

## **Utilities**

### **Water and Sewer Service**

The Edgewater/Mayo Planning Area is covered by two sewer service areas and is partially served with water from the Broad Creek 210 pressure zone. The communities of Woodland Beach, Edgewater, South River Colony, Southdown Shores, Annapolis Landing and Riva are part of the Annapolis Sewer Service Area (SSA). Glebe Heights, Coxby Estates, Loch Haven Beach, Selby on the Bay and all other communities of Mayo and Beverly Beach are served by the Mayo Water Reclamation District.

#### ***Water Supply Facilities and Capital Projects***

The area provided with public water service is within the Broad Creek 210 Pressure Zone. The County operates and maintains five wells in one well field in the Broad Creek area that can produce 6.9 million gallons per day (MGD) which the Broad Creek Water Treatment Plant system is capable of treating, with a storage capacity of 4.2 MGD to meet an average daily demand of 2.1 MGD. Within the Edgewater/Mayo Small Planning Area, only the communities of Riva, Southdown Shores and South River Colony are served with public water from the 210 pressure zone. There are two private community well systems in this area. One serves Sylvan Shores and the other serves South River Landing. Map 14 shows areas designated for water service per the County's 1999 *Master Plan for Water and Sewer*.

There is one capital project in the Broad Creek 210 Pressure Zone that affects the Edgewater/Mayo planning area. This project is a 16-inch transmission main (Project W-7537) along MD 2 that provides two crossings of the South River and ensures continuous service and improves fire flow capabilities to those customers on the south side of South River. This project has been recently completed and is in service.

#### ***Sewer Service and Facilities***

Map 15 shows areas designated for sewer service per the County's 1999 *Master Plan for Water and Sewer*. The Edgewater/Mayo Small Planning Area is served by two separate sewer collection systems. The Riva, Edgewater, Woodland Beach, South River Colony areas are part of the Annapolis SSA while the Mayo Peninsula, Glebe Heights, Loch Haven areas comprise the Mayo Water Reclamation District.

The Annapolis Sewer Service Area Collection system is a composite of gravity and force mains that convey wastewater flows to the Annapolis Wastewater Reclamation Facility (WRF) located on Edgewood Road across from the Villages of Chesapeake Harbour. The Annapolis WRF is a conventional system utilizing an anaerobic activated sludge process and is permitted to process 10 million gallons per day (mgd). This facility has recently been upgraded to meet the State's most stringent biological nutrient reduction (BNR) requirements. A planned 3.0 mgd

Map 14

Map 15

expansion of this facility has been approved and is under design. Construction of this facility is anticipated to begin in 2002.

The Mayo Water Reclamation District utilizes a man-made natural environment to filter out nutrients from septic holding tank effluents. The Mayo Water Reclamation Facility (WRF) is part of a large communal treatment system which serves the residents of the Mayo peninsula and is owned and operated by the County. The WRF is located off of Mayo Road between Loch Haven Road and Selby on the Bay. Each residence or business in the service area has an individual below ground septic tank on-site, with the effluent from the septic tank flowing by gravity or pumped into the collection system. The collected wastewater is conveyed to the central wastewater treatment facility by a series of force mains and gravity sewer lines. The Mayo WRF was completed in 1988 with a treatment capacity of 464,000 gpd. This capacity was based on a projected wastewater flow of 200 gpd from 2320 EDUs (equivalent dwelling units). The original Facilities Plan called for the plant to be expanded in phases, with each phase corresponding to the addition of 585 EDUs to the service area, generating an estimated additional flow of 117,000 gpd. In January 1995, construction of the first expansion phase was completed raising the design capacity of the treatment plant to 581,000 gpd. The permitted capacity of the current facility is 615,000 gpd. The WRF is currently operating at 90+% capacity. The next planned expansion to 870,000 gpd is currently under design and anticipated to begin construction in 2002.

#### Wastewater Capital Projects

There are six programmed capital projects within the Edgewater/Mayo Small Planning Area. They are described as follows:

1. S7697 Mayo WRF Upgrade - present worth analysis for upgrade, operation and maintenance of the Mayo WRF and Glebe Heights Sewer Module demonstrates considerable cost savings by converting the treatment technology to a conventional activated sludge design. Design for upgrade of this facility will proceed with construction completion anticipated to begin in 2002. Projected ultimate capacity for the service area remains consistent with that originally projected when the existing facility was first approved.
2. S7698 Glebe Heights Sewer Module - design for upgrade of the Mayo WRF will include provision for transfer of Glebe Heights flow to the Mayo WRF. This approach for service to the community is selected to provide the most cost effective solution for construction, operation and maintenance of the treatment facilities.
3. S7765 Mayo Collection System Upgrade - construction for planned upgrade of key pump stations is underway. The upgrade in capacity of these pump station is consistent with the original growth projected for the areas served by each.

4. S7768 Mayo Septic Tank Retrofit - retrofit and replacement of septic tank manways is a multi-year project that will continue for several years to correct structural issues contributing to the infiltration/inflow of surface and groundwater into the collection system. The project will also be used to explore alternatives for correction of similar infiltration/inflow issues within the privately owned laterals between resident's homes and the County owned septic tanks.
5. S7771 Mayo Interceptor Upgrade - this project has been completed. It involved construction of a parallel force main along MD 214 which was required to facilitate pumping resultant peak flows during rain events. Excess surface and ground water entering the system, primarily via privately owned on-site plumbing, has historically exceeded capacity of the original force main.
6. S7884 Woodland Beach Pump Station and Force Main Upgrade - An upgrade is required to serve planned growth, commercial redevelopment and existing communities with on-site septic tanks who may petition for public service. The pump station upgrade will exceed capacity of the existing force main and downstream Parole Pump Station and its force main. Therefore, a new force main and underwater crossing of the South River is required. This project., once initiated, will require three years from start to completion.

## **Issues Related to Water and Sewer Service**

Several issues were identified at public forums and discussed at committee meetings relative to public and private sewer and water facilities. Salt water intrusion into private wells and excessive drawdown of the water table due to new development is of concern in waterfront communities. There is a general desire to have both public sewer and public water serve communities in the area. Uncertainty related to the future capacity of the Mayo WRF, including a moratorium on new service hookups during certain periods, has been an ongoing issue in this area, although the planned conversion of the Mayo WRF to a conventional treatment facility should address this problem. Groundwater contamination from the current wastewater treatment system has been another concern. Residents also feel that more frequent well water sampling is needed, especially after new wells are installed.

Some of the Edgewater/Mayo area is on private septic systems, including the communities of Southdown Shores and Edgewater Beach. Due to clay based soil, high water table and steep slopes, these areas are very difficult for the design of individual septic systems, however, in most cases it can be done. The Health Department promotes the care and maintenance of septic systems. Areas that have septic systems are surrounded by waterways and most homes have drinking wells. A key maintenance recommendation being promoted by the Health Department is to pump septic tanks every 3 to 5 years, with some needing pump out every two years depending on usage. Usage factors include the number of household members, washing machines and things of this nature.

### **Recommendations:**

- 1.1 Upgrades to water reclamation facilities should be for improvements to the operations of the facilities and not for expansion to accommodate development beyond the system's design capacity.
- 1.2 Properly maintain Mayo sewer system to manage gray water.
- 1.3 In communities with failing septic systems and high nitrogen levels, promote public support for sewer installation.