

**WATER AND WASTEWATER  
ELEMENT**

## **WATER AND WASTEWATER ELEMENT**

### **Water Supplies and Wastewater Planning**

This chapter is an overview of how water supplies and wastewater treatment are provided in Sussex County. Both public utilities and private providers are described. Policy recommendations are included on how the County and others can improve and expand these vital services in the future.

### **Water Supply Overview**

Sussex County depends completely on groundwater supplies and wells for its water supplies. Therefore, it is critical to protect the quality of groundwater and to promote the recharge of water into the underground water table. DNREC regulates all water treatment facilities and water withdrawals.

### **Water Supply Providers**

The accompanying County Water Service Areas Map shows the areas in Sussex County now served by central water systems. These central systems provide water to most areas of concentrated population in Sussex County. Most homes and businesses in the County's more rural vicinities get their potable water from individual on-site wells.

Private companies provide almost all water to those parts of Sussex County served by central water systems. The largest of these service areas belongs to Tidewater Utilities. It includes areas west of Rehoboth and along the Route 1 commercial corridor, adjacent areas along Route 24 and Camp Arrowhead Road, areas west of Delmar, the Angola area, and areas along Orchard Road/Route 5. Tidewater Utilities also serve numerous scattered developments. The second largest private water provider in Sussex County is Artesian Water Co. Their largest service areas are along the Route 9 corridor east of Georgetown, South Bethany, the Route 5 corridor south of Route 9, and the Roxana Area east of Selbyville.



Other large private water companies operating in Sussex County include the Broadkill Beach Water Co. (which serves Broadkill Beach and Primehook), Long Neck Water (which serves almost all of Long Neck), Sussex Shores Water (which serves areas north of Bethany Beach), and Slaughter Beach Water Co. (which serves the town of Slaughter Beach).

Dewey Beach is the only area in the County served by the water system that is owned and operated by Sussex County.

Municipal water systems are provided by Bethany Beach, Blades, Bridgeville, Dagsboro, Delmar, Frankford, Georgetown, Greenwood, Laurel, Lewes, Milford, Millsboro, Milton, Rehoboth, Seaford, and Selbyville. In many cases, these water systems extend outside of the municipality’s borders. To meet growing needs, many municipal water suppliers are seeking new well sites to provide additional capacity. For example, Millsboro is constructing new deep wells to address contamination problems with two existing wells. In addition to the municipal systems in operation today, the Town of Ellendale is also considering constructing its own central water system.

There also are many scattered private water systems, such as systems serving scattered mobile home parks, campgrounds and industries.

**Table 10  
Estimated Projected Water Demand for Sussex County  
from Public Water Supplies to be as Follows:**

AREA	Current GPD	2025 GPD
Ellendale SSD	89,550	215,600
Ellendale Planning Area	37,500	90,000
Town of Greenwood	94,000	225,700
Greenwood Planning Area	120,000	289,000
City of Seaford	900,000	2,162,600
Seaford Planning Area	490,000	1,180,000
Blades SSD	133,900	322,000
Blades Planning Area	502,000	855,350
Town of Bethel	22,500	38,300
Delmar	TBA	TBA
Laurel	TBA	TBA
Bridgeville	148,000	355,800
Bridgeville Planning Area	161,000	388,250
West Rehoboth	4,551,300	10,953,000
Goslee Creek	397,200	955,900
Angola	1,018,500	2,451,150
Herring Creek	267,900	644,700
Long Neck	1,831,200	4,407,000
Oak Orchard	649,800	1,563,800
Dagsboro	585,600	1,409,300
Frankford	186,600	449,000
Bethany Beach	1,221,300	2,939,200

AREA	Current GPD	2025 GPD
North Bethany	332,400	799,900
South Bethany	1,629,000	3,920,000
Fenwick Island	1,533,900	3,691,500
Ocean View	293,100	705,400
Holts Landing	230,700	555,200
Cedar Neck	507,600	1,221,600
South Ocean View	90,000	216,600
Miller Creek	150,600	362,400
Millville	536,400	1,290,900
Bayard	51,900	124,900
West Fenwick	165,300	397,800

Source: Sussex County Engineering Department

**Table 11**  
**Sussex County Aquifers**

TOWN / SUBDIVISION	AQUIFER
Angola	Columbia
Rehoboth / Lewes	Columbia / Manokin
Bethany Bay	Columbia / Pocomoke
Bridgeville	Frederica
The Meadows	Columbia
Sussex Shores	Pocomoke
Town of Bethany Beach	Pocomoke / Manokin
Sea Colony	Manokin
Fenwick Island	Pocomoke
South Bethany	Pocomoke

Source: Sussex County Engineering Department

**Table 12**  
**Number of Wells by Type in the**  
**Inland Bays / Atlantic Ocean Basin**

<b>WELL TYPE</b>	<b>TOTAL</b>
Soil Borings Standard	235
Geothermal	319
Fire Protection Standard	26
Aquifer Storage & Recovery Std	1
Industrial Standard	237
Agricultural Within CPCN	1,263
Irrigation Standard	2,273
Well Construction Standard	8
Public Standard	1,629
Other Standard	578
Geothermal Closed Loop	665
Remediation Recovery	7
Monitor Zone of Interest	38
Public Miscellaneous	819
Agricultural Standard	3,910
Dewater Standard	938
Observation Standard	4,246
Geothermal Recharge	605
Monitor Direct Push	296
Monitor Standard	1,997
Domestic Standard	37,100
Remediation I Injection	39
<i>* There are approximately 626 allocated wells in Sussex County.</i>	

**Source:** Sussex County Engineering Department

**Table 13**  
**Community Water Systems (Over 500 Connections)**

<b>SYSTEM NAME</b>	<b>SERVICE CONNECTIONS</b>
Angola Beach	606
Angola By the Bay w/TW c/o Tidewater Utilities	796
Bethany Beach Water Department	3,032
Bridgeville Water Department	1,173
Delmar Water Department	1,617
Dewey Beach Water Department	2,983
Georgetown Water Department	1,861
Laurel Water Department	TBA
Lewes Water Department	2,633
Lewes District c/o Tidewater Utilities	5,192
Long Neck Water District	4,939
Millsboro Water Department	1,877
Millsboro District c/o Tidewater Utilities	3,099
Millville District c/o Tidewater Utilities	817
Milton Water Department	1,290
Oak Orchard Public Water	TBA
Ocean View District c/o Tidewater Utilities	1,658
Rehoboth Beach Water Department	4,631
Rehoboth Yacht & Country Club c/o Tidewater Utilities	548
Rehoboth District c/o Tidewater Utilities	4,120
Sea Colony	1,318
Seaford Water Department	2,500
Selbyville District c/o Tidewater Utilities	592
Selbyville Water Department	1,309
Sussex Shores Water Company	1,738
Swann Keys Civic Association	580

**Source:** Sussex County Engineering Department

## **Water Supply Protection**

DNREC oversees the state's Source Water Assessment Program (SWAP), which is primarily aimed at protecting water supplies from contamination. Central well protection areas and "excellent" groundwater recharge areas have been designated by DNREC. Sussex County is currently working on an ordinance that would regulate groundwater protection areas. That ordinance is being prepared to meet a requirement of the State Source Water Protection Law of 2001. The ordinance is primarily designed to minimize the threats to major water supply wells from pollution.



Under DNREC regulations, assessments have been completed of the vulnerability from contamination of each water system.

One of the best ways to avoid contamination of important water supply wells is to avoid intensive industrial and commercial development that use hazardous substances in adjacent areas. Once toxic substances enter an aquifer, it can be extremely difficult to contain the contamination and to remove the substances from the water. Where hazardous materials are stored or handled, there should be measures installed (such as impervious surfaces surrounded by curbing) to contain any spills before they occur. Persons transporting or handling hazardous materials should be urged to contact authorities as soon as a possible hazard may arise - while the hazard can still be contained.

The ideal type of land use around water supply wells is preserved open space, or low density residential development. Ideally, the amount of impervious coverage around major water supply wells would be minimized to allow the groundwater to be recharged. Agricultural uses promote recharge, but may result in high nitrate levels in the water. Persons who operate agricultural, livestock or poultry uses near water supply wells should be urged to cooperate with the Conservation District to use proper nutrient management and other measures to minimize water pollution.

Agricultural uses are beneficial for groundwater recharge, because the water used for irrigation returns to the ground. However, if there is not proper management, this can result in high nitrate levels in water supplies, a potential health hazard for young children and pregnant women.

## **Fire Protection**

The State Fire Marshall Office reviews proposed developments to make sure they comply with State Fire Protection regulations. Among other provisions, those regulations require that adequate fire flow and pressure be available for firefighting as part of central water systems. It is difficult to provide adequate water supplies for firefighting within smaller water systems.



## **Water Supply Strategies**

The following strategies will aid in ensuring more safe water supplies are available in those areas of Sussex County served by central water systems.

- More effective ordinances need to be adopted and enforced by Sussex County and the incorporated municipalities to minimize hazards to public water supply wells.
- Water supply planning needs to be more closely coordinated with sewage treatment and land use planning.
- Great care should be used in allowing intensive development in areas that are likely to be needed in the future for additional groundwater supplies.
- Water systems should have a back-up source, such as an additional well that is not needed for normal demand or an emergency interconnection with another water supplier that has surplus capacity. This is important to ensure water supplies are available without interruption in case one well becomes contaminated.
- The quality of groundwater should be more extensively monitored to identify contaminants before these contaminants reach public water supply wells, and to measure movement of known contaminants.

**Map: County Water Service Map**

**Map: Water Supply Wells Map**

**Map: County Wastewater Service Areas Map**

## **Wastewater Treatment Overview**

Public wastewater planning in Sussex County is overseen by the Sussex County Engineering Department. The entire County has been divided into Planning Areas, as seen on the accompanying County Wastewater Service Areas Map. The County has completed detailed sewer treatment plans for several parts of Sussex County where the County provides sewer treatment now or may do so in the future. The accompanying map entitled “County Wastewater Service Areas” shows the following types of areas:

- **Existing Sewer Districts** – Areas where service is provided through the statutory authority granted to Sussex County through the Delaware Code, which may include serving specific users through contractual agreements. Private wastewater service providers are regulated in these areas.
- **Primary Service Areas** – Areas where the County has conducted planning activities to eliminate septic systems and/or serve future development and growth. Primary service areas are areas with immediate needs and are designated either as developing areas or areas that have a significant amount of existing development with wastewater needs. These areas are considered to be near term service areas, which will receive wastewater service within 5 years. Private wastewater service providers are regulated in Primary Service Areas.
- **Secondary Service Areas** – Areas where septic systems shall be reduced, growth is expected and special environmental needs may exist, but service is not expected within the next 5 years. The County may have conducted planning activities in these areas to eliminate septic systems and/or serve future development and growth. Private wastewater service providers may be permitted to operate in Secondary Service Areas on an interim basis, until County service is provided.
- **Unclassified Service Areas** – Areas where County facilities are not currently planned. Private wastewater providers may be permitted to operate in these areas.

In addition to areas served directly by the County, most cities and towns in Sussex County operate their own sewage treatment systems. Beyond County and municipal sewer treatment providers, the private companies (such as but not limited to Artesian and Tidewater) provide wastewater treatment to individual communities in several Sussex County vicinities.

Title 9, Chapters 65 and 67 of the Delaware Code addresses public sewer and water services in Sussex County. Those regulations provide Sussex County with the authority to establish sanitary sewer districts. In many cases, under those regulations, a referendum is held to ask affected property owners whether they wish to be served by County sewage service.

## County Wastewater Treatment Services

The following information mainly addresses sewer services provided by the County. Information on the sewer services provided by the town/cities is provided within individual municipal comprehensive plans.

### *Inland Bays Region*

In June 2006, the draft Inland Bays Planning Area Wastewater Facilities Plan and Environmental Assessment (referred to hereafter as the “Inland Bays Wastewater Study”) was completed. This area features the following treatment facilities and individual sewer districts:

- The County-operated Inland Bays Regional Wastewater Facility serves the Long Neck and Oak Orchard sewer districts and has been in operation since December 31, 1995. The facility and its spray fields are located on County-owned lands on the east side of Townsend Road, north of Inland Bay Road. Existing or planned spray fields surround the facility on all sides, with the largest areas to the west. The facility currently serves the Long Neck and Oak Orchard areas and is proposed to serve Angola, Goslee Creek, and Herring Creek in the future.
- The County-operated Wolfe Neck Regional Wastewater Facility serves the West Rehoboth district. The West Rehoboth district includes a high percentage of the intense new development in Sussex, including areas along both sides of the Route 1 corridor. The Wolfe Neck system uses County-owned land at the eastern end of Wolfe Neck Road (west of the Lewes and Rehoboth Canal) for treatment and both State and County land for application of treated effluent.
- The City of Rehoboth Beach Wastewater Facility serves the Dewey Beach and Henlopen Acres districts (as well as Rehoboth, which is not in the Inland Bays Planning Area).

The Inland Bays wastewater study projected the following build-out design equivalent dwelling units (EDUs) for the following areas, including both existing and projected development:

- |  |        |
|--|--------|
| – West Rehoboth Existing District<br>(Areas on both sides of Route 1, including land on Route 9 west of Route 1, and lands along Old Landing Road and Bald Eagle Road; approximately 17,000 of these EDUs are already connected to the sewage system.) | 39,989 |
| – Long Neck Existing District<br>(Areas north and south of Long Neck Road, most of which are east of Route 24, including the Pot-Nets developments; approximately 7,000 of these EDUs are already connected to the sewage system.)                     | 15,204 |
| – Northern West Rehoboth Expansion Study Area<br>(Northwest of the intersection of Routes 1 and 9, southwest of Lewes)   | 1,823  |

– Goslee Creek Study Area (Areas north of Love Creek, and south of the current sewage service area, including areas on both sides of Route 24, such as areas along Camp Arrowhead Road)	9,095
– Angola Existing Sewer District (Areas south of Love Creek and north of Herring Creek, most of which are east of Route 24. That includes the Woods on Herring Creek and Angola By the Bay, which each have community sewage systems.)	15,444
– Herring Creek Study Area (Areas south of Herring Creek, most of which are east of Route 24)	5,756
– Oak Orchard Existing District (Areas along Oak Orchard Road, north of Indian River; approximately 900 of these EDUs are already connected to the sewage system.)	1,663
– Oak Orchard Expansion Study Area (Areas north of the Indian River, most of which are south of Route 24, east of the Mountaire Chicken Plant, and along Oak Orchard Road)	10,236

Sewer extensions to serve most of Angola Neck will be designed and built by the County. The next phase of that extension will serve approximately 1,360 existing homes and businesses.

The Inland Bays wastewater study projected that \$175 million of improvements are needed to serve the Long Neck, Northern West Rehoboth Expansion, Goslee Creek, Angola Neck, Herring Creek and Oak Orchard Expansions. The study found that 5 existing sewer lines and 14 existing pump stations are already at capacity. Additional lines and pumping stations will need improvements to handle flows by 2015. The study projected that \$35 million is needed to address the priorities in collection and conveyance.

The study projected that the 117,308 total EDUs are allowed in the Inland Bays Planning Area under current zoning, including approximately 25,000 existing EDUs that are already connected to the system. The build-out design is for 99,210 EDUs, considering that not every unit is occupied at all times and assuming 20 percent of the land remains in open space. That build-out design is projected to generate total wastewater flows in the peak summer month of 26.7 million gallons per day (mgd).

Of this 26.7 mgd design total, 13.7 million gallons would be part of the Wolfe Neck Treatment Facility service area. The Wolfe Neck treatment plant was designed for a peak summer capacity of 4.0 mgd but the effective capacity is reported to be lower. The Wolfe Neck system is intended to have a disposal capacity of 11.0 mgd, including a practical capacity of 2.0 mgd on existing fields, a planned 1.0 mgd field expansion and eventually 8.0 mgd using spray irrigation. The existing Wolfe Neck spray fields use 319 acres. The 1.0 mgd of field expansion assumes the County would be able to use additional State-owned lands west and southeast of the plant. The study foresees substantial shortfalls in disposal capacity for Wolfe Neck of up to 2.7 mgd in the

future, even with the proposed disposal expansions. Spray irrigation at the Inland Bays Facility is an option under consideration for this future flow.

The Inland Bays Facility needs a treatment plant expansion. The treatment system has a design capacity of 1.46 mgd in summer months, but the practical limit is reported to be 1.3 mgd. The study suggests diverting some flows from West Rehoboth to the Inland Bays facility as part of the Inland Bays facility expansion, because the Inland Bays facility is less constrained in land. The Inland Bays Facility has disposal capacity of 1.5 mgd for spray irrigation. In 2004, Sussex County purchased 2,000 acres near the existing facility for spray expansion. The report estimates that the existing and new fields could provide capacity for 13.1 mgd, which is consistent with the build-out peak summer design flow of 13.0 mgd. Recent sewer expansions at Angola and Oak Orchard will add to this demand.

The study also states that disposal capacity could be increased by converting spray irrigation sites to rapid infiltration basins, if DNREC approves.

### ***South Coastal Region***

The following information is based upon the 2005 South Coastal Planning Area Study for Wastewater. The South Coastal Planning Area includes the following existing sanitary sewer districts: Bethany Beach, North Bethany Expansion of Bethany Beach, Miller Creek, South Ocean View, Johnson's Corner, Sea County, Bayview Estates, South Bethany, Fenwick Island, Holts Landing, Ocean View Expansion of Bethany Beach, and Cedar Neck Expansion of Bethany Beach. Several smaller community sewer systems were abandoned as the South Coastal system was expanded over the years.

Service is scheduled for the following new sanitary sewer districts:

- Millville Expansion of Bethany Beach (Part of North Central Service Area, including areas south of the Indian River Bay and areas north and south of Millville).
- Miller Creek (Part of Central Service Area, which includes lands along Central Avenue and north of Old Cemetery Church Road).
- South Ocean View (Part of Central Service Area, which includes areas south of Ocean View).
- Portions of the Beaver Dam Area (Part of Central Service Area, including areas west and southwest of Millville, northwest of Central Avenue and east of Powell Farm Road).
- Johnson's Corner (Part of South Service Area, which is south of Zion Church Road and northwest of Bunting Road). This is an established district. Improvements should be completed by 2111.

Future sewer service is anticipated for the following proposed sanitary sewer districts:

- Bayard (which is generally east of Bayard Road, north of Dirickson Creek and west of Assawoman Wildlife Refuge).
- West Fenwick (which is generally east of Dickerson Road and north of Route 54).
- Vines Creek (which is generally north of Route 26, south of the Indian River, west of Blackwater Creek).

The study found that the total build-out for the South Coastal area under current zoning would be 87,180 EDUs, including existing development.

In 2007, service was extended to several parts of the Miller’s Creek Sanitary Sewer District, north of Assawoman Bay. The new service area includes areas along Beaver Dam Road, Parker House Road, Double Bridges Road and Plantation Park. The project cost \$11 million.

The current sewer improvements to serve Millville and areas to the north are projected to cost \$35 million. The current County project to extend sewer service to areas south of Ocean View is projected to cost \$8 million.

In 2007, a referendum was passed to establish the Johnson’s Corner Sanitary Sewer District. Approximately \$14 million of improvements are proposed.

All of the South Coastal cost estimates were provided in 2005 dollars. The study estimated that \$163 million in conveyance and collection expenses would be needed to serve the proposed sewer districts, not including treatment costs. Within existing districts, conveyance improvements are projected to cost \$9.2 million. Many additional costs have not yet been determined in the study.

The South Coastal facility’s treatment capacity was recently expanded to 9.0 mgd at a cost of \$15 million. The study recommends eventually expanding the treatment capacity at the existing South Coastal facility to 24 mgd. The flows are also being affected by the replacement of smaller homes with larger homes with higher numbers of bedrooms and often more occupants. The treatment facility is located on Beaver Dam Road.

### ***Dagsboro/Frankford Region***

The following information is based upon the December 2006 draft of the Dagsboro/Frankford Sewer Planning Area Study. The area includes the towns of Dagsboro and Frankford and areas surrounding the towns. This district also includes large areas east of Millsboro south of the Indian River. The northern boundary of the planning area is the Indian River. The planning area includes lands west of the Vines Creek, and east of Route 113 and Thorogoods Road. The southern border of this planning area is generally along Omar and Lazy Lagoon Roads. Wastewater is collected and transported to the Piney Neck Regional Wastewater Facility near Piney Neck Road. This

facility only has capacity for 200,000 gallons per day and would need an expansion to handle significant growth. There currently are approximately 987 EDUs connected to the treatment plant. The study found that the build-out design would be 25,761 EDUs based upon current zoning. The study projected that there would be 6,136 EDUs connected to the system by 2025.

### ***Blades Area Region***

The following is based upon the November 2006 draft Plan for the Blades Sewer Planning Area. The current Blades Sanitary Sewer District uses a County-owned collection system. The effluent is then conveyed to Seaford's treatment plant, which is along north side of the Nanticoke River at southwest corner of the City. Existing flows from Blades are approximately 100,000 gallons per day.

There are 360 acres in Blades' Annexation Area, which was established in the Town's 2002 Comprehensive Plan. That annexation area includes areas close to the town's borders along the south side of the Nanticoke River. The 1998 County Sewer Plan suggested that a new sewer plant be constructed to handle growth in the Blades area.

The Blades Planning Area Study considered a potential service area of 14,800 acres. This was divided into Study Area I, which includes large areas southwest, south and east of Blades, and Study Area II, which includes areas south and east of Study Area I. Part of Study Area II is adjacent to the northern edge of the Annexation Area for the Town of Laurel. If the Annexation Area and Study Area I would be built out, based upon current zoning and if public water and sewer services would be provided, the study projects that the sewer flow would be equal to 7,242 total equivalent dwelling units by 2030, based upon the study's estimated growth rates. The study estimated that such growth would result in sewer flows of 2.2 million gallons per day. If that same land area would become completely built out, the study projects that up to 16,288 EDU would be possible.

If Study Area II would be served by public water and sewer services and be completely built out sometime in the future, the study projects that could result in an additional 15,529 equivalent dwelling units. If Study Area I and II would be completely built-out, that could eventually result in a total of 35,778 equivalent dwelling units.

The County Wastewater Services Areas Map shows the areas immediately surrounding Blades as a primary service area, meaning it is intended to be served within five years. Blades Study Area I is shown as a Secondary Service Area, meaning any service is likely to be more than five years away. Study Area II is not currently shown as a County sewer service area.

### **Sewer Service by Municipalities**

Most of Sussex County's cities and towns operate their own sewer systems, including Seaford, Georgetown, Rehoboth, Laurel, Lewes, Millsboro, Bridgeville, Delmar, Greenwood, Milton and

Selbyville. Milford is connected to a system owned by Kent County that has its treatment plant a few miles north of Milford, east of Route 113/1.

Many of these municipalities need to invest millions of dollars in their sewer systems to expand treatment and provide additional spray fields. For example, Milton is building a new treatment facility south of the town, and Georgetown is seeking additional spray fields and planning an expansion of their treatment capacity. The Millsboro plant is proposed to be expanded in phases. Phase I is under construction. An expansion of the Lewes treatment plant is being completed that will double the city's treatment capacity. In many cases, a large portion of these costs are being funded by new developments, including connection fees, as well as low interest loans and grants from State and Federal agencies.

Studies are currently underway to consider whether any of the sewer systems along the Route 13 corridor in the western part of the County should be consolidated, and a larger sewer service area be established. That could possibly involve a new regional treatment plant that could serve Blades, Bethel, Greenwood, part of Seaford and surrounding areas.

Sewer from Ellendale is currently being conveyed to Georgetown for treatment and disposal, but a treatment plant for Ellendale is being considered. A sewer system is also operated by the County at the Sussex County Airport.

As described above in the Inland Bays section, there is a proposal for a joint Sussex County / Rehoboth discharge of treated effluent at a point over one mile out into the ocean.

### **Private Sewer Providers**

Private sewer providers are considered utility providers and are regulated by the Public Service Commission (PSC). They must obtain a Certificate of Public Convenience and Necessity (CPCN) from the PSC to serve a designated area. Private sewer providers are considered a viable option for wastewater treatment in areas where County or Municipal services are non-existent or unplanned. Wastewater from new development should be directed to County or Municipal wastewater systems where available.

Artesian Wastewater Management and Tidewater Environmental Services currently mainly provide sewer services for individual developments that are along Route 9 east of Georgetown or along the Routes 5, 24 and 26 corridors in the eastern part of the County. Each company is also planning on serving many new developments. In addition, Tidewater is proposing to serve the large Blackwater Creek development west of Delmar and also serves a development southeast of Laurel.

In addition to Artesian and Tidewater, other private providers of sewer service include: the Bass Property, Chapel Green, the Excel Property, Moore Grant, Oak Crest and YMG Corporation. There also are wastewater treatment facilities serving major industries, such as Allen Family Foods in Harbeson, Perdue in Georgetown, Mountaire east of Millsboro, and Mountaire in Selbyville.

## **On-Lot Septic Systems**

Many scattered buildings throughout the County use on-lot septic systems, usually with a drain field. DNREC regulates holding tanks and requires annual inspections be performed which include a review of pump-out records.

A number of properties along the Inland Bays use holding tanks, which are only intended to be temporary and which require regular pumping.

## **Private Sewer Treatment Service In Public Sewer Districts**

Tidewater Environmental Services and Artesian Wastewater Management have been regularly expanding sewer and water services in Sussex County, as new developments are proposed and built. Service areas of private companies are mainly under the oversight of State Public Service Commission (PSC). The PSC issues Certificates of Public Convenience and Necessity (CPCN) to private providers. These certificates are typically applied for after a majority of affected property owners in a specific area sign or the owner of a large subdividable petition asking a private company to provide service to that area or parcel. Sussex County works closely with private providers to connect private systems to public treatment plants, where possible.

A controversy can arise when a private sewer treatment provider company seeks to serve an area that is also in an area planned for service by a city, town or county system. In many cases, a private developer is seeking service as soon as possible to connect with his/her new development. In many cases, the public system intends to serve the area, but no immediate connection point is available. In some cases, the project may install infrastructure to make that connection.

Delaware law gives towns and cities the authority to pre-approve any private utility service within its borders. However, that control does not extend to future annexation areas located outside of current municipal borders. Much of Sussex County's new development is located in or near these annexation areas, rather than within municipal borders.

The primary concern for Sussex County is to ensure that its own County-operated sewer treatment services can be efficiently provided to existing development suffering from inadequate existing community sewer facilities and/or failing on-site septic systems. The County has taken on tens of millions of dollars of debt to extend County-operated service to these areas. The County's efforts are extremely important to protect the water quality of the inland bays and other waterways. The County and municipalities have also been burdened with high costs to meet State mandates to avoid or eliminate discharges of treated effluent into the inland bays and many other waterways. These mandates have required large expenditures to establish land application systems for the effluent disposal after effluent has passed through a treatment plant.

To make it cost-effective to provide sewer service to existing development, it is often necessary to serve new development in the same system. The new development often provides the initial capital to lower connection costs and a larger customer base to keep usage fees moderate for existing homeowners. However, if the new development is served as part of a separate private system, then the economics of serving existing development must stand on its own. There also may be major inefficiencies if the private system is located between two existing areas that need service. This results in a need to build long service line extensions without any customers along those lines to pay for those extensions. In these cases it is also difficult to efficiently serve individual lots between subdivisions.

## **Wastewater Treatment Strategies**

The following strategies address public-private sewer treatment service area conflicts and other issues raised in the above discussion.

- Regarding private sewer treatment providers in officially-designated public sewer service areas:

One option would be for Sussex County to control whether private or public providers will serve areas planned for new sewer service within County-designated sewer service areas. To address the highest priority situations, Sussex County could limit this policy to primary service areas (those planned for County sewer service in the immediate future). Alternatively, this policy could be extended to areas intended for longer-term service too.

In some cases, the County may end up determining that a private provider can most efficiently serve a particular area. In other cases, the County might determine that service by the County is appropriate, in which case the County could contract with a private service provider to construct and/or operate this new County-owned system.

In some cases, the County could deny private providers the right to provide service in an area where County or municipal service is planned and needed to cost-effectively solve a public health problem. These types of decisions would be subject to a process before the County Engineering Department and County Council. This process could require consideration of cost issues, health concerns, proposed construction timing and other relevant considerations before any decision is made to establish, expand or delay service by a private sewer treatment provider.

The intent would be to have any authority apply only within the County's officially-designated sewer service areas. County approval of which providers serve areas outside of the sewer service areas is not contemplated. Most of the land area in the County is not within official sewer service areas. The County would like to retain the authority to comment on proposed private service outside County and sewer service areas.

- Other Wastewater Treatment Strategies:

- Sanitary sewer service needs to be coordinated with land use planning and zoning. Most major public sewer improvements should help to direct growth to areas adjacent to or within cities and towns.
- Sussex County should emphasize providing public sewer service to areas of existing development where there are public health concerns or where central sewer is needed to protect the water quality of the inland bays. Care is needed to avoid large public sewer extensions in undeveloped areas that promote dense new developments in areas with important natural features.
- In cooperation with DNREC, the County and municipalities should investigate use of Rapid Infiltration Basin (RIB) systems. The cost of acquiring land for large spray irrigation fields has greatly increased, because of higher land values. Land can be leased, but then there is not a guarantee of long-term availability. RIB systems can allow the same effluent to be disposed on one-tenth the land conventional spray fields require. However, it would be necessary to address nutrient loadings, and nutrient fate and transport issues. Also, care would be needed to meet TMDL limits established for local waterways. If not properly operated and maintained, RIB systems have a greater threat of groundwater pollution than spray irrigation.

**Map: Wastewater Service Areas that have  
Received Certificates of Public Convenience and Necessity**

**Map: Water Supply, Wellhead & Excellent Recharge Areas**