Murphy's Law Repealed: Environmental Success in Nine Mile Run

Nine miles from the confluence of the Allegheny, Monongahela, and Ohio Rivers, lies an urban watershed, covering six and half squares miles of, now, healthy forests, clean rivers and streams, and thriving ecosystems. This valley, which encompassing seven Pittsburgh neighborhoods and outlying communities, provides the Pittsburgh community with miles of trails and idyllic forest clearings for all sorts of recreational activities. However, the beauty of Nine Mile Run was not immediately apparent before the late 1990s and early 2000s as the regional environment was plagued by erosion, sewage run-off, and general neglect, products of a long history of mistreatment by the steel industry and ignorance to the gravity of the problem by the average Pittsburgher.

At the beginning of the twentieth century, when Pittsburgh was a national leader in industry, Nine Mile Run was just a strip of riverfront adjacent to the already well-established public park, named for the steel tycoon Henry Clay Frick to whom the land originally belonged. Although some, like American landscape architect, Fredrick Olmsted, Jr., thought the small, privately-owned tract of land should be bought and absorbed into the neighboring park, the economic interests of the city and the wishes of the steel industry had to be put first (American Planning Association). Thus, under the ownership of Duquesne Slag, the high-banked, wooded hollow was transformed into a dumping ground for slag, the fairly useless by-product of the steel-making process. After decades of dumping, the over 17 million cubic yards of slag being disposed of in Nine Mile Run created heaps over 150 feet high in parts, covering over 200 acres (Three Rivers Wet Weather, Inc. 5)(American Planning Association). As a result, the area would continue to deteriorate until it became a bizarre, lifeless moonscape. A few concerned citizens would push for something to been done about the environmental disaster, which had begun to impact the surrounding neighborhoods and parks, but no one who had the funding or power to fix the problem was interested in getting involved.

The solution began with the son of a steel worker, Tom Murphy, who was elected mayor of the City of Pittsburgh in 1994. One of his many goals for the city was to renovate the brownfields, areas that had been made unusable or completely destroyed by the industries of the past. Nine Mile Run was an obvious target for the ambitions of Mayor Murphy and other city leaders and, one day, on a run through Frick Park's extensive network of trails, Murphy, decided that something needed to be done about the more than 300 acres of barren wasteland (McLean). The first step was to purchase the property from Duquesne Slag in order to bring the area into public domain. This acquisition was completed in 1997 by the Urban Redevelopment Authority of Pittsburgh, a municipal economic development agency that aims to improve the vitality and livability of the city, with the goals of transforming a portion of the land into a residential area and restoring the rest as a public green space, reconnecting Frick Park to the Monongahela River (American Planning Association)(URA).

At the same time the city officials were looking into solutions, the Pittsburgh Parks Conservancy, founded in 1996 by a group of Pittsburgh citizens who were concerned with the deterioration of the city's four major public parks, decided to get involved and signed a partnership agreement with in the city in 1998 (Pittsburgh Parks Conservancy). Unlike most concerned-citizen, non-profit groups that had challenged the city to renovate public parks and green spaces, this group was backed by, or contained, some of the most affluent and influential people in the city, giving them the political and economic clout to affect the city government's policies. The partnership of the city with this powerful, community-based group allowed for the watershed project to form a crucial bridge between the leaders of the local government and the leaders of the private sector, making the inherently-costly renovations more likely to be accomplished.

Taking the lead on this venture, the Pittsburgh Parks Conservancy contacted the Pennsylvania Environmental Council (PEC) to review the issues and current policies while assembling the interested parties in order to determine a plan of action and figure out who should get involved. Ultimately, the PEC decided that the best course would involve the

formation of a watershed association, which would include not only the City of Pittsburgh but also the upstream communities (American Planning Association). In the spring of 2001, the Nine Mile Run Watershed Association (NMRWA) was formed, growing out of the STUDIO for Creative Inquiry's Nine Mile Run Greenway Project, which was based at Carnegie Mellon University as an interdisciplinary project to investigate the relationship between the environment, community, and the arts with the goal of reconnecting the urban resident with the local environment ("History"). This organization was not only crucial to the renovating of Nine Mile Run but also to the continued maintenance of the area through the development of a stewardship program whereby Pittsburgh citizens could become actively involved in the restoration of the area. The association's role as an educational resource and it's emphasis on community participation are some of the reasons why the project has seen such success in the long term.

Before the organization could create its model for stewardship, it had to confront the problems currently facing the watershed. The slopes of the slag mounds were the first issue that had to be addressed because the slag's extreme dryness, inability to retain moisture, and high alkalinity, were preventing plant growth on the mounds and upsetting the ecology of the streams (Three Rivers Wet Weather, Inc. 5). Working in agreement with the U.S. Army Corps of Engineers, the NMRWA developed a solution that would revegetate the hills of slag while creating a strong building platform for a proposed residential area (American Planning Association). The hills were covered with soil and plants were brought in to reforest the hillsides and to prevent erosion of the new soil. These actions, as simple as they may seem, required extensive research and planning to be carried out effectively. Soil had to be imported from another site, which, if undertaken carelessly, could have stripped the donor environment of its resources, replacing one environmental problem with another. To remedy this, the project managers focused on readily-available and affordable soil additions that would not deplete another site of its necessary soil deposits (McLean). To hold this new soil in place, trees, shrubs, and other plant life were introduced to the slopes, with special attention being paid to the type of plant, choosing to use currently-indigenous species verses historically-indigenous ones.

On top of these newly covered slag piles, an innovative residential area was constructed, although not without some push back by the adjacent neighborhoods. Designed as a sustainable urban community, Summerset at Frick Park, a pedestrian-friendly neighborhood, is frequently punctuated by green spaces and trails into Frick Park with all of its homes being built for energy efficiency. To ensure the success of this project, while every lot is small, the type and size of the home is at the discretion of the owner, allowing for a variety socio-economic classes to join the community and environmentally-friendly lifestyle. Furthermore, the city offers three-year tax abatements, some tax exclusions, and even scholarships for residents of the development (Summerset at Frick Park).

While this development seems to be a positive addition to the city, the residents of the border neighborhood of Squirrel Hill were concerned about how it would affect their property values and the local traffic patterns. Mayor Murphy abated most of this anxiety by holding a series of town-hall meetings with community members in which everyone was able to contribute ideas and opinions concerning the design and planning of the Summerset community (McLean). To make sure the development was truly open to all Pittsburgh residents, Mayor Murphy met with leaders of the Lubavitch community to ensure that their cultural customs were met by the project. Ultimately, this meeting led to a restructuring of the development along an extension of the center line of the ultra-orthodox's community in Squirrel Hill so that members of that sub-culture could built in Summerset (McLean). After months of compromise and restructuring, solutions were found that satisfied the concerned parties. The project was a huge success, with every lot in the sector being sold at the first lottery. As of 2008, there were over 200 families living in Phase I of the development, but the real success of the project can be seen in the number of property resales, showing the long-term viability of the development (Summerset Land Development Company). Based on the current demand for

homes in this residential area, the city will have no problem filling the 500 homes that are projected to be built by end of Phase III.

The most innovative renovation to Nine Mile Run took place at the base of the slag heaps. Plagued by sewage runoff and bank erosion for years and assumed to be a lost cause by the surrounding municipalities, the stream that meanders through the ravine continued to deteriorate as general neglect was added to the already rampant mismanagement ("State" 1). Before the water quality could be fixed, the stream's course had to be reconfigured in order to correct the erosion damage, which was causing inconsistent water conditions that would range from too little water in dry weather to flash floods with even a moderate amount of rainfall ("State" 1). This restructuring not only made the stream inhabitable for fish and insect life, by slowing the stream's flow and allowing for oxygenation of rainwater but also minimized the danger for local children who often play by water's edge ("State 1").

Part of the reshaping of stream involved the creation of wetland environments using native plant life, slowing the flow of the water and improving the overall water quality of the stream. Although these changes were much needed and very effective, renovating the Nine Mile Run stream would require more than just the reconfiguration of the water's path and revegetation of its banks. Most of the City of Pittsburgh depends on miles of sewage pipes that were put in place at the turn of the 19th century. They are old, leaky, and use a combined sewer system, which has sewage and stormwater flowing into the same pipe, a system designed to allow overflow during heavy rains. However, as little as one-tenth of an inch of rainwater can flood the pipes, causing sewage to flow out of the culverts and into the streams (Three Rivers Wet Weather, Inc. 7). People soon realized the downfalls of this system and, in the 1930s, designed the sanitary sewer system, which has separate pipes for stormwater and sewage (Three Rivers Wet Weather , Inc. 7). Pittsburgh began using this model but, despite the obvious public health advantageous for the new system, never replaced their combined sewers. Moreover, the smaller watershed boroughs, while switching to the sanitary system, have the downspouts of their homes that are attached to the sewage pipes instead of the stormwater ones, adding to an already serious problem (Three River Wet Weather, Inc. 7). A problem which is amplified by the fact that 27% of the watershed is covered by impermeable surfaces, like asphalt and concrete, increasing the amount and speed of the rainwater running into the sewers and causing litter, road salt, and other pollutants to wash into the steam with each storm (Three RIver Wet Weather, Inc. 6).

In 1999, the municipalities adjacent to Nine Mile Run received orders from the Pennsylvania Department of Environmental Protection (DEP) to fix the sewage overflow problem (Three River Wet Weather, Inc. 7). It was the intervention by the state government that really pushed the local governments to take action. While the municipal governments recognized the issues with the sewage systems, the incentives and money for the infrastructural revamping were just not there. With the combined funding of the U.S. Army Corps of Engineers, through Section 206 funding, and the City of Pittsburgh, in conjunction with Three River Wet Weather Demonstration Program, 7.7 million dollars were raised and put into the three-year program to cleanse Nine Mile Run of sewage, making the project one of the largest of its kind in the nation ("State 1") ("Restoration"). As of 2007, the sewage in the stream at Nine Mile Run has been reduced to two miles of the stream, with efforts being made for its continued restoration.

Because the park and stream are a public resource, their continued care falls under the domain of the City's Department of Public Works, which means that all major and long-term renovations are the concern of the U.S. Army Corps of Engineers. However, the NMRWA is still involved in the process and is constantly trying to come up new and innovative ideas to help. One of these new programs being implemented by the NMRWA is the Rain Barrel Initiative, which, through the installation of rain barrels at the base of the downspouts of watershed homes, seeks to keep as much rainwater as possible on the residential lots, allowing for a slow absorption of the water by the soil and reducing the amount of runoff , entering the sewers ("Rain"). In addition, NMRWA is great at getting the community involved in educational and restoration activities, holding tree identification walks, birdwatching tours, and stream sweeps,

with consistently high attendance. It is programs like these, ones the promote respect for and stewardship of Nine Mile Run, that will ensure the continued care of the watershed.

Although many powerful parties were involved the resolution of the environmental issues at Nine Mile Run, the real spark of progress started with a motivated, charismatic political leader and his ideas for change. Murphy's flexibility in planning and commitment to the project brought together the right group of people from both the public and private sectors to make this intervention a long-term success. In addition to mustering the necessary funds to follow through with the project, the former mayor's work brought into being organizations that understand the importance of stewardship, fostering it through education and community involvement. While people can be detrimental to their local environments, if they are motivated and organized, they can also be part of the solution.

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