A. Analysis of Recommendations Contained in 1998 Report:

Introduction:

The initial study identified nine (9) areas for potential municipal/authority cooperation and/or regionalization:

1. Consolidation of outstanding debt
2. Staffing
3. Laboratory Analysis
4. Chemical and Materials Purchases
5. Infiltration/inflow (I&I) Control
6. Engineering and Legal Fees
7. Power Purchases
8. Sludge Management
9. SWIP Testing

There have been a number of cooperative efforts undertaken as a result of the initial study. However, combinations of events, unanticipated at the time of the initial study, have impeded additional cooperative efforts.

Many of the cooperative efforts subsequent to the 1998 Study have been sub-regional in scope. These sub-regional efforts; i.e., small regional systems and municipalities working together to address similar issues, are important examples of how future cooperative efforts among systems can work. Case Studies are detailed throughout this report.

Intergovernmental cooperation takes time and patience to move from concept to reality. When the attention of officials is diverted to issues such as consent decrees issued by regulatory agencies, the time and attention required for cooperative efforts suffers.

As the pressures and expectations of regulatory agencies emphasizing plant upgrades subside, attention of public officials will refocus on cooperative efforts in areas where collaboration has been done on a limited basis, previously discussed or attempted but not implemented, such as:

- Shared I&I resources
- Contracting for chemicals and power
- Shared personnel (primarily through private contractors)
- Potential for shared sludge disposal
- Equipment Sharing
- Source Water Protection Programs
- Stormwater Management Programs
- Training and education of employees
- Public Education Programs
- Expansion, interconnection and acquisition

A.1. Consolidation of Outstanding Debt:

Consolidation of Outstanding Debt; 1998 Report Findings and Recommendations:

The initial study concluded that "there would be very little, if any, cost savings to rate payers if some or all outstanding water and sewer debts were to be consolidated into a single County issue."

Consequently, no cooperative efforts were undertaken in the intervening years.

Consolidation of Outstanding Debt; 2010 Survey Findings and Recommendations:

Findings:

a. Debt:

The 2010 survey indicates that a number of systems:

- Obtained financing for capital improvements through Pennvest and other very low funding sources with rates typically at 1%.
- Refinanced debt reported in the initial study.
- Assumed new and/or additional debt.

The initial study evaluated the existing debt of the reporting systems through a debt issue by the County and did not include any discussion of existing debt of the County or of any local government in the County. The discussion did not include any analysis of the potential of issuing new debt by any jurisdiction. This is an issue that should be considered as discussions on cooperative efforts move forward.

b. Debt Management:

Debt management is an issue that transcends municipal authorities and extends to all public organizations.

As with all public entities, every expansion, upgrade, or new construction project must be funded; the challenge, or what could be considered as an advantage, is that there are a number of financing alternatives available. However, each will have an impact on long term costs of service to be paid by the users.

Some of these funding sources available are:

- Short-term Bank Loans:
    - Possible source of funds for preliminary costs for large projects or the entire cost of smaller project.
- Public bond issuance/Participation in a bond pool.

- Pennsylvania Infrastructure Investment Authority (PENNVEST):
    - Governed by a Board of Directors,
    - Chaired by the Governor,
    - Administered by the staff in conjunction with the PA Department of Environmental Protection,
    - Provides long-term; e.g., 20 year construction loans at subsidized interest rates based on such things as municipal median income, County's unemployment rate, cost of funds, and affordability factors.
    - Interest rates may be as low as 1%, but may be subject to an increase after five (5) years.
- USDA Rural Development/Rural Utilities Service (RUS):
    - USDA/RUS administers water and wastewater loan and grant programs to "improve the quality of life and promote economic development in Rural America".
    - All applicants with a population of less than 10,000 are eligible with priority given to those with a population of 5,500 or less.
    - Maximum loan term is 40 years.
    - Lowest interest rate, currently, is 4.5%.
    - Eligibility is also based on estimated user charges and the median household income of the residents.
    - Grant assistance is also available.
- H2O PA:
    - H2O PA Act was established by the General Assembly in July, 2008.
    - Provides for single-year or multi-year grants to municipalities or municipal authorities to assist with the construction of drinking water, sanitary sewer and storm water projects.
    - Eligible projects also include consolidation or regionalization of two or more water, wastewater, or storm water systems.
- Public-Private Partnerships (See page 45)
- Delaware Valley Regional Finance Authority (See page 40)
- Other various grant programs.
- *Of note: many programs reward or give extra review points to efforts which include regional approaches have precedence in application and acceptance processes.*

Regional Approach:

It can be said that a regional approach to refinancing debt would open the possibility of savings to systems whose outstanding debt is small; e.g., less than $1 million. An analysis for the potential stand alone refinancing for these systems may indicate that it would be cost prohibitive due to the cost of issuance. These costs could be marginalized for the small system within a larger refinancing issue or pooled BANs (Bond Anticipation Notes) program. The ability to refinance or finance jointly is dependent upon the type of project or equipment due to specific regulations for municipalities and authorities.

The 2007 Monmouth County Improvement Authority (MCAI) Annual Report cites a case study in which MCIA refunded $56.6 million involving 8 municipalities and a utility authority; and 22 separate bonds issued under six pooled BAN's (Bond Anticipation Notes) programs. Per this 2007 Annual Statement, the "refunding generated savings through a negotiate bond sale an aggregate savings of $2.1 million for eight (8) municipalities and one (1) local utilities authority"; further, the "financing achieved a true cost of funds of 3.972% and a present value savings of $2,080,974, or 3.175%." (See also pages 40 & 41, the MCIA and Delaware Valley Regional Finance Authority case studies under *Countywide Finance Agency.)*

It must strongly be noted that in any discussion regarding debt transactions:

- Policy makers should clearly and completely understand debt transactions.
- That the overall financing makes sense in the light of the authority's or municipality's stated needs.
- Significant due diligence must be performed to evaluate risk potential.
- Citizens should be able to get clear and precise explanations about transactions.
- The parties involved in debt transactions should avoid even the perception of conflicts of interest.
- The costs and risks associated with the transactions should be clearly disclosed and published.
- The type of project or equipment is similar and the entities are subject to the same regulations.
- Tax implications, federal securities laws, Debt Act

c. New and/or Additional Debt:

While many public officials feel that it is not prudent to incur additional debt, given the historically low interest rates, it may well be a costly mistake not to consider the possibility of assuming new debt for projects that would address long standing infrastructure needs and asset management. With the age of our existing infrastructure, the cost of replacement, emergency repairs, and more stringent regulations it is fiscally responsible to identify what the future needs of infrastructure such as the following are:

- Bridges
- Stormwater facilities

- Roads and sidewalks
- Transportation Projects
- Flood risk management
- Potable water
- Environmental protocols

Environmental protocols are those municipal initiatives designed and implemented to standardize and/or regulate environmental issues. In the context of this update, it would reference such things as river and stream water samplings, stream bed stabilization and assessment of water resources.

Potential savings from refinancing of existing debt could be used as a potential funding source to assist with programs to:

- Reduce I&I through slip lining
- Replace existing conveyance lines
- Replace existing brick manholes
- Replace hydrants
- Upgrade pump stations
- Funding interconnections with neighboring water systems
- Increase water storage capacity

Summary of Recommendations:

- Determine if any existing County authority has the interest to issue debt on behalf of local systems/municipalities on a regional basis. There are authorities within Berks County that have the ability to participate in this and at least one authority has expressed an interest in this idea.
- If existing authorities do not have the authorization to act as a regional financing agency, determine feasibility of changing the powers of the authority by resolution or ordinance or establishing a County-wide authority with the needed authorized scope of powers/projects.
- Incorporate data from systems/municipalities such as interest rate, date of issue, amount of issue and other relevant data into a County-wide website discussed below so that data would be available to all systems/municipalities in the County.

A. 2. Staffing Analysis:

Staffing Analysis; 1998 Report Discussion and Recommendations:

The initial study suggested consolidation of existing staff with the potential savings of $1.3 million (1998 dollars) through a reduction between 41 and 48 positions Countywide.

Staffing Analysis; 2010 Survey Findings and Recommendations:

Rather than focus on absolute numbers, this discussion focuses on issues to improve cooperative efforts and to strengthen the existing workforce.

There are several areas where potential efforts would benefit employees, systems and/or municipalities. Regardless of the type of system, the areas discussed below have relevance today and in the future for cooperative efforts. Of significant importance is the strategic benefit to be gained through undertaking any of the cooperative opportunities discussed below.

a. Job Combining/Merger:

Findings:

Data contained in the survey was not sufficient to provide an analysis of potential savings that could be gained through the consolidation of positions. Further, job descriptions were not detailed or provided; and information regarding pay scales, benefits and other labor issues were not made available. The scope of this update report did not include gathering of this data.

Case Study: Joint Public Works Department

However, audited 2010 financial statement work papers of a joint Public Works Department (two small boroughs) indicate the following savings:

- Receptionist: $46,649.50
- Administrative Assistant: $51,175.50
- Mechanic: $62.940.50
- Total Personnel Savings: $160,765.50

Savings: This represents a savings of over 14% of the total personnel costs of the two departments.

Note: The above listed numbers include salary, FICA, medical, Rx, dental, vision, deferred compensation (3%), training and miscellaneous

It should also be noted that this same joint Public Works Department also enjoys the following savings:

- Joint use of equipment: $84,000.00
- Common salt storage: $ 1,000.00
- Labor for road surfacing: $46,500.00
    - Equipment costs include P&I, fuel, maintenance, and insurance for back-up trash collection vehicle, Case backhoe loader, and front deck mower.
    - Labor for Road Surfacing includes prevailing wage on $200,000.00 job, inspections, bid specifications, legal ad, training, miscellaneous.

Implementation: The formation of this joint, inter-municipal effort was established prior to the now existing labor agreement. At that time all redundant personnel were either laid off or retired. Now, subsequent to the labor agreement, there is a clause in the labor agreement which due to substantive changes in staffing requirements and/or responsibilities allows for further layoffs and/or furloughs.

Summary of Recommendations:

The reduction in system personnel through regional cooperative efforts and other means should occur only by way of normal employee turnover and only in those instances where the operations of the systems involved would not be negatively impacted.

Accurate and current job descriptions are critical in any discussion regarding combining/merging jobs. Not only should job descriptions be made available, they must provide an accurate, current description of the duties performed with scope of responsibilities and authority detailed.

Job consolidations should also be considered in the context of the impact, not only on the organization but also on the individuals affected. Needless to say, any contractual obligations also need to be considered.

- Is there an innovative and flexible approach to downsizing through the natural course of attrition; i.e., rather than forcing layoffs and/or combining, and thereby protecting morale, critical skills and experience?
- Who should be terminated as a result of the consolidation, the most junior as determined by seniority or the employee least qualified?
- What are the contractual obligations and ramifications?
- Is the consolidation being driven by economics or by technological advances?
- Should the decision be based on who would best be able to perform the duties of the job:
    - as currently defined,
    - as the job will most likely be defined in the near future,
    - or as defined by anticipated changes in regulations and technology?

As vacancies in the workforce occur, a series of questions should be asked:

- Is there a need to replace the employee with the same skill set?
- Can some or all of the skills be contracted?
- Are the skills required to be replaced?

Most important, do the efficiencies gained and the dollars saved come at the expense of:

- Organization
- Management Control
- Coordination

- Communication
- Morale
- Job Satisfaction
- Needs Fulfillment
- Productivity

As questions are formulated, prioritized, and asked; and as answers are developed, decisions can be better made regarding the degree and manner of job consolidation and/or modification.

There is also a need to:

- Establish database with:
    - job descriptions
    - salary/wages
    - over-time provisions
    - work hours
- Establish database containing all information listed above and make available on website
- Perform organizational and compensation study to determine if and when job consolidations should be undertaken.

If job consolidation is determined to be appropriate, it should take place as current employees in the workforce separate.

b. Joint Training and Education:

Findings:

A cooperative training program for all employees including managers should be designed to include technical training as well as training programs for human relations/labor management, general management/leadership, finance, crisis management, and internal and external communication with both public and employees.

This type of training could be conducted through a more formal process and program than currently exists. While there are several current small Countywide organizations, participation by employees of systems and municipalities is not consistent. This is understandable given the time requirements placed on individuals in these organizations.

Summary of Recommendations:

While it is difficult to establish mandatory cooperative training requirements on systems and municipalities where no authority exists to compel participation, it is strongly suggested that the training and education opportunities currently provided to employees and system/municipalities be strengthened.

- Establish training programs to focus not only on improving employee skills but also discussing long range policy issues and that meet the federal and state mandatory certifications.
- Establish methods to encourage participation in training and education programs.
- Establish web based training and education system.
- Establish partnerships with the Albright College Center for Excellence in Local Government and other County colleges and universities to provide training, educational and student intern opportunities where appropriate.
- Establish employee mentoring program.

c. Joint Forums:

Findings:

The use of formal and informal forums based on similar groups of individuals such as treatment plant operators, public works employees, and township and borough managers; or based on specific tasks such as the Berks County Cooperative Purchasing Council (BCCPC) should be strongly encouraged. The existing framework is working well with consideration given to establish a water and wastewater system operator forum.

Summary of Recommendations:

Regularly scheduled cooperative forums focusing on long-range policy issues should be established, perhaps on a semiannual or quarterly basis; in order to develop a framework for identifying and addressing issues before regulations impacting systems operations take effect.

Potential invitees would include:

- Local/regional water and wastewater systems that have successfully addressed issues facing Berks County systems,
- Local/regional water and wastewater systems that have had difficulties addressing issues facing Berks County systems,
- Regulatory agencies such as EPA, DEP, US Army Corps of Engineers, DVRPC, the Delaware River Basis Commission, the Schuylkill Action Network, and SRBC,
- Representatives from the Chesapeake Bay watershed that are facing issues that may be faced by systems in the Delaware River Basin in the future,
- State and federal legislators, not only local legislators, but also those legislators that head committees of importance to water and wastewater systems.

However, the difficulty common to all of these forums is the time and distance required for consistent participation. While the meeting locations can and are rotated or centrally located, many times, attendance is poor due to actual or potential lost travel time.

The introduction of a web based conferencing system would be beneficial in expanding membership participation, education opportunities and information sharing among members.

Therefore, opportunities should be developed and expanded to:

- Establish creation of formal and informal forums to expand knowledge base and training opportunities,
- Establish web based system for use by systems for training, education and communication.

d. Contracted Services for Administrative Tasks, and the Operation and Maintenance of Systems:

Findings:

Contracted services for certain administrative tasks, as well as treatment plant operation and system maintenance have significant potential for cooperation and expansion.

While the technical expertise to operate different treatment systems may be unique to each system, there are certain tasks that must be provided across most systems such as:

- Billing to customers
- Laboratory testing
- Purchase of chemicals
- Operation and maintenance of treatment facility
- Operation and maintenance of collection system

Data from the surveys indicates that most of the contracts for operation and maintenance of the systems require that the contractors pay the utility costs. Provisions such as this may limit the systems' ability to reduce costs through the purchase of electricity from low cost providers. The agreements, depending upon how the electricity provision is handled, may hinder or prevent the systems from purchasing electricity on the open market.

Summary of Recommendations:

- All contracts currently in use by systems for contracted operator and contracted maintenance services should be obtained.
- The contracts should then be analyzed as to the type of services that are provided, the type and size of each treatment facility, and the specific treatment process.
- Determine scope of services to be provided under cooperative contract.
- Prepare proposed cooperative contract for bidding for a multiple year period of time.

e. Billing to Customers:

Findings:

Cooperative efforts for joint billing and collection of revenue should only be attempted on a sub-regional basis where one system that provides service to two or more municipalities could provide joint billing. These sub-regional systems often share long term cooperative efforts in other areas and are not reluctant to considering other cooperative ventures.

Communities often lack the resources to facilitate the planning necessary to achieve a cooperative effort; e.g. hardware, software, trained personnel. This additional expense may be beyond the capabilities of the local systems to absorb, therefore, cooperative effort is not undertaken. There will be start up costs to assess the feasibility and merits of joint operations as well as start-up costs; e.g., software and/or hardware. Also, it is important to identify the basis for the billing; consumption, EDUs or another form.

One of the fallacies that occur frequently in the consideration of service consolidations is that the merger/consolidation will result in instantaneous costs savings. However, practice indicates that very few mergers/consolidations save money in the short term. They may require initial capital, equipment, and even personnel.

It is important to understand that results must be judged on a two, three, or five year basis.

Summary of Recommendation:

- Resources/incentives should be provided such that smaller, sub-regional systems could develop joint billing and collection of revenue programs,
- Develop case studies of those systems that currently utilize joint billing and collection of revenue.

Case Study: Joint Billing and Collection

The experience of the Mt. Penn Borough Municipal Authority and the Antietam Valley Municipal Authority is an excellent representation of cooperative efforts that have spanned more than a decade, in fact, preceding the initial study. The Mt. Penn Borough Municipal Authority provides billing services for the members of the Antietam Valley Municipal Authority.

It is recommended that a detailed case study of this system be prepared and distributed to the appropriate systems. A work session with members from both the above authorities participating as key speakers should be held.

f. Operation and Maintenance of Treatment Facilities:

Findings:

Of long term concern to every system is the changing licensing requirements for both water and wastewater treatment plant operators. It must be understood that violations of certain sections by operator and/or staff could mean lose of license and possible, personal liability.
As change occurs and modifications prescribed, personnel costs for every system increase. Competition for a limited supply of licensed technicians increases the cost of providing these employees. The potential for contracting all or a portion of water and wastewater treatment plant operation should be considered a viable option over the long term.
A number of systems currently utilize contracted services for the operation of treatment facilities. Even though existing contracts were discussed in our conversations and meetings, the 2010 survey does not provide sufficient detail to determine all of the activities that are included in each of the existing contracts nor was the collection of this data part of this study update.

Summary of Recommendations:

In order to develop a more comprehensive assessment, the actual scope of responsibility of each contractor and contracting system must be determined.

For example, which party is responsible for such things as:

- Chemicals
- Laboratory testing
- Electricity
- Replacement of minor equipment such as filters
- Repair/replacement of motors and pumps

Certain additional information should also be obtained:

- Who maintains pump stations?
- Who maintains the collection system?
- Who completes the required reports?
- Who completes the Chapter 94 report?
- Who is responsible for liability for system malfunctions such as illegal discharges, overflows due to I&I?
- Who is responsible for operator errors and for the possible issued citations?
- Who is responsible for the payment of any fines?
- Who is responsible for the payment of damage to public/private buildings and land resulting for system failures?
- Who is responsible for the failure to meet permit requirements?
- Who is responsible for the billing of customer and the maintenance of customer accounts?

- Who is responsible for obtaining information necessary for the billing of customers?
- Who is responsible for the security of pump stations, wells, and treatment facilities?
- How would the agreement be modified should the treatment process be modified as the result of a change in the number of customers or a change in the demand for service, either in terms of the amount of water treated for consumption or the amount of sewage treated?
- Who is responsible for providing sufficient water for firefighting purposes?
- Who is responsible for flood damage to facilities?
- What happens when the facility is off line for any reason and the contracted services are not provided?

Further:

- Identify systems who utilize contracted services and to what extent. Bern Township, Sinking Spring Borough, Bernville Borough, Boyertown Borough, Centerport Borough, Leesport Borough, Lenhartsville, Borough, Robeson Township, Tulpehocken Township, Washington Township have indicated the use of contractors to operate all or a portion of their treatment plants.
- Develop framework for standardized agreements for commonly used contracted services.
- Develop case studies of those systems currently utilizing contracted services.

g. Sharing Equipment:

Findings:

Both water and waste water systems have the potential of sharing of certain types of equipment, such as dump trucks and backhoes, with other systems or with the municipalities that systems serve. One of the most often voiced concerns of shared equipment is the responsibility for equipment maintenance, repair, and replacement, in particular, if damage is caused by the borrowing agency. This can be easily resolved through an intergovernmental agreement and/or the joint ownership of equipment, and accomplished through agreements delineating purchase price sharing, the maintenance responsibilities of each party, where the equipment is to be located, and the time of equipment availability to each participant.

However, often equipment is shared among systems and municipalities on a more “informal” basis, road master to road master, or similar interpersonal relationships. These types of arrangements are often unreported as they are simply considered “a part of doing business” among those systems/municipalities who participate. Little or no thought is given to a rental rates, maintenance costs, liability, etc.; because the costs, over time, are thought to “even out” by the participants.

Formal, intergovernmental mutual assistance agreements would address these issues but should remain as flexible as possible to permit the informal networks to remain in place and to

encourage the growth of these networks. These sub-regional networks strengthen trust and familiarity, two key concepts required to develop more formal cooperative efforts.

Summary of Recommendations:

- Establish a framework through which water systems can jointly purchase leak detection equipment.
- Establish a framework for the joint purchasing of equipment by systems.
- Establish a framework for the sharing of existing equipment among systems.
- Develop case studies of those systems which currently share equipment.

Case Study: Sharing of Equipment

Recent cooperative efforts among the Western Berks Water Authority and its member municipalities demonstrate a level of cooperative effort that could become more prevalent in the future.

Western Berks Water Authority has little in the way of public works type equipment. As needs arise, requests are made to members for assistance.

This model could be used and expanded throughout the Berks County systems. The most appropriate time to experiment with this type of cooperative effort is when systems are faced with equipment replacement needs or the purchase of new equipment to address additional needs.

Easily identifiable examples of the type of work that could benefit from cooperative efforts include:

- GPS systems for locating public facilities
- Geospatial/mapping
- Excavation equipment
- Rolling stock
- Landscaping
- Grass mowing
- Snow removal
- Digital TV sewer system, water and stormwater pipe inspection
- Manhole inspection reporting

There are a number of municipalities that currently have intergovernmental agreements for either the purchase of equipment of the sharing of existing equipment:

- Robeson and Brecknock Townships purchased and share paving equipment
- Robeson and Union Townships and Birdsboro Borough have an intergovernmental agreement to share existing equipment and personnel specific to specialty equipment

A. 3. Outside Laboratory Analysis:

Outside Laboratory Analysis; 1998 Report Findings and Recommendations:

The initial study indicated that savings of at least 25% could be achieved, ($60,000 in 1998 dollars) through cooperative efforts in the form of contracted services. The study discussed and dismissed the concept of a new County owned laboratory to be constructed as cost prohibitive.

Outside Laboratory Analysis; 2010 Survey Findings and Recommendations:

Findings:

It is clear that cooperative efforts could provide savings over the existing cost for this service and that the original recommendation remains valid. Cooperative efforts utilizing a standardized format for testing would minimize the cost to the local systems and could be implemented with minimal participation. As interest in participating grows, additional participants would be included at little or no additional cost because the standardized format would be in place.

Laboratory testing required on a frequent and routine schedule to monitor the ongoing treatment process should be conducted on a more informal basis using existing personnel. Changes in the treatment process may be required, such as the modification of the levels of certain types of chemicals, based on the characteristics of the water/wastewater being treated. These types of tests need to be conducted on a frequent basis in order to ensure that the parameters of the permits are maintained. Smaller systems with limited resources could contract with neighboring water and sewer systems for this technical assistance.

Summary of Recommendations:

- Rather than establishing a County-wide facility, with the attendant responsibility of maintaining employee and laboratory certifications, it is recommended that testing services be standardized for the type and frequency of collection and testing that is required. This would include collection and transportation protocols. A bid proposal for a minimum of a three (3) year contract could then be let. The proposed contract could include provisions for training existing employees in the necessary collection techniques to reduce the cost of testing.
- Collect data for each type of laboratory test that is currently used for each system.
- Once data is collected and analyzed, develop standardized formant for each type of test with regard to frequency of collection and testing.
- Develop case study of Western Berks Water Authority laboratory sharing program.

Case Study: Laboratory Testing

The Western Berks Water Authority has extended its laboratory expertise to its member community sewer systems for daily flow monitoring laboratory testing.

A.4. Chemical & Material Purchases:

Chemical & Material Purchases; 1998 Report Discussion and Recommendations:

The types and amounts of chemicals used by water and wastewater systems vary widely, depending on the type of treatment system used and the location of the treatment plant.

The 1998 study suggested that the market for chlorine, the most widely then used chemical, was highly competitive and that any effort to purchase chlorine competitively would not result in appreciable savings.

Chemical & Material Purchases; 2010 Survey Findings and Recommendations:

Findings:

The issue of the types of chemicals used by each system remains. The permits issued by the regulatory agencies often cite the type of chemicals that are to be used by the permittee. Given the wide range of chemicals and the inability of systems to modify the types of chemicals to be used, joint bidding for a variety of chemicals may not be an option.

Recently, an effort at joint bidding for chlorine was initiated. Although the City of Reading declined to participate, a joint contract involving the Western Berks Water Authority and the Hamburg Municipal Authority was successfully implemented.

While the first step has been tentative, it has been demonstrated that joint bidding for chlorine and other chemicals now being used in some cases can be accomplished.

Next, there must be an outreach effort to smaller systems to determine and understand their chemical needs and to develop a joint bidding template. The outreach must be done in person, as most of the smaller systems do not have the administrative support staff of a Western Berks Water Authority or the Hamburg Municipal Authority.

Finally, efforts should be undertaken to establish a list of the chemicals that are required by each permit held by the systems. A study should be undertaken to determine whether each chemical is required due to the chemicals unique characteristics and the treatment process in which it is used and whether or not a more commonly used chemical can be used to replace the chemical required. The objective of this study would be to minimize the number of individual chemicals used by the systems and to increase the volume of commonly used chemicals so that they could be competitively bid.

Summary of Recommendation:

- Prepare case study of Hamburg/Western Berks Water Authority joint bidding of chlorine.
- Extend outreach to systems through personal contact to share Hamburg/Western Berks Water Authority joint contract for chlorine.

- Develop program to communicate routinely with regard to availability of joint purchasing opportunities.
- Develop list of permit-required chemicals used by systems in effort to reduce the number of permit required chemicals and to determine feasibility of joint bidding for additional chemicals.
- Support efforts to promote Joint Purchasing Council, proposed County-wide S/W forum or Association.

A. 5. Infiltration/inflow Detection:

1998 Report Discussion and Analysis:

The initial study suggested that two (2) County-wide crews for I&I work would be possible. A subsequent study, *Inflow and Infiltration Equipment and Crew Study*, was contracted to identify the cost to provide a County wide I&I crew.

Infiltration/Inflow Detection 2010 Findings and Recommendations:

a. I&I

Findings:

Excessive flows in a sanitary sewer system typically come from three sources: infiltration and inflow (I&I) into main pipelines; I&I into building laterals; and increased wastewater discharge from homes, businesses, and industries. Increased sewage flows from homes and businesses can be accommodated by increasing the capacity of collection systems and treatment plants.

However, because I&I is relatively clean water and does not require same the level of treatment if it were kept out of the collection system, increasing capacity to convey and treat I&I flows is not economically prudent. Preventing the entry of I&I into the collection system can be more economical and environmentally sound since the treatment of stormwater helps to recharge groundwater levels and can be done at the individual property or development where it originated.

Conceivably I&I may cost Berks County residents millions of dollars each year through increased treatment cost.

Although implementing a private I&I elimination program may seem an unattainable goal to many, it can be achieved by:

- educating local decision makers and residents about current problems created by excessive flows, successfully implemented programs, potential institutional measures, and funding sources,
- detailing an I&I elimination program that addresses the concerns of the residents, the potential roadblocks to program implementation, and is based on locally relevant information, such as the greatest sources of I&I in the municipality,

- developing a program based on the experience of other communities tailored to specific local needs. Once a draft program has been established, community involvement is essential to ensure that residents will fully understand the need for the program.

However, before a program can be implemented a framework must be prepared including:

- revising or instituting ordinances,
- procuring necessary instrumentation and tools, assigning and training employees,
- educating the public.

Wastewater treatment systems all face the continual issue of inflow and infiltration (I&I) and the loss of treated water through illegal connections and leaks in the distribution and storage systems. Many systems have leak detection programs in place. The potential for cooperative efforts are focused on the contracting for joint leak detection programs utilizing the same contractors and the same specifications.

The 2010 survey data indicates that there are at least three (3) locally staffed I&I crews in place and that several systems utilize third party contractors to perform I&I work. The data also suggests:

- In those areas where I&I work has been performed on an ongoing basis, it has been successful in reducing sewage flows,

- There are several systems that do not have planned, continuing I&I programs and,

- In areas where I&I activities are conducted, the work does not address the entire universe of activities necessary to completely address I&I.

A more complete program to address I&I would include:

- Smoke testing of laterals, downspouts, and storm sewers
- Inspections for illegal sump pump connections
- Inspections for illegal downspout connections
- Inspections of yard cleanouts to ensure that they are above grade

While I&I crews are available for cooperative efforts, little if any are being undertaken, especially outside of the framework of a joint system.

The 2010 survey data indicates that those systems that provide funding for I&I, budgeted from 1.5% of expenses to 27.7% of expenses with the average budget amount of 15%.

There are two reasons for the failure of joint I&I programs becoming more prominent: first, the cost of providing the service, even with public crews; but more importantly, second, the assumption that the treatment plant has sufficient capacity to treat all I&I.

Both of these reasons are shortsighted and will lead to future issues of concern for elected officials and staff as the regulatory agencies begin to focus more of their attention on the I&I issue in future years.

Managing the Issue:

There are two approaches to managing the issue of I&I; that is, on a system wide basis or neighborhood basis and on a more random basis such as change of property ownership.

A typical system wide approach should encompass the entire universe of I&I reduction inspections and efforts:

- Generally, the first task is the inspection of the transmission mains and interceptors and design and complete repairs where necessary and required.
- Secondly, inspections beyond the transmission mains and interceptors should be completed. This task would include smoke testing, inspecting for illegal sump pump connections and downspout connections and inspecting the condition and elevation of the yard cleanouts.
- Third, inspect and repair laterals.

The inspection and repair of transmission mains and interceptors is the responsibility of the system with all costs to be borne by the system. The property inspections could be undertaken by the system. However, the effort to rectify any illegal connections and the cost to do so would be the responsibility of the property owner.

The program for the inspection and repair of the laterals would also be a joint venture by the system operator and property owner. However, due to the costs involved, and potentially the scope of work involved to correct any problems, the degree of cooperation between property owner and system operator is more involved and requires a great deal of discussion before any project is undertaken.

It must be understood and remembered that repairs to sewer laterals are the responsibility of the homeowner and, possibly, to some degree, the system. Systems do not have the sole responsibility for maintenance and repair.

A system wide I&I effort is generally undertaken once every fifteen years or so. Neighborhood wide efforts are generally conducted on an as needed basis, depending on individual circumstances.

Once a system's acceptable I&I level is achieved on a system wide basis, a maintenance program of periodic transmission and interceptor inspections, coupled with property inspections at the time of property transfer should be sufficient to manage I&I.

Inspection programs established to determine and locate illegal connections to the sewer systems, such as sump pumps and downspouts, is a significant issue that can be addressed through cooperative efforts.

Extraneous water from these two sources, as well as water from improperly installed or maintained yard cleanouts, is a major source for inflow and infiltration.

A joint program to inspect for these illegal connections at the time of a property resale would, over time, produce reductions in inflow/infiltration with little to no cost to the system operators.

The system would have to be instituted by the local government and could be a stand-alone inspection or could be included with an inspection of the total property. That decision would rest with the local government. A fee would be established that would cover the inspection costs. Homeowners would be responsible to correct any illegal connections prior to the sale of the property.

One inspector could serve multiple systems thereby standardizing the scope of inspections and sharing costs.

Legal Basis:

Municipalities in Pennsylvania are empowered by the Pennsylvania Municipalities Planning Code (MPC), Act 247 of 1968, to prepare and adopt comprehensive plans according to specified requirements and procedures. Revisions to the MPC made by Act 170 of 1988 expanded the subject matter and goals of comprehensive planning to enable municipalities to manage growth more effectively, and to implement procedures, ordinances, and codes for the delivery of public facilities and services.

This would include:

- Planning and zoning
- Codes and enforcement
- Stormwater management
- Drainage system maintenance

Municipalities are also empowered by this Act to carry out joint planning with one another. Recent amendments to the MPC specifically enable municipalities to work together to develop regional plans for the allocation of growth and development, along with the delivery of public facilities and services.

Most important, the Municipal Authorities Act, Section 5607 d. (17) delineates the specific power; i.e., “To do all acts and things necessary or convenient for the promotion of its business and the general welfare of the authority to carry out the powers granted to it by this chapter or other law, including, but not limited to, the adoption of reasonable rules and regulations that apply to water and sewer lines located on a property owned or leased by a customer and to

refer for prosecution as a summary offense any violation dealing with rules and regulations relating to water and sewer lines located on a property owned or leased by a customer."

To affect these efforts, municipalities and municipal authorities have the ability to institute ordinances to control illegal connections such as sump pumps and down spouts; and that the proper officers as stated in the ordinances have the authority to take corrective action.

Summary of Recommendations:

- Establish joint inspection program to include:
  - Smoke testing of laterals, downspouts and storm sewers
  - Inspections for illegal sump pump connections
  - Inspections for illegal downspout connections
  - Inspections of yard cleanouts to ensure that they are above grade
- Establish incentive program for system to work cooperatively in joint I&I programs
- The property inspection could be expanded to determine to what extent, if any, an onsite septic system is properly functioning. The inspection could provide additional data such as:
  - The type of system, sand mound, conventional, or other
  - Size of holding tank
  - Location of the system on the property
  - Age or date when the system was installed
- Similar data for private wells could also be collected and could include:
  - Location of well on the property
  - Separation distance for septic system
  - Depth of well
  - Water quality test results
- Establish system to collect above data at time of property resale
- Establish program that all future building permit applications provide above data
- Establish program that above data be provided on plans for final land development approval
- Review the *Inflow and Infiltration Equipment and Crew Study* to determine if analysis and recommendations remain valid.

Other Considerations:

Home resale inspections are commonplace throughout many areas in the state. Many municipalities in southeastern Pennsylvania have had these in place for decades.

Inspections include:
- Life safety
- Building code
- Onsite septic system operation

- Onsite well operation and testing
- Illegal connections to sewer systems
- Illegal uses such as apartments, businesses or other zoning violations

Inspections for life safety issues would be limited to such things as working fire detectors, carbon monoxide detectors, and electric circuit breaker panels/boxes. Care must be given to distinguish home resale inspections and property maintenance inspections. Many municipalities have both types of programs. The home resale inspection deals specifically with life safety and building code violations, not with how well a property is maintained.

b. System Maintenance:

The 1998 study discussed the need for a long term financing solution to address the eventual replacement of the system infrastructure. Data in the study indicated that more than 50% of the systems in Berks County did not provide long term funding for future infrastructure improvements. The study recommended that systems establish an additional quarterly fee of $.50 per customer to fund for long term infrastructure needs.

Findings:

Long term maintenance of water and wastewater systems is most often deferred. Much of the system is out of sight and as long as each system functions, all is assumed to be in good order. However, many of the systems currently in use, especially in older boroughs, exceed their designed lifetimes. Maintenance in many of these locations is deferred until a crisis develops and repairs are completed. The decision to defer maintenance is often based on political and/or financial reasons; i.e., the system users protest that they cannot afford a rate increase for the capital needs of the system or the municipality or authority does not want to take responsibility for raising rates.

The continual process of deferred maintenance/crisis repairs is a situation that needs to be corrected or it will have a significant impact on the vitality of the community. If the cycle is not broken, the community will, in all probability, have difficulty in attracting investment into the community. Needless to say, without a continual flow of capital into a community, to upgrade housing stock, or nonresidential properties, communities will not have the resources to address the needs of the community, proactively.

The 2010 survey data indicates that systems recognize the need for capital planning but often do not provide funding for the plan. The funding for capital improvements comes primarily from tapping fees. A few systems include capital expenses as part of their user fee calculations.

Relying on a steady stream of funding for capital expenses is essential for the long term health of the system. While tapping fees may be one method of funding capital expense, this method is a temporary. At some point, the revenue from tapping fees will cease. When this occurs, the demand for capital expense will increase as the system begins to age.

A small capital fee, used only for capital improvements for the system, added to existing bills can begin to provide the funds that will one day be needed. There is no deferring maintenance for an indefinite period, it will have to be done and the users will have to pay for it. The issue is one of whether to pay a little amount over a longer period of time or a larger amount sometime in the future.

Reviewing the 2010 survey data, an increase of $.50 per EDU per quarter designated for capital purposes would result in fee increases from between 0.2% to 0.6% annually.

An additional capital fee is often an essential element in securing additional financial assistance from outside agencies. With the competition for these resources growing in intensity, the ability to provide matching funding, regardless of the amount, demonstrates the willingness of the system to invest in the system and can be the deciding factor in receiving outside financing.

The 1998 Report contained an excellent analysis on this topic, which remains valid. The recommendation in the 1998 Report was to increase the user rate by a small amount, the example suggested $.50 per user per quarter. By utilizing the time value of money, the 1998 Report clearly illustrated that even the smallest system could have significant funds available in the future to address any capital need.

Had systems begun funding the $2.00 annual fee in 1998, systems would have accumulated between $1,700.00 for the smaller systems (less than 400 customers) to more than $40,000.00 for the larger systems. While this is not a large amount, each system needs to determine what their future needs are and base the fee on those needs.

Local government and water and wastewater systems generally operate with the minimum resources, human and capital, necessary to carry out their function while planning for the future. However, this often fails to take into consideration the longer term capital and system replacement requirements necessary to continue to function and provide residents with the same level of service in the future that they currently enjoy. A small increase in user fees, while it may not be politically acceptable to some, is more acceptable than the inevitable 25%, 30%, or 50% increase in user fees that may be required in the future for system repairs or replacements.

Systems constructed before the introduction of plastic pipe are susceptible to unanticipated and costly repairs. Many of these systems have been in place longer than their design lifetimes. As these systems continue to age, failures in the systems will occur with increasing frequency.

Summary of Recommendation:

- Establish a program to educate system operators, owners and the public on the need to establish programs to replace the existing infrastructure.
- Encourage establishment of fee based increases to fund capital requirements of systems.

A.6. Engineering and Legal Fees:

Engineering & Legal Fees; 1998 Report Discussion and Recommendations:

The initial study stated that the widely dispersed locations of systems and the wide range of activities undertaken by both attorneys and engineers do not bode well for the potential of savings through cooperative efforts.

Engineering & Legal Fees; 2010 Survey Findings and Recommendations:

Findings:

Despite the wide range of needs of system operations and engineering services, there are opportunities for cooperative efforts as discussed below.

a. GIS Opportunities:

Municipalities and authorities are at the forefront for data collection activities on a regional basis. The standardization of regulations regarding the plan requirements for subdivision and land development plans would have significant long term benefits and result in long term savings to both as well as to the County. The development of a standard for submission of land development and public improvement plans in GIS format, would allow the County to update GIS maps and plans without significant additional cost.

By maintaining up to date maps, the County could produce data in map or plan form for municipalities and authorities at little or no cost. Data files of infrastructure improvements such as bridge locations, size and elevations, roadway widths, right of way locations, water and sewer pipe locations, type size age manhole locations, type invert elevations, storm water locations and invert elevation and storm water outfalls would benefit many different programs.

b. Technical Specifications:

Efforts should be undertaken to establish similar or identical technical specifications for the type of materials and/or equipment commonly used for the installation/maintenance of facilities such as:

- Pipe material for water, stormwater and wastewater systems
- Type and amount of backfill material
- Method of marking underground facilities
- Type of fixture used for exterior lighting.
- Fire hydrants
- Water meters
- Pumps and motors
- Manholes and covers

Sub-regional or County wide specifications for commonly used services/items can reduce engineering expenses over the long term; e.g. should systems that have a need to replace water meters separately engage their own engineers to develop their own specifications or should they join together to develop one standardized specification?

c. Chapter 94 Reporting:

It is recommended that a standard set of specifications be developed for the preparation of Chapter 94 reports. A review of the Chapter 94 reports submitted by systems as part of the 2010 survey indicates that there is a wide range of data submitted in a variety of formats. The most perplexing data point is how sewage flows are represented in the report. In most reports, sewage flows are represented in terms of EDU's often with the appropriate gallons per day reference stated in the report. However, several Chapter 94 reports were submitted with references to flows, not in EDUs, but in gallons per day. Without clear reference to equivalents, it is difficult to incorporate this data into a format for comparative purposes.

The Chapter 94 Report contains a wealth of data that if collected over a significant period of time, and could provide the water and wastewater systems, municipalities, the Berks County Conservation District and the County Planning Commission with a tremendous County database for assessing a wide range of potential issues.

Standardized data of discharges, hydraulic and organic loadings and flows, along with the discharge points, located in a GIS system would provide insight as to the impact of treatment plant flows on streams and rivers.

Similar data collection efforts for water systems including testing on the quality of water at plant intakes and the groundwater elevations at system wells would supplement the wastewater data. Over a period of time, the impact of the use and treatment of water, both surface and groundwater would be illustrated.

Cooperative efforts on the part of smaller systems to utilize standardized Chapter 94 reports and standardized laboratory test can lead to reduced costs and will most likely lead to efforts to further consolidate treatment plant operations. A standardized Chapter 94 report, coupled with standardized laboratory testing, have the potential to reduce expenses, especially if two or more systems cooperate in the bidding and selection process.

Through the use of the standardized laboratory testing and standardized Chapter 94 reporting, smaller systems would learn firsthand the benefits of working together in small groups. These experiences would well lead to joint cooperative purchasing efforts and the potential for joint billing and the use of joint personnel.

d. Annual Water System Reports:

A similar approach should be undertaken with the required annual water system reports. The data and information required by the state is significantly less than the data required in the Chapter 94 reports. The lack of required data is a serious flaw that should be corrected. Data

such as water quality tests prior to treatment, flow tests, depth of water tables, permitted drawdown rates for wells should be collected on a County wide basis.

For those systems that utilize wells, the depth of water in the well and the depth of the well are two important data points that over a period of time will provide valuable information on the quantity of ground water. Testing requirements could also be developed to establish baseline data regarding ph, arsenic, fecal coli form nitrates and other chemicals present in ground water.

Additional groundwater data regarding the location of wells, public and private, and the depth to the water table should be required for all new construction, both residential and nonresidential. DEP requires some of this data from well drillers. With a better coordination of information, this information could be accumulated by the County in addition to other data not specifically required by DEP.

Over an extended period of time, the changing characteristics of ground water would make themselves apparent and appropriate actions could be discussed and implemented.

Summary of Recommendation:

- Develop standardized technical specifications for GIS format for all systems and municipalities to adopt.
- Request that all plans to be recorded use standardized GIS format.
- Develop standard Chapter 94 Report format and information to be provided.
- Request all systems to file copy of standardized Chapter 94 Report to Berks County Planning Commission when required to be filed by DEP.
- Develop standard annual water report format and information to be provided.
- Require all water systems to file copy of standardized annual report to Berks County Planning Commission when required to be filed by DEP.
- Require plans for public and private wells to provide data on well elevation, rate of water withdrawal, depth of water table, chemical properties of water and location of well on property.
- Require plans for public septic systems to show location of septic system on property.

The County can, as a condition of providing County support for local projects, require systems and municipalities to provide much of the data listed above. The development of County wide data bases will provide the County, municipalities, authorities, and the systems with much needed support in the long term.

Case Study: Hydraulic Model

Amity Township along with its engineer, have developed a hydraulic model of the Amity sewer system to evaluate the capacity of sewer lines and determine the impact that proposed developments and inflow/infiltration work would have on the sewer lines. The hydraulic model can be used to identify areas of the sewer system that are at or near capacity and to indicate the effect that proposed development would have on the existing system.

The data would pinpoint where problems would most likely occur in specific portions of the systems as a result of proposed development. This would be beneficial to systems, as it would highlight issues to be addressed as part of the discussions with potential developers. Future problems could be adverted and could be resolved at no cost to existing customers.

This model would be extremely beneficial to many systems throughout the County. Efforts should be undertaken to determine the viability of the models use in other systems.

Birdsboro Municipal Authority also uses a hydraulic model of its water system to evaluate the pressure in its distribution system and determine the impact that proposed developments would have on the distribution system. The hydraulic model can be used to identify areas where pressure would be negatively impacted by proposed development and permit the Authority to assess proposed alternatives to alleviate any potential pressure problems.

A.7. Purchase of Power:

Purchase of Power; 1998 Report Discussion and Recommendations:

The local purchasing of power has the potential of providing significant savings to systems.

The regulatory changes in the electric industry following the initial study have put into place the mechanisms necessary for systems to more fully take advantage of the opportunities to jointly purchase power.

The initial study estimated that individual customers could realize annual savings between 7 to 10% on their energy bills. Potential savings, in 1998 dollars was estimated to be between $250,000 and $300,000 annually for all systems in the County. If the systems worked cooperatively, the study suggested that an additional saving of 5% ($125,000 to $150,000 in 1998 dollars) could be realized.

The savings would, therefore, be realized through a County wide, sub-regional authority, or cooperative purchasing efforts.

Purchase of Power; 2010 Survey Findings and Recommendations:

Findings:

Many systems and municipalities have participated in the joint purchasing of electricity through one or more of the cooperative venues since the deregulation of electricity. The amount of savings depended on a variety of issues, the systems electric supplier at the time of deregulation, the subsequent electric supplier, and the terms and length of the agreement.

As the initial contracts expired, the market reacted in several ways, with most of the changes being driven by the electric suppliers. The number of electric suppliers increased with some of the initial suppliers dropping out and a larger number of newer suppliers entering the market. The terms of proposed agreements are changing as well with shorter terms the norm although there are instances of longer term (4 years) agreements currently in place. The rate structures

have been modified by the suppliers to reduce their risk to market fluctuations in the cost of raw materials. A number of systems and municipalities are foregoing joint purchase cooperatives and seeking bids directly from suppliers.

What is beginning to emerge is a fractured market with a relatively large number of suppliers willing to enter the market with a variety of programs and rate structures while systems and municipalities make decisions to retain membership in their existing cooperative, changing to a different cooperative or seeking suppliers on their own.

This market, with a large number of variables, is missing one key element, a vehicle for systems and municipalities to share and learn from other systems and municipalities. This information would list the market supplier, the terms of the agreement, and if the system participates in a cooperative effort, and if so, which effort.

As the market fractionalizes into one with a large number of suppliers and a large number of menus by which systems and municipalities can meet their electric requirements, the sharing of information is of critical importance. A website continually updated with information on the particulars and issues of the topic is needed.

a. Energy Use & Generation:

Energy use and its generation are two of the most important areas in which significant cooperative efforts can be undertaken in the future as technology matures. With a strong consultant/engineering team associated with the systems, issues such as interior and exterior lighting and power generation should be explored and developed.

b. Case Study: Power Generation

The Western Berks Water Authority is in the process of investing several million dollars to install a solar panel field at its treatment plant to generate electricity to meet their own needs.

This effort should be closely monitored with its potential to be replicated throughout the County to determine its cost benefit ratio.

Summary of Recommendation:

- Prepare case studies of different programs to purchase electricity regardless whether electricity is purchased through a joint program or individually.
- Establish data base with the following information:
    - Joint purchasing forum
    - Rate paid to electric supplier
    - Amount of power purchased annually
    - Type of power used (treatment, pump station, etc.)

A.8. Sludge Management

Sludge Management; 1998 Report Discussions and Recommendations:

The 1998 study stated that “A coordinated sludge management program holds the possibility of a comprehensive solution to this on-going operation need while making the best use of available resources (landfills and land application areas) and minimizing the cost to all systems.”

The 1998 report did not make any specific recommendations.

Sludge Management; 2010 Survey Findings and Recommendations:

Findings:

The ultimate disposal of sludge remains one of the more perplexing issues in wastewater management. The type of wastewater treatment process defines the characteristics of the end product of that process, sludge.

Generally speaking, each system manages the disposal of sludge in concert with the treatment system. Cooperative efforts on this issue have been limited until the recent construction of the Exeter bio solids dryer. Exeter is actively seeking other systems to utilize the Exeter system as their final sludge disposal method.

Prior to the Exeter system, cooperative efforts were limited to those systems that transferred their sludge to other treatment plants such as the Valley Forge Sewer Authority, Hazelton Joint Sewer Authority or the Pottstown treatment plant for further treatment and disposal. Other methods for the ultimate disposal of sludge include land application at approved sites and disposal at approved landfills.

The addition of the Exeter system offers yet another alternative to sludge disposal, one that could lead to an environment in which systems have a distinct advantage in negotiating with those who would provide the service of ultimate disposal. The key to the success in reducing the cost of sludge disposal is the Exeter system’s ability to obtain sludge from systems that currently dispose of their sludge by other methods such as landfills and land application.

If any system is successful in attracting sludge from systems that currently utilize landfill as their preferred method of disposal, landfill operators would most likely have to reduce their fees in order to remain competitive and to keep existing customers and to attract other systems. Joint bidding of disposal at landfills should put additional pressure on landfill operators to maintain or reduce costs.

One or more joint disposal programs should be established based on the method of disposal. Systems would jointly bid the hauling of sludge to its ultimate disposal location and/or jointly bid for multiyear contracts for land application sites and/or landfill disposal sites. Joint bidding opportunities for the disposal of sludge at other treatment plants could also be explored.

Summary of Recommendation:

- Expand data collection to determine location of ultimate disposal site.
- Develop standardized hauling specifications separately for landfill applications, wastewater treatment plant disposal and land applications of sludge.
- Work with systems to develop joint disposal programs based on type of disposal method and location.

A.9. SWIP Testing

SWIP Testing; 1998 Report Discussions and Recommendations:

Much of the discussion on this topic was found elsewhere in the 1998 Report although the Report did suggest that the County acquire testing equipment at an estimated cost of $1,500 (1998 dollars).

SWIP Testing; 2010 Survey Findings and Recommendations:

Findings:

It appears as though the systems have adequately addressed the issues resulting from the current regulations.

The initial phase of the SWIP program was to determine through testing what systems might be impacted by ground water. This involved the cooperative purchasing of test equipment. The second phase of the testing program specifies steps for each system to implement. These are individualized for each system.

B. Additional Discussion and Recommendations Based on 2010 Survey:

Cooperative efforts among water and wastewater systems need not be restricted to the systems, themselves. Authorities, by law, are agencies of local governments and are established to serve one or more needs of local governments. Cooperative efforts by systems can and should be expanded to include local government because the clients/users of each organization may be the same.

While several potential areas where local governments and systems can work in a cooperative manner have been discussed above, additional areas for cooperation include:

- Insurance products and coverage
- Website development

B.1. Insurance:

Findings:

Providing property, causality, liability and public official liability insurance is a requirement of both authorities and local governments. Working, cooperatively, significant savings in premiums and expansion of coverage can be obtained; and improved oversight of claims management can be achieved. Providing this insurance coverage in a soft insurance market is relatively easy for individual authorities and local governments, however, in tight/hard insurance markets, premiums can significantly increase, and coverage often reduced. A cooperative insurance program can address these two issues in favor of the participating agencies.

Worker's comprehensive insurance is a requirement that is highly regulated by the state. Options for cooperation exist and are often taken advantage of by systems and local governments.

Health insurance costs are becoming the single most important expense element in many organizations. The Berks County Cooperative Purchasing Council (BCCPC) been successful in establishing a program to provide joint health insurance to systems and municipalities. This cooperative effort has lead to a reduction of health care costs. There are additional models that provide for health insurance through cooperative efforts. These models may be of interest to those system/municipalities that currently do not participate in BCCPC's programs and possibly to some systems/municipalities that are currently participating in the BCCPC programs.

Summary of Recommendation:

- Sponsor and produce forums in which providers of joint insurance programs of all types could present their programs for all systems to review and consider.
- Provide information on website regarding cooperative insurance models.

Case Study: Delaware Valley Insurance Trust, Delaware Valley Workers Compensation Trust & Delaware Valley Health Insurance Trust

The above listed trusts serve as models for successfully providing insurance coverage with significant cost savings realized among the joint participants. The three, located in southeastern Pennsylvania, provide their members with a high level of coverage at costs far less than the market costs and the costs of many other cooperative insurance efforts.

There are several member communities in the Delaware Valley Workers Compensation Trust that, through a combination of reduced premiums, returns, discounts, joint trust discounts and other trust programs will not have any increased cost for workers compensation or property, causality, liability insurance in 2011. There is no other cooperative venue that matches these benefits, costs and/or resources. In addition, members of the trusts are provided with safety grants each year used to support efforts to improve worker safety.

In the matter of health care, the Trust replicates the existing health care plans and contracts with large regional providers for coverage. There is no requirement for a minimum number of participating employees. Average annual savings range from 12% to 18% over the first year. Subsequent health care annual rate increases have ranged from between 5% to 7%.

A strong effort to make use of these types of trust programs should be a priority. There are two potential avenues to take, one would be to participate directly with each trust and potentially opening a Berks County trust office, the second to take the trust model and develop and manage new similar Berks County trust organizations. Also, there may be similar efforts within the County that municipalities or authorities may be able to participate in.

B.2. Website Development:

Findings:

Time, distance and the lack of personal contact are all working against system and municipal co-operative efforts. A well designed web site, available to all systems and municipalities, would overcome many, if not most, of the communication and marketing obstacles to the expansion of cooperative efforts. Information regarding the "who"," what", "when", "where", "why" and "how" of each cooperative effort; and most important, the lessons learned, positive and negative, are invaluable.

What is not available is a single point of reference where systems/municipalities could access information and/or share knowledge and experiences with other systems/municipalities. The inability of appointed/elected officials and public administrators to obtain the most routine information is a costly failure, costly in the missed opportunity to participate in cooperative ventures, and costly in the time lost in obtaining data, information, and knowledge through repetitive telephone, email or paper surveys.

The website would serve as a central clearinghouse for case studies of each cooperative effort, provide information regarding current opportunities for joint purchasing of materials and supplies, and act as employee training forums.

The website could:

- Be owned by the systems/municipalities who utilize it. Maintenance of the site would be paid for and controlled by the Planning Commission.
- Be owned by the systems/municipalities who utilize it. Maintenance would be a shared cost between the County and the local educational institutions as the website could be used, in part, as an education vehicle.
- Be owned by the County and administered by the Planning Commission. Data, information and experiences could be uploaded by systems/municipalities. A steering committee composed of system/municipal administrators, County administrators and educational institution administrators would be responsible for the development of the web based system.

Summary of Recommendations:

- Establish a website for systems/municipalities to share information, data, and knowledge as discussed throughout this report.
- Establish a web site steering committee as described above.

C. Discussion and Recommendations Based on Conversations with Stakeholders:

The data in the 2010 survey was not specific enough to determine whether or not those systems that committed/sold EDU's to potential users upon land development approval were accounted for in future capacity calculations. Also it cannot be determined whether or not once a commitment was made, if there was a time limit on the specific commitment, and most important, the ramifications of non compliance should bankruptcy or defaults occur.

It is important for the systems to track EDU's committed through land development approvals as this capacity may not be utilized for years, and ,occasionally, beyond the Chapter 94 reporting period. The tracking of this information will enable the system to recognize years in advance when the potential for hydraulic capacity is to be reached.

A second related capacity issue arises with abandoned nonresidential parcels. It is conceivable that there are abandoned parcels whose prior occupants discharged significant volumes of waste water. If these situations occur, how they are addressed in the Chapter 94 report, especially if the parcels/users have been abandoned for a significant amount of time, is of critical importance.

If the volume of wastewater flow was significant in prior years but zero at the time of reporting, the Chapter 94 Report could be providing an inaccurate representation of the available capacity that might not be recognized until a hydraulic overload occurs.

A program to establish the appropriate EDU usage to each parcel of land should be established. Parcels that are abandoned, both residential and nonresidential would be assigned EDUs. In the case of nonresidential properties, the assignment of EDUs would be based on the most recent economic activity and water usage data. This data should be represented in some fashion in the Chapter 94 report.

While it would not be appropriate to assign EDUs to vacant properties or properties underutilized from a zoning perspective, an analysis of the system capacity, in terms of EDUs and the available land for economic development purposes, would be extremely beneficial. The analysis should include input from the Countywide and local economic development agencies.

Of critical importance, is the additional capacity available in wastewater treatment plants for industrial and commercial use. As part of this update, the Berks County Planning Commission

identified those areas where zoning is currently available for industrial and commercial use. (See Appendix C)

A complementary study should be designed and implemented to include the identification of those vacant commercial and industrial sites and determine the actual capacity of each vacant parcel of land when the parcels were active.

If the economic development agencies had this type of information available on a system wide basis throughout Berks County, coupled with the appropriate zoning data, and the relative position of the elected body with regard to the types of uses acceptable, marketing Berks County's economic development would be simplified and accelerated.

An additional study would calculate the available capacity in each system for nonresidential users. This study would make use of the report approved by DEP when the permit for each treatment plant was issued. These reports contain data relative to the design capacity of the treatment plant assigned to nonresidential users.

Potential users must recognize that systems are in fact business organizations established to provide product and services to their users; more so, they have the responsibility and obligation to their customers to protect the investment in each of their facilities. The reservation of capacity for future users has a cost, one that must be borne by the user who wishes to reserve the capacity. However, other possible users who have not paid for the reservation, but who may desire capacity, may be in a position to put unused capacity to use more quickly than those users who have paid for the reservation. In these instances, the systems would lose potential revenue which would be detrimental to the existing users of the system.

Summary of Recommendations:

- Catalog all parcels previously used for industrial and commercial uses but now vacant.
- Determine and assign sewage capacity for each parcel based on prior usage.
- Identify all parcels in each community that are zoned for commercial and industrial uses.
- Determine industrial and commercial uses for each parcel that are acceptable to local government.
- Determine available sewage capacity in each system taking into consideration capacity allocated to land development plans approved but not yet completed and capacity allocated to vacant industrial and commercial parcels.
- Create data base to include parcels which are zoned for commercial and industrial use, acceptable commercial and industrials uses, immediate sewage capacity for redevelopment parcels, and available system capacity for new development.

- Establish available system capacity for potential nonresidential users based on a plan submitted to DEP in the permit application taking into consideration the capacity reserved for the redevelopment of vacant, unused nonresidential parcels.

- Establish framework for reservation of capacity for industrial and commercial users.

D. Further Thoughts and Observations:

D.1. Trends:

The 1998 study recommended a number of areas where cooperative effort among water and wastewater systems would be beneficial. However, in the intervening years, cooperative efforts often took a back seat to the pressing need of addressing the concerns as expressed by state and federal regulatory agencies. The concerns of the regulatory agencies were largely met through the modification and expansion of treatment plant capacity in systems throughout the County.

A few cooperative efforts have been undertaken in recent years, notably the sharing of manpower and equipment in the Western Berks Water Authority service area, the joint purchase of chlorine by Western Berks Water Authority and Hamburg Municipal Authority.

However, of great importance is the emergence of two trends:

1. Increasing reliance on the private sector to operate and manage treatment plants and systems,

2. Lack of communication among elected officials, appointed officials and public administrators in the establishment and communication of specific goals and objectives.

D.2. Failure to Establish Process:

The failure to establish a process to determine outcomes and evaluate the effectiveness of programs also needs to be addressed.

The lack of communications among the several parts is evidenced by:

a. The absence of I&I programs,
b. The disbandment of authorities and the increase in local economic development committees.

a. Absence of I&I Programs:

The lack of comprehensive I&I programs established and managed in order to address the substantive issue of I&I throughout Berks County is a cause for concern. Infiltration does not only occur in public transmission mains but also in laterals and through illegal connections such as sump pumps and roof drains.

The comment, all too often expressed by system operators, was that the treatment plant had sufficient capacity to handle I&I.

A false assumption under this scenario is that the volume of I&I will remain constant over a period of time, not recognizing how water found its way into the collection system; more important, not acknowledging the disruptive forces of water. Ground and surface water seek the path of least resistance and will find its way into collection systems if not controlled and/or mitigated.

The failure to recognize the cost, particularly the future dollar cost, could be catastrophic to any system. Administrators of these systems are often concerned about the cost of maintaining the system with deferred maintenance the preferred alternative. Unfortunately the perceived inability of the present customer to pay for the current maintenance needs of systems is leading to the inevitable action that the higher future maintenance costs will be borne by future customers whose ability to pay may be the same as or less than current customers.

b. Disbandment of Authorities, the Increase in Local Economic Development Committees and Failure of Communication:

Perhaps the most significant area for discussion is economic development. There seems to be several independent agencies/authorities charged, or they think that they are charged, with redevelopment and new economic development; that is, to improve the quality of life in its local municipality and/or Berks County through business and/or economic development. There is a perception among some members of these different agencies/authorities that local governments are impeding economic development.

On the other hand, local governments perceive economic development agencies as serving their own needs and not recognizing the goals and objectives of the local government and their constituents and clients. This situation leads a high level of frustration on both parties, so much so, that the economic development agencies/authorities have a substantial negative opinion of local government while local governments are appointing local economic development committees to serve their own needs. The result of this discord is that companies that are willing or want to relocate to Berks County are looking elsewhere.

The disbandment of authorities by local governments comes about only through the inability of authority members to understand and achieve the goals of the local government through imaginative, cooperative plans and programs. Authority disbandment is not uncommon, and occurs throughout Pennsylvania. What is important to learn is the reasons for disbandment and apply a lessons learned approach to similar issues in the future.

Pennsylvania is a state with a strong tradition and dependence on local control of government. The failure of authorities and economic development agencies to recognize this fact and to ignore the concept of local control will result in greater failure and frustration.

To overcome these disconnects small, frequent, informal meetings with representatives from all of the agencies who might interface with local government in the area of economic development

need to be held. This will provide a platform for the local government to explain their goals and objectives and to discuss how each of the attending agencies can help the local governments achieve their goals. If these meetings do not occur, the situation will deteriorate to the point where there is no regionally planned development and/or redevelopment.

Summary of Recommendation:

- Establish regular small meetings with local government officials, system administrators and appointed officials, County planning commission staff and economic development officials to discuss specific economic development opportunities acceptable to local government.
- Establish framework for continual communication among all parties as opportunities for economic development occur.
- Establish framework to ensure local data regarding tapping fees, user fees, sewage capacity reservation programs, available redevelopment parcels with available sewage capacity, and available sewage capacity is available to planning commission staff, economic development agencies and local government administrators.

D.3. Storm Water Management:

On a County, regional, sub regional, and/or local municipal level, when discussing water and waste water improvements, studies must reference overall integrated water quality improvement strategies. These strategies should analyze the potential for impacts from waste water treatment systems to local ground water and surface water bodies. Both waste water and stormwater improvement options should be considered. The topic of “Stormwater Harvesting” should also be discussed; that is, how best to use stormwater and rainwater as a supplemental water supply.

It is neither this study’s scope nor purpose to discuss this in detail, only to mention that it cannot be ignored in any conversation regarding water quality improvements and co-operative municipal efforts.

In the early 1990’s the EPA began a nationwide effort to address water pollution issues associated with stormwater discharges. The initial effort included large and medium communities (municipalities over 100,000 in population) whose volumes of stormwater in their municipal separate storm sewer system (MS4) were very large. This program was identified as Phase I. Phase II of the federal program, with active implementation in 1999 addressed smaller communities (under 100,000). Phase II resulted in a number of communities receiving their initial MS4 in 2002 – 2004.

However, and very important, these initial MS4 permits, which have been extended in Pennsylvania until midnight, June 11, 2012, are, in most cases, much less demanding than the proposed MS4 permits intended to be issued to Pennsylvania municipalities in 2012. The

second round permits will impose dramatically more stringent requirements than those included in the current MS4 permits.

Therefore, thought should be given to creating or joining a regionalized storm water coalition.

Case Study: The Pennsylvania Stormwater Coalition

The Pennsylvania Stormwater Coalition is a coalition of over 60 municipalities committed to being constructive partners with the EPA and DEP in developing and implementing an effective stormwater program within their jurisdictions. The Coalition identifies certain distinct categories of legal issues that constrain a municipality's ability to perform the stormwater management role envisioned by EPA and DEP.

As of the date of this report, 23 Berks County municipalities have joined the coalition.

D.4. Source Water Protection:

While discussing overall integrated water quality improvement strategies and the need for cooperative municipal efforts, source water protection must not be ignored. It must also be understood that source water protection and watershed management present unique challenges for municipal water systems.

Residents, for the most part, take for granted that a plentiful supply of high quality drinking water will be available. However, drinking water sources, whether from ground water, or surface water, or both, are vulnerable natural resources that need to be protected.

Water is critical to all aspects of our lives and it is important that we ensure there is a safe and reliable source of water for all our uses - now and in the future. Drinking water originates from lakes, rivers, streams or underground sources (aquifers) located across the state. All of these sources of water are linked in a watershed through the water cycle**.** These sources can be easily contaminated and have a limited tolerance for stress. Long term problems can develop that are costly or even impossible to correct. Therefore, governments need to protect sources by managing the influences on them.

The Pennsylvania Department of Environmental Protection has created a process to help municipalities develop source water protection plans to help to prevent the pollution of the ground water, lakes, rivers, and streams that serve as sources of drinking water for local municipalities. DEP recommends the enactment of ordinances to specifically protect both source water (groundwater) and surface water (reservoir).

DEP conducts assessments of the susceptibility of public water system water sources to potential sources of contamination. These assessments have been done in accordance with Pennsylvania's Source Water Assessment and Protection Program and the Safe Drinking Water Act. The previously existing Wellhead Protection Program is considered the cornerstone for the assessment of ground water sources serving public water systems. The purpose for conducting

the assessments is to educate the public and promote the development of local, voluntary source water protection. DEP offers a variety of support for municipalities, water suppliers and the public to develop these local source water protection programs.

According to published documents, as of December, 2010, there were seven (7) Berks County public water systems with source water protection plans in effect; Bernville Borough Authority, Kutztown Borough, Lyons Borough Municipal Authority, Maxatawny Township, Reading Area Water Authority, Western Berks Water Authority, and Womelsdorf/Robesonia Joint Authority.

Case Study: Northeast Berks County Wellhead Protection Project

The Borough of Kutztown, Lyons Borough and Maxatawny Township established the Northeast Berks County Wellhead Protection Project. The Project received a Source Water Protection Grant in March, 2004. The grant stipulated that the Project would include:

- Establishing a steering committee with public participation
- Wellhead protection (WHP) area delineations
- Contaminant source inventory
- WHP area management and commitment
- Contingency planning
- New Sources

To insure public participation both on the Steering Committee and in the community the Project is located within it is necessary to take several different approaches in developing long-term goals. These approaches range from education, both in schools and through community events, stormwater management/recharge protection to update existing Wellhead Protection Zone Overlay Districts.

D.5. Emergency Preparedness: PaWARN

Given the volatility of political and social events, the topic of cooperative effort in emergency preparedness must be mentioned and should be addressed.

The PA Water/Wastewater Response Network (PaWARN) has been organized to “support and promote statewide preparedness, disaster response, and mutual air assistance for public and private water and waste water utilities from natural and human-caused emergencies.” The network seeks to restore water and wastewater service as soon as physically and logistically possible.

Currently, state-wide, there are over 50 systems in the network. Area members include Hamburg Municipal Authority, Kutztown Borough Water and Wastewater, PA American Water Company, Reading Area Water Authority, United Water of PA, and Western Berks Water Authority.

Case Study: PaWARN

PaWARN assists municipal emergency management with those emergencies involving water and wastewater systems. It can quickly locate personnel and equipment specific to water and wastewater systems.

D.6. Use of a Countywide Financing Agency:

The use of an agency/authority to provide capital improvement financing for water and wastewater systems and for other local government units could be a very important step in addressing the regional infrastructure needs throughout Berks County.

- This authority(s) would be a catalyst for developing patterns of intergovernmental cooperation.
- It could stimulate cooperative efforts by providing loans and/or grants to systems and municipalities based in large part on the applicants' demonstration of cooperative efforts. The greater the cooperative effort, over a longer time period, the more financial assistance could be provided.
- It would provide needed capital improvements while enhancing the quality of life and the economic well being of the local communities.
- It could save County taxpayers a significant amount of money.

There are a number of existing authorities within Berks County that are capable of doing this type of funding and may be interested in discussing the possibility of being the vehicle for it.

Case Study: Monmouth County Improvement Authority (MCIA)

Under the provisions of the New Jersey Municipal and County Utilities Authorities Law, the Monmouth County Board of Chosen Freeholders established the Monmouth County Improvement authority (MCIA) in 1986. The charter created MCIA as a conduit "to cost saving alternatives to the traditional methods of public capital finance" for municipalities, regional and local utility authorities and other government entities. MCIA also assists the various government and educational entities in implementing decisions in an efficient, cost-effective, and timely manner.

According the MCIA management, these activities have saved Monmouth County residents tens of millions of dollars while implementing much needed capital improvements while enhancing the quality of life and the economic well being of the local communities.

MCIA has exceeded $1 billion in financing.

MCIA programs include Pooled Bond Anticipations Notes, Pooled Capital Equipment Lease Program, Financing and Preservation of Open Space and in particular, Stand-Alone Financing and Refundings.

Regarding Stand-Alone Financing and Refundings, MCIA can tailor a financing to meet the specific needs of municipalities, utilities and school districts. These stand-alone financings enable participants to take advantage of the MCIA's fine reputation in the bond market, its unique financing flexibility to conduct negotiated bond sales and its ability to structure repayment of the debt to accommodate the participant's future capital improvement needs.

The MCIA has designed and implemented stand-alone financing to fund the building of new schools, town halls, municipal libraries, water and sewerage treatment plants and other public facilities, and open space preservation.

In addition to the interest savings these entities have realized by financing through the MCIA, several have used the Improvement Authority to refund the principal balance when conditions in the tax-exempt bond market were favorable.

According to MCIA management, their financial personnel constantly watch the bond market for improvements in interest rates and will move quickly to obtain Local Finance Board approval when market conditions improve. Generally, the MCIA does not conduct a refunding unless the borrower will realize a true interest cost savings of at least 3%. (See also Page 6, *Debt Management*)

According to published reports, in a 2006 Pooled BANs Program, MCIA “helped six municipalities save more than $900,000.00 in converting Bond Anticipation Notes and funding new ordinances totaling $23,760,000.00”.

Case Study: Delaware Valley Regional Finance Authority (DVRFA)

In 1985, under the provisions of the Pennsylvania Municipal Authorities Act, the Counties of Bucks, Chester, Delaware, and Montgomery organized the Delaware Valley Regional Finance Authority to provide loans to local government entities for capital improvements.

Since its creation in 1985 DVRFA:

- Has provided approximately 410 loans,
- With an aggregate principal amount of $2.65 Billion,
- To more than 170 difference government entities.
- As of June, 2010, approximately $1 billion of loans to 127 municipalities in 12 different counties were currently outstanding.

Each loan is secured by the full faith, credit, and taxing power of the local government unit.

Since 1985, DVRFA:

- Has issued $1.2 billion of bonds,
- Entered into $1.5 billion of interest rate swaps,

The loan program has been successful because, according to published data:

- The costs of issuance are typically 50% to 75% lower than bonds.
- Interest rates are .10% to .90% lower than bonds or banks loans.
- Borrowers have total flexibility in structuring their debt.
- Borrowers can avoid the churning of refunding.

D.7. Importance of Water and Sewer Cooperative Efforts and Regionalism:

It is imperative for Berks County that there be an effective and implementable improvement strategy in the establishment of goals and objectives, including limitations and constraints, with all parties understanding their respective roles in order that the County be competitive in the challenging current and future economic climate.

There is also a need for a comprehensive and integrated approach to municipal and regional services and the protection of natural life-supporting and recreational resources. Therefore, a regional, multi-disciplinary approach should always be emphasized in order to understand and to mitigate negative impacts.

D.8. Sub-regional/Inter-municipal Cooperation vs. Regionalism:

One does not preclude the other. It must be noted that resistance to regionalism is not uncommon. People do not disagree with the concept or even the resultant benefits of regional governance, but they see regionalism as a step toward centralization of power and a shift of this power from local governments and/or authorities. Therefore, this resistance usually comes from the self-interest of local officials (appointed and/or elected), public and private interest groups, and any others who benefit from strong, local autonomy and regional fragmentation.

D.9. Sub-regional/Inter-municipal Cooperation:

As an arrangement between two or more governmental entities for accomplishing common goals, providing a service, purchasing supplies and/or equipment, or solving a mutual problem, inter-municipal, sub-regional cooperation is one of the most important strategies for achieving efficient and effective service delivery, and has become one of the more popular forms of service restructuring.

Sub-regional functional consolidation involves cooperation across jurisdictions for a common service commonly seen with water and sewer districts. However, the challenge of functional consolidation is, at times, the inability to address issues that cross functional boundaries.

Case Study: The Berks County Cooperative Purchasing Council (BCCPC)

It is important to understand that as an existing, operating entity with approximately seventy (70) members, the Berks County Cooperative Purchasing Council (BCCPC) provides a strong,

existing operating structure for governmental and public education providers to join together to purchase goods, supplies, and/or services, and to share information and, most important, purchasing expertise.

The BCCPC is too important to relegate its mention to a bullet point.

The Council is administered by the Albright College Center for Excellence in Local Government.

Its membership includes:

- The County of Berks
- The City of Reading
- Sixty-Three (63) local municipal governments and authorities
- Five (5) educational entities

BCCPC Successes and Challenges:

Organized approximately nine (9) years ago by Albright College's Center for Excellence in Local Government, BCCPC facilitates the purchase of more than $3.5 million in contracts per year. Some programs, such as the electric contracts, while well intentioned, negotiated and designed, could not foresee the effects of deregulation on the rate structures of prime providers. However, other contracts; e.g. rock salt, (over $1.2 million) have been highly successful providing members with equal or better pricing, and, most important, a better quality of product with more timely delivery and/or pick up.

- BCCPC success is dependent upon:
    - Receiving continued and/or expanded technical support and direction from the County, city and its other members.
    - Identifying and developing new opportunity strategies.
    - Continued support, financial and otherwise, to develop an energized membership.

BCCPC Current Contracts:

- Automotive parts & Supplies
- Bond Paper/Stationery
- Compost/Yard Waste
- Electricity
- Fire Extinguisher Service
- Fuel and Heating Oil
- Furniture (HON brand)
- High Intensity Road Signage
- Line Striping Service
- Motor Oils & Lubricants
- Rock Salt

Case Study: US Environmental Protection Agency Report "Joining Forces on Solid Waste Management"

The above-captioned report is the product of a joint venture between the National Association of Regional Councils (NARC) and the Environmental Protection Agency's (EPA's) Office of Solid Waste.

The report notes that because of limited resources, individual rural and small communities are finding it more difficult to provide "all of the services for which they are responsible, from public works projects to municipal solid waste (MSW) management".

- **Why sub-regional co-operation:** According to the report, one of the most useful strategies which has developed in MSW management is the sub-regional approach whereby neighboring towns and communities "pool resources to address local problems" and are thereby able to accomplish together what is difficult to do individually; specifically, municipal solid waste management, which is "traditionally a function of local governments".
    - Managing MSW has grown increasingly complex.
    - Rural and small communities in particular find it difficult to fulfill their responsibilities.
    - Rural and small communities often have lower tax base with limited revenues for financing waste management services.
    - Changing status quo can be complex and costly.
- **Advantages of sub-regional, multi-jurisdictional strategies**: By working together, "effective recycling programs (including the marketing of recyclables and the purchasing of goods with recycled content), state-of-the-art landfills, and waste-to-energy facilities are within reach of small communities with small resources." The EPA delineates the following advantages to rural and small communities when being faced with complex MSW management issues:
    - Greater economy of scale: By combining financial, administrative, personnel, and equipment resources the cost of projects, such as developing waste characterization studies is spread among more than one community and/or authority.
    - Enhance cost-effectiveness of community recycling efforts: Communities may be able to command a better price for the collected recyclables if they have a large enough quantity in inventory. Buyers often specify minimum quantities as contractual requirements.

- Co-operative, sub-regional purchasing agreements may make “buying recycled” more cost-effective. Widely used recycled supplies and products can be purchased in larger quantities and at lower prices when resources are pooled.

- Increased financial support: Sub-regional cooperation can provide greater leverage in obtaining the financial resources needed for solid waste management planning and implementation activities. “For example, many states give priority to regional efforts when disbursing grants and other forms of financial support for solid waste projects.’

- Increased flexibility: Because of the greater resources available and the improved economies of scale, sub-regional co-operation opens up new waste management possibilities. “With more opportunities available, communities can develop strategies tailored to their specific needs and concerns.”

- Environmental improvement: Sub-regional co-operation offers “access to state-of-the-art technologies, which can result in enhanced environmental protection for many jurisdictions”.

- **Challenges of sub-regional, multi-jurisdictional co-operation:** According to the EPA’s joint report, even though sub-regional/multi-jurisdictional cooperation offers many advantages, there are several challenges:

  - Potential partners can have different MSW management goals. While neighboring communities share many common solid waste management needs and concerns, “disparities in population, geography, industrial base, or other characteristics may make it difficult for communities to agree upon specific regional projects”.

  - Multi-County, sub-regional/multi-jurisdictional co-operative programs can face varying regulations. Sub-regions that straddle one or more counties may need to resolve issues raised by contradictory or conflicting regulations.

  - Potential inequities can exist among neighboring communities. Communities considering sub-regional co-operation must recognize “that the costs and benefits of regional projects, although shared, will not necessarily be identical for all communities. Tradeoffs might have to be made”. For example, a community sending its waste to a facility shared with its neighbor, may benefit from not having to site and manage a landfill within its jurisdiction. However, it probably will be subject to fees levied by the community in which the waste management site is located. While the community hosting the regional facility bears the financial costs and the potential conflicts associated with the waste facility within its jurisdiction, it is likely to receive benefits such as host fees and free local disposal.

- Hauling waste across jurisdictions can cause conflicts. Sub-regional co-operation may require that waste be “transported over long distances and through neighboring areas. Communities on routes leading to a regional solid waste facility might see an increase in traffic. Concerns over the resulting congestion, pollution, and roadway wear and tear could create conflicts among communities”.
- However, by acknowledging the potential obstacles up front, communities can take constructive steps to overcome these challenges

D.10. Definition:

It is important to have accepted, well defined terminology inclusive of authority, efficiency, equity and accountability, because comprehensive, well planned, and clearly articulated comprehensive reforms provide effective strategy in the areas of accountability, equity and authority. Other strategies such as loose intergovernmental service agreements, functional transfers and multipurpose area-wide districts may be less effective, less accountable and lacking in equity.

In order to implement the changes more efficiently and effectively, some special preparations must be required which would give voters a periodic opportunity to express their desire to study options.

D.11. Public-Private Partnerships for Water and Wastewater Systems (PPPs, 3Ps, or P3s):

It is not our purpose in this report to justify the use of a Public-Private Partnership, rather the writers are simply encouraging the consideration of P3s in any discussion regarding the efficient and economic water and wastewater system infrastructure and delivery improvement.

There is no recommendation, made or implied, to turn over or to sell publically owned authorities to private entities.

We state the following “Advantages” and “Disadvantages” with the following caveat: *these relationships must be studied and structured very carefully with open transparency or they are doomed to failure.*

a. Advantages:

With current financial pressures local governments have started to investigate what “assets” they can lease without sacrificing public policy goals.

A local, municipal water or wastewater system may be high on the list of assets that could be leveraged for a large up-front payment. Public-Private Partnerships (P3s) or the privatization of water and/or wastewater systems can put the responsibility in the hands of the private party to upgrade infrastructure and maintain compliance with ever-increasing environmental regulations.

Some would argue that a P3 shifts the responsibility for infrastructure investment to the party best able to mitigate risk.

Supporters will argue that when governments operate a system, public pressure and local government policy/agenda may keep rates artificially low with the result of “lagging” infrastructure investment. Supporters will continue that a private company with operational and maintenance risks will more likely avoid replacing parts with cheap alternatives with shorter useful lives.

They maintain that institutional investors including pension funds see investments in infrastructure such as water and wastewater systems as attractive investments due to the stable demands for the products and services. However, they argue, the tax-exempt bonds floated by local governments/authorities are of little or no interest because they are tax-exempt and have a lower yield for these investors.

To them, taxable loans to private operators are a better fit for these institutional investors. Further combining with other water or wastewater systems create economies of scale.

A P3 process must be established:

- The local government must articulate the public policy goals.
- Bidders must be given an accurate, detailed description of the condition of the system.
- A more complete bidding package may result in higher bids because of a greater certainty.
- RFP should contain a form of Concession or Asset Purchase Agreement to be used by all bidders.
- Ensures that the stated public policy goals will be achieved and that all of the bidders are bidding on the same transaction.
- Know and perform complete due diligence on the financial strength of all bidders.

Other non-financial factors of concern should also be studied:

- Does the bidder control the source of water with the quality desired?
- Review environmental compliance records.
- How will climate change effect water delivery/supply?
- Is the entire process totally transparent and will it remain so in the future?

b. Disadvantages:

- For-profits require taxable financing.
- Even though P3s minimize dependence on public revenues there is a loss of public control over operation.
- Even though the private entity assumes more of the environmental and infrastructure risk, limits on rates and charges must be set by contract.

- Even though P3s may represent a large, new source of funding, future rates and charges may be higher than if the system remained in public ownership.
- Even though the private entity assumes the long term risk and the operation and maintenance costs, public sharing in future net revenue gains is limited with difficult contractual issues.
- Tendering and negotiations:
    - P3 contracts are typically much more complicated than conventional procurement contracts.
    - There is a need to anticipate all possible contingencies that could arise in such long-term contractual relationships.
    - There are typically very significant legal costs in contract negotiation. It has been estimated that total tendering costs equal around 3% of total project costs as opposed to around 1% for conventional procurement.
    - The cost of both successful and unsuccessful bids is, in effect, built into total project costs.
    - The costs of contract re-negotiation are often high.
- Contract renegotiation:
    - Given the length of the relationships created by P3s and the difficulty in anticipating all contingencies, there may be a need to renegotiate some aspects of the contracts.
    - Even though contractual provisions detail how variations are to be priced, given the term of the contract, it is almost inevitable that unforeseen and unanticipated circumstances will arise.
- Performance enforcement:
    - One of the difficulties with service delivery performance specification is that, at times, performance has dimensions which are hard to formulate in a way that is suitable for an arms-length contract, such as, maintaining good customer relations, and not creating public relations blunders which negatively impact the public not the private entity.
- Political acceptability:
    - Given the difficulty in estimating financial outcomes over such long periods, there is a risk that the private sector party will either go bankrupt, or make very large profits. Both outcomes can create political problems for the government, causing it to intervene.

c. Satisfaction with existing Water/Wastewater P3s:

The use of P3s for water and wastewater services has been much (at times, heatedly) debated; both praised and challenged. A published 2005 report presented the results of interview
s of public entities that contracted the day-to-day management, operations, and maintenance of their water and/or wastewater facilities to a private partner, in whole or in part. The information is as follows:

- 31 systems throughout the US participated.

- Systems served populations ranging from 4,000 to 1.2 million.
- Total population covered by surveyed partnerships was 4.7 million.
- "Satisfaction with Partnerships and Partners" was "high":
    - 50% rated overall satisfaction with partnerships as "extremely satisfied. No respondents rated overall satisfaction less than "satisfied".
    - 86% of respondents that had prior partnerships awarded new contracts to the incumbent.
    - 50% rated the technical competence of the private partner as "outstanding".
    - 57% rated the quality of communications as "outstanding" with no rating less than "Satisfactory".
- "Impact on the Environment, Customers, and Municipalities" was "positive".
    - 74% rate rated regulatory compliance as better under the partnership; 22%, equal; 4%, worse.
    - 93% noted that customer complaints decreased or remained the same under the partnership; 56%, equal; 37%, less; 7%, more.
    - 92% achieved the projected, published cost savings. The other 8% were too early in the contract term to evaluate.
    - 94% of the rate changes were equal to or less than pre-partnership projections; 76%, equal; 18%, less; 6%, more.
    - 93% noted that the private partners "proactively participated in community activities above and beyond what was required in the contract".
- Employees were "generally satisfied".
    - 21% rated employee satisfaction as "extremely satisfied". All respondents rated employee satisfaction as at least "Satisfied".
    - 64% reported a decrease in the number of employee grievances; 36% equal; 0%, more.
    - 93% noted that involuntary turnover declined or remained the same under the partnership; 7% noted more.
    - 93% noted that employees had more educational and training opportunities and more professional growth opportunities with the private partner; 7%, equal; 0%, fewer.
    - 87% noted that salaries increased or remained the same; 53%, more; 34%, equal; 13%, less.
    - 60% noted that employee benefits increased or remained the same; 20%, more; 40%, equal; 40%, fewer.

D.12. Implementation: County-wide Authority and Steering Committee

a. County wide Authority:

A County-wide operating authority is not necessary to implement any portion or recommendation of this report.

The County Commissioners, the County Planning Commission, various County authorities, water and wastewater systems, local governments, residents, developers, and businesses all have vested interests in the successful implementation of effective, proactive, successful co-operative strategies. Their direct involvement in the prioritization of recommendations, and the allocation of resources, financial and political, is necessary to implement even the most obvious recommendation contained in the report.

What is possible - what is necessary - is a guiding principle from the County Commissioners of the importance placed on intergovernmental cooperation and the role of the County government in the process of expanding intergovernmental cooperation.

For most systems and municipalities, cooperation must become a way of life, whether it is sharing public works equipment when needed in informal arrangements or more formally as a member of a regional water or wastewater treatment system. Systems and local governments work cooperatively and creatively when and where the opportunities present themselves.

In many cases, cooperation is encouraged or discouraged through the perception of the participants. Local governments and systems have significant authority over their own destiny. Cooperative efforts cannot be demanded of them nor dictated to them. Cooperation can only be encouraged and incentivized; but it must be directed and managed.

b. Steering Committee:

The primary challenge for inter-municipal cooperation and regionalism is the establishment of the political and legal frameworks to represent several municipal areas.

This demands that those selected to develop the frameworks and timelines must:

- Understand the need for new regional processes, entities, and/or institutions that can and will identify regional problems, develop coordinated regional solutions, and implement those solutions,
- Understand that there is a need for intergovernmental collaboration while acknowledging the need to ensure a democratic voice. There is a need to balance efficiency, equity and democracy.
- Understand that successful regionalism may have to come from a “grass roots” effort among municipalities to work with one another, not an aggressive “top down” mandate to implement change,
- Understand that cooperation must be encouraged, local governments empowered and state and County funds targeted. If it appears that municipalities choose cooperation, there will be little political opposition.

Important:

- The steering committee must be independent, impartial, fair, and precise,
- There can be no perception of a conflict of interest or having a preset and/or “hidden agenda”,
- It must have the sole agenda of the regional development of those water and sewer systems which best benefit the well being of the residents,
- The committee must communicate clearly, effectively, and transparently,
- A steering committee may be better able to be the liaison/information source between municipalities and the economic development entities

Composition/Members:

- County Elected Official/s
- State Legislative Official/s
- County Planning Member/s
- Economic Development Member/s
- Local Municipal Elected Official/s
- Local Municipal Authority Member/s

Identify:

- Policy Entrepreneur
- Discernable and achievable incentives/benefits
- Visible advantages of regional cooperation
- Effective, clear, articulated strategies
- Methods to develop “people and management skills” on collaborative processes
- Clear and continued support by elected officials
- Most important, have an acceptance of the definition of “regional”
    - Regionalism, its definition, limitation and application
    - Inter-municipal Cooperation
    - Functional Consolidation
    - Coalitions
    - Privatization
- Need for future feasibility studies,
- Marketing Strategy (internal/external) to also include web site and social media
- Voter involvement

E. Final Comments:

- Economic development and the socio-economic systems which serve residents are based on regional socio-economic and specific marketing areas not on municipal boundaries.
- Economic and political decisions made in one municipality affect the lives and economic decisions made by residents in another.

- Numerous governmental entities transcend physical, municipal boundaries; e.g., legislative districts, school districts, PennDOT regions, and Post Office zip codes system.
- Economic, social, religious, governmental, and recreational activities already create a strong municipal interdependence.
- Economic development programs must recognize this existing inter-dependence (and need for this inter-dependence) and address development issues/challenges on a regional, sub-regional basis.
- Inter-municipal/sub-regional cooperation can redress municipal fragmentation while respecting municipal autonomy.
- Moreover, inter-municipal cooperation may increase the effectiveness of local municipal governments.
- The economies of scale derived from inter-municipal cooperation appear to be obvious; i.e., maximize use of personnel and capital equipment, distribution of over head costs, reduced costs of goods and services, increase in the quality and/or number of services, and increase in efficiencies.
- Inter-municipal/sub-regional cooperation leads to faster, more cohesive economic development.
- Inter-municipal cooperation and, where appropriate, consolidation are likely to assume greater significance as local governments and/or authorities develop ways to strengthen their financial positions while improving service delivery.
- Municipal growth has resulted in an expanded need for infrastructure and services. It is apparent that many municipal projects and services can be provided more cost-effectively when done in cooperation.
- Cooperative efforts, on a regional and/or sub-regional level, regarding water and wastewater service are paramount to maintaining future costs and quality of service.
- Cooperative efforts must continue and expand in the future, whether Countywide or regional/sub-regional, with the ultimate decision to cooperate made locally, to better serve local residents.
- Inter-municipal/sub regional cooperation must be equitable, fair and voluntary.
- The benefits of inter-municipal cooperation/sub-regional cooperation are many:
    - Cost savings,
    - Better prospects for recruiting professional staff,
    - Improvement of the quality of public services,
    - Enhanced well-being of the community and its residents,
    - Promote a sense of “community” without consideration for “boundaries”’
    - As a regional/sub-regional plan/approach, increases the possibilities and potential to attract funds from public, private or donor sources – joint approaches often have precedence over the individual,
    - Increased, more rapid economic development,
    - Enable public officials to demonstrate effective leadership on cooperative initiatives.

- Public officials must:
    - Be prepared not only to explore and identify opportunities; but to fully develop them.
    - Recognize and address the obstacles that complicate and distract the process, as doing so, will determine the success of the cooperative effort.
    - Maintain a cooperative spirit.
    - Instill a "culture of cooperation" - cooperation must be encouraged and championed by local public officials willing to build and maintain relationships with one another.
        - Interaction must be encouraged through strong leadership on the County level.
        - All County agencies that deal with local government issues on a regular basis have a unique opportunity to introduce new and enhanced lines of communication among local officials Countywide.
    - Focus on offering practical resources – much can be achieved by providing local officials with effective and practical tools that will help them through the, at times difficult, process of cooperating with one another.
        - The County must continue to develop and provide useful training programs, management guides and consultative services to encourage efforts to consolidate services.
    - Encourage and incorporate inter-municipal/sub-regional cooperation and consolidation as part of any restructuring of municipal budgets and/or debt.
        - The County must continue to develop and provide assistance both financial and consultative to local governments as they develop funding alternatives.
    - The County could provide some type of financial assistance for feasibility studies – determining the feasibility of cooperative/consolidated efforts is the important first step for local governments; but there is reluctance, more so now than ever before, to spend money on studies without a predetermined, stated cost benefit.
        - The County should establish and promote strategies for cooperation.
        - The County could expand/develop financial incentives that may go beyond reimbursing study expenses by actually subsidizing cooperative ventures.
    - However, financial incentives are difficult in today's economy,
    - Therefore local officials:
        - Must understand that cooperation/consolidation will result in efficiency, increased savings, possibility of additional funding, improvement of services, and enhance the well being of the community.
        - Must be patient, flexible and learn from failures; rather than failure precluding future cooperative efforts, "failures" can provide solutions for future success, not foregone failure.
        - Should have the forethought and courage to understand that the benefits of inter-municipal/ regional cooperation, alone, should act as incentive enough to investigate cooperative strategies.

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F. Sewer and Water Regional Meetings

As part of the process of this Update, five regional meetings were held throughout Berks County to gather feedback from municipalities and sewer and water providers. Additional information was added to the Update based upon input from these meetings, such as capacity of sewer and water facilities. All attendees were very interested in being able to access up to date information in the tables and maps and in keeping the information updated for future use.

Also, an additional cooperative idea was discussed similar to the PA WARN system. This would be a locally organized "Berks County WARN" system that would enable municipalities and sewer and water service providers to register their equipment that would be available in the case of an emergency to another entity in Berks County.

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