

Public Utilities

Existing Conditions

Sewer

The Severn Small Area is located within portions of the Baltimore, Patuxent and Cox Creek Sewer Service Areas (SSA's). These service areas are described below:

Baltimore City Sewer Service Area

Limits of the Baltimore City Sewer Service Area (SSA) are generally established by the drainage area of the Patapsco River. The boundaries on the western and northern sides are the County's boundary line. The eastern and southern limits generally follow the watershed boundary of Deep Run and the Patapsco River west of Wagner's Point, including Jessup north of MD 175 and the area north of the Baltimore Beltway (I-695) near Cabin Branch Creek.

The sewer service area encompasses approximately 15,400 acres (excluding the Baltimore Washington International (BWI) Airport property). According to Anne Arundel County's General Development Plan (1997), a majority of the service area is designated for low-medium and medium density residential, industrial park, and employment-mixed and transit-mixed land uses. There are roughly 4,000 acres of vacant land within the service area.

There are seven privately owned or independently operated systems located within the Baltimore City SSA.

The Patapsco Wastewater Treatment Plant, located on Wagner's Point in Baltimore City, provides treatment for the majority of the sewage in the service area. The plant, owned and operated by Baltimore City, has an allowable operating capacity of 63 Million Gallons per Day (MGD). Anne Arundel County's existing flows are approaching 3.2 MGD out of a purchased capacity of 5.39 MGD based on the existing allowable operating capacity of the plant. The facility is undergoing an expansion to 87.5 MGD. At that rated capacity, the County's shared allocation will increase to 6.2 MGD. Anne Arundel County is negotiating with Baltimore City for additional allocation.

Anne Arundel County has entered into several agreements with both Howard and Baltimore Counties and Baltimore City regarding jointly utilizing sewerage facilities. These agreements stipulate capacity allocations to Anne Arundel County as well as capital and operating cost allocations.

Patuxent Sewer Service Area

The Patuxent Sewer Service Area (SSA) includes the portion of the Patuxent River drainage basin east of Fort George G. Meade. This area includes the developed areas of Odenton and Crofton.

The Patuxent SSA encompasses approximately 13,900 acres. According to the General Development Plan, a majority of the land within the service area is designated for low-medium residential usage. The Odenton Town Center is a designated commercial revitalization area and is planned for mixed-use development. There are nearly 2,800 acres of vacant land within the service area.

There are two independently operated treatment facilities located within the Patuxent SSA.

Sewage from the service area is collected and conveyed to the Patuxent Water Reclamation Facility (WRF) located west of Route 3 just north of Crofton. The facility has a rated capacity of 6.0 MGD. However, an evaluation of the treatment process has been conducted, and a request was submitted in February 1999 to the Maryland Department of Environment for a re-rating to 7.5 MGD. As of December 1998, the average daily flow at the plant was recorded as 4.6 MGD. The effluent from the facility is discharged to the Little Patuxent River. The facility utilizes an oxidation ditch activated sludge process designed for nitrification/de-nitrification and phosphorus removal.

Cox Creek Sewer Service Area

The Cox Creek SSA is located in the northern portion of the County. It is generally bounded by Baltimore City to the North, Rock Creek to the East, Elvaton Road and the Magothy River to the South, and BWI Airport to the West.

The Cox Creek SSA encompasses approximately 31,100 acres, excluding the BWI Airport property. According to the 1997 General Development Plan, a majority of the service area is designated for medium and low-medium residential land use. Commercial land use exists along Mountain Road, MD 2 and MD 3. Industrial use is predominant in the area of Marley Neck Boulevard and Fort Smallwood Road. There are approximately 6,500 acres of vacant land within the service area.

There are six privately owned or independently operated systems located within the Cox Creek SSA.

The Cox Creek Water Reclamation Facility is located off Wagner Road. The 15 MGD rated facility provides activated sludge secondary treatment and phosphorus reduction facilities with an annual average daily flow of approximately 11.2 MGD. The treated effluent is discharged to the Patapsco River.

Water

The Severn Small Area is located within the Glen Burnie High 295 Water Pressure Zone of the County's water system.

Glen Burnie High 295 Zone

The 295 Water Pressure Zone is situated in the north central portion of the County and is divided into three distinct areas centered around the Dorsey Water Treatment Plant. The northeast portion is generally bounded by Baltimore City to the east; the 350 zone to the west; Baltimore County to the north; and the 220 zone to the south. The southwest portion is generally bounded by MD 3 and the 220 zone to the east; Howard County to the west; MD 176 and the 350 zone to the north; and the Severn Run Natural Environmental Area to the south. The southeast portion is generally bounded by Chalet Drive and Foxwell Road to the east; MD 3 to the west; Old Mill Road to the north; and Benfield Boulevard to the south.

Topography of the area varies from an elevation of 10 to 240 feet. Static pressures range from 125 psi to 24 psi. The overflow elevation of the elevated storage tank is currently 295 feet with a low water elevation equal to 260 feet.

According to the County's design criteria, the highest ground elevation that can be served from the 295 zone is 175 feet, without providing supplemental means of pressure. There are areas with elevations exceeding 175 feet generally bounded by Dorsey Road to the north; Meade Village to the south; MD 170 to the east; and the BW Parkway to the west, that are located within the 295 zone. Mitigative measures for adequately serving this area are being investigated as part of the Midwest Corridor Water Strategic Plan as described in the strategic planning paragraph below.

The Glen Burnie High Pressure Zone contains approximately 24,000 acres of land. According to the County's General Development Plan, a majority of the land use in this zone is designated as low, low-medium and medium density residential use and industrial park. The MD 2 and MD 3 corridors are targeted for medium to high density residential and commercial land use. Low to low-medium density residential land use has been targeted for the region south of MD 100.

The Dorsey Road Water Treatment Plant provides water to the 295 Pressure Zone and is located along Dorsey Road adjacent to I-97. Currently five wells provide raw water to the plant for treatment capacity totaling 3.5 MGD. The plant also receives 2.5 MGD from the Glen Burnie Low Zone (220 zone) for redistribution into the 295 zone. This is received in the plant clear well and is, therefore, mixed with the treated raw water supply. Treatment provided includes aeration, prechlorination, chemical addition, coagulation, sedimentation, fluoridation, disinfection and filtration.

There are two self-contained wells (SCWs) that serve the 295 zone: (1) the Stevenson Road SCW and (2) the Telegraph Road SCW. Both SCWs provide chemical addition, disinfection and fluoridation. Rated capacities of the Stevenson Road SCW and Telegraph Road SCW are 0.64 MGD and 0.96 MGD, respectively. A third SCW, Quarterfield Road, is currently out of service due to the detection of radium that exceeds the maximum contaminant level (MCL). There is a capital project to remove the excessive levels of radium.

Assets and Issues

Sewer

Baltimore City Sewer Service Area: Required Capital Projects

More detail regarding strategic planning efforts to date that identify future system capacity needs can be found in the 1999 Water and Sewer Master Plan. As described in the Plan, the County's Capital Improvement Program includes the design and construction of a "potential" new Water Reclamation Facility and NPDES discharge within the Baltimore City or Cox Creek SSAs to provide capacity for future anticipated flows within the Baltimore and Cox Creek SSAs respectively.

The County does not anticipate that any pumping stations within the SSA will require capacity upgrades within the planning horizon. The majority of anticipated growth is located just east of the BW Parkway and will be conveyed by gravity sewers discharging to the Piney Run interceptor.

Patuxent Sewer Service Area: Required Capital Projects

As described in the 1999 Water and Sewer Master Plan, the Patuxent Water Reclamation Facility is required to increase treatment capacity beyond 6.0 MGD. Capital Project S-7838 implemented changes at the facility to effectively increase the treatment capacity to 7.5 MGD. The County has submitted information to the Maryland Department of Environment (MDE) requesting that the facility be re-rated to 7.5 MGD. A study of the existing facility has documented its ability to meet the discharge requirements set forth by MDE at the requested re-rated capacity. While these improvements have increased the WRF capacity, the planned expansion will increase to 9.0 MGD for anticipated growth and decreasing discharge limits required by the State.

A capital project identified and programmed within the Capital Improvement Program is the Severn Run Force Main Rehabilitation Project S-7923. This project will replace the existing force main due to its expected lifespan.

Furthermore, it is anticipated that a new pump station will be needed to replace the Pigeon House pump station within the planning horizon in order to facilitate a comprehensive means of servicing its drainage area. Development of portions of the Odenton Town Center may accelerate the necessity for upgrades to the Odenton Interceptor within the next 10 years. An implementation plan for these and other projects will be available upon completion of the Comprehensive Strategic Plan.

Cox Creek Sewer Service Area: Required Capital Projects

The 1999 Water and Sewer Master Plan describes projects in the County's Capital Improvement Program for design and construction of a "potential" new WRF (and NPDES discharge) within the Baltimore City or Cox Creek SSA to provide capacity for future anticipated

flows within the Cox Creek SSA. Other alternatives involve transfer of flows to the Broadneck SSA. Any of these alternatives will require changes to the Sewer Service Area Boundary.

The pump stations below have been identified as requiring upgrades necessary to meet sub-drainage flow requirements in the future:

- Marley
- Marley Neck
- Stonehaven

In addition, new pump station facilities designed and constructed as either development projects or through the County's Capital Improvement Program are anticipated in the following locations.

- Cayuga Farms
- Governor Ritchie Highway at Pasadena Plaza (near Jumpers Hole Road)
- Mountain Road and MD 100 near the Lake Shore Plaza
- Tanyard Cove North
- Tanyard Cove South

The Cayuga Force Main and Pump Station Capital Project (S-7929) is underway and will facilitate the reversion of a portion of the Cox Creek SSA back to the Broadneck SSA once completed. Additional capital projects and future pump station locations will be identified through the comprehensive strategic plan effort.

Water

Glen Burnie High 295 Zone: Required Capital Projects

The County has been able to meet immediate needs through use of connections with the City of Baltimore and flow transfers between zones. Projects currently programmed for design and construction include a transmission main connecting the 330 zone to the Shipley ET and continuation of the existing 36-inch transmission main along Waugh Chapel Road north from Piney Orchard to MD 713 and MD 175 (Project W7784). The 36-inch main will allow the County to transmit water from the 330 zone to the 295 zone taking advantage of the increased production capability at the Crofton Meadows II Water Treatment Plant (WTP). This is consistent with the objectives of the strategic plan to provide more transmission flexibility while reducing reliance on the City of Baltimore.

The Midwest Corridor Strategic Plan recommends the expansion of the 350 pressure zone to effectively displace the western portion of the 295 zone. This increased hydraulic gradient will provide higher pressures to areas of higher elevations that have been identified as not being adequately served by the 295 zone. Necessary infrastructure for facilitating this displacement of the 295 zone are identified in the new Strategic Plan and include: a 295 to 350 zone pumping station; a 350 zone elevated tank; a new transmission main along MD 174; and miscellaneous piping associated with converting the Telegraph Road SCW into a 350 zone facility; and a small

BPS that would draw from the 330 zone. This is consistent with the objectives of the County's 1999 Strategic Plan to increase transmission flexibility across pressure zones and reduce reliance on the City of Baltimore.

Map 17 and 18, show the water and sewer service in the Severn Small Area.

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Goals and Recommendations

Goal 1: Establish a better means for incorporating citizen input into the process of updating the Sewer and Water Master Plan.

Recommendation 1: The County should notify the citizens when the update of the Sewer and Water Master Plan is taking place (every three years) and allow a formal process through which the citizens can get information about what changes are being proposed and have input.

Goal 2: Ensure that any development planned for public utilities has adequate water and sewer service.

Recommendation 1: Revise the Adequate Public Facilities Ordinance to ensure that the public utility infrastructure keeps up with proposed development in the growth areas.

Recommendation 2: Update the Water and Sewer Master Plan, changing the proposed Mixed-Use Employment Area (known as the Kirk Property) and any properties within the Severn Village boundary, from the Future Service category to the Planned Service category.