

Stormwater Management  
An Attainable Goal for Allegheny County

By

Raymond L. Reaves, Director  
Allegheny County Planning Department  
441 Smithfield Street, 2nd Floor  
Pittsburgh, Pa 15222-2219

David R. French, Project Manager  
Allegheny County Planning Department  
441 Smithfield Street, 2nd Floor  
Pittsburgh, Pa 15222-2219

### Introduction

This paper is a discussion of the stormwater management program in Allegheny County. The goal is a rational, user funded management system that will provide the citizens of Allegheny county with the benefits of well planned, high quality development without the risks associated with periodic flood events.

This paper will discuss the underlying policy and financial aspects of this program.

### Background

Allegheny County is approximately 735 square miles with 130 municipalities within its boundaries. The Pennsylvania Department of Environmental Resources has identified twenty four major watersheds that discharge into one of the Counties four rivers. Land use in the county until the early 1970's was characterized by dense urban development in the City of Pittsburgh and heavy industrial activity along the rivers, principally the Monongahela and the Ohio. The south central portion of the county was the primary focus for suburban bedroom communities. The northern and western portions were sparsely developed with large tracts of agricultural lands. Also, both areas had some large strip mining operations.

As population shifts occurred in the mid-seventies and the region's economy began to diversify, the land use patterns in the west and especially the north of the county began to change dramatically. Dense strip commercial development along transportation corridors accompanied residential development. Coincidental with the rapid urbanization of those portions of Allegheny County was the enactment of Act 167, the Stormwater Management Act. Because the act was intended to deal with precisely the situation that was occurring in Allegheny County, four Allegheny County watersheds were chosen as pilot areas by PADER in the early eighties.

These pilot studies, Pine Creek, Deer Creek, Girty's Run and Squaw Run, identified and clarified issues that have been addressed with greater sophistication and confidence in subsequent watershed plans. Technical issues such as establishing baseline criteria, hydrologic mapping, model selection and release rate percentages were resolved.

Since the completion of the first pilot watershed studies, the County has completed two other watershed plans, Montour Run, which encompasses the new Greater Pittsburgh International Airport's Midfield Terminal, and the Turtle Creek watershed, a two county effort involving Allegheny and Westmoreland counties. Additionally, we are in the midst of studies of the Monongahela and Little Sewickley Creek Watersheds and have recently completed a first-ever update of an Act 167 plan in Girty's Run.

This paper deals with the unresolved issues of management, administration and finance as well as Allegheny County's attempt to find solutions to these problems.

### The Functional Basis Of Stormwater Management

Act 167 appreciates the role of watershed wide planning. However, in assessing the Act against all the major functional activities that a comprehensive approach toward management must have, it is inadequate in several key areas.

The seven functions of comprehensive stormwater management are:

- Planning
- Land Development Plan Review
- Construction Inspection
- Maintenance
- Enforcement
- Emergency Response
- Finance

Although the Act attempts to address each of these functions explicitly or implicitly, it stops short in several areas. For example, while the act calls for municipal enforcement of plan standards for new development, it does not take into account the broad range of competence or interest in stormwater management at that level. In effect the courts are the only recourse if inadequate municipal enforcement leads to problems in downstream communities.

Additionally, the Act does not call for remediation of existing stormwater management or flooding problems, it merely requires that new development not make matters worse. While it is not fair to saddle new development with the sins of the past, simply living with existing problems is not acceptable.

Perhaps the overarching weakness in the current management system is financial. The Act only discusses planning and initial administrative costs. Costs for all other functions, when performed, are to be borne by already overburdened municipal budgets.

### The Organizational Response

Upon the adoption of the pilot studies, it became apparent that a formal watershed-wide institutional response to stormwater management was necessary. The severe flood events of 1986 and 1987 added increased urgency to the problem as the county and municipalities involved formed emergency ad hoc groups to cope with immediate flood damage repair and long term mitigation measures.

In 1987, the County hired the firm of Coopers and Lybrand to assist us in analyzing and developing a feasible management option that could perform the functions outlined above and also fit the following criteria:

1. Binding agreement:

It is important that the organization can bind municipalities in order to maintain watershed integrity and to insure that municipalities could not opt out of the organization (a major criticism of councils of government)

2. User fees :

The agency requires a dedicated funding stream to cover ongoing administrative, operational and maintenance costs. It seems fair that the users and beneficiaries carry these costs.

3. Issue bonds:

Bonding capability is necessary to carry out larger remedial and capital projects e.g. regional detention facilities

4. Local representation:

The agency and its structure should promote regional municipal participation.

5. Enforcement:

The agency should have the ability to enforce its standards directly.

6. Ease of implementation:

The methods and procedures needed to create the new agency should be clear and capable of being carried out in a timely manner.

7. Flexibility to expand:

As the number of watersheds coming under Act 167 plans increases so will the size of the agency.

A number of different management options were evaluated against the above criteria. The options evaluated are as follows:

1. Joint Municipal authority
2. ALCOSAN
3. A County Authority
4. Environmental Improvement Compact
5. A Stormwater Management District
6. An Allegheny County Department
7. Contract with a Private Company
8. A Utility/Franchise

Figure 1, the evaluation matrix, summarizes the results of our alternatives analysis.

Based on this analysis three of the possible options were viable; a Stormwater District, a County Authority, and a County Department.

Reasons for rejecting the other options centered around the projected problems with 100% inter-municipal cooperation, police powers, flexibility to expand and the ability to raise capital funds through the issuance of bonds.

What follows is a summary of the strengths and weaknesses of the remaining three options; County Authority, County Department, and Stormwater Management District

## Summary

### County Authority:

**Strengths:** The authority would be relatively simple to form, it could take advantage of existing county expertise, manpower and equipment, and it is a form that is familiar to the persons in authority in the county.

**Weaknesses:** Amendment of the municipal authorities act would be required in order to make stormwater management a permitted activity, the authority would have no direct enforcement power, it would not be able to expand beyond the political boundaries of Allegheny County.

### County Department:

**Strengths:** The easiest to form it could operate effectively maximizing the use of existing County personnel. No additional billing mechanism would be created.

**Weaknesses:** The second class County code would need to be amended to give a county department direct enforcement powers. The department would not have a dedicated funding stream and would have to compete with other departments for funds. Changing priorities of the Commissioners could degrade consistent performance towards stated objectives.

### Stormwater Management district:

**Strengths:** The district would be defined as a municipality giving it direct enforcement powers. Because its boundaries are based on geographical, and not political features, expansion of the district would be easier. Creation of the district would be directly tied to Act 167.

**Weaknesses:** Special legislation creating the district is required.

At the conclusion of our analysis, our choice was the Stormwater Management District. The strongest points in its favor were the enforcement powers and the district's ability to expand beyond county boundaries.

The legislative effort to create the district was put into effect. County staff held numerous meetings with PADER and legislative staff. The resulting legislation is summarized as follows:

#### Organization:

The district would be organized using the PADER designated watershed boundaries. As each new watershed came under an Act 167 Plan it would be added to the district. The district would be governed by a board of directors representing each municipality within the district as well as the County Commissioners. Because that board would be very large, an executive committee of the board would be elected. The executive committee would have seven members elected from the board of directors with one seat on the executive committee reserved for the representative of the board of county commissioners. The Board of Directors would meet semi-annually and the executive committee would meet monthly. The Board of Directors would set policy and would hold public hearings on the district's annual budget, the executive committee would provide oversight to the professional staff and develop recommendations to the board.

The District would also have a small full time staff of between fifteen to twenty professionals. The staff would be organized in such a manner to facilitate accomplishing the seven functional areas mentioned earlier. It would consist of a director, a planning section, a maintenance section, an inspection and review section and an administrative and finance section.

#### Powers and Duties:

The district's powers and duties will reflect the inherent functions of stormwater management. The district will have the ability to fix rates and fees, issue bonds and make contracts of all kinds. The district can develop regional detention facilities for stormwater management, a technique that has been discussed in depth in many of the published plans and which has shown to be effective in other parts of the country.

The district will review land development plans to ensure compliance with stormwater plan standards and will also conduct ongoing inspections of construction to ensure compliance.

The district planning section will prepare and update stormwater management plans, provide a data base for those engaged in land development and assist municipalities in intermunicipal coordination and cooperation in matters dealing with stormwater management, flood mitigation and flood recovery.

The district will ensure that streams and obstructions within the member watersheds are maintained in such a manner that they maintain sound hydrologic and hydraulic capacity.

The district will not override any municipal land use powers or responsibilities. The district will be governed by the standards contained in approved and adopted watershed plans in accordance with Act 167.

#### Financing The District:

The district will be funded with user charges. The charges will be allocated against both residential and non residential properties within the district boundaries. Within the residential group, a single rate will be charged independent of property size. Non-residential assessments will be made proportional to property size, using residential multiples derived from characteristics of size, soils, slope and per cent impervious surface. Following are the details of the steps in the user fee calculations.

Total stormwater management costs are the sum of three parts;

- 1) The district allocation of overhead cost.
- 2) The total maintenance costs.
- 3) The cost of material and equipment including reserve funds for major capital expenditures.

The total overhead cost for the district assuming full coverage of all 24 watersheds impacting the county will be approximately \$1.1 million by 1984. The total Maintenance cost under the same assumptions will be \$1.9 million and the total cost for the third category will be approximately \$1.7 million for a total of \$4.7 million.

There is another category of costs which cannot be quantified before hand. These are defined as watershed specific capital expenditures which are dependent on board approval. However given that uncertainty, the predicted single family cost for funding the stormwater management district will be between \$8.50 and \$12.00 per household per year by 1994. This cost range includes all four cost categories.

Commercial property assessments will be a multiple of the residential cost based on total commercial acreage( minimum - \$25.00).

**Conclusion:**

Since 1986 Allegheny County and the Commonwealth of Pennsylvania have spent in excess of \$5,000,000.00 on flood recovery in a single watershed. Many of the conditions that caused those and other flooding problems could have and can be avoided in the future by systematic, well planned regulation, inspection and maintenance of stormwater systems. A coordinated systems management approach is the goal of Allegheny County and with the implementation of the Stormwater Management District, that goal is within our grasp.

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