

WATER AND SEWER

Public water and public sewer services are available in portions of the Dover Area and can be effectively used to protect public health, safety, welfare, and for managing growth and development. The following describes existing facilities from various source documents including the municipal Chapter 94 Plans which describes the wastewater treatment facilities and its capacities, the municipal Act 537 Plans which describes water and sewer service areas including projections and expansions, and the Pennsylvania Department of Environmental Protection's website (www.drinkingwater.state.pa.us) which provides water reports. Public Water services are described first followed by Public Sewer services. Note that water and sewer lines that service the Dover Area are depicted in Map 13: Water and Sewer for Dover Township and Map 13.1 Water and Sewer for Dover Borough, and that almost the entire service system is within the Growth Area Boundary and the ACT 537 Plan Boundary with a trunk line that extends north along Carlisle Road to Fish and Game Road.

Water Services

Dover Borough provides water to its community for consumption and fire prevention through six ground water wells, five of which are located within Dover Borough, and one of which is in Dover Township along Stoney Lane. According to the Pennsylvania Department of Environmental Protection, the wells service approximately 1,900 people. Three of the six wells are in operation (wells 4, 5, and 6) and three of the wells are not operating. The three Dover Borough wells in operation have a capacity to provide 215,000 gallons per day. The water supply in Dover Township comes from ten surface water wells located throughout the township and also purchases water from the York Water Company to supplement consumer demand. Dover Township wells one through seven, nine and ten are pumped from an aquifer known as the New Oxford formation, while well eight is pumped from the Gettysburg formation, the wells have the capacity to provide 15.4 million gallons per day. York Water Company's water source provided to Dover Township is the combined flow of the south and east branch of the Codorus Creek.

Dover Township and Dover Borough routinely monitors for contaminants in drinking water according to Federal and State Laws. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least a small amount of some contaminants. The presence of contaminants does not necessarily indicate the water poses a health risk. The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses.

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- Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

There were two drinking water contaminants detected during the 2004 calendar year in Dover Township. The presence of these contaminants in the drinking water does not necessarily indicate that the water poses a health risk. The state requires the township to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Also, there are a few contaminants that are unregulated, and the township is not required to test for them. Dover Township was not required to test for Cryptosporidium or Radon. (Source: *Dover Township Water, Dover Area 2004 Annual Water-Quality Report.*)

Sewer Services

The Dover Township Wastewater Treatment Plant (NPDES permit # PA0020826 for collection and conveyance) is a regional facility treating sewage from parts of Dover, Conewago, Manchester and West Manchester Townships. The plant is owned by the Dover Township Sewer Authority and operated by the Dover Township Board of Supervisors through a leaseback agreement. Inter-municipal agreements exist between Dover, Manchester, and West Manchester Townships. In 1982, a Joint Advisory Board was established with representatives of the user townships. The original plant was built in 1972 as a 1.75 million gallon per day (MGD) contact-stabilization plant with secondary removal requirements. Hydraulic overloading compelled the expansion of the plant in 1986 to 3.5 MGD capacity. The treatment requirements were also expanded to include nutrient removal, specifically ammonia and phosphate. In 1989, the plant was re-rated to 4.0 MGD capacity. In 1997, the plant was again expanded to double its capacity (8 MGD). This expansion was required to meet the demands of the new State and Federal sludge disposal regulations, the Chesapeake Bay requirements, and capacity demands within the user townships.

Sewage is the contaminated water from homes, schools, and business. It comes from toilets, showers, clothes washers, dishwashers, etc. The contaminants include fecal matter, urine, soaps, food particles, hair, rags, paper, toys, dead goldfish, and anything else that is disposed of down the drain. A person creates an average of 80 to 100 gallons of wastewater every day. Sewers are a network of pipes that bring the sewage to the treatment plant for treatment. Treatment is the process of removing the contaminants from the water and processing the contaminants into a product that can be safely recycled. (Source: www.dovertownship.org)

The treatment process consists of a sewage grinder, pumps, grit removal systems, oxidation systems, final clarifiers, and ultraviolet light disinfection. The removed contaminants are thickened, aerobically stabilized, and dewatered prior to disposal. All sewage enters the plant through a 48-inch diameter pre-cast concrete pipe. It then flows through an influent grinder unit which consists of a horizontally rotating screen that directs all the solids towards and into a dual counter-rotating shaft grinder. The material then flows into the influent wet wells. Submersible pumps move the sewage to the grit removal units.

Dover Borough Wastewater Treatment Plant, located off City Hall Drive in Dover Borough has an approved Department of Environmental Protection loading of 0.4 million gallons per day.

Chapter 94

Dover Township Wastewater Treatment Facilities

The Dover Township Wastewater Treatment Facility is owned by the Dover Township Sewer Authority. These facilities serve portions of Dover Township, Conewago Township, Manchester Township, and West Manchester Township, all located in York County. The following information is provided by the Dover Township 2004 Chapter 94 Municipal Wasteload Management Report.

The average flow of 4.398 MGD and the maximum 3-month maximum average flow of 5.648 MGD for 2004 were both slightly greater than projections made in the 2003 Chapter 94 Report. However, the annual average and the 3-month maximum average were both lower than that of 2003 (5.058 MGD and 5.962 MGD respectively).

There were only two NPDES violations in 2004. Two violations occurred in September during hurricanes Ivan and Jeanne. The creek levels were so high that the final effluent cascade couldn't cascade. This resulted in two violations for the minimum Dissolved Oxygen level falling below the minimum level required by permit. These two violations ended a 15 consecutive month period with no violations. All member townships anticipate continued growth within the collective system service area. These municipalities have undertaken procedures to reduce extraneous flows through a vigorous inflow and infiltration (I&I) identification and control program. Dover Township has made I&I reduction one of its crucial priorities.

Permitting and Regulatory Considerations

The wastewater treatment plant and the Little Conewago Creek interceptor were constructed jointly by Dover Township and West Manchester Township in 1972. The treatment plant is located in the southern portion of Conewago Township, and discharges its effluent into Little Conewago Creek at a point located approximately 350 feet downstream of the Fox Run confluence. The plant is currently operating under a new NPDES permit (PA 0020826 effective date September 1, 2000). Sewage sludge disposal is covered under the General Permit No. PAG-08-3825.

Inter-Municipal Arrangements

Through the original inter-municipal agreement among the contributing townships, and with the completion of the 8.0 MGD upgrade in 1997, the following allocations became effective in 2001:

- Dover Township 59.665%
- West Manchester Township 29.32%
- Manchester Township 9.15%, and
- Conewago Township Sewer Authority 1.875%.

Dover Township, through a lease agreement with the Dover Township Sewer Authority, operates the treatment plant and Dover Township's collection system. Manchester, West Manchester, and Conewago Townships maintain their own collection systems. Flows from the Townships of Manchester and West Manchester are conveyed to the Dover Township plant via the Little Conewago Creek interceptor. Flow metering continues to improve with seven meters which were installed in 2001, and an eighth meter installed and tested in late 2003, which was later replaced and placed on-line in January 1, 2004. Two additional meters have recently been installed.

Waste Loading

The five-year average flow was used as a baseline flow to which projected increases were added. The nominal value of 300 gallons/day/EDU was used to project future flows. The five-

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year average of gallons/day/EDU is 318. This value decreased despite the very wet year in 2004. The average for 2004 was 356 gallons/day/EDU while the previous four-year average was 309 gallons/day/EDU.

Organic Loading

The organic loading for the year 2004 averaged 6,037 lbs./day and the maximum month was 8,506 lbs./day. The average organic loading was less than the existing plant's capacity of 12,000 lbs./day. No organic overload is projected within the next five years.

Nutrient Loading

Nutrient loading does not appear to be a problem in 2004. In anticipation of revised regulation pertaining to Chesapeake Bay and the nutrient reduction program, the laboratory is in the process of establishing the methodology, including QC/QA for nitrate analysis of wastewater. The preliminary goal is to establish a program for routine monitoring of nitrates through the treatment process. This data will be used to determine future revisions, additions, etc. that will be needed to meet pending nutrient removal requirements.

Industrial Waste

No problems have been observed with the system resulting from industrial users, since January 1, 2005, there were no industrial users within the system. Dover Township and the contributing townships are unaware of any significant dischargers of industrial waste into the system at this time. An industrial pretreatment ordinance was adopted by all three municipalities in 1998 and Conewago Township adopted these ordinances in 2001. With the completion of the Northern Interceptor in 1999, several industrial users were transferred to the Dover Township wastewater system and removed from the Dover Borough system. The only permitted industrial user within the system, Pfaltzgraft, sold its property in Dover Township in mid 2003. The new owners have no industrial discharge. No problems are anticipated with these new industrial users. Industrial waste surveys have been completed and no industrial permits are in use.

Dover Borough Wastewater Treatment Plant

According to the Department of Environmental Protection's (DEP) review of the 2001 Chapter 94 Report, the Dover Borough Wastewater Treatment Plant needed a new Consent Order and Agreement (COA) to modify previously-approved Corrective Action Plan (CAP) schedule to include a new end-date for the elimination of bypasses at the plant. The Dover Borough Wastewater Treatment Plant has had an approved CAP since 2003, and submits reports (to DEP) describing progress with the conditions of the sanitary sewer system twice annually in accordance with the COA. Recent (2005) improvements included replacement of sections (578 linear feet) along Rachael Road which impacted 22 laterals. Anticipated improvements include replacement of six sections (290 linear feet) along Butter Road, replacement of sections (1,024 linear feet) on Mayfield Street, replacements of sections (445 linear feet) on Reservoir Drive, replacement of sections (325 linear feet) to Doovertowne Apartments (Stoney Lane). One sewer extension was constructed in 2004 along Charles Lane which consisted of approximately 396 linear feet of 8" diameter PVC piping and three sewer connections. Within the sanitary system there is one pump station (with two pumps) that services the Delwood subdivision. There are no industrial users in the service area, and only other municipality with tributary flow to the Dover Borough Wastewater Treatment Plant is Dover Township; whereby flow from approximately 30 residences in Dover Township are directed to the plant. The Dover Borough Wastewater Treatment Plant projects 5 equivalent dwelling units (EDU) per year though 2009 for flow increases. The plant assumes a flow of 350 gallons per day (GPD) per EDU in flow projections. (Source: Dover Borough 2004 Chapter 94 Update).