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Communication from City Controller Tony Pokora submitting an Audit of the Pittsburgh Water and Sewer Authority and the outside municipal use of the City sewer system.

PITTSBURGH WATER And SEWER AUTHORITY Outside Municipal Use of the City Sewer System

Report by the
Office of City Controller

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INTRODUCTION

This performance audit revisits the issue of outside municipal use of the City sewer system. Generally accepted governmental auditing standards were followed. In 1998, the Controller released a ***Performance Audit of Various Agreements with Surrounding Municipalities for Shared Sewer Maintenance and Repair***. The audit surveyed existing cost sharing agreements and found that neither the Pittsburgh Water and Sewer Authority nor Department of Public Works had systems to identify maintenance and repair work that was subject to reimbursement. (Public Works no longer has sewer maintenance responsibilities.) The audit recommended that the City and Authority investigate the legality and feasibility of rental or user fees for use of the City sewer system.

OVERVIEW

Pittsburgh Sewage System

In the late nineteenth and early twentieth centuries, Pittsburgh had the highest typhoid fever mortality rate in the nation. A major cause of the typhoid was the disposal of raw sewage and industrial waste into the rivers from which the city obtained its drinking water. The expansion of the City sewer system exacerbated this problem by dumping more raw sewage into the rivers. Dumping of raw sewage into the rivers by upstream communities also contributed to this cesspool of disease.

In 1907, the City's first water treatment plant near Aspinwall became operational. Typhoid rates sharply dropped. Adding chlorine to the filtered water in 1912 further improved drinking water quality. However, Pittsburgh, like most other Allegheny County municipalities, still dumped raw sewage into the rivers and nearby streams. Large quantities of untreated industrial waste were discharged directly into the rivers or indirectly through the City sewer system. This untreated sewage threatened downstream water supplies and constituted a serious threat to the health and safety of City residents and those of adjacent municipalities.

Sewage Treatment Requirement

In 1945, the State Department of Health, under the authority of the federal Clean Streams Act of 1937, ordered 102 municipalities and 90 industries in Allegheny County to stop polluting waterways. As a result, ninety-six of the municipalities and 36 of the industries agreed to participate in a countywide sewage collection and treatment system.

The Allegheny County Sanitary Authority (ALCOSAN) was chartered in 1946 to implement a plan for meeting the state mandate to control water pollution. Sewer design and service agreements took 10 years to complete. The treatment facility was to be constructed on the Ohio River in the City's North Side. To ensure that the new Sewage Disposal System would be fully paid by its users, the City and Authority executed agreements with municipalities and industries located within the treatment facility's service area. According to the Agreement between the City and ALCOSAN executed May, 1955, sewage treatment rates for the City and surrounding municipalities would be uniform and "all duties and obligations imposed upon the other municipality would likewise be assumed and borne by the City." In other words, all users would share the construction and operating costs of the new Sewage Disposal System.

With miles of intercepting sewers, tunnels, regulators, pump stations and ejector stations, the ALCOSAN treatment plant began its services in 1959. River and stream water quality improved considerably. The collapse of the steel industry brought further improvement by removing a major source of water pollution.

ALCOSAN has since expanded to service much of Allegheny County and has added collection systems along Saw Mill Run, Turtle Creek, Thompson Run and the Bear Run basin. Nearly 70% of ALCOSAN'S serviced areas employ separate sanitary and storm water sewer systems. The other 30% of areas served have combined sewer systems, that is, sanitary and storm water flow through the same sewer main.

Combined Sewer Systems

The City of Pittsburgh has a combined sewer system, as do some of the older suburbs. All the houses on a street have service laterals under the ground that feed into a sewer main. Sewage from toilets, shower, washing machine, dishwasher, as well as storm runoff (roof drain, French drains, etc.) converge in the same service lateral and then move into the same sewer main. A number of sewer mains in an area make up a collection system which feeds into a larger sewer called an interceptor or trunk sewer. From there sewage is conveyed to a pump station or to the treatment plant (ALCOSAN). The ideal is to have separate sanitary and storm laterals running from each house or building into respective sanitary and storm main lines. This would prevent combined sewer overflows which pollute waterways with sewage. City catch basins (commonly but inappropriately referred to as 'sewers') collect precipitation runoff from streets and sidewalks and transport it directly into the rivers.

City Sewer System Management

Prior to 1984, the City Water and Public Works Departments managed the City's water and sewer systems. The City transferred operation and maintenance of the systems to the newly created Pittsburgh Water and Sewer Authority ("PWSA") via a Lease and Management Agreement dated March 29, 1984. The Authority "leased" the existing water and sewer systems and the City provided services necessary to operate the systems as an agent for the Authority.

This agency relationship was terminated by a Cooperation Agreement effective January 1, 1995. As per Agreement Section III A. 1., the City was to still provide certain services to the Authority "until such time as that function is transferred to the Authority.." Subsection B states that "the City shall furnish such other services to the Authority at such times as may be required and requested by the Authority."

The 1984 lease agreement was terminated and replaced by a new Capital Lease Agreement, effective July 27, 1995. The Authority assumed "all contracts, leases, permits, licenses and other instruments used in

connection with the operation of the (water and sewer) System.” Therefore, the PWSA had sole responsibility for enforcing any existing shared costs agreements and maintaining the 1400 miles of sewer which still belonged to the City.

SCOPE

This performance audit of the PWSA is focused on the existing sewer maintenance agreements with the City's surrounding municipalities to determine if the City is receiving fair reimbursements for use of its sewer lines.

OBJECTIVES

1. To determine whether the current legal agreements with surrounding municipalities are cost-effective for the Water and Sewer Authority.
2. To identify whether existing sewer maintenance agreements need to be updated.
3. To determine if the ALCOSAN agreement restricts the City or PWSA from collecting additional costs or fees from outside users of Pittsburgh sewer system.
4. To make recommendations for improvement.

FINDINGS AND RECOMMENDATIONS

ALCOSAN processes all sewage generated by the City of Pittsburgh and eighty three (83) other Allegheny County Cities, Townships and Boroughs. Municipal sewage processed includes raw sewage and storm sewage (rain runoff.) Industrial waste, some of which is transported through the City sewer system, is also treated at the treatment facility.

Sewer Maintenance Agreements

As reported in the performance audit referenced in the audit Introduction, the auditors reviewed 96 ordinances authorizing agreements between the City and outlying municipalities for sewer construction, reconstruction or maintenance. The dates of these resolutions ranged from 1911 through 1987. Some ordinances required that the borough or township pay a certain percentage of the sewer line construction costs. This would be a onetime payment without future financial obligation. Some ordinances required the City or borough to assume all costs of a project. Only eight of the reviewed ordinances required the surrounding

municipalities to pay the City (now Authority) a percentage of future maintenance and reconstruction costs. These eight ordinances involve ten municipalities. **The PWSA executive director concurs with that audit's finding that there is no comprehensive list of sewer maintenance agreements.**

The Pittsburgh Water and Sewer Authority has identified 25 municipalities that transport their sewage to ALCOSAN through fifteen City owned interceptor sewer basins. (Prior to ALCOSAN's construction, outlying municipalities used the City's lines for sewage transport into the rivers.) City Ordinances have authorized sewer maintenance agreements with ten (10) of these municipalities. (see Appendix) The PWSA is responsible for enforcing these agreements. As per the City and Authority's 1995 Capital Lease Agreement, the Authority "assumes all contracts...used in connection with the operation of the (water and sewer) System."

Enforcement of Existing Agreements

FINDING: It appears that that the PWSA tries to enforce sewer repair contracts and recoup costs from other municipalities per existing agreements where possible.

For example, in 2001, the Authority repaired the McNeilly Road Trunk Sewer. Demands for pro rata reimbursement were made to Dormont Borough, Baldwin and Mt. Lebanon Townships pursuant to a 1927 agreement between these municipalities and the City. Three years later, pro rata payment has been received from Dormont and Mt. Lebanon and a settled amount from Baldwin.

The Executive Director stated that conversations with officials of Whitehall, Baldwin and Brentwood Boroughs indicate these communities will honor an old agreement and pay their share of repairs to Street Run Sewer Trunk. One user community, West Mifflin, is waffling.

Information supplied by the Authority indicates reimbursement of \$2,241,998.61 has been received from various municipalities from 1991 through December 2005. The following table shows how much has been collected from whom and what percent of the total maintenance cost the payment represents:

Project Name	Total Project Cost	Reimbursing Municipality	Amount of Reimbursement	Percent of Total Project Cost
McNeilly Road Trunk Sewer	\$ 294,080.00	Dormont Borough	\$133,675.10	45.5%
		Mt. Lebanon Township	\$ 32,651.52	11.1%
		Baldwin Township	\$ 24,000.00*	8.2%
Provost Fairhaven	\$1,437,165.00	Whitehall Borough	\$400,000.00	27.8%
		Castle Shannon Borough	\$ 84,240.17	5.9%
		Brentwood Borough	\$153,868.82	10.7%
Streets Run	\$2,114,525.58	Baldwin Borough	\$290,458.00	13.7%

		Whitehall Borough	\$290,458.00	13.7%
		West Mifflin	\$348,550.00	16.5%
		Brentwood Borough	\$484,097.00	22.9%

*Amount of settlement. Pro rata share is \$29,290.36

In addition, the Authority is attempting to collect \$218,876.43 from Swissvale Borough for work done on Nine Mile Run. The Borough's share represents 3.9% of the \$5,500,094.00 total project cost. It must be noted that not all project costs are eligible for reimbursement. For example, the project scope may include trunk sewers that only benefit the City. Those costs would not be reimbursed by other municipalities.

Updating Existing Agreements

In addition to enforcing existing agreements, the Authority has participated in discussions to develop updated inter-municipal agreements. One example is the PWSA's attempt to renegotiate the 1927 agreement referenced above. A proposed agreement proposes a reduced maintenance percentage for Dormont and slightly increased percentage shares for Mt. Lebanon and Baldwin with a proviso that the percentage shares be reviewed every ten years. To date, the agreement has not been executed.

City of Pittsburgh's Role

There appears to be some confusion as to what role, if any, the City should have regarding any new inter-municipal agreements. The Executive Director's position is that the City, as owner of the sewer infrastructure, must be a party to any inter-municipal sewer agreements. The former City Solicitor didn't have an opinion about when and how the City should involve itself in these negotiations. She stated in an email that she "would think that the City would have to establish itself as an interested party in those negotiations which is something the Administration would have to decide". An interested party has a right, stake or claim in the situation at issue.

The former City Solicitor provided an updated opinion on this issue. A Law Department response dated 12/12/05 stated that the "...it seems advisable for the City to be involved to the extent of knowing what is going on and being a signatory with PWSA to any contract of the type envisioned. The negotiations should be undertaken by PWSA, which has the technical expertise on such matters. The City would participate to the extent of protecting its own and its residents' interests. The City would not be the scrivener. Alternatively, the City need not be a part if its interests are adequately protected by insurance and indemnification requirements". The scrivener would write or draft the contract.

Recently proposed and executed agreements further confuse the issue of the City's role. For example, the City is not a party to the proposed updated 1927 agreement referenced above. This draft, prepared by the Authority's outside counsel, only lists the PWSA, Baldwin Township, Dormont Borough and the Municipality of Mt. Lebanon as parties.

Similarly, the City is not a party to an agreement for Stream Culvert Maintenance made the 26th of January 2004. The parties to the agreement are PWSA, the Township of Ross, the Borough of Bellevue and ALCOSAN. The agreement requires ALCOSAN to "maintain, repair and improve the Stream Culvert" and for the City, Bellevue and Ross to each pay twenty percent (20%) of costs. This appears to be an updated version of a 1960 agreement concerning Jack's Run.

These proposed and executed agreements indicate that the City is not a required party for the PWSA to update or enter into new maintenance agreements.

However, the City, along with ALCOSAN and PWSA is a signatory to the January 2004 Consent Order and Agreement made with the State Department of Environmental Protection and other regulatory agencies. Signing an agreement to “diligently cooperate” with the PWSA “to comply with the terms and conditions of this Consent Order” and “implement the...ordered milestones and schedules herein” makes the City “an interested party” for purposes of environmental compliance.

Changing Sewer Usage

The majority of sewer maintenance agreements were signed over 70 years ago when City residents generated the majority of non industrial sewage. Changing demographics have resulted in changing system usage. The population shift from city to suburb has resulted in a shift to increased non-resident wastewater passing through the City sewer system. As the City continues to lose population, suburban wastewater will comprise more of the City's sewer system flow.

Consent Order and Agreement Requirements

Since the establishment of ALCOSAN, the City's untreated sewage runoff problem from combination sewers has reared its ugly head and the State is intervening. Under Section 402(q) of the federal Clean Water Act, the City, Water Authority and ALCOSAN must comply with the Combined Sewer Overflow Policy of April 11, 1994 (“CSO Control Policy”). This policy is part of a comprehensive national strategy to achieve CSO controls that will ultimately meet acceptable health and environmental objectives.

Combined sewers collect precipitation runoff and sanitary and industrial wastewater and transport this combined wastewater in the same pipe to a treatment plant. When it rains, the volume of water in the pipe may be so great that all of the water cannot be diverted to the treatment facility. This creates an overflow that discharges raw sewage water and runoff into the nearest stream, ditch, river or lake. As reported by the Southwestern Pennsylvania Water and Sewer Infrastructure Project Steering Committee in 2003, our region has the dubious honor of more sites that dump sewage-laden storm water into rivers and streams during rainy weather than any other region in the country.

In 2004, local governments in the Allegheny County Sanitary Authority (ALCOSAN) service area participated in a regional effort to clean up these discharges of billions of gallons of sewage into Western Pennsylvania waters. By signing agreements with local regulators - the Allegheny County Health Department and the State Department of Environmental Protection (DEP)- municipalities agreed to maintain sewers and take the first step toward controlling sewer overflows in this area.

Under the Consent Agreement, each municipality will inspect its sewage collection system and make repairs when needed. The municipality will also monitor the flow in the sewers, eliminate excessive sources of storm water inflow and work with ALCOSAN and the other municipalities and their sewer authorities in their drainage basin to identify controls needed to bring wastewater collection into compliance with the Clean Water Act. A Long Term CSO Control Plan must be submitted by the City and PWSA to DEP by January 2008.

Flow Monitoring

In 2004, the PWSA used flow meters to measure the amount of non-City wastewater passing through the City sewer system. PWSA estimates that at least thirty and one half million (30,500,000) gallons of flow from twenty five suburban communities enter the City sewer system each day. This is almost as much as the estimated 40,000,000 gallons per day flow to ALCOSAN generated in the City.

Due to topographical construction requirements, some City wastewater passes through other community systems and re-enters the City sewer system. The Authority estimates that approximately eleven million (11,000,000) gallons of City flow pass through the sewer systems of seventeen other communities. Only three of these communities, Brentwood, Castle Shannon and Crafton, appear to share equal flow with the City. Fourteen of the reciprocal communities have more estimated flow in the City system than the City has in theirs. (See Appendix) Eight communities that use the City system receive no City flow. The City sewer system is impacted three times as much by suburban flows than are the communities which accept flows from the City. These flows consist of sanitary and storm runoff.

Sewer Mapping Project

Another aspect of the Consent Agreement is the need for a comprehensive mapping of the city sewer system. There are a number of unidentified sewer lines flowing into the City's sewers. One reason for this is the poor documentation when some surrounding communities were annexed during the last century. Another reason is the lack of good records that kept track of the sewer lines constructed beginning in the 1800's. Mapping was started by the PWSA in 2003 and is ongoing. The project verifies and corrects existing paper maps. The new information is downloaded into a geographical digital format.

Sewer Inspection and Repair Costs

The Consent Agreement requires that problems uncovered by sewer inspection must be repaired. Defects are classified by type. Major defects such as blockages causing back ups must be corrected immediately. The PWSA is given 6 to 8 months to make less serious repairs. Given the age of the City sewer infrastructure (most of it being over one hundred years old) these repairs could be costly. Estimates indicate that the repair work identified during the assessment phase of the order could reach \$20 million dollars per year through 2012.

The changing demographics of City sewer system use and the costs that the City will incur in meeting the Consent Decree objectives are further reason for the PWSA to pursue reimbursement from other user communities.

Sewer Usage Reimbursement Options

The Authority's reimbursement options include 1) enforcing existing sewer maintenance agreements, 2) updating existing agreements, 3) negotiating new agreements with other user municipalities and 4) assessing a

user fee on suburban users.

Enforcing or Updating Existing Agreements

Many of PWSA's agreements are outdated and do not reflect the shift in population to the suburbs or the changes in regulatory acts. The agreements only cover 10 of the 21 communities that use the City sewer system. The agreements are not uniform regarding percentage share of reimbursement and do not reflect present non City flow. If existing agreements could be updated, the majority of suburban communities will still not be reimbursing.

Negotiating New Maintenance Agreements

New maintenance agreements could involve all user communities. The City and PWSA's Consent Order and Agreement could be used as the basis for new sewer maintenance agreements. Section S. of the Consent Order states that the “the development and implementation of a LTCP (Long Term CSO Control Plan) is a comprehensive process *which will require coordination with other municipalities and with ALCOSAN*”. (emphasis added.)

When the Authority's sewer mapping project is completed, PWSA can develop a model that shows the other municipalities' connections into the City sewer system and the amount of flow received through these connections. Construction or reconstruction costs and ongoing maintenance costs associated with the mandated LTCP plan could be negotiated with all users of the City sewer system.

The City, as a signatory to the Consent Order, could initiate discussions with other user municipalities. Flow measurements could be the basis for cost allocation. Maintenance costs could be offset for communities like Brentwood, Castle Shannon and Crafton which receive a similar amount of flow from the City.

User Fees

There is statutory authority allowing municipalities to impose an annual rental or charge for use of its sewerage system. (53 P.S. §2231. Rentals for use of sewage system.) In pertinent part, the statute allows “any county, city, borough, incorporated town, or township” which “..either singly or jointly with other municipalities or townships, (a) has, wholly or partially, constructed or completed..any sewer, sewerage system or sewer treatment works, either wholly or partially at public expense.....may provide by ordinance or resolution, enacted either before or after the acquisition or construction thereof...for the imposition and collection of an annual rental, rate or charge for the use of such sewer, sewerage system or sewage treatment works, from the owners of, or the users of water in or on the property served or to be served by it, or from both the owner or water user, whether such property is located within or without the corporate limits of such county, city , borough, town or township.”

The statute continues that “The annual rental, rate or charge so imposed shall be a lien on the properties served, and such liens may be filed in the office of the prothonotary and collected in the manner provided by law for the filing and collection of municipal claims.”

The plain language of the statute indicates that cities may impose sewer user fees on non-resident users. In Kennedy Township v. Ohio Valley General Hospital, 129 Pa. Commw. 494 (1989), Commonwealth Court held that to be assessed sewer rental fees, a user sought to be charged must obtain some benefit. The Court did not distinguish between resident and non-resident users but stated any user who benefits from a sewer system is subject to reasonable rates. The Court cited an earlier decision, Duryea Borough Authority v.

McLaughlin, 74 Pa. Commw. 517 (1983), that indicated that “where a municipal authority has the responsibility to repair, maintain and operate sewer facilities it may charge users reasonable rates.” The PWSA is a municipal authority with these responsibilities and the borough residents who transport their wastewater through City sewer lines to ALCOSAN receive a definite benefit from the City sewer system.

User fees can be distinguished from fees for maintenance, repair and reconstruction. At issue, however, is whether the City can impose such a user fee.

Authority personnel have expressed concern that sewer user fees are precluded by the City's Cooperation Agreement with ALCOSAN. The Municipal Authorities Act (53 P.S. §§ 5601 et seq.) does vest exclusive rate setting power in the relevant authority. An argument could be made that one legal effect of the formation of ALCOSAN is that all participating municipalities (including Pittsburgh) surrendered their right to charge each other any fees related to the use by one municipality of another municipality's sewer lines.

The Kennedy case was decided after ALCOSAN entered into agreements for sewage treatment with the City and other participating municipalities. The City's Agreement with ALCOSAN does not expressly bar the City from charging other municipalities for using its sewage system. Also, language in the original agreements creating ALCOSAN seems to allow for use/rental charges imposed by one municipality upon another.

Fee Basis

PWSA's flow monitoring measures sewage and storm water flow. There is no way to distinguish between the two types of flow. To assess individual users as per the above referenced statute, user fees would have to be based on water consumption. This information is available from ALCOSAN. The fee would pass uniformity muster as long as all non-resident users were assessed the same fee, e.g., \$.50 per 1,000 gallons of wastewater.

Conclusion

The signers to the City's original sewer maintenance agreements and the creators of the County-wide sanitation authority did not envision the extent to which the City's sewer system would be used as a conduit for suburban sewage. Given the age of the City's sewage infrastructure, the inspection and repair mandates of the Consent Order and Agreement could prove costly. The Order's mandated coordination with other municipalities and with ALCOSAN to develop a Long Term CSO Control Plan could be the basis for shared comprehensive sewage system costs. Like Ohio Valley General Hospital in the Kennedy Township case, non-resident users will be “benefited by the system generally” if combined sewer overflows from the City sewage system are reduced or eliminated.

RECOMMENDATION: City Administration and PWSA should convene a legal research task force to pursue all options of increasing suburban cost sharing for the maintenance and repair of the City's sewer system. The task force should also determine whether the City or PWSA should be the lead negotiator in these endeavors.

