A Carnegie Mellon University art student identifies plants along the trail.

II. Issues, Concerns, and Constraints

II-a. Urban Ecosystems

NMR has had its ecosystem disrupted by years of human intervention. Urban infrastructure is intended to resolve problems that occur as we create cities and towns, disrupting the natural landscape and its flora, fauna, and hydrology. The urban ecosystem is stressed by a "problem solving" mentality that is often oblivious to the cause and effect relationships of the system. By resolving systemic problems as isolated issues, we often create significant problems elsewhere in the system and frequently reduce the economic, aesthetic, and experiential value the system may provide to the community.

As an urban stream, the value of NRM and its attendant ecosystem is lost within the existing conservation paradigm which views ecosystem value as primarily properties beyond the suburban edge, beyond human intervention. While there is a solid constituency which recognizes the value of post-industrial nature, the view of the stream and its surrounding lands as a dump devoid of nature still resonates amongst many of the parties with an interest in the site.

II-b. Watershed Management

Urban watersheds have traditionally been managed as infrastructure systems, ignoring the underlying ecosystems which have been often displaced, and always affected. The Federal Clean Water Act and the Pennsylvania Clean Streams Law have instigated regulatory agencies, namely the Pennsylvania Department of Environmental Protection and the Allegheny County Health Department, to enforce water quality standards on a number of local watersheds. This has typically resulted in expensive detention projects or watershed authorities who concentrate on an isolated length of trunk sewer line. Arguably, the focus of the Clean Water Act and the Clean Streams Law is to maintain and protect the water quality of the receiving stream. An integrated watershed authority with the ability to monitor and protect the stream ecosystem, as well as maintain the infrastructure, would be the most equitable and cost effective way to manage this watershed. This would connect the cause and effect of urban watershed degradation.

Community Input

Eileen Bell: There needs to be a barrier to dumping. It seems that dumping occurs whenever the jersey barriers are opened. Vehicle access should be prevented to discourage that type of use.

Kenny Steinberg: Now that we know many of the sources of the SSO's and broken pipes, what are the regulatory issues?
What strategies do we have given obvious clean-streams law violations?

Jim De Angelis: Raising issues and public awareness does NOT affect the stream. The municipalities will not decide to act unless compelled to act. Provide the information to compel action or admit defeat and dissolve this process.

II-c. Water Quality

II-c1. Water Quality and Human Use

Water quality in NMR is negatively impacted by inputs of domestic sewage from unauthorized sewer discharges to the culverted section of NMR, from sewer leakage or unauthorized sewer discharges to storm water sewers, and from sanitary sewer overflows (SSOs) and combined sewer overflows (CSOs) to NMR along its length. These sewage inputs are contributed by all four watershed communities and have been occurring for many years. The sewage inputs cause high levels of fecal coliform bacteria in the stream during both dry and wet weather conditions, thus serving to make the water unsafe for human contact. This is recognized as a significant human health hazard by the Allegheny County Health Department.

The NRM streambed will soon be surrounded by a contiguous public space from where its first tributary emerges from culvert at Braddock Avenue right to its mouth at the Monongahela. There are three tiers of problems that need to be addressed: (1) the value of NRM is lost to most viewers upon seeing the trash, smelling the SSO/CSO discharge points, and observing the detritus of sewer, highway, and urban neglect which defines the stream and floodplain; (2) fecal counts in excess of DEP/EPA standards for human access and use occur on this stream 365 days a year; (3) stormwater events are extremely dynamic resulting in a torrent minutes after a major rain event. This can present a potential danger to anyone in the stream channel. Storm events are also laden with fecal matter, a problem which is illustrated by chronically discharging manholes.

A NMR **fecal fountain**, or in the language of the the sanitary engineer, a "chronic discharge."

II-c2. Water Quality and Ecosystems

The NRM watershed is 34 percent open space. Runoff from adjacent Frick Park and Homewood Cemetery produce three small creeks that exhibit good water quality and a diversity of benthic organisms. Despite this fact, Frick Park and Homewood Cemetery place a significant amount of surface flow into storm sewers to protect trails. A study of the park during construction of the sewers in 1947 indicated a significant drop in the ground water levels and a cause and effect on the plant life (Black, 1947).

NMR has lost its floodplain and wetlands to industry, highway construction, and pressing recreational uses (see Fig. IV-b,c). Because of this, NMR digs into its streambed with a powerful erosive force. The effect of this includes a sediment load that is detrimental to life in the stream; it also has an obvious effect on the Monongahela, as illustrated by the sandbar that has developed at the mouth of NMR.

II-d. Slag and Toxicity

The lower end of the NMR floodplain is dominated by 20 million tons of steel mill slag. This brownfield site is currently being studied and prepared for development for both a housing and a greenway component. Recent studies commissioned by the site owners, the Pittsburgh Urban Redevelopment Authority (URA), have indicated a number of issues that are relevant to the NMR Rivers Conservation Plan.

The overt effect of slag on the stream is clearly demonstrated by the walls of the stream that are producing a leachate characterized by a 9.6-10.6 pH. This occurs in the lower end of the stream just above the mouth at the Monongahela (**see Map II-d**). The pH change produces an obvious precipitate which coats the bottom of the stream and appears to prevent algae from forming. This is an effect on the ecosystem which has been observed but not analyzed. Tests for exposure to water and slag which may contain toxic elements are under review by the URA. They are working with the community to test, review, and retest as necessary to identify any potential problems. The reports, thus far, have concentrated on the area of housing development and have not addressed the lower riparian corridor and its open space. The most recent Report on Clean-Up Plan for Nine Mile

Community Input

Eileen Bell asked about stormwater flow, especially from the new development. Are Duck Hollow residents going to need flood insurance?

Elizabeth Barrow asked if the study is looking at wetlands as a filtration mechanism.

Run Slag Area by Advanced Systems Technology Systems (June 1997) comments on slag and water. "All target receptors are below the target levels set by the EPA and the PADEP for exposure to the existing constituents of the slag material. Soil cover will be a minimum of 18 inches to allow adequate cover of the slag, eliminating any exposure pathways to future residents." And on water, "No direct contact with groundwater is likely to exist and this exposure pathway would not require further evaluation." An 18-inch cover is unlikely in the lower greenway part of the valley, and access to the stream is a critical part of the greenway. In a recent discussion (April 21, 1998) with a senior representative of the URA, Mr. Jerry Dettorre outlined a subsequent toxicity analysis which will address the toxicity pathways as they would apply to the greenway and its users.

II-e. Public Access and Use

NMR is most accessible in lower Frick Park where an adjacent ballfield encourages children and families (with dogs) to sometimes recreate in and along the stream banks. The other access point is on the URA property, where children and adults find easy access under I-376 and by various trails leading to the water's edge on the Commercial Avenue end of the property. The steep slag slopes deny access to the stream throughout the rest of the property with exceptions at a dilapidated bridge in the center of the property and two maintenance trails leading to remnant wetlands which are bordered by shale outcroppings on the eastern/Duck Hollow side of the property.

The NMR corridor contains a number of conflicting use patterns. The primary conflicts occur between slow-moving contemplative users and more active users of the park. The user group with the least effect on landscape and maintenance are naturalists who use the park for walking, birding, and botany study. A significant user group are dog walkers in the park. A preference to let dogs run free is a source of conflict with other users and wildlife in the park. The expanded use of mountain bikes for both transport and recreation has created a situation in which trails, hillsides, and paths are developing erosion problems. The ballfield in lower Frick Park is also the site of significant use, causing attendant traffic, parking, and maintenance demands.

II-f. Historic and Future Development

The NMR upper watershed is primarily developed in all four municipalities. Characterized by residential and commercial uses, large scale industrial uses have moved out of the watershed. Remnant open spaces in the upper watershed are either defined as parks, highway right-of-way, or properties which are not conducive to development because of steep grades or other site-specific economic constraints. Properties available for redevelopment are either residential or, as in the case of some properties north of Penn Avenue such as the Rockwell Industrial Park and the Wilkinsburg recycling transfer station, post-industrial brownfield properties.

The lower watershed of NMR is, by contrast, primarily open space, and some of it is available for development. Principally characterized by

Community Input

Mary Kostalos: What are the specific toxicity issues of the slag on water quality?

Marilyn Skolnick said that the NMR watershed valley is one of the last natural areas. She asked how will the Mon-Fayette Expressway affect this natural connection of stream to river?

Elizabeth Barrow, of the Nine Mile Run Greenway Steering Committee, recommends the International Mountain Biking Association's Rules of the Trail:

1. RIDE ON OPEN TRAILS ONLY.
   Respect trail and road closures.
2. LEAVE NO TRACE.
   Be sensitive to the dirt beneath you.
3. CONTROL YOUR BICYCLE!
   Inattention for even a second can cause problems.
4. ALWAYS YIELD THE TRAIL.
   Make known your approach well in advance.
5. NEVER SPOOK ANIMALS.
   All animals are startled by an unannounced approach.
6. PLAN AHEAD.
   Know your equipment, your ability, and the area in which you are riding.

KEEP TRAILS OPEN by setting a good example of environmentally sound and socially responsible off-road cycling.

For more information about mountain biking in Pittsburgh you can contact Elizabeth Barrow of the Nine Mile Run Cyclists by email at:
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parks and cemeteries, there is also 340 acres at the mouth of NMR which is currently targeted for the development of 700 homes and a 100-acre greenway. The 100-acre greenway and its adjacent development have increased public awareness of the stream's condition. Community members and public officials have galvanized around the issue and are currently championing a number of initiatives to address water problems in NMR.

If the stream stays unculverted, there is a road planned which will connect the two plateaus by moving down and through the valley. This will affect the greenway in two ways: (1) it will cross in the quietest part of the valley; and (2) it will exit onto Commercial Avenue by crossing through one of the forested areas growing on natural shale soils.

Other issues pertaining to development which are relevant to the Rivers Conservation Plan include: regrading within the valley, sediment and alkaline runoff from the construction, and potential values of the additional stormwater flow if it is properly managed and delivered to the stream.

The final development issue involves ongoing planning by the Pennsylvania Turnpike Commission for the Mon-Fayette Expressway which would (as presently planned) cross the mouth of NMR at the Monongahela. This will have a significant effect on the larger Monongahela riparian corridor and its ability to benefit the NMR ecosystem. Sound may be an issue, as well as overall change, in the riverside aesthetic experience.

Rosemont, a new community built upon the slag fill.

Duck Hollow, an historic community which once had a floodplain in its backyard.

The plan for Sommerset at Frick Park. The flowing stream was not always part of the plan.

Community Input

Jack Solomon: Will the current plans for the housing development/slag grading change the existing conditions? Will the current plans enhance the site?

Bill Colliscious: Is the downstream culvert which was proposed by the developer a dead issue? If it is NOT, this is a MAJOR THREAT TO THE STREAM! And everything we are trying to accomplish here.

John Schombert: I can give you 20 reasons why culverting is a bad idea.