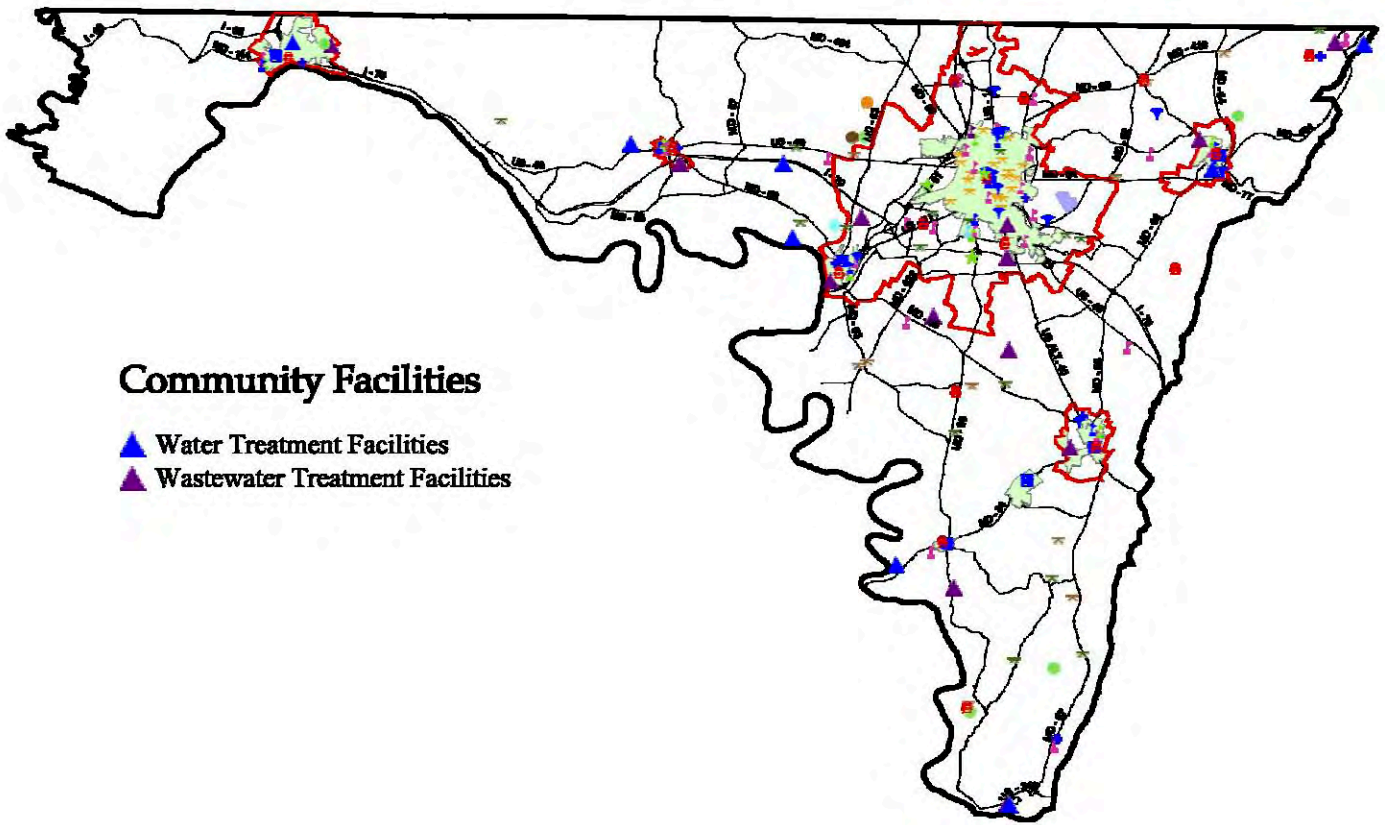


WASHINGTON COUNTY WATER AND SEWER INFRASTRUCTURE COMMISSION



FINAL REPORT

June 16, 2006

WASHINGTON COUNTY WATER AND SEWER
INFRASTRUCTURE COMMISSION
FINAL REPORT

TABLE OF CONTENTS

Introduction	1
Background	3
Executive Summary	6
Observations and Conclusions	7
Recommendations	8
Water Sources	11
Wastewater Treatment Facilities	13
Financial Considerations	18
History, Labor, Legal and Regulatory Background	22
Combination or Consolidation	28
List of Appendices	

**WASHINGTON COUNTY WATER AND SEWER
INFRASTRUCTURE COMMISSION
FINAL REPORT**

INTRODUCTION

- **Legislation establishing the Commission**

House Bill 1211 established the Washington County Water and Sewer Infrastructure Commission for a two-year term beginning July 1, 2004.

Provisions in the bill include, among other things:

“Commission shall develop a long term plan that:

1. **Identifies critical areas of need with regard to water and sewer services in Washington County; and**
2. **Addresses how to meet Washington County’s water and sewer needs through 2055, including the options of consolidation or regionalization of services, joint service agreements, or regional authorities.”**

- **Acknowledgments**

In its work, the Commission was primarily, and ably, assisted by members of the staff of the Washington County Department of Water Quality. The Commission also received support from many other Washington County and City of Hagerstown officials and staff members.

Special appreciation is expressed for the invaluable support given to the Commission in its activities by Greg Murray, Director of the Washington County Department of Water Quality, Julie Pippel, Regulatory Affairs Coordinator of the Washington County Department of Water Quality, and Julie Nichols, Executive Assistant to the Washington County Administrator.

- **Activities of the Commission**

The legislation provided for appointment of Commission members by various governmental agencies and officials and other community groups. Final appointments including the position of the Chair of the Commission were completed in late November 2004, and the Commission had its first meeting in early December 2004. The Commission was mandated by the legislation to submit an interim report by December 31, 2004 with a final

report due by June 30, 2006. The required interim report was completed and submitted as required in advance of its due date.

Active participation by Commission members was immediate and was sustained during the Commission's continuing studies and deliberations. The findings of the Commission as included in this report are the views of the entire Commission and reflect, where appropriate, views of individual Commission members where they had differing opinions or wished to expand upon or partially modify a Commission comment to more accurately express their individual view.

The Commission divided its studies among four Work Groups, each of which, upon completion of its activities, developed a report of findings. These findings were considered in the development of a preliminary working draft of the Commission's proposed final report. This working draft formed the basis for a series of discussion meetings of the full Commission to help clarify understanding of the facts. This process helped reduce repetitions and redundancies in the information considered by the Commission and as included in this final report. Based on these discussions of the findings of the Work Groups, the Commission developed Observations and Conclusions upon which the Recommendations included in this report are based.

It became apparent during discussions of the full Commission that two main focuses had been developed by the Work Groups. One highlighted capacity limitations and the critical need to deal with those limitations through immediate proper and continuing planning. The other addressed the need for cooperative/coordinated efforts between water and sewer utilities to provide some level of oversight to insure maximum benefit to the entire county from existing and added infrastructure. Both concerns are interrelated as the capacity limitations amplify the need for the close cooperation and coordination that will be essential in planning future growth and development in the county.

This report addresses the needs described in House Bill 1211. However, it is not practical to accurately determine precise needs through the year 2055. Developments in the future, beyond the time periods covered by current projections, will require active monitoring followed by appropriate actions to address changing circumstances. As detailed in this report, the Commission has concluded that, given the natural and legal limitations on water and sewer capacities, long term planning is dependent upon close cooperation and coordination among all water and sewer service providers in the county, the development of careful and intelligent planning for the use of land and other resources requiring water and sewer services, and the establishment of agreed upon and enforceable procedures to assure maximum benefits to the entire county.

BACKGROUND

In order for the Water and Sewer Infrastructure Commission to adequately address its assigned tasks, it was necessary to gain a comprehensive understanding of the related processes from beginning to end. These processes begin with the acquisition of raw water, and conclude with the return of wastewater to the environment after removal of nutrients and other pollutants. This description does not include the forces of nature that return water to the environment through the natural processes of evaporation and precipitation. Federal and State requirements provide for protection of water sources. Withdrawals from both ground and surface water sources are subject to regulatory authorization. Permitting requirements control treatment of wastewater that requires removal of contaminants and sets absolute limits on permitted discharges.

The Commission began its work with an orientation session conducted by representatives of the Washington County Department of Water Quality (WCDWQ) and the City of Hagerstown Water and Sewer Department. Following this orientation session, the four Work Groups established under the legislation began their separate activities. To establish a beginning point, each Work Group was provided a listing of documents and factors related to its primary area of focus. The activities of the Work Groups overlapped in areas. Each Work Group developed independent findings of fact which have been combined and summarized in this report of the entire Commission.

Operations of the water and sewer utilities in the county are governed by Federal and State laws and regulations that are not subject to local modification. Conducting activities in compliance with the regulations is necessary, but conducting operations in a manner that maximizes local benefit is essential. Cooperation among all facilities in the county may help assure such benefits through shared facilities, improved ability to secure scarce funding and economies of scale.

Water and wastewater facilities in the county are currently operated in accordance with Federal and State of Maryland laws and regulations. These regulations require certain permits and authorizations. Operations are subject to compliance reporting. Enforcement actions may be initiated for violations including occasional accidental incidents (e.g., partially treated sewage discharged into streams, and other events).

The City of Hagerstown operates its water and wastewater facilities under the direction of its Water and Sewer Department. Some facilities that serve several other county municipalities and other major areas of the county are fully owned and operated by WCDWQ. Certain contract services are performed for other jurisdictions/municipalities that own their own facilities by WCDWQ. In addition to certain formal agreements, both the City of Hagerstown Water and Sewer Department and WCDWQ provide assistance to each other from time to time on an informal basis.

The City of Hagerstown operates its sewer service with a centralized treatment facility located in the city's south end. Except for a small portion of the City served by the WCDWQ sewer system, this facility serves the entire City and parts of the

surrounding county. The City's Water and Sewer Department provides wastewater treatment services for some collection systems owned and operated by WCDWQ. There are formal agreements covering joint services and sewerage flow transfer between the City of Hagerstown and Washington County.

The City of Hagerstown provides water service to the entire city area and, also, to much of the surrounding county. Three smaller municipalities in the county--Funkstown, Smithsburg and Williamsport--purchase water from the Hagerstown system. None of these smaller municipalities own or operate its own water treatment system. However, they do own water distribution and wastewater collection systems and, in the case of Funkstown, its own wastewater treatment plant.

WCDWQ operates both water and sewer services in certain areas of the county and, as stated before, provides operating and management services for several systems owned by smaller municipalities in the county.

Several county municipalities operate their own water and sewer facilities using outside service providers and professional consultants other than the City of Hagerstown Water and Sewer Department or WCDWQ.

The question of regionalization of water and sewer services has been addressed in the past. Nearly 30 years ago possible benefits were included in the 201 Facilities Plan. Similar recommendations were included in the BCM study completed in November of 1992. Recommendations regarding regionalization from these studies have not been implemented. (Appendix 10)

A number of areas in the county are served by septic systems and private wells some of which could develop critical health issues and require public water and/or sewer service. The total cost to provide water and sewer services to those areas should health hazards develop is estimated at \$118 million. It should be noted that septic tank installations could increase where public sewer is not available due to capacity limitations at treatment plants.

The City of Hagerstown has determined that to protect anticipated future capacity needs inside the City it does not allow new development located outside of Washington County's Urban Growth Area encompassing Hagerstown, Funkstown, Williamsport and surrounding areas (UGA) to connect to its public water system unless it serves to address health needs or provides greater efficiency in the system. Any new developments in these areas would, of necessity, be served by wells which may be subject to contamination. This has the potential to create future health issues.

Washington County has a Water and Sewer Plan mandated by state law to be updated every three years. This plan governs the location and operation of water and sewer facilities in the entire county. The last comprehensive update of this plan was completed in 1994. County municipalities are permitted to develop subsidiary plans that are consistent with the County Water and Sewer Plan and which promote the health, safety

and welfare of those systems. However, changes to the plan are subject to approval by the Board of County Commissioners. Changes since 1994 have not been incorporated in the published plan but are tracked and maintained in the office of the County Director of Planning.

EXECUTIVE SUMMARY

Use projections for authorized water sources indicate that present supplies (based on an assumed rate of growth in service areas of four percent annually) will be adequate through the year 2026. This assumes that requested withdrawal increases are approved, that acceptable levels of water loss are maintained, that needs do not change as a result of local decisions and requirements and that source water increases are not limited due to increased needs/demands from other geographic/political areas.

Projections of wastewater nutrient loading capacities indicate that a shortfall will occur before the areas served by these facilities are fully built. At the present rate of growth, capacity limits will be exceeded in approximately twenty years. This will make it necessary to carefully plan land uses that might otherwise exceed these capacities. Improved treatment technology might result in increased capacity; however, there are no known or expected financially feasible advances that would significantly expand maximum capacities of existing wastewater treatment facilities.

It is questionable whether substantial financial savings to the various county utilities at the operating level would result by combining operations; however, combining certain administrative, supervisory and management positions might result in increased efficiency and financial savings.

Planning for system additions and expansions to serve identified needs should be removed as much as possible from the political process, relying more on engineering feasibility and design practicality. The overall land use planning and growth expectations should be controlled through the political process. However, the professional utility operators should make the determination of practical water and sewer system additions and expansions.

Regardless of other actions which might be taken as a result of this report, there is no question that the wastewater loading limitations must be seriously addressed. Immediate steps to develop cooperative approaches among all governmental bodies and all water and sewer utilities in the county are necessary to insure that the interests of the entire county are carefully addressed.

OBSERVATIONS AND CONCLUSIONS

- **Federal and State laws and regulations set controls over water sources and wastewater treatment, including nutrient loading capacity limitations which can not be modified by state and local actions. Current operations in the county are generally in compliance with these laws and regulations; however, these laws and regulations are subject to continuing change, and local management will require increasing sophistication to remain in compliance. Coordination among all operations in the county will be essential to help secure and maintain maximum local benefits.**
- **These regulatory requirements require careful consideration of available and allowed capacities. Within limits, beneficial and sustainable growth will be possible, but capacities must be considered, priorities established, and development carefully planned and monitored. This will require coordination among all water and sewer utilities and other related agencies in the county to maximize benefits to the entire area.**
- **There is no countywide process or procedures to assure maximization to the entire county of its total available capacities and resources. In certain circumstances exceptions are allowed which sometimes appear to be made in an arbitrary or capricious manner.**
- **There is limited coordination among and between governmental bodies and agencies including Washington County, the City of Hagerstown, and all other municipalities in the county.**

RECOMMENDATIONS

- **UPDATE COMPREHENSIVE PLANS**

Washington County, the City Of Hagerstown and other municipalities in the county should update their Comprehensive Plans and incorporate into those plans realistic consideration of water and sewer capabilities and adopt procedures to keep those plans updated. (They should also consider early compliance with the provisions of recently enacted House Bill 1141)

- **UPDATE THE COUNTY'S WATER AND SEWER PLAN**

The State mandated Washington County Water and Sewer Plan should be updated and the process for periodic amendments formalized. The current Water and Sewer plan updated with all amendments should be readily available to the public and all affected governmental agencies.

The updated Water and Sewer Plan should be more than an inventory of facilities. Procedures should be established to assure input from all affected entities in developing and amending the Plan. This is not just a water and sewer issue. All aspects of the county's development will be impacted by the maintenance and future expansion of water and sewer facilities

Ongoing consideration should be given to the following factors:

- Establish procedures for continuous updating which is essential to any coordination of operations
- Provide rational basis for development and expansion of water and sewer facilities
- Provide framework for dealing with regulatory authorities
- Assure congruency with Comprehensive Plans of Washington County, the City of Hagerstown, and other municipalities in the county
- Include procedures to assure an adequate and balanced mix of residential and commercial development
- Encourage or require uniformity of operating procedures and materials and equipment used to maximum compatibility
- Allow for subsidiary water and sewer plans as provided under State statute to ensure health, safety and welfare of all systems and to allow for local objectives to be more clearly enumerated/enunciated

- **OPERATIONS OF WATER AND SEWER FACILITIES IN WASHINGTON COUNTY SHOULD BE COORDINATED:**

A structure should be established to provide overall coordination of all water and sewer facilities in the county. Matters to be addressed include, among others, membership of a coordinating body or committee, how selected/appointed, and the procedures for coordinating activities. Over time this structure could be expected to develop, among other things, the following benefits:

- Overall coordination and effective management of all facilities
- Provide maximum benefits to the entire county
- Highest level of efficiency
- Assure regulatory compliance
- Provide for development of agreed upon and sustainable growth plans
- Assure maintenance of competency of staff
- Facilitate communication between operations
- Assure all facilities benefit from advanced security procedures
- Increased effectiveness of long range planning
- Increased influence and success in dealing with regulatory and funding sources
- Improve sharing of facilities to ensure maximum benefit to the overall county
 - The wastewater capacity using bubble concept
 - Interconnection and sharing of water sources
- Improve efficiency and economy of operations
- Improve communication between utilities
- Assure staff familiarity with changing regulatory and operating requirements
- Assure political oversight

- **CONSIDER AN EVALUATION OF MERGER OR CONSOLIDATION OF WATER AND SEWER OPERATIONS IN WASHINGTON COUNTY**

While a detailed study of a formal plan of merger or consolidation is beyond the scope of the legislative charge to the commission, serious consideration should be given to undertaking such a study. However, in advance, a number of important considerations should be discussed and, if possible, consensus developed among the governing bodies of the affected entities. Included among these considerations are the following:

- How to determine compensation to current owners
- Degree of autonomy such combined entity would have
- Governance issues—representation and method of selection of members
- Impact on user rates
- Employment considerations
 - Job qualifications

- Merit systems
 - Continuity and seniority
- Coordination with zoning, land use and economic development objectives
- Other

WATER SOURCES

The Washington County Water and Sewer Infrastructure Commission was established to, among other things, evaluate the adequacy of the supply of water and appropriate wastewater treatment facilities into the year 2055.

Projecting events into the future is extremely difficult and, over a longer time period, many unknown and unpredictable variables impact projections and make them less reliable. It is important, therefore, that a structure be established to monitor developments and to coordinate activities in the county to assure that proper steps are taken on a continuing basis to assure that water services consider all aspects of water supplies.

It is certain that the supply of usable water will depend in large part upon the forces of nature. Precipitation will supply water, which will in turn evaporate, form clouds, and fall again as precipitation. The overall supply of water in nature does not change, and while there is plenty of water on earth, usable water is limited and care must be taken to protect the supply.

Washington County is dependent in large part upon the Potomac River as the primary source of water. Whether water for human consumption is surface water, (that is from rivers and streams, lakes and reservoirs), or is drawn from groundwater sources, (aquifers and other underground sources), the county's future water supply will depend on natural recharging (i.e., precipitation) primarily into the streams and tributaries of the Potomac River Basin.

Withdrawal of water from its source, whether from ground or surface, is subject to regulation and approval. Source water assessments of all water treatment locations are periodically completed by the State of Maryland to identify potential sources of contamination, the system's drainage basin, source water protection, and other issues the system must address. All of which is to help assure that the system's treatment processes make the water suitable for human consumption as required by the Federal Safe Drinking Water Act. Water from the source is processed in the several water treatment facilities to remove impurities and contaminants.

Water capacity is limited

On the whole, for the entire county, water supply issues are not as urgent as wastewater capacity. Like Carroll County and other counties east of Washington County, capacity limits will probably first appear in systems utilizing ground water. This is primarily due to the State's tightening of permit regulations. It is possible that in a few of these localized systems this could occur prior to reaching permitted wastewater capacity.

Permitted surface water withdrawal allocations from the Potomac River might also reach a limit in the future. One cause will be increasing demands of downstream users. Steps

should be taken over the next few years to insure an adequate water supply to match known wastewater capacity potential and projected future potable water demands.

Adequate groundwater is a major concern for many of these systems. Individual well and septic systems are also likely to increase significantly. The 5 acre zoning (one acre lot size) in the agricultural preservation area has failed to stop housing development in other counties. There is no overall limit or control beyond individual installations. Groundwater contamination is a major concern.

The major source of surface water for our area is the Potomac River and its tributaries. Use of surface water is subject to Maryland regulations and MDE approval. MDE bases this approval on the demands and needs of all users and designated use criteria, including, but not limited to upstream and downstream water systems, power plants and the protection of aquatic life. Increases to approved withdrawal allocations must be approved by MDE and, while not subject to local control, local governments are asked to make comment. At this time, many communities in Maryland, especially those on groundwater systems, are experiencing water supply problems. This could affect our ability to secure permits for increased allocations in the future. In the event that withdrawals need to be increased, additional raw water storage capacity through dams or reservoirs may be required.

Smaller water systems in the county utilize groundwater as their water source. Groundwater is also regulated by MDE. The amount of water that can be withdrawn from the groundwater source is largely dependent upon the recharge area of the aquifer. In determining the amount of water MDE will authorize for this withdrawal, the recharge area is limited to the amount of land under the control of the water system. This means that even if the groundwater source could produce additional water supplies, MDE will not approve additional withdrawals unless the water system controls enough land to meet the recharge need.

Current analysis indicates that long-term water needs can be met. However, uncontrolled future growth and development at its current projected and planned pace and density will severely overtax these available supplies and impact water systems. The density of permitted growth in some areas of the county could result in demands in excess of source water recharge requirements. Capacity is not only impacted by future growth, but also by environmental conditions (e.g., drought), operational conditions (e.g., water loss, raw water quality, etc.), and regulations.

Due to various municipal growth plans and certain State regulations, the City of Hagerstown no longer provides municipal water to new development outside of the UGA unless such service would address health conditions or provide efficiency in the system. While the existing development in these areas with city water are not subject to contaminated water sources, this may not be the case for new development outside the UGA which may require the use of wells as the potable water supply.

Groundwater quality is impacted by land use. A wellhead protection ordinance, if adopted, would provide a mechanism to protect this ground water quality. The State of Maryland has completed Source Water Assessments, which delineate the areas to be protected for each water system.

The following is a summary of water usage information:

- The 2004 Average Daily Flow (ADF) for the Urban Growth Area (UGA) and surrounding areas served by the City of Hagerstown water system is 10,358,000 gallons. The current permitted capacity of the RC Willson Water Treatment Plant (Potomac River) is 15,000,000 gallons per day (gpd) and the Breichner WTP is 750,000 gpd for a total of 15,750,000 gpd. This leaves permitted available capacity of 5,392,000 gallons, or 26,960 available EDUs based on 200 gpd per EDU. It should be noted that the total treatment and pumping capacity for the Breichner plant is 20 million gpd.
- Projected growth analysis through 2020 for all of the area currently covered by public water systems (based on 4% growth in the service area and 10% system water loss) shows that based on current permits, the UGA is approximately 10,239 EDUs short. Other areas of the County also show a small deficit using these same assumptions.
- Water Use projections for full build out of the Urban Growth Area, after netting out water uses that must be currently reserved, indicate 13,459 EDUs available for vacant land that has been identified or 1.12 EDUs per acre. Based on an analysis using “Future Planned” developments, which show an average density of 2.2 EDUs per acre; the Urban Growth Area’s shortfall is approximately 27,384 EDUs.

Appendix 4 presents a more detailed discussion of existing water treatment and treated water storage facilities with schedules showing the impact on those facilities of future growth and the factors, including the need for additional future increases in water appropriations, which must be considered to assure future adequate water supply and treatment capacity.

WASTEWATER TREATMENT FACILITIES

There are absolute limitations (flow and treatment) to our wastewater treatment facilities and the limitations on the discharge of nutrients. The limitations related to the technical capabilities of the facilities might be remedied with adequate funding and possible advances in technology; however, the limitations related to the Maryland Department of the Environment’s ENR (Enhanced Nutrient Removal) Strategy, which has resulted in the assignment of Nitrogen and Phosphorus maximum allowable loading allocations to all wastewater treatment plants (WwTP’s), are much more difficult to overcome. Summarized, the State’s ENR strategy allows each wastewater treatment plant a certain loading (i.e., the amount of nitrogen and phosphorus that can be discharged after treatment), and under those regulations the plants cannot exceed those limits, regardless

of any potential renovations and expansions. Only technological advancements, which would increase nutrient removal capabilities, would alter this situation and allow for additional discharge. Disposal of effluent by land application, sustainable reuse and other procedures may also allow for additional permitted discharge since the flow would not directly enter a receiving stream. However, overall permitted nutrient loading is finite and the net benefit would need to be calculated to insure that limits are not exceeded. However, even technological advances will have limitations, and no economically feasible technological advancements which would make a significant change in this reality are currently known.

Analysis indicates that there is a maximum build-out of all of the wastewater facilities in Washington County, which is expected to occur in approximately 20 years under current development pressure and planning measures, and may occur earlier in some areas. Under ideal conditions of (a) inter-jurisdictional cooperation, (b) financial investment, and (c) physical implementation, the Chesapeake Bay Agreement will limit wastewater capacity in the Urban Growth Area (UGA) to a maximum of 33,500 EDU's. As of the beginning of 2005, of total future EDU's, 15,700 have already been committed or planned in some fashion, leaving only 17,800 to allocate (without septic credits in the UGA). Additional capacity may be gained if system improvements continue to reduce inflow and infiltration into the system.

Strong housing pressures stemming primarily from the Baltimore-Washington area have been evident in Washington County in recent years, with the number of new units and prices for new and existing units both increasing at a rapid rate. With an average growth rate over the past four years of about 1,000 residential units per year in the UGA, a range of 900 – 1300 units per year could be assumed in the future. When compared to remaining treatment capacity and assuming a reasonable 20-30% allowance for non-residential uses, this translates into only 15 to 20 remaining years of residential growth in the UGA. Governmental decisions affecting growth and trends in the overall economy will affect this range as well. Indeed, if, as this report indicates, only 17,800 EDU's remain to be allocated in some fashion, most detailed urban planning decisions should be completed as soon as practicable. Possible credits for potential septic replacements may add some minor capacity, as may additional inflow and infiltration improvements to collection systems. The 2002 Comprehensive Plan for Washington County allows up to 87,000 EDU's to service projected build out growth in the UGA, a much greater quantity than State regulations under the Chesapeake Bay Agreement would permit under currently foreseeable circumstances.

Contaminated Well Water and Septic Systems

Karst geology in Washington County is susceptible to ground water contamination from septic tank failures and other sources. Since most of these failures occur underground or are undetected, the exact scope of these failures is unknown. The Washington County Health Department has identified 1,175 homes in areas where well water could become unhealthy, plus an additional 2,535 homes with failing septic systems. While no one knows when a health problem will occur, it is known that the State will require the

County to correct or mitigate these health problems primarily by extending public water and/or sewer to the effected areas. The cost will normally be at user's expense. While the need to fund this mitigation could occur over a number of years, the estimated cost to extend adequate facilities to the identified areas would cost (in today's dollars) approximately \$118,255,000. (Appendix 5)

Adding to this problem is the wide discrepancy between what wastewater capacity is available versus what is planned to be used. This increases the risk of scattered development outside the growth areas, but at present Federal, State, and Local officials foresee no enhanced technology methodologies, capacity trades, or other solutions sufficiently reliable and cost effective to allow capacities to increase substantially.

It should be noted that wastewater facilities could gain allocation from converting septic systems to public sewer systems. As health and safety concerns, along with growth, require connection to sewer systems, additional allocation may be generated. At the present time septic tanks are not included in the area's point source nutrient loading numbers. Since septic tanks are not included in the ENR calculations, there is a chance that this ENR Strategy could ultimately lead to much more growth outside the urban growth areas throughout the State, effectively putting a significant amount of new development on septic tanks outside the growth areas. Once the State realizes that the legislation as it is written goes against all "Smart Growth" logic, they may consider modifying the calculations to include septic tanks, which may lead to further constraints. At the very least, local health departments may wish to consider increasing the size of septic fields and drainage areas for new construction.

Wastewater limitations and restrictions present challenges

The following *projected* criteria were used in evaluation of the available EDUs:

1. All WwTP's are upgraded and every WwTP is at 4 mg/L total nitrogen ENR capability unless noted (while 3 mg/L total nitrogen is possible, it is unlikely that we will reach that with every plant or even a majority of them).
2. Loading is consolidated from Funkstown, Conococheague, Hagerstown and parts of Antietam, Clear Spring, and Winebrenner using a "bubble concept" for the UGA. {NOTE: This concept requires the approval of MDE as well as all participating owners and allows loading from one WwTP to be used at another WwTP. It could be expanded further using cooperative efforts between all facilities in the county }
3. ENR loading allocations do not change in the upcoming years. In other words, if it is determined at a later date that the Chesapeake Bay Initiatives are not being met, MDE could reduce the loading even further, which would decrease our WwTP's capacities.
4. There are no major changes in I & I or effluent usage.
5. There are no major technological advances to decrease effluent discharges of total nitrogen below 3 mg/L.

Based on the above criteria, an analysis was performed to determine available EDUs (one EDU = one household = 200 gallons per day) for each WwTP. Based on this analysis the UGA has approximately 33,460 EDUs available. Planned development, existing unused buildings, potential commercial sites and allocation increases in the UGA are deducted, 19,959 EDUs are available (assuming credit for septic systems in the UGA). When you divide the 19,959 EDUs by the 12,010 available acres in the UGA, it concludes that the UGA could be developed at 1.66 EDUs per acre.

Appendix 6 presents a more detailed discussion of existing wastewater facilities with schedules showing the current processing and nutrient loading and the impact of increased treatment requirements resulting from future growth and sets forth capacity limitations under current laws and regulations.

When using the Future Planned calculation, as outlined in Appendix 6, of 2.2 EDUs per acre the analysis changes significantly. The UGA is then 20,884 EDUs short. When using the Comprehensive Plan growth calculation of 4.6 EDUs per acre (estimated weighted average of allowable densities), the UGA is 42,472 EDUs short of what it needs for full build-out of this growth area.

There are a number of actions possible at wastewater treatment plants, subject to formal approval by the appropriate agencies, to increase their ENR capacity. These include:

1. Upgrading, where applicable, the major WwTP's to meet a discharge of 3-mg/L total nitrogen and 0.3 mg/L total phosphorus, would increase the capacity of the Major WwTP's. (Projections included in this report generally anticipate this upgrading of the major WwTP's.)
2. Upgrading the Minor WwTP's to meet a discharge of 4-mg/L total nitrogen and 0.3-mg/L total phosphorus, reducing the nutrient loading being discharged thus creating additional net loading that could be used for increased capacity at that or another facility. Loading could be used at another facility through the use of the Bubble Concept.
3. Addressing Inflow and Infiltration (I&I) issues in the collection system. I&I is the amount of rain or ground water that enters the system through downspouts, manhole covers, etc. (inflow), and/or broken/cracked pipes, etc. (infiltration). I&I flow takes up a portion of the WwTP's capacity that could be used for new services.
4. Implementing and ensuring the maintenance of non-point source best management practices (BMP's), (i.e., purchasing strips of agricultural land along streams and planting vegetative buffers), which could yield a nutrient load reduction credit. In this example prospective developers could essentially purchase this land and bring their load capacity with them as a condition of connection to the WwTP. It should be noted these scenarios would require State approval before implementation.
5. Connecting existing septic tank users to a WwTP, which could provide a credit of 4:3 (Load capacity added: Septic Load Removed) or 3:2 if the WwTP were treating to 3mg/L total nitrogen.

6. Finding alternative uses or reuse of the highly treated effluent. For example reuse could include golf course watering or commercial reuse in cooling towers. Ideally, the volume of effluent reused would not be counted against in the discharge loading. Any reuse would have to be long term/permanent and sustainable.

In addition to the above items, the following factors will need to be considered:

1. The physical capacity and treatment efficiency of each of the plants.
2. Legislation relating to ENR.
3. The needs of commercial users for economic development purposes – per the Hagerstown-Washington County Economic Development Commission the average annual needs for new commercial development are approximately 250 EDUs per year.
4. Areas that are currently not served by WwTP's which are considered in need (e.g. Leitersburg, Downsville, Holiday Acres, etc.). Currently there are 3,710 homes in the county that could benefit from being hooked up to a WwTP. While hooking these areas up to a treatment facility could potentially result in a 4:3 EDU credit (or even 3:2 given the right treatment procedures), the estimated combined cost of these projects is \$118,255,000 as referenced in Appendix 5.
5. Planning intelligently for new residential construction and revising allowable densities.
6. Investigating the possibility of requiring larger septic field and reserve areas for those developments outside the urban growth areas.

Emergency Response and Security Management

In recent years, security of governmental facilities and protection of the general public has been thrust to the forefront of utility management. It is imperative that Washington County be prepared for emergency response requirements and protected through security management initiatives. While specific details of these initiatives will not be discussed in this section, it is necessary for utilities operating in our county to insure that 1) physical security of all sites is effective and monitored; 2) data and process control networks are separate from other public/governmental networks that are prone to cyber attacks, and that these networks are, and remain secure; 3) these systems can survive major events and remain operable for use; and 4) specific emergency response and security management plans are in place to effectively use these tools.

These tools as discussed are mandatory to protect the integrity of utility operations and the general public. It is pointless to develop long-term water and wastewater plans that will serve the general public with potable water and protect the general public from contamination if our systems are vulnerable to compromise at any time with no appropriate emergency/security response initiatives in place. Through cooperative efforts there are advanced initiatives in place that can be shared to improve security measures

throughout the county. Cooperation and close coordination with all such facilities throughout the county is an important objective.

FINANCIAL CONSIDERATIONS

Water and wastewater facilities in Washington County are owned by State government, County government, municipal governments or private entities. Generally, all of these services are operated on a self-supporting basis. Subsidies from General and other funds are rare and water and sewer operations are expected to be self-funding. Each utility is responsible for its own financial management. However, this management can vary from system to system.

Financial Management Descriptions

State owned facilities are financed through the corresponding State agency for that facility. For example, the MCI WwTP, which serves the State prison complex, is financed through the Department of Public Safety and Correctional Services. The State owned facilities are operated through contract services with Maryland Environmental Services, a quasi-State agency. Funding of these facilities is through direct budget cost recovery from the State funds for the respective budgets. Any capital improvements to these facilities are placed in the appropriate department's capital improvement program and funded through State funds.

Washington County Government owns and operates the County's water and wastewater facilities under its Department of Water Quality. Funds for these operations are under an enterprise fund and separate from the County's general fund. Primarily funds for these utilities come from user rates, allocation fees and other fee structures. These rates and fees are established utilizing a complex rate model. Capital improvement projects are funded through the rate structure and various other sources depending on the size and nature of the project. These other sources generally include bonds, grants and loans and are discussed later in more detail. The County does provide a yearly contribution to utility fund operations and the County's debt capacity currently includes a portion of this enterprise fund debt. This debt is now considered to be self-supporting due to the County's projection to not require this investment by the year 2013, and will be removed from the County's debt capacity analysis in the future. This investment began prior to the Washington County Sanitary District being abolished and was established to fund costs associated with excess capacity being built in County owned facilities. The County agreed to the excess capacity and its funding so that the capacity could be used for future planned economic development initiatives.

The City of Hagerstown owns and operates the City's water and wastewater facilities under the City of Hagerstown Water and Sewer Department. Funds for these operations are under an enterprise fund and are separate from the City's general fund. However, the enterprise funds are charged a Payment in Lieu of Taxes (PILOT) by the General Fund for the provision of general City services consistent with other City taxpayers, as well as an administrative charge for shared services to cover the costs of consolidated administrative services to achieve greater shared cost efficiencies, both of which have been approved by the Maryland Public Service Commission (PSC). In the City rate-setting model, the PSC has allowed a rate of return which is currently set at 10%. Funds for these utilities come primarily from user rates, allocation fees and other fee structures. These rates and fees are established utilizing a complex rate model. Capital improvement projects are funded through the rate structure and various other sources depending on the size and nature of the project. These other sources generally include bonds, grants and loans and are discussed later in more detail.

Other municipal governments in the county that own their water and/or wastewater utilities operate these systems as enterprise funds separate from their general funds. These operations are primarily funded through user rates and connections fees. Rates and fees are established using basic formulas to primarily cover expenses. Capital improvement projects are funded through the rate structure, special assessments, bonds, loans and grants.

The City of Hagerstown and WCDWQ operated utilities primarily have the same financial management philosophies. Both of these entities utilize rate models for setting rates and fees, and both have long-range capital improvement plans. In contrast, some municipal government agencies do not have rate models or long-range capital improvements plans and some lack financial planning to accommodate long-term regulatory and operational initiatives.

Private water and sewer utilities fund their operational costs at their own expense. Recovery of these costs is either through the overhead of their business rates or in the case of multiple users, such as trailer parks, through a utility bill. Capital improvement projects are funded through their normal business financing channels.

Capital Improvement Plans and Funding

Capital improvement plans generally include expansion and renovation projects for water and wastewater facilities and are normally financed using accumulated fund balances, grants from federal and State agencies, governmental loans (frequently at low interest rates and/or extended repayment terms), Contributions in Aid of Construction from owners or developers, and bonded debt. Bonded debt generally requires a full faith and credit obligation by the related governmental body (County or municipality) although the

utility is expected to fund debt service from its operations and/or from debt service charges to users.

Utilities are permitted to apply to Federal and State funding programs which includes loan and grant initiatives. However, funding requests each year outweigh the amount of funding available so these programs are quite competitive. The State has indicated that if the facilities in the county were to take a unified approach to planning and requesting these grant and loan funds, it would look more favorably on the projects and their potential to receive funds. A list of these funding sources and examples of projects funded through these programs is shown in Appendix 7.

Bay Restoration Fund

In response to Chesapeake Bay Initiatives, the State created a new source of funding through enacted Senate Bill 320 titled the Bay Restoration Fund (BRF) (colloquially referred to as the “Flush Tax”). This legislation provides for funding Enhanced Nutrient Removal upgrades at major WwTP’s identified in the ENR Strategy. The ENR strategy has identified maximum nitrogen and loading allocations for each of the WwTP’s in the county. Once the major WwTP’s (plants with capacity greater than .5 MGD) are completed, this legislation allows funds to be utilized to upgrade minor WwTP’s (plants with a design capacity less than .5 MGD). However, due to bonding issues and significant increases in construction costs not anticipated in the legislation, the BRF is under funded to even accomplish upgrading all the Majors at 100% funding levels. Therefore, the likelihood of funds for minor WwTP’s is bleak in the near term. Costs associated with upgrades, if not covered by the BRF, will need to be funded at the local level from public monies, developers’ contributions, Contributions In Aid of Construction and from other sources. With the exception of funding from grants and other sources not subject to repayment, added debt service costs will need to be funded through rate increases and other user fees. By coordinating their efforts, utilities in the county will best utilize the funding sources available to maximize the nitrogen and phosphorus loading available to the county. It should be noted that the BRF legislation has no sunset provision and allows for increases in the assessed fee.

Survey of User Charges

A survey of user charges for water and wastewater services in the region revealed a wide variation in methodology and rates. Reasons for these differences seems to relate to the age of the system, date of construction and the original cost variances, system size/number of users, local/state regulatory requirements, and specific operating conditions. (Appendix 9)

Economies of Scale and Consolidation of Utilities

A review of the possible economics of scale from combining or merging operations indicates that many individual positions and functions would be required regardless of the overall size of a utility system. This primarily pertains to field personnel such as operators, laboratory staff and maintenance personnel. It is possible that some positions could be reduced by automation; however, the cost of automation might offset any financial savings.

Financial and other benefits might be realized by consolidating some supervisory, administrative and management and systems throughout the county. Combining such functions in separate organizations would be difficult, but done carefully might increase certain efficiencies and help facilitate, through increased specialization, effective compliance with reporting requirements, changes in regulations and regulatory initiatives, and other compliance issues. In addition, the creation of a unified management structure could allow for more timely response to circumstances created by accelerated growth.

Debt service can be a significant factor in determination of user rates. The costs of system construction, expansions and renovations are normally funded in large part by borrowing. Reductions of such borrowing will obviously reduce debt service requirements. Although each system might qualify for grants and other financial assistance individually, if publicly owned water and sewer systems coordinate their activities, renovations and expansion plans, they could improve the collective ability to secure more favorable considerations and terms from the various funding and regulatory bodies.

Wells and On Site Disposal Systems in the County

The Washington County Health Department has identified many areas of the county which are vulnerable to health hazards and could require public water and or wastewater services, this represents approximately 3,710 EDUs. Estimated cost to serve these areas totals \$118,255,000. (Appendix 5)

Most of these areas lie within the County's jurisdiction and when served will affect the County's debt load in water and sewer funds, but could also be strategically leveraged to increase some capacities available for use in other areas. Developers may be able to assist with the costs related to provision of some of these services if they could ultimately benefit from the expense.

Conclusions from Financial Considerations

- Grant funding is limited for water and wastewater utilities. State agencies have indicated that the grant potential can be improved and or increased with cooperative planning efforts. State funding is based on numerous factors including, but not limited to, public health, compliance, reliability benefits, etc. System size and geographic location are not considered in funding determinations.
- Capital planning is well defined at the City of Hagerstown and Washington County level. However, long term planning at some smaller municipal levels is not as well defined.
- Management of the systems varies from a structured staff such as the City of Hagerstown and WCDWQ with designated individuals doing specialized jobs, to town managers and clerks performing the management duties.
- Improper management can create issues that cause high rate increases.
- The City of Hagerstown Water and Sewer Department and WCDWQ practice financial planning, and their rate impacts are identified through the use of detailed rate models. However, the smaller municipalities do not utilize this tool and rely on income verses expenditures to establish rates.
- As the potential failing wells and areas of the county served by on-site disposal systems require installation of public utilities, Washington County will be faced with additional debt loads and financial management issues.
- Charges for connection fees vary across the county and are set by different methodologies.
- There is no formal process for monitoring the debt or financial situations of the various utilities as a whole.
- The Washington County Water and Sewer Plan is out of date and is in need of a comprehensive update.

HISTORY, LABOR, LEGAL AND REGULATORY BACKGROUND

A large part of the regulation of water and sewer utilities in Maryland derives from Federal legislation passed in the 1970's. The Federal Clean Water Act was passed in that decade, and it serves as the basis for water quality protection in the Chesapeake Bay region. Over the years the Act has been amended to reflect stricter standards that take into account technological advances in utility operations.

In 2000, based on the Clean Water Act (CWA), the U.S. Environmental Protection Agency (EPA), and the states of Maryland, Pennsylvania, and Virginia signed the Chesapeake 2000 Agreement, a document that outlines strategies and regulatory goals for protection of the Chesapeake Bay estuary. The agreement is a direct outgrowth of Federal regulation stemming from the CWA.

As background, EPA and the Maryland Department of the Environment (MDE) have determined that the Chesapeake Bay does not meet the water quality standards established by these agencies, and is therefore an impaired body of water. These impairments must be addressed to bring the Bay into compliance with current Federal and State Water Quality criteria. The purpose of the Chesapeake 2000 Agreement is to form a partnership among the watershed states and identify goals and actions each state will take to address the impairments and restore the health of the Bay. In addition, because the Bay is deemed to be an impaired body of water, the Clean Water Act requires that a TMDL (Total Maximum Daily Load) document be prepared for the Bay, which will identify discharge limits and other criteria necessary for the Bay to achieve the specified water quality criteria. The EPA, in recognition and signatory support of the Bay Agreement, has established a 2010 deadline for the agreement actions to restore the Bay. If the states are unable to voluntarily comply, the EPA has stated that it intends to exercise its authority under the CWA to establish a TMDL for the Bay.

The Maryland Tributary Strategy is the outgrowth of Maryland's effort to meet the goals of the Chesapeake 2000 Agreement. This strategy was developed as a result of input from ten local tributary teams, local governments and various other stakeholders. The final strategy was adopted by the Governor's Bay Cabinet and approved by the Governor.

The primary focus of the tributary strategies is the development of nutrient loading caps for the various watersheds. These caps limit the nitrogen and phosphorus discharge in each tributary to a certain number of pounds each year.

Since the Tributary Strategy was written, EPA has issued guidance to the States requiring that all major wastewater treatment plants (WwTP's) be assigned a yearly loading limit for nitrogen and phosphorus discharge. This action was taken by EPA in response to the Chesapeake Bay Foundation's threat to sue if a TMDL was not written sooner than 2010. These limits mean that once they are written into a National Pollution Discharge Elimination System (NPDES) permit, they become enforceable and, if the WwTP does not comply, the State or EPA may initiate enforcement action. MDE has started to include these limits in each permit as they are renewed and they plan to incorporate a compliance schedule for each WwTP to upgrade to ENR levels. Therefore, the enforceability of the limits would not occur until the ENR upgrades were complete as long as they were completed in accordance with the mandated schedule.

A variety of Maryland State agencies will participate in implementing the tributary strategy. MDE is involved in regulating the point source strategy as it relates to wastewater treatment plants. The Maryland Department of Planning will be involved in land use issues, and Maryland Department of Natural Resources (DNR) will be active in conservation issues. The Maryland Department of Agriculture will be involved in strategies to reduce farm pollution sources. Additionally, actions by local governments will need to occur in order for the objectives of the strategy to be met.

In addition to establishing the Bay Restoration Fund, Maryland Senate Bill 320 reaffirms the requirement that all farming operations in Maryland have an approved nutrient

management plan. In addition to providing funds for WwTP ENR upgrades, it is intended to help provide funds for Sanitary Sewer Overflow correction, septic tank upgrades and cover crops, all of which are all required for clean-up efforts in Maryland. This legislation is a key tool for funding the requirements of the Chesapeake 2000 Agreement and the Maryland Tributary Strategy.

Local Authority

The authority of Washington County and its municipalities to establish and operate water and sewage utilities derives from a number of sources. These sources include the Washington County Code of Public Local Laws, the various municipal charters, and the Maryland Environmental Code embodied in COMAR Title 9, subtitles 6, 7, and 9.

Washington County derives authority through a combination of Title 6 of the Code of Public Local Laws, and COMAR Title 9, subtitle 6. By way of background, the Code of Public Local Laws was revised in the 1990's when the old Washington County Sanitary Commission was dissolved, and the Washington County Commissioners assumed powers held previously by the Washington County Sanitary Commission. This transfer of authority occurred in April of 1995 and was authorized by Maryland House Bill 830.

Title 6 gives the County the express authority to plan water and sewer projects, create sanitary sub-districts, and adopt user rates. In addition, it spells out the County's borrowing authority. Title 6 of the Code of Public Local Laws also states under Subtitle 2 Administration, (6-201(c)), that in conflicts of authority between COMAR and Title 6, Title 6 applies as the primary authority.

The City of Hagerstown and the other county municipalities derive their authority to own and operate water and sewer utilities from their municipal charters and/or COMAR Title 9, subtitle 7. For example, under the City of Hagerstown's charter, the City is granted the authority to own and direct the water courses within the City, and to construct, operate, and maintain water, storm water and sewer systems.”

Strategic Deployment of Utilities: Decentralized Model

The operation of water and sewer utilities in Washington County occurs, at present, on a decentralized basis. The City of Hagerstown is the major provider of water services in the county. Some municipalities and other small service areas which receive water from the City maintain their own lines and billing processes. The City and County are the principal providers of sewer service in the county; however, several towns operate smaller facilities serving their own areas.

Despite the decentralized nature of this arrangement, the various political entities have entered into cooperative agreements over the years to provide services to customers. Examples of such agreements include the City of Hagerstown—Washington County Joint Services Agreement, the City of Hagerstown/Washington County Interconnector Agreement, the Boonsboro / Keedysville Water Agreement, City water rates to

Williamsport, Funkstown and Smithsburg and the contractual agreements between Washington County and the Town of Clear Spring, St. James School and Brooklane Hospital for operational support, and Towns of Smithsburg and Williamsport for wastewater treatment services.

It was noted that some of these agreements came about in the spirit of cooperation and as a result of practical considerations, while others were crafted to resolve jurisdictional policy disputes. In addition, in the latter cases, the process of dispute resolution often required arduous negotiation, regulatory pressure from State agencies, litigation and inordinate amounts of time to reach agreements.

Current Operational Environment – Degree of Cooperation among Providers

There are presently several areas of operational cooperation between water and sewer providers in Washington County. As noted above, the County provides certified water and sewer plant operators by contractual agreement to Clear Spring, St James School, and Brooklane. In addition, the City of Hagerstown and the County, and the City and County and various other municipalities collaborate on several functions in providing service. The City of Hagerstown provides water and sewer billing in service areas outside its boundaries. The County bids all utility procurement contracts for the City utilities in excess of \$25,000. WCDWQ also manages the pretreatment permitting process for the City of Hagerstown and WCDWQ sewer customers. The Hagerstown and County water and sewer utilities also exhibit a strong degree of voluntary cooperation in emergency situations.

There are other operational areas where a greater degree of cooperation might produce greater efficiency in delivery of service. Hagerstown and the County do not presently share common standards for certain infrastructure components (e.g. Hagerstown may specify one type of fitting while the County prefers another.)

Finally, in terms of work force numbers, there appears to be no significant advantage to consolidating rank and file operations at the various facilities. Each plant takes so many hours of labor to operate, and consolidating via voluntary cooperation or formation of a single utility does not shrink those hourly demands.

The Labor Environment

Water and sewer utilities in Washington County utilize three types of labor arrangements. They are (1) “at will” employment status, (2) collective bargaining (union) agreements and (3) independent contractors.

Washington County’s utility workforce is non-union and works “at will” for the employer. Annual compensation adjustments are by County Commissioner approval and merit based. Management has the right to create, eliminate, and redefine job descriptions as it sees fit. Management may also deploy the workforce as it sees fit. In addition,

management encourages cross training. The County's "at will" work force allows for a very flexible working arrangement for its work force.

The City of Hagerstown's water and sewer utilities utilize an "at will" and union work force. The City has had collective bargaining agreements for several decades. A comparison of the City of Hagerstown and Washington County benefits is shown in Appendix 8. Existing bargaining agreements provide the union's right to have input into specifications for job descriptions, which, through consolidation of the water and sewer departments has provided cross-training to employees. In addition, at least part of an employee's annual compensation adjustment is tied to step adjustments related to seniority.

The smaller municipalities use combinations of in-house and independent professional contractor labor to run their operations including the City Water and Sewer Department and WCDWQ. The in-house labor is non-union.

Efforts to promote greater cooperation and efficiency among the independent utilities in Washington County in the past have been hampered by the distinct labor models. For example, a proposal to set up a single lab operation to do work for both the City of Hagerstown and the County failed over issues of mixing union and non-union employees in a single department. Any movement to work towards greater cooperation or consolidation of utility operations will require resolution of labor issues.

Other Factors Related to Water and Sewer Utilities

Other municipal and private systems in the county are all significantly smaller than the City of Hagerstown water and sewer systems and the County sewer system. All are overseen by the State and almost all municipal systems receive some degree of advice and assistance from the City and County. All systems confront a variety of operational and planning issues. Boonsboro, Smithsburg, and other smaller municipalities face significant growth challenges. UGA limitations create greater pressure as well.

Merger efficiencies seem most likely in certain joint staff functions such as laboratories and training, following on the pretreatment model. However, overhead could be increased by a merger as well (e.g., a regional board with real powers would need staff).

Water and sewer providers in the county also seem to have varying degrees of ability with regard to addressing compliance issues. The smaller municipalities rely on professional contract services, including WCDWQ, to provide them advice. The larger operators also have struggled, at times, to keep pace with regulatory imperatives. These failures have, from time to time, lead to fines and restraints on capacity. One of the key questions is how increased cooperation between utilities might allow communities to avoid regulatory enforcement actions, financial penalties and restraints on capacity which can have an impact on user rates, and limits on beneficial growth in the community.

Advantages of the Present System for Delivery of Utility Services

The greatest advantage our system of decentralized utilities offers its owners is independence and local control of operations. For example, municipalities such as Boonsboro can retain control over their utilities as they relate to such processes as land use planning, capacity utilization, user rates, and financing choices. This independence gives the local, smaller political subdivisions a great deal of flexibility in outcomes, free of influences from the rest of the county.

There is a strong case for decentralization as it relates to rate equity. With smaller, localized utilities, user rates can be pegged more directly to costs in the local area. Infrastructure improvement miles removed from a local area would have no direct effect on rates.

Disadvantages of the Present System for Delivery of Utility Services

The present decentralized system of utilities has some disadvantages that might be alleviated with a more cooperative approach. First, with more and more regulation, staying in compliance with EPA/MDE standards is becoming more difficult and requires increased training and greater sophistication. In our present system, the smaller utilities obtain compliance support by contracting with outside professional consultants. In addition, the focus of the Maryland Tributary Strategy is on managing watersheds.

Decentralized operations may have been beneficial when the county was for the most part rural. Such operations may not be as effective as the region becomes more urbanized. Separate, competing utilities in the county might limit maximization of wastewater treatment capacity by use of the “bubble” concept and other efforts to increase capacity, thus reducing overall benefits to the entire county.

From a finance standpoint, the State clearly supports collaborative initiatives among cooperating utilities. In a number of instances over the years, the State has provided preferential funding terms for collaborative projects. State funding agencies have been especially supportive of regional problem solving that emphasizes managing drainage areas and watersheds regardless of which jurisdictions exist in those areas.

As Washington County has become more urbanized, especially in growth areas where municipalities have been the traditional provider of both water and sewer services, the operation of separate and sometimes rival utility operations in close proximity to one another presents problems. The abutment of large, densely populated, political jurisdictions contiguous to another has produced natural frictions that affect utility operations. These frictions stem from varying interests relating to land use planning, annexation, finance, infrastructure planning, and capacity allocation.

One aspect of the problem is simply structural in nature. Collaborative efforts now require not only the mutual agreement of the affected municipal departmental staffs, but also the consent of the Mayors and Councils of every municipality, and the Board of County Commissioners. This structure can complicate and delay the planning and decision making process for any cooperative initiative.

The City of Hagerstown/County Sewer Flow Transfer Agreement is considered to be a reasonable solution toward efficient use of utility infrastructure. However, the agreement took seven years to negotiate, involved three separate City Councils, and three separate County Commissions. The negotiating process had to survive changes in staff, changes in elected officials, advice from two sets of attorneys, and was, for a time, delayed by a City/County legal dispute. These types of delays would be avoided by closer cooperation between governmental bodies and their water and sewer utilities.

While important to municipalities, linking of utility service to broader policy objectives might conflict with the objective of maximizing benefits to the community as a whole. Improved cooperation with the objective of maximum benefits to the entire county would result.

COMBINATION OR CONSOLIDATION

House Bill 1211 which established the Commission specifically directed the Commission to consider among other matters “the options of consolidation or regionalization of services, joint service agreements, or regional authorities.” Following are the findings of the Commission in addressing this portion of its charge.

Experiences of other jurisdictions

A Work Group investigated utility consolidation activity in other jurisdictions within Maryland and Virginia. In Maryland, there are several private/public initiatives in the formative stages. One is in Port Deposit in Cecil County, and the other near Berlin in Wicomico County. While promising, these examples are not considered to be mature enough to offer insights for improving operations in Washington County.

Two regional operations in the state of Virginia were identified. One was in Augusta County and the other in Roanoke County. In 1966, Augusta County formed a regional water and sewer authority. It currently operates 12 water treatment facilities and 9 wastewater treatment facilities.

This authority was formed for a variety of reasons. Augusta County was starting to experience growth around some of its smaller communities. These were served by a number of small rural systems, some of which were privately operated. Maintenance was poor in some cases. Debt financing was expensive, and there were limited possibilities for grant money.

The formation of a regional county authority afforded the county the possibility of improving long term funding options, including greater access to grant money. Of particular benefit was the fact that having an independent authority borrow money for utility improvements benefited the political subdivisions in this community. The cities of Staunton, and Waynesboro, plus the other smaller communities in Augusta County were relieved of borrowing for these improvements and spared the cost of adding such debt to their books.

This authority is now organized into seven districts, each of which has representation on its governing board. The Board is made up of elected officials as well as citizen representatives. The authority has a major say in the land use planning process. Authority staff members report that the authority indicates where they can accommodate growth, and the political subdivisions write comprehensive plans to accommodate these recommendations. The authority has 95 employees.

A second authority in the state of Virginia is the Western Virginia Water Authority. This authority was formed in July of 2004 by Roanoke County and the City of Roanoke, Virginia. The reading materials published by this organization, and the interviews conducted with their officials provided the greatest insight into the dynamics leading to its service consolidation.

A statement from this authority's web site says in part, "Watersheds, not local government boundaries, determine water resources and wastewater service. Therefore, an organization that spans localities is a logical unit to manage water and wastewater services." The web site goes on to comment that the benefits of the regional authority include reliability (with an emphasis on water supply), cost savings, and consistent future planning and rate stability.

By way of background, authority staff members provided information as to what led to the formation of this authority. The City of Roanoke and Roanoke County had talked for years about the possibility of joint utility operations. However, until a water crisis developed early in this decade, there was no political will to enact change.

In the late 1980's Roanoke County decided it was necessary to build a new county water facility. At that time, Roanoke County asked the city of Roanoke to participate, but the City declined. This new facility was built at great cost, and county users were burdened with high water rates. When the severe drought came about in 2000, the City of Roanoke was suddenly at risk in not having enough water.

This crisis presented opportunity to both political jurisdictions. The formation of an authority allowed a spread of cost over a larger population and thus allowed for rate moderation for water utilities. This, of course, was pleasing to the county. The city, in return, gained access to capacity and will avert supply problems in the future.

Interestingly enough, the consolidation process was a staff initiative. Employees of the county and city came together and proposed the merger to the respective political bodies. Political officials then delegated the task of negotiating a consolidation agreement to a steering committee made up of City and County staff.

The City/County steering committee established three guiding principles. These principals included equal representation for both sides, the establishment of a single rate for users at an appropriate time, and transfer of all assets to the independent authority.

The authority is governed by a board comprised of seven individuals. Three representatives are appointed by the City, and three by the County. These six select the final appointee.

This authority employs 258 persons.

The experience of Augusta County as it relates to maintenance, compliance, and financing issues has some parallels to the experience of Washington County in recent years. Of late, several of our utilities have struggled to keep pace with needed upgrades to plants and collection systems. These shortcomings have led to costly fines, State mandated improvements, and threaten to compromise future capacity under the latest regulations. In addition, the Augusta County consolidation led to positive improvements in the ability of their utilities to acquire greater amounts of, and more affordable financing. This theme is comparable to the findings of several of this task force's subcommittees as it relates to financing for our utilities.

The experience of Roanoke also adds some enlightenment to our circumstance. Their statement regarding the "natural logic" of managing utility issues with emphasis on watersheds is similar to the principles of the Maryland Tributary Strategy. Furthermore, the regulation of nitrogen and phosphorous loads in the Antietam and Conococheague basins may create a utility crisis in sewer here that may become roughly analogous to what Roanoke experienced in water several years ago. As our community faces the demand to ration limited reserves of sewer capacity, there will be greater need to adopt regional approaches and cooperation among governmental bodies, and water and sewer utilities will be essential.

Coordination of Planning and Capacity Utilization

Other jurisdictions have realized benefits from combining their water and wastewater operations. Disputes are avoided and cooperation is improved. Financial and other benefits are realized. However, such combinations do not happen by chance. There must be a need or desire for such change.

The creation of a single, regional, water and wastewater utility in the UGA may be achievable, but could take years to become a reality. For this to happen, there are

complicated political, financial, and labor issues that need careful consideration by the Mayor and Council of Hagerstown, the Washington County Commissioners and other jurisdictions in and near the UGA. These issues cannot be resolved overnight but the challenges of capacity limits; especially wastewater treatment should not be delayed.

All of Washington County would benefit from enhanced cooperative utility operations and ultimate merger or consolidation for the following reasons:

1. There is regulatory pressure to manage utilities based on watershed.
2. The expansion of utility regulations by the EPA and MDE is making compliance more difficult all of the time, especially for smaller operators.
3. Sources of funding for infrastructure, especially the State, have made it clear they give priority to cooperative ventures when asked for money.
4. As the City, County, and smaller towns (especially in the UGA) face pressure for more rapid development, the community at large needs decision making processes that allow for timely response to need.
5. Current regulations, unless modified, will place absolute limits on public sewer capacity, and may lead to a crisis requiring rationing of such capacity. The effects of sewer capacity shortages would be better controlled and shortages minimized by closer cooperation.

In the current regulatory environment, the county is fast approaching limitations on wastewater treatment capacities and, ultimately, may approach limits on available potable water sources. As stated earlier in this report, water sources are finite and wastewater treatment capacities are absolute under current regulations and technology. Maximizing benefits to the entire county will require realistic evaluation of these finite limits and careful planning and prioritization of their use. Washington County and the City of Hagerstown are faced with the inevitable exhaustion of water and wastewater capacity. The entire county is in the unenviable position of having to decide what types of growth to permit. This will impact planning by the County, the City of Hagerstown and each of the other municipalities in the county

Distributing Allocation

Individual water and sewer allocations are subject to final determination by elected officials and are not necessarily governed by comprehensive plans.

Residential Growth

Residential growth is permitted where septic systems and wells are required with the only requirements being zoning and Health Department permitting. Potential impact on potable water sources and county nutrient loading limits is not necessarily considered.

Economic Growth

Economic Development priorities do not specifically evaluate opportunities with consideration of the impact new projects have on county allocations. (e.g, the benefits of a milk processing plant requiring excess wastewater treatment capacity might not be as desirable as other growth opportunities not requiring such capacity). No countywide procedure now exists to reserve water and sewer capacity for economic growth in our planning process.

Achieve Maximum Available Capacities

Washington County is faced with limited water and wastewater capacity. Wastewater nutrient loading is approaching maximum allowances which will severely impact future growth in Washington County. Nutrient Loading allowed under the provisions of the Bay Restoration Program and the Chesapeake Bay Agreement with EPA and MDE will be exceeded in approximately twenty years at current growth rates. There are some solutions that may alleviate some of these restrictions; however these are finite resources that will eventually be exhausted.

Bubble Concept

While valid, the Bubble concept (offsetting unused wastewater treatment capacity of one facility with another needing capacity) is considered in calculations but is not yet formally approved by the State of Maryland. No specific determination of the availability of such trading, the possible increases in treatment capacity or its probable cost has been determined.

Washington County, City of Hagerstown and other County municipalities Comprehensive Plans

Countywide water and sewer capacities are not fully considered in the County's, The City of Hagerstown's and the other county municipalities' Comprehensive Plans. The factors which will affect capacity limitations and when they might be exceeded are not formally evaluated or incorporated into the Comprehensive Plans.

Factors controlling when treatment capacities will be reached

1. Rate of increase in new volume added to the collection systems.
2. Improvements in the collection systems to reduce Inflow and Infiltration.
3. Improvements made in the treatment plants to maximize nutrient removal.
4. Technological advances and improved efficiencies

- a. New technologies, though not presently identified, could reduce nutrient loading resulting in more EDU availability
- b. Some existing plants might be made more efficient reducing nutrient loading and increasing EDUs
- c. Technology developments and plant improvements may have high costs. Who bears that cost and the resulting growth opportunities will need to be determined.
- d. Even with advances in technology, capacities are limited. There are no currently known feasible technological developments which will completely eliminate nutrient loading from wastewater.

Trade Allocation Concept

Trading allocation allows one source to meet its regulatory obligations for wastewater quality by using pollutant reduction or credits from another sources that has exceeded or not used their loading allocation. Trading requirements can be established by the State under current federal law; however, there are many policy and regulatory issues that need to be worked out by State, buyers, sellers and the public in order to implement a successful program. This concept does have the possibility of providing additional allocation to Washington County. At this stage, Maryland is working on the beginning stages of a program. However, there is no direct implementation plan.

WASHINGTON COUNTY WATER AND SEWER
INFRASTRUCTURE COMMISSION
FINAL REPORT

Appendices

1. Summary of House Bill 1211
2. Commission Membership and Appointing Agencies
3. Structure and Activities of the Commission
4. Listing of Water Treatment Facilities with Attributes
5. Listing of areas having potential need for public water and/or sewer service based on Health Department determination
6. Listing of Wastewater Treatment Facilities and Available Capacity including Nutrient Loading Limitations
7. Summary of Funding Sources
8. Comparison of City and County Employee Benefits
9. Wastewater Rate Comparison
10. Summaries of Reports - Antietam 201 Plan and BCM study
11. Facilities and Organization Work Group Report of Findings
12. Debt, Finance and Accounting Structure Work Group Report of Findings
13. Legal Issues and Labor Relations Work Group Report of Findings
14. Planning and Environmental Work Group Report of Findings
15. Dissenting views