfur per hour coming out of the stacks. It was 24 hours a day from 1918 to 1970. Steep valley—the air tends to hang there. You get inversions in the summer. The first scrubbers went on in 1970. Sulfur emissions dropped to about 1,400 pounds per hour until 1980 and all smelting ceased at that point.

In 1982 EPA came in and proposed listing it on the NPL (National Priorities or Superfund List) and in 1983, it was finally listed. That's when I got involved. While the sulfur dioxide was in the air, fumigating the forest, you had particulates of lead, zinc, and cadmium dropping back out of the sky (that had come out of the stacks). Here's what you're left with. We had—the earliest reports we could find were letters to the editor, or notes, as far back as 1922 where amateur naturalists were talking about the understory on Blue Mountain. It didn't look like it had in the past, and the blueberries weren't as good as they had been, etcetera. We found aerial photos from the 1930s to the present and you can see holes in the canopy of the forest appearing in the 1930s. They are getting larger by the 1950s. By the late '60s and early 1970s, the ecosystem had just been stretched like a rubber band and couldn't go any further and just snapped. In just the course of a couple of years, the whole mountain ecosystem collapsed.

What in fact happened, the existing trees were rooted a couple feet deep in that soil. All the metals that were hitting that soil got bound on soil particles and didn't go much below six inches deep. The sulfur dioxide was working on them, but as the sulfur dioxide finally took out the old growth forests, young trees couldn't come in and the whole thing just collapsed. The high zinc levels in the soil took out the soil microbes, bacteria in particular, and so there's no decomposition. There are no nutrients cycling. There's no food. Zinc, of course, is the active ingredient in a lot of your burn creams because it does kill bacteria so well, as you can see here. So what do you do?

We started a remedial investigation. In 1984 (we) began looking at this and found that there are smelter sites just like this all over the world. None of them had ever been vegetated—anywhere. EPA was about ready to order the removal of the top 12 inches of the mountain (assuming that there was a hazardous landfill within 50 miles of Palmerton, which there isn't). The cost in 1985 was about $485,000,000 just for excavation and disposal. So I suggested to them that we consider an in-situ stabilization. If we can get the pH of the soils up near neutral, we can get the metals in the soil to form very low solubility compounds. They won't dissolve and go into solution; they can be held where they are and would be unavailable for vegetation. But again, how do you vegetate?

Well, before I get into that, let me tell you what all the benefits would be assuming we could vegetate. We could increase evapo-transportation. That's the amount of water that has evaporated from the surfaces of the soil and from the vegetation itself. That's about half the rainfall that hits, so that would decrease the amount of water running off that could carry metals. Also, it could decrease the amount of water that could percolate through the soil and contaminate the aquifer. We would stop wind and water erosion which would stop solid materials from going across.

But how do we vegetate? We have a list of problems here. We have very unstable slopes. We have very steep slopes. A lot of slopes on that portion of the mountain are 100 percent to 150 percent or greater slope. Inhibitory water regimes (what I mean by inhibitory is that we lost our moisture holding capacity). It's very dry. You can have a half inch of rain and literally a couple of hours later, dust is blowing from the surface again. Compacted, cemented surface. Inhibitory surface

Lawrence: I belong to the Friends of the Green and Seldom Seen. It's a natural area of about 40 to 50 acres in Pittsburgh. It's the main sizable open space south of the Mon River before you go out toward Upper St. Clair. Last time I was here, I was with friends from the Seldom Seen group and they were bird watching and I was enjoying the outdoors.

Gould: On my last visit, I was enjoying a walk along the informal path by the stream, and bird watching and looking at all of the vegetative growth. It's amazingly healthy.
Stephen: We've heard a broad array of experiences, and what we should really think about is what are the essential experiences of the site that we should capture. Most of you have had some type of wonderful experience at the site, realizing that it is not a pristine wilderness, but it is a work in progress. I was wondering if we were able to work on getting more people actually down to the site to experience it...Paul mentioned that he had a worry, that he doesn't want to use it because he hasn't had many of the experiences of the wilderness that the others do. What is it that we can do as we start to develop the greenway project, to educate people to get them down to the site? What are the essential experiences that we should try to capture? Any thoughts as to what are the habitat lessons that we can explain?

Solomon: I'm not sure, but it seems that fixing that bridge might be a step in the right direction; is this what you are talking about?

Stephen: Well, that's a start; it speaks to the access issue.

Collins: Yeah, it creates a relationship to the stream.
Kruth: Do you think the bridge would give better access to the greenway?
Solomon: Yeah, they should at least fix it so that I could more easily traverse it.
Kruth: What is the status of culverting/not culverting the stream right now?

Stephen: The general trend right now is to continue to analyze the economic relationships between the scope of the development and how much grading has to be done, and in the end, how much they have to culvert. This is a determination that the URA is progressing through right now. No final decisions have been made yet. Maybe there are some ideas that we could integrate into the planning process about the value of the stream or what should be done about the steep slopes so maybe they could make a better decision.

Peffer: From the focus group a week ago Thursday, I understand they want to move 4.2 million feet of the slag and now they're talking about 2.2 million, so they're talking about moving a lot less slag.

Stephen: The amount of grading is being cut back; as they scrutinize the economics of grading.

Collins: So what's the cause and effect on the greenway? Jerry, you've come out publicly against the culvert. Why do you see the culvert to be such a problem? What good comes out of the culverting? What bad comes out of the culverting?

Kruth: What I have expressed in the past is the stated position of the Audubon Council. What I have felt is that maybe one has to look at the topographical realities and try to mix in with economic conventionals. My original position was this, if you place the stream in a culvert you actually sever that continuity. If you look at the stream as part of a living organism, if you pinch it somewhere, you actually choke something off. If you want to take that kind of esoteric view, which I think can be valid. That was my public position on this but in talking with you and a lot of other folks (including Mr. Schnieder) if no houses are built, there is no greenway. That is a position being alluded to here. That being the case, perhaps the stream then has to be culverted. But when you do that, then, the whole issue is people's use; if you want to follow the stream and suddenly it disappears, then you are going to have to rise. One of you, again I think it is you, John, who has said that some Squirrel Hill residents felt it would be tragic if that culvert takes place. That severance of the stream would damage the corridor if you have a stream that suddenly enters a pipe. But again, if you look at the topographical realities, how do you cut a corridor that remains wide enough to allow two bicyclists to pass given that material and try to retain some type of continuity? And what happens to housing plan phase III? Does that remain isolated on one side of the grand canyon, while on the other side remains housing plan phases I and II? So I am not sure and my own position has become more malleable.

Stephen: The culvert would cut off the habitat corridor for things that depend on the stream, clearly. We've seen beaver further up, up towards Commercial Avenue and the meadow area. I think its clear that the culvert would certainly cut them off.

Tamminga: There's also a linear and vertical discontinuity. There are organisms that use the stream and then move into an

upland terrestrial habitat, salamanders and so on....The eastern newt needs to live it's juvenile and adult stages in the stream, and in it's eft stage it needs to move uphill so to speak. It can't do that if this place is culverted, so there's that sort of vertical cross section as well. And the newt is an example of a creature that goes up and down the slope, looking for the stream at the bottom of the slope.

Schaier: One of the things that we should look at when we discuss the culverting is who is the person, or group, or body who is making the decision as to this, because it is this person or group we need to influence to say one way or the other. And is there a deadline for it also.

Stephen: There's no deadline for the decision. The developer would have the say on the economics; there are regulatory agencies that would have some say as to what type of culverting could be used.
Tamminga: Could we just carry to concept of no development, no greenway a little bit further? What becomes of Nine Mile Run if there is no development?
Stephen: There is no denying that the corridor exists and that it is being used by habitat and there is also some work to be done with sewage remediation regardless of whether the development comes to be. My thought is that the greenway exists. It's just how much are we going to change it.

Peffer: As I understand it, if the Nine Mile Run project does not go into effect, with the housing and the additional revenue, it would greatly reduce the money available for a greenway. I think it is a clear statement. Without the Nine Mile Run housing project on both sides, there would be very little money for the greenway.
Lawrence: The other thought is that if there wasn't the development, the city would peddle the heaps for something else like a shopping mall. Some future administration will want taxes from it.
Smith: I think its premature to say that if they don't build housing on both sides in very much the manner in which it's been shown, that there won't be a greenway, I think that this is probably not correct. They can very much affect the kind of buildings and what kind of greenway there will be. You can build it on the cheap and you can build it on the expensive; there are a thousand ways to build.

Newburn: One of the things that I found once I started touring the site, is that I never realized how beautiful the site was, you know, right by the trailer, and I think

this is because of the lack of access for the public and the parking issue. When we talk about public leverage about what happens to the site, we can make the area around the trailer and that path more accessible. I think you could build a constituency of some type or a regular usage down there, that beautiful section, if we could figure out a parking thing—maybe on the field right near the trailer—so that people aren't parking on the street. I know there's parking in Frick Park and near Duck Hollow, if somehow we could isolate it out at a center. So maybe, as far as access is concerned, could we open that or create some sort of gravel parking lot as this process continues, or is it too dangerous to do something near Commercial Avenue?
Stephen: It could be done. There are a lot of bicyclists and walkers that go through the site. But definitely creating car access would open it up to a lot more people.

Kotovsky: It seems to be that the housing/culverting issue maybe should be looked at in a different way. It seems to me that it could make the housing much more attractive, that there doesn't need to be a conflict. It seems to me that the housing would be much more attractive if it was on a stream, there were nice walks along the stream, and you could get to the river, that maybe there could even be a marina back there, with boats tied up. The fact that you live there and it is really Squirrel Hill is fine. That is one selling point. But tying it meaningfully to a waterfront, and a waterfront that opens up on a big waterfront could be a big winner to enhance the housing project. I wish we could learn to look at this differently, and learn to take advantage of the existing topography.
Solomon: Is the steepness of the slope a vegetation issue? Because steep slopes are nothing unusual in Pittsburgh. There are stairways on many slopes. If there was a stairway on a hillside vegetated with flowers, it would be a real nice walk down the stairway down to the creek, maybe have a little bridge across it at the bottom of the stairs.

Stephen: I asked John Oyler that kind of question and he did not say anything intimidating about the reforestation possibilities.

Smith: I don't want to talk too much, but we've also built roads in a lot of places like Schenley Park and Bigelow Boulevard, and we have terraced vertically, but let me go back one topic to access. Maybe we're talking about too many topics at one time, but when we're talking about access, let's

be very practical, and say with an area like this, a damaged area, there is a natural constituency of people who would like to access a place like this. They tend to drink beer and tend to ride machines that make a lot of noise and they tend to dump trash, and as we create more access, the people who say, "That's great..." are not necessarily the people who are going to come down to admire the vegetation.

Peffer: Since we're talking public access, the traffic study, completed by GAI Associates, indicates right now that approximately 38,000 cars on Browns Hill Road. And on Forward Avenue and Commercial Avenue, we're already averaging 52,000 to 54,000 cars a day—right now under current circumstances. So this will affect public access with the development and the greenway. It's said that potentially by 2008 that if all 900 homes are on line that Forward/Commercial will have gridlocked traffic which will affect the greenway, I believe, the way I see things right now.

Doyle: Speaking of money for the project, public access can be greatly improved by having enough, and the right volunteers. Working in South Park, it just amazed me about how many resources are out there, like Eagle Scouts. I get an endless number of requests for staff projects. There are people out there who also want to practice construction techniques. These are possible sources of help.

Gould: I just wanted to comment on an observation of what we are talking about directly: public access is a forerunner for appreciation of the greenway and the habitat, and that greenway and habitat does make a material contribution to property values. There are studies across the nation that document that property values escalate the closer they get to a greenway, leaving the community a place to ride or stroll or walk. John knows better than anybody that Friends of the Riverfront commissioned a consultant to study the impact of the Three Rivers Heritage Trail in terms of tourism dollars on the City of Pittsburgh. The number of dollars was significant. But maybe what we are talking about here is further study of economic value of this greenway to property values.

Kruth: John, how many of today's tax dollars would be used to maintain the greenway? What would be the net benefit? I suggest to you that you get somebody to come forward with a number, advance that figure. This could affect the controversy surrounding this.

Rothschild: With the Phase I, Phase II, and Phase III scenario we are looking at roughly 150 rentals. It will not be all single family homes.

Staples: They still pay taxes.

Collins: Excuse me, all this conversation is very good and this is a dialogue that needs to happen, but we set up here to talk about greenways. Could we please confine this discussion to greenways? One of the questions I think is important to ask is how is this greenway unique? How is it different from the other greenways in Pittsburgh? What is the value to the local community, the adjacent homeowners in terms of greenspace and recreation, and also what is the value of it in terms of the larger region? How do you explain to somebody the import of this? How do you explain to somebody in the South Side the importance of this, the South Hills, the importance of this?

Tamminga: I think that this site has some really interesting stories to tell. Where else do you have this industrial heritage of Pittsburgh with the resilience of nature in the middle of the city? The potential to link up with the Three Rivers Heritage Trail is fantastic. So just as a learning experience there is a lesson of who we are as Pittsburgh, who we are, where we are going. Listening to the others, it seems as though it took effort to gain access. We are all able-bodied. As this becomes a movement, I worry that it may start to become elitist. I believe we should be inclusive, so that everybody can access Nine Mile Run, including those in wheelchairs.

Lawrence: Going off of that, I believe that few people have an idea of the topography of this place; it could be 10 acres or 3,000 acres. If they live on the edge, they don't have a concept of how large it is. True, these are not the people who use it now, most people who see that place who aren't kids, see it twice a year or less. We have tours of up to 30 people of which about seven are core people. So we are reaching out, for many of these people who never go in by themselves. They don't really know where they are going. Unless there was a fail-safe way of knowing they could get out, I don't think they would ever go in by themselves. That does take quite a civilization of the slag pile. You need a loop trail that comes in and goes out.

Collins: Yes, I understand that people these days don't have much of a sense of topography. But people know that if you go in that you will hit the Monongahela; valleys with streams are usually surrounded by water and if you orient yourself to that, it's pretty hard to get lost.

Lawrence: But that's you; you grew up in the rivers. To orient people, do you hand lead them on walks, or provide a trail?
Solomon: I guess you bring people by bringing them, or they meander in by themselves...it's a beautiful place to look at. Frick Park served for us as city kids, as a remarkably wild place. They used to have Frick Park Junior Naturalists. The Nature Center there was a window into science for me. Drifting back to culverting would be a sad thing.

Kass: I'm fairly new to Pittsburgh. This is the only stream in Pittsburgh that is not culverted. This makes it very special. This project is particularly relevant to my generation in its approach to remediating, which is very relevant to our generation. If teachers took it upon themselves to make projects about Nine Mile Run, this could be very useful for the next generation as well.

Liberman: I wanted to say that when people speak about how beautiful the area it is, I have a hard time identifying with it; it has a bad image problem. You could use the most vivid words to describe it, yet somehow, a segment of the population sees it as a dump. They've grown up here. Realtors give it no value. They see it as a dump.

Stephen: I go back to getting people down there. It's the best thing we can do. It is a challenge, but it really does impress people. We need to educate people about the challenges too.

Whitney: But the city doesn't want us there. There's a no trespassing sign.
Kruth: I think one thing is really obvious—look at how many people utilize the place, look at all of the people here today. There are no through roads. That makes us different. That is why there is beaver here. Have there been other streams of this type that have been culverted and if so, what has the effect been?

Doyle: I've got to wonder if 5, 10, 20 years down the line an eyesore will be the only end result of culverting.

Lambert: Someday, it has to be replaced. No culvert can last for eternity. It's going to have to be dealt with in the future.

Doyle: Why is the culvert needed?

Stephen: It's really for the economic footprint of the development, and also for the management of the slopes.
Collins: Mike, is this correct?

Benton: Culverting right now is just one of the options. We're just looking into what is possible right now...looking into scenarios of moving the slag around.

Staples: There is a strong commitment to not moving the slag to somebody else's yard.
Vincent: I want to mention regarding the abilities for the Scouts to help out. Down where we are with the Chartiers Greenway project, we had about 120 Scouts one Saturday morning, and it was pouring down rain but they came out anyway. And they hauled away all these car parts, about 50 tires, all kinds of stuff. They were in the ravines pulling trash out. They did it all in one day. Then you call in a city truck and they get it and haul it all away. So when someone says, "Hey it's a mess down there," you can say, "No, we were down there and cleaned it up." This is something that can be done. It just takes an organizational effort.
Lawrence: Sometimes the mess is "code word" though. A lot of people really fear and hate nature. They see a woodchuck and they fear getting attacked, and things like that. They see grass more than an inch high and they fear rats everywhere. That kind of thing isn't quite as common in this part of the city. But I don't think that it is entirely absent. So instead of saying they hate nature, they say that it's a dump. Every natural area that anyone ever wanted to save was "just a dump," because there was always some dumping.
Smith: Let me address a couple of things...it's hard to develop a very large stream. It's hard to culvert it simply because it runs enough water that you don't want to put a culvert there because it can become a dam. Saw Mill Run becomes a dam every now and then and they are currently buying out Ansonia Place. The large creeks are hard to do anything with. They are hard to develop. In 1910 Frederick Law Olmsted, Jr. wanted to create a park along Saw Mill Run, like Nine Mile Run here. It is hard to do. It sounds like it should be easy, but when you start to think about how to do it, it gets very much harder. I find it hard to imagine talking about Nine Mile Run without being able to walk alongside and seeing the run in some fashion. In other words, if you can't walk along it and see it, is it really Nine Mile Run? The answer to that question is no. That does not mean you can't build a two lane road along side it. It doesn't mean you couldn't only have a walking path. It doesn't mean that you may not have a row of houses on fairly spacious lots. There are a lot of things you can do with the corridor. The main thing you have is the corridor from the river up past the Irish Center, through Frick Park toward Linden School in Point Breeze. The unique

thing is that it is a corridor. You can bridge it, you can put roads through it but it is still a corridor.

Kotovsky: With this idea of a corridor; it is a corridor that leads to three things that are wonderful. Frick Park, surrounded by very large population areas, the river... Pittsburgh is a study of disconnection from the riverside. We've always had problems with access to the river. This kind of pulls a big chunk of the city into a riverside context. People drive many miles to go to the Ohiopyle when we have this resource here. It could be a real regional asset right here. It could be absolutely spectacular here if done right. Tying the two ends together is just a spectacular opportunity and culverting seems to be against that.

Kass: I have one last comment regarding the parking issue which is so central to access discussions. There is a dilemma in my mind in that giving people access is central to this project because the main function is to educate people about the habitat and open space. Yet the idea of giving up even one parking space of the natural space for cars seems like a terrible idea. For those people that want to use their cars to access recreation, there are so many places where they can do that with parking access. In the interest of having a balance it seems to be very nice to have a place that does not sacrifice any space for that use.

Savage: You can go to Fern Hollow to park, you just have to know. I don't think very many people know that you can park there and get to the site.

Staples: How do you get in...there are dozens of ways to get into the site...

Stephen: You just have to make it clear.

Barrow: It looks like the park ends at Commercial and no one knows to cross it. And it is dangerous to cross there.

Stephen: Commercial is acting like a barrier to the greenway.

Barrow: And if there was a way to walk over or under it, it would be easier for people to explore.

Peffer: As we talk about access to, I was on the river last night, and I had to drive all the way over to the North Side to get to a dock, and then we had to come all the way down to see Squirrel Hill. The only other place for a small boat to stop is Sandcastle. It's beautiful on the rivers, but there's nowhere to stop.

Collins: Maybe it could be an essential element of greenspace design is to put in a public dock.

Peffer: I think there should be something, it would attract a great amount of activity.
Smith: I once spoke to the Mayor about the dock in the South Side. It was so popular, I asked him, "Why don't you build another one?" He gave me a typical Pittsburgh response, "But we already have one."
Lawrence: It's the city's budget that maintains them. I don't think we should be completely provincial but it is completely understandable why they would be reluctant to put in more boat ramps.
Peffer: Why don't they charge?
Lawrence: They can't, they were put in by the Fish and Boat Commission and their regulations don't allow fees.

Collins: I live on the South Side and watch the fishermen come in and buy ice and beer...they're good for the city.

Lawrence: I'm not saying we should be hostile to people outside of the city, but the city budget...and Sandcastle did offer a piece right by the Glenwood Bridge. And no one took them up on the offer of a free boat launch. There is a possibility. The Fish Commission will give you the money to put in a ramp, but the local government pays for upkeep.
Solomon: Any chance of a private developer to put in a dock and turn a profit?
Lawrence: There are some private ramps.
Peffer: But ramps are different than docks.
Staples: What was the connection between the Fish Commission you mentioned...?
Lawrence: They have a fair amount of money to build public access sites, but they make the local government say they'll maintain it forever....
And usually that local government represents a small percentage of the people who use it.
Staples: They can't charge?
Lawrence: Yes, they in turn can't charge, it's one of the conditions. I think if you own an $8,000 boat you should be able to afford a buck or two. I don't keep up on all of this, but a few years ago there was discussion of paying back the Fish Commission so the city could charge for use of the ramp. I don't know how it turned out.
Kruth: Coming back to the greenway, there are not many streams through urban communities. There are not that many times that Mother Nature gives us a second chance. Marilyn Skolnick of the Sierra Club has said that maybe too many houses are being built there. Maybe you guys, as part of your charge of what you are doing here should address are we trying to create a greenway, are we trying to extend a park,

are we trying to attract housing? Should the question of the number of housing units drive the discussion of the composition of the corridor? Or should the greenway stand as a shining example of how we can reclaim a brownfield.

Stephen: Maybe we should focus in on our interests of the greenway, thinking how to develop a business plan for the greenway. We talked about the challenges of maintaining a greenway as a budget item for our team, but we need strategic thinking about how there will be funding for the project. There's actually a model of stormwater utilities with a fee for stormwater management. Looking at the benefits of a greenway to the houses and the watershed around it, we should consider using a utility fee added to local houses to maintain the greenway.

Collins: I think it is interesting how everyone uses the site as corridor, and how they access it. What are the arguments you can make for the existence for the greenway, what benefits are there to the city?

Kruth: Then you come back to this: Is this to be a greenway or a housing development with a bit of a green? What are the economics involved?

Tamminga: All over the country, you can see that it is economically imperative that we build above the 100 year flood plain. You can talk a little bit about the economic value of recreation, or a marina, but you can't put a dollar amount of a greenway.

Kruth: I understand that.

Smith: Just to show you what a cynic I am, I think 99.9 percent of the drive is to build the housing project. However, I think that there is also a push by the state to clean up the stream, and there is certainly a popular constituency for parks. You probably can't put in the housing if the park constituency, the green constituency, opposes it. In terms of what is really driving the Mayor and Council, what is really considered important is that you have a thousand houses on the top of slag mountain.

Peffer: Isn't one of the most expensive costs cleaning up the sewers?

Collins: Sewage was a big problem in 1910 and is still a big problem; no assessment has been done. Someone is going to end up paying the piper in the end.

Peffer: That should be included in the greenway project. It needs to get a dollar amount. It directly affects the greenway. We know that fines are not being enforced on the communities with overflow problems and that is a shame. It could be part of the funding source for us as well.

Collins: Part of the problem is that if the developer has a carefully bound area to develop. It is not in the developer's economic interest to solve the problem. What we have done is to try to leap frog the economic interests and the aesthetic interests to pursue a watershed approach to the problem. At this time, the County Health Department is mapping the watershed and sewer lines for the first time in probably 50 years. There are tests that are being done that are helping to quantify the problems within the water. At this point, everyone knows there are problems but no one knows who owns what sewer or who is responsible for fixing the problem. There is no economic driver behind that, it is citizen will.

Peffer: I'm glad to hear about the testing. This cannot be an effective greenway without cleaning up the water.





Project	*Community*	*Government*
Reiko Goto, NMR-GP	**Kristy Bannon,** Chartiers Nature Conservancy	
Choli Lightfoot, NMR-GP	**Larry Ridenour,** landscape architect	
Marge Myers, NMR-GP	**Uzair Shamsi,** Chester Engineers	
Geri Spring, Chattanooga-Pittsburgh Partnership	**Jane Werner,** Children's Museum	
Sue Thompson, Carnegie Museum of Natural History	**Residents:** Sukauya Basu, Dean Benjamin, Marilyn Ham, Anne Mates, Betty Mullock, Richard Piacentini, Kate St. John, Loree Speedy	
Susanne Varley, *Nature Observer News*		

Vegetation, Habitat and Environmental Education Roundtable Discussion

Thompson: Maybe a first way to start is if there is anyone that has questions or comments they would like to start with?

Benjamin: I am here for a concrete purpose. In a couple of weeks I plan to go to an elementary school across the street from me. I would like to get ideas of how I can approach a teacher with a phone call and say here are some things you might consider doing in your class, are you interested? How do we get teachers involved in this project?

Thompson: In terms of starting this out, let's just talk about the habitats at Nine Mile Run. How many of you were on the tours this morning and what areas of the Nine Mile Run site do you like? What areas do you appreciate most and the reasons why?

Mates: This was my first time coming to Nine Mile Run. I was just overwhelmed when we walked in and I was at the bottom looking up the slag heap. I had never seen it from that perspective. I have only seen it driving by on Commercial Boulevard.

Thompson: So in a sense, you are saying that the slag heap has value in terms of perspective and sort of just something to see.

Mates: To see what was done. To see that shopping cart all the way up there. It was really amazing to see what we did.

Piacentini: It seems, based on what John Oyler said today, the place has a potential for the whole thing being turned into green space by greening the sides of the slag. Like they did in Allentown.

Thompson: That's certainly a potential. I have the same perspective too. There are parts of this site with the barren slag however that present an interesting landscape. So maybe part of it has educational value in leaving some of it intact and not trying to turn it all into an artificial green space. To actually let succession happen as an educational process.

Goto: What did you think about the plants?

Bannon: There is lots of variety. How many habitats have been identified down there? I know there is wetlands. What sorts of habitats have been identified down there?

Thompson: We have divided into five basic types and then there are sub-divisions with in them. (shows map)

Bannon: Generally are habitats defined by the vegetation?

Thompson: Yes. Basically a habitat is a vegetation type. Vegetation types are just speaking of the plants in general. When we talk about habitat it is the other organisms that have specific habitats which fall within vegetation types. The basic ones are forests—within that are more mature forests and secondary forest growth. There are stable meadows. Riparian flood plain and wetland zone are all plants that are adapted to wet areas. Meadows on the slag area. Areas where we have very beginning succession growth on the slag slopes. Then the very primary succession where there are a few grasses and down to the barren slag where it has not even started to happen yet. That is a rough overview, there are finer divisions among that. In all of those areas there is a combination of introduced and native species. That is another concept that people can discuss here. Is there a value in maintaining native species?

Shamsi: Have you yet identified any ecosystems associated with the slag, and if we go ahead with the residential development what effect will it have on that ecosystem?

Thompson: Well, there is a certain type of vegetation, it is a non-natural habitat that is created on the slag. It certainly is a distinctive one. It is an open, barren, dry zone with very distinctive plant growth that isn't found in Pittsburgh. It is a unique habitat for this region. I became interested in this project because we are doing studies on what we call natural barrens. Barren sites in Pennsylvania. Barren sites are sites that plants don't grow well on for whatever reason. A lot of times, it is because of high mineral concentration. Like serpentine barrens which have a high concentration of serpentine in the soil. Or sand barrens where the soil doesn't retain water, much like the slag area here. So we were doing the same kind of studies we are doing here on Nine Mile Run on natural barrens. We haven't finished any of them yet, so it will be interesting to see what the

comparisons will be between the natural barrens and the artificial, man-made barrens at Nine Mile Run.

Goto: It is interesting, last week Susanne and her boss, Chuck Tague, said that lots of birds come from Frick Park and during the winter time there are lots of birds because there is lots of grass and plants that make seeds and berries that the birds can eat. But the interesting thing that I heard from Susanne and Chuck is that the mockingbird is nesting for the whole year down on Nine Mile Run near the Mon. In the 1950s there weren't any mockingbirds. According to Chuck they really like multiflora rose, which is kind of invasive. They really love the berries. The area is very special slaggy soil and brings special species that bring other unusual habitats to the area.

Piacentini: I wasn't sure if I understood his question, but it seemed to me that he is asking if you put up houses and have to regrade the slag, will you destroy any of these unique habitats?

Shamsi: Let me explain a little bit more. An ecosystem means a system and with the soils and plants and animals they are interdependent and over a period of time, in the 70 years, the soil, plants, and animals have learned to live interdependently. And now it has become a sort of unique environment. Now we are introducing the human development with the proposed development. My recommendation is that if this 70-year-old environment is of any value to Pittsburgh, the residential development should be planned in such a way that it does not disturb the ecosystem.

Thompson: We are not involved with what is happening with the design of the housing development. We are involved in making recommendations in a rivers conservation planning grant, of what to do with Nine Mile Run and that valley. Obviously, grading the slag and moving the slag creates a different valley to work with. From the development side and housing side, I think that people don't want to live in a slag pile. They want to live where they have a yard and trees. So something would have to be done. This is a successional habitat and it would not change much because the conditions are so very harsh. It would take a very, very long time for natural succession and organic decomposition of the vegetation to occur. So for anything to change, we would have to speed that up. In terms of a full ecosystem, not enough studies have been done to ever really look at it. We are doing the very first insect studies. When

talking about diversity and what kinds of life you have at any site on earth it is always the insects that are the primary component. We don't even know yet what we have there. The samples are being taken this summer and will be analyzed this winter. So whether we have anything really special we don't know. We know that we have the hop tree which is a threatened species in Pennsylvania. This is a category that is legislated — endangered is the highest category and threatened is next. It has legislated protection. This particular species (the hop tree) grows a lot in sandy areas. In fact, the kinds of soils created in the base of the slag by the slag may have created prime habitat for the plant at the site that John Oyler talked about, Blue Mountain, there are a couple species of plants that are heavy metal tolerant, that are very rare, that grew only at that site. This happens in natural sites such as serpentine plants. These are classic areas where you get barrens and not much plant growth though there are some plants that are globally rare that grow only in those habitats because they are tolerant of the high metals that other plants aren't tolerant of—they grow in those sites and other plants can't compete in those sites. So at times some of these sites actually create habitats that are conducive to growth by things that are otherwise rare or endangered species and if you have the plants you will probably have the insects also. Many of the insects are very plant dependent.

Goto: So when the city and developers talk about developing a greenway—green—what does it mean? It is not just any of the plants they are planting in the park; it has to be very specific to the area.

Piacentini: Are you saying that the whole scope of this creative inquiry is just to look at the river? Not looking at the entire Nine Mile Run project site?

Goto: We are looking at basically from Commercial Street near the trailer to the River. Just the valley, not the top. That is the developer's site.

Piacentini: We can't talk about the potential green space in that area without talking about the development.

Lightfoot: We are talking about the slag slopes, the flat space on top is not our domain.

Bannon: So basically what you guys are trying to do is encourage a rebirth of the natural habitat on the slag slopes and in the valleys that are going to be surrounding the areas of the housing development which will be on the tops of the slag heaps.

Thompson: What we are trying to do is find out what the public is interested in seeing happen in this area. The Carnegie Museum of Natural History has been asked to provide some data that will go into a proposed conservation plan for that area about how you might conserve that stream. But in terms of a recreation green space, housing development—I think that is what these forums are for—to say what the public thinks is useful in this area. What do you want to see.

Basu: What other kind of feedback have you received?

Goto: We went to the community meeting, especially the city presentation about the development. It is real funny because a lot of people that live next to the site are worried about a lot of real issues for instance, traffic. Over 1,000 new houses—what will happen to the street traffic? Also, the toxicity of the slag and the dust. Those questions come out first. And also—access—nobody likes people cutting through their backyard to get to the green space. But some people talk about deer and wild turkeys. The city never really includes those issues — about habitat and about living things. Of course, everybody cares, we all know that, and children, they all like that; but for some reason in city planning meetings those things are not embedded, and our team started wondering about the meaning of 'greenways'. We just talked about that. It is not just about plants. People are worried about traffic and toxicity and what will happen to our neighborhoods. That is first, of course that's first, but we need another time to discuss what else has been left out. So this is the time to talk about the things that have been left out. But actually, these are really important issues.

Piacentini: I don't think there are any residents in that area who would object to having the whole area turned into greenway.
Bannon: And forget the development even on top of the slag area?
St. John: Some of the nicest birds are at the top.

Thompson: It is certainly a distinctive habitat. There are very different plants, very different animals, insects. It is a totally different kind of place.

St. John: Because at the top it is open and almost like a field. And so there are birds that like to be on edges near fields like Indigo Buntings, which, where I live on the other side of the Squirrel Hill tunnel, you don't see any Indigo Buntings there.

Shamsi: I'm a little bit confused here. What I had heard on radio and t.v. and what I have read so far it appeared to me that we are doing this because we want to make the new housing development livable for the people. Today I am learning that that is not the issue. We are just trying to find out what is the best use of the area. What I knew is that we have already decided that the residential development is coming and we are trying to make the environment more pleasant for the people and that is why we are building the greenway and there are some concerns about not disturbing the existing system.

Thompson: I think what you are confused about a little bit is the issue from whose perspective. Obviously, the issue from the perspective of the city is driving the activity on many of the fronts here - the perspective of increasing the tax base in Pittsburgh. Building a housing development in that area, and having an improvement of the Nine Mile Run valley in conjunction with the green space, that would be attractive to potential home buyers of houses on top. So that, obviously, is an interest in their perspective. Now in my perspective I am not at all interested in the housing development. If you are asking me personally what my perspective is in working on this is that we are working on one aspect. And from the housing development I know nothing about it, I haven't read the master plans. I know as much as you do from various news reports, but I am not an expert on that, I am not part of the city government.

Lightfoot: One of our big goals is that this greenway isn't for the housing development. It is for the whole city of Pittsburgh; Frick Park is for the whole city of Pittsburgh, this should be for the whole city of Pittsburgh as well. And we would like to find out what people who aren't involved in the housing development want in this area, so that those aren't the only people who are listened to. The city, with increasing the tax base, aren't the only people who have a say in this.

Bannon: I don't live around here, but I would say keep it green.

Myers: One of the reasons it is wonderful is because it is so different. You drive around town and you spend time in the various places in this region and suddenly you are in a place that is so different from anywhere else. When you are there you look at things and you have an experience that you can't have anywhere else. And that has real value.

Thompson: Marge, you are talking about the areas of real barren slag as being so different? Yeah. I think that is the real question. People say green or greenway, but is there value in leaving it? Educational value, aesthetic value, habitat value in leaving areas of very open barren slag.

Bannon: Nature will come back.

Myers: And the thing itself, just this thing, is a lesson of some sort, I mean I don't know exactly what that is I haven't decided, but I mean it is steel history in it, by looking at it and a whole bunch of other things.

Speedy: It's different because it was created by man, this is man's influence. And I don't think that as a society we can afford to ignore those areas or forget those areas. I mean you look at a community map you don't see Squirrel Hill slag dump. There are not signs that say this way to the slag dumps. Most people have probably found out through, maybe birders or people who have encouraged them to visit there. We can't forget what our industrial past has done or even our industrial present is doing, we have to look at those costs and you can turn around and look at it and say oh my gosh that's ugly, but we still have to look at this and say this is the result of the steel industry. And I think there is a lot of value socially to that.

St. John: I think the part of it looking different is that when you go there and from a far away vista it looks really ugly to see the barren parts but when you get there and see the flowers coming up you think, "Wow!" You know those particular flowers are more valuable because they are so unusual. So you see clover all over the place; you don't care about clover. But when you go there and see clover close-up, you think, "Oh yes, it's clover." ' You can see clover in the middle of winter there, which is also kind of interesting.

Myers: Do you think it is ugly really?

St. John: I think it's Pittsburgh, you want to say look this was done, on a big scale. The only other place you can look at a slag pile, and it doesn't look the same at all, is at Century Three Mall. That just looks like, oh well, it's a mall. It must look barren because it's a mall.

Myers: Well, I don't think it's ugly, I don't know why, I associate it with moon scapes or something. For some reason it doesn't look ugly to me.

St. John: It is actually kind of encouraging to see nature coming back despite what industry has done. The only thing I regret is

that because it has some ugly characteristics or barren characteristics, people tend to dump in a place like that. So there is a lot more garbage there than you ever find in Frick Park. People think this is a wasteland and throw waste there. But if there are people there, maybe it will be less like that. When I've gone in winter, there are motor bikes. Like in the fall and early spring, like February, everything looks awful. Motor bikes and ATV's really make the place look yucky.

Mates: One of the things that I was very concerned with is the connection with Frick Park. I don't think we can afford to lose that because that is what is so necessary for the wildlife, especially.

Goto: Susanne can you say something more about Frick Park? What would you like to see in this area?

Varley: There is so much forest fragmentation. Frick is great the way it is but it needs to grow a little bit, mammals need room to expand. Even when you have birds that aren't reproducing, they are going to have to find their own territories and you know Frick Park can only hold so many of anything.

Thompson: I think both from the wildlife perspective but also probably for an economic perspective, it would be valuable to have a corridor from Frick Park to the river. And that is something that is also a development issue and it is the development in Pittsburgh of our waterfronts. I think, somehow, this project should tie into that, but that is obviously valuable land that we have only just started developing. There has to be the human aspect that you can make the connection from our parks and things down to the waterfront.

St. John: I have done the walk myself from Frick down to the river, but the only time you can really go through the section from Commercial Street into Frick is in winter when all the prickers and everything and the bushes are all dead. But that whole section has a sort of trashed element to it. In the winter you see all of the trash.

Thompson: I think one interesting idea that emerges from this group is that people have talked about greenway and I think the assumption is that greenway is forested and we can change it into something else. But there seems to be impressions that if we do that we're going to lose part of our history. Our natural history.

Ridenour: Our unnatural history.

Thompson: The history of man in Pittsburgh. Has there ever been any

expression of a historical site? I know there has been some talk of creating a mill historical site. And it seems like a big slag heap like this would be an essential part of something like that.

Ridenour: I am going to play devil's advocate here for a minute, because I am a dyed in the wool conservationist, but somebody has to pay the bill. I don't know how much the city had to pay for that property, but as a landscape architect I think that you can have development and conservation and the natural element. I think the greenway from Frick Park to the river is a given, and I think that everybody has bought into that. I know if we tried to take on the top and say that is a nice area to study etcetera, well, somebody has got to pay the bill. I think if done right that development can be an asset to the city. God knows the city needs tax revenue and things of that nature.

Piacentini: There is a lot of money available for brownfield areas and this whole thing could turn into a greenway. There is no need for the development.

Ridenour: This study that you are doing I think is a good laboratory to be able to transfer this technology to the many other brownfields sites we have in the city and in Allegheny County. I mean we don't have to save this one, because there's plenty more in Western Pennsylvania, and there are technologies evolving in different places by the people themselves with the aid of scientists like you and the federal government. Just as an example, I have learned in the last year, up in the Johnstown area where all of the rivers have become just awful as our legacy for strip mining and deep mining over the years, is now being cleaned up at a very rapid rate. And they're using biology, wetlands as passive treatment to clean up this acid mine drainage. It is wonderful to see this happening. We have a lot of work to do. We have a lot of brownfield sites throughout the area that need the same attention that we are giving Nine Mile Run. What we are learning here today is how vegetation and habitat and all these things can be transferred in one form or another through environmental education, through writing, through various projects. I think we need to do that. I am glad that Carnegie Mellon is involved and we need to concentrate on Nine Mile Run, but we need to transfer what we learned here to all of these other projects. I know that Kristy is working on the Chartiers Creek valley. They've got some problems down there. I mean, projects like this are happening all over Western Pennsylvania.

Mates: One of the values here is that you are in a large urban area. You have access to so many more people than you do if you use those other sites. This site can be a valuable site for education. And for history and like I said you have access to many more people than you do in, say, Johnstown. Because people may go there on a trip, but here you can have thousands of children go through and see things.

Thompson: On the topic of education, is this site valuable the way it stands right now for educational purposes? What are the pluses? What are the minuses?

Benjamin: It is difficult, especially for little kids, to get anywhere beyond the end. So we need to provide access. Providing access is expensive when you talk about allowing little kids. There is also the fact that the stream is so polluted right now there is actually a disincentive. You don't want to put kids anywhere near it because you will be slapped with lawsuits when they come down with dysentery. So there is a chicken and egg problem; do you clean up the stream first so the kids can get down there and see or do you leave the current ecosystem intact, sewage and all?

St. John: I don't have much background about how the sewage got there. If development occurs on the top at least they won't exacerbate that problem, but will there be storm sewer drainage into the creek bed. What are the plans to fix the streams?

Lightfoot: There are some combined sewer overflows that are happening into the stream, that is how most of the sewage is getting in there. There is some talk of possibilities of illicit connections and some leaking in the trunk sewer, but the sites have not been confirmed. That's how it is getting in there. As far as the development goes, they have talked about the need to fix that trunk sewer to tie in, but they are still not certain about that.

Ridenour: It is not just a city problem, because that watershed encompasses about four different municipalities. So it becomes very political very quickly.

Lightfoot: The problems are occurring. We are seeing them in Pittsburgh. But, the problems are also coming from the surrounding communities. As far as stormwater, that is going to have to be an issue the developer is going to have to deal with. Whether they pump it down to the stream, or they use it to try and water some of the slag up there hasn't been determined yet.

St. John: So if they determine in a certain way, then they would say, "Okay, whenever there is a really big storm let's just throw it down in the valley."

Lightfoot: It is one solution they could have for stormwater. It might be able to help some of the other problems. Right now we have flash floods in the area but we also have really low flow in the stream at the non-flash flood times.

Shamsi: Where is the money going to come from?

Thompson: That's a key question that Larry and Richard raised, as in, what's driving the funding and where is the funding coming from. I think from the city, and especially from the URA—they are seeing the housing development as driving the funding. Richard suggested the possibility of other types for federal funding from recovering brownfields. The money is obviously a key question. Where is the money coming from that you can have all kinds of grand conservation schemes or whatever to take the whole valley and turn it into a historical conservation park? The key question always is where? Where is the money?

Piacentini: I bet you could find funding for that.

Thompson: Don't... Not me! But the argument from a historical perspective too—this is a key part of the history of Pittsburgh of what Pittsburgh was, and what's happened in this area.

Speedy: I'm curious about the logistics of fixing a sewer line. I mean, is that something only a municipality can fund and fix? Or, would you or could you get federal grant money to fix the sewer lines of Pittsburgh?

Thompson: The Clean Water Act!
Lightfoot: Well, it is city property, I believe.

Shamsi: Let me answer the question because we did the Nine Mile Run Trunk Sewer Study for that area in 1995. As implied from the name, it was a "sewer study". What we found when we looked at the area as shown there, is that the watershed doesn't stop there. It goes several miles upstream. The reason it's called 'Nine Mile' is because it's nine miles long from it's origin to where it ends at the Monongahela River. This Greenway Project, I think, is on the first one point three miles.
Benjamin: It's called Nine Mile Run because that's the distance from the point along the Mon River.
Shamsi: Right.
Speedy: It's Nine Miles?
Benjamin: Almost exactly.

Shamsi: The sewer problems that you see in this area, from the conclusion of the study, is that they are coming from the up-stream municipalities like Swissvale. The major contributors are not really conclusive about where it's originating, but there were no sewer overflows. Sewer overflows means past a certain capacity. If you put large stormwater and a lot of sanitary sewage in, then the capacity is full and the water comes out of the manhole and goes into the creek and pollutes it. Now who's responsible for fixing those? There are several communities which connect to this trunk sewer. Trunk sewer means the main sewer which is collecting sewage from other communities. There are several communities involved. Somewhere, in some street and in some community, if you have a leaking sewer or manhole there, its water has some potential to eventually come back into your greenway project area. Sewers are built parallel to or next to a stream. So, maybe, that little tributary is the best place to build them. That is why the trunk sewer is also parallel to Nine Mile Run. Every time there is an overflow, if there is a waterbody or a water course, it will go there and eventually come here. The municipalities are responsible for fixing them. The city of Pittsburgh cannot. Whichever municipality that manhole is located in, they are responsible for fixing that. However, nobody fixes them because of the shortage of money. Sometimes the Department of Environmental Protection (DEP), if they hear enough from citizens about nuisance, they issue the municipalities orders to do what we call corrective action plans (CAPs). A lot of times, with inadequate capacity in the systems, citizens complain, which forces them to do CAPs. In a smaller community, they do not have any money. Their tax base is very small and they are not proactive. They don't do anything unless an administrative order or consent decree is issued. Once they are issued, under a 90-day consent decree, it seems like money is no longer an object and they are ready to fix the problems.

Bannon: Yes, we are experiencing a very similar problem in the South Hills along Chartiers Creek. A lot of the municipalities are allowing water or sewage to spill into the water. What we're engaged in right now is setting up teams of observers at the points where the sewage is coming up so that we can document it and turn it in. Once they are reported, all of a sudden the municipalities seem to come up with all this money to stop it. Otherwise, they go to

court and they get fined. So, you can stop that. We were part of a class action suit and our conservancy got a nice sum out of that. What it takes is community groups to get the public aware that there is a problem, monitor it and then turn them in.

Goto: Two weeks ago we had a water workshop and there is some documentation. If you are interested, we can send you the issue document and the RECAP.

Mates: Are there groups monitoring it?

Goto: Yes, once a week. We do 12 spots total and then six spots once a week and we bring them to the County Health Department. We have about five more minutes and we kind of have to conclude. I would like to ask you about education, especially for younger children, what would you like to teach about this area? We kind of stopped because of the stream and also the access to it is hard, but how about in the long term? For instance, I don't think it is an interesting idea to bring school children to the Century Three slag heap. I mean, compare Nine Mile Run and there. There are some reasons for that. This is also, I am asking two questions. The first is what you would like to teach to children about this area? The second one is if this project will last for 15 years, what kind of changes would you like to see in the greenway? That might be related to what you would like to teach to children because children will see what we will see too.

Varley: You think children would have a chance to learn the sins of the past and they will be able to see if they go on a field trip every two years or so just from how the gradual development is changing and how nature is taking over? When they are in their 40s, they can say well when I was seven it used to look like this. When I was nine, these plants were introduced, these birds started coming back, these mammals started coming back. And then by time I was a senior, this was going on, and now that I am an old person of 45, I can tell you not to allow these slag heaps to happen again.

Thompson: It certainly does seem to be a site where you could very easily teach environmental awareness. There is such a stark contrast. I mean, we are all talking about trying to teach environmental awareness and increase environmental awareness. It is kind of tough to do sometimes until people sort of experience it for themselves and until they see what man can do versus what happens in just a natural area.

Mates: One of the things we talked about was access. But a lot of what is important to teach is right at the beginning. Look at how few plants grow here and which kinds grow here. As we go further into the site, you will see others. Just look over there and you can see that they don't grow over here.

Thompson: Especially from that Duck Hollow entrance, you are very quickly into where you can contrast very bare slag and look down to the riparian creek side vegetation.

Goto: Also, it might be interesting to just leave some area alone and see what happens from now on. And like John Oyler said, have test sites and show the difference of what man can do and what nature does by itself. And in more artificial circumstances, how the plants might change. That might be interesting, having many different sites instead of just treating the slag one way.

Werner: This site cuts across so many different subject matter. You can talk about politics, aesthetics, history. You can talk about so many different things. You can use it as a lab area and teach science. This often goes back to how a child fits into the world and how their actions fit within the environment. Also, it is in an inner city and any kind of wooded area is special.

Benjamin: It is a tough sell though. If you look at it from the teachers perspective, you've got two to three field trips per year and you've got a choice between Fallingwater, the Frick Nature center, a slag heap, and the science center. I think that if I was a teacher, the slag heap would be way down on the list. Unless there was some kind of a hook. You almost have to present your ideas to the teachers like you are marketing a resort or something. You should bring your class here because..., and I don't know what to fill in there.

Lightfoot: Do you think that if there were these test sites and actual experiments going on that maybe kids could help out with, that kids could plant the slag?

Benjamin: I saw a newspaper article two to three months ago where a retired guy from DEP went out and got samples everyday, I think, from somewhere upstream on the Allegheny River. He brought the stream to the student. Every week he would bring in his water samples and the kids would do their little chemistry. These were fifth and sixth graders. They would plot the E.Coli and the BOD (biological oxygen demand) and had these

charts they were making. They knew that when there was a rainstorm, there would be a spike in the E. Coli the next day. I am not sure if they were actually doing E. Coli tests, but they were doing a number of them. And maybe they were also incorporating tests from the health department. That is something they could do. Then maybe they could come and see the site once a year and say: "Hey that's where our water samples are coming from."

Mates: Maybe you could do an adopt-a-site. This is a site that we are doing this experiment on and it was adopted by this school. And this other school adopted this other site.

St. John: There is a teacher in the Quaker Valley school district who has done that for Little Sewickley Creek. She is a biology teacher.

Bannon: They did that at Chartiers Valley for scrub grass.

Benjamin: But does anyone have any other ideas of why you should come to Nine Mile Creek? Because...your toilets flush out into Duck Hollow?

Bannon: All little kids love a good story. If you started out with "Once upon a time there was a slag dump..." and here is our vision for the future. They love heroes too. So they would want to be part of that story. You start their education and their involvement very young with the once upon a time here is what it was here is what it is now. Then have the sort of longitudinal program within the whole school district grades K-12 to get them involved at a variety of levels as they can appreciate it.

Mates: It could be Pittsburgh's own project.

Goto: If it is a once upon a time story, do you think we should have a good result for children?

Bannon: Yes, you want to end with a very positive note. End with a success story and let them feel that they are part of the success and that they helped make it happen. The more you can pull your community and your children in, the better off you are.

Basu: I just had an idea, I am not quite sure how it is going to work out, but like Carnegie Museum of Natural History, there are specimens and everything in a building. Could this be an open natural museum to the children? I am not sure how it is going to happen, but this is just a little bit of an idea I have. An open museum, it doesn't have to be all over technical or all over housing project. There could be an area that is just for the public, for children, or for school and college-going students as a

natural museum for what it was before, what it is now and what it can be in the future.

Thompson: I think you basically summarized what we have been talking about. It is a very idealized kind of thing here, not talking about the economics for the moment, that this site would make an ideal open museum that talks about history of the area, ecology, aesthetics (artistic). Some people have expressed this; that there is a certain beauty of the slag heaps. There is this artistic aesthetic sense that people get.

Benjamin: It is an installation piece.

Thompson: You can go there and see the contrast of bare slag versus vegetation and it is an open museum. I think that is essentially what we have all been saying. That is a very nice summary. Then, of course, we have that realist among us, and there is that little voice in my head that says where is the money coming from. But, I think, when we are talking about what you want to do and what you want to see, you have to push that voice to the side and talk about these kinds of ideas and then later on get practical.

Benjamin: I was reading in the transcripts from the last workshop. They were talking about the problem of cleaning up the sewage and addressing the sewage problems. Right now, all of the communities are in violation of the pollution regulations to the tune of $25,000/day, which could be fined if the law were enforced as it is. But nobody wants to go to everybody and hit them up for $100 per household. The point of that was that somebody made a comment and one of the experts at the table said that regulation has not worked and that the only way to do it is to motivate a grass-roots response. If all of the mayors and all of the councilmen in the four principle municipalities suddenly get hearings from their constituents saying why don't we clean this up, then they will move fast. That was the gist. That leads me to believe that one of the first things we need to do is imprint another identity onto all of the residents: "Yes I am a resident of Wilkinsburg, Edgewood, Swissvale, but I also live in the Nine Mile Run drainage basin." When I was distributing posters for this thing a day or two ago, I was amazed that maybe ten percent of the people that I talked to even knew what Nine Mile Run was. I got blank stares and I had to explain. Somehow, there needs to be a consciousness raising and I don't know

exactly how to do that. Letting everybody know where is down hill from here. Seeing Squirrel Hill not as a neighborhood, but as just a ridge that separates Four Mile Run from Nine Mile Run.

Bannon: Have you heard of the Clean Water Initiative? That is sort of a grass-roots thing happening, at least for us in the South and West Hills. I can give you a contact person.

Myers: Is it a local thing?

Bannon: I am pretty sure, but I could be wrong. I am just one of the people that goes and looks at the sewage coming out.

Thompson: Have there been any discussions about having a watershed association for Nine Mile Run? Because that is what we are talking about. That would bring awareness if people paid a fee every year to their watershed association.

Benjamin: That would be a great idea. For instance, there is not a single sign in the entire drainage ditch saying that this is Nine Mile Run. All you see is "The water is unsafe, stay away." I had this idea of painting big stripes across the streets at the edge of the watershed maybe three colors, like gray, blue and green. The gray slag, the green boundary and the water in the middle. Then point downhill, "This is Nine Mile Run. You are entering the Nine Mile Run watershed." Put those on I-376, on Braddock Ave., on the main drags at least and maybe get real ambitious and maybe even on every little neighborhood street. That would at least say, "Hey, here's Nine Mile Run," and break down the sense of, "I'm Wilkinsburg and that's a Swissvale problem." Turn it into, "That's our problem and we live in Nine Mile Run."

Bannon: You sort of have to identify it as a regional thing. A region that is going to be impacted, not just one community versus another. You have to get the people involved, not the government. The governments don't care until the people come to them. So if you inform all of the people of your problem, then go to the governments.

Shamsi: Saw Mill Run had a citizens group—Saw Mill Run Task Force. They were a very active group of people like you and they waited and had a lot of patience. Eventually they got a $30 million dollar project from ALCOSAN. They are building a parallel interceptor so that they have more capacity and Saw Mill Run stream won't stink.

Bannon: There was an immediate concern though, because the sewage was backing up into the people's houses.

St. John: That certainly brings it home.

Thompson: Again with Nine Mile Run, as you flush your toilets, take out your bath water, you don't think what is happening with all of the water. It is not caring about what is happening downstream.

Shamsi: Now California has started a watershed program, check it out on the web. It is called Know Your Watershed program. It is sponsored by EPA. Everybody knows the name of their county and of their municipality and nobody knows the name of their watershed. So on the web, most of the watersheds in California are on a map and you just enter the name of your city and it takes you to your watershed and you click there. So, everybody in the community should know their watershed. From this will come a sense of belonging to a region. And the people will be really afraid to throw anything on the road because it will get in the catch basin and in the sewer and in the trunk line and in the Nine Mile Run. That is how you can get cooperation from different municipalities.

Mates: Since there is already a web site is there a way to connect into other web sites? To convey that kind of information.

Myers: Sure.

Thompson: I know there are watershed maps on the larger scale for Pennsylvania.

Mates: Maybe some of those places already have groups going and they could link up.

Benjamin: We are talking about a relatively short horizon here, maybe a five-year plan. At most only 10 to 20 percent have internet access right now.

Bannon: We had the same problem so we printed up pamphlets, on recycled paper of course, and we got 16 people and we leafleted the whole town in four hours. In four hours, we did 3,000 households.

Benjamin: Another idea for this knowing your watershed is how about just put a sign on the bridge out of the tunnel that says Nine Mile Run? You cross every bridge that say this is, like, the Allegheny River. You would reach maybe 90 percent on the Pittsburgh region in two months because everyone uses that parkway.

Piacentini: Sue, you had made a comment before about where the money is going to come from to be realistic. The grading is going to cost city taxpayers $60,000,000. And, certainly, what we are talking about, turning this into a museum type site, will cost a lot less than that.

Thompson: That is a good point, we have problems from both sides. There is grading and things from the development that are a major problem in terms of the greenway

and it is very expensive. There is the sewage problem coming from the other end which is also a major problem. And, in some ways remediating the site to a very lesser extent and keeping it as a sort of outdoor experimental museum and laboratory is the cheapest of any of the alternatives.

Piacentini: And probably the most desirable one.
St. John: Probably the only argument that could be made is lost potential revenue from the tax base. But if you wanted to sell the site, and it was known that in the basin it was sewage, people aren't going to buy.
Speedy: That is why I have always been surprised that people bought homes at Rosemont.
Mates: It smells.
Benjamin: No, the houses are too high.
Speedy: Still the ones at the end are looking over a slag pile.
Werner: Does anyone know about the industrial heritage sites they are trying to set up in Pittsburgh? There are actually a series of sites that they are trying to save as open museums. You might want to talk to them if you are really serious in pursuing this idea.

Myers: It is called Steel Industry Heritage Corporation and they have proposed to put a museum in one of the old mills. And, as Jane says, some other sites too.
Thompson: It would bring money into the region through tourism. The history of steel and the industrial heritage of this region. I always love those kinds of things when I travel. Factory tours and things that show you the history of that region. If you lose the tax base from one thing, maybe you collect the revenue from another source. I grew up in Indiana and we don't have slag dumps.

Piacentini: It really is impressive.

Thompson: It is not as impressive from the top as it is from the bottom there.

Mates: There is this consortium of people looking at this, but is there an action group already formed? There is no action group already formed. That would be an important step I think.

Thompson: In the last workshop, there was talk of a Friends of Nine Mile Run group being formed. I don't know if anything has happened with that, but is that what you mean by an action group right?

Benjamin: I think we all more or less fall into that category. It exists in principle.

Thompson: When we are talking about Nine Mile Run as a greenway, in a sense, Nine Mile Run already exists as a greenway. It is just not an official one, but it is there and people use it for various recreational purposes.

Benjamin: As it is right now, I think a lawyer would probably look at it as an attractive nuisance and that whoever owns it is inviting to be sued by the first person that sprains their ankle on that broken down trestle. The city of Pittsburgh owns it and took over all liabilities. Right now, the city does not encourage people to go there, even though the first time I looked at it, I saw it an extension of Frick Park. It would cost a lot of money to take it from its current state to something they could let people in safely.

Goto: Do you know of any schools that might be interested in the Nine Mile Run issues? The Children's Museum and myself, we are working up some activities to teach children about the Nine Mile Run site.

Thompson: Supposedly, the grade school near Frick Park has an environmental orientation for Regent Square or whatever. I am not sure. The people in City Parks where telling me that the other day.

Benjamin: I am going to see if Kelly School is interested.

Werner: We have one that is really on board.

Thompson: Thank you for participating.



Project

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Soil, Slag and Geology Roundtable Discussion

Bingham: Maybe we could get started with some questions either from the tours this morning or Mr. Oyler's talks. His worldly experiences made Nine Mile Run look rather small.

Blaustein: I had asked David earlier, because I had not thought about the temperature variation at the site. Bob, I don't know if that is one of the assessments that is being done—this is a very interesting aspect of the problem that I had not considered before. Because of the color of the slag and the lack of water retention, do we have that kind of temperature variation on the site?

Oyler: I would expect only some variation because where you don't have an organic cover, it creates a reflective black box. There is not vegetation, currently, that is so great as to influence the temperature.

Blaustein: So that the color is not in a range that is too extreme? I didn't know how dark 'dark' meant.
Sentz: It looks black to us.

Bingham: Chris, in your risk assessment, did you monitor temperature?

Logelin: In the risk assessment portion, we did not. We monitored health aspects concerning the stream. The temperature variations within the slag were monitored in another report, which I did not bring with me today. I believe it is available in the library. We looked at the gases coming out of the slag as it heats up, but the temperature was mostly a side issue.

Dzombak: Something struck me looking at the aerial photographs. We can see the revegetation is a fair amount ahead of where you started in Palmerton, Mr. Oyler. It seems that we have a pretty good start on the revegetation already.
Oyler: Definitely. I agree with you.

Charney: We're ahead in the revegetation if there's not going to be any more regrading. If the whole site is regrading, all that vegetation may be lost.

Dzombak: Regrading could have a negative impact on the existing vegetation, that's true. In the first workshop on July 2nd, we talked about the regrading. With respect to the greenway, there seemed to be a consensus that there was a desire not to have substantial regrading, especially filling in the valley. I don't know if any of the artists have thoughts on that—the issue whether the slopes should be left alone—preserve the corridor and preserve the vegetation which has started to grow on the slag. Any thoughts along those lines?

Bingham: John, can you compare the slope of the slag slopes to those at Blue Mountain?

Oyler: Blue Mountain has a lot of variety, there are some steeper portions and we were able to establish revegetation.

Schmidt: The Blue Mountain situation is different from what you were saying. If the tree roots can go through a toxic layer several inches thick, it will get to good soil and then they will branch out. Here, the slag is extremely porous. If there is just a shallow level of soil piled on, just enough to get the grass growing initially, the tree roots will not have deep enough soil. This will stunt their growth and you'll have very small trees. You won't get to a climax forest. Whereas, if you mix the soil with big bulldozers on top so you can get deep amendment of the soil, this will enable trees to grow on the site. I think this will be best in the long run.

Oyler: A technique that can be used which I haven't talked about yet is the cinder bank. We haven't really started full-scale work on it yet. However, we have, over the years, done 68 acres of vegetation work on that using the same technique. That's as deep as 300 feet in some areas. The roots would never escape these cinders. The oldest vegetation there has been there since 1981.

Schmidt: So that didn't effect the large trees?

Oyler: The nutrients leech down there and there is enough water retention now.

Schmidt: This appears to be so porous, you'd think that it would work.

Oyler: Our site appears to be the same.

Buck: This is really early soil development. If you have a zone on the surface with adequate nutrient availability, the top roots can be bringing in the nutrients while the bottom roots going into the slag can be bringing in water plus any nutrients down below. There would be a lot of feeding going on on the surface and a lot of drinking going on further down.

Schmidt: I just wondered, with the tremendous depth of the slag, why the water wouldn't go down through.

Buck: Right. The water retention is not great on the site, probably one-third of what soil would retain. But, it is still something. One thing I have noticed while doing test pits on the site is that when the soils are extremely rocky, with an organic mulch, the trees will go over 25 feet to find water between little cracks and porous areas. In very rocky soil, where there is little water retention, the trees will root very deeply. I have done test pits with extremely heavy backhoes that went down 23 to 25 feet deep and still didn't get to the end of the roots. Yet, in very loamy, silty soils that have great water retention, the root system is concentrated in the first couple of feet. They are getting enough from the top soils. Plants are allocating resources between top growth and root growth as they need it. In the case of slag, I think if you have some soil or some other material on top you can feed them to get the seedlings started. They will root as many feet down as they need to intercept water, even though the slag may only hold one-third or one-fourth as much water as soil.

Charney: I would like to bring up something that was mentioned before, that there is a do-nothing approach to the Nine Mile Run slag dump. Then there is housing development and the whole aesthetics issue. Are you talking about planting all these trees for the residents of the new housing development to create park-like amenities or will they be for the people who use the valley to provide some better ecological corridor than is there now?

Bingham: If I could interrupt for just a moment—if we can try to keep the conversation concentrated in the valley, I'd appreciate it.

Charney: Are the trees for the people who are using the valley, so they can look up and it looks pretty—or are you talking about trees for the housing development?

Sentz: It is both.

Charney: I'm asking Tom.

Schmidt: It would be both because it would be a true regeneration of the site. It would make the site more like it was in the beginning, capable of supporting trees where ever they may be planted.

Dzombak: Tom is coming at this project, I think, from the standpoint of trying to recreate as close to the previous natural setting as possible, in terms of forestation.

Schmidt: Yes, exactly, because we have this tremendous introduction of slag, that we'd like to bring the valley back to what was there before.
Charney: What was there before 1950 or 1920 is the same thing as was there now...what's the point?
Schmidt: We are talking about making the city more livable and attractive and I think if you do a treatment of the soil...
Charney: There are people who don't necessarily want the site to be pristine, nice trails, bridges and all that.
Schmidt: I'm assuming there is going to be housing mixed in, too.
Charney: But we're being asked to forget about the housing—we're just talking about the valley now. I don't think we can forget about the housing, but that is what Bob wanted us to do.

Bingham: Yes, if we could, we'd like to steer away from the housing development topics. Are you advocating a do-nothing approach?

Charney: No, I'm advocating a do-less approach. I was just wondering if you were asking about the do-nothing.

Bingham: We have talked about that a lot and it is one of the options outlined on a chart in the background document. Certainly, one scenario is to minimize the grading, have no grading, or what are the options if we don't want to move any slag around or we don't want to move the climax forest but it would be curious...

Charney: Obviously, cleaning up the stream is very important. I mean no one is really questioning that, but concerning the use of the open space.... People's use of public space is very finicky. Five years ago there were joggers, then there were rollerbladers, now its mountain biking, and biking trails. Who knows what it will be ten years from now? So I think to say that, "Yes, we want a place to attract people to the city," we need to know what may attract Tom or what may not attract me or you. It is a very slippery question.

Bingham: Maybe we can talk about not having it all one way or another. A versatile, multi-purpose use site. That is the kind of information we are looking to gain through this process.

Caginalp: I think there is another very viable option that may be better than those mentioned before, that has been described in the *University Times* at the University of Pittsburgh, that there are better and cheaper alternatives. In these discussions, there has been very little discussion that we are

dealing with millions of cubic yards of industrial waste. Do-nothing is an option, maybe not a very good one; another option is assume that nothing harmful is there is a very undesirable option. A very desirable option is to look at ways that this industrial waste can be cleaned up. If you look at the computer industry and how much it cost a few years ago compared to what it costs now, it has come down considerably. Similarly, clean-up costs are coming down dramatically. And now [regarding] the issue of what's out there. I am very disturbed by the information that has been propagated, in part from the STUDIO and the most recent information about the slag on Nine Mile Run, this idea that the slag is [benign] is false. We saw that the recent report found numbers for chromium up to twenty-five hundred. [Technical studies completed in other communities show that chromium in these concentrations are toxic.] For instance, in Woburn, Massachusetts between 1966 and 1986, the childhood leukemia rate was 4-fold higher than the national average. Residents of Woburn may have been exposed to arsenic and chromium. In Hudson County, New Jersey, homes in Lafayette Gardens had three times the level of chromium dust as control homes. In at least two tests, chromium levels in children's urine was found to be correlated with distance from the slag site.

The wording for these examples were excerpted from the October, 1997 Newsletter of the Citizens for the Responsible Development of Nine Mile Run in lieu of the actual dialogue. The taped audio was corrupted by dialogue from the other roundtables.

Buck: That's leaving out a lot of data from Maryland. I'm just saying that is not the upper range for chromium, I'm sorry. You can find numbers in the natural barrens of Pennsylvania which are over a thousand. I guess what I am taking issue with is that you are implying that this is some Chernobyl when it's not. Responsible people have done analyses and put this data into perspective—its not like we are going to be making a diet out of slag.

Caginalp: Are you familiar with the 20-year study in New Jersey?

Buck: What other industries were present in that study? I mean, you make this look like some kind of cover-up.

Bingham: Chris, can you address these issues or are they addressed in your risk assessment?

Logelin: Yes, I think there is risk inherent in many different areas of our society, no doubt about it. Industry has created a tremendous amount of risk. And I think what we really need to do is look at the risks with the development of the property, if we want to look at those risks—we were asked to look at those risks. Yes, there are some high chromium levels there. Is there hexavalent chromium there? We did not find any, which is the most...

Caginalp: Which lab did you send it to, your own?

Logelin: No, we would not send it to our own. We sent it to a DEP approved laboratory, RJ Lee Laboratories and they do a lot of testing throughout the state. Regardless, I admit there is chromium there. Is the chromium in a state that is very harmful? No. Chromium is found in slag...

Caginalp: Do you know about the studies...have you seen them?

Logelin: I don't really care to know...I don't know if that is relevant to the situation we have here today. We are trying to decide what types of risks there are with the development of the site. There may be long-term risk to breathing the air in this building, but I'm not going to stop breathing because there is something in the air here. We are looking at whether or not the risks associated with the development of a property are acceptable. There are always going to be risks. The acceptable risks to you are going to be different than the acceptable risks to me. But we have to have a baseline to base that on.

Caginalp: Right, and the acceptable risks are going to be different to someone who is ignorant of the basic studies and someone who is not.

Dzombak: Are these within state standards?

Logelin: They are below the state standards for residential areas; they are below those standards.

Caginalp: No, they aren't.

Logelin: Yes, they are. Look at the new 1997 April MSC standards and they are there.

Caginalp: The standard is 1,000 for total chromium and you found over 2,500...

Logelin: No, they are not 1,000 for total chromium, they are 1,000 for hexavalent chromium. Yeah, go look at it. I've got it in the report.

Caginalp: There is a report that compares standards in the different states and they sometimes differ by a factor of a thousand. Say one state has a standard that is more restrictive by a factor of a thousand, does that mean that the chemical is safer in one state than the other? No. What do these standards mean? They are effective of the legal powers that industry and citizens' groups can bear.

Logelin: Right, but again you still have to look at direct exposure paths and what are the risks associated with these activities.

Bingham: Excuse me for a second, I think you have been given enough time and I think we have to move on to other subjects we should cover.

Charney: The URA went to the planning commission in March to regrade and the Mayor made an announcement in the paper that the regrading was to start in April. That was without any community input at all.

Blaustein: And the process stopped. Your voice was heard.

Charney: Fine, but you have to pay attention...

Blaustein: And have we paid attention now? The process halted in favor of the community's interest in the project.

Charney: There have been no meetings.

Blaustein: But the process stopped to allow the Squirrel Hill Urban Coalition to form its groups and for us to respond.

Charney: Anyhow, we're talking about the valley and the STUDIO.

Blaustein: In terms of revegetation, certain standards have to be met to allow any level of vegetation on the slopes that are not vegetated, is that right? Maybe Mr. Oyler can talk about this. Are there different remediation standards depending on whether you are just going to grow grasses or trees. Or do you have to start at the same base level? Regardless of what your ultimate plan is for the revegetation? Does your first stage differ depending on what your ultimate goal is?

Oyler: Yes, yes, no and yes. I don't know what kind of a regulatory position you would be in as compared to industry doing something. I think that you folks probably will have, from the city of Pittsburgh, would have a lot of latitude as to what you are going to do. I think that you are in a negotiating position with PA DEP, if they get involved. Depending on the way you revegetate, they might not even need to be. Probably, what you as group will be able to do, is decide what you want to do and how

you want to do it and then start to look at the regulatory difficulties.

Blaustein: So how did you get around the DEP regulations that say you can't put sludge on slopes greater than 15 percent.

Oyler: We are working on a federal superfund site. And the state and local governments don't really get a say. Plus, on these sites, everything that can be done has to be done.

Blaustein: But there are basic levels of water retention, minerals, pH, those things that have to be found in order too.

Oyler: Nothing like that is regulated.

Blaustein: Just to allow things to grow, I mean beyond regulations, just in terms of revegetation. I mean, that is really what the question is, I think.

Buck: I think you are asking if the ground is prepped and the nutrients would need to be different for a herbaceous cover versus a forest cover. I would say no. I say the developed areas I would direct a lot more resources and a lot more intensity toward, because you are more in a manicured park mode. But say, on the slopes that face the valley, you could accelerate natural succession more by adding some of the missing factors. Mulch, motility. But like the choice of seeds that you use, say if you were establishing temporary cover where start-up community herbaceous cover would be very important. For example, use crown vetch and you choke out everything else. So you wouldn't want to do that. But you do need some sort of cover to hold things together and you use temporary covers that will yield to trees in the future. Like using shade intolerant grasses and select planted trees so the trees can shade out the competition of the grass.

Sentz: You mentioned this morning that if you want to see mature trees ever develop on the site, you would want to avoid covering the whole site with grass, because that makes it difficult for the development.

Buck: I didn't qualify that as well as I should have, there are cover types that can produce 100 percent herbaceous cover by the fall and then be killed by the winter. Then either by dormant seeded or seeding next spring you could introduce other species. Having already stabilized the surface.

Sentz: I have heard Tom say that he would like to see the soil worked down to a depth of approximately seven feet. Is that what you said Tom, to really support tree growth?

Schmidt: That would be the deepest, between three and seven.

Sentz: I know that when we were doing the original master plan for the site, a firm out of Philadelphia. Andropogon was involved. I believe they recommended reworking down to three feet. I notice also from my own observations, going backpacking in the natural areas, that occasionally I will see a tree that has been blown over, up-rooted, that has a very shallow root system, no more than 18 inches into the soil and yet it is a very large tree. Is there any firm figure for if you want to support large tree growth what you have to go down to? As I have said, I have heard three feet, but I have seen myself, very large trees with even less than three feet of soil.

Buck: I guess the limitation is how much water the tree can exploit within thickness of the growing medium. So in a flood plain where maybe the water table is at 18 inches, those plants will have lots of water available and, too, they cannot grow under water. In some cases, I have seen magnificent trees growing on top of boulders growing in a tiny litter layer, they tend to be adapted species that can really ration down their water consumption when they have to.

Sentz: So the water storage becomes a very key factor in determining how deep to go.

Buck: And aeration, because if you have lots of water but no air they can't...
Oyler: In something like the slag here you are going to find that it is so porous that moisture is going to decrease and the roots will chase it.

Schmidt: Will the alkalinity kill the roots that penetrate down through the soil?

Oyler: It won't kill them; it is not like a toxicity situation. I think that nutrients would be very difficult, but there are adaptive species.
Buck: If you do soil tests on that slag, and the iron, the manganese, the carbon and the zinc are not very soluble.... But it is probably an underestimation of what is available to plants because in there immediate root zone they are putting out organic acids that will sort of chelate just immediately around the roots. We are talking about a zone of millimeters. And

the other thing is, if they have a litter layer on top they are going to do most of the nutrient cycling up there. And it is just getting nutrient poor water from way down below. I think it would be really useful to show up with a really heavy duty back-hoe and dig into the slag to show what some of these older trees are doing in terms of the rooting nets and it is pretty easy to do and you dig a trench and sometimes you bring out the roots and you get a power washer and you hose off the face of that trench and you can see exactly where the roots are. That's sort of an investigation technique worth doing.

Bingham: Could we possibly move into options for remediating the soil and the idea of demonstration sites to see how things would work, and how the community would feel about, say, the sewage sludge, fly ash combination?

(There is gap due to technical difficulties, there was some discussion of the relation with the sewer lines and the need for future grading.)

Logelin: But you are right Peg, before grading can begin and the utilities can begin, there is going to have to be a stormwater runoff permit that will be issued by DEP for that construction activity to address runoff, oh yes, and a sedimentation control plan as well. Prior to any of that grading and excavation activity DEP is going to have to insure that we won't have additional impacts on the lower valley due to those construction activities. And that is all part of that whole process and that is why I don't believe that grading can happen in the next month or so just like Dan was saying. Those issues have to be solved first.

Sentz: In addition to the erosion and sedimentation control plans, there is also an officially adopted storm water management plan for this watershed which states that the rate of runoff after development can be no more than the rate of runoff before the development. In this case you have a very porous soil, artificial soil, out there, right? So you have a relatively low runoff rate and you are going to have to address stormwater management, looking at detention facilities. One of the things that has to be considered in the design of the wetland is, do we want some of this additional runoff to supplement any wetland that might be constructed, the wetland acting as a sponge to release some more steady flow into the stream over time. So there is a whole range of questions related to stormwater management, both keeping the rate from adversely affecting the

stream and possibly even using the additional runoff generated to help the stream along in terms of the wetland acting as a sponge and releasing the flow to supplement the natural flow during dry weather times.

Charney: Joan asked questions to John Oyler about certain things in the regulations, how did you do this, how did they apply....

Sentz: She was talking about one specific aspect and that was the use of sludge on steep, sloped areas.

Charney: Yeah, I know that. There is a workplan between the URA and EPA involving state guidelines and regulations that apply.

Blaustein: That was certainly not my question how we get around regulations. I was curious about a superfund site. We have no intentions of getting around any regulations. What are going to be our guidelines for how we proceed are the regulations we must meet at both the state and the federal level. That certainly is not the case.

Skolnick: My concern is the use of the sludge. We have had forums on the use of sludge, the Sierra Club, and it is amazing how many people come out of the woodwork and don't want any part of any use of sludge; and this is in agricultural areas. Now we are concerned about the contamination of the stream, and the wetland is going to help, but it is not going to solve any problems. If we use sludge, we are going to exacerbate the problem, not help. So while it may help the growth, we all know that sludge does promote growth where ever it is used. That is a very serious consideration that you can't minimize. But when you are talking about sludge, understand that that raises peoples hackles immediately. Whether it is true or not, that is the reaction you get.

Bingham: That is certainly only one option, maybe we should address other options, including composting.

Oyler: I don't think that you need to decide today or even in the near future what organic amendment you use, but I was trying to show you what has been used (and very successfully) on toxic slag. One possibility, if you can't decide, would be to put in some test plots. Get some yard waste, get some MSW compost, get some mushroom compost, any number of organic materials like that.

Skolnick: I would avoid the word 'sludge'; I would use an euphemism for it. I really mean that. It has been our experience.

Bingham: Like I said, I would change it to 'bio-solids'.

Sentz: Sludge. There are two problems: one, you have to be aware that it can contain contaminates far in excess of what you might find on the site right now, particularly sludge that you get from sewage plants that accept industrial waste. The other concern with sludge is more of a political subjective, whatever you want to call it, is that people just have a mental block against the idea of using anything related to sewage in any proximity to their neighborhood, even if it is a benign sludge.

Ridenour: I would like to bring up the issue of stormwater. What happens now, is it just rushes down. What is going to be done during grading?

(Gap due to technical difficulties)

Skolnick: It is pretty stable. There are a couple of little land slides over near the tunnels, but they are very minor when you consider the entire site.

Prellwitz: Water goes right through the slag.

(Gap due to technical difficulties)

Blaustein: Can we talk about the next step then, what happens when the slag is graded? Does that activate anything? What are the changes that happen and maybe all of you experts can talk about what happens when you grade it, does it change the composition? Do things get activated that haven't been exposed when you hit these hard levels? What happens?

Buck: We reclaimed about 100 acres at the LTV residual waste site at Alliquipa and to get the DEP and everybody comfortable with the idea of revegetating the slag, we made some little test areas. Basically we excavated three or four feet down and rolled it around and laid it out flat and applied our amendments, in this case fly ash and sewage sludge, fertilizer, feed and mulch. When you do break up slag (which is weathered on the outside) and the insides get exposed, the pH goes up for a little while but those surfaces very quickly weather. Carbon dioxide in the atmosphere and moisture will take that calcium hydroxide and make it calcium carbonate and then you are very quickly back to where you have a carbonate rind around the hydroxide oxide.

Goodson: Is that what causes the vapor? What about the dust? Would that be a problem? Would you think?

Buck: I think most of the dust and the particles are already small. The regrading is surely not going to make alot of fine particles; it will break up big particles.

Goodson: But it shouldn't be suspended in the air for very long anyway, I wouldn't think.

Buck: Right, right.
Dzombak: The dust suspension, it is my understanding, is something that the risk assessment addressed. The URA will release that at some point. The appropriate forum to challenge it is a technical forum and go point by point.

(Gap due to technical difficulties)

Logelin: I think that is exactly right, in any process like this where you have a large development. In any development like this where you have a tremendous amount of stakeholders, residents, developers, commercial development, you have people that occasionally use the site—want to use the site. I think you need to have this type of forum to get those thought processes apart. In order to analyze a report like what we did, it takes many eyes, without a doubt. It does because not all of the assumptions that we used are going to be agreed upon. I don't think all of the parameters we looked at will be agreed upon. At some point in time you can research it to death, and still come up with the same answer you started with. But at what point is too much? I am not sure. I think the step that URA took is quite unique. Number one, the constituents and the concentrations of constituents in that slag pile (if this was any other development site in a brownfield) would not require a site specific risk assessment. They are too low, they are below all of the standards that require a risk assessment. URA has gone beyond what is necessary to develop a site like this to try to satisfy some of those unknowns that we really don't know. I think that bodes very well for URA. To go beyond that, they are going to and have, released this to CMU to look at and they are also releasing it to DEP and the Health Department next week because we had just got the final report in their hands on Friday. So there is going to be a lot more input prior to releasing it to the URA as a final. We released it to GAI and a number of other consultants to get consensus.

Yes, I think you have looked at all of the exposure points. You have looked at the receptors, you have gone through the process correctly. Now there are going to be additional questions that we will have to ask, but that is why these forums are put together. The professor that was here earlier and left is raising issues, I think, that need to be raised. Unfortunately, he takes them out of context and that doesn't help us understand what the real problems and the real issues are.

Bingham: Can we talk about, if there are any suggestions, how to address the risks different from this discussion?

Charney: I think the Coalition sponsored focus group on environmental issues is going to ask that question. We did send a report to the URA and asked them if they can review some of these reports with those of us that are not that knowledgeable about these issues. The letter was sent in April. I think there is a major issue about regrading, does it need to be regraded all at once. At what point can you start digging trenches for sewers, putting in streets—is that a period of months, years?

Buck: I think it should be done as extemporaneously as possible, because as long as they are working the land there you are vulnerable to all kinds of erosion issues and they don't want to put in the erosion controls more than once. So if you regrade, stabilize, and then you go back in start putting in the utilities, streets, and so forth, you are doing work twice. Because you....

Charney: So you don't have to wait for the regraders to hit the streets to put the sewers in?

Buck: Oh, I see, you mean maybe in terms of an expansive slag issue?

Sentz: Or if you are doing fill, if some of the slag is used as fill. Is there a compaction issue?

Buck: Yeah, there is a consolidation. I am not an engineer, I am a soil scientist, but just from hearing my colleagues when they have been doing a major fill project, they are monitoring how well compacted it is, but they still come back every few days to survey the ground to see if there was any consolidation and settling more than what they expected.

Dzombak: An important issue is expansion and heat.

Skolnick: Can I ask a question? Is it possible to get a short report on the remediation you did in Alliquipa? I think that situation is very similar, except that maybe there aren't any slopes. How successful

were you? What did you encounter? What would you do differently if you had it to do over again? What you learned....

Buck: I would have to get permission to do that.

Sentz: Does Century III provide us with any information, or is that a different type of slag out there? That is a very large development site that was regraded extensively. A very large slag site. I know there can be radically different slag, so I am wondering if there are similarities in the slag because if there are similarities in the slag, that might provide us with a lot of useful information.

Bingham: Maybe you could speak to this, John, but from what I understand it is also dependent on the use of the site. If you are putting housing there, there are different regulations then if you are just putting parking lots or big box development. This is the process at the South Side works.

Buck: I have had some involvement with the South Side Works. I think that Century III is a good model in terms of some of the potential problems with dusting and regrading and having to deal with noise and neighbors and nuisance problems. We can see what kinds of dust control measures are working. John Oyler has had some experience with regrading the cinder banks which is an area for fused slag similar to what we have at Nine Mile Run. One of the conditions he required was dust control, and somebody with a hydro-seeder, basically a portable fire hose on hand and real time monitoring dust.

John Oyler: What we had to do was we had personal monitors on the operators, everyone was in half waist respirators. We had ambient monitors around the periphery. Lots of monitors. We had a Health and Safety man with a mean grab that could detect dust. This went on for several weeks a couple of times a year for a few years as we did different things. These are little battery operated pumps that pump air across a filter and then you analyze what is on the filter. They are commonly used on hazardous sites, kind of just to see what is going on here, but the highest we ever got was three to four percent of the PEL. That is permissible exposure level, so we weren't even close. We never had to use the hydro-seeder; that sat there for dusting. When we cracked open the face, we found there was sufficient moisture, that the material was not dusty. So I think you have

a similar situation here, probably. Unless you are doing it right in the middle of July in 100 degrees, every day and windy. I wouldn't expect alot of dusting, there is a lot of moisture in the slag.

Charney: One of the recommendations is to have trails come down. Has the URA considered that in the regrading plans?

Bingham: You are speaking of access trails. I think that is going to come up more in the next phase, more of a planning design phase. When more detail about usage is discussed.
Dzombak: As the greenway develops, as we develop trails along the greenway, it is apparent that my concern is safety.

Sentz: I think with regard to any trails that connect the upper plateau areas with the lower areas, you will not be looking at extensive grading to create those trails. Like virtually any other neighborhood in Pittsburgh you will look for the best route for the trail to follow existing topography—as opposed to having to gouge out something.

Dzombak: Pittsburgh style is to have 800 steps.
Bingham: Is that an option, a step strategy?
Dzombak: Now there is a child safety standard....

(More technical difficulties)

Sentz: One of our designers always had this fantasy of reestablishing another incline in Pittsburgh.
Brown: Does anybody know if any of the slag at the site has any economic value? They mine the slag out of the Century III area all of the time. The slag at Old Browns Hill Road looks like very fresh slag.

Logelin: They did try to re-mine some of that slag not too long ago, maybe ten years ago.

Sentz: I think they were trying to reclaim as many metals as possible when they did that study about ten years ago. They either got what they could or they decided that they where not getting enough to make it economical.

Bingham: I understand there is a supply and demand problem.

Sentz: Additionally, in this region, so much aggregate is available from the rivers and the regular dredging of the rivers that it probably is an economic consideration. There are just too many competing cheaper means of getting that type of aggregate.

Skolnick: Is this the right kind of slag? We had a horrible error with the highway east collapsing as a result of the expansion. The wrong kind of slag was used.

Buck: I know we are running short, but I wonder if it would be useful for the public and for us to have someone from the regulatory agency, like DEP, talk about what the regulatory safety net is, for example, stormwater. Sometimes there are exceptions taken. I think we need to know what sort of regulations are applicable.

Skolnick: Well, DEP is important, but, also, the Allegheny County Health Department because they are the regulatory agent for DEP in Allegheny County.

Blaustein: And for air quality once the grading starts, the Health Department does air.

Buck: We need someone with real stature.

Bingham: Thank you very much for coming.



John Buck, a soil scientist who has worked on a number of revegetation projects speaks to an East European graduate student about revegetation.

SUSTAINABLE OPEN SPACE

Ample Opportunity: A Community Dialogue 4

Thursday, October 23, 1997

Introduction: The last workshop explored the meaning of three aspects of sustainability in the context of urban open space: economy, ecology and community. The keynote speaker, Jack Ahern, presented the different roles of greenways. Roundtable subjects examined economy, ecology, and community issues. Each roundtable was asked to develop a graphic vision for the Nine Mile Run Greenway applying the issues investigated at previous workshops.

Review: This was an evening event with a tour the following Saturday. The event was well attended and the move to a "graphic vision" development phase was successful with diverse concepts and ideas recorded on paper. However, it provided an opportunity to reconsider the relationship of Nine Mile Run to Frick Park as well as identify major user groups and their specific concerns.
Attendance: 80

Advisors:
Joan S. Blaustein, *Urban Planner, Department of City Planning in Pittsburgh*.
As Manager of Special Projects, she is responsible for administering and directing a variety of projects, including the Nine Mile Run Open Space Project and related grant programs, such as the River Conservation Plan. Other projects involve developing a public art plan for the city; managing the Federal Enterprise Community program; and participating in the Strategic Parks Initiative and the Downtown Plan.

Jim DeAngelis, *Graduate School of Public and International Affairs, University of Pittsburgh.*
Mr. DeAngelis's research interests investigate the applications of planning and development through neighborhood, municipal, regional, and state organizations.

Judith Hull, *Architectural and Landscape Historian*.
Dr. Hull is currently working on the history of Trinity Church in New York City. She is a Research Associate with the University of Pittsburgh, Department of Modern and Contemporary Art History.

Larry Ridenour, *Landscape Architect with a specialty in recreation and trails*.
Mr. Ridenour worked in the Allegheny County Planning Department for 11 years where he coordinated the planning, acquisition, design development, and long-term management of Rail-Trail projects and coordinated the county's efforts relating to riverfront conservation and development.

Kirk Savage, *Art Historian at the University of Pittsburgh.*
Mr. Savage work focuses on monuments and public art. His current book, *Standing Soldiers, Kneeling Slaves: Race, War, and Monument in 19th-Century America,* has been recently published by the Princeton University Press.

Ken Tamminga, *Assistant Professor of Landscape Architecture, Pennsylvania State University*.
Mr. Tamminga's research focuses on ecological planning in urban regions. He has extensive experience in urban open space planning in Ontario, including the preparation of the Rouge Valley Park Management Plan and the Lower Don River Valley lands Study.

When cities are built upon beautiful, dramatic or rich sites, their excellence often results from preservation, exploitation and enhancement, rather than obliteration of this genius of the site.

—Ian McHarg
Design with Nature



3-D topographical model of the Nine Mile Run development site.



Looking toward the slag heap from the small community of Duck Hollow.

Introduction

In many respects, building a greenway is the easy part. In fact, participants in the Ample Opportunity Worskhop have pointed out that many elements of a greenway already exist in the valley of Nine Mile Run. The hard part is to nurture and maintain a greenway for years and generations. That is why the Nine Mile Run Greenway Team has chosen sustainable open space as the subject of the last workshop of the Ample Opportunity: Community Dialogue series. As we consider the meaning of ***sustainable open space,*** *we can look at ideas of economic, biological and cultural sustainability.*

From an economic point of view, we need to consider the fact that the existing city parks are infrastructure and maintenance intensive. How do we create a park that needs care (because anything in life worth having requires maintenance and care) but becomes self sustaining?

From the biological point of view, ecologists consider biodiversity to be the key measure of sustainability for plant and wildlife communities. Biodiversity indicates genealogical diversity or the potential for nature to adapt to minor and major changes in the environment. How do we create a park that can react to minor and major changes in the economic environment as well as the natural environment?

To create a sustainable open space we need to establish public lands rooted in a caring community. We need to learn to leverage emerging brownfield development to reestablish our relationship to our urban environment.

I. The Basis for Community Dialogue

What is the effect of my participation in *Ample Opportunity: A Community Dialogue*?

The question of influence and the decision-making process has reoccurred throughout the workshop series. As a non-traditional, non-governmental process, the Nine Mile Run Greenway Project cannot provide a definitive answer. (Arguably, that answer can only come from the city government landowner and regulator.) Instead, we can learn a lesson by looking back to make a prediction that will lead us forward.

At the first workshop of the *Ample Opportunity: A Community Dialogue* series titled "History, Context and Public Policy," we learned that two important civic committees highlighted the Nine Mile Run valley for its potential as an urban park to serve a growing urban populace.

The first, the Pittsburgh Civic Commission formed in 1909 by Mayor George Guthrie, retained Frederick Law Olmsted, Jr. to report on Pittsburgh's parks and boulevards. Olmsted's report for the commission, published in 1911, recognized that "the most striking opportunity noted for a large park is the valley of Nine Mile Run." However, Mayor Guthrie left office in 1909 and was replaced by William Magee, who had little use for the commission or the open space ideals set out in the Olmsted report.

After World War I, prominent Pittsburgh businessmen, organized by Mellon Bank's chief executive officer, Richard B. Mellon, formed the Citizens' Committee on City Plan. The Citizens' Committee consisted of prominent professionals and businessmen and carried significant influence. It contained a subcommittee on recreation that recommended public funds be used to construct a botanical garden, tennis courts, picnic grounds, and a lake in the Nine Mile Run valley. However, these recommendations were lost in the ensuing public debate leading to Pittsburgh's first zoning code.[1] During the time the proposed zoning code was being debated, Duquesne Slag purchased 94 acres from a private estate. Since this purchase was made the year

WORKSHOP GOALS

Participants in the Sustainable Open Space workshop will:

- Explore the definition and functions of greenways.
- Appreciate the roles of parks and open spaces in a region around Nine Mile Run.
- Identify, analyze and evaluate physical, natural, institutional, cultural, and recreational resources in the Nine Mile Run watershed.
- Understand cause and effect relationships of the contextual issues and development concerns associated with a Nine Mile Run Greenway.

"We can't forget what our industrial past has done or even our industrial present is doing, we have to look at those costs and you can turn around and look at it and say, oh my gosh that is ugly, but we still have to look at this and say this is the result of the steel industry. I think there is a lot of social value in recognizing that."

—Loree Speedy

[1] Andrew S. McElwaine, unpublished research, *Slag in the Park, A History of Nine Mile Run,* 1997.

before the zoning code was enacted, industrial use of the Nine Mile Run valley was established and sustained until the 1970s. Again, the Citizens' Committee influence was not enough to have open space protections included in the zoning code or to allocate public funds to expand Frick Park.

In both of these historic accounts, there was no constituency large enough to have the vision of a park in the valley last through changes in city leadership or expansive public policy debates. Learning from these experiences, it appears that an effort to create a greenway in the Nine Mile Run valley needs a broader and larger constituency than has existed in the past. If such a constituency can grow from the seeds sowed by the Nine Mile Run Greenway Project, there is no limit to the influence this work can have.

"There seems to be consensus around that we would like some passive park development in the valley and we would like the stream cleaned up. And probably agree on a gradual minimalist restoration of the slag heap, using the ability of the land to reconstitute itself. The minimalist reconstruction is not a big dollar item, the passive park is not a big dollar item, but...the cleaning of the stream is a big dollar item. We will have to be really creative to get the money, or fight like the devil, or probably both, to get this done."
—Jonathon Robison

What purpose have the workshops served so far?

Workshop participants have expressed frustration throughout that a definition of the greenway does not exist. The intent of the workshop series was not to present a greenway vision, but to let one develop through informed dialogue.

The integration of critical thinking with the democratic process creates a vibrancy from which previously overlooked concepts get considered. The exercise established by the workshop series has led toward a consensus around a vision of a water-centered greenway, with a clean, healthy flowing stream paralleled with trails for hikers and bicycles, connecting Frick Park to the Monongahela River. More detailed design is hampered by a number of unresolved issues. Further definition requires continued citizen participation in the planning process to address issues relating to the stream, slopes, and uses.

"Who is the person, or group making the decisions on culverting? We need to influence that decision."
—Rita Schaier

What was discussed at the previous workshops?

Over the last four months the Greenway team has worked to outline issues specific to the open space by developing advisory groups of academics and professionals, then producing an event to discuss those issues publicly. The three issues have been:

1) History, Context and Public Policy: An overview of how the Nine Mile Run site became what it is today and how we can work within the existing public structure to provide input into what it will become. The roundtables featured discussions with professionals from history, planning, and public policy.

2) Stream Remediation: The history of the problem and complexity of the solution. This included an analysis of the existing stream problems and various approaches to solving them. The roundtables featured discussions with government officials and professionals about the nature of the problem and how citizens can get involved.

3) Community and Ecology: Slag, Soil, Plants and Wildlife: Focused on the idea of community defined in ecological terms (people in relationship with nature). This included an analysis of the systemic relationships and problems faced when attempting to revegetate and sustain plant growth on an artificial material like slag. The roundtables featured discussion with professionals experienced in all four areas.

Stream remediation: Process of returning stream to pre-industrial, non-polluted state.

Slag: Waste product of steel production

"If there is regrading, all the existing vegetation goes down the tubes."
—Peggy Charney

"If the greenway philosophy can be more defined early on it would be reassuring to many people."
—Allan, Squirrel Hill resident

What questions will be discussed at the final workshop?

The *Ample Opportunity* workshops have coalesced a group of citizens that recognize the opportunity of the site. After three meetings on the open space, there are specific issues being raised consistently by our citizen participants. We will use these issues as focus points

during our roundtable discussions on the form, function, and philosophy of the Nine Mile Run Greenway: The most prominent issues are:

1. What is the greenway? There is a consistent request to define the philosophy and form of this greenway. The definition provided by keynote speaker Jack Ahern, suggests that greenways are multi-functional, that we must identify the ecological, cultural, social, and aesthetic goals for each site. We must consider the "ownership of the site." How do we make it accessible and available to the widest community use?

2. How will grading affect the greenway? The grading plan has gone through a slow evolution. Many of our citizen participants have pointed out that the final form of the greenway will be dictated by the movement of slag on the site. The actual regrading of this site, and finding a proven method to revegetate the existing steep slopes has been a slow and complicated process. The city and the development team have been working to find a balance in terms of cost and quality of the resulting environment. At this point, the development team has outlined two potential approaches to site grading: Option 1, provides a relatively accessible 2-1 slope by culverting a portion of the stream and moving more of the slag. This will provide a broad flat park by filling the remaining river valley. Option 2, maintains the stream in its current condition and moves less of the slag. This will retain much of the existing growth, but leave us with the existing steep slopes, a park much like the area in upper Frick. These two options are currently under aesthetic, cost, and value analysis by the development team. It is our understanding that more information on the regrading schemes will be available by the time of our final workshop. These two final landform options will provide a basis for the roundtables to discuss initial ideas about open space access, use, and view options.

3. Why can't the stream be cleaned up? A clean stream is the most consistently requested outcome in the roundtable discussions. Our stream remediation workshop brought together specific experts to discuss the how and why of the pollution problems of Nine Mile Run. For this final workshop, the problems will be outlined so that the roundtables can explore ideas to get people involved in the resolution of this 90-year-old issue.

4. How can we help more people appreciate the lessons of the valley? Education, education, education has been a consistent focus of the roundtables from the previous workshops. It is widely felt that the problems and solutions that occur while Nine Mile Run is reclaimed and revegetated will provide a living classroom opportunity. Education also becomes a citizen awareness issue during discussion of a "Friends of Nine Mile Run" citizen group or a watershed authority.

5. How will we accomplish these goals in the workshop?

Each of the roundtables at this final workshop will discuss the form, function, and philosophy of the Nine Mile Run Greenway. Each roundtable will be assisted by a landscape architect and artist. Advisors from previous workshops will be asked to return to participate in the discussions as resource persons. Each roundtable will capture opportunities, ideas, visions, and challenges concerning the greenway on maps of the stream valley. Participants will also be asked to identify physical, natural, institutional, cultural, and recreational resources in the study area. The result will be a visual representation of the greenway ideals distilled from the workshop participants. The workshop will close with a presentation of the greenway concepts by the roundtable leaders.

Greenways: Networks of land containing linear elements that are planned, designed and managed for multiple purposes including ecological, recreational, cultural, aesthetic, and other purposes compatible with the concept of sustainable land use.

Regrading: Altering the slope and mass of the slag heap to achieve a particular development footprint.

"I understand they originally wanted to move 4.2 million tons of slag, and now they are 2.2 million, they are talking about moving less and less slag."
—Paul Peffer

"This cannot be an effective greenway without cleaning up the water."
—Paul Peffer

"This place can be a valuable site for education for all ages!"
—Anne Mates

"I'd like to paint big blue stripes across all the streets at the edge of the watershed."
—Dean Benjamin



Can you think of words or images that describe:
the ecology of the lands surrounding Nine Mile Run?
the culture and community of the surrounding open spaces?
the recreational opportunities presented by the stream valley?
the social organizations that support adjacent open space uses and experiences that define the "sense of place"?

II. Physical Models for Public Open Space

"Yes, we want a place to attract people to the city, we need to know that what may attract say Tom, or what may not attract me or you. This is a slippery question."
—Peggy Charney

What might this "open space" or "greenway" look like?
As we begin to think about a park for the 21st century what might we be considering? Of the local parks, which relates best to Nine Mile Run? Which of them have similar landscapes? Which of them have elements that you really enjoy? Which of them provide a good model? Which provide a bad model and why?

The city of Pittsburgh has numerous parks each a little different in design and intent. Most of Pittsburgh's parks were developed over a 40-year period spanning the turn of the last century. Highland Park and Schenley Park were developed in 1889, Riverview Park in 1894 and Frick Park in 1919. More recent park developments include the Mellon Park in 1943, and Point State Park in 1969. If we stop to consider these parks, each one reflects the ideas about parks and recreation existing at the time it was developed.

Let's consider the look and feel of the "typical" parks near the Nine Mile Run site (within a 2.5 mile radius). We will explore Frick Park in the most depth due to its adjacent location and the history of attempts to establish this link to the Monongahela.

Arcadian tradition: Could be defined as a romantic vision of an idyllic, pastoral landscape. It refers to the Arcadia region in ancient Greece traditionally known for the contented pastoral innocence of its people.

Frick Park— nature preserve, urban wilderness or unusable wooded valley?
Like most city parks, Frick Park[2] is remarkably varied, encompassing a nature reserve, lawn bowling, tennis courts, three soccer fields, a ball field, and two playgrounds. At the same time the central core of Frick Park is primarily wooded, no roads pass through the park and the infrastructure mentioned above is primarily on the perimeter of the park, by design.

Frick Park was initially part of a 150-acre donation to the city made at the request of Henry Clay Frick's daughter. The initial idea for Frick Park emerges from an Arcadian tradition of parks development that is rural appearing and undeveloped. In addition to the land, Mr. Frick provided

[2] History is summarized from Maxwell, M., 1985. "Pittsburgh's Frick Park: A Unique Addition to the City's Park System." *The Western Pennsylvania Historical Magazine,* Vol. 68, No. 3, July 1985.

a two-million-dollar endowment to maintain the park. There is some controversy as to whether Henry Clay Frick actually intended to leave a legacy of an undeveloped wildlife park. Despite the contemporary musings about intent of the donor, the Frick Park Committee, Frick Foundation representatives and others made a decision soon after his death in December of 1919 to keep the park primarily undeveloped and naturally wooded.

By 1929, the original 150 acres had more than doubled to 370 acres with the careful use of the two-million-dollar endowment. It is interesting to note that at this time the Citizens' Committee on the City Plan, informed by the new progressive parks movement, was formed. The committee advocated a highly programmed and designed park environment, not considering the idea that parkland could be valuable as a nature preserve. This set the stage for a public discussion. Ultimately public opinion favored the plan to leave the park undeveloped.

"In 1939, the Frick Foundation purchased the adjacent Pittsburgh Country Club Property, adding ninety acres to the park area. [The foundation] promptly demolished the club house and regraded the tees and the traps to return the site to its natural state."[3] At the same time, the Frick Park Nature Center was recognized nationally for its outstanding nature education programs.

In 1947, William Black undertook a rigorous study of Frick Park as part of his Ph.D. thesis at the University of Pittsburgh. Let's consider his description of the park:

Frick Park is an area of some four hundred and seventy six acres, consists of three wooded, modified ravines, lowland and upland field in varying stages of scrub and second growth (it had been logged previously). It represents an area approaching climax conditions, but the destruction brought about by man maintains this area in disclimax condition. There are no automobile roads running through the park. About ten miles of hard-surfaced foot trails provide the only convenient access into the area.

In the 1940s, Frick Park survived an extensive program to "manage" stormwater (by removing flow from the valley's streams, and dropping the watertable in such a way that it damaged trees).[4]

In the 1960s, Mr. Childs Frick, son of Henry Clay, donated money for the construction of the new nature center. Helen Frick was influential in seeing it designed and contoured in relation to the landscape. The nature center opened in 1979.

Today, Frick Park remains a relatively undeveloped urban park. The Nature Center is the primary architectural facility in the park, providing an interface for education and nature interpretation. It is still the site of innovative environmental education, with important work being done on the nature trails adjacent to this facility. There is some interest today in restoring the architectural entries and attendant fountains that were part of the original design. There is also some serious discussion of how to best manage the new generation of park users on mountain bikes.

It is important to note that in many ways the Frick donation of land and accompanying endowment provided the method to sustain the ideals of this park through numerous changes in politics, culture, economics, and management approaches. The "stewardship" of this park was insured by a monetary investment in the park's design and intent.

Schenley Park — municipal garden, historic civic park or a maintenance



Frick Park

Progressive (or Reform) Parks Movement: An approach to parks that favored an organized park with numerous facilities, play directors and efficiency minded experts in recreation who could provide the masses with a structured recreational pursuit.

"I started walking through Frick Park and venturing at times into the slag site as long ago as — fifty years. I bird watch, and botanize down there, think it is beautiful in a stark and amazing kind of way."
—Jack Solomon

3 Ibid.

4 Black, W.L., 1947. "The Ecology of a City Park, Frick Park, Pittsburgh, Pennsylvania." Ph.D. dissertation, University of Pittsburgh.

nightmare?

It is a traditional urban park with manicured landscapes, municipal amenities, memorials, and formal gardens. Schenley Park is a major transportation and cultural hub. At the same time, the rolling landscape and Panther Hollow Ravine provide respite, and broad lawns provide space for a variety of passive and active recreational pursuits. Schenley Park is the site of eight or more memorials, a golf course, a skating rink, a swimming pool, a lake and some of the most spectacular views in the city. Phipps Conservatory provides an added benefit.

Schenley Park was a major park acquisition donated to the city in 1889 by Mary E. Schenley, actively lobbied by the visionary director of Pittsburgh Public Works, Edward M. Bigelow. (A city attempt to purchase this land with a bond issue had been struck down earlier.)[5]

The idea for Schenley Park emerged from arcadian traditions and the urban park ideas being developed at the time by Frederick Law Olmsted, an inspiration for Bigelow. Olmsted and other influential designers envisioned an alternative to the formal gardens of Europe—informal picturesque landscapes based on pastoral images. They provided a synthesis of natural serenity and human order with an occasional glimpse of natural wonder (e.g.,Panther Hollow). At the same time the "City Beautiful Movement" was emerging (and Olmsted is again involved), and Oakland was increasingly developing as a center of Pittsburgh civic culture.

City Beautiful Movement: Informed by classical sources and the Ecole des Beaux Arts in France. The City Beautiful aesthetic featured an expanded sense of the civic realm, broad panoramic public spaces, ornate gardens and buildings, a sense of conspicuous wealth and well being. A landscape in which the citizenry could see and be seen in.

Bigelow assembled the land and set the program, designing the roadways and regrading for the development of the park. In 1896, William Falconer [6] was brought to Pittsburgh from New York by Bigelow to be the superintendent of Schenley Park. A Scottish botanist "trained at the British Royal Gardens at Kew," Falconer arrived to preside over the final regrading and to plant and landscape the park. "He laid out plantings according to the Kew system, which was the sequence of plant families to be found in the sixth edition of *Gray's Manual of Botany.*"[7] This manual taught a method of planting that would educate the viewer by a careful planting and layout of the perennial beds according to families. Falconer was also instrumental in developing the program and diverse collection of the Phipps Conservatory. Working with Henry Phipps, he traveled to the Caribbean and Central America to "observe how they grew so that the appearance of nature could be duplicated in Schenley Park."[8] Falconer and Bigelow would not be able to fully realize their nature ideals due to political shifts. The ideas and concepts that they initially laid out have perpetuated in some form to this day.



Phipps Conservatory

Schenley Park with all its infrastructure is both a show piece and burden. The shifts in society, culture, and ideas about park uses have not been kind over time. It is currently in need of serious attention. The damaged bridge (currently slated for repair) at Panther Hollow is one of the most visible examples. In many ways Schenley Park still functions as a classic urban park, being used for celebrations, road races, and events. The Phipps Conservatory has recently been privatized illustrating the current economic realities, and exploring new methods to restore the grandeur of the Beaux Arts influence. This private approach to our public realm deserves careful consideration, as we consider the sustainability of parks for the future.

The Hazelwood Greenway — a passive urban wilderness

[5] Stewart, H., 1943. "Historical data on Pittsburgh Public Parks"
[6] Hannegan, B., 1996. "William Falconer and the Landscaping of Schenley Park," *Carnegie Magazine,* May/June 1996.
[7] Ibid.
[8] Ibid.

The Hazelwood Greenway is a 70-acre system of steep slopes and wooded under-mined vacant land. It is one of the larger of Pittsburgh's officially recognized greenways. In 1979, the city established a Greenway Program designed to consolidate publicly-owned vacant wooded, steep slope and environmentally sensitive land into continuous belts of natural space for passive use. For example, the Hazelwood Greenway provides a natural wooded extension behind the Bud Hammer Playground in Greenfield.

The Pittsburgh Greenway Program provides another model for us to consider as we think through the idea of sustainable open space. The program is designed and developed to rely on community interest and stewardship. When the program was designed and throughout the '80s, community planners in the Planning Department encouraged and helped neighborhoods develop and maintain greenways. All of those positions were eliminated by layoffs in 1990. Each community of stewards in the Pittsburgh Greenway Program has been affected in different ways. The Hazelwood Greenway has been badly impacted and is in need of critical maintenance. The Seldom Seen Greenway, on the other hand, still flourishes under an active community of stewards.



Hazelwood Greenway

Koenig Fields — active, athletic fields

Koenig Field in Edgewood is another park we need to consider. Dedicated to active, organized recreation, Koenig Fields is a highly organized landscape serving the local sporting community. It includes tennis courts and a large field for soccer and football.

What is the current status of parks in Pittsburgh?

by Joan Blaustein, Department of City Planning

Pittsburgh has begun a venture to reexamine the parks and open space systems in the city — everything from large, regional parks to neighborhood parklets and greenways. When much of our park system was created at the turn of the century, Pittsburgh had a population of 500,000 people and an expanding economy. Now, with a significantly smaller population, with very different needs than at the turn of the century, we require a different approach to parks. We need a system that:

- can effectively maintain our parks and open spaces
- meets the needs of an aging population, distressed and underserved neighborhoods
- helps to attract and retain young people to Pittsburgh
- supports economic development

Two major efforts are underway in the city to look at these issues and propose some solutions.

"I wish we could learn to look at this differently, and learn to take advantage of the existing topography."

—Ken Kotovsky



Koenig Fields

Strategic Parks Planning Initiative

In late 1995, a group of public, private, and non-profit organizations came together to discuss the potential for Pittsburgh's parks system and the need for more strategic planning for parks and open space. From these discussions, the need for a more formal process became apparent, and the Strategic Parks Planning Initiative was formed. First, national and local research was conducted and a variety of events with diverse park users and stakeholders were held in order to enhance the information gathered through research. Four focus areas emerged from this process: administration, resources, physical improvements and marketing. A Vision Paper outlining these areas, and the goals and

"Pittsburgh is a study of disconnection from the riverside. We have always had problems with access to the river. People drive many miles to go to Ohiopyle when we have this resource here...it could be spectacular here if its done right."
—Ken Kotovsky

strategies associated with them, is being developed. This Vision Paper will be used to define potential demonstration projects, build a broader constituency, market concepts to a wider audience, and prepare a funding proposal to national foundations. The Strategic Parks Planning Initiative will work with the city of Pittsburgh to refine the recommendations related to administrative challenges.

For more information contact Caryn Ernst, at the Community Design Center: 391-4144.

Regional Parks Planning



Mellon Park

"There are not many streams through urban communities. There are not many times that Mother Nature gives us a second chance. Should this greenway stand as shining way to reclaim a brownfield....Is this to be a greenway or a development with a bit of green? What are the economics involved?"
—Jerry Kruth

The city of Pittsburgh is about to undertake a Master Planning process for its four regional parks — complete plans for Frick, Riverview, and Highland, and update and finalize the 1991 Master Plan for Schenley Park. The purpose of the plans will be to guide the city's decisions on programming, the provision or elimination of facilities, and maintenance. These Master Plans will also serve as the basis for soliciting and guiding public and private investments in these regional-serving parks. The plans will include: park background, description, inventory of facilities, inventory of programs, needs/issues analysis, alternatives to address needs/issues, revenue and funding sources, recommendations with phased implementation plan. The Pittsburgh Parks Conservancy is being organized as a non-profit group to advocate for the parks.

For more information contact Joan Blaustein at the Department of City Planning: 255-2206 or Meg Cheever of the Pittburgh Parks Conservancy: 383-7158.

In the previous section we considered the four basic types of

III. Theoretical Models for Greenways

Greenway linkage: Would indicate the ecosystem potential to extract benefit from greenways in an urban landscape. There is potential to realize both human and biological benefits from an awareness of the connections between green areas.

Pittsburgh parks: 1) an undeveloped arcadian woods; 2) a beaux arts park with carefully designed plantings and numerous civic structures; 3) a greenway, community designated undevelopable open space; and 4) an organized recreational field, designed and dedicated to athletics. In the following paragraphs, we will outline the ideas which are informing current urban park planning. This may help broaden our thinking about sustainable open space at Nine Mile Run.

I like parks and nature but am not sure of this greenway approach. What exactly does it mean?

Excerpts from an article by Jack Ahern, "Greenways as a Planning Strategy." Originally published in the journal, Landscape and Urban Planning *#33, 1995.*

Greenways are networks of land containing linear elements that are planned, designed, and managed for multiple purposes including ecological, recreational, cultural, aesthetic, and other purposes compatible with the concept of sustainable land use. The definition and the following five key ideas provide a view of greenways as a complex and variable strategic approach to landscape planning. Perhaps greenways are appealing and successful because of the simplicity of the concept and because greenways do not attempt to transform or control the entire landscape — but by focusing on riparian corridors, and other environmentally sensitive areas, greenways are more modest in their ambitions, while exploiting linear elements in a strategic and synergistic manner. There are five key ideas connected to this definition:

"Maybe this whole process has to deal with how everyone perceives a park."
—Unidentified

1. The spatial configuration is primarily linear.
2. Linkage is a key characteristic defining the greenway and relating to landscape context. As integrated systems, greenways attempt to realize a synergy based on these spatial linkages.
3. Greenways are multi-functional, because of this, setting goals is an essential process of greenway planning. Identify the ecological, cultural, social, and aesthetic goals for each site. Some of these may be in conflict and compromise and trade-off will occur.
4. Greenways are based on an assumed complimentary between nature protection and economic development. They are a key component and paradigm for land use relationships in sustainable development.
5. Greenways should be considered a compliment to comprehensive landscape planning. Efforts should be made to protect other important landscapes that are not linear in form and which may not benefit from linkages or multiple use.

Are greenways a new idea?

by Ken Tamminga, Department of Landscape Architecture, Pennsylvania State University

Pittsburgh was not isolated from larger parks and open space trends in the late 1800s and early 1900s. For example, the birth of Schenley Park in 1889 was quite consistent with park-making across the country. Its curving carriage ways, extensive plantings and sculptures were clearly inspired by Central Park and the like. However, Pittsburgh was apparently not attracted to the more systematic thinking that created

"I grew up in Minneapolis and the river way, the waterway, is the whole guiding principle of the park system there. I had always thought of the slag heaps as an extension of Frick Park."

—Dean Benjamin

green networks in cities such as Boston and Minneapolis. Perhaps because of the wall of industry along its riverbanks, or the discreet hills and forgotten ravines, Pittsburgh's parks were content as islands in a sea of neighborhoods. Even Frederick Law Olmsted, Jr., as a consultant to Mayor Guthrie's Civic Commission in 1909, could not convince Pittsburghers of the merit of linear park connections. Following is a list of historic events that help set the context for discussing modern greenways in Pittsburgh.

1865: Frederick Law Olmsted, Sr. and Calvert Vaux conceived the two basic greenway components—the stream valley park and the pleasure drive—in an 1865 plan for Berkeley, California.

"Providing access to the stream is a chicken and the egg question. Do you provide access now or wait till it is cleaned up? Of course if people don't spend time there and learn to care....It may be another 90 years!"

—Dean Benjamin

1866: Olmsted and Vaux plan Brooklyn's Prospect Park, complete with greenway-like links and corridors.

1869: Olmsted and Vaux prepare the General Plan for Riverside (Chicago), complete with prototypical greenway-like open space winding along the Des Plaines River.

1876: Olmsted, Sr. developed Boston's "emerald necklace," entailing a linked system along the Muddy River, Charles River, boulevards and parks that encircled half the Boston urban area.

1883: Horace Cleveland designed a linear open space system for Minneapolis, organized around natural hydrological systems (rivers, streams and lakes).

1883: George Kessler designed a similar system for Kansas City, with a focus on the river terraces of the Missouri River and its tributaries.

1890: Charles Eliot convenes a conference on the new idea of "metropolitan parks" in the Boston-Cambridge region, which led to the founding of the Metropolitan Parks Commission.

1898: Ebenezer Howard proposes the concept of urban greenbelts in "Tomorrow: a Peaceful Path to Real Reform." Howard's work led to the idea of the Garden City.

1902: Frederick Law Olmsted, Jr. (Olmsted, Sr.'s nephew) contributed to the Senate Parks Commission's plan for updating L'Enfant's 1791 plan for Washington, D.C.; it included designation of green parkways along Rock Creek, the Potomac, and a number of lesser waterways.

"It seems to me that the housing and culverting issues should be looked at in a different way....If it were on a stream, there were some nice rocks along the stream and it opened up on a big river, maybe there could be a marina back there, with boats tied up...waterfront that opens up to a big waterfront, sounds like a winner to me"

—Ken Kotovsky

1915: Olmsted, Jr. and W.A. Stinchcomb prepared a plan for the city of Cleveland (also called the "emerald necklace") targeted at ridges and ravines; the Cleveland regional system now encompasses 18,000 acres and is 85 miles in length.

If there was so much interest in greenways at the beginning of the century, why does it seem they are a new idea?

Urban greenway planning experienced a near demise in the early decades of this century because of new aesthetic ideals and larger social dynamics. The 1893 World Columbian Exposition in Chicago marked the beginning of the City Beautiful Movement. Classic architecture experienced a great revival, as evidenced by some of Pittsburgh's most notable buildings, many of them scattered throughout Oakland. This preoccupation with built form did little to bolster sagging public interest in greenways and natural open spaces.

"I find it hard to imagine Nine Mile run without being able to walk alongside it. If you cover the stream, it is not Nine Mile Run. The unique thing about it is that it is a corridor. You can bridge it, you can put roads through it, but it needs to remain a corridor."

—Jon Smith

The 1910s and '20s saw a shift in priorities once again, this time to public health and city infrastructure. Romantic views of nature gave way to early Modernist perspectives that sought to control and harness natural processes. Huge engineering works ensued. Stream

culvertization, river-filling and new sewage-transport systems bore witness to this so-called City Efficient era. Most of Pittsburgh's streams were buried or channelized during this period, including the upper reaches of Nine Mile Run.

Meanwhile, the rise of the automobile allowed for the consumption of "pristine" nature beyond the urban fringe. In wilderness areas the growing National Park Movement continued to adopt and refine greenway principles. Newly conceived linear motor parks, including the Blue Ridge Parkway, also borrowed greenway concepts from an earlier era. Still, most designers and planners practiced their craft where they could—in and around cities where suburbs, shopping malls and estates squandered their creative energies.

It was the environmental movement of the 1960s that stimulated a gradual reawakening of the greenway movement. Writers such as Rachel Carson, Barry Commoner and Jane Jacobs advocated a post-industrial view of nature in the city. In terms of application, landscape architects again translated theory into new greenway forms, with seminal works by Phil Lewis (Wisconsin Outdoor Recreation Plan, early 1960s), Ian McHarg (*Design with Nature,* 1969), Michael Hough (*The Urban Landscape,* 1971) and a few others.

This time around, however, greenway planners began to tap into science as a means of adding substance to the greenway cause. The late '70s and early '80s witnessed a remarkable outgrowth of basic ecology and biology into several proactive applied ecologies. Landscape ecology helped establish greenways as a vital part of the urban regional mosaic, an antidote to increasing ecological fragmentation. Restoration ecology provided the tools to reconstruct some semblance of natural function on degraded sites. And conservation biology studied the habitat requirements of indigenous species, calling for large, connected natural areas and corridors as a means to achieving the genetic flow needed for diverse and healthy populations.

Ecology: The branch of biology dealing with the relationships between organisms and their environment.

Conservation biology: The identification of threatened an endangered species and their related ecosystems with the intention of preventing further loss or threats to those species.

These applied ecologies have recently begun to merge, and are providing an ever stronger foundation for the modern greenways movement. Uncharacteristic of many sciences, they perceived the role of social values and cultural norms. They have helped to popularize and make relevant such concepts as "biodiversity" and "ecological integrity." Difficult to quantify, these ideas nevertheless are being shown as essential characteristics of a healthy urban region. Ecologists have learned to work alongside designers and community groups. Today, greenway planning is an art, a science and, at its best, a deeply community-based process.

Connected natural systems are becoming the hallmark of livable cities. Portland's Greenspaces, Toronto's Bioregional Greenway Network and Chattanooga's Riverpark are just some examples of new and widely valued initiatives that grew from collaborative involvement between designers/ecologists, local citizens and supportive local and state governments. As the 21st century confronts Pittsburgh, this three way partnership approach could provide the impetus for another, greener Renaissance.

Pittsburgh's history has provided us with a legacy of large, gracious parks. But they are isolated from each other and the rivers and hillsides that are the ecological lifeblood of the region. Clearly, Nine Mile Run presents a prime opportunity to create an ecological greenway link between Frick Park and the Monongahela River. And in time, it may

Ecosystems: The system formed by the interaction between a community of organisms with their environment.

become a showcase of the new ethic, one that values fresh water, clean soil, and thriving wildlife enough to act.

What does ecology have to do with the planning and management of parks?

Ecosystems planning assumes that society and nature are interconnected. Here in Pittsburgh our industrial legacy has fragmented that relationship. As we consider redevelopment of our post-industrial brownfield sites, we have an opportunity to make reparation and ensure that new open spaces enhance natural processes. To do that, we have to carefully consider the complexity of the existing natural environment (and its degradation due to human activities) and begin to value and support the ecology which defines this city of rivers.

Ecological design[9] is based on ideas about structure and function in the context of physical location. When we talk about structure, think about the things we see in nature: rocks, soils, plants, and trees, wildlife and birds. These can be further broken down into: rocks and soils, (the abiotic components), green plants which store the energy from the sun, and animals which consume plants and other animals (the producers), and microorganisms: barely visible creatures that live in the soil and help decompose decaying plant and vegetable matter and in the process create soil (the decomposers). Each of these structural groups interacts in a variety of ways, some of the interactions are obligate, or determined by the relationship of one life form to another. All of the life forms are tied in some way to a complex web. One of the ecological definitions of sustainability is oriented on diversity. The more complex the web, the less likely it is to be seriously damaged by natural and human catastrophes.

Obligate: Creatures, or plants that are uniquely suited to a specific environment, and cannot exist without the physical conditions of that environment.

Function refers to the flow of energy and materials in the landscape. The relationship between the two primary sources of energy, the sun and water, is manifest in the green plants. The green plants nurture the animals, plants and animals eventually return to the soil to create the conditions which nurture new growth. This is all based on two physical laws. The first law of thermodynamics, energy is neither created or destroyed, although it may be transformed. (From the biological point of view, food is considered energy.) The second law of thermodynamics is that as food/energy is used, it is degraded into a more dispersed form. Think of the energy of the sun, distributed to the multiple plants which are then consumed by the animals which eventually die and the nutrients are utilized by microorganisms in the soil.

Abiotic: The absence of life, i.e., minerals, rocks, stones etc.

The other important element of ecological design is the location. Structure and function are determined by location. Plants and animals evolve out of a relationship to landforms, and climates. Combinations of temperature, moisture and surface form effect the geology, soils and communities of plants and animals. "Each species has a limiting condition that depends on temperature and moisture, but they also depend on the presence of the other organisms with similar environmental needs." Thus, every place is unique in complex interrelationships or systems of ecology. The structure and functions of landscapes in relation to flowing water are especially complex and exciting to consider.

Thermodynamics: Using or producing heat.

Humans have an enormous affect on the function of ecosystems. Any manmade landscape from the slag heaps to a rigorously "gardened" city park is most likely ecologically degraded to the point of

[9] Lyle, J.T., 1985, "Design for Human Ecosystems, Landscape, Land Use and Natural Resources." Van Nostrand Reinhold, New York.

ecosystem collapse. In the attempt to grow exotics, and create visually appealing landscapes based on formal design traditions, we apply a variety of aggressive management techniques from pruning to mowing, raking, and the application of pesticides and fertilizers which have a detrimental effect on the food chain of producers. Butterflies are a good example. They rely on specific plants for larval food and a general assortment for nectar. They are particularly susceptible to pesticides. As we mow the grass and rake the leaves we are often removing the sleeping chrysalis or cocoon stage of the butterflies, insuring that the few that escape the application of pesticides will not survive.

Ecosystem collapse: When the environment supporting the interactions of organisms ceases to exist or function properly.

Once we begin to understand the complex relationships of plants, animals, and human nature we can begin to design our parks to enhance the experience of nature and promote the development of a sustainable ecosystem. We need to understand the order of three systems to design from an ecological point of view: 1) The ideal system for the region; 2) The existing system; and 3) the likely effect of our intended design. One of the hardest concepts to understand is the idea that nature is a dynamic entity. Designing with a systems ecology approach takes into account the transformation of a landscape over time (known as plant succession) and as a result tries to plan accordingly.

Exotics: Plant materials that are brought in from outside the bio-region, defined as the immediate geographical area of similar climate, soils, landscape and flora and fauna.

Dynamic entity: Something which has motion, force or cyclic action, in the process of change.

Applying a systems ecology approach to an urban parks program can be extremely rewarding. Aesthetic perception can be broken down into two broad categories; panoramic landscapes and immersive landscapes. "Panoramic landscapes emphasize physical distance and is a primarily visual experience that involves a sense of separation between viewer and landscape."[10] An immersive landscape emphasizes relationships and proximity. The experience is multi-sensual involving a sense of continuity between the viewer and the landscape and its intermediary wildlife. It could be argued that the immersive landscape experience is one of the experiential goals for applied ecosystems planning of an urban park system.

Immersive: To plunge into or involve deeply. To experience with multiple senses and the intellect at the same time.

[10] Berlant, A., 1996. "Aesthetic Perception in environmental design." published in *Environmental Aesthetics,* edited by Nasar, J. L., Cambridge University Press. 1988



IV. Citizenship and Stewardship

Brownfields: Abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination.

Is the Pittsburgh Greenway Program a model for the Nine Mile Run Greenway?

The goals of Pittsburgh's Greenway Program, as set forth in the 1970s, still resonate today. The goals are:

- to appreciate the natural environment that surrounds us;
- to capture and preserve the steep wooded hillsides and make them part of our lives; and
- to leave a legacy for future generations by formal adoption.

"The natural green areas are a very attractive amenity, or a good selling point to incoming residents to the area. Right now, Nine Mile Run is agreeably not the most pristine place on the planet, but it has potential to be cleaned up. The question which remains to be answered is where will the money come from."
—Mark Remcheck

The most interesting aspect of this program is that it relies on neighborhood participation to define the scope and boundaries of the greenway. Furthermore, it involves specific community groups in the care of these urban open spaces. Before the city will place property into the greenway system, a community organization must approve a resolution defining neighborhood commitments on such items as: project planning, assistance in soliciting private property gifts, clean-up help, community education, and area monitoring. The neighborhood submits that resolution to the city which then takes action on the proposed greenway.

"The Seldom Seen Greenway for instance, very little has been done with it. Now, it wasn't as severe. But it did have some major things happening there, but they just let it grow. It is fairly recent according to the history we are hearing now that this has been left. Just let it go, is an option that has to be put in there for analysis."
—David Tessitor

The first greenway, Spring Hill/Spring Garden, was adopted in 1980; the last, Elliot and Shoreham, were adopted in 1989. Due in large part to the layoffs of community planners in 1990, no new greenway designations have occurred. Community planners were assigned to interact with community organizations and citizens in geographic areas. They were able to establish the relationships necessary to develop a greenway. After the eight-year period of inactivity, three neighborhoods are seeking to establish officially recognized greenways: Fineview, Sheridan, and South Oakland. These are likely to occur in 1998. Obviously, the spirit of the City Greenway Program is strong.

"It would be nice to see something green there. I don't actually see the slag heap. But if I walk down the road, it does not really look that bad to me. A lot of areas in this world have rocky formations, whatever, it really does not look that ugly. I see some gain that we have some park land or whatever but not so much that it outweighs other things like an immense increase in traffic."
—Gundi Caginalp

The land that is likely to be considered for the greenway program is "left-over," coal mine riddled, historically ignored valleys, and steep slopes. The "left-over" categorization applies equally well to post-industrial brownfields as exemplified by Nine Mile Run. How do you elevate the public perception of a place known as a dump or a wasteland? How do you manage the transition of left-over land into places of complex experience, value, and interest to the community?

The Nine Mile Run Greenway Project is modeling one potential process.

"The questions is, what is the greenway? I would take it on faith, but I don't hear that around the room. I am hearing so much unwillingness to take things on trust and so much dispute about what the 'it' is, that it undermines the public support we need."

—Jonathon Robison

How is the City Greenway Program funded?

It is the responsibility of the community organization to fund greenway maintenance. In the past, the Greenway Program received funding from the city through a contract with Neighborfair Pittsburgh (now CitySource Associates). These funds were used for initial debris removal and fence installation at new greenway areas. The fences act as barriers to prevent illegal dumping. Each greenway includes signs to recognize the greenway as a visible community asset.

After this initial investment, the responsibility to maintain the greenway is as defined in the community resolution. In Beechview, the Friends of the Green and the Seldom Seen Greenway organize biannual clean-ups and hikes through the greenway. For those greenways, without such strong community buy-in, illegal dumping and neglect would degrade the greenway experience.

So, what are the specific issues affecting a Nine Mile Run Greenway?

"In the case of Nine Mile Run it seems the municipalities show no concern for sewers beyond their borders."

—Doug Chaffey

•Should it be a greenway or a park?
•Water issues: how to resolve 100 years of municipal pollution.
•Slope, grading, steepness, and revegetation.
•Use options: park, greenway, playing fields, the complex experience of a post-industrial river valley or the artifice of a pastoral landscape created by filling what is left of the valley. (There are good arguments on both sides of the question.)
•Interface with the built environment: the relationship between the existing communities and the new housing, the relationship between the greenway/park and these communities.

How can citizens stay involved in the Nine Mile Run Greenway planning process?

The Department of Conservation and Natural Resources has provided the city of Pittsburgh with a grant to develop a strategy for restoring, maintaining or enhancing Nine Mile Run through the formulation of a reciprocal citizen <--> professional, community-based planning process. The Department of City Planning is managing the river conservation process. The STUDIO has worked to assemble a team of academics from three institutions to gather data and create the public program.

The planning process:

1. A review of all *Ample Opportunity: A Community Dialogue* materials.
2. Presentations to any community group that calls and requests it.
3. Continued staffing of the community resource center on weekends. (Saturday, 9 a.m.-1 p.m. and Sunday 12-4 p.m.)
4. The creation of a community advisory board. Stakeholder organizations should appoint a representative, individuals should call to be sure their point of view is represented.
5. Two or more public meetings are planned:
   (a) to present and solicit input to the Draft Conservation Plan.
   (b) to present the Final Plan and include final public comment.

For more information contact: Tim Collins or John Stephen at the STUDIO: 268-3673.



Jack Ahern

Professor, Department of Landscape Architecture and Regional Planning, University of Massachusetts

Mr. Ahern's research interests focus on greenways as a planning tool and linking landscape structure and function through an extensive open space system.

The following is a transcription of Mr. Ahern's keynote address.

Jack Ahern
Professor, Department of Landscape Architecture
and Regional Planning, University of Massachusetts

Thank you, Ken, for the kind introduction. It's my pleasure to be here. It's my first time in Pittsburgh. I lived on the other side of this state for five years. My first two children were born in Pennsylvania, but I haven't been back for awhile and I never did make it to this side, so it's a pleasure to be here. I can't think of a better way to be introduced to the City, than to meet such an inspired group of people and to learn about this exciting project. They sent me a relatively large file of information that I read and digested, but to be here in person is much more exciting—to see this impressive work from the STUDIO. This new model of interdisciplinary cooperation, not only among academics and professionals, but including the community as an integral part. I think it's very well done, and you are fortunate to have them here. I can say this from seeing a lot of other models for how this might be done. Well, the evening is moving along and we have a full agenda ahead of us, so I'm going to try to be as brief as I can and do my talk in a half an hour. I'm going to talk about greenways as a planning strategy or as a planning approach. In your literature, there's a definition that I've written that I'll just repeat. I think it's a good place to start. "Greenways are networks of land containing linear elements that are planned, designed, and managed for multiple purposes, including ecological, recreational, cultural, aesthetic, and other purposes that are compatible with the concept of sustainable land use."

First of all, when we talk about greenways, the primary spatial configuration is linear. We're not talking about preserving and managing large regions. It's a strategic approach that focuses on corridors where resources and activities tend to be concentrated and linkage is a key factor. There's a presumption of synergy with greenways, by linking together nodes of protected areas, we achieve something greater than [the sum of the parts]; by putting different components together, we achieve something that does things that the individual parts [separately] cannot do.

So, there's a presumption of synergy and that can be manifested in benefits of many types: hydrological, ecological, recreation, aesthetic, quality of life, economic, to name a few. Greenways are multifunctional or multipurpose. In some cases, the ecological benefits are emphasized and in some cases, the recreational benefits are emphasized, but in many, the distinctions are blurred and we can't really point to one particular use. Then it's up to the community and the stakeholders and the residents to make the decisions about which gets the first priority. I would say that greenways are a good example of the assumed complimentary between economic development and environmental protection, which is part of my concept of sustainable development. I like the simple definition from the Bruntland Report of sustainable development, titled "Our Common Future". Maybe we can get to that later, but I'll leave that alone for now. Finally (maybe I sound too much like a champion for greenways) but I like to point out that greenways are one strategic approach and there are other fish to fry. We need to take care of entire watersheds and nations and regions and states and counties, but greenways are something that is do-able. It's a grassroots effort; it can bring people together and achieve something in a strategic way where these benefits can be realized.

So let's look first at a couple of overheads from my paper. In this paper, I tried to look at all these different terms and found a Tower of Babel out there. These are just some of the terms that I encountered that are used around the world to delineate greenways: ecological networks, wildlife corridors, riparian buffers, greenbelts, landscape linkages. I tried to indicate whether they're primarily from Europe or North America, the areas I'm most familiar with, whether they are functioning for biological reasons, cultural or multifunctional. What is the scale? Some of these go all the way to the continental scale, in Europe, particularly. National, regional or local— the Nine Mile Run Greenway is an example of a local scale greenway. The primary

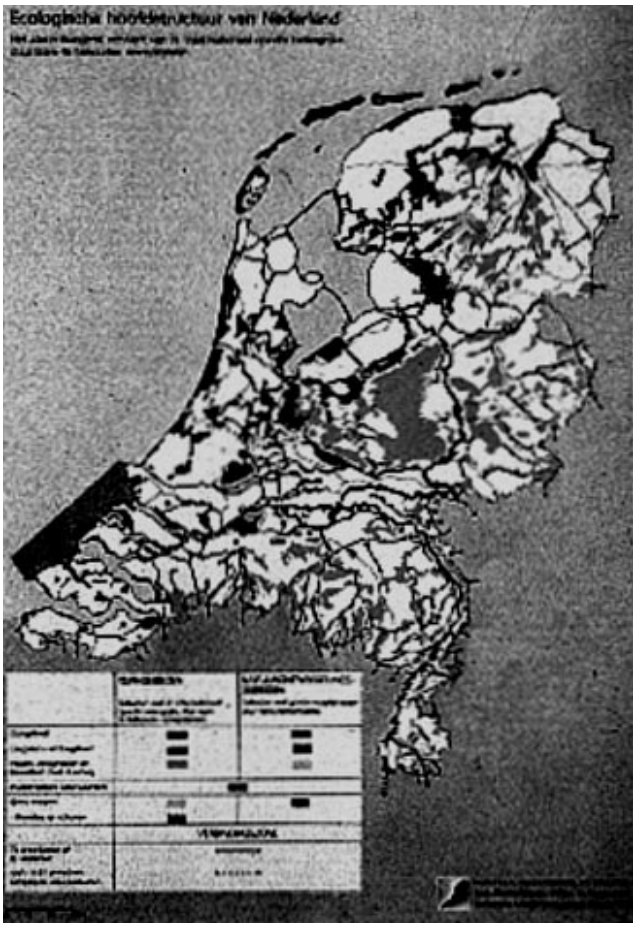
spatial basis—some of these are physical, relying on river corridors, like your project [and] some are biological, looking at the needs of species. Some [spatial bases] are cultural, and others are opportunistic. Rails/trails [is a good example] of a cultural greenway; the spatial basis is an abandoned railroad line that may or may not have anything to do with the stream corridor, or wildlife habitat.

I've developed a typology that I hope is useful to facilitate a discussion so that people from other parts of the world can understand what they really are trying to do. Is a greenway in Lithuania the same as a greenway in South America or in Asia? Well, we can start to look at the scale, and I'm proposing a simple scheme here, like stream orders. We can talk about the landscape context, whether it's in a forested area or an urban area. We can talk about the functions. What are they trying to achieve? Finally, we can talk about the spatial strategy. I've identified four different spatial strategies here: protective, defensive, offensive, and opportunistic. In these diagrams, the dark area represents some kind of a special core area [in which] you are presumably interested. Whether it's a special wetland in a wildlife habitat or a hilltop that has a beautiful view from it, that's the core area. Around that, in some of these examples, is a buffer zone and then corridors. In the column on the left, is the existing condition and on the right is the goal. In New England; our population is declining, the landscape is coming back to a large measure, and we have an opportunity to protect our landscape. Here's a landscape [that is] forested, beautiful, and functioning well. What we need to do is predetermine this network and defend that network against change (against forestry or development). We just protect it and it emerges after the landscape changes as a result of a protective strategy.

The defensive approach is when the resources become a little bit more scarce and then, the threats are a bit more imminent. It's important, I believe, to realize if you only apply a defensive approach, you are always in a losing proposition, because the defense is never perfect. Things are always nibbled away from the edges. They are effected, if nothing else, by physical factors of wind at the edge of forests or predation from species coming into a core area. So when we have a core area in inhospitable surroundings, we can create a buffer zone around it, but there's always going to be a net loss to the core area.

We can have a core area in a somewhat supportive matrix. Here, we can be a little more offensive, and we can create new corridors to link the core area through ecological restoration. I would say that your work is more in this strategy. You have a tremendous opportunity and there are some resource values, but to realize the full value you need to restore that and bring this stream back to life. Clean up the water, stabilize the slopes, reestablish vegetation. You need to be offensive. Maybe that's obvious to you that you need to work that way, but when you are looking internationally at these things, a lot of people in New England (where I come from) don't even realize they are only acting in a defensive mode. They don't really think about the potential for offensive, of things that "could be", that don't exist yet. If you lock into that defensive strategy, then you are always in a losing proposition.

I'd like to talk briefly about two projects to illustrate some of these ideas [more] clearly. First, I'd like to talk about The Netherlands where I was fortunate to spend a year a few years ago. I'm going to talk about a project, but it's a special opportunity to put into [the context] of national scale. It's the only country I know of that has a whole ecological plan for the country, a network of protected areas.



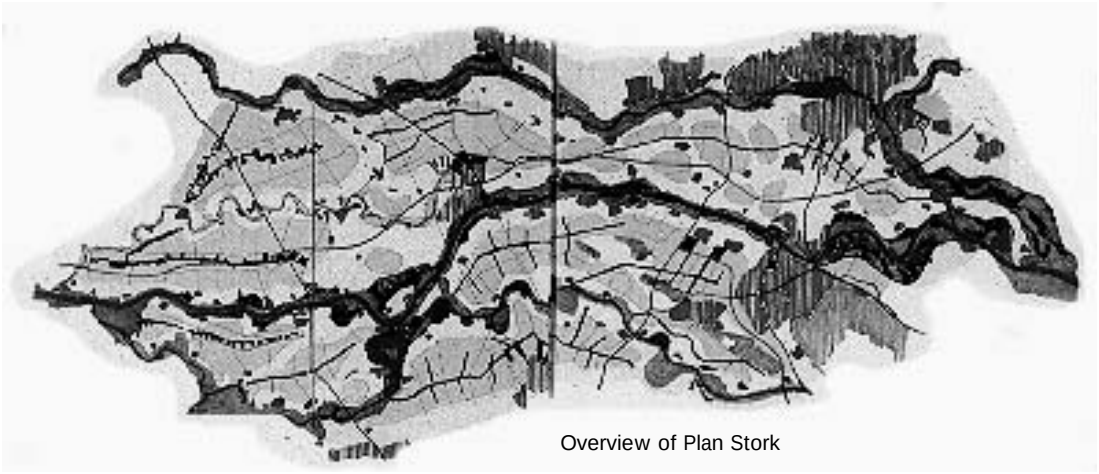
An ecological plan for The Netherlands, 1990

The colors indicate different types of environments from the sandy areas on the eastern part of the country to the dunes along the North Sea, to the peat areas. If you look a bit closer, you can see that the core areas are shown here (the lighter colors are the buffer zones) and then there are a lot of corridors indicated. Now, The Netherlands is way beyond the brink of sustainability, in my view. They have massive water pollution, species are becoming extinct at an alarming rate; the biodiversity is in serious trouble. So they are in a very, very offensive mode here to try and bring this back. These corridors, linkages, and buffer zones do not exist. They have to be restored.

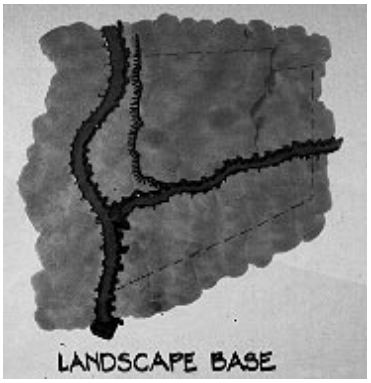
The other thing I think that is worth looking at about the Dutch example, is that they are integrating a creative approach with a scientific approach. This is a famous project called "Plan Stork," that was the result of a competition to come up with some visions for this landscape on a regional scale. It's called the river district [and is] located in the south central Netherlands. This is the City of Arnhem. Nijmegan and Utrecht are up at the top of the map. The area includes the Rhine, the Maas, and the Waal. The three rivers all come together here. The problem is, well, we all know that nature needs to be brought back here, but how do you do it? How can you convince the farmers to give up their land to allow it to happen? There are economic, social, and political issues. This is a rather clever scheme that involves a trade-off with the farmers in a kind of deal making plan on a regional scale so the land adjacent to the rivers (the light blue areas) can be restored to riverside riparian forest.

You see now next to the river channel, there's a flood plain which doesn't exist at the moment and in between the rivers, the yellow zones are places where agriculture is given more freedom from restriction. So they can respond more quickly to an international market for different agricultural products by changing to new fertilizers or changing to the groundwater level. They've employed a myth to sell this plan which is the black stork, a bird that is extinct in The Netherlands but formerly was very common in flood plain forests. The forests have long since disappeared and so has the stork. So the plan is named after the stork. They've created a myth people identify with and use this to sell the plan. Here's another view of the plan with the two components—this trade-off is very much in the realm of sustainability. Making a deal that is right down to the concept integrated with the economic reality of the situation.

The yellow areas are the intensified agricultural areas; it's a strategy of enclosing and containing these. Acknowledging that, yes, they will be polluted, they will pollute the ground water, but this is one way to gain this extra land adjacent to the rivers so that these flood plain forests can be developed. The agriculture and pasture goes right up to the edge of the Rhine River because that's fertile, beautiful land and it's protected by a dike. There's a small dike adjacent to the stream. Further inland, there is a second dike, which is the real flood protection. So occasionally the area will flood, but often not even every year; the flood plain dynamics have been taken away from the flood plain, therefore, the forest can't exist and, therefore, the stork can't exist. Here's the idea: to break the lower dike, strategically, in a few places, to keep the major dike intact, and to allow some interaction between the river and this flood plain so that the riparian forests can develop. This is the other concept for the agricultural area that is a little difficult to explain in a few words, but I'll be glad to discuss that with you if you're interested later. Lets just understand that They're given more flexibility. There is a pilot project that was already implemented along the Rhine River, it's called the Blauwe Kamer. The dike was broken and the area that was formerly used for mining clay for bricks is now flooded periodically. The river flood brings in



Overview of Plan Stork





Concept diagrams illustrating landscape formation around Chicopee River in Massachusetts.

sediment and does some erosion. The hydrology is much more akin to what it would be on a natural flood plain, and the vegetation is responding accordingly. This is a particularly good place to do this because adjacent to it is a large glacial feature—a lateral moraine that is filled with sand and has high quality ground water—so we're starting with the potential for good nature development.

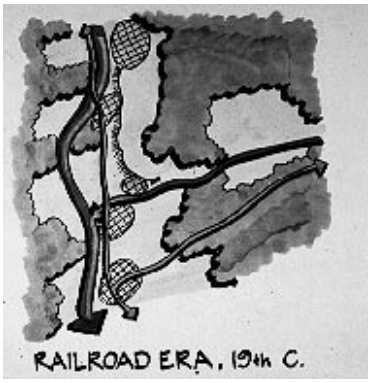
This was a very modest little project, but when this dike was broken, the queen was there. It was a very symbolic event for the Dutch to break a dike after spending centuries developing dikes. To take them down was a major effect. When I was there, I was fortunate to see the flood, to see this in action. So, the flood plain is working once again. Part of the forest had been developed before, but now it is going to be expanded with the increased activity of the flood plain. In a country like Holland, the concept of nature is not inseparable from culture and part of that has to do with grazing. The grazing is a way to introduce disturbance so that the vegetation will remain as a kind of diverse and mixed mosaic. So, they've introduced wild horses that can live outside [and] graze this area to produce variety. This grazing brings variety or diversity.

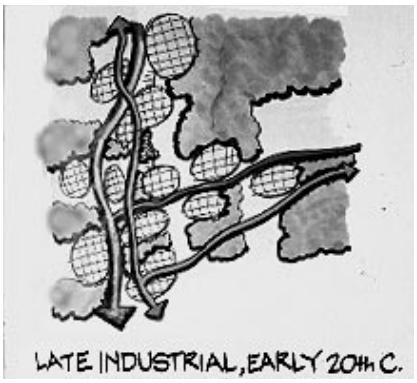
A significant part of this project was the public education and public awareness. So now, people can come here and see the tremendous waterfowl, and in the process, they can learn about this idea. They can see that even though they've given up some control over nature, they are still safe from the risk of flooding, and they can understand the reasons for doing this as well as the benefits. In addition to the hydrological benefits, and the ecological benefits, the human part is very much integrated here and it's tremendously popular. I was fortunate to live near this place, I visited it many times, and saw—it's kind of a pilgrimage for people to see and to bring young children, and so forth. Well, I think you all know that if you're in a building like this—it's dedicated to these kind of ideas, but it's an important part of a greenway and an opportunity that shouldn't be missed.

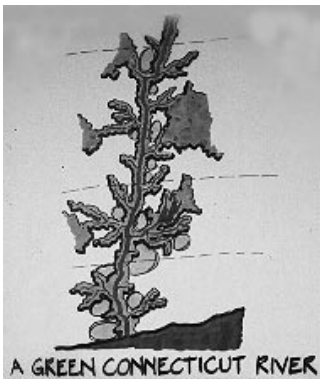
This illustrates a different concept of nature that does not separate design from science. These are some kind of bold ideas for developing nature within a river corridor, but finding a place for artistic expression as well. I'm not advocating this; I don't know if this is the right thing to do, but this kind of thinking is useful and, again, I will commend this project for its integration of art into this. I think that's a way to bring meaning to people—cultural expression—to transcend some of the mundane aspects of it and add a whole other dimension. I would like to emphasize that.

I have another project to present briefly. It is in Chicopee, Massachusetts along the Connecticut River. This is one of the more urban projects I've worked on. A lot of my work tends to be in rural environments, but this is pretty urban. Chicopee is at the site of the confluence of the Chicopee and Connecticut Rivers. It is an old industrial city. I'd like to say at the beginning, the reason we did this—the Connecticut River has recently been identified as a national wildlife refuge in a new type of model that doesn't involve the federal government coming in and buying the houses and acquiring the land. It's a new model based on planning, cooperation, education, and strategic investments, rather than the big hand of the federal government. So, it's a whole different concept—and, of course, the pristine gems are important to include—but if we don't deal with the issues of the urban environment, the water quality that comes out of this major tributary, the Chicopee, into the Connecticut, then, the water quality goes down and the other goals can't be realized.

So here's a terrain model of the city of Chicopee and it sits on an interesting geological formation, it's a glacial delta. Here's the Chicopee River that comes through here and the Connecticut River coming down. The city of Chicopee sits on this





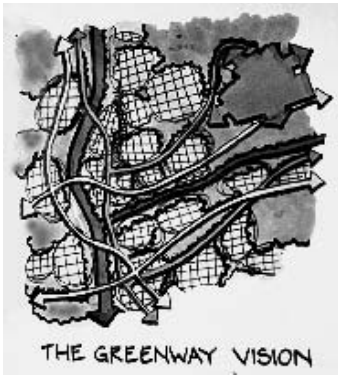


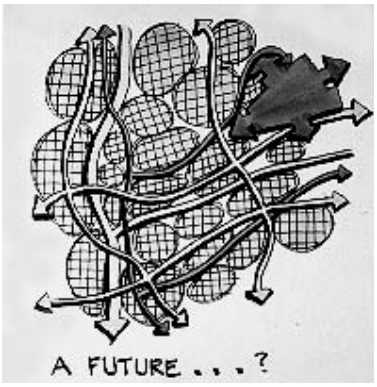
plateau that is about a 100 foot thick bed of sand with some very steep escarpments around the edge which creates some interesting issues on the tributary streams. So, here's a concept diagram of how this landscape was formed. This used to be a glacial lake; there were deltas formed at the edge of the lake and then, the city of Chicopee sits right on the edge of one of these deltas.

This is what it looks like. This is the Chicopee River again. This is the escarpment. The top of it has been almost completely developed; the sides are very steep and this is where we have problems with erosion and so forth. Not exactly analogous to the Nine Mile Run but you'll see some similarities. In landscape architecture, we like to simplify and tell the story of the landscape quickly. So here's our basic hydrological system and the escarpment. The early settlement came here because of the strategic location—two rivers coming together, good soils along the riverside, the railroads came there. I'm sure the story of the city of Pittsburgh is not so different from this and the settlement occurred along the river in the 19th century. Later on, it was quite industrialized. There's another major industrial city called Holyoke here, the first planned industrial city in America, and Chicopee became a very large industrial area. Then, of course, maybe this is one future (we hope not). This is a major airport that's already developed and, you know, some of the little gems may disappear. So we prefer to think of a greenway vision—the infrastructure network is still there but we're looking for ways to make these corridors more functional for multiple purposes—to protect the water quality, wildlife habitat, recreation, scenery, etcetera. So that was our idea and—here's our Chicopee site and the concept is to be a part of a larger greenway vision for the entire Connecticut River. [It] goes 400 miles from the Long Island Sound almost to the Canadian border.

Then we jump down to a smaller scale to look at something more manageable. We looked at a tributary stream, Beaman's Brook, a stream of about two miles in length, not so different from Nine Mile Run, heavily urbanized coming down this escarpment that I showed you. Just a small watershed as a sample, but intensive, impervious surface upstream that caused major hydrologic impacts. To try to help our client and the public understand, we do diagrams like this. The classic idea of the hydrologic system as it should be with vegetation cover and groundwater percolating into the ground, maintaining filtered surface flows that are more stable. And, of course, then we have to consider the developed condition where we have a lot of impervious surface. The groundwater table is lowered, recharge is reduced [and] we end up with lower base flows.

People don't often think of biodiversity in urban areas. They think that's something for the wilderness. But we feel it's appropriate anywhere. It's a question of how "wild" can you get and for which species do you try to plan. We used a concept of target species in consultation with local wildlife biologists. We identified two species of birds that were indicators of healthy conditions. One for the riparian zone which is the Belted Kingfisher. Many of these indicators are predators, because they're higher on the food chain. For this bird to [survive], we need certain conditions to be present which are illustrated here. A vegetated bank for the river and some overhanging banks where the Kingfisher nests. They feed in the waters which presumably contain the [fish they require to sustain them]. We try to map these areas and make corridors to connect them while we are solving the hydrological problems as well. This is all part of the larger idea of the Connecticut River Greenway. [If you look closely] at a map of its habitat, you would see clustered [areas] along the river and strategic zones where we would like to achieve some vegetation and stabilization of the banks in order to enhance the habitat for that species.







Our other species is the Downy Woodpecker. It is an upland species, living [partially in mature forests] with standing dead trees [which contain the grubs that sustain their diet]. We [mapped] the habitat for this species, as well, and identified some broad zones in which we could achieve some kind of connectivity. Again, the habitat map was not the greenway proposal. It is one of the layers that goes into [the proposal]. We didn't make a whole proposal for the city of Chicopee. There's no magic 'bullet' for this.

This became obvious to me today when we were speaking about Nine Mile Run. [You are not] going to come up with a greenway plan in the next year [and sit] back to watch it be implemented over 20 years. It's going to be an ongoing process because the factors are constantly changing, and in many instances we don't have enough information to make the right decisions now. For example, we don't know how to establish vegetation on these slopes. We don't have the definitive answer for how to clean up the water flow in the river. It has to be done incrementally, research has to come along with it, feed back into the process, modifying the design, changing the policies and making [this go forward] in an evolutionary way.

[Some people] fear that the idea of greenways becomes dogmatic—a rigid green framework [that is] imposed on the landscape. It doesn't come from the intrinsic characteristics of the landscape; [it doesn't come from] the physiography or the biodiversity. Of course, greenways are not like this. Some people really fear that this is what will happen if this gets implemented in a rigid, dogmatic way. [But I believe that a greenway is best implemented through an understanding of the natural processes]. This is the tail that wags the dog of the greenway. Where are the stream corridors? Where are the major rivers? Where are the steep slopes? If we are thinking about a strategic approach to fix the landscape, we need to get the most for every dollar that is spent or the most for every hour that is spent - however you prefer to measure your input of resources or energy. By doing that, we need to strategically look at the places where the resources are concentrated and they are often found along the stream corridors, the steep slopes, [and] along the ridges.

At that, I would like to stop. [I don't know] if we have time for any comments. If not, I'll be glad [to speak to you later this evening].

Project

Reiko Goto, NMR-GP
Choli Lightfoot, NMR-GP
Marge Myers, NMR-GP
Henry Prellwitz, University of Pittsburgh
Ken Tamminga, Pennsylvania State University
Joel Tarr, Carnegie Mellon University
Sue Thompson, Carnegie Museum of Natural History

Community

John Dawes, Western Pennsylvania Watershed Protection Program
Jeremy Parsons, Pennsylvania State University
Richard Piacentini, resident
Robert Rubinstein, Swisshelm Park resident
Rita Schaier, Friends of the Riverfront
Uzair Shamsi, Chester Engineers
Marilyn Skolnick, Sierra Club, Pennsylvania Chapter
Lois Winslow, Edgewood Foundation and The Children's Museum

Government

Joan Blaustein, Department of City Planning
Kathy Stadterman, ALCOSAN
Claire Staples, Urban Redevelopment Authority

Sustainable Open Space Roundtable Discussion, Table 1

Tamminga: I am not sure why the landscape architects were pinpointed, because anybody can grab one of those fat markers around the table here and gesture. I think that's really what we are looking at. We are calling this a mini-workshop and there has really been quite a lot of discussion so far. What we would like to do is try to get some of that discussion winnowed down to some of the key ideas that can be mapped. If we have something that is not geographically based like, "I know [an area where] a boy scout troop [meets], but [it is] off the map, however," we could just write a little key note somewhere. We can jot down on any one of these maps some key ideas. This is far too much to do in an hour and a half, so perhaps a better way to [proceed] is to think of this [as] a graphic brainstorming session. Perhaps some of it has to do with the institution and the people we think can become involved in Nine Mile Run. Some of the cultural values might be expressed in the surrounding district or in the valley itself. Some historical features, natural and cultural heritage features in the valley itself are all inventory. I think what we would love to see is some ideas, also. How do we want to intervene in this particular valley? This is a unique creature. How would you like to deal with water quality? Do you have a favorite pet project you haven't been able to express in any of the previous workshops? If it has a spot on the map, let's put a red mark on it or a yellow mark or circle it and attach a little keyword to it [so] it is there for the record. The good people at the STUDIO will do their best to interpret it, and pull apart the spaghetti I hope forms over the next hour and a half on these maps. So that's it. I think it can be a free-for-all. The danger is (at least in this case, in terms of trying to be productive) is that we can let some of the discussion drift away into the air and not [record it] on paper. Choli, am I right in saying you really want to see something here?

Lightfoot: I think whatever people are comfortable with, right Reiko? If you are comfortable drawing, please do so. Also, we are recording what we say so things, hopefully, won't get lost if we come up with good ideas.

Blaustein: Should we start with introductions?

Goto: Yes.

Parsons: I am one of his (Ken Tamminga's) students at Penn State in landscape architecture, fifth year. I'm originally from Pittsburgh. In fact, I got beat up a lot down here.

Thompson: Mark it on the map.
Tamminga: So safety—you're into safety.

Blaustein: I am Joan Blaustein from the Department of City Planning. I have been working on this project for almost three years. I am coordinating the Department of Conservation of Natural Resources' Rivers Conservation Grant.

Dawes: I have a question, has that grant been made?

Blaustein: Yes. Work is underway.

Dawes: Can I ask the amount?

Blaustein: The amount from the state $60,000. It is matched by $60,000 in kind services from the City, the Carnegie Museum and CMU (Carnegie Mellon University). It is a total of $120,000 in work. Actually, it's much more than that when you consider the amount of in kind services going into this. The assessment is just about finished. The insects have been trapped; the flora have been gathered and marked; the people who have been looking at the stream and the land are just about finished with it. They will spend the next couple of months looking at that data, collating it, and [the result] will be the preliminary findings everybody [will see] probably, in early January. From that data, a series of alternative recommendations [will be developed] for bringing this stream corridor back to a point yet to be determined. We are not sure what point in history we are trying to recreate; that is a whole set of circumstances we have not settled on, but [we wish] to restore it to a more natural state than it is now.

Skolnick: I am Marilyn Skolnick. I am the land use and growth management chair of the Sierra Club Pennsylvania Chapter. I am very interested in reclaiming brownfields, so this is a very interesting project.

Myers: I am Marge Myers. I am the assistant director of the STUDIO that is

sponsoring this project, and I am also a resident of Squirrel Hill. I have a teenage daughter who is very charmed by this project, too; she is interested in the ecological aspects of it.

Paicentini: Richard Piacentini. I am a resident. I live near the site.

Stadterman: Kathy Stadterman. I work for ALCOSAN, so I am familiar with the sewer problems, the sewer issues, and water quality issues.

Lightfoot: I am Choli Lightfoot. I am an intern on the Nine Mile Run Greenway Project, and I am a masters student of sustainable economic development at Carnegie Mellon University.

Rubinstein: Robert Rubinstein, resident of Swisshelm Park. I am interested in getting the water fairly cleaned up in the stream, keeping areas of it green (trying to keep them green) and to regreen some of the brownfield areas.

Thompson: I am Sue Thompson. I am a botanist at the Carnegie Museum of Natural History and, along with John Rawlins and other entomologists from Carnegie Museum of Natural History, we have been working on the Rivers Conservation Plan doing a baseline assessment of the flora and the insects there.

Dawes: My name is John Dawes. I administrate the Western Pennsylvania Watershed Protection Program for the Heinz Endowments.

Prellwitz: I am Henry Prellwitz, geology student at the University of Pittsburgh. I am doing a mineralogy study of the actual slag itself. When I was a kid, I got kicked off the dump [many times trying to play there when] it was still active.

Goto: I am Reiko Goto from the STUDIO for Creative Inquiry and also, I work with the Pittsburgh Children's Museum. Right now, I am teaching/visiting the Homewood Montessori School concerning the Nine Mile Run Project [which] I showed to some people this afternoon. These are some drawings of Nine Mile Run by fourth grade students. [This] is a dream picture; it [shows the] stream and trees and also, animals in the stream. Look at the stream; it has fish. And these are important, too—it has animals in the stream. This is very abstract; water going into the soil or slag.

Schaier: I'm Rita Schaier. I'm a member of Friends of the Riverfront.

Tarr: I am Joel Tarr. I am an environmental and urban historian at CMU, and I am also very involved in brownfields redevelopment. I act as a kind of historian of Nine Mile Run.

Shamsi: My name is Uzair Shamsi. I am a senior technical manager with Chester Engineers [and] I have been associated with Nine Mile Run for the last three years. In 1995 (two years ago in November) I completed a sewer study of the Nine Mile Run Watershed for ALCOSAN. I am also an adjunct faculty in the Department of Civil and Environmental Engineering at the University of Pittsburgh. I teach a GIS course and created a web site for that course. [In developing the web site,] I had to find a map that represented Pittsburgh because we were using Pittsburgh as a mapping example. Since I [already] had a map of Nine Mile Run, I [used it] on my web site. I live in Moon Township but was a student at Pitt, so I stayed in the Shadyside/Oakland area for three years.

Staples: I am Claire Staples, Squirrel Hill resident, user of the park and the slag heaps. I am also on the board of directors of the URA (Urban Redevelopment Authority).

Tamminga: My name is Ken Tamminga, I am an assistant professor of landscape architecture at Penn State and a research fellow with Carnegie Mellon University and the STUDIO on this DCNR project. Would you like to start rather formally by going around the table and pick an idea [to] break the ice on these maps, or as an idea that could be jotted down or recorded through that insidious device right there? Either way, it is okay. We want to hang on to these ideas so they don't float away. When the idea comes to you, feel free to grab a marker and jot it down. I think that is one way to start. Just go around the table and say, "I would like to see this," and somebody (whoever has the power of holding the marker) jot it down; let's see if we can get started that way. I would rather hear what everybody else has to say.

Rubinstein: I volunteer to start. It is the idea of cleaning up the stream. It has been talked about, it has been met [over], but I'm afraid after tonight's meeting, it loses momentum. I know there is still interest on the owner's and the developer's side to get that cleaned up, but it may turn out that if they go with the culverting option, they just put the decision off and it [will sit] for another 90 years.... Now that we have the momentum and a group of interested

people, what are the next steps? How do we build on this and make something actually happen? I don't know the answer, but it is something to layout.

Tamminga: Could you pick—there are all sorts of levels and water quality issues here. Tim pointed out some of them. We see another issue here today which is actually no flow, and a lot of it drops away into one of the big sanitary sewers. The stream is actually infiltrating into some of the sewer systems and going subsurface or dissipating somewhere. Henry, maybe you can elaborate on the geology; there are large stretches of [Nine Mile Run] where the little critters in the stream are just gasping for some water, and that is a bad scene as well.
Prellwitz: I guess the material in the stream is so coarse (the grain size of the material [in] the stream). You know the slag dump is so porous, the water is just percolating around grains and is disappearing under the surface in the summer anyway. As Tim said when a rainstorm comes, it is a whole different situation. Where Nine Mile Run goes underneath the cement Parkway bridge, there is a paved portion that is, maybe, 30 feet wide. During the summer, the stream is, maybe, 3 feet wide. I was down there during a rainstorm and it rained hard for about 20 minutes. Within 25 seconds, the water was 3 feet deep and 30 feet wide. It only took 25 seconds for it to come up.
Thompson: I haven't been in one of those situations, but that is what they say; that it just comes up immediately.
Prellwitz: It just comes up extremely fast, of course, there is too much water for the stream to go below the coarse material. I guess it is a matter of the runoff that [accumulates] so fast during a thunderstorm—upstream in Wilkinsburg, in Edgewood, in that area where there is so much cement that [the water] doesn't go under the ground—you get flash flooding. I had to run pretty fast a couple of times [to avoid it].
Tamminga: Can we turn that into an idea that is mappable? Like perhaps...can [we] say where that is happening? That is happening here (draws location on map).
Prellwitz: And above too.

Stadterman: Does it happen so much in Frick Park? That should be fine.

Prellwitz: If you compare [it] to the stream [flow] in Frick Park itself, the stream [in Frick] doesn't rise nearly as quickly.

Blaustein: It comes from here primarily (above culvert) because everything is paved above here and it is going into the storm sewers and comes out here.

Tamminga: It is really just this large urban zone.
Prellwitz: Nine Mile Run goes well north of the map area. It goes up into Wilkinsburg.
Lightfoot: That's all culverted.

(Discussion becomes confusing with many people speaking simultaneously.)

Blaustein: ...which is all paved. So everything is coming into the storm sewers.

Piacentini: Doesn't something have to be done to regulate the flow characteristics of the stream? If you are going to make it usable in any way?

Prellwitz: I can give an example of where Commercial Street...go down [to] the bottom of the valley where it goes over Nine Mile Run. [There] is a culvert there; I think that culvert may be about eight feet wide and six feet high and usually doesn't overflow. But sometimes (like in February and March) it will back up and the stream will flow over Commercial Street.
Goto: Can we [refrain from] talking all together [at the same time]? I think we will have trouble [with the] recording later on.
Myers: Well, I have a question. Maybe it is a kind of devil's advocate question. I would love [to see] a beautiful stream in Nine Mile Run, but in one of the meetings I [attended] someone told me when he was a little boy, one of his friends drowned in the stream because of the [flooding] you mentioned.
Prellwitz: [Discussion of flash flooding] ...and I have a feeling [it] would make some people just as comfortable if the stream sort of disappeared. In other words, if it was culverted or it just went underground, if it was never seen again—because along with a stream in an urban environment you have dangers. I don't know. I mean, could the stream be fixed to such a point where it was always two and a half feet high? Or you didn't have to worry about kids playing in it?

Skolnick: Why worry only about Nine Mile Run? Why not worry about every river? There are dangers and risks and we have to live with them. We don't ruin our environment just because one person drowned years ago. It is unfortunate, but...

Blaustein: Joel, in terms of regulating flow there has been some talk of the Fern Hollow Stream being buried under debris

when they built the Cathedral of Learning and the partial diminishment of the stream—because that is so far underground—it is so far below the level of Nine Mile Run. Do you know historically where that stream was [located]?

Tarr: Yes. We have maps that clearly show the distance of Fern Run and other streams. We have maps we are looking at from 1860 and 1870 that show a number of water courses scattered throughout Oakland, Squirrel Hill, East Liberty, and so on.

Skolnick: What about the Parkway? When was it built?

Tarr: I don't know about that. The great period of building sewers was between 1890 and 1920. This is when they put the main trunk sewers down and an operable combined system. It was at that time many of these streams were culverted and turned into sewers. You probably have all of the maps.

Stadterman: Yes, I think we looked at our system and identified 22 streams in our service area that had been culverted.

Shamsi: I think the high flow is not as much of a problem as the low flow for the water quality. For urban streams, flash flooding is very common. It is not particular to this watershed, it will be in every urban watershed, and there is nothing you can do about it. We build the land which is in a tributary and each and every inch of it is concreted and paved so that is why we get a lot of runoff from those areas.

Thompson: There is nothing you can do about that?

Shamsi: There are things that can be done such as building retention ponds and so on, but the water quality problem occurs because of the low flows. The water should remain in the stream, if it is going into the sewer because of infiltration or it is being diverted somewhere else at some of the upstream points, then even a little trickle of accidental sewage in that stream can make a big stink. So, it is the dilution factor that we don't have in this stream. I think we should give some consideration to the low flow aspect of it.

Tarr: Henry, when it is at a high flash flood stage does it damage the banks for instance? How high up does it go?

Lightfoot: There is one site we have been studying that has, I'd say, a 15 foot sheer wall where it has been eroded. That is only one of the areas. A number of areas have shown a smaller height of erosion, but there are 100 foot long or more sections where it is just eroding on the edges.

Shamsi: How often does it happen?

Lightfoot: It seems to happen everytime it rains.

Skolnick: Well only when it...it has to be pretty strong to start a...

Prellwitz: You have to get at least a half an inch of rain.

Shamsi: Half an inch of rain will bring a wall of water there fifteen feet high?

Lightfoot: It is not that the wall of water is 15 feet high, it is that it cuts out underneath the soil so that the soil is no longer supported underneath and it just falls.

Skolnick: It is a very young stream in terms of maturity, there are no meanders in it, it is straight.

Lightfoot: Some of those meanders have been taken out. It is not that they weren't there.

Skolnick: But what is there now acts as a young stream—when there is a lot of water it just erodes. Its natural inclination is to want to meander.

Tamminga: It is eroding through here quite badly, but there is a nice meander pattern here and some sand bar formations which are really nice to see. I am not sure if that material should be there because it is not coming from the upper watershed, it is mostly from Nine Mile Run itself. When you see this effluent down here, where is this material coming from? I can't imagine in the highly developed urban environment that is either grass or roof or road, that a lot of sediment areas exist. So, obviously there is some real down cutting to the stream going on. Consequently, the more down cuts, the more the storm flows want to stay. They don't what to dissipate their energy on a floodplain, they stay in and they bang up the sides and the meanders. So that is a real problem.

Lightfoot: And there aren't any floodplains so there is nowhere for it to go even if it wanted to, to slow down the water flow.

Tarr: How deep is it?

Tamminga: Well Ann Reily (who was here for a workshop) did some mental calculations out on site and [although] I don't recall the exact figures, she said it is much, much wider and deeper than it should be for an urban watershed this size. So it down cuts and during low flow situations you have a tiny stream in a very wide channel which is all wrong for this type of stream. So it is dysfunctional from a stream morphology point of view. In plan (points to map) this is channelized, this is hardened off with the cobble, this is channelized up there; in plan, the geometry is all wrong and the horizontal alignment is really strange.

(Flood plain drawn on map)

Prellwitz: That is the old natural flood plain there. When you get to the slag [you can see that] they covered it and blocked it off.
Tamminga: This is the historic flood plain?
Prellwitz: That part is, that part is not.
Lightfoot: Is this the current flood plain drawn on here Henry?
Prellwitz: As you went on towards the Mon, the original flood plain got wider and wider. You can see how wide it is at Duck Hollow.

Unknown Speaker: Duck Hollow is part of the original floodplain.

Thompson: Slag plain.
Prellwitz: It's a slag plain now. I guess these floodplains are only underwater in a good 100- to 150-year flood.

Unknown Speaker: Well how bad does it get now?

Tamminga: A half inch of rain in a storm acts like a five-year storm instead of a one-year storm.

Stadterman: One thing that needs to be eliminated is sewage in dry weather. The trunk sewer should be fixed.

Tamminga: What color represents that?

Blaustein: Brown.

Tamminga: So this is the big trunk sewer here, it criss-crosses. Should it follow this three dotted line here?

Stadterman: Most of the sewer lines should be on there.

Tamminga: Okay, it veers off and then it hits the ALCOSAN main line. Then which way does it go?

Stadterman: Down river.

Tamminga: That makes sense, so it comes down off the table and to ALCOSAN. And what was our premise about this?

Stadterman: The Chester study shows that it is dilapidated and at this point we have Wilkinsburg, Swissvale, and Edgewood all coming down through here and they are all coming down into the trunk sewer.

Shamsi: This double line is actually a storm sewer.

Tarr: Do you know when that sewer was put in?

Shamsi: It is not recent. Around the 1930s.

Tamminga: Can you give us the proper wording of what is happening here?

Shamsi: You are seeing two kinds of sewers: storm sewers and sanitary sewers. Sanitary sewers are bringing sewage from these areas and those areas upstream and they are combined sewers. [They are accommodating both stormwater and sanitation.] They were never built to carry all of the rain water; some rainfall water runoff was supposed to expel into the streams. That was the wisdom of the time when they were constructed and no one thought [they would result in] such a big problem. But anyway, they continue to function the way they were designed. They overflow in the nearest body of water. Since the municipalities cannot keep up with the maintenance, the sewers are worse condition than before and they are overflowing more often than they should. That is why all of the sewage that has been expelled from miles and miles of stream eventually shows up here. That is why we are seeing high bacteria counts.
Schaier: [Also,] aren't there separate sewers in these areas that should be carrying sewage only, but because they are cracked and leaking...

Unknown Speaker: That's in Wilkinsburg, right?

Tamminga: Those are called SSOs. Sanitary sewer overflows.

Shamsi: We recorded some portion of the sewers. We put a camera inside and tried to observe the structural condition. We didn't examine all the sewers in all of the municipalities, but wherever we looked we found it was in pretty bad shape. There was a lot of infiltration in the sewer from either the groundwater or Nine Mile Run itself.
Piacentini: Did you ever estimate what it would take to fix?

Stadterman: There was an estimate in the study.

Lightfoot: That was just for the trunk sewer, for the city.

Shamsi: That's right. I don't remember the number.

Blaustein: I think it was $3 to $5 million.

Tarr: Is that for correcting problems in the municipalities?

Blaustein: No, that is for just the city.

Tarr: But a lot of the infiltration is coming from upstream.

Skolnick: I went through John Schombert's files; I went through every piece of paper he had, and his opinion is that unless you deal with Edgewood, Wilkinsburg, Swissvale and parts of the city of Pittsburgh, you are never going to solve the problem.

Tamminga: Can we mention some long term and short term things we can jot on the map here so we all have a common vocabulary?

Shamsi: Three million, that is for the city for the trunk sewer.
Schaier: Does that eliminate any overflow into the stream?

Stadterman: It would probably still function as a combined sewer system.

Lightfoot: Isn't that the main sewer that the stream is flowing into? So that might help with the flow problems. I know there is also a major break up inside the culvert because I have seen it.

Stadterman: I have seen that too.

Shamsi: Yes, but it shouldn't dry the whole stream. Sewers have limited capacity as compared to the waters which are in the stream. I don't know what kind of effect it will make, but I think the low flows in this area may have something to do with the geology. The bed and the sides of the stream may be of material that is just not bringing enough base flow. The base flow keeps the rivers and the streams alive during dry weather and this stream is missing the base flow. Base flow is the water that travels underground and eventually shows up in the streams in dry weather. We see that this stream pretty much goes dry, so there are strata on both sides of the stream which are impermeable [which] can cut off the supply of water to the stream. But I am not a geologist.
Skolnick: What is the rock?

Prellwitz: The rock in the valley is shale. It is relatively impermeable.

Blaustein: It is fairly common in this region to have shale.
Staples: It is common in this region to have dry streams and for streams to dry out in the winter and mid-summer.

Schaier: Is there an area possible along the flood plain where it would be shallow and something could be dug up, for instance, a retention pond? I was just thinking of a solution that could solve a lot of the problems if possible. But if you had some sort of a pond somewhere, a retention pond, it might regulate the water flow because you could have it so it could fill up a certain amount to take care of any flood situations. Then, whenever the stream is low you could open up the gate, open up the dam, and let it flow so you would have a more regulated stream base. Also, I am not sure how this all works, but I know in certain ways you can put in microbes that would clean up water.

They have these processes in chemical plants where they have a retention pond and they have biological factors cleaning up the water. So if you had a pond, you would have a nice pond. Possibly, you'd have it cleaned up and you would have regulated water flow.

Prellwitz: If you had a big enough pond.

Schaier: I guess.

Tarr: Where would you put the pond?

Shamsi: I think that is an excellent idea. [A detention pond could store the water during high floods and release water slowly to augment low flows during dry weather.]

Stadterman: It is still going to be contaminated with sewage.

Schaier: The microbes would clean it up.

Shamsi: Just do the stormwater runoff.

Stadterman: Doesn't the stormwater have sewage in it, though?

Shamsi: Stormwater collected from the natural overland flow before it even....

Stadterman: Like not from this culvert.

Shamsi: There are separate storm sewers and separate storm sewers that bring just...

Lightfoot: Couldn't we run the high flow out of that culvert into a detention pond? It would still have some of the sewage problems, but at least it would stop the scouring. I know that is one of the big problems that people were talking about that would make remediation wetlands impossible; they would get washed out by flow.

Skolnick: I just want to say John Schombert believes that with these irrational rain storms nothing you can build is going to be able to contain that.

Shamsi: You are absolutely right. With that sort of storm event, you cannot build a large enough detention pond or a large enough culvert. You cannot do anything about it. The residents here see that very frequently.

Lightfoot: Couldn't we also suggest to upstream communities where a lot of the runoff into that culvert [originates], to have detention ponds near their large parking lots, near their large areas of runoff? So that it is not all concentrated down here in large ponds, but diversified in many small ponds.

Stadterman: I think Wilkinsburg has to do that, don't they? If they have SSOs around EPA mandate...if they have separate sewers. Under EPA, they have said that you can't have that. So they have to come up with solutions. So possibly, if Wilkinsburg has SSOs on this stream, they will have to come up with a solution.

Skolnick: Well, they don't have the money.

Stadterman: Well, I don't think EPA cares.

Skolnick: I know, but I think the reality of it is, "Okay, punish us. Send us all to jail." If you don't have the money, you don't have the money. John Schombert's solution is that they ought to form a municipal authority that would be able to float bonds and will be able to take care of the funding of this. The only thing is that Edgewood doesn't want to be included.
Winslow: I am from Edgewood and I am sorry, but I disagree with that. There must be a reason for that.
Skolnick: Yes they don't feel like they are part of the...they don't want to be associated with Willkinsburg...
Winslow: I don't think that is true.

Stadterman: Other people in this county just don't want to pay for it. This has been a problem for decades. They just want to ignore it.

Tamminga: Idealistically, there could be a myriad of smaller water recharge/infiltration areas up in the watershed. You had said before that it was urban and there was nothing you could do about it. Right away the red flags go up, but there are plenty of little things we can do about it to at least move in the right direction. You can experiment (and it is past experimental stage) with what we call open grade asphalt (porous asphalt). It needs to be maintained and it is a bit of a hassle but it can be done. At the edge of parking lots, you can [install] infiltration swales. [There is a fascinating program taking place in a Minneapolis neighborhood. Basically, they are removing the stormwater pipes from an existing postwar housing development.] They are using the backyards and front yards. They are getting federal and municipal funds. It is a long term but very fast moving program of education. The community is all behind it. Perhaps Minneapolis is 10 years ahead of some of these communities, I don't know. But I think this is about getting the ideas down and once in a while the red or green flags go up.
Goto: Does the community really know about the problem? When I asked children about Nine Mile Run and they [in turn] asked their parents, they wrote [that] Nine Mile Run is polluted because of the slag. I never said that during the class; it came from parents.
Tamminga: As opposed to themselves.

Stadterman: I don't think the municipalities have a good idea of what their sewer systems are doing.

Skolnick: Yes they do. John Schombert has been out there and talked to a lot of them.

Stadterman: They don't. Whose manholes are whose along there? It is very confusing.

Tamminga: And to some extent, they'd rather not know.

Skolnick: I was just going to say they don't have the money and they are not going to do anything.

Tamminga: This is where it starts to get fun and things start to overlap, so I will throw my one thing out on the table. I really love the vegetation in this area, so we are going to have to move your detention pond. And, Henry, there are some gorgeous shale formations in through here.

Prellwitz: And the bedrock is right under the stream.

Staples: There are some great stands of trillium through there.

Tarr: Where are the wetlands?

Tamminga: Okay, where might those wetlands be?

Lightfoot: There is one in here and then there is one in here.

Skolnick: Are they natural?

Lightfoot: We are unsure.

Tamminga: There is probably a seep situation in here.

Winslow: This turns into streams in the spring (about the one in Frick Park)?

Tamminga: Yes (talking about the one near the trailer). This is a real sweet little wetland; it is so fine that it probably.... We were looking today at whether it had hydric or glycolic soils of low chroma. It is definitely gray soil. It has all of the obligate wetland species. It has almost standing water and, again, we think it is a seep situation coming off here. So these are not riparian, but they are perched seeps. Beautiful. There is some tension here, because we could dig that down and create more detention or we could [remove] the ball fields here and we would have a social tension.

Lightfoot: When we were looking at this wetland (near trailer) there is an almost natural path off from the trail above it. I like that. People could look at the area but not have to tromp through it. This is very close to being off the path which I really liked because it afforded a good teaching place.

Shamsi: We were planning on building a detention pond here and want to move it out of here, fine. We can maybe use wetlands as detention ponds and when you do that you can actually cleanse the water. These wetlands can serve as little treatment plants; this has been tried very successfully in different areas. Divert the water there and grow different kind of vegetation and let the water detain there. It has a cleansing effect.

Tarr: My understanding of the wetlands option is that it is a very controversial option.

Skolnick: Well, it breeds mosquitoes.

Lightfoot: Not necessarily.

Skolnick: That is what you are going to hear from people.

Tamminga: Well-functioned wetlands, probably because they have a surrounding landscape base where they are kept in balance, have their swallows and so on. They have aquatic food chains...so that really shouldn't be a problem. But the study team that is looking at these things has done some preliminary numbers on this, and a wetlands would have to be really big. Preliminarily, let's just say it is much bigger than any flat that could be accommodated. Plus these constructed wetlands (that is what we are talking about when we talk about water treatment) are not very efficient at treating pathogens such as fecal coliform. They are great at taking out biological oxygen demand and nutrients and nitrogens.
Thompson: But we always talk about wetlands in the context of their water treatment capability. When we can't do that we say, "Okay, we can't have a wetland." Why not think of wetlands in terms of biodiversity and habitat enhancement? You can have a little wetland. So maybe it doesn't remove e. coli from the water if you only think about the sewage problems, but it enhances biodiversity and diversity of habitat.
Tamminga: So where would the wetlands have been before we screwed this up?
Thompson: Well, we have that little natural one and we have the little flood plain areas as well.
Tamminga: And before the slag came?
Prellwitz: They would have been in the flood plain.
Tamminga: We had a big flood plain riparian zone which was probably a wetland forest and probably not an emergent wetland the way we see here.

Those would be quite rare. These are probably forested wetlands. If you look at reference streams around this region, they tend to be forested with silver and red maple and some other species [predominating].

Stadterman: So what does the diversity of plant life look like along this bank?

Thompson: Actually, the flood plain area up here is very strange because it is like an Asian forest. The dominate tree species is Siberian elm. They are huge, elms. The undergrowth is an introduced species of *Lonicera* (honeysuckle). If the Japanese came here, they would feel right at home. It is a very nice, well established, functioning ecosystem. It is just a strange grouping of plants. It is not what you find in a typical floodplain.

Tamminga: But you would find it in a typical backyard because if you go back 30 or 40 years ago, Siberian elm was all the rage to plant.

Piacentini: Where did you find the threatened species?

Thompson: Well, the hop tree is along the slag heap.

Stadterman: Is there only one?

Thompson: No, it is all along here. Reiko, about up until here?

Goto: Yes, up until the old bridge, near the bridge.

Thompson: And they are at the base of the very exposed open slag piles at the parking area, and I assume, along the shale areas along the bank of the Mon as well.

Tamminga: So what is so great about the Hop tree?

Thompson: It is a Pennsylvania threatened tree. It is not too common and it seems to [prefer] drier habitats. The slag here may have encouraged its growth, up here, away from the shale slope right along the river. It came up here because of the slag.

Skolnick: How do you spell it?

Thompson: The common name is H-O-P tree. The scientific name is P-T-E-L-E-A.

Skolnick: But it is recognized as an endangered species?

Thompson: It is listed in Pennsylvania as a threatened species, which is a notch below endangered and above rare. But both threatened and endangered are protected and have to go through an environmental review process for any action that would destroy populations.

Stadterman: How about insect wise?

Thompson: We haven't done the species level identification yet to know what is happening.

Stadterman: If this was [converted to] a greenway, would [an attempt be made to preserve the existing vegetation?] Or would you [attempt] to radically change some of the non-native species?

Thompson: I think that is a decision for lots of other people. We will make recommendations. There are quite a few plants out there now that are invasive or potentially invasive; you would want to decrease their population. But there are other aspects of the population you could certainly encourage.
Tamminga: There are three or four quite invasive species and then other ones [considered] urban, gutsy trees like Ailanthus. They are not necessarily displacing other vegetation. We can take a live and let live attitude and they are just a great educational tool. These are the things that grow out of cracks in Brooklyn.
Thompson: I like that, 'urban, gutsy trees'.
Tamminga: So that is [a philosophy] we would like the public to help build.

Piacentini: Is there any kind of succession [occurring] on the slag heap?

Thompson: Yes.

Piacentini: Is it permanent or does it just cycle?

Thompson: Succession and climax only up to a stage. Obviously, some of these sites aren't going to [develop]. The whole theory of succession has been debunked [in a way]. Not everything grows to the typical climax forest. In some of these areas, we may have what would be the climax and it may be a climax that includes Ailanthus and Siberian elm and ash and some other first stages. [On one area of the slag slope (which we just finished a couple of weeks ago) we did two transects for comparative purposes, one down the slag slope and one down the natural shale slope on the other side.] We haven't even compared the data yet. And we had to drop Tim down on ropes.

Dawes: Who determined the million yards of slag to be moved?

Thompson: That was the developers, right?

Blaustein: Originally it was 4 to 5 million.

Dawes: When will that start?

Blaustein: Maybe next spring.

Prellwitz: It was supposed to start last June.

Shamsi: One thing that I would like to point out is that every time I come here I see a map like that and maps on the walls. This area you are working on covers only a little bit of the total watershed. There is a new concept called a watershed approach. Now, if this is the total Nine Mile Run watershed, we are looking at about 30 percent of the problem area. So, give some importance and some consideration to the areas which are not on this map. What happens in the upper watershed effects this [area of] study. [The Chester] map shows you a good picture of the entire watershed. There are ridges along these sides and it is sort of an ecosystem. So what happens anywhere on the periphery of the watershed effects the area we are discussing. Since I have the microphone, let me [amend what I said] about the urban runoff. I meant if it happens once every two years, we cannot do anything about that kind of flood. But if it happens on a daily basis or a monthly basis, those kinds of problems can be fixed.

Tarr: Let me make a comment about the watershed. We put a proposal in to EPA to do a watershed study (David Dzombak, Tim Collins and myself) and unfortunately it wasn't funded. One of the comments was that there was not enough theory. This is just a traditional kind of urban watershed problem. There is nothing new in it. But we could try again.

Schaier: Is it that common to have a stream culverted to this extent? I mean the majority of the stream is underground. Is that common?
Shamsi: Yeah, that is common in urban areas, especially in Pittsburgh.

Tarr: All over the East Coast. Look at New York City.

Shamsi: Now the Department of Environmental Protection has a special plan. It is called Act 167 stormwater management. Act 167 takes care of stormwater flooding problems. Every municipality in the Commonwealth is supposed to have a stormwater management plan in effect. But not all of the municipalities have implemented that. So that is where you can address the detention ponds. All of the developers of a plan are supposed to provide detention such that it will not adversely effect the post development conditions and, sometimes, to even fix the pre-development problems. The criteria vary from place to place.

Skolnick: But it didn't work on July 1st. Monroeville has one, but the storm just overwhelmed everything.
Shamsi: But that kind of rainfall is an act of God. We don't design to control anything like that.

Stadterman: The legislature is possibly looking into rewriting that act to make it stronger because they have seen that it doesn't work. They are looking to possibly update those regulations.

Skolnick: Another problem that has been found to exist is who is responsible for that detention pond once it is constructed. A developer will put it in, [but] who maintains it? That could be a real problem because if it is not maintained, then it cannot function.
Shamsi: That act is only applicable to new developments since most of this area has developed to its full extent. Do we have any developable land left so that entire area is developed, so it won't have much application in this case.

Stadterman: What is the Western Pennsylvania Watershed Program?

Dawes: It is a small grant program given to site specific projects like A and D on a small stream. The board of advisors [gives preference] to headwaters, but it is a program for something site specific. Another requirement would be another agency like DCNR. This is the right priority in terms of how you are working. You have the planning process done and access state funds and, if there is a need for a local match for a specific project within the watershed, we could provide those funds.

Stadterman: So you look at these intermunicipality programs....

Dawes: We would be interested in the process once it's broken down.

Tamminga: So we have a headwaters situation in Homewood?

Dawes: Right. I can see a lot of potential projects that would interest us.

Tamminga: There was an interesting series of workshops a couple weeks ago on the overall greenway system here in Pittsburgh as an idea. We had a representative from Homewood. This is a little off the topic, but it fits. They said they were extremely underrepresented with open space and ecological function and even pocket parks and playgrounds. So there is some, perhaps, unintentional racism in the distribution of ecological and urban space resources in Pittsburgh. The kids [play in] the streets. So, we would talk about the small disbursed infiltration

projects, not just detention ponds, but also infiltration splines those can happen in a scattered way all over. I guess my question to you is if we had a systems project that had some other projects, if it wasn't just one thing. Because we aren't just talking about one thing, we are talking about the developed watershed, small initiatives plus the sewers.

Dawes: We don't have the budget. We do have $380,000 to work with distributed in $5,000 to $10,000 increments to leverage other agency dollars. Say if a local match was needed by a DCNR grant then we facilitate that process. That is the intent.

Tamminga: So we have about three or four minutes left until the official end and we have been talking a lot about water quality. I think that is great. It is a very important issue. Is there any other pet project or idea you would like to [record]? There are obviously many. Does somebody want to throw some things down on paper? What about butterflies?
Goto: [I am always thinking about habitat. How can this area support existing, living things? Not just the issue of dirty water—the can/cannot touch issues. I am not just thinking of a place for humans, but the other things that live there. I think this is the dream of the children, too. You know that from their drawings. I think this is a very natural, normal vision.]

Stadterman: There are a lot of birds and things [to see out there].

Tarr: There are some deer down there.

Stadterman: And a bear.

Tamminga: Wild turkey. We came up to the trailer one time and saw a turkey walking around.
Prellwitz: Didn't Tim see a beaver too?
Goto: Right, Tim saw some beavers.
Tarr: He saw a beaver? Did he see it again? Was there another sighting?
Lightfoot: I believe there were two sightings, but I am not sure.

Stadterman: [What uses do people see for the stream?] I mean, [how] do we look at the stream? [To what extent] do we want to remediate it? Do we want it pristine?

Prellwitz: It can't be pristine unless you take all of the slag away. Restore the original flood plain.

Stadterman: So [what uses do people see for the stream]? Do we want to let our dogs run free?

Tamminga: [Let's talk about the acoustic qualities of the place. There are certain places of retreat where you have a "pseudo-natural" environment. Where are those for you? Where do those spaces occur? Tim called them "immersive landscapes".] Are there any value in those?

Winslow: Oh very much. Especially in an urban area.

Goto: And the quietness, too. You cannot hear any traffic by the old bridge. That is very unusual in the city.

Unknown Speaker: The slag actually contributes to those qualities of having a quiet space.

Tamminga: As soon as you turn the bend here...the highway sound dissipates and, boy, it is quite nice. It is quite peculiar through here. It is an unreal landscape, but quiet. It is away. One of the slides Jack showed [addressed] this Dutch idea that some of the disturbances can actually contribute to biodiversity, this kind of local biodiversity. We have that here. There are quite a lot of plant species. The birds found in there are [indicative] of disturbed landscapes. They are edge species: blue jays, mocking birds, and so on. But for these people that is a wonderful kind of wildlife.

Stadterman: So the idea of this greenway is to connect Frick Park to the river?

Tamminga: I would love to talk about landscape ecology which is my....what about the Monongahela River being attached to Frick Park. And why would we do that.

Tarr: That's what Mayor Murphy has [proposed].

Tamminga: What is his objective behind that though?

Blaustein: Because there aren't that many accesses to the river without a hard surface, there aren't many accesses to the river at all. There could be boat launches and sidewalks...

Tamminga: So this is a recreational, experiential thing?

Tarr: There is a hope to develop the edge all the way down.

Tamminga: Has anyone walked up here? (Further upstream along the Mon River from Nine Mile Run?) This is oak...hickory.

Prellwitz: This is a hillside that is so steep, you can't climb it.

Tamminga: It keeps on going as well. In fact, the trail stops up here and these people kind of own it. You don't feel like going through their backyard. It is much more spectacular here than right along the river. It is quite pristine.

Stadterman: The river is very accessible...

Tamminga: So from a regional landscape ecology perspective, besides the human experience, the feeling is, "Hey, I am part of a system." The fact is, that I cannot get from an interior part to the river. Wow, what an awful idea. At least in Pittsburgh, because all of these great parks are islands. From an aquatic point of view, we have aquatic organisms that have a rough time getting up and down stream. We know that. We have bird life and butterflies that tend to use these little river valleys as a place of respite. We have what we could call the ecological node, that would be Frick Park. We have probably some small mammals that would love to use this and then come up and zip down along the Monongahela. It gets pretty dire down here, but...

Goto: When we think about this from the human point of view, we cannot touch the water and it is a long future to reach the things we are talking about. Until then, even creating some walkways near the stream is almost impossible right now. But think about other wildlife that find this area useful. Is this really...I mean is this valuable to think about? For humans, it is really a problem. It is too expensive. We are talking about the future, but plant-wise and animal-wise I don't think the water is really harming the wildlife except maybe fish and aquatic kinds. You know what this means. If we talk about water quality for humans, we should trash the stream. But if we think about the other side, it is so viable. The stream is existing there, that is why the area is green and nice. I can't really [express] a loud the balanced part.

Tamminga: There are all sorts of beautiful little places disbursed throughout the site. If you observe closely, there are all sorts of great things happening. And truly, Reiko is a master at finding those places. She says, "Come on over here and look at this." And you say, "Wow, I didn't know that existed here." That is part of urban ecology.

Winslow: We have good friends that own a boat, so I have been on this space. I have seen a blue heron and the river banks are beautiful. You would not believe this is an urban industrial place if you had just seen the riverbanks. Even though I might not eat the fish out of the river, everybody will tell you there is an amazing variety of fish that hadn't existed here before. They are existing; we may not be able to consume them yet, but the water quality has improved in some way and life can be sustained.

Lightfoot: I would like to ask a question. [Can anyone identify] the areas along the stream they wouldn't like to see compromised, a favorite spot? Some thing about the area that is very important to you or that you think is important to the surrounding communities?

Winslow: I think it is very important to have that quality, it's very hard to define. Frick Park and that whole area that goes down [towards Nine Mile Run] affords me and my friends a little touch of nature within walking distance. That is very important. That is quality of life.

Prellwitz: It think it is important to have access to the Monongahela River, too. It is hard to get to the rivers in this city. You have to wade through some industrial nightmares. But this gives you a corridor from Edgewood, Wilkinsburg, Swissvale directly to the river.

Unknown Speaker: There is an undisturbed area right in here; it is heavily wooded and has a stream running through it. I know everyone on that end of Swisshelm Park, that is very important to them that the area be maintained as is. Trails are not to be developed through there—no bike use.

Lightfoot: Is that the area that leads up to the community center?

Unknown Speaker: Yes.

Lightfoot: There is great, well it is not great ecologically, but there are great roses back there in the spring. There are huge brambles of roses there.
Tamminga: Multiflora rose—that is on the hit list.
Prellwitz: Is that hill over Duck Hollow part of the URA land, the one that has all of the oak and the hickory?

Blaustein: I am not really sure.

Skolnick: The Mon-Fayette is supposed to go over it. I have seen the renderings, and it is a disgrace.

Tamminga: So what do we say, no Mon-Fayette?
Prellwitz: If they are going to extend Frick Park down there, this is the hillside they ought to hang onto. Keep it the way it is—it is all natural. There are beautiful sandstone cliffs there.
Tamminga: What about Duck Hollow?
Lightfoot: It is funny; I talked to all of the residents that were home the day I was down there. Some love the neighborhood and some hate it and wish the city would buy it out.

Stadterman: Why do they hate it?

Prellwitz: It is hard to get out of there.

Lightfoot: They told me stories about [the era] when the slag was dumped. They had to wipe their [kitchen] counters three times a day. They are terrified it is going to happen again. Before it happens again, they would like the city to buy them out. Some people don't like the isolation; they feel trapped.
Tamminga: Last year [one of my students] surveyed all 18 residents as well. We greenway questions, slag questions, and social interaction questions. I got the feeling most of [the residents] were really happy to be there.
Lightfoot: They also said the property values are some of the lowest in the city. The houses in Duck Hollow are very cheap. People were worried about that, too.
Tamminga: But if you look at the houses themselves they are really quite well maintained. I think there is a pride of ownership, but an unstable situation [is created when they hear all this stuff]. I don't know why [the residents are fearful] because if they were bought out, that is eminent domain. They would get good market value price for [their property].

Winslow: One of the things that would be important to me is a natural space for our children. Children can see a stream that is artificial at the zoo or somewhere else, but to find a real stream within a city is an amazing thing—to have a wild open space for children to see is something you can talk about, but to experience [first-hand] is very rare.
Shamsi: I think it is the last natural stream remaining in the city. Everything else has been culverted.
Schaier: I don't like the little parking area down by Duck Hollow.

Tamminga: Should we improve it or get rid of it?

Schaier: Improve it.
Winslow: How would you improve it?

Lightfoot: I think it might benefit from some lights.
Thompson: Then paving.
Lightfoot: I don't think it is a safe area. People go down there and party at night.

Piacentini: Improvements and lighting attract people.
Skolnick: If you are going to have parking, you are going to have people coming by car. You need some facility to accommodate them. If you don't want people coming by car...
Piacentini: It would be nice if it could be left natural. No lights or parking lots.

Lightfoot: But there is one. People have a tendency to drive places, especially in this city. If they could drive somewhere, park, and walk along the stream to Frick Park, it might encourage use of the area.

Winslow: But do you want that? Lets think about that. Is it for the use of people or is it an open space?

Lightfoot: You yourself were talking about the importance for children. If Pittsburgh is going to sink a large quantity of funds into this area, it should have a regional draw or at least an all city draw, so the Pittsburgh tax payers will at least be able to access the area. I think a parking lot will [encourage] that.

Tamminga: But does a regional constituency mean it needs to become a manicured Schenley Park? Perhaps not. There are not a lot of greenways in Pittsburgh. I think there is one that was done in the mid-eighties.

Blaustein: Our definition of greenway? We have 7 or 8 [definitions].

Tamminga: [We are helping Pittsburgh define "greenway." If the small constituency—the surrounding neighborhoods—want to see it maintained natural, but built out carefully as a region, it needs to be controlled. You cannot have masses of parking. If you build a parking lot, they will come. That is what happens. You control the trailhead parking lots; it's quite a hike from down there, so you will need to invest some sweat.] A balance needs to be found between local private ownership and making it a place that all of Pittsburgh can be proud of. If anything significant is done here it will take Pittsburgh and more money.

Goto: I think more studies could be done. I don't think Mellon Park or Schenley Park [need to be studied]. This has more potential. What kinds of birds are there during the winter? What kind of butterflies are there? Really unknown. Even plants. Sue Thompson has been spending days and days [investigating these issues]. Even common plants and invasive plants [should be examined]. We cannot really judge it's value [until we study it in more detail.]

Tamminga: All of those thing have a story to tell. The Chinese elm over here; the hop tree over there; or the fritillary butterflies we see over here, or the red tailed hawks. The comparison and contrast that can be done with school groups is amazing. We have a wonderful resource right now in terms of urban ecology in the extreme. If we look at some of the key words you mentioned, a wild place wow, that is

interesting. As we start to look at this, we are coming to appreciate the slag. It has a lot of angst to it. All of this. There is a great human story in this and another theme.
Tarr: It has a lot of history, the salt works, the gas works, the golf course.
Tamminga: Wasn't there an old black baseball league?
Tarr: The Homestead Grays. That is not definite. We have pictures of the actual gas works and the nine hole golf course.
Prellwitz: There's a salt works down there. The salt water is in the sandstone, which could be about a thousand feet down. You just drill a hole in it and pump out water.
Lightfoot: The gas works was located here, near the Irish Center. Is that the one you were talking about?
Tarr: Look in this picture, this is the ninth hole of the golf course and there is a derrick right in front of it.

Stadterman: The idea of public access needs to be considered because there are people fishing there regularly. That is what the parking lot is used for, during the day at least.

Tamminga: We have gone to the end of these streets surrounding the area. Not many of them function as parking lot trailheads. Most of them are just pedestrian access and some of them have no pedestrian access; they are just impenetrable or steep slopes. But where it is amenable and the slopes aren't that steep, almost everyone has a little informal path. I would think that those are special places for each one of these little neighborhoods enclaves.

Staples: The children go up there a lot. There is an abandoned hunting blind...bales of hay...

Tamminga: There is a BMX course up there.

Staples: I expect that people have been hunting there in recent years.

Tamminga: I just thought of John Stephen. There is a mountain biking ramp that is fabulous. We came down a little service road here and there were at least six or seven deer.

Staples: There is a deer stand.

Tamminga: I have seen some shot-gun shells around.

Staples: I think the park has at least 15 or 20.

Project

Tad Hirsch, NMR-GP
Mary Kostalos, Chatham College, NMR-GP Advisor
Andrew McElwaine, The Heinz Endowments
Marge Myers, NMR-GP
Ray Reaves, Professional Planners
Larry Ridenour, landscape architect
Kirk Savage, University of Pittsburgh
John Stephen, NMR-GP

Community

Bridget Alexander, Squirrel Hill Urban Coalition
Eileen Bell, Duck Hollow resident
Dean Benjamin, Wilkinsburg resident
Trishka Darkis, Interested citizen
Bob Hurley, Pittsburgh High Technology Council
Dianne B. Swan, Rosedale Block Cluster
Adam Young, University of Pittsburgh
Linda Whitney, Regent Square resident

Government

Bill Wadell, Real Estate Division, City of Pittsburgh

Sustainable Open Space Roundtable Discussion, Table 2

Stephen: I'll get us started, but I don't want to lead the discussion. We have a landscape architect here, and we'd like to focus on the map as much as we can. When we reconvene at the end of the evening, we'll give a report on what we talked about at this roundtable. What I'd like to do first is go around the table, and introduce ourselves, and state what our interest in this project. My name is John Stephen, cofounder of Friends of the Riverfront, and a project coordinator for the Nine Mile Run Greenway Project.

Swan: I'm from Homewood. I'm executive director of the Rosedale Block Cluster, which is a community grassroots group. We have a Head Start daycare and several other social service programs. I've had occasion to work with several people here, and while I don't know much about Nine Mile Run, we have 1,500 lots in our community which belong to the city, and I'm interested in seeing how we can work with those.

Whitney: I recently bought a home on Hutchinson Street in Regent Square. I moved here from the South Hills because I'd started coming here to run in Frick Park with friends and fell in love with it. I lived for 20 years in Elk County, Pennsylvania, which is in the middle of Allegheny National Forest, so this was like a little piece of heaven which I didn't know was here. If there is a chance we could extend Frick Park to the river, I'm very excited about that.

Alexander: I'm very glad to meet Dianne Swan with whom I've corresponded. I'm a member of the committee of the Squirrel Hill Urban Coalition that produced the master plan which indicated Nine Mile Run was suitable for residential use, identifying the link with the river and Frick Park, so I have a historical interest in this project.

Bell: I live in Squirrel Hill, well, you call it Duck Hollow. I live as close to the river as you can get. I know they're developing Homestead and Munhall, and I'd like to see our side developed as well, but not so much so that we can't stay!

Ridenour: I'm a consulting landscape architect. I've spent most of my career in Pittsburgh, and have been involved with rivers, greenways, Rails-to-Trails, and things like that.

Wadell: I work for the city of Pittsburgh, with the real estate division. I am also a carryover from the old Pittsburgh Greenway Program when it was a program of the Planning Department.

Young: I'm a graduate student at the University of Pittsburgh, studying the history of art and architecture. I'm currently writing a paper on the reconstruction of brownfields into public spaces. I'm also a student of Kirk Savage's.

Savage: I teach in the art department at Pitt; I've been working with the CMU team for the last few months on this project. I also live in Edgewood, on the edge of the culverted part of Nine Mile Run.

Benjamin: I live in Wilkinsburg; I have a reputation in my family – whenever they come to visit, I drag them down to my wonderful slag heap. Even though it's ugly in one respect, it's awesome in another. I'd really love to see Frick Park extended down to the river.

Hurley: I come with a lot of baggage. I grew up in Point Breeze, and slid up and down the slag heap, fished in Duck Hollow, and did all the things kids did. Career wise, I'm an urban planner. I've worked for a number of municipalities in Pennsylvania. Most recently, I worked for the Mayor when this project was getting off the ground. Currently, I work for the Pittsburgh High Technology Council, managing the Environmental Business Network, and working with the Environmental City Initiative. We're the people trying to get the greenway portion of this project underway.

Reaves: I live in Squirrel Hill, and I'm a city planning/regional planning consultant, and member of the Squirrel Hill Urban Coalition.

Kostalos: I'm in the biology department at Chatham, and have worked on Nine Mile Run off and on for 20 years. I'm interested in preserving as much of this as we can.

Hirsch: I'm a grad student in at CMU and have recently begun working for the STUDIO on the Nine Mile Run project. I also live in Wilkinsburg.

Stephen: Throughout this project, we've been reaching out to various groups – schools, environmental groups – talking about the project and getting people involved. I'm really excited that we have wide coverage of the watershed represented tonight. I'd like to make sure, as we have our discussion, we identify

organizations, individuals, and businesses that we can reach out to and involve in our Community Advisory Board for the conservation plan. So one of the first things we could consider identifying are the organizations and individuals who should be at the table in this process.
Reaves: The landowner isn't here. Bill works for the city, I guess, but...
Stephen: The city is here, but they're at another table.
Reaves: The adjacent neighbors? Someone from Duck Hollow is here.

Bell: There are only 20 families in Duck Hollow.

Reaves: It would be good to have the communities up in the Rosemont area, the Beechwood area, who are raising all the hell about development here.
Stephen: Those groups have been involved. There are members of the Squirrel Hill Urban Coalition on the project steering committee. Reiko, one of the team members, has been going out to the Homewood Montessori School, and has been developing a Nine Mile Run curriculum. The kids have really involved their parents. If there are schools in this area of which we should be aware, we should start identifying those.

Whitney: I think that Allderdice has been involved. Their biology teachers have used Frick Park for a variety of projects.
Alexander: I have a question. When we're talking about 'the project,' are we talking about the development project for the whole site, or are we talking about the Nine Mile Run Greenway Project?

Stephen: We're talking about the valley, the greenway link.

Alexander: We're not talking about the housing on the upper tiers?

Stephen: Not tonight.

Alexander: So you're asking who should be involved with the Nine Mile Run Greenway Project.

Stephen: Right. We're talking about the ecological aspects, the restoration aspects, like we heard from our presenter.

Benjamin: I'd like to point out an organization in Wilkinsburg. Hosanna House. Teenagers are their primary focus; they're an incredible organization in Wilkinsburg. It would be worth informing them at the very least. They're an incredible source of community energy.

Swan: Leon Haines is the Executive Director.
Benjamin: The other thing I just noticed is that the Kelly School is right next door to where the stream used to be. That could be an interesting link.
Alexander: I guess there are a lot of teenagers who use this site. I took my 20-something son out there last weekend. He knew all about the site, and I was surprised. I guess there must be people using the site in a way we're not aware of. Homeless people, or teenagers, I don't know.

Stephen: It's a place for adventure – bike riding, etc. It would be interesting to think about teenage groups, like YMCAs or YWCAs to see if we could do some organized activities down in the valley, so the greenway could be connected to the community. I think Wilkinsburg has a YMCA too.
Reaves: I saw the guy from Pittsburgh Pro Bikes here tonight. It's interesting, because they probably sell a lot of bikes. I know my son was riding bikes at Nine Mile Run for awhile, but there was a lot of theft.

Benjamin: There was, but the mounted police cut down on that.
Bell: Well, they're not supposed to be riding through there. The Urban Redevelopment Authority doesn't want them to; they've been taking cars out of there, too. They have a cement block to prevent people from trespassing. I guess the liability would be too high if somebody got hurt.
Benjamin: That doesn't stop anybody, though.

Stephen: Do you think there are activities that should be encouraged?

Bell: I know they party up there, up on the plateau. I can hear them at night. They burn fires up on the hill.

Reaves: Mountain bikes should be accommodated, I think. They're using Frick Park. I think they'll use whatever is there, and it's better to plan for them now rather than wait until later.
Stephen: Are the bikers just in the valley, or are they up on the slopes? I know the problem in Frick Park is that they go off the trail. Some bicyclists want steep hills and declines. You think about the slope of Nine Mile Run. Maybe we should plan for their use now. Since it's already damaged landscape, maybe involve them in restoring the site, including some of their needs for trails. Involving them in the process could give them a sense of ownership.

Waddell: Gatto Bike Shop is also a factor.

Alexander: What about rowing on the Mon? What riverfront organizations are there?
Bell: Sandcastle is directly across the Monongahela River from the site. Right now, there is fishing on the river. You can't catch much, but they do fish. They catch catfish, but you can't eat them.
Whitney: Someone told me they saw a kingfisher there, at Duck Hollow.

Stephen: There is surprising diversity. Part of the education process is to bring people down there and to show them what you can find. You mentioned the riverfront, and rowing, and fishing. Are there organizations we could contact? There is the rowing organization in town. The fishermen are harder to reach, because it's an individual pursuit.

Bell: They come from all over.

Stephen: What is it that attracts them to this site, and how can we use that for growing a constituency?

Bell: On the other side, you can't get to the river because it's all private property. That's why they have to come to our side. (Pause) Our side! Like I own the river. I guess I feel like I do, I've lived there for a long time.

Ridenour: Aside from the Squirrel Hill Urban Coalition, are there any other community organizations that should be invited to the table here?

Alexander: I'm surprised the Jewish Association for the Aging – well, they've changed their name, but I'm surprised they haven't spoken up for this development. They're right there. That's a community group with a big interest in the site.

Stephen: The cultural aspects are interesting. I noticed there's an eruv where they're lining the area of Squirrel Hill so orthodox Jews can do certain things on the Sabbath. The line goes right up through Nine Mile Run. It would be interesting to get them involved in this process. Maybe do that through the Jewish Home for the Aging.

Bell: They've got the Riverview Apartments now too; they're right up there.

Reaves: The Swisshelm Park people are also real organized.
Kostalos: It would be ideal if we could get involvement from the civic organizations located in the municipalties whose sewage flows through the area. Because they are not located in the city, they don't see the pollution in Nine Mile Run as a problem; the sewage is out of their community and into somebody else's. So, that would be Wilkinsburg, Edgewood, the suburbs east

of the city; they have to be part of the solution.

Savage: Speaking for Edgewood, this issue rarely, if ever, gets into the Edgewood newsletter, for example. They're much more concerned with the busway and things that directly affect them. There should be a way to get this onto the agenda, into the newsletter, and the agenda of the borough authorities. I think there would be interest if we could get this onto the agenda; I think there are enough people who realize that we have some responsibility for our contribution to the sewage problem, and there would be benefits. It's a short walk from where we, in Edgewood, live to this site.

Hurley: The reality of it is that the park is a regional park. Whether people want to believe it or not. While it belongs to the city, and the city has a responsibility to it, it is truly a regional park and there are three upstream communities that, as you said, need to take some responsibility for it. It's used by the Edgewood community and the Wilkinsburg community. I'd like to see upstream action taken, because that's the source of most of the effluent with which the park has to deal.

Reaves: Well, there's been talk for years about that problem, and there is a mechanism to deal with it. I'm frustrated that it has not been pursued. The state of Pennsylvania has plans for sewer studies, and they'll pay half. And I think the estimate is that the total would be about a half a million for this study, and they would pay a quarter of a million, and the four municipalities would have to contribute the other half, which in the great scheme of things, isn't a lot of money. It's frustrating

Wadell: My understanding is that there has to be a joint approach taken by the County Health Department and ALCOSAN.

Reaves: I don't think ALCOSAN has to be involved. They could do it, but they don't have to. The real issue is why they haven't. This process puts some fire to their feet.

Stephen: There has been some action. The County Health Department is working to convene the engineers of the different municipalities, and they are trying to identify some of the sources of the sewage problem. It's not to the level of a full-fledged plan yet, but they might be on their way.

Alexander: It's providing leadership for that.

McElwaine: Exactly. You've just hit on the problem, which is you have, as so often in Western Pennsylvania, these overlapping governmental agencies, with lots of responsibilities, but no real authority. And we all get nothing to work. That's exactly what we're talking about here, where ALCOSAN runs the treatment facilities, and has no ability to control what goes on above it. Again, the County Health Department has some authority, but ultimately, it comes down to decisions made in Wilkinsburg, Swissvale, and the city of Pittsburgh. This is not just a Nine Mile Run issue, this is a Pennsylvania issue. We've got a dysfunctional governmental system which is as present in the sewers as everywhere else. I think the compromise would be to eventually move PennVEST funding which the state established years ago, back into the City, and out of Southpointe, and out of Butler County. To have ALCOSAN take over management of these pipes in exchange for a fee from the boroughs, municipalities, and the cities, (because they don't know what they're doing) and finally to start to enforce the laws that are on the books.

Reaves: I don't disagree with anything you've just said, in fact I agree with everything. The one factor which frustrates me is that the state does have the hammer, under current law, to bring these municipalities together, but they are not willing to use it. If we know where the pressure points are, then this process can help make it happen, or at least to start hammering on the right people. Like the Secretary of Environmental Protection.

Waddell: The key here is the pollution in the stream. If you're going to make it a viable area or corridor, why isn't the County Health Department involved with these teams? Shouldn't they be involved with these groups here?

Stephen: They're at another table.

Waddell: That's what I was wondering – if they have people here to get the message. Why can't they be petitioned to organize this? They have the power to do this, if they would organize this. How do you get that going, without some pressure from groups like this?

Ridenour: Maybe that's the outcome of this process. The citizen's groups really have to apply the pressure, and create the political will. Every level of government has some responsibility here, and nobody's doing anything. There's just a lack of initiative or leadership, and so often, it has to come from a handful of citizens. When you put the spotlight on the Nine Mile Run,

and look at the potential that it can have as a greenway, and really make it a big issue, sooner or later those government agencies have to claim responsibility for the combined sewer overflows.

Reaves: I think that gets back to what Andrew was saying. The upstream communities aren't hurting. They're just dumping, and the city's hurting.

Waddell: Maybe we better find a politician running for office and make this one of the planks, or something.

Waddell: Groups like this should make them hurt, because they're creating the problems.

Benjamin: One of the things that's frustrating for me is that everyone wants to turn their backs on Nine Mile Run. It's walled off with concrete, there's not even a sign that says, "This is Nine Mile Run." If you stumble on it at the soccer field, as you approach that stream, you don't know there's a stream there, and if you do come close, there's a sign which says "Stay away, it's dangerous, caution, it's radioactive." Even the tiniest little welcoming measures are not being made, and it seems to me you ought to be able to spend trivial amounts of money to take away those barriers and let people get into the site. Just declare, "It's part of Frick Park now," and let people walk in there. Police it to keep the garbage dumpers out, and make it clear that this is now a community resource, and let people meet it. The only reason I stumbled on it was totally by accident. I thought Frick Park ended somewhere over there near Commercial Avenue, and my wanderlust took me down to the end of the stream, and I said, "hey, there's something more on the other side – what's going on?"

Stephen: The team has a trailer down on site, and I think it's wonderful when people do find their way to it, and we engage them in the process. They learn about it and get excited. I'd love to be able to improve that access from Frick Park down to where the trailer is, and find ways to work with the City Parks Department to promote that connection, so people know there's something down there beyond the end of that parking lot, beyond the soccer field.

Kostalos: To some extent, I think people make too much of a big deal about the fact that it's not pure water. You're never going to be able to drink it – when you see people cleaning up after their dog and throwing the waste into the storm sewer, that's their version of disposal. The stream is never going to be pristine. We can improve it a lot, but it's not hazardous. I've played in the stream, studied the stream

for 20 years. I've never gotten sick and I don't wear gloves when I go in there and I don't wear boots. It's not dangerous, or awful. All those signs making it sound like you're going to die if you dip your finger in it, I think is overkill. The stream is not that bad.

Bell: We used to swim in that river a lot.

Kostalos: There's sewage in it, yes. Would you drink it? Would you feed it to your children? No. But still, there's some live things down there, we've seen beavers down there, birds and other animals drink out of that stream all the time without it killing them. It's not pristine, but it's also not awful. It really bothers me that people regard it as an open sewer. It's not. It has some real value.

Bell: How is the expressway going to effect the greenway? The expressway is definitely coming over this side.

Stephen: It really doesn't effect the greenway that we're talking about, upstream from the river. The effect is at the endpoint, where the greenway engages the river.

Bell: Will there be a way to get under?
Benjamin: Can we culvert the expressway?

Waddell: The Planning Department is trying to design for a very broad expanse over that entrance where Nine Mile Run comes out, so there will be a wide, high opening that acts as an entrance and not a blockage.

Bell: In other words, it's not going to go along the railroad tracks.

Waddell: Yeah, but it's going to go higher. It will be elevated.

Reaves: I think Dean had a good point. I think we should lobby for it to go into a tunnel under Duck Hollow.
Kostalos: That would be so cool. Are you serious?
Reaves: Oh, yeah.

Benjamin: Put the expressway in a culvert, leave the stream alone.
Bell: Put it underneath instead of over top.

Reaves: Yeah, I mean, not the whole way, just at that point, where it would impact both the stream and the community. The designers working on this are good, but as good a design as they come up with it's still a big highway. I've never understood why they don't put it under.

Bell: We definitely don't want it. It's going to be a lot of noise, a lot of traffic. We wanted them to improve the roads we already have, but there wasn't enough input, so actually, people don't make a difference.

Kostalos: Are there plans for trails on that side?
Stephen: Yes. Let's start drawing some of this on the map. There is a plan for a trail all the way along the river.

Ridenour: *(drawing)* I'm going to try to color code all this. We've spent a lot of time getting ideas off our chests, I think we should get at this in a more systematic way. The natural features, the natural assets are listed here. The trail will go all the way along the riverfront, this is part of the Steel Industry Heritage Trail, the Three Rivers Heritage Trail –
Stephen: Just the Heritage Trail.
Ridenour: *(indicates map)* The Glenwood Bridge is down this way. This is one idea for a connecting trail. Actually, they're talking about one on both sides of the river; one that would also go through the Homestead Works. This is part of the Steel Industry Heritage Trail, which would connect with the Three Rivers Heritage Trail, and would go down to McKeesport and Clairton, connecting with the Yough River Trail and the Montour Trail. This is a major regional trail system proposed here, and I think one of the original ideas all along has been to connect Frick Park with this trail and come down along Nine Mile Run.

Bell: That'd be nice.

Ridenour: I like to think of it as a no-brainer. It's such an obvious, good idea.
Stephen: *(indicates map)* Dean mentioned trying to get more people down there, to improve the connection to Frick Park. We should start thinking about establishing the greenway from Frick Park to the riverfront and connect up to that. Let's start up at this end, where people are already using the Frick Park area.

Alexander: Does the Run go in a culvert under the expressway? I couldn't find that connection when I was there.

Stephen: It goes underneath Commercial Street, here. That's actually one of the barriers to this connection, how to improve that connection across Commercial Street.

Benjamin: It really is a pedestrian nightmare!
Alexander: You can't walk along the edges of the stream from Frick to –

Waddell: It's difficult. You want to wear wading boots –

Reaves: No you don't!
Kostalos: I wouldn't go in bare feet, but –
Savage: But how does the stream go under Commercial Street? In a culvert?
Stephen: Yeah, in a pipe. It's very tight, and in heavy rains, that's a bottleneck. It backs up and floods.
Kostalos: It wouldn't be too much of a trick to put a pedestrian bridge over Commercial Street.

Bell: Yeah, that would be nice.

Kostalos: It isn't an expensive project, and it would make that connection so people aren't risking their lives as they try to cross Commercial Street.
Reaves: Or put Commercial –

Benjamin: Not a tunnel!

Reaves: No, not a tunnel, but in a depression, have the street dip down 20 feet and create a pedestrian crossover
Kostalos: If you put Commercial down 20 feet, when it rains, it would be under water.

Benjamin: Could Commercial be raised? Could you build a bridge, and take the stream out of the pipe?

Ridenour: You could. Is there enough conflict between vehicles and pedestrians at this point, or in the future, that it needs to be continuous?
Reaves: It's a blind crossing.

Benjamin: I'm an experienced pedestrian, and when you get there, you're dodging these bullets that come whizzing around the corner.
Bell: It's dangerous.

Ridenour: *(indicates map)* Maybe when you design the greenway, you locate the crossing over here, further, and not at the creek. I just drew in the route of the stream itself, the natural meandering. That doesn't mean the trail has to follow the stream exactly. I think whenever this area is designed, that issue would be considered.

Benjamin: I guess the question I was getting at is: what are the barriers to creating the minimal annexation to Frick Park? Without moving a rock, with the stroke of a pen, you could just say, "This is now part of Frick Park." Put up a sign saying, "The Nine Mile Run Slag Trail," or something like that, and put a sign leading out of Frick Park, saying, "It's a hike at your own risk trail." Instead of putting up the gated barriers saying, "Keep out, you're going to die," say, "C'mon in, there's a cool place here." I'm sure there are reasons that it's not done. What bureaucratic hurdles do we need to bash through? They've got to be a lot less than getting a million dollar grant!

Myers: Let me tell you one that we've already gone over. When the team at the STUDIO asked for access to this property, legally, they said, "Well, you've got to prove to us that there's a certain level of insurance coverage for all the people doing research on this site." We had to provide proof of that insurance, put it on paper, and...you know what I'm saying? They are

the property owners, and they have not made amenities to the property. They feel people can be...well, you know what I'm saying.
Ridenour: When we talk about the owners, who are we talking about? The URA?
Stephen: The URA.
Ridenour: So everything below Commercial Street is private URA—
Stephen: Public/private.

Bell: I still walk it with my dog. No one stops me and says, "You're not allowed here."
Benjamin: Well, technically, we're all trespassing!

Reaves: Even though one of the basic things the URA's going to decide when they do the plan, is to define the greenway that would be turned over to the city as parks. The rest of the site would go into private ownership. That's why they don't want to define the parks yet, because they don't have the final plan. So they keep hands-offing a final decision on the boundaries of the greenway. Your point is well taken, but I think it's going to come at the appropriate time. What I think you have to lobby for is to make sure that the corridor is ample through there so it is a direct connection and the stream stays open and not culverted. I think that's the basic thing.

Benjamin: I think the difficult part is which comes first, the chicken or the egg. You want all these communities to feel like there's a resource that belongs to them, yet there's no resource they can use. There's no motivation for them to come and do it, unless you're a nut like me, who likes poking around.
Alexander: I really like your approach to this site, because it fits in with what we heard in the lecture—the incremental, step-by-step approach—by taking designing cues from the site. One way of developing the site is to observe the way people use the site and what species of plants and animals inhabit the site. That makes sense to me; I think breaking down the barriers to access is one of the first steps.
Benjamin: Can we maybe push the barrier across Commercial Street, up through and past the trailer a couple dozen yards? Maybe we can't get the valley yet, but we can get the—
Bell: You can walk it, nobody's going to stop you.
Benjamin: I know that, but—

Ridenour: I don't think there's a question of whether or not there's going to be a connection between Frick Park and the River. I think that's probably policy. It's a question with URA of how much, and how it's going to be done. So why don't we give them an idea of how we think it ought to be done? Let's draw them a map which shows –
Reaves: Sometimes there's a tendency to overdesign, to overbuild. I think we ought to be as natural as possible to begin with, and see what happens. Eileen, you mentioned earlier that people fish down at Duck Hollow. Fine, let's make sure that they are and can continue to fish there. We don't need a big fancy promenade.

Benjamin: Kids swim down in the Nine Mile Delta.
Bell: Yes, they do. They shouldn't do that; their parents are not aware they're down there. We've had kids drown down there. They're taking a risk, because that river has a drop off, and they could drown very easily. I'd like to see a boat dock, and maybe some stores open up down there.

Ridenour: You're talking about the river. We don't have a lot of time; I think we need to really focus on the corridor.
Myers: But she's right in a way. If there were things to "go to." If you could buy a bottle of water.
Ridenour: You mean pedestrian access, by using the trail?
Myers: Yes. You would have a destination. You could walk down to the river, and get something to eat, for example. Even the fishermen go there to watch the ducks; it would be nice if there was someplace to go to the bathroom, other than the bushes.

Hurley: I'm concerned about the relationship between the development and the stream. There's a potential for this to be sort of a gated community on the citadel.
Bell: We're separate. Have you ever been down there? You know we're not going to be right on the greenway.
Hurley: I know, but there ought to be lots of sidewalks coming from Squirrel Hill right through the development to the greenway.
Bell: And you know what our roads are like. It's very dangerous. So many near-miss accidents.

Ridenour: *(indicates map)* Didn't a bridge exist here, before they built the Homestead High-Level crossing?

Benjamin: There's a really great picture of that in the Homestead Library. If you go into the library, there's a picture prominently displayed on the wall depicting a view across the river towards the site.
Bell: The Jewish Home used to be Brown's Mansion. That's a millionaire's home.

Ridenour: John, for my information (since I don't live in the neighborhood) you're not studying this part upstream from Commercial Street at all, are you?
Stephen: The stream is being studied. That area is a wetland.

Waddell: As you deal with the effluent in the stream, how you clean it, there have been discussions of increasing portions of the wetlands area in the existing Frick Park, and opening up portions across the road, to replace what you remove. If you take out the ballfield, you open up a new ballfield.

Benjamin: The ballfield is a good place for a marsh.

Stephen: It is a marsh, and that starts to extend Frick Park down towards the river, incrementally again.

Waddell: Years ago, when I was a kid, teams played football there, and it has gone downhill in a very bad way.

Ridenour: Isn't there an existing trail that goes up the hollow? (indicates map) Is this called Fire Lane Trail, right here?
Stephen: There's a hiking trail that goes down to the stream, but Fire Lane is the much bigger trail.
Ridenour: *(indicates map)* Did they open this? I see parking here. Did they come down from Edgewood into this parking lot? And there's another trail here along the creek? So is the idea to extend the greenway up this way, or to continue up through –
Savage: There's another trail that comes this way –
Ridenour: Why don't you draw it in?
Savage: I'm not sure, upside down. (indicates map) It kind of runs this way, comes right up to the edge, comes back down. It's a mountain bike trail. It ends where the culvert is located.
Ridenour: This is all wetland.

Benjamin: There's lots and lots of deer all through here.
Bell: Wild turkey, too.

Ridenour: Wild turkey! Where do you think wild turkey come from? How do they get there? Do they come from the river? They don't come from Wilkinsburg. There's more wildlife there than we know about, huh?

Hurley: One thing that we are discussing with the Corps of Engineers is conducting a river habitat analysis which will give us a benchmark, a basis for developing ways to increase the wildlife population as the area develops. This would probably happen over the next year to year and a half.

Stephen: Would that include the stream?

Hurley: No, just the river.
Bell: One morning, I was walking my dog, about 8 o'clock in the morning, and I stopped a passing car then asked, "How many deer just walked up our street?" Six deer walked straight up our road! They didn't bother the driver's car, though, he got past them. And my husband goes far away to hunt!

Ridenour: We heard today from the landscape architects for the developer, that they're looking for alternatives (indicates map). Rather than installing a huge culvert, they're thinking of coming this way, crossing at a lower level with a stone bridge, which would be high enough for a greenway underneath it, and then go up the other side.
Stephen: You mentioned the stone arch bridge concept. It would be interesting to replicate that at Commercial Street, and raise Forward up so the greenway could go underneath it. Matching stone arch bridges.

Benjamin: One of the nicest trails in the entire area is right along the crest of this ridge.

Ridenour: *(indicates map)* Are you telling me there's a trail up along here?

Benjamin: Right. There's access all along it. It's a wide open trail, and it's incredibly lovely. Hardwood forest, nice view.

Ridenour: And it just sort of happened?

Benjamin: I think it's natural. It's the edge of the big bowl.

Ridenour: Does it continue all the way around?

Benjamin: *(indicates map)* Well, this is all slag here, but if you climb the slag at this grade, you wind up back on the original bedrock.

Reaves: Who owns that plateau? Is that Duquesne Light?
Ridenour: Isn't that part of the site?
Stephen: It's leased out. WJAS has their antenna there. It's city-owned.

Benjamin: It's probably the most prime real estate in the entire development.
Alexander: We haven't mapped views at all, the visual aspects of this. We're talking about plateaus, you should be able to tell where the views are, but there are some spectacular views along here.

Ridenour: Well, let's put them on here!

Alexander: I don't know the site well enough.

Ridenour: I don't either. Let's put the trails we know about, and the views we know about.

Benjamin: *(indicates map)* You just put a great one there.

Ridenour: Along the top of the slope here. Where does it start?

Benjamin: Actually, it starts in these people's backyards!

Ridenour: *(indicates map)* But you could tie it into this street, there. It's going to be ruined by the highway?
Reaves: No, no, no.

Benjamin: I'm sure they're going to be building the houses in there, it would be wonderful to somehow not shut it from pubic access.

Ridenour: Exactly! This should be a public trail.

Hurley: The discussion is that the main roads would be located around the edges of the ridge. The park space would meet the edge of the road, creating public access. That was discussed.
Alexander: I'd also like to keep some evidence of slag, of the historical nature of the site. I don't know how that can be done.
Bell: I'd like to know what they're going to do with the slag? How are they going to level it?
Alexander: They're not going to; the minimal amount would be a lot.

Ridenour: Basically, all the plateaus above green area are going to be developed for housing. Some of this mounded earth, this slag, is going to be brought in to fill this area. So everything within this valley is steep slope. We want a trail, or a road, or a trail and a road, all the way around here.

Bell: Are they going to leave us there?
Hurley: The discussion so far is to not disturb Duck Hollow.
Benjamin: They can't afford to buy you out, so that's why you're safe.

Ridenour: *(indicates map)* Okay, so this is all housing, all up here.

Bell: Is this Pittsburgh?

Ridenour: Part of it is, then you get into Swissvale. This is called Swisshelm Park, up here.

Benjamin: The initial plan was to fill in the whole valley.
Hurley: No it wasn't. There was initial discussion that you'd have to move between two and four million cubic yards of slag. The Mayor has been adamant since day one that his desire is to create a greenway, and there would be a connection from Frick Park to the river.

Ridenour: It would be helpful if folks who live in this area could indicate the potential trails from the top into the valley, and access to the greenway.

Benjamin: The reason for my emphasis on that was, given the current political structure, the stream is going to remain dirty and obnoxious until these communities develop the political will to change the sewage system.

Reaves: Or the state uses the hammer.

Benjamin: Why should they do that if they can't get to the stream? If there's going to be a de facto wall put up, which makes the stream inaccessible, it will make it less likely that they will be motivated to clean up the stream. However, if their kids are going hiking down there...

Stephen: You're talking about connections upstream as well?

Benjamin: I'm talking about Wilkinsburg, Edgewood, Swissvale. Otherwise, frankly, it's a rich man's enclave. Why should we pay any more cents to clean up our sewage?

Ridenour: What are the possibilities for access? Where are the places? *(indicates map)* Certainly right here, along Commercial Street, you could get into the site.

Benjamin: The old Foodland area is the neatest arm of the stream.
Young: Again, there's no sign, there's no way you'd know about it unless you attended one of the workshops, or you're an explorer.
Benjamin: Which, again, is part of the attraction for me!
Bell: There's really no reason to go down, except to look at the river.

Ridenour: Where's Rosemont, which one's Rosemont? There's a development there already.
Savage: Again, you're trespassing if you go in there. There's a sign at the end of Rosemont which says, "No Trespassing."

Benjamin: Rosemont is an example of what should not happen. It's a private road with no indication that there's river access.
Bell: You mean you could come down off of their street to the slag?
Benjamin: If you have a good jeep, you can make it all the way down from there. Walking, easily.

Reaves: *(indicates map)* There's another access here (off of Forward Avenue above the Squirrel Hill Tunnel).
Kostalos: That's going to be the main access to Phase One of the development.
Ridenour: Are all these streets going to be public or private? If they're public, you could have trail access off the public street all along here.

Hurley: Pittsburgh is a fenced culture; everybody's backyard is fenced. You can't walk three blocks very easily.

Kostalos: This is probably a minority view, but, when something is nice, it doesn't stay that way for long. I want to protect this area for wildlife habitat, so I'm not sure you want 80 thousand bits of access. Some of what's nice about it is that it's isolated, it's wild, it has some natural assets. I think you have to have a balancing act between access without turning it into a concrete structure. The more you develop it, even as a greenway, the less natural it becomes, the more you lose wildlife habitat. The turkeys are going to go if you have too many people down there. A lot of the people who go down there now like it because it doesn't have great access, and there aren't thousands of people down there. One of the things about Frick Park is that it was specifically developed with the ballfields and the playgrounds around the outer perimeter, so the interior is protected. I'd like to see something like that done, so at least some of this is protected as a natural area to be enjoyed by humans and nonhumans.
Ridenour: One of the categories to consider here is use. Passive use, active use, organized, athletic, education. Do you feel you could have a multiple use site for all those activities? I think what you're talking about is a density, or level of use. I'm not sure how you're going to control that. When you get all those new units up on these hillsides.
Kostalos: Yeah, but the more access you put in, the more you encourage.

Alexander: I think the slopes are steep enough...

Kostalos: You get steep protection. I'd like to see some of that integrated.
Ridenour: We started off talking about access and use to get people down there, so they know what this is like, then begin to support it. So there's a time element. What's the current access, and what's the future access I don't even think we're talking about that at this point.

Alexander: She's talking about ideal access. Do we want it all to be accessible, or do we try to protect some portion?
Benjamin: We all have ideas of access. My idea of access is you need hiking boots and feet to get in there.

Kostalos: Even so, if you have too many people with hiking boots and feet... look at how the trails have deteriorated in Frick, with the mountain bikers. I have nothing against mountain bikers, but they tend to go off the trails, and they've made a whole bunch of new trails which have deteriorated very badly. Trees are dying, hillsides are eroding, because there is too much use by mountain bikers who want to go straight up and down steep slopes. There's real damage being done to the park because one biker isn't a problem, 25 bikers are a problem.

Hurley: Part of it also is some of the close proximity. Trails have not been maintained in 20 odd years. You've got trails that are not easy to pass with a pedestrian and a bike, and its easy to go off the pedestrian trails with a bike. Plus, there are a lot of new trails that have been created by deer, who weren't here 25 years ago. Now, there are a number of deer killed every year on Forbes Avenue, near Homewood Cemetery. It's a dangerous situation.

Stephen: We have to wrap up.

Benjamin: We can start a hunting season!
Hurley: I used to live in Point Breeze, near Mellon Park, and we had a deer in velvet walk down our street. The deer have eaten my shrubs.

Stephen: We're going to have to start wrapping up soon. Two things I've heard us discuss is the importance of education, and incremental access, and the definition of that access. We have to understand ways of limiting and controlling that access. It's a balancing act.
Ridenour: It is a balancing act. That's the key point. You have to provide enough access so that humans can get in there and appreciate what they have, but not to the point that it becomes a dominant impact. Right now, this section here has a lot of trash and a lot of problems because it has not enough access. As we've seen in Rails-To-Trails, whenever there's not many people using it, it's abused. They dump things there, and all that. We're

assuming there isn't going to be any vehicular traffic in here, maybe we say there shouldn't be any mountain bike access either if they are causing that much of a problem. Or maybe they're to be kept on the paved trail.
Reaves: There are regulations in Frick Park. The difficulty is, there's no one in there to enforce it. A pedestrian isn't going to knock off a biker going by. It's not a logical place to have a lot of cops, either, because then it doesn't feel like a nice park.

Bell: And we don't have the money to pay them.

Reaves: There are mounted police patrolling Frick Park; I think it's four or six months out of the year, and they stopped some of the bike thefts that were happening.
Ridenour: So I guess the fact that this is not used much means anybody can do anything they want down there. Once this gets developed as a greenway trail, then there'll be more people. They tend to police themselves most of the time.
Kostalos: I'd hope that there'd also be a volunteer group to conduct clean-ups. Some of the greenways are nicely cared for, they have regular clean-ups.

Waddell: How about Adopt-A-Trail people, like the Adopt-A-Highway people?

Ridenour: Does Pittsburgh have a system of Friends of the Park?
Stephen: Yes, there is a Partners in Parks.

Alexander: There's a conservancy for Schenley Park.

Ridenour: I think there's a group by Riverview Park.
Kostalos: Something could be organized around Frick and the greenway. I think people would be happy to take it on, to clean it and monitor it.

Bell: There is an unstructured group of people who walk their dogs there everyday. When we have the spring clean-up, people come and pick up all the garbage. I believe they make it a safer place for me to go by myself.

Ridenour: We've seen abandoned rail lines totally change over, and become extremely popular, well used, and very safe.
In addition, you have volunteer monitors and maintenance people. It's working very well. A greenway trail like that could do the same thing here.

Bell: The major problem is crossing Commercial Street. I see that as the major holdup to Nine Mile Run. I know dogwalkers would be over there if they weren't afraid of getting hit. The street has a right-angle turn, so no matter where you cross, you can't see the cars coming.

Reaves: Was one of the ground rules indicated by these two yellow areas to keep them separate, so you could have a greenway?
Ridenour: Oh no, it's going to be connected. One of the first ideas was to put a huge culvert and connect it across. (indicates map) Now the current thinking is to come down here like this and come across here like this. This would be the location for the new bridge which would be high enough to let the greenway flow underneath it.
Reaves: I'm asking is that a desirable feature? *(indicates map)* Can't people on this side of the stream relate here; the people on that side relate there, with no through access, so the park comes through, with no connection?

Benjamin: They didn't think the existing road network could sufficiently handle emergency vehicles and other things, and a connection to neighborhoods that would still be somewhat distinct. You would relate that side more to the existing one there, and this side to this one, and you'd still have a connection.

Reaves: Is that connection vital? Has anybody brought that issue up? To keep that corridor, so it remains natural without that connection. Does that hurt?
Ridenour: If it's done the right way, I don't think it has to hurt.

Hurley: The discussion has been to make that a very difficult connection, so it doesn't become a major thoroughfare.

Reaves: It would become a shortcut, which is a traffic problem.

Benjamin: If you're commuting to the eastern suburbs, there's only three ways to go. There's the Parkway, there's Forbes Avenue and Penn, and maybe if you're really smart, you know about Commercial Street. It's a tough thing getting across that Nine Mile Run valley for commuters, if you open up another hose they're going to –

Reaves: You don't want to have another Commercial Street! It's real windy, but people manage to go down there real fast.

Benjamin: Probably because it's faster than the other routes available.

Ridenour: So we want to increase access from the other communities to encourage them to buy into this process, including Wilkinsburg and Swissvale, because they're using it now. One aspect I thought about awhile ago, didn't get to throw it in, was that the County Parks and the City Parks are now funded by the Regional Asset District. Traditionally, this has been thought of as a City responsibility, yet it's used by the adjacent communities. Why

Project

Jack Ahern, Associate Professor, University of Massachusetts
Timothy Collins, NMR-GP
James DeAngelis, University of Pittsburgh
Judith Hull, University of Pittsburgh
Lynette Little, NMR-GP

Community

Bob Gangewere, *Carnegie Magazine*
Petra Kuehl, University of Guelph, Ontario
Jon Smith, Beechview Area Citizen Council
Jeff Wagner, Western Pennsylvania Conservancy
Residents: John S, Jack Solomon, Sue Solomon, Ned VanderVen, Buzz Miller

Government

Paul Brown, Allegheny County Health Department
Jonathon Kass, Department of City Planning
Nancy Racham, Department of Environmental Protection

Sustainable Open Space Roundtable Discussion, Table 3

Collins: As you can see, we have a real diverse group of people. We have a variety of maps. We have the river valley which includes parts of Frick Park and the development site. We have the history maps. One of the things to consider is how do we begin to expand this watershed mentality to make it a part of peoples' daily lives. We also have a USGS map. What we're looking for is community assets, cultural assets, natural assets. Some of you may want to tackle more philosophical questions: citizen activism, sustainability, and uses. Please draw on everything you have here.

DeAngelis: This is mainly to Jack and Sue. Where do you do your birding?

Solomon: Right up here at the nature center.

DeAngelis: On the map, I mean.

Solomon: On the map? It's literally here in Frick Park. Although occasionally we've been birding in Nine Mile Run. Ned was just down by Beechwood Boulevard there and there's the nature center.

Wagner: Are we going to essentially break into two groups? First group deals with issues one, two, and three, and the next group four and five and, then, six and seven scattered over the two groups?

Collins: Yes, and if anybody feels like they want to break off and do citizen activism and sustainability, that's okay. Otherwise, we'll try to get it in as part of this discussion. We can swap and everybody can stay within this area. We'll assemble for a final wrap up and prepare a final presentation. We have a lot to accomplish so, over on this side will be community and cultural assets and that side will be natural assets and use.

(The table breaks up into three separate discussions.
The transcription that follows is one of the discussions;
the recording was sometimes interrupted by noise from the other groups.)

Ahern: I'll help you but I don't know where these things are. I'll be glad to help you map and label them.

Smith: I have a [feature] to [indicate] on the map and it's historical/cultural too.

Ahern: In ten years I would think you'd have a lot of things to put on there.

Smith: About here (pointing at a spot on the slag plateau) there's a newly wooded area that has vernal pools; it supports breeding populations of red wing black birds, and song sparrows. I was hoping somewhere along the line when they incorporate green space into the residential development, they would incorporate this as it is. It is toward the end of the successional process, but due to vegetation and the increase in trees on that site, I don't think it will be integrated into the development. It's not going to support vernal pools anymore and it's sort of on its last legs at that. But I think it is on an otherwise flat area.

Ahern: Is it coming up and seeping out somehow?

Smith: It could be coming through the natural wooded hillsides and seeping out. I'm not sure.

Ahern: Is this part forested here?

Smith: Yes.

Ahern: This is slag too, right?

Smith: No this isn't; this is wooded hillside.

Ahern: Okay, that's the edge of the slag. And that's the steep slope there.

Smith: That's 907, while that's 776 (referring to an area on the topographical maps). This is actually a depression but that depression is no longer really there. That used to be like a big pit where they buried refrigerators and stuff like that. The least disturbed areas, however, are primarily in the riparian zone and in the hillside. I mean the slag heaps are pretty themselves even though they don't have a lot of older vegetation.

Ahern: Excuse me, I should mark that this pit is no longer there.

Smith: That pit is no longer there.
John S: How much slag are they going to take out? A million yards or something like that?

Ahern: I only just came in today, but the original proposal calls for over a million cubic yards of hills to be moved.

John S: How much is there now?

Ahern: I don't know, but the current proposal is down to one billion. I believe the policy is that they want to get all the slag that remains on site. They don't want to truck it somewhere else.

Wagner: As we identify research—what's here, whatever the slag may be and what might be done with it—one thing we should do is identify areas. Then ask the question, is this area, even though the substrate is slag, even worth investigating for protection? If we're looking at natural features.

Ahern: At the moment, and I don't mean to push your question aside but, we're completing an inventory of all your knowledge about this place. Then, hopefully, we can synthesize and I can help you with that. What I learned today about this project was the development proposal is integral with the greenway component. It's kind of driving this thing. They have to create these areas to build the housing on and the developers have expectations about the slag heaps.

John S: Let's retreat a bit and talk about the slag dump. I mean, that's not [viewed as] an eyesore.

Kass: That's something I think is interesting as far as the features of the slag. Wastelands are natural features when looked at for aesthetic value. It is interesting to discuss what the slag might look like in the end. People talk about putting up a layer to grow trees, but it's unrealistic that the slag will ever have large trees on it. It's really interesting to think about the green space in terms of the features since you have an expanse that may never [be populated by] trees. That will be a unique habitat.

John S: There is a unique feature—it looks kind of volcanic.

DeAngelis: In the cultural aspect, the mills are gone. There's nothing to tell you this is a tremendous little area except as a kind of archeological mountain.
Ahern: I see what you mean.

Wagner: I mean everything's natural in geologic times. What are you guys talking about here?

Ahern: I'm just keeping notes on valued industrial artifacts.

Kass: Well it might be valued more if the area next to it was a really rich green space.

Wagner: Just to get some stuff on the map, where are some areas you are familiar with?
Gangewere: There's more forest land on this side.

Ahern: All the way down?

Gangewere: Yes, quite a ways down.

Kass: And actually this is really forested also, no?

John S: Yes. On the left there is a lot more slag but you get a lot more successional growth.

Ahern: This is 'show and tell' of the vegetation.

Smith: Yes, I think this area is slag but these areas are wooded. But some slag was dumped on the interior. Maybe from further down this way and the mills down this way.
Wagner: Are there any sections [or geographical features] of stream you consider relatively intact?
Smith: It's hard to tell because I think most of the trees there are older than 80 years
VanderVen: Only one part of the stream hasn't been touched because there's a trunk sewer that runs right down the stream.
Smith: Relatively close to the channel.
VanderVen: The slag pile [extends] to Homestead.

Kass: Naturally, it won't be scoured anywhere near the extent it would on a regular stream. But certainly, relatively speaking, it has the most natural feeling because of the vegetation.

Smith: This wooded area, here, I think, is secondary growth.

Kass: Is that not slag?

Smith: No. This probably bears the closest [resemblance to] a natural western Pennsylvania forest.
Wagner: When you put this all together and you ask the question cultural versus natural, and you're looking at community assets and resources, one thing that seems natural to show [is the comparison and contrast of a recovering forest on relatively natural substrate, and an area that is being remediated]. For educational opportunities, that's great.

Ahern: Do you know where along the slag slope there is vegetation?

Smith: These slopes are bare right here (points). This is wooded here. This [resembles] a succession pattern; this is bare and this is invasive vegetation (a lot of Japanese knotweed, honeysuckle and so

forth). Then you have locust trees here. But I have heard that those trees were seeded [in an attempt] to revegetate the slopes.
VanderVen: They did that along the Parkway.
Smith: Yes, they did that over here, too, but I think that also happened here.
VanderVen: That growth of locust extends

Ahern: I walked through there today and I saw them.

Kass: I wondered if there's an explanation; is it just steepness that keeps it bare?
Smith: It's probably the most recent dumped area.

Brown: You mean over by Old Browns Hill Road?

Smith: Yes.

Ahern: Does it have something to do with exposure?

Smith: Yes, that's true. It seems this is darker slag than the [substrate] here or further this way *(points to map)*.

Ahern: If it's darker and faces more south, then it's going to be a lot hotter than the other slag; it could be really dry, it could be the texture. The stuff is really variable; it was hammered with a pick ax, while some of it was poured molten.

John S: Steam seeps out if it. I guess it's from the pressure.

Ahern: No it's from a chemical reaction but supposedly it's benign.

Smith: Are you talking about the steam vents? I have heard it's from the calcination process.

Ahern: Yes.

Wagner: How about this area here (points)?

Kass: This is one of the nicest. Actually, I don't know the whole site intimately, but it really is beautiful.

Ahern: Why beautiful?

Kass: I guess it's the density of growth. The undergrowth is thick—a lush green—more so than a woodlands.
Brown: Yes. The old railroad bridge is there?
Kass: I thought it was further down but maybe that is [the location].
Brown: Yes that is real nice and wooded.

(Discussion shifts to another point on the map.)

Kass: That's the meadow there...

Gangewere: Are there any floodplain factors or a seasonal water effect?

Ahern: I don't think there would be much because the streambed has very high gradient into it. It may in this area but I wouldn't expect it to.

Kass: The banks are so steep.

Ahern: Here it is already 15 feet above the regular water level, just here.

Gangewere: At what point does Nine Mile Run begin?

Ahern: It starts at the culvert near the Foodland.

Wagner: One reason I was interested in this area is because the tributaries below the Parkway provide one opportunity to control input into Nine Mile Run. But, I don't know, there's a lot of impervious surface. This (points) in itself is a project. I'm not familiar with these little valleys but, they may have some of the more natural substrates [present]. Maybe that whole area is a resource, a [community] project for education. Hydrologically, they built this project called Nine Mile Run, and it presents an opportunity to influence water quality.
Gangewere: What's this?

Ahern: This is a subwatershed unit that could be managed to improve water quality, if this is going to be a part of a greenway system that goes along the river at some point. It actually goes both ways now.

Gangewere: If you get on the river and head downstream, can you go across the bridge?
John S: No, you're under the bridge.

Ahern: The trail will come down this way and probably cross one of the bridges maybe cross over the railroad bridge.

Gangewere: As a kind of cul-de-sac, serving the people here, Nine Mile Run has a special importance because it's their park. But as part of a greenway system that links the city, you are going to be inviting people on bicycles to come over somehow, maybe over the bridge, and enter Nine Mile Run and Frick Park. It's part of the network, and that's part of making the trail. I think it's good actually.

Ahern: You see it in places like Philadelphia's Fairmont Park; there are a lot of bike trails following stream corridors.

Fairmont Park is a greenway park. It follows the rivers and creeks and then it goes up to larger recreation areas. It seems to work quite well.

Kass: When you talk about green space as a linkage, the linkage is here, between Frick Park and the river. Certainly, it isn't a pristine environment but it is a different environment, [with a presently weak linkage. Would that linkage tø the river be a determining factor in the greenway's formation?]

Gangewere: Yes. I think it's possible to go on your bike from South Side to Frick Park.

Ahern: You can do it now. John Stephen does it. He's an avid biker. It's a little difficult.

Wagner: It's an issue of sustainability, really, and whatever a sustainable community is supposed to be is a function of that from here into town. Obviously Frick Park should [provide] access [which] brings in issues of multiple use. So many greenways and trails are opportunistic: here they are and we should use them. It sounds like this is an opportunity to do that [to offer access from home to work, to recreation areas....]

Kass: What about the linkage in terms of wildlife? Is there wildlife that you think would take advantage of the expanse?

John S: I think more wildlife would come if there was an expanse.

Wagner: It will integrate all these species. Don't know what's going on with the grading but, in addition to a trail or a couple of trails, we need wildlife corridors too. The question is: can you have some of everything and or will you have some of nothing? Are we trying to combine too many uses? So much of what we are [proposing] depends on what happens here. How does this get graded? This is a huge area. Is it better to have a pedestrian trail on the top instead of a trail along the valley?

Kass: Well there's a natural trail there now [but, perhaps, frequency of use and subsequent impact on the area, would be a determining factor for trail location].

Gangewere: The Mayor's talking about very expensive houses up here and that's probably going to happen. That's a whole new neighborhood and those people are going to view this as their park, from their houses into Frick Park.

Kass: The [possibility] is that these people may not want [trail access through their] neighborhood. That's their right. That's human nature.

Gangewere: The trail can link neighborhoods. The isolation of the old neighborhoods is the historic Pittsburgh quality which has pluses and minuses. It sustains the integrity of the neighborhood but it keeps everybody provincial. That is, they don't go from one neighborhood to the other.
John S: It's not as bad as it used to be.
Gangewere: But the greenway, is going to be a linkage.

Ahern: A social linkage.

Gangewere: Yes, a social linkage. Schenley Park and Squirrel Hill will link to the downtown. These people are going to bike from here down to there in 20 minutes and 45 minutes back, uphill. The people up here are probably going to figure out a way to get downtown on a bike trail?

Ahern: Yes, hopefully.

DeAngelis: I was interested in the point you were making about the decision down here. As I understand it, there is a disconnection between the slag heap and this community. If you fill that gap, then you could widen that part of the stream valley, thereby make it more accessible. Is that what you are suggesting?

Wagner: Yes, just in terms of expanding where we have more options in terms of a pedestrian trail. If you are going to emphasize some sort of habitat and wildlife, for instance.

Kass: But I don't think anyone would go very far with actually pulling the base of the slag heap back at all. Are you talking about pulling the slope back? But then in addition to that, in pulling the whole thing back you're talking about enormous amounts of slag.

Wagner: And basically the risk is if you can't widen it there, then a certain amount of manipulations are going to occur. Part of the design, if you're going to have a trails system here, [is to consider the residents' point of view]. It's different than putting a trail through an existing neighborhood where people are accustomed to a certain kind of use. So [this situation is] a little bit different from the traditional trail situation. It's really an open palette here to some extent.

Kass: But you're saying it's a unique opportunity to be able to incorporate [these ideas] before [the community is established]?

Wagner: Yes. It's a lot easier to establish it right away before [the community] exists.

Kass: [How do you interpret this] from a citizen activist point of view? There's going to be so much going on there—the whole green space perspective. [Do you consider] the green space [after] you have this impending massive amount of people in position? In addition, these workshops [generate] swells of excitement about gathering around the Nine Mile Run habitat, but no one can really gather around much yet because we have to wait and see what [the housing developers are going to do].

DeAngelis: [This has been] the state of problems from the get go. [For this to function as a habitat, as well as incorporating other uses,] you have to pay a lot of attention to how the stream works. So where does that leave you?

Gangewere: That means that the bottleneck for this whole greenway is right in here, leaving Frick Park and connecting to the river. And the bottleneck, as narrow as it is, has got to be very carefully maintained because everybody is going to go through it.

DeAngelis: If these things are true, if it is a bottleneck, then the logical answer is that they violate the principles. But if the reality is culturally they can't afford to do it, then you make the best of it. Then you contour this and put that in the culvert. You can give people a degree of access.

Gangewere: How narrow is it?

Brown: [Covering the stream presents the problem of covering a 54 inch sanitary sewer in the valley.] If you cover it, it's going to overburden the old sewer and that could present real problems.

Ahern: When you cover the stream, you're eliminating any possibility to improve the water quality or to [improve] the wildlife habitat or to help people. It's the aesthetics. Also, the hydrology becomes different now that the water moves fast through a pipe instead of through a channel where it can get spread out a little bit. The people all of a sudden don't know there is a stream there because it's not there just like upstream. The people don't know they are living on top of a stream. There's a big cost to doing that and the trend is to take streams out of pipes and not put them in.

DeAngelis: I agree with you but look at the water quality. It is not really effected here. Look, it's less than a football field here, I think, from the mouth. You do have some structural problems and there is an expense involved, but there is an expense in opening up so it helps the habitat, too. You have to look at the very particular circumstance right in this area.

John S: As far as talking about widening and preserving the stream, there's a cliff up there. I mean, you choose to move it back onto the cliff. I don't know how expensive [it will be] to move the slag but the [vegetation] is going to grow back. You're not going to change that. Instead of going through the stream; go on top of it on the cliff side. That's how they built the trail in the first place.

Kass: Are you talking about chopping it back to put a trail on it or are you talking about chopping it back to have the stream enter the river at a different spot?

John S: Leave the stream there. I don't know if it's harder or more expensive than moving the slag. You could chop that back and it's still [going to revert] to it's natural state.

Gangewere: Is there a place where you can walk the streambed down to the river? I mean, where in the immediate city can't you do it at? Panther Hollow. You can't do it on the North Side, I don't think. There's no place where you can walk down a stream and get to a river. There are roads that cross it; there's railroad tracks that cross it.

Kass: Well that's not going to change here though.

Ahern: I think what you're articulating here is the spiritual, aesthetic value. Just to be able to look through a vantage point and see down the stream connected to the river so people would say there's value to that. People are connecting with the natural system. They can see where the rain goes as opposed to seeing the stream disappear into a pipe.

Kass: If it's truly very restrictive here and we want to say that making it wider is not an option and that putting into the culvert is not an option, is it an option to think that a lower portion of this stream is going to be allowed to be a natural environment and that the access would come higher up and people just wouldn't be in that stretch?

Wagner: You mean up on the cliffs?

Gangewere: There are lots of options. Maybe you double the tracks for the bikes and pedestrians and build a bikeway 50 feet above and [establish a] pathway [on] the hill.

Ahern: Yes, I think it can be designed from what I saw briefly. Really the slope areas further up (somewhere around here where the slope comes right down from the water around here) it's quite narrow. In here, this is very, very steep. Once you come around this bend there are a couple landmarks. Pipes cross here. It's very narrow and it's not something you could see from a vantage point. You're in a canyon.

John S: I grew up on top of that hill. I can't think of a place....

Ahern: Even in that area, the trail is designed a little higher on the slope. If the trail is properly constructed, then it can [traverse] the slope. But the challenge is to [create] space for the stream at the base of the slope. The stream is a dynamic system that is eroding. It's a major feature in that area.

DeAngelis: Is there any option in this area to build a dam?

Ahern: One of the reasons it's less feasible (I'm not saying it isn't feasible) is because of the high gradient of the stream. If you have a low gradient stream, you can build a ten-foot dam and you can create a large impoundment. But when you have a high gradient stream, and you build a ten-foot impoundment, it just won't hold up because the slope is steep.

Kass: Another issue is eliminating odor [which results from] the pooling of the water. They're going to eliminate that pooling by getting rid of any spot [where] water might collect and [stagnate]. I don't know [if that will eliminate the odor].

John S: Eventually this sewer problem will have to be cleaned up.

Kass: Well the storm sewer isn't going to be cleared up for a long time. That [is] a long-term solution. The dry weather sewage situation has a short-term odor/garbage solution. A mid-term solution will [produce] fairly good quality. The storm situation [with] the combined sewer overflows [will require substantial financial resources].

Wagner: You know, I think [these are conceptual decisions]. That is the idea of focusing on the stream, not on the sewage module. Focus on the stream as a natural wildlife corridor [; focus] on the stream as a pedestrian bicycle use with all these constraints. We are comparing this area this area. I think it's pretty obvious that this side of the greenway tends to have more natural features in the valley. This side is open for development of some kind, manipulation of some kind. So maybe the decision is: do we pull out the people from here, particularly higher impact people that can always walk on here with minimal trail? Bicycling becomes a whole other issue. So maybe the choice is asking [what drives the incorporation of] trails into this section of the project? Use this section of the project as restoration and semi-natural area. Maybe

we are looking at the core of the site, over here, [and] combining stream value. So maybe [this locates] where people are and [this locates] the natural features. Maybe the aesthetic point of view [can determine access—] biking or walking up here and actually looking down and seeing these slopes. People live here, people traffic through here, people move through this area and I don't think you want to bike down there.

Kass: Yes that was the question, I thought. The bikers have been thrown in but the bikers don't necessarily go down there. They do now but, if we're talking about moving incrementally toward a more natural habitat, maybe a trade-off [has to be made]. It may be more important to have bikes there for the encouragement that that means throughout the city.

Wagner: Have bikes where?

Kass: In the base.

Wagner: Why do bikes have to be here?

Kass: Well because if they are coming from the riverbed it's a gradual gradient to get into Frick Park rather than having to climb up a very steep hill.

Wagner: But what are the options in these areas with reconstruction? *(Looking at a topographic map.)*

Kass: With reconstruction of the trail? Well a bike can do pretty well along a lot of that now. Right now you descend right around [here]; you go up a hill, then come back down around where that bridge crosses.

Wagner: Without moving tons of slag, is it possible to [construct] an eight-foot corridor of moderate slope that moves from this area up on to whatever this ends up being? If it's going to be housing, this [area] could be graded and [function in the same way] back down to that area.

Ahern: I would say that you want both. You want bikes along the corridor and you want to have an alternative and, also, to allow these people to get down from here and for these people to get up there.

John S: Well there is a road that goes up into the slag dumps.
Wagner: Why bikes there?

Ahern: As part of a city-wide bikeway system to connect Frick Park to downtown. It's over 100 feet higher than the railroad here. It's a significant jump in a short distance. It's going to be a really heavy climb to get up here as opposed to

following the stream corridor. There's kind of a natural preference for following the water.

Kass: That's why I said a trade-off. I agree with you. If we were really prioritizing this as a great natural environment, we might not put bikes down there. But it makes a big difference for the bikes to get between the two elevations here along this slow gradient verses up here.

Ahern: The larger issue is of all the uses you want [to incorporate at the bottom]. Do you want to have a multi-use trail [for hiking], riding bicycles, and jogging? I don't know if you could cross-country ski around here. [With] a multiple-use trail, you can do those things. That's something in urban areas and many areas. I don't know if safety [is an issue here]. Having a presence of people regularly rather than being the only person in this valley and therefore being vulnerable to being attacked [; is that an issue?]

Gangewere: One of the issues about bikes is separating the bike from the walkways in areas where there [are] a lot of walkers. [In] places where [bikers and walkers] occupy the same space, on the South Side [, for instance], they have a biking path [with] a hard surface [permitting a fast commute] to downtown and there's a separate eight-mile path for walking closer to the water and there's no reason why in a place like this you couldn't keep a separate use. You could have your walking path not too large, five feet or so, with parts of this down near the water. Sometimes it gets flooding and sometimes it's bare but the bikers are maybe 25 to 50 feet above. They are on a road that [could run] alongside the mountain and above the stream.

DeAngelis: We're talking about two different types of bikeways. The bikeway you're talking about in this valley is for recreational use. Anybody that lives in this area that's going to bike to work is going to go through Oakland to downtown. For whomever bikes, you know how easy it is to get right in through here. So there are probably some decisions to be made for extreme bicycle safety and [related issues] but you don't have to think about this kind of a route. This is not smart. This is a recreational route.

Kass: Well that's not true if you're only coming from downtown. You must make a distinction. You could make a recreational route more challenging then you might want to do with a community bikeway. Commuting bike people are going to bike here.

Gangewere: That's true. You wouldn't even have to make it a hard surface. You could make it gravel. I think the main point is that it is too narrow down here to have all these multiple uses. It's impossible.
Wagner: You have to ask, what is the priority. First, ask the question what do you want it to be and then ask [if that is possible].

Ahern: That's a valid question, what do you want it to be? Do you want to save that area for more nature, wildlife protection or try to compromise it to accommodate more bicycle use.

Kass: Would the issue of the trail up above and the view of the valley and that being a really nice feature, seem like it should be a priority? [Should] the edge of the cliff, usually a very desirable spot, be a public spot as opposed to [the providence of] those who live there?

Gangewere: That's one of the selling features of this whole development. The height looking down into the valley. I don't think they'd neglect that but I don't think they'd get bikes up there from down near the riverbed.

Kass: It might be hard to [persuade people] that there needs to be significant public space right where the best view is [located].

Wagner: Answer this question. People who buy into this development [will most likely] be interested in accessing the shops, and doing things outside of the space. How will they deal with these constraints? How will they get on their bikes and go to the South Side? How will they put on their backpacks and climb up here to go shopping in Squirrel Hill?

Kass: Well, the development is also pitched to the person who would otherwise move to the suburbs.

John S: I don't think these are the kind of people to put on their backpacks and bicycle.
Gangewere: Well they can't sell houses in Washington's Landing fast enough. Yet those people put up with a terrible intersection and those houses are selling like hotcakes. There is a bike path that will connect that island to the North Side. People are spending a quarter of a million dollars to buy houses on an island in the Allegheny River that's hard to get to by car. But they have a bike path.
Wagner: It seems like this is marketed. It's going to be pretty pivotal in determining how everything else fits together. These

people are primary to designing this area. They don't want the hassle of having a corridor over here for others in the city. This becomes isolated community which at most tolerates the greenway rather than supports it. I don't have a good take on that.

Kass: You're right. It is being marketed as a new urban community.

Ahern: We must note it as an issue to keep in mind.
Collins: We've got ten minutes to sum up here. Does anybody want to take responsibility for pulling this whole thing together? Making a nickel tour of what we've been up to?
Ahern: Any volunteers from the local contingent? Well I love to (summarize) but a lot of you have much more at stake in this than I do and spoke pretty clearly about it.

Kass: I don't know if I could pull all of [this together in a] coherent way.

Ahern: I can make a brief summary.

Kass: I think you would have the most objective take on what went on.

Collins: Let's touch on what was going on over here as well as what was going on with Petra and John.

Kass: Do you guys want to start?

Kuehl: Sure. We addressed very briefly sustainability and divided it into cultural, ecological and economic sustainability. John gave most of the background information because I'm not a Pittsburgher. He said the development of [the greenway] is driven by the development of the slag mountain housing development up here. He believes it should be more a traditional residential, upscale design similar to upscale housing in Squirrel Hill. There is a possibility that a tunnel [will be] built underneath the neighborhood that connects into Squirrel Hill, making it more attractive for [commuters] and increasing the traffic flow. Down points of this design [are] noise pollution, fumes, and vibration. John thinks the design of it is crucial in assessing what kind of impact it will have on the neighborhood. The other residential development is in the south, here; we call it the green residential development. We left that open, because this should be an area that can be treated more experimentally. The designers can come in and do green design, etcetera. It's close to a little neighborhood, Duck Hollow, which is a

traditional Pittsburgh neighborhood that is more contained and has more sensitive environmental issues. Ecological sustainability in this area is very much geared towards the greenway along the river and the slag heaps need to be revegetated. That's the biggest problem right now. Revegetation of the slopes should introduce viable plant communities, a landscape that is self-renewable like an organism and doesn't need to be a pristine woodland. It should be a self-sustainable system; maybe in the future, the slopes can be developed for recreational activities and putting paths on. The cultural aspects of sustainability of this area is driven by the proximity to Squirrel Hill. People are using this area right now. Culturally, we've found that some Jewish people have some of their rituals in this area and they use it to enhance their holidays and to walk there. Other people use it just for physical activities. The cultural connection to other parks in Pittsburgh can [be accomplished by] designing bridges and other architectural features so people have a sense of place and connect to other historical landmarks in Pittsburgh. It has an educational [value] and [establishes] a much stronger sense of place than there is now. That's it.

Smith: Let me get in a quickie and say as long as I have a lot of earth moving machines that it would be nice to drill a tunnel from the Parkway and come out on Browns Hill Road. It was not meant to be in any sense a major feature. I just couldn't resist it, being a transportation planner and of course it's an obvious extension of Frick Park.

Collins: Buzz, do you want to talk about what was going on over there?

Miller: I'm not sure if I could sum it all up here but... we started off talking about some of the traditional or the historical features of Nine Mile Run itself. There was a salt lick and then eventually a salt mine at the mouth of Nine Mile Run. I guess there were also natural gas wells in this area before it actually became a slag dump. At the top of the saline path there was tavern which I think was also a brothel, owned by someone named Stuart. In the ‘40s or ‘50s it was owned by one of his descendants who died. Consequently, it [became] dilapidated—didn't have electricity and [other amenities]. Whoever bought it [converted] the place to apartments. Beechwood Boulevard itself was a railroad bed for the coal which was mined along the coal seam which was adjacent to what now is Beechwood Boulevard. Then we started talking about the cultural development that

came into being [in response to] the old natural resources of the area. The lower income people lived closer to the river and streams like Duck Hollow and upper income people lived in the lighter air and the views [afforded by] Beechwood Boulevard in the upper area of Squirrel Hill. We started talking about bikeways coexisting, with a bias toward birding and botany. I guess one [solution] is creating a bike path that is not conducive to barreling through the area but is meandering, slowing the path, just like water moves slower when it meanders around oxbows. [Design] a paved bike path that meanders and maybe crosses over a couple of ways or a couple of places. What sprang to my mind are the bikeways and paths in Rock Creek Park and Slag Oak Creek Park down around D.C. and Maryland, which have very similar bike paths that meander. Also, the birding there is excellent given the fact that it's so urban. [We also discussed how geographical boundaries can determine settlement patterns.] We were talking about working class boundaries, not only did attitude play into boundaries but railroad track [location, for example] (you know, living on the wrong side of the tracks). What else did we have here that I didn't get to?

Solomon: Wetlands and opening up some of the streams.

Smith: Wetlands further upstream and elevation would define wetlands and the contiguous landscape.

Collins: There was a point that Nancy made. You can identify wetlands [areas], elevation-wise, you can start to make links throughout the entire watershed that might start to promote this kind of ecosystems planning approach. Upstream you might be able to identify more of the original wetlands in the process.

Smith: I guess we didn't have a very outlined conversation or come up with an outline from our conversations. It's like a smattering of a broad range of things.

Kuehl: But I think that the connection you make to the old historical neighborhoods, is something unique [to] Pittsburgh. I think what makes it interesting driving through Pittsburgh is the diversity. Not everything is the same; it doesn't look like somebody slapped down one type of suburb. It's different everywhere. People have a unique identity with their neighborhood. Some people even claim that they speak different languages.

John S: Could I ask a practical question? How do you propose to create a meandering bike path with switch backs in such a narrow corridor?

Solomon: Bridges across the stream.
Smith: And winding between existing trees. Stuff like that.
Wagner: Then that doesn't become a function aspect. It becomes a decoration type thing.
Smith: True.

Ahern: You may be disturbing more of the wooded area than you otherwise would if you have an area where the bikes are going through; then there's an area where the noise is a factor. It could impact on a much larger area.

Smith: You're thinking of peddle bikes rather than motor bikes. If you have a meandering motor bike path of course your throttling, so we'll assume that it's peddle bike and it is recreational. Yes, I guess it's an arbitrary decision but you have to make some decisions.
Kuehl: But the creation of the bike path doesn't necessarily [have to be completed] in one phase. There are a lot of stream bank stabilization problems right now, and it might be very difficult to construct a bridge in this area. Those are the bioengineering questions that have to be answered first before you can go and make it really pretty. Maybe initially you have to have very simple bike paths; maybe [they] only go one way or another. Then, maybe in ten years when the city has more money and there is more awareness and people have a demand for these kinds of things, then you can put in a more complex path system.

Kass: Well why don't I try and then whoever will fill in the blanks, because I'm going to miss most of it. I think we talked a lot about the constriction of the proposed greenway area. We talked a lot about linkage. A lot of the discussion about linkage [focused on] what [areas] we [want to link]. People tended to think we were linking to people in this corridor more than wildlife, perhaps, or at least that's what we talked about a lot. We talked about the [existing] bike trails and [trails that are] going to exist more along the South Side and along the Mon, and [the logistics of circulation through] this corridor. A lot of the discussion was about what would take place with the constricted mouth here; whether bikes and people [are an appropriate presence. The location of the bike path and issues concerning its function were discussed, as well as what these paths would connect. What does this mean for Frick Park?] I think some people felt it [would be a positive move] because Frick Park is such a great resource. Some people [felt the area] would lose the bucolic nature

if more people [had access to] it. Into this discussion of constriction there was some [concern for the access options introduced by culverting or other infrastructure, such as a bridge]. We tried to talk about the green space. I think we got most of our intimate knowledge of the place when Buzz came over and helped. I think a lot of us haven't been on the site much so we didn't know of many really specific areas. We had trouble [identifying] the green spots, but everybody thinks the east bank is in a natural state right now. There were some statements about this valley as an interesting connection to the community or an interesting tributary issue that we didn't really understand.

Wagner: I think I can [respond to] that. We were just pointing out that below Frick Park are two small tributaries that move up into those neighborhoods and furnish an opportunity to effect water quality, effect runoff, to do a variety of things. It is a sort of small sub watershed within Nine Mile Run. It's an opportunity for a project involving the community in water quality monitoring [,for example]. One thing we discussed a lot that kind of fits in with the rest of the discussion has to do with the Slag Mountain Housing Development. I guess it's proposed that this would be a fairly standard suburban development, perhaps upscale. [The success of the greenway is dependent upon the compatibility of the residents' interests and values.] A big question I think everybody has to ask in terms of functionality is: if this is really going to function in terms of commuting and in terms of people moving through this area to get to shopping facilities, etcetera, then that should be made a priority and those kinds of accesses need to be planned. In terms of the most natural [sections] of the site, obviously, this slope over here has at least two areas of relatively undisturbed topography. Maybe this is the core area. Obviously, any development over here is what they are going to be [examining]. Some more thoughts?

The Conclusion of A Year's Work

If we are to analyze the value of Ample Opportunity: A Community Dialogue, we need to carefully consider our goals and intentions and find a way to evaluate the success of this year's project. In our philosophy section we outlined the theoretical foundation of our program on reclamation and sustainable public space: systems/restoration ecology, the ideals of reconstructive postmodern art and finally, discursive public space. Over the past year we developed a program that would allow us to apply the theories and experiment within the social and political context of Nine Mile Run. Ample Opportunity: A Community Dialogue was intended to inform the public about public space development on brownfield sites.
Our process was primarily discursive in nature, although various ephemeral manifestations of art and restoration ecology permeate the onsite efforts, public tours and four events. As we attempt to analyze the work, the question we need to answer in its simplest form is, "How do we examine the value of a conversation?"

In the following pages we will discuss the four events and their products within the context of post-industrial reclamation practices. We broadly define reclamation as an integrated physical, cultural and ecological activity.

The Ample Opportunity conversation was primarily constructed around issues of public space, specifically public space within the context of a specific urban brownfield (Nine Mile Run) which is about to be developed by private interests. It has been our contention from the beginning of this process that urban brownfields or post-industrial sites are an important public space opportunity, particularly for rust belt cities like Pittsburgh. Many of these cities were built upon the resources of the natural world. Pittsburgh is physically located at the tip of a peninsula formed by two major river valleys. Economically it was an industrial city, weaned on resource extraction and the use of the rivers as part of the transport infrastructure that made industrial growth, expansion and its culminating forces possible. Resource extraction and the use of the urban environment as the "sink" for the wastes of industrial production[1] was typical of the industrial period. Ostensibly public space was utilized by private industry in the pursuit of profit.

Each society and its related means of production (in this case, extraction of resources and industrial production) creates a specific kind of physical space[2]. The steel industry in Pittsburgh colonized our waterfronts (excluding public uses), transformed our rivers, filled the skies with smoke and the valleys with slag. This was an amazing and radical spatial transformation. The land along the rivers became the frame for a giant machine of industrial production. The water, the air,

[1] Tarr, J., (1996) *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective*. The University of Akron, Akron, Ohio. P. 7-30

[2] Lefebvre, H., (1974) *The Production of Space*. Translated by Nicholson-Smith, D. (1991) Blackwell Publishers, Malden Massachusetts. P. 30-33

even the people were the fluid in the system. The land once natural became technological, a system to be harnessed in the pursuit of profit. The economic benefits to the private realm overwhelmed the benefits to the public realm.

Today, we find ourselves immersed again in radical change. The question is, what kind of space that will be created. Industry is gone, riverfront properties lie vacant and once again we are deciding the relative value of the public realm. The technological purpose for the land has passed but the economic need is still viable. The question is how to view these properties in the context of a pre-industrial legacy of public access and natural value. Can we integrate economic benefit with public use and ecosystem function? Will we continue to accept the dichotomy of wilderness or zoo as the primary "spaces" of natural experience? Or, is there something new to consider at the place where the land meets the river and the soot of industry still stains the soil?

The Ample Opportunity conversation has manifest itself in a number of forms. Texts have been created and distributed to over 600 individuals and families. Onsite tours with various professionals were arranged and a public access point was created in a trailer set up with the permission of the City of Pittsburgh. There were also public events where the professionals and academics who outlined the issues relevant to the development of public space entered into active dialogue with the citizenry. Our intention was to work from an opportunity-based assessment, to identify the brownfield as a place in its own right. We worked across disciplines to articulate its public value and, using a community dialogue-based program, creatively explore ways to sustain and nurture public value. Our goal was to enable an alternative public, a citizens group that recognized the opportunity of public space development of brownfields[3].

Systems/restoration ecology

It is important to note that the rigorous assessment that informs an ecosystems analysis has not as yet been completed at Nine Mile Run. In July 1997, an initial assessment study began with funding from the Department of Conservation and Natural Resources River Conservation Program. The completed River Conservation Plan for Nine Mile Run will result in a series of recommendations and options for

[3]Collins, T., and Savage, K., (1998) *Brownfields as Places.* Public Works Management and Policy, Volume 2, Number 3. January 1998. P. 217-219



The Industrial River:
The mouth of the Nine Mile Run Valley, view from the Homestead High Level Bridge.



The ecosystem river:
The mouth of Nine Mile Run provides habitat for a wide variety of waterfowl.



A student attaches a plant description tag on Cow Parsnip



A plant description along the trail.

onsite restoration and project work.

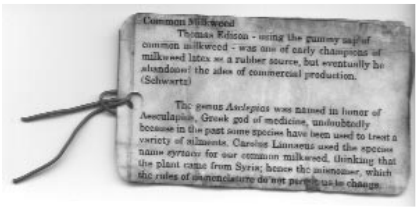
With full realization of the lack of assessment data, we decided that we could use the four events and their attendant tours to expand the public's ideas of the ecological systems, opportunities and problems at Nine Mile Run. Numerous individuals saw the site primarily as a "dump." This perception is difficult to address, as both the development interests as well as some of the traditional environmental interests have a stake in retaining this perception. The development team wants the freedom to act as it sees fit, driven primarily by economically viable solutions and a clear understanding that a failed revegetation program would adversely affect the sale of homes. The traditional environmental organizations have an invested interest in the wilderness/zoo duality as the primary sites of environmental import. The ecological value of a post-industrial ecosystem is for many a step down from the backyard lawn and its birdfeeders. These are often professionals and organizations that have an economic and intellectual interest in assessing and protecting remnant pristine environments beyond the suburban core. While the STUDIO team would not argue the import of either of these views, we feel that there is room for an alternative voice at the table speaking in support of urban environment. The STUDIO team is interested in defining the image, meaning and method of a sustainable infrastructure of ecosystem function. The argument in favor of an ecosystem-based analysis of Nine Mile Run and other riparian brownfields can be found in the relationship between the vast body of potential urban users and the great estates of vacant brownfield properties which line our rivers for miles. If we are to teach ecology and respect for systemic function, it needs to permeate daily life, not be a lofty goal for properties seldom experienced and only accessible by automobile or airline.

If we were to encourage an eco-exploration of the site, we knew that it was important to begin to illustrate its complexity. Reiko Goto worked with Choli Lightfoot to identify numerous plants along the trails and to tag trees, bushes and wildflowers with their common name, Latin name, and common or historical use and/or value.

The Stream Remediation, Community Ecology and Sustainable Open Space workshops were designed to provide an increased awareness of the complexity of systems function (and disfunction) at Nine Mile Run. At the Stream Remediation workshop, we developed handbooks on benthic organisms (mud dwelling bugs) and riparian plants with Mary Kostalos of Chatham College's Rachel Carson Institute. Professor Kostalos led a streamside workshop on these organisms which are the building blocks of stream ecology. Without a foundation of benthic organisms, a stream is unable to support higher organisms. During the same event, John Schombert of the County Health Department led an upstream tour to explore the effects of municipal sewage on a city park and its attendant stream ecology. Tim Collins led a tour of the remnant riparian corridor between the slag slopes downstream. During the Community Dialogue roundtable on water regulation, citizens raised questions about the human ecosystem such as the neglect that plagues the sewer system resulting in a stream with a 90 year history of contamination and threats to human health, and the effects of the brownfield and its subsequent development on the remnant riparian ecology. Other roundtables

brainstormed physical solutions and volunteer projects to reclaim the relationship with and use of the property.

Community Ecology featured an advisory group that was prepared to explore the slag revegetation issues. John Oyler, a revegetation specialist, and John Buck, a soil scientist, led a tour from the plateaus into the valley. They explained the obvious constraints to growth as well as the not so obvious. They addressed moisture and temperature regimes, alkalinity and other issues effecting growth. They were also able to point out areas of growth that were fairly substantial and discuss the reasons behind this. Sue Thompson, a botanist with the Carnegie Museum of Natural History, took a group through the valley to look at the diverse vegetation and its function. At the Community Ecology workshop, the advisory team had organized a "science exhibit" type of event where individual community members could explore their issues and interests with individual professionals. At the ensuing roundtables, one group of citizens outlined approaches to teaching the complex ecological issues of brownfield restoration and the wonders of the site, from the herds of deer to the wild turkeys. Another table discussed designs that might enable public access and habitat function. The third table explored issues raised by the slag and geology of the area. This included a heated discussion about perceived toxicity.


Common Milkweed

Thomas Edison - using the gummy sap of common milkweed - was one of early champions of milkweed latex as a rubber source, but eventually he abandoned the idea of commercial production. (Schwartz)

The genus *Asclepias* was named in honor of Aesculapius, Greek god of medicine, undoubtedly because in the past some species have been used to treat a variety of ailments. Carolus Linnaeus used the species name *syriaca* for our common milkweed, thinking that the plant came from Syria; hence the misnomer, which the rules of nomenclature do not permit us to change.

One of the tags, listing the history, common uses and habitat value of milkweed. (Milkweed is an important larva food plant for Monarch butterflies.)

Sustainable Open Space featured Jack Ahern, an internationally respected landscape architect, who has written extensively on greenway development and ecosystem function. Mr. Ahern provided an overview of the meaning of greenways and various approaches to assessing, planning and managing urban ecosystem function. At the final event, the roundtables were worktables with landscape architects Ahern, Larry Ridenour and Ken Tamminga capturing citizen ideas on maps, supported by the STUDIO project team. In these final roundtable discussions, citizens addressed a variety of issues from the community, cultural and educational organizations that surround the site to the problems and issues connected to restoring the stream and the slag slopes. A local foundation representative even challenged one table to devise some working projects that he might fund along the stream banks and into the watershed.

In our minds, the intent to inform and enable a discussion about ecological system function using tours and onsite communication tools was successfully achieved. The next step is to begin the actual analysis and identify options and alternatives for restoration and stabilization. This work will begin in 1998 with funding provided by the Heinz Endowments.

Art and reconstructive postmodernism

As a preface to the following paragraphs it is important to state that despite the fact that individual artists are taking responsibility for specific areas of the project, the effort is always integrated with the team. All planning is collective including advisors from various disciplines, and execution is a collaborative act by the core team. The core team consists of artists Bob Bingham, Tim Collins, Reiko Goto and environmentalist John Stephen[4].

[4]Trained as an environmental attorney, Mr. Stephen is a Pittsburgh native and founder of "Friends of the Riverfront." He is also a Nine Mile Run research fellow in the STUDIO for Creative Inquiry.



Reiko Goto, installation *Equation*: (site 1) A project for the Hewlett Gallery, Carnegie Mellon University, 1995



Equation: (site 2 Gallery)

The Nine Mile Run team would argue that art is about shifting values. If we look at the evolution of art since the days of American landscape painting, we see an evolution away from paint as a tool to replicate the world to an interest in the paint itself, from the psychological effects of fields of color to the physics of light and color. The value of painting shifted from its role in representing the world to its value as an essential part of the world; from the object of manipulation to the subject of manipulation. The work of the Nine Mile Run team reflects another shift in values. The artists are interested in the place itself as the object and subject of inquiry and manipulation. The subject is defined by a postmodern culture in pursuit of equity, access and increasingly viable cross-disciplinary process. While the art of the work at Nine Mile Run can be identified separately from the science, considering either outside of its social context ignores the systemic function and value of what is essentially a program developed and directed by artists. Fifty years of dumping slag in the lower watershed provide the artist with a site/place/context that is indelibly post-industrial. There is no chance of a physical reclamation of the historic condition. The "long meadows and wooded slopes" described by Olmsted in 1910 are well beyond our reach, buried beneath 50 years and 20 stories of slag. That leaves us with an opportunity to develop a reclamation program (an intervention in value and aesthetic) that is integrated with social and cultural goals[5] while holding firm to sustainable ecosystem based process.

Art critic Suzi Gablik talks about reconstructive postmodernism as an art practice defined by a "more integrated aesthetic of interconnectedness, social responsibility, and ecological attunement.[6]" This evolution of the artists' role is a reaction and evolution from the modernist system of disparate professional disciplines involved in a mechanistic interpretation and analysis of nature. The artistic program of Ample Opportunity recognizes and accepts the reconstructive postmodern challenge. We attempt to delineate an artistic/aesthetic practice that recognizes the inter-connected systemic (ecological) value of all living things, while accepting the human context of sustainable urban culture.

The Nine Mile Run project team can point to various ephemeral components of Ample Opportunity that illustrate the art of reconstructive postmodernism. Nine Mile Run is in many ways defined by its post-industrial condition. Its value as a place has been subsumed by 20 stories of slag. Abandoned by a slag industry which was itself abandoned by the steel industry, this land has lost its systemic function. Joel Tarr describes the Nine Mile Run valley identified by Olmsted as the "Hetch Hetchy[7] of Pittsburgh." By making this statement, Tarr begins the cultural transformation of place. He plants a seed, an idea about what was lost and what we stand to gain as we reconsider this land and its stream. To begin our program of Ample Opportunity, we realized that we needed to create opportunities for experience and discourse that would serve as seed ideas. These concepts would allow us to begin a discussion of the potential value of riparian brownfields using Nine Mile Run as a case study.

Our earliest work began in 1996. We began a series of tours of Nine Mile Run. We brought in soil scientists, botanists, wetlands scientists, ornithologists and geologists to lead public tours. We would

[5]Higgs, E., (1997) *What is Good Ecological Restoration?*, excerpts from an article originally published in the Journal of Conservation Biology, Society for Ecological Restoration News, vol. 10 No. 2-1997.

[6]Gabelik, S., (1991) *The Reenchantment of Art*. Thames and Hudson, 500 Fifth Avenue, N.Y., N.Y..

[7]Hetch Hetchy: The valley next door to Yosemite, which was drowned by a San Francisco City dam to create a water source. It was aggressively defended by John Muir but his pleas fell on deaf ears.

argue that the value of these tours was in line with the intent to create a program of reconstructive postmodern art. For one we needed to know the place better. We needed to seek post-industrial ecological attunment. Informed by postmodern practice, our role was not to interpret but to share and extend our opportunity for inquiry and discourse. Our goal was not to create a product, but instead a potential for aesthetic awareness, a shift in the way we collectively "see" the site. Arguably this approach builds on the groundbreaking work of Helen and Newton Harrison.[8] Our goal is to reinterpret the Socratic method (which they use in their work) and its attendant teacher/student duality into an integrated community discourse, where the questioner-teacher and student are roles that are freely exchanged. In 1985, Robert Irwin described a contextual phenomenal art approach[9] that provides a model for art that promotes aesthetic awareness.

The Heinz Endowments funding for Ample Opportunity allowed team members to spend more time onsite. As the rhetoric of development declared the site a dump, Reiko Goto began to discover a plant community of experiential richness. This evolved into a sustained creative inquiry which has informed an evolving scientific study of the area and may inform an approach to landscape/vegetation planning. Initial identification evolved into working with scientists to identify each and every species. Reiko decided to tag the plants along two separate trails. Paul Valéry[10] has said, "Seeing is forgetting the name of the thing one sees." In the case of Nine Mile Run, we needed to forget the names "slag heap" and "slag dump" and begin to look and see the evolution of plants that have begun to reclaim the site. The tagging of individual plants along these post-industrial trails was intended as an intervention in the value and meaning of Nine Mile Run. It raises important questions about the rhetoric of development. It raises questions about the evolving complexity of ecosystem function on brownfield sites and about issues of value and focus within the environmental community. Modernist discipline-specific scientific analysis provides the basis for the development of ecosystem-based science. Postmodernism defines the constraints of a discipline that ignores its wider social context. The question we are trying to answer is, "How can we use aesthetic awareness (informed by scientific analysis) to shift contemporary cultural values?"

The creative (interdisciplinary) inquiry into the plant life of Nine Mile Run has provided an important and ongoing impetus for a series of works. These include, "Equation: Gallery - Art + a Greenhouse = Reclamation" a site/non-site[11] type exhibition developed through Carnegie Mellon's Hewlett Art Gallery, as well as a mini-exhibition of 100 year old pressed plants from the Nine Mile Run area[12], juxtaposed against an exhibition of fresh-cut NMR plants in water. This was developed in collaboration with Carnegie Museum of Natural History botanist, Sue Thompson for the Community and Ecology workshop at the Sarah Johnson Black Community Center in Swisshelm Park.

The trailer was an unexpected addition to the Ample Opportunity program. Artist Bob Bingham saw the need for an onsite access point for our inquiry, tours and events. He arranged to have Carnegie Mellon transport and equip a construction trailer as an onsite classroom. It was used through out the summer and fall as a resource center open every weekend from 9-1 on Saturdays and 12-4 on



Equation: (site 3 Greenhouse)

[8]Artists Helen and Newton Harrison created a discourse theory and ecological argument in 1970. They define their work within the process of the Socratic method. They spent most of the 70's involved in an inquiry on estuaries and lagoons, developing projects for the Salton Sea and the Sacramento River Delta. In the 80's they began to branch out into other ecological issues and ecosystem based planning projects. They are currently working on large projects in Europe. They are both professor emeritus at the University of California at San Diego.

[9]" ..place the observer in context, at the crux (specific place) of the determining (art) process, insisting that he or she use all the same immediate cues the artist used in forming the art to form his or her operative- response." From Being and Circumstance: Notes Toward a Conditional Art, by Robert Irwin, published by Lapis Press, California.

[10]Paul Valéry (1871-1945) French poet, essayist and critic noted for his sensuous writing style Member of the Symbolist movement.

[11]Site-Nonsite refers to a conceptual framework developed in 1969 by the artist, Robert Smithson. "The land or ground from the Site is placed in the art (Nonsite) rather than the art placed on the ground. The Nonsite is a container within another container-the room. The plot or yard outside is yet another container. Two-dimensional and three-dimensional things trade places with each other in the range of convergence. Large scale becomes small, small scale becomes large. The rules of this network of signs are discovered as you go along uncertain trails both mental (within the gallery) and physical (upon the site)". Hobbs, R., (1981) *Robert Smithson: Sculpture*, Cornell University Press, Ithaca N.Y..

[12]The Carnegie Museum of Natural History has numerous plants specimens from Nine Mile Run. A train stop at Duck Hollow provided 19th century botanists with easy access to the valley.



The NMR-Classroom/Community Resource Center arrives onsite!

Sundays. The trailer has a library of project documents for public perusal.

The trailer offered a site for both discourse and expression, attracting community members and professionals to stop by and inquire about the site. It gave us a location for meetings which would have previously occurred offsite. The trailer provided an anchor, a focus for creative inquiry, while at the same time it provided a visible symbol of the STUDIO's interest in the discussion of open space at Nine Mile Run. Our long term goal is to use the trailer as a site of public expression and a component of an interface system promoting community access to the evolving literature about the site, as well as opportunities to comment about the evolution and changes occurring onsite. The trailer is a key element of our creative process. Our goal of experimenting with the potential for aesthetic awareness, a shift in the way the site is perceived, was enabled by the trailer. We think of the trailer as a reconstructive postmodern artist's tool, allowing us to create experiences instead of products, concepts instead of things, relationships instead of audiences. Artists creating a context/place for intervention or symbolic statement are not unique. In 1974, Bonnie Sherk developed "The Farm"[13] in a warehouse in San Francisco, creating a community art center that realigned zoning districts to form a new city park. Sherk's work explored an integrated approach to creative process informed by nature. Another interesting model to consider is the storefront turned into a participatory health care program by Chicago-based collective HaHa[14], using hydroponic systems to grow vegetables and enable a community discourse around the health care issues that emanate from the AIDS crises.

The Nine Mile Run trailer provides shelter, public visibility, a threshold to introduce visitors to the site, a base of operations, and an anchor for our work. Bob Bingham began symbolic experiments with soil remediation products on the roof this winter, growing a significant crop of winter rye. We could compare this to Robert Smithson's. "Partially Buried Woodshed" created in 1970 at Kent State University. Discovering an old wooden structure on campus, Smithson directed a contractor to:

> *"pile twenty loads of earth onto the shed until its central beam cracked. The breaking of the beam was crucial to the piece, it symbolized entropy, a closed system which eventually deteriorates and starts to break apart and there's no way that you can really piece it back together again."*[15]

Smithson used the woodshed to explore the relationship between human culture and nature. The woodshed (cultural artifact) is considered order and nature is considered chaos. He used the natural materials (soil) to disrupt the orderly structure and begin the entropic process of nature. In comparison, Bingham reverses the process. Nature is considered orderly (ecosystem function) while the trailer and its post-industrial context is considered chaos (trailer and slag are both cultural products). Bingham uses the trailer to symbolically challenge the dominant perception of culture over nature.

The "art" of the trailer is evolving. We have only recently identified specific funding which will enable us to expand its use. The team is currently exploring ideas of public expression/creative discourse

[13]Lippard, I., (1983) Overlay, Pantheon Books, N.Y., N.Y., P. 232-234

[14]Jacob, M.J., Brenson, M., Olson, E. M., (1995) *Culture in Action*, Bay Press, Seattle Washington.

[15]Hobbs, R., (1981) *Robert Smithson: Sculpture,* Cornell University Press, Ithaca N.Y., P. 191

and ways to use the physical mass of the trailer to communicate and interface with our audience. We are discussing tools from wheat paste and chalkboards to telemetry and computer interface in an attempt to build a two-way communication and expression of the options at Nine Mile Run. We are also interested in expanding the temporary function of our community resource trailer into a center for stewardship and post-industrial education. Over the next year we will start a dialogue with various colleagues to develop concepts for an integrated social/structural design which focuses on expanding the ideas of sustainability.

Nine Mile Run has a 90 year history of water problems.[16] Over the last seven months, a group of interdisciplinary academic advisors and municipal agency advisors have gathered to help identify the stream problems at Nine Mile Run. This process was initiated within the project team by artist Tim Collins and environmentalist John Stephen. The artists' role in the process is value specific. Poetic quotes were used to expand the context for viewing the stream. Electronic media was used to illustrate obvious problems that were the subject of controversial banter amongst the responsible parties. Mr.Collins worked for seven months collaborating on a water testing program with the County Health Department. In the process the artist has developed a complex understanding of the systemic function of the site and has learned to interpret the jargon of water issues. As an environmentalist, John Stephen provides the connections to various institutions, and enables the creative process through regional networking. The work on water issues initiated by the STUDIO builds on some of the recent work by artists like Mierle Laderman Ukeles[17] and Hans Haacke[18] who have both taken an interest in systemic infrastructure issues and the social perception of value.

The aesthetic/creative inquiry into water issues has informed an engineering study of the area and has precipitated a multi-disciplinary analysis of the riparian zone which is about to begin. The product of the

[16]"The stream when it is freed from sewage... " F.L. Olmsted Jr. 1910

[17]Mierle Laderman Ukeles, a "self appointed" artist in residence at the New York Department of Sanitation, has embraced the aesthetics of maintenance as her area of inquiry. She is currently involved in a variety of projects including the "public interface" for a waste transfer station in Manhattan, and various planning projects on landfill sites.

[18]Hans Haacke's early work concentrated on the systemic function of aquatic systems. In his later work he looks at the social and economic domain and its relationship to the product and context of art making. One of his most famous works involved an analysis of the property owned by the board of the Whitney Museum. The work often explores the discrepancy between public and private behaviors.



Fall 1997, Bob Bingham begins a discussion with soil scientist John Buck about "growing the trailer." They devise a light weight "designer" soil and run tests with cell containment systems.



Bob Bingham, *Growing The Trailer*, February 1998, a roof-top growth of green winter rye juxtaposed against the slag slopes of NMR.

Texts and quotes placed on sewer structures in NMR by Tim Collins for the Stream Remediation workshop.



In the dialectical theme of purity and impurity of water, the fundamental law of material imagination acts in both directions, guaranteeing the eminently active nature of the substance: one drop of pure water suffices to purify an ocean; one drop of impure water suffices to defile a universe.

Gaston Bachelard, in *Water and Dreams, An Essay on the Imagination of Matter.*



All the water that will ever be, is right now.

National Geographic special edition on water.

artists' work is integrated with the goal of social change through collaboration with the environmentalists. We are outlining a program that expands the artists' traditional role of critique into the realm of shared creative inquiry in the pursuit of resolving social and aesthetic ecological (systemic) inequities.

The Nine Mile Run property creates a relationship between Frick Park and the Monongahela River. It is the connection between the communities of Squirrel Hill and Swisshelm Park. A good part of its function will be defined by its trails that will provide access to our rivers. John Stephen has made a career of creating links between places in Pittsburgh. Arguably, the work could be interpreted in the realm of ecological artists like Richard Long, who has made a career of walking and creating "in" nature. Mr. Stephen's preferred means of transport is a bicycle. Rather than the stones or photographic record that Long leaves as his marks in the world, Mr. Stephen blazes trails on his bike. He shows the rest of us new ways to move through the world and think about our relationships to land and water. He has organized "no-pedal" tours of the old stream beds (long culverted) from the top of the watershed down to the mouth. He has presided over complex and curious introductions of groups of people that, at first meeting, would not expect to have anything in common. Despite Johns training in engineering and law, it is quite obvious to those of us that work with him, that he has the heart and soul of an artist.

The STUDIO is working to model an integrated art program of awareness, social responsibility and opportunity-based analysis. The team's approach to NMR integrates experiential qualitative analysis (community) with quantitative analysis (professional) and puts the artist at the crux of change. Reclamation of water quality and vegetation is a definitive element of the aesthetics of place at Nine Mile Run. The project team's intent is to approach this object/subject of creative inquiry as an integrated aesthetic issue. The team firmly believes that the answers to the aesthetic issues that plague our public realm are not to be found in the disparate jargon and practice of monolithic disciplines. In the spirit of Robert Irwin, we are willing "to go anywhere, to do anything with anybody, at anytime" if someone expresses an interest in these issues. We take a holistic approach to culture, integrating discourse and access to information with adult and child alike[19]. We are charged and enabled by the STUDIO policy of integrating disciplines and community in all of our work.

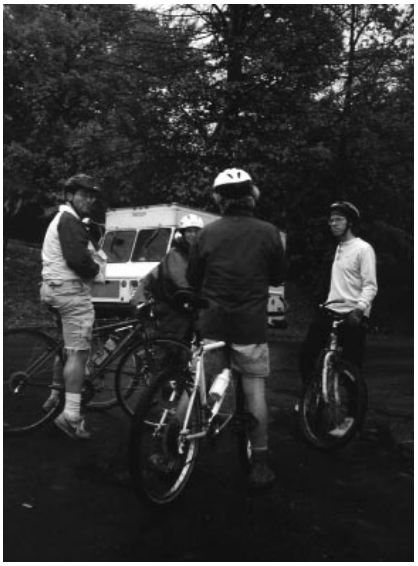
Discourse and public space.

This brings us back to the question, "How do you begin to examine the value of a conversation?" Our goal was to enable an equitable public dialogue about brownfields and public space. We brought in professionals to clarify and communicate issues specific to the development of public space. We saw our work as enabling a process and policy discussion about public space, a discourse that was missing in the current program. To do this we had to seek support from the specific municipal agencies managing the current program. Despite the political support of these agencies, we retained our objectivity as a separate entity with our funding supplied by the Heinz Endowments. The Director of Pittsburgh City Planning, Eloise Hirsh and her staff (Joan Blaustein, John Rahaim and Dan Sentz) deserve recognition for working closely with us to enable this alternative public discussion.

[19]The STUDIO, working with the Pittsburgh Children's Museum has begun an inquiry based program using the arts and sciences to consider brownfields. Begun at the Montessori School in the Homewood neighborhood of Pittsburgh. Reiko Goto developed the initial program with art teacher Valerie Lucas. The expanded goal of this program is to build a grade school support system that will enable teachers to focus on the legacy and opportunity of brownfields and acid mine drainage. Nine Mile Run is being used as the case study.

Public dialogue involves a process of challenge and response, a collective evolution of the ideas which form the meaning of justice and the public good. There were a number of times in our roundtable discussions when team members felt that the challenge offered by some of our participants threatened to re-focus the discussion upon the issues relevant to the monitoring of potential liabilities connected to the development. While the theoretical approach demands that the legitimacy of a discourse be open to question and Seyla Benhabib[20] argues that the subject of discourse must be open to challenge as well, the questions asked were often outside the discipline and interests of the professionals we brought to the table. While we don't deny the import of understanding the total context of a problem, we had to be realistic about the issues that we were able to deal with given the constraints of time, funding and organizational interest. We would argue today, as we have, from the beginning, that the discourse on residential developments effect on private life was being explicitly addressed in the public meetings held by the Urban Redevelopment Agency, Pittsburgh City Planning and the development team. Furthermore, these official sites of public discourse were being well utilized by the community. Some of our vocal critics went back into that development discussion creating an alternative public of their own. They focused their interests on the potential liabilities of traffic, housing values and perceived toxicity. While the latter is specific to brownfields and is referred to in the literature, the former issues are common to any urban/suburban development.

We applaud both the community and the city for their commitment to a collective resolution of these issues. The city has made a bold decision to invest in further study (hiring a firm of the public's choice) to respond to these challenges and inform the public discussion about these issues.



John Stephen organized and led a NMR watershed Bicycle Tour in Spring 1996. Starting at the highest point in the watershed, we were able to coast most of the way into the Nine Mile Run Valley.

The Community Dialogue Roundtables.

In the following paragraphs we will attempt to examine the three specific sites of public discourse, which were created to enable conversation:

1) The roundtables that occurred at each Community Dialogue event.
2) The onsite public access trailer and its attendant materials and experiments.
3) The project publication site on the World Wide Web.

At each of our public events we engaged both sound and video technicians to create a record of the event. We specifically focused on the roundtables, intending to "give voice" to our citizen participants. This process proved to be very useful for team members. The ability to review the video tapes to consider interaction, communication, conflict, and discursive productivity was an important tool as we fine tuned the process of enabling public discourse. We also decided to transcribe each event making the copy available to the community as part of the background package for each subsequent event. (See the graph and text following the conclusion for an overview of statistics extrapolated from the transcripts.)

There were three major changes to our program development over the four events. After History, Policy and Context, it became very clear that we needed to find a way to minimize the presentations,

[20]Benhabib, S., (1992) *Models of Public Space: Hannah Arendt, the Liberal Tradition and Jurgen Habermas.* Published in Habermas and the Public Sphere, Edited by Calhoun. The MIT Press, Cambridge, Massachusetts. P. 81-85

Various manifestation of the Community Dialogue process.



History Policy and Context



Stream Remediation



Community and Ecology



Sustainable Open Space

clarify the content in our background documents and maximize the time spent in the dialogue-based roundtable discussions. The second major change occurred when the advisory board for Community and Ecology decided to revamp the presentation part of the program and simply focus on what they called an exhibit approach. Each advisory board member developed a graphic presentation of the issues specific to that event. These professional advisors then stood next to their exhibits at the workshop so that participants could approach them. This was an interesting experiment in creating citizen instigated dialogue on specific issues. The final major change occurred in response to the need for more planning interaction with the community participants. In the final event, three tables were staffed by artists and landscape architects. Each table had a current topographical map and a historic watershed map with a variety of markers and tools to illustrate ideas. Each table was asked to follow a particular outline. In hindsight it is clear from the table responses that our outline was too complicated for such a short event. As a result we received a variety of responses which will provide a baseline on which to build upon for our work in 1998.

Numerous activities occurred at and emanated from the trailer including various meetings, assessment activities on the stream, flora and fauna, experiments in art, experiments in slag-soil plant growth and experiments in public communication. The trailer was used as a staging area for public tours varying from adults to school groups. Experiments were begun during the summer and fall, resulting in a donated greenhouse structure for the winter months.

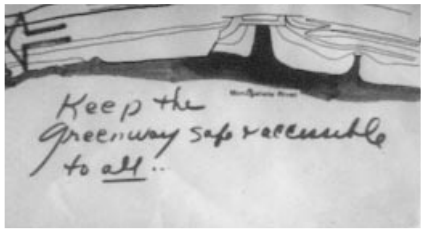
Despite these obvious values, the team has mixed feelings about the relative success of the trailer as a site of public discourse. Funded by the university, the trailer remains onsite free of charge due to the graces of the landowner, the Urban Redevelopment Agency (URA) of the City of Pittsburgh. We value the trailer as it allows us to accomplish experimental work that is not possible offsite. At the same time, the maintenance and staffing issues are labor intensive. Furthermore as the majority of our public dialogue at the site is demonstrative or presentation oriented. We have not achieved the goal of using it as an interface rather than a presentation site. Notably the trailer has never had an independent funding stream so its programming and use has been an additional challenge. Recently we have secured funding which will allow us to tune various aspects of its function and more aggressively explore its role as a site for public discourse/public interface.

The project and its various products have been published and updated on the World Wide Web (http://noumenon.cfa.cmu.edu/nmr). The web site has grown organically over time with each background document being added to the web soon after the event. Various assessment programs with independent funding sources provide data that we post regularly. We have also provided interactive tools for comment and mailing from this electronic site.

We have received inquiries from all over the country and a handful from Europe and Canada about Nine Mile Run as a result of the wide availability of materials published on the web. The Nine Mile Run site is listed on a variety of important ecological and art-based link lists. We have had the opportunity to use the site as a tool for lectures in Japan and Germany. As a site of public discourse we feel that there is

work to be done on the web site. Over the summer we began experiments with various interactive technologies that would provide viewers a more active hand in commenting and adding to our site. With the pressures of the Community Dialogue event schedule we decided to put this off until we could focus more carefully on it. The web, while an equitable publishing tool, is still not easily configured for meaningful dialogue-based use. We will be coming back to this issue in 1998 and writing grants to pursue this important functionality.





A scene from one of the Sustainable Open Space work tables and a comment

Conclusion:

"How do you examine the value of a conversation?" This is an important question for those of us in the arts and humanities that believe as Joseph Bueys, that "*We need a foundation of social art, upon which every individual experiences and recognizes himself as a creative being and as a participant in shaping and defining the world.*"[21]

The social, cultural, environmental and economic reclamation of brownfields is a major shift in the way we make our world. Henri Lefebvre says, "Each society and its related means of production create a specific kind of physical space." What will the physical space of post-industrial Pittsburgh look like? Brownfields lie vacant on our rivers and bays, as do the slag heaps and refuse piles that have filled our valleys. The environmental devastation that accompanied the growth of industrial production can in some ways be laid at the feet of a homogenous society, a "public" that had one intent—production—and heard little challenge to that intention, its process or its effect.

The opportunity of the post-industrial era can be found in the diversity of interests represented at the Ample Opportunity workshops. From government and regulatory agency representatives to school teachers, housewives, electricians and lawyers, a wide range of interests sat at our tables and worked through conversations to build the future. As we consider the year's work, attempting to integrate critical thinking with democratic process, we find that this discursive process has reached consensus on a number of items. The notion of a water-centered greenway with a healthy, flowing stream paralleled with trails for hikers, bikers and variously-abled users has been clearly stated time and time again. A desire for functional links at Nine Mile Run between Frick Park and the Monongahela River future trail system has also been clearly communicated. Given the complexity of the problems at the site, the following issues will be addressed in future work:

1) What form will this greenway take?
2) How will grading affect the greenway?
3) What will it take to achieve a clean stream?
4) How can we appreciate the lessons of the NMR valley?

Ample Opportunity has provided a forum for the establishment of an alternative public: a discursive community that doesn't quite fit under the umbrella of citizens that examine and monitor urban development, nor under the umbrella of environmental interests that see our natural world in dualistic terms of wilderness or zoo. Our alternative public is neither strictly professional nor strictly community but an exciting mixture of both.

The property owners at Nine Mile Run are confined to the project site by the economic realities of their interests. The adjacent homeowners are likewise confined by their economic interests. If we

[21] Stachelhaus, H., (1987) *Joseph Beuys*, Abbevile Press, N.Y, N.Y.

can't we change that for Frick Park? I don't know about the other parks, but here, where the whole eastern side of the park is bounded by other municipalities—

Kostalos: County parks have more trouble than city parks. I'm not sure I'd want to change—

Ridenour: I'm not saying the county, but the whole concept of a Regional Asset District. The moneys are coming from the whole communities. The city is getting regional funds to maintain Frick Park, with the idea that those communities are using it, so why don't they truly begin to think of this as a regional park? Embrace those communities and get their involvement and create more access from those communities, then you might see a difference in attitude. But from a governmental standpoint, I don't think that's going to happen; I think it's got to happen from a handful of citizens who care about Frick Park, and reach out to those communities and make it happen in that way.

Stephen: What we started talking about was grassroots education. Not only do we have to be offensive here, we have to be offensive in getting the attention of groups upstream.

Ridenour: All these governments have their own problems, and they don't want to be bothered with this. And obviously the city doesn't have much control.

Hurley: The responsibility of the County Health Department to make them responsible for getting these people together to control that upper end, that's what bothers me.

Ridenour: I think the citizen's group could make enough noise to create that as a priority, and make an issue out of it.

Hurley: And if we could tie in regional assets to get some money to help do this, maybe that's a way to put some money behind their enforcement.

Stephen: Time to break up and reconvene. We'll get reports from the different tables.

Ridenour: Well, thank you all for your input

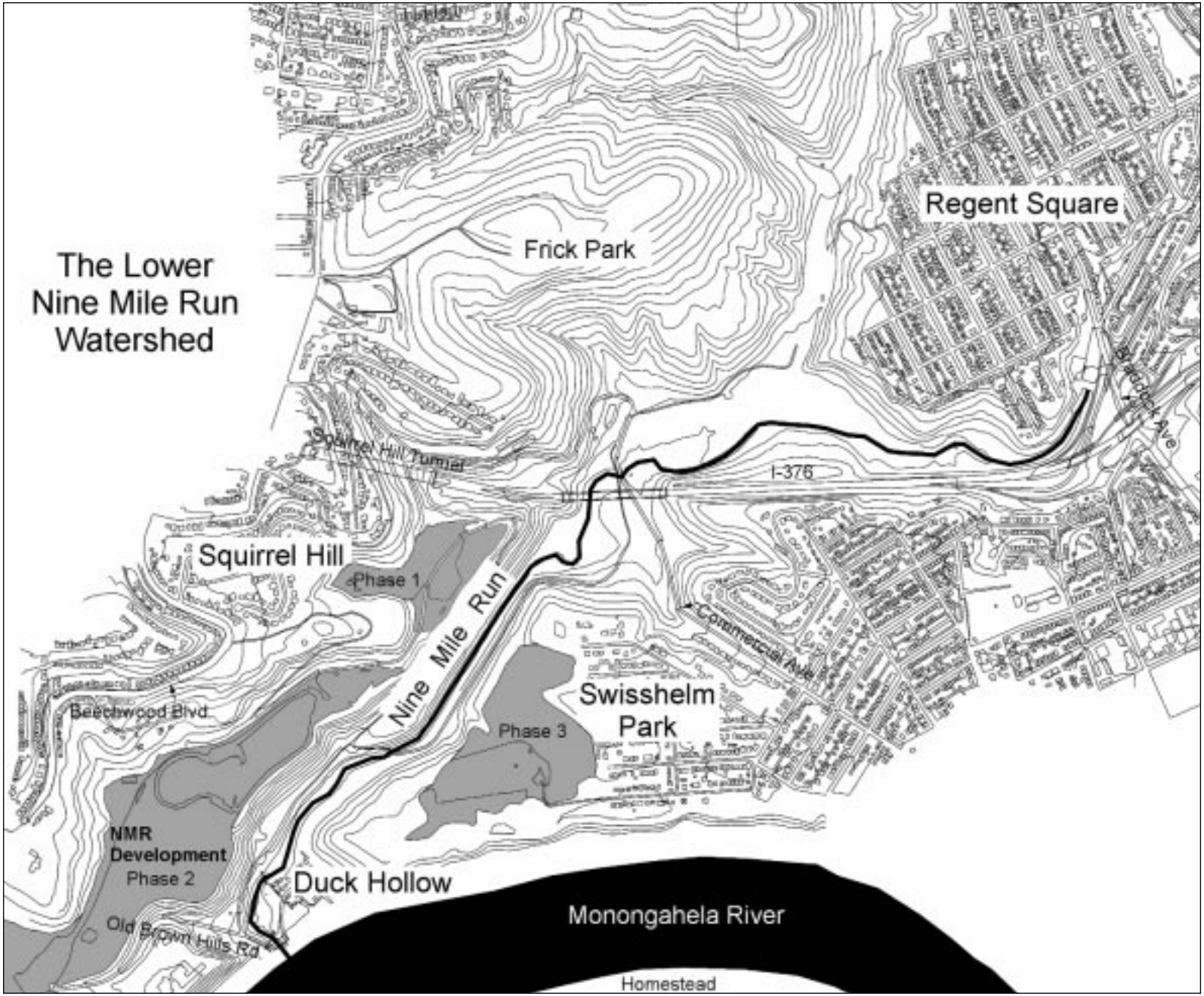
are going to establish brownfields as viable public spaces with a potential for functional ecosystems and natural experience we must learn a new language, a new process, a new role as citizens and encourage new ways of doing business. We must learn to listen to new ideas, engage our children in the post-industrial dialogue and listen carefully to their thoughts and dreams for the future. We must work to learn the complexity of our local problems and find local solutions to those problems. We need to find a way to collaborate in our problem solving, with the clear realization that many of our environmental problems are not conveniently delineated by property lines, boundaries or municipal borders. We need to find new ways to bring a variety of public and private institutions to bear on our regional issues and learn new ways to resolve old problems.

In our next year's work, "Ample Opportunity: The Brownfield Intervention" we will move more deeply into the ideas and practice of art, ecosystem reclamation and discursive public space, within the context of post-industrial development. We will work with an expanded team of ecological scientists, a botanist and wetlands scientist, riverbed engineer, landscape architect and urban historian to assess various ecosystem functions and dysfunction.

We will build on the community-based conceptual planning process, producing illustrated alternatives and a presentation of the work in 1999.



A milkweed seed pod, the dome greenhouse and the slag in the background. Images and symbols of a changing post-industrial landscape.


The Lower
Nine Mile Run
Watershed
Regent Square
Frick Park
Braddock Ave
Squirrel Hill Tunnel
I-376
Squirrel Hill
Phase 1
Nine Mile Run
Commercial Ave
Swisshelm
Park
Phase 3
Beechwood Blvd
NMR
Development
Phase 2
Duck Hollow
Old Brown Hills Rd
Monongahela River
Homestead


WILKINSBURG
PITTSBURGH
Edgerton Ave.
Estate of William Wilkins
Jas. B. Murray
Jas. A. Hutchinson
Irwin Est.
Forbes
Mrs Sterrett
Shady
David
Abe Keller
R. B. Phillips Rev.
Douglass
Ave.
Thos English
Forward
Randall Morton
Mrs Eliz Jackson
Mrs E. Jackson
Jas Kelly
Hon. Moses Hampton
Widows Home
Shelgrain Arms
Inn Love
Penn Ave.
Edgewood Sta.
EDGEWOOD
RACE
Estate of W. Wilkins
Jas Swissheln
NINE MILE
Mrs. E. Jackson
Mrs Swissheln
Presb.
SWISSVALE
Coal Rd.
Swissvale Sta.
Sch. Ho.
HAMPTON COAL WORKS
Jno McKelvey
Jas McKelvey
Jos Robertson
DUQUESNE COAL CO. WORKS
Jno. H. Kelvey
636
Jno McKelvy Res
Mrs. Wallace
Sch. Ho.
J. Buzzard
Mrs. of Jno Hanna
255
Jno. W. Milligan
W. G. Hawkins Jr.
PENNA RR
HAWKINS STA.
ADAMS STA.
Braddock
CITY FARM STA.
PW&B RR
Mills, McKelvy & Comp.
James Denniston Res
Mrs. Adams
W. G. Hawkins Mills Res
HAWKINS
Borough Line
Ave.
Mtg. Sta.
Kelly
Hackett
Tucker
Randolph
Nelson
Hays
Nelson
William H. Steward
Hays & Phillips
Miller
Chapman & Peale
Mrs Wilson
PART OF
PITTSBURGH
1876

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ORGANIZATIONS WITH AN ACTIVE INTEREST IN ACTIVITIES AT NINE MILE RUN

Community:

Citizens for the Responsible Development of Nine Mile Run
Paul Peffer, President
2625 Mt. Royal Road
Pittsburgh, PA 15217

Frick Environmental Center
Barbara Balbot, Director
2005 Beechwood Blvd
Pittsburgh, PA 15217
422-6538

Friends of the Riverfront
Mike Lambert, Chair
P.O. Box 42434
Pittsburgh, PA 15203
488-0212

Regent Square Civic Association
Jack Fisher, President
1319 LaChair Avenue
Pittsburgh, PA 15218

Squirrel Hill Urban Coalition
Beth Koshinski, Executive Director
5604 Solway Street
Pittsburgh, PA 15217
422-7666

Swisshelm Park Community Association
John Shields, President
1150 Goodman Street
Pittsburgh, PA 15218

Government:

Allegheny County Sanitary Authority
Jan Oliver
CSO Program Officer
3300 Preble Avenue
Pittsburgh, PA 15233-1092
734-8351

Department of City Planning
Joan Blaustein, Project Manager
200 Ross Street
4th Floor
Pittsburgh, PA 15219
255-2206

Department of Environmental Protection
Charles Duritsa, Regional Director
400 Waterfront Drive
Pittsburgh, PA 15222
442-4192

Pennsylvania Turnpike Commission
Tom Fox, Manager Public Involvement Programs/ Marketing
2200 No. Center Avenue
New Stanton, PA 15672
925-5460

Urban Redevelopment Authority
Mark Knezevich, Project Manager
200 Ross Street
Pittsburgh, PA 15219
255-6656

SOURCES

Photographic Sources

Ace Aerial Photography: iii

Bob Bingham: (cover), viii, 5, 6, 16 (bottom), 24, 33, 71 (top), 79 (both), 80, 85, 88, 93, 115, 121 (both), 129 (left and right), 123, 189, 190, 195, 281 (both), 282, 286, 287 (both), 290 (top two)

John Buck: 117 (left and right)

Carnegie Library of Pittsburgh, Pittsburgh Photographic Library: 38

Tim Collins: 69, 70 (bottom), 288 (both)

Community member: 291 (bottom)

Ecology of a City Park, Pittsburgh, PA, 1947, William Leroy Black, M.S. University of Pittsburgh: 54

Reiko Goto: 2, 4, 7, 128, 150 (left and right), 170, 187, 194, 196, 197 (both), 198, 204, 206, 212, 214, 282 (bottom), 283, 284 (both), 285, 289, 290 (bottom two), 291 (top), 292

Gulf States Paper Corporation: 12

Metropolitan Museum of Art, New York: 11

National Gallery of Art, Washington, DC: 8

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Water is the one substance from which the earth can conceal nothing; it sucks out its innermost secrets and brings them to our very lips.

—Jean Giraudoux, The Madwoman of Chaillot