WASTEWATER ADVISORY COMMITTEE

A G E N D A

TOWN OF CHINCOTEAGUE, VIRGINIA

May 30, 2013, 9:00 A.M. – Council Chambers - Town Hall

CALL TO ORDER

ROLL CALL

AGENDA ADDITIONS OR ADOPTION

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1. Town Council Report
   - Committee mark up of FINAL report

2. Draft Motion/Recommendations
   - Action Items
   - Future of Committee (S. Papadopoulos)

3. Committee Member Comments

ADJOURN

NEXT MEETING(S): JUNE 3RD, 7PM COUNCIL MEETING, OR
JUNE 20TH, 5PM COUNCIL WORKSHOP

MEMORANDUM

Town of Chincoteague Inc.

Date: May 30, 2013

To: Wastewater Advisory Committee

Through: Robert Ritter, Town Manager

From: Bill Neville, Town Planner

Subject: Review of the **FINAL REPORT** to Town Council

The Wastewater Advisory Committee successfully presented a draft report to the Town Council on April 18th which seemed to be favorably received. Since no major comments or concerns have been identified, Town Staff incorporated several small edits and revised the document to be the Final Report of the Committee.

The scheduled meeting of WAC will allow for a final review of the document and recommendations, as well as a suggested motion for presentation to the Town Council in June.

> ***To recommend adoption of the Report of the Wastewater Advisory Committee dated June 2013, as a Preliminary Wastewater Management Plan for the Town of Chincoteague, and to approve the following small steps toward implementation of a public Phase 1B wastewater management utility.***
>
> 1) Request VDH to expand its computerized reporting system of existing drainfield system inspections, repairs and replacements and report to the Town Council annually so that improvements can be documented.
>
> 2) Town of Chincoteague will continue to encourage individual wastewater treatment systems that are properly maintained to meet current State regulations.
>
> 3) Town of Chincoteague will continue to encourage NPDES wastewater treatment permit holders to provide service by voluntary connection within the Main Street Corridor small service area between Maddox Boulevard and Bunting Road.

4) Town of Chincoteague will regularly review and refine zoning ordinance and development standards for areas within new sewer service areas.

5) Town of Chincoteague will identify a potential Maddox Boulevard Corridor wastewater treatment service area and prepare the next phase of engineering studies, permit applications, and grant requests to determine its feasibility for operation as a publicly owned wastewater treatment facility similar to the private Sunset Bay Utilities facility.

6) Request Virginia DEQ approval in principle of a public wastewater treatment facility discharge permit.

7) Town of Chincoteague will actively participate with Virginia State Agencies, Accomack County, and the Maryland Coastal Bays Program to revise the Comprehensive Conservation & Management Plan (CCMP) for monitoring and improving water quality in Chincoteague Bay, and will seek to continue working on a long range plan that reduces nutrient loads from septic drainfields to the surrounding waters of Chincoteague Island on a voluntary basis.

Final Draft 5.24.13

REPORT OF THE
WASTEWATER ADVISORY COMMITTEE

June 2013

Presented to the Town Council
Chincoteague Island, Virginia

By

Spiro Papadopoulos, Chairman
Scott Chesson
Tommy Clark
Kelly Conklin
Mike Tolbert

With the support of Town Staff

Purpose of the Wastewater Advisory Committee

The purpose of the Wastewater Advisory Committee is to review the Preliminary Engineering Report for a Phase 1 Sanitary Sewer System dated March 2011, along with other studies or alternatives, and to present recommendations for action to the Town Council by June 30, 2013.

Wastewater Committee Goals

- **Complete a 2 year study/work plan by June 2013;**
- **Review wastewater needs for the community;**
- **Review the regional wastewater study dated March 2011, along with other studies or alternatives, and to present recommendations for action to the Town Council;**
- **Review and make recommendations on alternatives for wastewater treatment and disposal, a collection system and force main routing;**
- **Provide ideas and suggestions to the Town Council on areas to be provided with wastewater sewer service;**
- **Provide suggestions for acquisition of new properties for possible treatment plant or pump station site;**
- **Serve as a liaison to the Public and Town Council.**

Why now?

The Town of Chincoteague is faced with public service responsibilities beyond the everyday needs of a small community. Our year-round management must look for alternative wastewater treatment methods in order to support local industry and the tourism based economy. The future well-being of all residents, visitors and businesses will be determined by working together on public service issues such as a new wastewater treatment utility system.

Similar coastal communities have been forced by federal regulations to develop 'state of the art' wastewater treatment facilities. In the future, Chincoteague could face similar potential issues that would require immediate action and could have a negative impact on the economy if we do not plan ahead.

A Wastewater Management Plan for Chincoteague Island

The Town of Chincoteague, Virginia, is the largest community on Virginia's Eastern Shore and has an important cultural history. Chincoteague is known for its small town charm, oyster and seafood business, famous ponies, recreational fishing and, most importantly, as a gateway to the National Seashore and Wildlife Refuge.

Today, Chincoteague is home to 4,000 people and tourism is its primary industry. Seasonal residents and visitors swell this number to more than 15,000 during the summer months. Rather than viewing Chincoteague Island as being dependent on the tourist industry, tourism is also seen as being dependent on the island, including its history and character as a fishing village. Unlike other coastal beach towns that feature a boardwalk and numerous attractions, the Town of Chincoteague and its surrounding waters are the natural attraction.

The Town of Chincoteague is challenged, however, with public service responsibilities beyond the everyday needs of its year-round residents in order to support its industry and tourism- based economy. The future well-being of all residents, visitors and businesses will be determined by effective public management of Town resources.

Chincoteague does not have major water quality issues today. There is a good flush of high quality water throughout the area thanks to the tide twice a day and the nearby Chincoteague Inlet. Our challenge is to protect this high water quality while allowing the community to grow and adapt to new economic and social changes.

The Chincoteague Wastewater Advisory Committee is tasked with making recommendations for a new public service responsibility for the Town – the addition of a wastewater utility system that will enhance the community and protect the environment.

Infrastructure improvements such as streets, drinking water, and parks that support the lives and businesses of Town residents are one of the basic functions of Town government. A Phase 1 public wastewater utility service area has been proposed (ClarkNexsen Preliminary Engineering Report 2011) as an important idea to promote Chincoteague's main economic development engine – Tourism.

All options considered by the Wastewater Advisory Committee (WAC) are based on the idea of first serving a Phase 1 area along the Town's commercial corridors as the best way to meet water quality standards for the largest water customers.

Not only will the primary cost of the new utility system be supported by those who will benefit (tourism related business), but small residential drainfield systems that are operating within the State regulations will not have to be replaced. Based on current demographic and economic trends, the plan for the future should be to allow incremental expansion of existing Town business and industry – not to create a wave of new growth and development.

The adoption of a Wastewater Management Plan with recommended actions by Town Council would be smart 'protection' from future EPA enforcement action and would support the preparation of grant requests. Research completed by the WAC over the last 2 years forms the basis of a plan with a deliberate approach to improve wastewater treatment options for the Town of Chincoteague.

The Wastewater Advisory Committee studied five (5) similar coastal towns that recently transitioned from individual drainfields to a public sewer system

Federal Regulations

Clean Water Act regulations impact Chincoteague Island and call for a pro-active plan

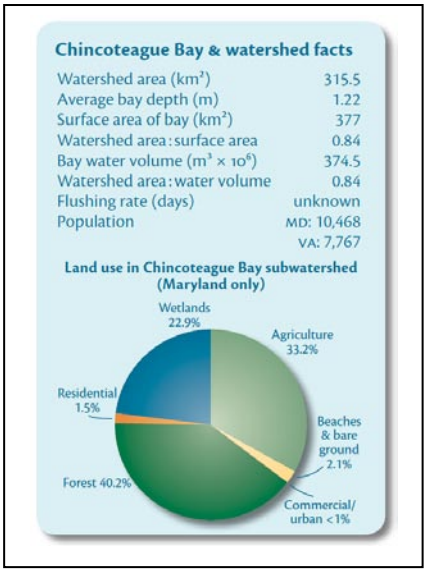
Surrounded by water that is managed by Federal and State agencies, Chincoteague Island must be well informed about the Clean Water Act (CWA). The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The Environmental Protection Agency (EPA) implements pollution control programs under CWA authority and can place a community under a compliance order subject to fines. Chincoteague Bay water quality is still good and has not crossed this threshold to require EPA enforcement.

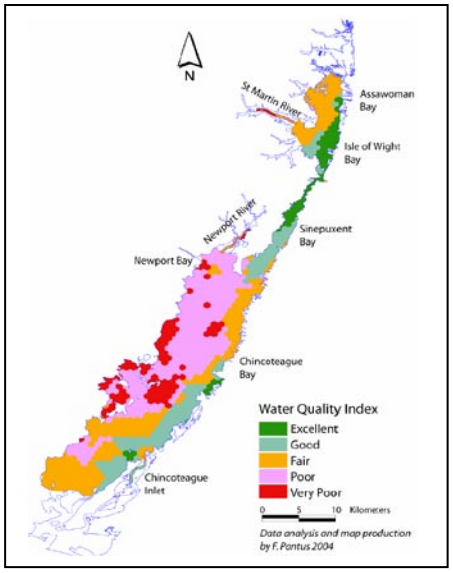
NPDES - National Pollutant Discharge Elimination System permit program controls discharges. It is unlawful to discharge any pollutant from a point source into navigable waters, unless a permit is obtained. Point sources are discrete conveyances such as pipes or man-made ditches.

TMDL - The EPA also sets water quality standards for all contaminants in surface waters as measured by Total Maximum Daily Load (TMDL) for nutrients such as nitrogen and phosphorus. Virginia Institute of Marine Sciences (VIMS) is currently establishing TMDL standards for Chincoteague Bay. Existing septic drainfields have been targeted as old technology that is not up to the task of nutrient removal.

CCMP - The National Estuary Program (NEP) was established in 1987 by amendment of the Clean Water Act to identify, restore, and protect nationally significant estuaries of the United States. The NEP is designed to encourage local communities to take responsibility for managing their own coastal waters by implementing a formal management plan (Comprehensive Conservation and Management Plan (CCMP)) to restore and protect the estuary. The Maryland Coastal Bays Program is currently revising a CCMP for Chincoteague Bay and requesting participation by Virginia.

Federal regulations also guide the actions of the Department of Interior agencies who manage public lands on Assateague Island. Studies of water quality have been completed by the National Park Service and the Maryland Coastal Bays Program that provide extensive data over the last 10 years.



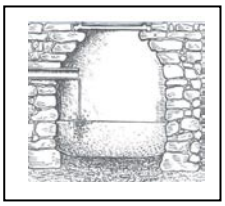


VDH plans to focus its efforts in the future on regulation compliance including more inspections, enforced maintenance and required upgrades to drainfields

State Regulations

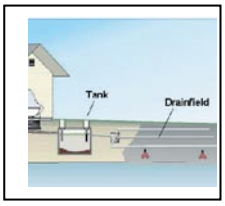
Existing regulations from DEQ and VDH are already at work in Chincoteague neighborhoods

Administration of CWA regulation is passed on to State Agencies such as the Virginia Department of Environmental Quality/State Water Control Board (DEQ) and the State Health Department/Environmental Health Services (VDH). Whether a property has an individual septic system or advanced treatment technology such as a mound system, these regulations must be met on Chincoteague Island.



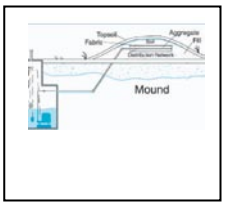
Cesspool

- No longer a permitted type of wastewater disposal
- Unknown quantity on Chincoteague Island
- Must be replaced with approved drainfield with new construction or sale of property



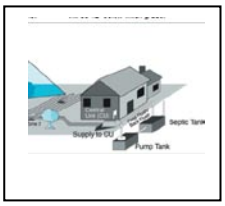
Septic Tank and Drainfield

- Permitted by VDH in well drained soils and min. distance to water table
- Location and number of existing drainfields is not available from VDH
- Inspection, maintenance and repairs are permitted by VDH
- Yard area useable except during heavy rains
- Poor quality nutrient removal



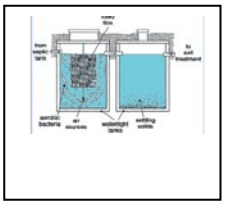
Alternative Onsite Sewage Treatment System (mound)

- Permitted by VDH with approved engineering design
- Approximately 30 new installations per year on Chincoteague Island
- Regular maintenance and inspection required
- Yard area not useable
- Moderate quality nutrient removal



Alternative Onsite Sewage Treatment System (discharge)

- Permitted by VDH and DEQ with approved engineering design and discharge permit
- Used for combined properties and larger uses
- Regular operation, maintenance and inspection required
- Yard area may be useable
- Moderate quality nutrient removal



Public or Private Wastewater Treatment System

- Permitted by DEQ and VMRC with approved engineering design and discharge permit
- Used for large commercial/institutional uses
- Regular operation, maintenance and inspection required
- Land area, setbacks and access required
- High quality nutrient removal

All short term or long term wastewater solutions will require individuals and the Town of Chincoteague to work with State Agencies to manage water quality. Research of similar coastal communities shows that a transition from individual septic drainfields to public sewer treatment may take 20 years or more and may only occur in portions of the community where it makes sense.

Accomack County Plan/Regulations

Draft Comprehensive Plan policies reviewed by the Accomack County Planning Commission

At this time, there does not appear to be a need for municipally owned and operated wastewater systems beyond those already identified. In the event that future municipal wastewater treatment needs arise, it appears that small collection and treatment systems (under 100,000 gallons per day/treatment) will be adequate.

The Town of Chincoteague is investigating a wastewater treatment and a collection system to initially serve the main commercial areas of the Town.

Accomack County supports the Town in its pursuit of a wastewater treatment facility and collection system located on the island. The County is also interested in assisting (with reservation) the Town to find appropriate solutions for the discharge of treated effluent from its wastewater treatment facility.

Town of Chincoteague Plan/Regulations

Existing Comprehensive Plan policies currently guide Town wastewater treatment policy

Presently there is no central sewerage collection and treatment system serving the Island. Wastewater on Chincoteague is disposed of primarily by discharge directly into seepage pits, cesspools, or by the use of holding tanks or septic tanks and drain fields. The maintenance of these individually owned sewerage systems on the Island, is provided by the periodic pumping of facilities by private firms. Recently a few packaged sewerage systems have been installed by residents and businesses of the Island and are in use.

Sewerage disposal is probably the most controversial subject on the Island. At the one extreme are those who feel that there are no sewerage problems on the Island. On the other extreme are those who believe that every cesspool and septic system on the Island has either failed or is about to fail. In addition, different state and federal agencies have confused the issue by referencing the "sewerage problems" on Chincoteague in numerous reports and documents, without apparent substantial supporting evidence. It should be noted that shellfish beds currently being utilized in surrounding waters have, to the best of knowledge, never been closed by any State or Federal agency. In fact, the VDH Division of Shellfish Sanitation has categorically stated that "the water quality is excellent" in those areas.

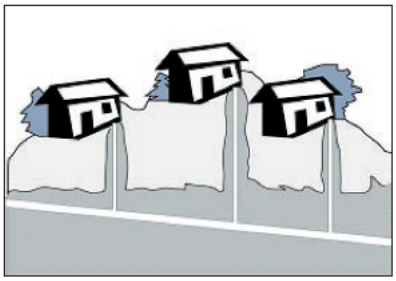
The Town's Comprehensive Plan recommends studying the feasibility of developing public sewer collection and treatment facilities. VDH and DEQ remain the responsible regulatory agency for wastewater management on Chincoteague Island.

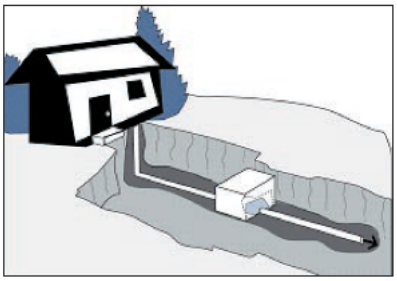
Septic tanks are required to be pumped out every 3 to 5 years or as needed. Drainfield lines become clogged over time and must eventually be replaced in 20 to 30 years

Collection Systems

A new wastewater utility system could be managed by the Town Public Works Department

In order to provide a public wastewater utility for Chincoteague Island, it will be necessary to construct a collection system of underground pipes from each customer to a central pump station that will convey the flow to a treatment facility. This installation will require pavement and sidewalk repairs along public streets, and connections to those existing business and residential properties which have frontage along the street. There are three basic types of collection pipe systems:





Gravity	Vacuum	Low Pressure
• Wastewater flows by gravity in a pipe system to a single large pump station • Requires the least disturbance to properties and least maintenance • Depth of pipe may conflict with elevated water tables • Limited elevation differences on the Island do not support this option over long distances • Susceptible to stormwater inflow and infiltration that increases treatment capacity needs • Increased cost for construction and maintenance due to dewatering	• Several small pump stations maintain a constant flow of wastewater in a pressurized pipe system • A larger pump station may be required to deliver the flow to the treatment plant • Requires a small valve unit between every two adjacent uses • Requires regular maintenance • Portions of system may include gravity lines with increased dewatering cost	• Each customer maintains a small pump that forces wastewater through a low pressure pipe system • Installation area on each property is higher, force main disturbance is lower • Less maintenance required by Town, individual customer maintains E-1 pumps and tank • Easy to implement in sections for serving specific areas and customers • Less initial expense for construction • Operates well in high water table areas to minimize stormwater inflow and infiltration

For each of the typical collection systems, the cost to convey wastewater flows to a central wastewater treatment facility may vary dramatically depending on the distance between the customers and the treatment plant.

A preliminary study estimated wastewater flow of 114,000 gallons per day off season to 342,000 gpd peak season from the Phase One commercial street corridors

Wastewater Treatment Facility

There is a limited number of solutions that can be implemented by the Town without assistance

In order to provide a public wastewater utility for all of Chincoteague Island, it will be necessary to construct an advanced wastewater treatment facility that meets all current regulations and water quality standards for water reuse or discharge (best available technology). A location has not been identified, however existing public use property, such as the area west of the Town Offices or the Harbor area, should be considered before the purchase of private land.

The Wastewater Advisory Committee has not yet concluded that the entire island should transition from individual septic drainfields and private treatment systems to a single public wastewater utility system.
It is clear that a voluntary connection agreement will be needed that would allow the cost burden to be carried by the commercial and public customers serving the tourism industry. These issues mean that there will likely be more than one type of treatment facility used to manage the needs of Chincoteague Island.

	Pros/Cons
Regional Example: Future WWTP at Atlantic Town Center site with the Town of Chincoteague as a customer	• Cost of treatment and disposal is shared with others • 9 mile force main from Island to Mainland
Centralized Example: Cape Charles (photos below)	• Town controls costs, operation, fees, growth issues • All residents and businesses required to connect
Small Service Area - Public Example: Parksley Commercial District	• Service provided to customers with highest need and benefit • Requires minimum number of customers to cover costs
Small Service Area - Private Examples: Sunset Bay Utilities, US Coast Guard	• Facilities only provided to meet current needs of a specific area • Multiple small private facilities increase inspection costs, chance of failure • Permits are difficult to obtain
Individual Private Example: Island Creamery	• Private investment to meet individual needs only • Inefficient use of land • Maintenance and inspection needed to comply with regulations

Cost Information Summary from Research Materials[i]

The following cost information for wastewater treatment system alternatives was compiled from recent research by other similar coastal communities.

Type	Capital Cost (Estimated total cost per property served)	Capital Cost (Estimated Unit Cost per gpd of capacity)	Operations / Maintenance (Estimated annual cost per property served)	Operations / Maintenance (Estimated Unit Cost per gpd of capacity)	Equivalent Annual Cost (5%, 20 yrs)	Effluent Nitrogen Concentration (mg/l)
Individual Septic tank and drainfield (175 to 350 gpd)	$13,000	$37	$110	$0.31	$1,150	26
Individual system with nitrogen removal	$26,000	$74	$2,000	$6	$4,090	13 to 19
Cluster system (up to 30 homes) 10,000 gpd	$48,300	$70	$1,050	$3	$4,920	8 to 15
Sunset Bay Utilities (up to 213 EDUs) 64,000 gpd	$21,694 ($1M treatment + $3.6M collection = $4.6M / 213)	$72	$804 to $1,200	$3.80 to $5.60	-	8
Public Service Area system (300 homes) 100,000 gpd	$51,300	$35 to $70	$1,360	$4	$5,480	6 to 8
Centralized system (3,000 homes) 1 mgd	$42,900	$17	$500	$2	$3,940	5
Cape Charles WWTP (1150 customers) 250,000 gpd	**$15,652 ($35,000 with new collection system)**	**$72**	**$695**	**$3.20**	**$1,400**	**ChesBay TMDL (5)**

($10,000 connection fee, $65-85 per month fee for water/wastewater/trash, $14M grants, $5M financed)

[i] *COMPARISON OF COSTS FOR WASTEWATER MANAGEMENT SYSTEMS APPLICABLE TO CAPE COD*
Guidance to Cape Cod Towns Undertaking Comprehensive Wastewater Management Planning
Prepared by: Barnstable County Wastewater Cost Task Force
April 2010

Local Examples considered by WAC

Oak Island, NC transitioned from septic to sewer and sends average flow to a regional mainland treatment plant. Peak tourist season flow is treated for reuse/land application

Methods of Disposal

The method of disposal may decide the selection of other parts of a wastewater utility system

In order to provide a public wastewater utility for Chincoteague Island, it will be necessary to re-use or dispose of the clean and treated water in a manner that meets current regulations and does not adversely affect the tourism or shellfish industries. A variety of solutions have been identified by researching other similar coastal communities.

	Pros/Cons
Rapid Infiltration Basins on Mainland Example: Delaware coastal communities	• Returns clean treated water to groundwater source on the Mainland • Preferred method of DEQ, however City of Chesapeake is only example in Virginia • Politically charged issue in Accomack County
Deep Well Injection Example: Florida coastal communities	• Returns clean treated water to deep aquifer under Island to prevent subsidence • Never been permitted in Virginia
Ocean Outfall Example: Delaware coastal communities Example: Ocean going Barge	• Clean treated water pumped offshore and out of the Chincoteague Bay watershed • Public perception is that Swimming beach may be affected
Overboard Discharge to Channel/Bay Example: Chincoteague and nearby coastal communities in Maryland	• Regular strong flushing action and short distance from channel to the inlet • Shellfish grounds may be affected
Reuse, Land Application, Fowling Gut Discharge Example: Virginia eastern shore communities	• Prevents direct discharge to surrounding waterways • Difficult to obtain a permit given elevated water tables and marsh conditions

Cape Charles, VA completed an advanced wastewater treatment facility in 2012 with assistance from an EPA grant for $12M and a $6M, 0% interest loan from VA CWRLF

Financial

The construction and operation of a public wastewater utility system is a high cost, long term proposal that must be supported by the customers who benefit from it, and ideally will include a cost sharing grant from Federal Agencies to offset mandated regulations and water quality standards.

EPA - Environmental Protection Agency primarily funds projects through the State revolving loan fund, however special funds may be available at certain times such as the American Recovery and Rehabilitation Act (ARRA).

USDA/Rural Development Program the main source of grants and financing for public utility infrastructure that is available right now. USDA guidelines will set a minimum utility rate based on 1.5% of median household income (same for water and sewer) and require replacement reserves. For Northampton County this calculation worked out to $45 per month for water and $45 per month for sewer. USDA typically offers a 70% loan, 30% grant package in the best case. This high loan ratio tends to drive the monthly rate way up unless there is a substantial connection fee to retire the debt.

Virginia Clean Water Revolving Loan Fund (CWRLF) provides 20 year loans for treatment facilities, and 30 year loans for collection systems. Cape Charles qualified for 0% interest.

Public Service Authority (PSA) is a semi public entity established to manage a regional wastewater treatment facility often with the power to independently obtain financing. A PSA can have the advantage of allowing local government to establish defined service areas that may cross governmental boundaries, and to share financial resources and expertise in providing a utility service. More information is needed to evaluate the issue of how many customers will be necessary to drive costs down to an affordable level.

Virginia Department of Housing and Community Development (DHCD) may be able to provide a grant from the federal department of Housing and Urban Development (HUD) to help with construction of a sewer pipe collection system. This funding source requires that the system service Low to Moderate Income (LMI) housing in the community. A survey would be needed and there are threshold levels that must be met.

Virginia Public-Private Education Facilities and Infrastructure Act (PPEA) legislation encourages design build agreements with a large contractor who can also obtain project financing. This may not be as favorable because it would not include grants and partnership costs would have to be passed on the consumers. (WebbTide was a consortium that made a presentation to Cape Charles that included Mid Eastern Builders and Timmons Engineering)

Municipal Bonds may be issued by the Town in order to finance all or a portion of the cost for a wastewater utility system.

Private Wastewater Utility companies such as Tidewater Utilities or Sunset Bay Utilities may propose the use of private investment capital to construct needed public utility infrastructure where the service area customer base is adequate to generate an adequate return on investment over time.

Matrix of Alternatives

Consideration of pros, cons, and costs led the Committee to establish a ranking on a scale of 1-10 (10 = best). The combination of alternative portions of a wastewater utility system leads to options that are the most practical and cost effective. The matrix has been enlarged on the following sheets.

Alternatives Matrix

	Pros	Cons	Costs	Rank	Notes and Comments
Collection System				1 to 10	
Gravity Sewer	Conventional technology	Limited application in coastal areas - not feasible	N/A	N/A	Island elevation does not support this option - too low
Vacuum Sewer	Reliability, sealed system in high water table	Public maintenance	$17,000 to $20,000 per property	8	Lower initial cost, higher maintenance costs and chance for infiltration of groundwater
Low Pressure Sewer	Shared Cost with property owner, sealed system	Multiple pump systems	$17,000 to $20,000 per property	9	Higher initial cost for customers to install pumps, lower overall maintenance and operations cost
Treatment Facility	Pros	Cons	Costs	Rank	Notes and Comments
Regional	Efficiency and best solution for watershed	Extended infrastructure, encourages growth, mandatory connection	$127 million	5.5	Water is returned to its origin on the mainland. Option ranked high with several committee members.
Centralized	Shared Costs lower per unit contribution	Mandatory connection, cost may exceed resources	$38 million	7	
Service Area - Public	Allows incremental solution for area of greatest need	Cost and benefit limited to selected areas, voluntary connection possible	$15.4 million	9	Need for cost regulation
Service Area - Private	Incremental solution for select customers, no public investment	Assurance of long term operation and maintenance	$4.6 million	7.5	
Individual Private	Installation is based on site conditions and owner needs	Nutrient control, loss of useable open space (yards)	$26,000 to $90,000	5	This option alone does solve existing problems or needs
Method of Disposal	Pros	Cons	Costs	Rank	Notes and Comments
Rapid Infiltration Basins on Mainland	Returns water to source, natural filter before coastal bays	Conversion of agricultural land, political challenge	N/A ($10 million)	7	Option ranks high with several committee members and VDH because of groundwater recharge. Political challenges to obtain an approved site may limit its implementation
Deep Well Injection	Returns water to source	Relies on EPA approval of deep aquifers, not approvable	N/A (unknown)	3	Not allowed yet in Virginia - option would require very long permit process
Ocean Outfall	Conventional technology	Cost to install and maintain, difficult to permit	$6 million to $20 million	6.5	Cost estimate needed
Overboard Discharge to Channel or Bay	Conventional technology, current practice	Possible impact to shellfish closure areas	Unknown	5.25	Option to continue or expand use of permitted discharge points for treated effluent will need to meet DEQ and VDH standards
Reuse, Land Application, Fowling Gut Discharge	Preferred practice, recharges g-water like drainfields	Limited capacity on Chincoteague Island	Unknown	7	Land application of treated effluent is complicated by high groundwater tables and permit restrictions, DEQ and VDH review
Financing Options	Pros	Cons	Costs	Rank	Notes and Comments
USDA Rural Development	Existing Community Development Programs	Limited grants available, mandatory connections		5.25	
EPA/State Revolving Loan Fund	Possible low interest (0%) loans	Conditions for serving residential areas		7.25	
DHCD/CDBG	Possible grants	Conditions for serving residential areas		6	
Public-Private PPEA	Leverages private capital and expertise	Increased cost over time		7.5	
Public Service Authority	Independently owned, operated and financed	Additional layer of government		6.75	
Municipal Bond	Competitive interest rate, no federal conditions for service	Sole obligation of Town		7.25	

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Centralized	Shared Costs lower per unit contribution	Mandatory connection, cost may exceed resources	$38 million	**7**	
Sewer Service Area - Public	Allows incremental solution for area of greatest need	Cost and benefit limited to selected areas, voluntary connection possible	$15.4 million	**9**	Need for cost regulation
Sewer Service Area - Private	Incremental solution for select customers, no public investment	Assurance of long term operation and maintenance	$4.6 million	**7.5**	
Individual Private	Installation is based on site conditions and owner needs	Nutrient control, loss of useable open space (yards)	$26,000 to $90,000	**5**	This option alone does solve existing problems or needs

Method of Disposal	Pros	Cons	Costs	Rank	Notes and Comments
Rapid Infiltration Basins on Mainland	Returns water to source, natural filter before coastal bays	Conversion of agricultural land, political challenge	N/A ($10 million)	**7**	Option ranks high with several committee members and VDH because of groundwater recharge. Political challenges to obtain an approved site may limit its implementation
Deep Well Injection	Returns water to source	Relies on EPA approval of deep aquifers, not approvable	N/A (unknown)	**3**	Not allowed yet in Virginia - option would require very long permit process
Ocean Outfall	Conventional technology	Cost to install and maintain, difficult to permit	$6 million to $20 million	**6.5**	Cost estimate needed
Overboard Discharge to Channel or Bay	Conventional technology, current practice	Possible impact to shellfish closure areas	Unknown	**5.25**	Option to continue or expand use of permitted discharge points for treated effluent will need to meet DEQ and VDH standards
Reuse, Land Application, Fowling Gut Discharge	Preferred practice, recharges g-water like drainfields	Limited capacity on Chincoteague Island	Unknown	**7**	Land application of treated effluent is complicated by high groundwater tables and permit restrictions, DEQ and VDH review
Financing Options	**Pros**	**Cons**	**Costs**	**Rank**	**Notes and Comments**
USDA Rural Development	Existing Community Development Programs	Limited grants available, mandatory connections		**5.25**	
EPA/State Revolving Loan Fund	Possible low interest (0%) loans	Conditions for serving residential areas		**7.25**	
DHCD/CDBG	Possible grants	Conditions for serving residential areas		**6**	
Public-Private PPEA	Leverages private capital and expertise	Increased cost over time		**7.5**	
Public Service Authority	Independently owned, operated and financed	Additional layer of government		**6.75**	
Municipal Bond	Competitive interest rate, no federal conditions for service	Sole obligation of Town		**7.25**	

Phase 1A Utility Service Area

The majority of properties within the Town will continue to use a conventional septic tank and drainfield system to handle wastewater treatment and disposal. Regular maintenance, repair and replacement when necessary will be monitored and permitted by VDH under existing state regulations. Alternative wastewater treatment systems will be designed and installed by individual property owners as needed to meet current state regulations.

Eight locations on Chincoteague Island have permits for private wastewater treatment facilities that discharge into the surrounding waters. Four systems are constructed and operational: Sunset Bay Utilities, US Coast Guard, Hampton Inn, Comfort Inn & Suites. The Town has supported State approval of a sewer service area for **Main Street between Maddox Boulevard and Bunting Road (Phase 1A),** and has encouraged Sunset Bay Utilities to extend a sewer main to customers in the downtown area which have failing septic fields.

Sunset Bay Utilities, Inc. has existing capacity at its private wastewater treatment facility that will be adequate to serve existing connections and a new 92 room Fairfield Inn & Suites (2013), three downtown restaurants, the restored Island Theater, and several important civic uses including the Library, the CVFC Firehouse, and the Public Restrooms. Additional capacity can be constructed to help meet future demand.

Support for this model of private investment in needed community infrastructure, and which allows for voluntary participation of customers, is an important test to determine whether there is an equal need in other areas of Town for a similar solution.

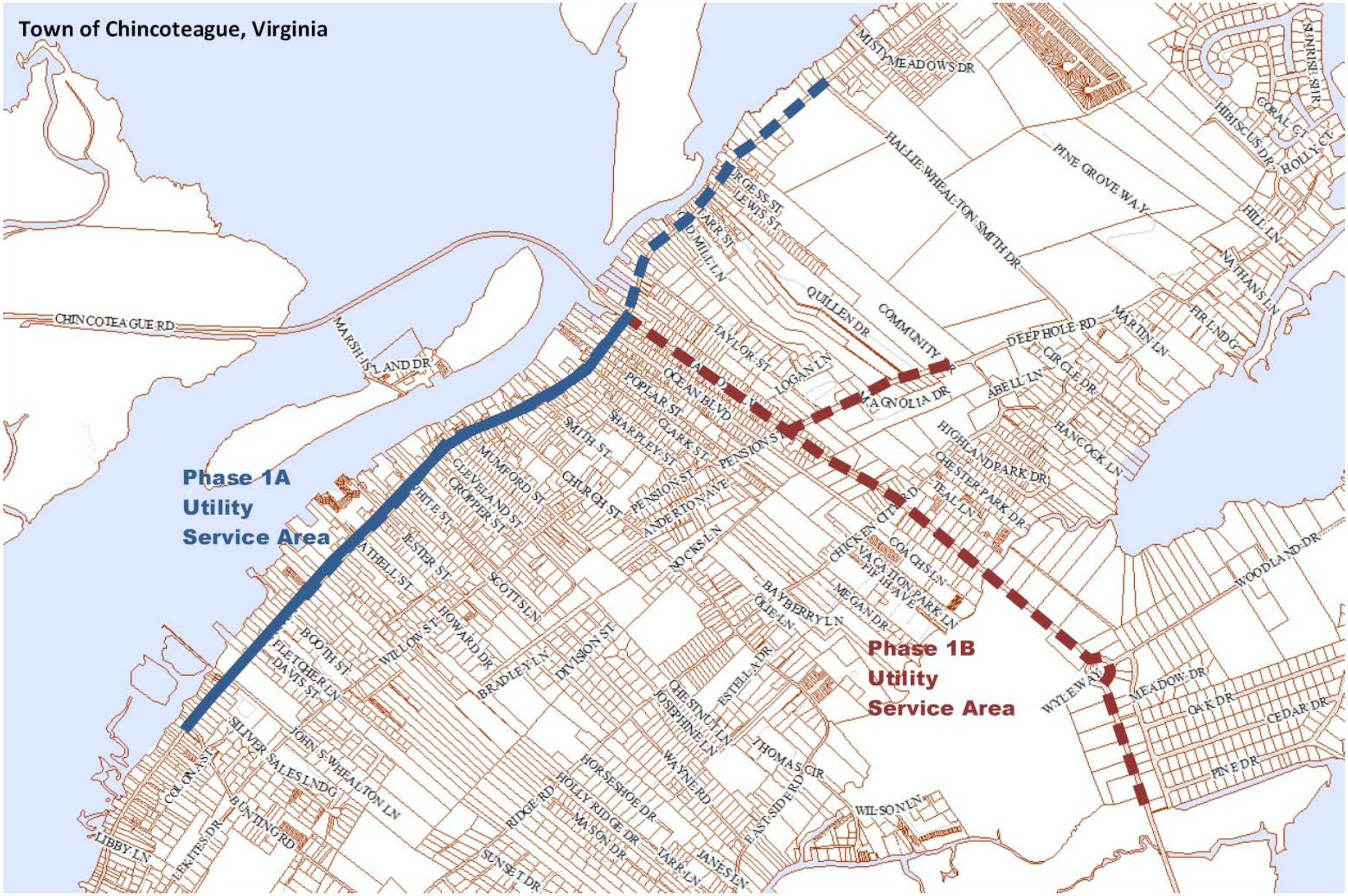
Phase 1B Utility Service Area

Another potential sewer service area has been studied along **Maddox Boulevard from Main Street to the Chincoteague Museum (Phase 1B).** In this case, it would be necessary to construct a new wastewater treatment facility, sewer main collection system, and obtain approval for the discharge of clean treated water that meets the highest standards.

Based on the experience gained in Phase 1A, the Town may find another opportunity to encourage private investment to meet the future needs of the Phase 1B service area, or, the Town could move forward to implement a small service area, wastewater utility system as a publicly owned and operated facility. This option was supported by a business owner survey presented to Town Council on December 3, 2012.

Future Phases

The Wastewater Advisory Committee has identified a step by step approach to meeting the needs of the entire Town of Chincoteague by building on what exists today. Moving forward on a voluntary basis to improve the technology and treatment of wastewater begins with the major water use customers and is tied to the tourism industry that will fund solutions that would otherwise be unachievable by a small rural community.



Conceptual Phase 1 Wastewater Utility System – Collection Sewer Main Exhibit_____May 2013

Summary Findings

Current Management of Wastewater Treatment (Cesspools, Drainfields, Individual Treatment Systems)

The 'status quo' of wastewater treatment solutions has served Chincoteague Island well over the years as a small town, fishing community and seasonal summer destination for family vacations. Investment by individual property owners has traditionally been adequate to meet wastewater disposal needs and regulations.

- Peak water use and disposal occurs in the drier summer months when high water tables are not as much of a problem
- Conversion of many year round homes to seasonal rentals has reduced year round impacts
- High technology advanced treatment systems approved by VDH (beginning in 2010) allows the use of unsuitable soils and areas of high water table to install an individual wastewater treatment system (mound system) and to improve nutrient removal.
- Increased need for wastewater treatment has been met by private investment of hotels, condos, etc. in small treatment facilities

What are we doing right?

- ✓ Installation of advanced individual treatment systems with new construction
- ✓ Repair of existing septic tank/drainfield systems
- ✓ Maintenance to pump out septic tanks or cesspools when there is a problem
- ✓ Inspection by State officials for the Shellfish Sanitation Report with violation notices to enforce needed repairs and maintenance

Looking to the future, investment in public infrastructure may be needed to solve economic challenges, new regulations and construction standards. A public wastewater infrastructure would be preferable to further reductions of landscaped yards and off street parking area for septage disposal mounds – especially on the small lots in the older part of town.
It seems reasonable to plan for a public infrastructure system which costs each customer about the same as it would cost for them to install a new individual system. ($13,000 to $26,000)

Next Steps to Improvement (Sunset Bay Utilities)

In response to an urgent need for wastewater treatment along Main Street in downtown Chincoteague, a private utility company expanded its service area in 2012 to connect existing business and civic uses. Approved and permitted capacity at the plant has allowed for private investment of 4.7 million dollars for construction of a new 92 room waterfront hotel, and will replace inadequate or failing septic drainfields for 3 restaurants, the downtown theater, public restrooms, and the historic firehouse.

- One time connection fees were established at a preferred rate of $10,000, plus $3,500 per EDU* to reimburse the private investment in capital cost of the plant and the sewer main extension. Monthly service fees are estimated at $100 per month.
  (*Equivalent Dwelling Unit equals 350 gallons per day, commercial use estimated by history of water use plus a reserve)

- The Sunset Bay Utilities treatment plant may be expanded under an approved State discharge permit. ($250,000 estimated to construct additional capacity for 105 EDUs/total 64,000 gpd treatment capacity)
- The Virginia State Corporation Commission has approved a wastewater treatment plant service area for Sunset Bay Utilities extending along Main Street from Maddox Boulevard to Bunting Road.

What are we doing right?

- ✓ Expanding existing utility infrastructure through private investment
- ✓ Demonstrating small steps can make a big difference
- ✓ The Wastewater Advisory Committee held a joint meeting on October 9, 2012 with the Town Planning Commission to identify zoning and development issues that would need to be addressed before a new sanitary sewer service area is established.

Looking to the future, there are limits to the number of approved discharge permits for small private wastewater treatment plants on Chincoteague Island, and the State has indicated that there will be no additional permits granted (to surrounding waters). Multiple treatment plants that are privately owned and managed is not the solution preferred by State agencies that are responsible for inspection, testing and certification of operators.

Long Term Future Solution (North Accomack County Regional Study)

Accomack County and the Town of Chincoteague worked together in 2011 to complete a feasibility study and preliminary engineering report (PER) for a regional wastewater treatment plant to be located in the vicinity of Atlantic, VA. This grant-funded work was completed in the context of many years of prior studies, and the possibility of working with private investment through a proposed Planned Development community to find a larger solution.

- Cost is a major concern. $127 million for construction of the treatment plant and collection system would mean the equivalent of $351 per month for mandatory service to all customers[1] (without grants or large connection fees)
- Geographic separation of communities to be served by a regional treatment plant increases cost and raises growth and land use control issues
- Political concerns include: location of wastewater treatment and disposal facilities and the expectation that new development should pay for itself
- Federal or State grants for regional wastewater infrastructure that would benefit both the economy and the environment are not generally available at this time.
- Consultant PER proposed a Phase 1 area with an infrastructure cost estimate of $25 million and 300 customers in the service area (169,000 gpd estimated). Without grant funding, the connection fee would need to be over $80,000 per customer

What are we doing right?

- ✓ Explored solutions that are being implemented in other coastal communities out of necessity or mandate from the EPA
- ✓ Engaged engineering expertise to estimate costs and feasibility of the regional solution

[1] Eastern Shore News, March 19, 2011, Carol Vaughn-Staff Writer

- ✓ Compared this solution with both County and Town Comprehensive Plans to determine whether this model fits with local land use planning and political reality
- ✓ Found that a regional solution may not be feasible or politically acceptable for our rural, low density communities on the Eastern Shore

Looking to the future, a regional wastewater treatment plant will only make sense with significant support from federal or state grants, private investment fueled by new growth, or cost sharing with large federal agencies at Wallops Island.

Until that time, a localized transition from low density septic drainfields to improved and small service area wastewater treatment technology is most likely.

Short Term Future Solution (Phase One Service Area)

The Town of Chincoteague is considering its own independent public wastewater treatment utility on Chincoteague Island, starting with a phase one area as a first step. A phase one service area proposed by WAC would focus on the Maddox Boulevard corridor from Main Street to the Refuge boundary in order to support the largest water users, the land area most likely to grow or re-develop, and the zoning districts that will benefit the Town's tourism based economy. The Town phase one service area should not overlap with the private utility service area already established along Main Street.

- o Businesses, rental homes and civic uses are most likely to connect to a public utility on a voluntary basis. This was confirmed by a survey of business owners in 2012 who responded overwhelmingly in support of a public wastewater treatment system
- o Existing residential neighborhoods are least likely to connect to a public utility if their septic drainfield meets their needs

What should be considered?

- ✓ Propose a wastewater utility system up to 100,000 gpd that can be expanded to meet future needs
- ✓ Match the financial model (rates) of Sunset Bay Utilities so that the cost of service is the same whether it is private or public
- ✓ Voluntary connections with a minimum number of property owner agreements needed to proceed
- ✓ Location of wastewater treatment facility on existing public property
- ✓ Obtain a new public discharge permit, or expand an existing approved discharge permit to consolidate treatment facilities
- ✓ Obtain a permit for 'land application' to undeveloped property (or Fowling Gut)
- ✓ Water conservation measures included in all solutions
- ✓ A partnership with the US Coast Guard, or other private utility providers to expand current capacity and service areas

Recommendations

The Wastewater Advisory Committee recommends that Town Council adopt one or more of the following actions that will inform Town Staff efforts and create a working policy for the next steps toward creating a public wastewater utility on Chincoteague Island.

Continue current management responsibilities

1) Virginia Department of Health (VDH) will continue to permit, inventory, inspect, and improve private maintenance and repair of the Island's individual wastewater systems (cesspools, drainfields, etc.). VDH will continue to enforce violations identified by the Division of Shellfish Sanitation.

Town of Chincoteague will request VDH to expand its computerized reporting system to include public access to mapping, inspection and repair reports so that improvements can be documented. Town of Chincoteague will continue to encourage individual wastewater treatment systems that are properly maintained to meet current State regulations.

2) Town of Chincoteague will continue to encourage private (and USCG) wastewater treatment permit holders to provide service by voluntary connection within the Main Street Corridor small service area between Maddox Boulevard and Bunting Road.

3) Town of Chincoteague will regularly review and refine zoning ordinance and development standards for areas within new sewer service areas.

Implement a Short Term Future Solution

4) Town of Chincoteague will identify a potential Maddox Boulevard Corridor wastewater treatment service area and prepare the next phase of engineering studies, permit applications, and grant requests to determine its feasibility for operation as a publicly owned wastewater treatment facility similar to the private Sunset Bay Utilities facility.

Work toward a Long Term Future Solution

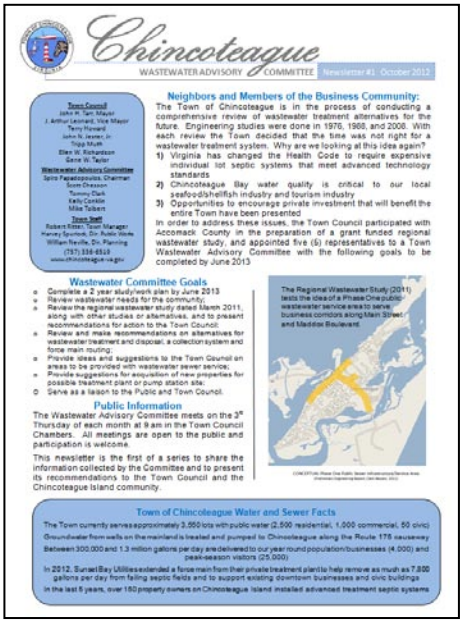
5) Town of Chincoteague will actively participate with Virginia State Agencies, Accomack County, and the Maryland Coastal Bays Program to revise the Comprehensive Conservation & Management Plan (CCMP) for monitoring and improving water quality in Chincoteague Bay, and will seek to continue working on a long range plan that reduces nutrient loads from septic drainfields to the surrounding waters of Chincoteague Island on a voluntary basis.

Wastewater Advisory Committee members unanimously agree that small steps should be taken to implement a plan for public wastewater utility service on Chincoteague Island. In addition, the solution should be expandable, should allow for private investment to meet interim needs and should not try to replace adequate State programs and responsibilities.

"Let's tackle what we can tackle with willing participants for the portion of Town that needs it."
K. Conklin, WAC 2013

Public Information Strategy

Two informational newsletters have been published to inform the public on the research and activities of the Wastewater Advisory Committee. In addition, three formal status reports were made to the Town Council on January 3, 2012, October 1, 2012 and February 4, 2013. With support from the Town Council, this report and its recommendations can be shared through presentations to community organizations, additional newsletters and distribution of a Frequently Asked Questions brochure.



Chincoteague

WASTEWATER ADVISORY COMMITTEE Newsletter #1 October 2012

Neighbors and Members of the Business Community:

The Town of Chincoteague is in the process of conducting a comprehensive review of wastewater treatment alternatives for the future. Engineering studies were done in 1976, 1988, and 2008. With each review the Town decided that the time was not right for a wastewater treatment system. Why are we looking at this idea again?

1) Virginia has changed the Health Code to require expensive individual lot septic systems that meet advanced technology standards
2) Chincoteague Bay water quality is critical to our local seafood/shellfish industry and tourism industry
3) Opportunities to encourage private investment that will benefit the entire Town have been presented

In order to address these issues, the Town Council participated with Accomack County in the preparation of a grant funded regional wastewater study, and appointed five (5) representatives to a Town Wastewater Advisory Committee with the following goals to be completed by June 2013

Wastewater Committee Goals

- Complete a 2 year study/work plan by June 2013
- Review wastewater needs for the community;
- Review the regional wastewater study dated March 2011, along with other studies or alternatives, and to present recommendations for action to the Town Council;
- Review and make recommendations on alternatives for wastewater treatment and disposal; a collection system and force main routing;
- Provide ideas and suggestions to the Town Council on areas to be provided with wastewater sewer service;
- Provide suggestions for acquisition of new properties for possible treatment plant or pump station site;
- Serve as a liason to the Public and Town Council.

Public Information

The Wastewater Advisory Committee meets on the 3rd Thursday of each month at 9 am in the Town Council Chambers. All meetings are open to the public and participation is welcome.

This newsletter is the first of a series to share the information collected by the Committee and to present its recommendations to the Town Council and the Chincoteague Island community.

The Regional Wastewater Study (2011) tests the idea of a Phase One public wastewater service area to serve business corridors along Main Street and Maddox Boulevard.

Town of Chincoteague Water and Sewer Facts

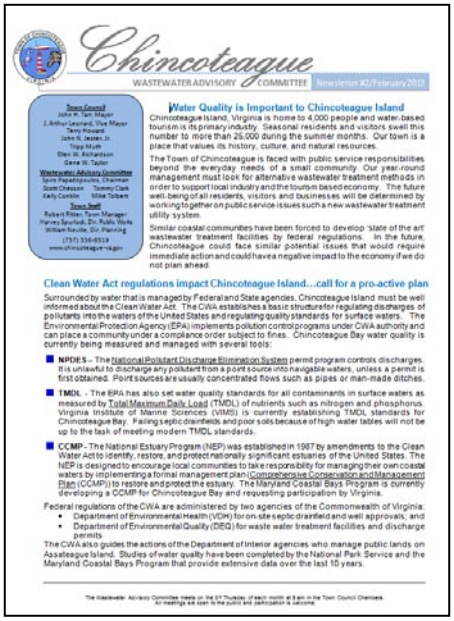
The Town currently serves approximately 3,550 lots with public water (2,500 residential, 1,000 commercial, 50 civic)

Groundwater from wells on the mainland is treated and pumped to Chincoteague along the Route 175 causeway

Between 300,000 and 1.3 million gallons per day are delivered to our year round population/businesses (4,000) and peak-season visitors (25,000)

In 2012, Sunset Bay Utilities extended a force main from their private treatment plant to help remove as much as 7,800 gallons per day from failing septic fields and to support existing downtown businesses and civic buildings

In the last 5 years, over 150 property owners on Chincoteague Island installed advanced treatment septic systems



Chincoteague

WASTEWATER ADVISORY COMMITTEE Newsletter #2/February 2013

Water Quality is Important to Chincoteague Island

Chincoteague Island, Virginia is home to 4,000 people and water-based tourism is its primary industry. Seasonal residents and visitors swell this number to more than 25,000 during the summer months. Our town is a place that values its history, culture, and natural resources.

The Town of Chincoteague is faced with public service responsibilities beyond the everyday needs of a small community. Our year-round management must look for alternative wastewater treatment methods in order to support local industry and the tourism based economy. The future well-being of all residents, visitors and businesses will be determined by working together on public service issues such a new wastewater treatment utility system.

Similar coastal communities have been forced to develop 'state of the art' wastewater treatment facilities by federal regulations. In the future, Chincoteague could face similar potential issues that would require immediate action and could have a negative impact to the economy if we do not plan ahead.

Clean Water Act regulations impact Chincoteague Island...call for a pro-active plan

Surrounded by water that is managed by Federal and State agencies, Chincoteague Island must be well informed about the Clean Water Act. The CWA establishes a basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The Environmental Protection Agency (EPA) implements pollution control programs under CWA authority and can place a community under a compliance order subject to fines. Chincoteague Bay water quality is currently being measured and managed with several tools:

- **NPDES** – The National Pollutant Discharge Elimination System permit program controls discharges. It is unlawful to discharge any pollutant from a point source into navigable waters, unless a permit is first obtained. Point sources are usually concentrated flows such as pipes or man-made ditches.
- **TMDL** - The EPA has also set water quality standards for all contaminants in surface waters as measured by Total Maximum Daily Load (TMDL) of nutrients such as nitrogen and phosphorus. Virginia Institute of Marine Sciences (VIMS) is currently establishing TMDL standards for Chincoteague Bay. Failing septic drainfields and poor soils because of high water tables will not be up to the task of meeting modern TMDL standards.
- **CCMP**- The National Estuary Program (NEP) was established in 1987 by amendments to the Clean Water Act to identify, restore, and protect nationally significant estuaries of the United States. The NEP is designed to encourage local communities to take responsibility for managing their own coastal waters by implementing a formal management plan (Comprehensive Conservation and Management Plan (CCMP)) to restore and protect the estuary. The Maryland Coastal Bays Program is currently developing a CCMP for Chincoteague Bay and requesting participation by Virginia.

Federal regulations of the CWA are administered by two agencies of the Commonwealth of Virginia:

- Department of Environmental Health (VDH) for on-site septic drainfield and well approvals, and
- Department of Environmental Quality (DEQ) for waste water treatment facilities and discharge permits

The CWA also guides the actions of the Department of Interior agencies who manage public lands on Assateague Island. Studies of water quality have been completed by the National Park Service and the Maryland Coastal Bays Program that provide extensive data over the last 10 years.

The Wastewater Advisory Committee meets on the 3rd Thursday of each month at 9 am in the Town Council Chambers. All meetings are open to the public and participation is welcome.

Frequently Asked Questions (FAQ)

Why is the Town undertaking the wastewater project?

How will the project be paid for?

Is the Town seeking state or federal money to reduce the impact on the taxpayer?

What is the difference between a septic system and a sewer system?

When will sewer come to my street/neighborhood?

What will it cost me to connect?

How much capacity will the new wastewater treatment facility have?

Where will the new treatment facility discharge the treated wastewater?

What is Low-Pressure Sewer?

Under what circumstances will it be necessary for a property to have a grinder pump?

Will I be required to connect my house to the sewer?

I just recently installed/paid for a new septic system, will I still have to connect?

Will sewers result in uncontrolled development?

Glossary of Acronyms and Terms

ACRONYMS (a word formed from the initial letters or group of letters of the words in a name or phrase)

CCMP: Comprehensive Conservation and Management Plan
CDBG: Community Development Block Grant
CWRLF: Clean Water Revolving Loan Fund
CWA: Clean Water Act
DEQ: Department of Environmental Quality
DHCD: (Virginia) Department of Housing and Community Development
DWI: Deep Well Injection
EPA: Environmental Protection Agency
GPD: Gallons Per Day
LMI: Low to Moderate Income
MBR: Membrane Bio Reactor
NEP: National Estuary Program
NPDS: National Pollutant Discharge Elimination System
NPS: National Park Service
PER: Preliminary Engineering Report
PPEA: Public-Private Education Facilities and Infrastructure Act of 2002 (VA)
PSA: Public Service Authority
RIB: Rapid Infiltration Basin
TMDL: Total Maximum Daily Load
USDA: United States department of Agriculture
USFWS: US Fish and Wildlife Service
VDH: Virginia Department of Health
VMRC: Virginia Marine Resources Commission
VIMS: Virginia Institute of Marine Science
VMRC: Virginia Marine Resources Commission
WAC: Wastewater Advisory Committee
WWTP: Waste Water Treatment Plant

DEFINITIONS (the formal statement of the meaning or significance of a word)

ALTERNATIVE ON SITE SEWAGE TREATMENT SYSTEM (DISHARGE): Means any device or system which results in a point source discharge of treated sewage for which the Virginia Water Control Board may issue a permit authorizing construction and operation for an individual single family dwelling with flows less than or equal to 1,000 gallons per day.
ALTERNATIVE ONSITE SEWAGE TREATMENT (MOUND): A wastewater treatment system that includes different components than typically used in a conventional septic tank and subsurface wastewater infiltration system. A mound system is a raised drainfield composed of sand fill above the soil surface.

CENTRALIZED WASTEWATER SYSTEM: A managed system consisting of collection sewers and a single treatment plant used to collect and treat wastewater from an entire service area.
CESSPOOL: A drywell that receives untreated sanitary waste containing human excreta, which sometimes has an open bottom and/or perforated sides.
CWA: The federal Water Pollution Control Act (1948), was reorganized to Clean Water Act with amendments (1977) and under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry and also set water quality standards for all contaminants in surface waters.
DECENTRALIZED SYSTEM: Managed onsite and/or cluster system(s) used to collect, treat, and disperse or reclaim wastewater from a small community or service area.
DECENTRALIZED WASTEWATER: Decentralized wastewater management may be defined as the collection, treatment, and disposal/reuse of wastewater from individual homes, cluster of homes, isolated communities, industries, or institutional facilities, as well as from portions of existing communities at or near the point of waste generation.
E/One (E-1) pump: The E/One Sewer System is a pressure system that is powered by a grinder pump as manufactured by Environmental One Corporation of Niskayune, NY who developed the concept of the household grinder pump in 1968.
PACKAGED TREATMENT PLANT: A packaged wastewater treatment plant offers the user a pre-engineered and pre-fabricated method of treating wastewater with an aerobic process to a safe sanitary water effluent quality discharge meeting and/or exceeding standards recommended by the US Environmental Protection Agency. The final effluent can be released safely into the environment such as receiving streams, rivers, etc. Treated non-potable water is also being used as a new source of water to promote agricultural and aquaculture production, industrial uses, water sustainability, and reclamation uses such as irrigation, wash down, and / or artificial recharge.
PUBLIC – PRIVATE EDUCATION FACILITIES and INFRASTRUCTURE ACT of 2002: Grants responsible public entities the authority to create public-private partnerships for the development of a wide range of projects for public use if the public entities determine there is a need for the project and that private involvement may provide the project to the public in a timely or cost-effective fashion.
VIRGINIA CLEAN WATER REVOLVING LOAN FUND: provides 20 year loans for treatment facilities, and 30 year loans for collection systems. Cape Charles qualified for 0% interest
WASTEWATER: Water that has come into contact with any of a variety of contaminants and is not fit for human consumption. Water that has been used, as for washing, flushing, or in a manufacturing process, and so contains waste products; sewage.

Appendices

Survey of Chincoteague businesses

Research of similar coastal communities

Newsletters

Wastewater Advisory Committee
Survey Results Report
November 15, 2012

The WAC conducted an interview/survey early this year, of six (6) restaurants, ten (10) hotels and (6) retail establishments along Maddox Blvd and parts of Main Street (the phase I business corridor). The survey results can be summarized to reflect that the majority of the business owners understand they have aging septic systems that require high maintenance costs and high replacements costs. It is the overall desire of these businesses to connect to a municipal wastewater system when available and have such system owned and operated by the Town. Attached is the summary of this survey report.

Respectfully Submitted,

Scott Chesson
Kelly Conklin
Mike Tolbert
Spiro Papadopoulos

WAC Members:

Spiro Papadopoulos – Chairman
Tommy Clark
Kelly Conklin
Mike Tolbert
Scott Chesson
Jack Tarr
Rob Ritter
Bill Neville

Wastewater Advisory Committee Proposed Survey
of Island Business / Property Owners

February, 2012

What would you say has been your annual maintenance costs on your current septic system over the last 10 year time period?

How old is your current septic disposal system?

Are your drain fields on the same piece of property as the building / business it serves?

What company services your current septic system?

How often do you get your septic tanks pumped /cleaned?

Have you had any drain field failures in the past 10 years?

Have you had the piping in your drain fields jetted in the past 10 years?

Have you ever studied the proper maintenance of a conventional septic system?

Do you think your current septic system will meet your septic disposal needs for the next
5 years? 10 years? 15 years?

What would you expect the cost of replacing your current system would be if it failed?

Do you think the Island of Chincoteague will have central sewage in the future?

If so, when?

If central sewage were to be provided, how do you perceive this service would affect property values?

Do you think the water discharged from those businesses that have an overboard discharge permit is safe for the environment?

If central sewage were to be provided, how likely are you to hook up to the system on a scale of 1 – 10? 1 being "not interested" ... 10 being "definitely".

If you were to hook up to central sewage, how much would you expect it to cost you per month for your disposal needs?

If central sewage were to be provided, who do you think should own and maintain the system?

If central sewage were to be provided, do you think all businesses should be required to hook up to the system?

If no, how would you provide for the financial needs of a central sewage system?

If central sewage were to be provided, do you think the current zoning is adequate to control future growth of the Island?

What would you expect the cost of replacing your current system would be if it failed?

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If you were to hook up to central sewage, how much would you expect it to cost you per month for your disposal needs?

If central sewage were to be provided, who do you think should own and maintain the system?

If central sewage were to be provided, do you think all businesses should be required to hook up to the system?

If no, how would you provide for the financial needs of a central sewage system?

If central sewage were to be provided, do you think the current zoning is adequate to control future growth of the Island?

WAC Survey

10 Hotel Responses

as of April 25, 2012

What would you say has been your annual maintenance costs on your current septic system over the last 10 year time period?

1. 5000/yr
2. 1200/yr
3. 4000/yr
4. 800/yr
5. 3000/yr
6. 50,000-60,000/yr
7. 50,000-60,000/yr
8. ???
9. ???
10. ???

How old is your current septic disposal system?

1. 30 yrs
2. 15yrs
3. 28yrs
4. 30yrs
5. 32yrs
6. 10
7. 10
8. 30
9. 30
10. ???

Are your drain fields on the same piece of property as the building / business it serves?

1. Y
2. N
3. Y
4. N
5. N
6. Y
7. Y
8. Y
9. Y
10. n

What company services your current septic system?

1. Boggs
2. RotoRooter
3. Boggs
4. Boggs
5. Boggs
6. Self
7. Self
8. Boggs
9. Boggs
10. Boggs

How often do you get your septic tanks pumped /cleaned?

1. 1 x yr
2. 1 x yr
3. 3 x yr
4. 1 x yr
5. As needed
6. As needed
7. 3-4 yrs
8. 2-3 yrs
9. Never
10. 1 x yr

Have you had any drain field failures in the past 10 years?

1. N
2. Y
3. Y
4. N
5. Y
6. N
7. N
8. N
9. N
10. N

Have you had the piping in your drain fields jetted in the past 10 years?

1. N
2. Y
3. Y
4. N
5. Y
6. Y
7. N
8. N
9. N
10. N

Have you ever studied the proper maintenance of a conventional septic system?

1. Y
2. Y
3. N
4. N
5. Y
6. Y
7. Y
8. N
9. N
10. N

Do you think your current septic system will meet your septic disposal needs for the next 5 years? 10 years? 15 years?

1. Y N N
2. Y Y Y
3. Y Y ?
4. Y Y hope so
5. Y N N
6. Y Y Y
7. Y Y Y
8. Y Y Y
9. Y Y Y
10. Y Y Y

What would you expect the cost of replacing your current system would be if it failed?

1. 40 – 50K
2. 100,000 +
3. ???
4. 200,000
5. 200,000
6. 60,000 +
7. 100,000 +
8. ?
9. ?
10. ?

Do you think the Island of Chincoteague will have central sewage in the future?

1. Hope so
2. No
3. Hope so
4. Yes
5. Yes
6. N
7. Y
8. Y
9. Y
10. Y

If central sewage were to be provided, how do you perceive this service would affect property values?

1. Go up
2. Go up
3. Go up
4. Go up
5. Go up
6. Go up
7. Go up
8. Go up
9. Go up
10. Go up

Do you think the water discharged from those businesses that have an overboard discharge permit is safe for the environment?

1. Y
2. N
3. Y
4. ?
5. Y
6. Y
7. Y
8. N
9. N
10. N

If central sewage were to be provided, how likely are you to hook up to the system on a scale of 1 – 10? 1 being "not interested" ... 10 being "definitely".

1. 10
2. 5
3. 10
4. Depends on cost
5. 8
6. Depends on cost
7. Depends on cost
8. 10
9. 10
10. 10

If you were to hook up to central sewage, how much would you expect it to cost you per month for your disposal needs?

1. ?
2. ?
3. Less than now
4. ?
5. ?
6. ?
7. ?
8. ?
9. ?
10. ?

If central sewage were to be provided, who do you think should own and maintain the system?

1. Town
2. Town
3. Town
4. ???
5. Town
6. Town
7. Town
8. Town
9. Either Town or private entity
10. Either Town or private entity

If central sewage were to be provided, do you think the current zoning is adequate to control future growth of the Island?

1. ???
2. N – zoning can change
3. Y
4. Y
5. Not Sure
6. Y
7. Y
8. ?
9. ?
10. Should be relaxed in business corridor

WAC Survey

6 Retail Responses

as of April 25, 2012

What would you say has been your annual maintenance costs on your current septic system over the last 10 year time period?

1. 1000/yr
2. 1000/yr
3. 1000/yr
4. ?
5. ?
6. ?

How old is your current septic disposal system?

1. 7yrs
2. 20yrs
3. 30yrs
4. 2yrs
5. 30+
6. 30+

Are your drain fields on the same piece of property as the building / business it serves?

1. Most – not all
2. Most – not all
3. Most – not all
4. Y
5. Y
6. y

What company services your current septic system?

1. Boggs
2. Boggs
3. Boggs
4. Boggs
5. Boggs
6. Bundick

How often do you get your septic tanks pumped /cleaned?

1. Every 2 – 3 months
2. Every 2 – 3 months
3. Every 2 – 3 months
4. As needed
5. As needed
6. As needed

Have you had any drain field failures in the past 10 years?

1. N
2. N
3. N
4. N
5. N
6. N

Have you had the piping in your drain fields jetted in the past 10 years?

1. N
2. N
3. N
4. N
5. N
6. N

Have you ever studied the proper maintenance of a conventional septic system?

1. Y
2. Y
3. Y
4. N
5. N
6. N

Do you think your current septic system will meet your septic disposal needs for the next 5 years? 10 years? 15 years?

1. Hope so Hope so Hope so
2. Hope so Hope so Hope so
3. Hope so Hope so Hope so
4. Y Y Y
5. Y Y Y
6. Y Y Y

What would you expect the cost of replacing your current system would be if it failed?

1. 25,000
2. 25,000
3. 25,000
4. ?
5. ?
6. ?

Do you think the Island of Chincoteague will have central sewage in the future?

1. Y
2. Y
3. Y
4. Y
5. Y
6. y

If so, when?

1. ASAP
2. ASAP
3. ASAP
4. ?
5. ?
6. ?

If central sewage were to be provided, how do you perceive this service would affect property values?

1. Go up
2. Go up
3. Go up
4. Go up
5. Go up
6. Go up

Do you think the water discharged from those businesses that have an overboard discharge permit is safe for the environment?

1. N
2. N
3. N
4. ?
5. N
6. N

If central sewage were to be provided, how likely are you to hook up to the system on a scale of 1 – 10? 1 being "not interested" ... 10 being "definitely".

1. 10
2. 10
3. 10
4. 10
5. 10
6. Depends on cost

If you were to hook up to central sewage, how much would you expect it to cost you per month for your disposal needs?

1. 300.00
2. 300.00
3. 300.00
4. ?
5. ?
6. ?

If central sewage were to be provided, who do you think should own and maintain the system?

1. Town
2. Town
3. Town
4. Town
5. Town
6. Town

If central sewage were to be provided, do you think the current zoning is adequate to control future growth of the Island?

1. Yes – need control
2. Yes – need control
3. Yes – need control
4. ?
5. N
6. ?

WAC Survey

6 Restaurant Responses

as of April 25, 2012

What would you say has been your annual maintenance costs on your current septic system over the last 10 year time period?

1. 5000/yr
2. 4000/yr
3. 1000/yr
4. 1000/yr
5. 1000/yr
6. ???

How old is your current septic disposal system?

1. Greater than 7 yrs
2. 20+
3. 7yrs
4. 30yrs
5. 20+
6. old

Are your drain fields on the same piece of property as the building / business it serves?

1. Y
2. N
3. Y
4. N
5. Y
6. y

What company services your current septic system?

1. Boggs
2. Boggs Roto Rooter, Jimmy Landon
3. Boggs
4. Boggs
5. Boggs
6. nobody

How often do you get your septic tanks pumped /cleaned?

1. 1 x month in summer – can only operate 11:00am-10:00pm
2. 1 x month
3. Every 2 months
4. Every 3 months
5. Every 3 months
6. As needed

Have you had any drain field failures in the past 10 years?

1. N
2. Y
3. N
4. N
5. N
6. N

Have you had the piping in your drain fields jetted in the past 10 years?

1. N
2. Y
3. N
4. N
5. N
6. N

Have you ever studied the proper maintenance of a conventional septic system?

1. N
2. Y
3. Y
4. Y
5. Y
6. N

Do you think your current septic system will meet your septic disposal needs for the next:
5 years? 10 years? 15 years?

1. ???
2. N N N
3. Hope so
4. Hope so
5. Hope so
6. Y y

What would you expect the cost of replacing your current system would be if it failed?

1. 60-70 thousand
2. 65,000+
3. 25,000+
4. 25,000+
5. 25,000+
6. ????

Do you think the Island of Chincoteague will have central sewage in the future?

1. Y
2. Y
3. Y
4. Y
5. Y
6. N

If central sewage were to be provided, how do you perceive this service would affect property values?

1. Go up
2. Go up
3. Go up
4. Go up
5. Go up
6. No change

Do you think the water discharged from those businesses that have an overboard discharge permit is safe for the environment?

1. N
2. Y
3. N
4. N
5. N
6. n

If central sewage were to be provided, how likely are you to hook up to the system on a scale of 1 – 10? 1 being "not interested" ... 10 being "definitely".

1. 10
2. 10
3. 10
4. 10
5. 10
6. ???

If you were to hook up to central sewage, how much would you expect it to cost you per month for your disposal needs?

1. ???
2. ???
3. 300/month
4. 300/month
5. 300/month
6. ???

If central sewage were to be provided, who do you think should own and maintain the system?

1. Town
2. Town
3. Town
4. Town
5. Town
6. Town

If central sewage were to be provided, do you think the current zoning is adequate to control future growth of the Island?

1. Y
2. ? need control
3. Yes / hope so / need control
4. Yes / hope so / need control
5. Yes / hope so / need control
6. ???

PLANNING REPORT

May 17, 2012

Wastewater Advisory Committee
Comparison Study of Similar Communities

Executive Summary

The Wastewater Advisory Committee (WAC) was established by unanimous vote during the Special Council Meeting of May 19, 2011. The goals of the WAC were formulated as:

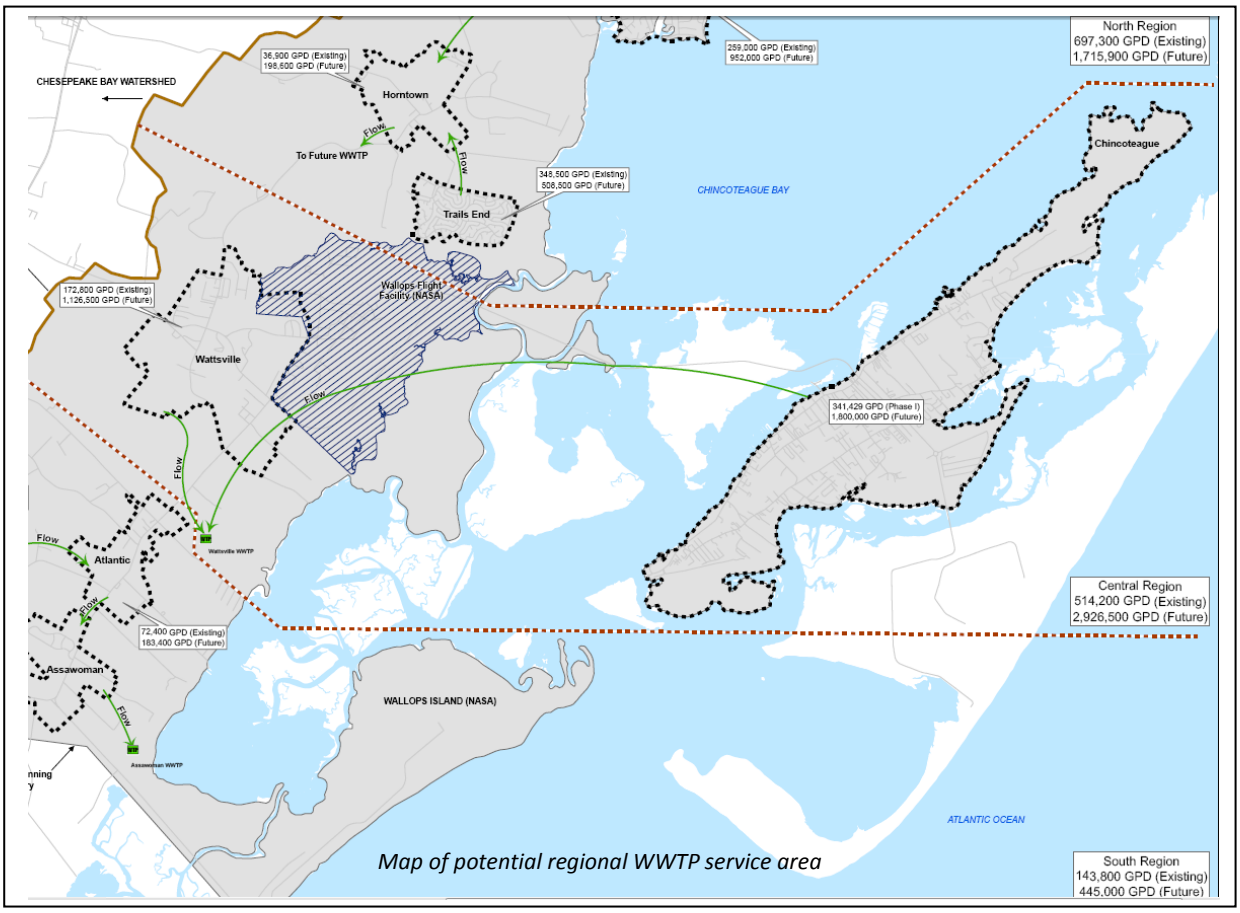
1. *To improve public safety and enviroment*
2. *Protect the way of life on the Island*
3. *Support the "economic engines" of the Island; that is, Tourism, Aquaculture, and Spaceport (NASA)*
4. *Develop a recommendation with minimal realistic costs (First cost, Life Cycle Cost, Operating Cost)*

The challenge is to identify a location and method for treatment with viable wastewater disposal options including: overboard discharge, deep well injection, drip system, or rapid infiltration basins. There are a number of existing communities similar to Chincoteague Island in the Atlantic coastal states which have also planned for their future wastewater treatment needs.

A comparison study can provide the WAC with valuable information to help evaluate opportunities available for wastewater treatment and disposal. There are several preliminary findings:

- *The transition from individual private septic drainfield systems to a centralized public collection and treatment system is closely related to the size of the community and their ability to finance major infrastructure and operational costs.*
- *Many communities maintain a hybrid system with a mix of public and private solutions.*
- *Federal Agencies such as the EPA, USFWS, NPS and others are intent to work with local communities to encourage a transition to public centralized systems to meet defined water quality standards.*
- *Cost is a major issue. Technology is not the limiting factor.*

The Town of Chincoteague Wastewater Advisory Committee is tasked with review of the 2011 Preliminary Engineering Report for a Phase One public sanitary sewer system, along with other studies or alternatives, and to present recommendations for action to the Town Council. The PER evaluates the option for a low pressure collection system on the Island, and a force main to pump the collected sewage to a proposed regional wastewater treatment plant and disposal site on the mainland. A multi phase project would transition existing septic drainfield systems and private treatment plants to a public centralized sewer service.



Map of potential regional WWTP service area

This report summarizes information collected to date for a comparison study of similar communities, and provides a working document for the Committee to inform the Town Council and the Public about the information and issues considered over its 2 year term until June 2012.

Several existing communities similar to Chincoteague Island in the Atlantic coastal states have also planned for their future wastewater treatment needs. A comparison study can provide the Wastewater Advisory Committee with valuable information to help evaluate options available for wastewater treatment and disposal.

Coastal Community List

This list of communities with similar characteristics to the Town of Chincoteague was developed through internet research, review of Google Earth coastal states, and census data. It is sorted by population size. In general the areas were selected because they are:

A) isolated from major urban centers so that wastewater solutions must be independent;

B) subject to similar conditions involving peak season use; and

C) in close proximity to natural resources that create a higher regulatory standard for water quality and restrictions on methods of disposal.

Community	State	Population	Seasonal Pop	Disposal Method	Disposal Area	Treatment Capacity	Elevation (Feet)
Fishers Island	NY	289	3000	Private Septic	Drainfields		10
Bald Head Island	NC	300	4000	Public Sewer			
Tangier Island	VA	700		Public Sewer	Channel Outfall	0.1mgd	
Edisto Island	SC	720	9000	Public Sewer/Private Septic		0.35mgd	
Ocracoke Island	NC	769	7000				
Jekyll Island	GA	940	8000	Public Sewer		1.0mgd	5
Bethany Beach	DE	1000	8000				10
Block Island	RI	1000	10000	Public Sewer/Private Septic	Drainfields/Marine Discharge	0.45mgd	13
Manteo	NC	1200					5
Onancock	VA	1430		Public Sewer/Private Septic		0.25mgd	18
Cape Charles	VA	1470		Public Sewer		0.25mgd	7
Rehoboth Beach	DE	1600	25000	Public Sewer	Channel/Ocean Outfall		16
Knotts Island	NC	2000		Private Septic	Drainfields		
Folly Beach	SC	2000	10000	Public Sewer/Private Septic	1500 Drainfields	0.25 mgd	10
Tybee Island	GA	3700	8000-30000	Public Sewer	Marine Discharge	1.0mgd	10
Chincoteague Island	**VA**	**4000**	**15000**	**Private Septic/Private Sewer**	**Drainfields/Marine Discharge**		**5**
Jamestown	RI	5405	10000	Public Sewer/Private Septic	Marine Discharge	1.0 mgd	50
Sanibel Island	FL	6000	20000	Public Sewer	RIB, Land Application, Reuse	1.2 mgd	50
Chatham	MA	6500	20000	Public Sewer	Rapid Infiltration Basins	2.3 mgd	46
Oak Island	NC	8000	35000	Public Sewer	Reuse, Land Application	1.4mgd	5
Cocoa Beach	FL	12000	30000	Public Sewer	Reuse, peak marine discharge	6mgd	12
Marco Island	FL	16400	38000	Public Sewer	Reuse, DWI, RIB	11mgd	31

Coastal Community Profiles

Four similar communities are profiled for comparison to Chincoteague Island. Information has been collected on the size, cost and current planning/construction completed for each community.

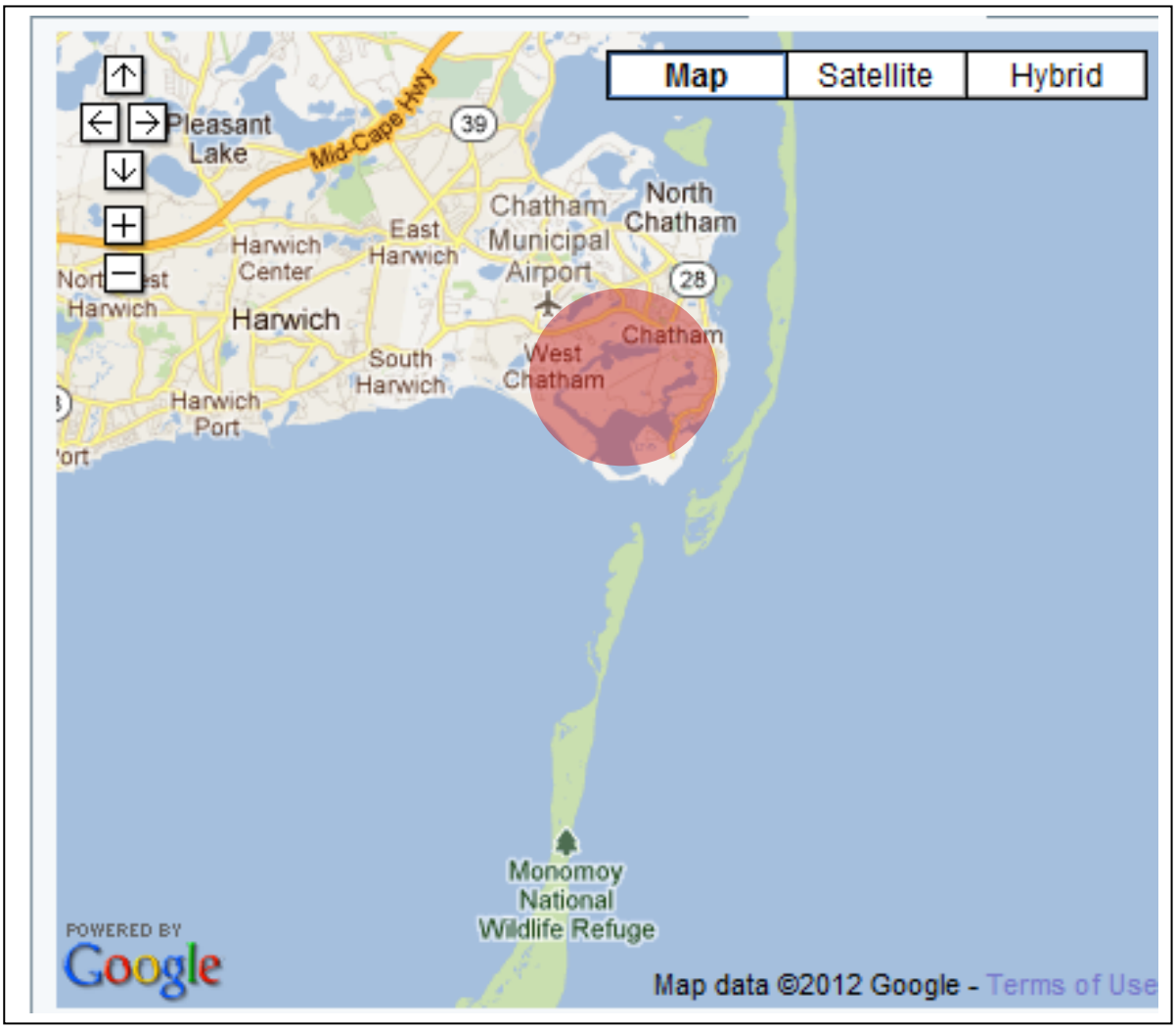
Chatham, MA

Geography: Coastal mainland (Cape Cod) behind Barrier Island
2.65 square miles

Population: 6500 / 20000 seasonal

Wastewater Plan: 2.3 mgd centralized

Comprehensive Wastewater Management Plan completed in 2010 after 15 years of planning. Phase One serves 4,500 properties, extends a service area along major road corridors, expands centralized wastewater treatment plant with discharge to infiltration basins. Approximately 7,500 properties will transition from septic to sewer over a 30 year planning period.



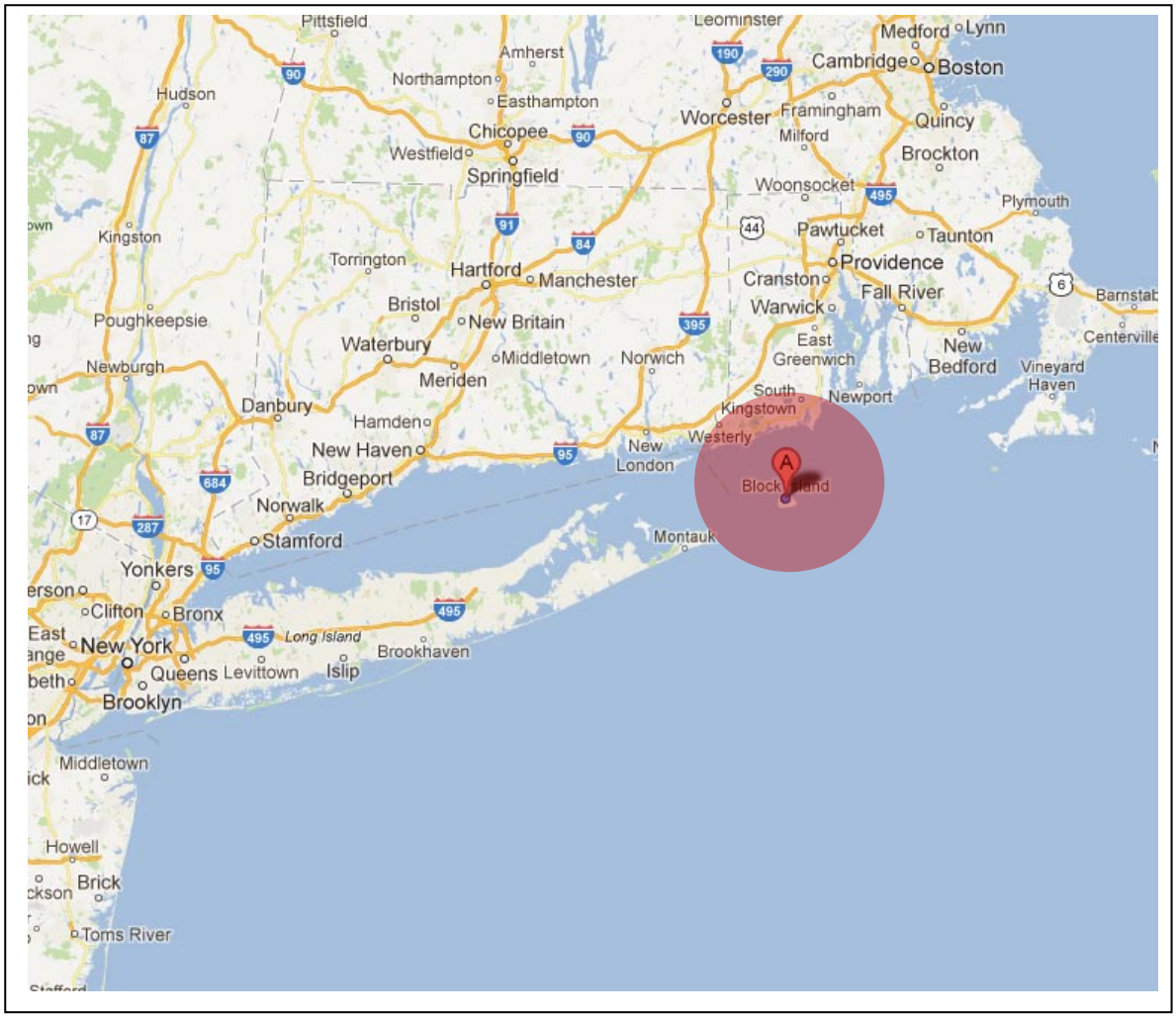
Block Island, RI

Geography: Coastal Island
9.7 square miles

Population: 1000 / 10000 seasonal

Wastewater Plan: 0.45 mgd centralized plus managed private individual drainfields

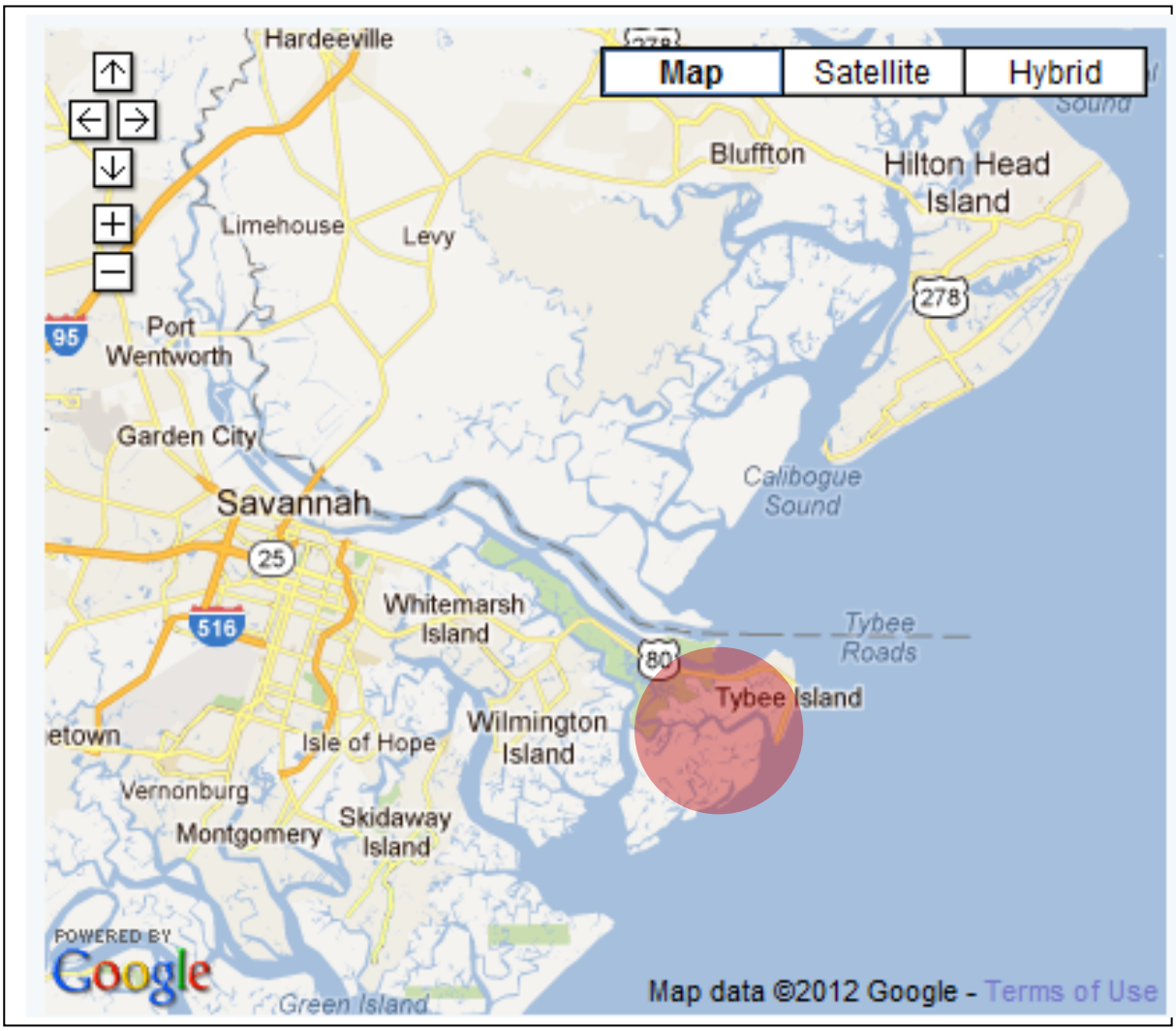
Most residences and some businesses dispose of wastewater through individual sewage disposal systems (approx. 1,088). Centralized wastewater treatment is provided to the central portion of Town with a total annual flow of 24 million gallons. Discharge to the Rhode Island Sound is approximately 38 million gallons that includes flow from septic pump outs, harbor use, basement sump pumps and infiltration/inflow. Treatment capacity is 450,000 gallons per day.



Tybee Island, GA

Geography: Coastal barrier island segment
2.56 square miles
Population: 3700 / 8000 to 30000 seasonal
Wastewater Plan:

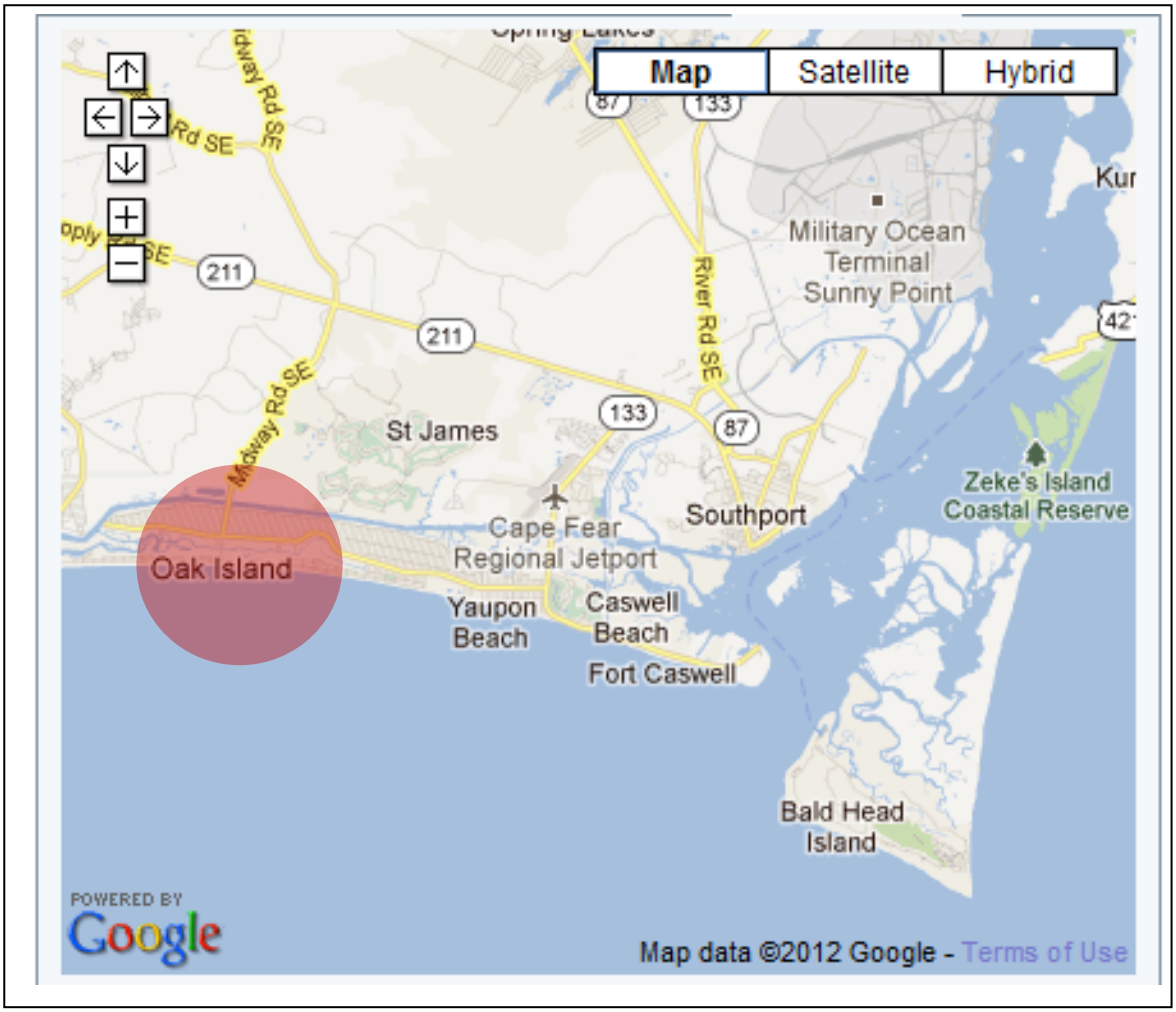
Centralized collection and wastewater treatment system with discharge permit for up to 1MGD into the Savannah River. Work continues to upgrade sewer collection system; improve efficiency, reduce stormwater intrusion and explore feasibility of connecting existing septic systems users to the treatment facility.



Oak Island, NC

Geography: Coastal barrier island
7.97 square miles
Population: 8000 / 35000 seasonal
Wastewater Plan: 1.4 mgd centralized

Centralized vacuum sewer collection system is currently under construction to serve the entire Island in 9 separate service areas. An 11 mile force main will be constructed under the Inter Coastal Waterway (by directional drilling) to a mainland regional County treatment facility. Approximately 5,400 lots were served by septic drainfields. Estimated 100 repairs/replacements per year or 10% failure over 5 years. 5,000 of 7,000 possible connections have been completed to date.



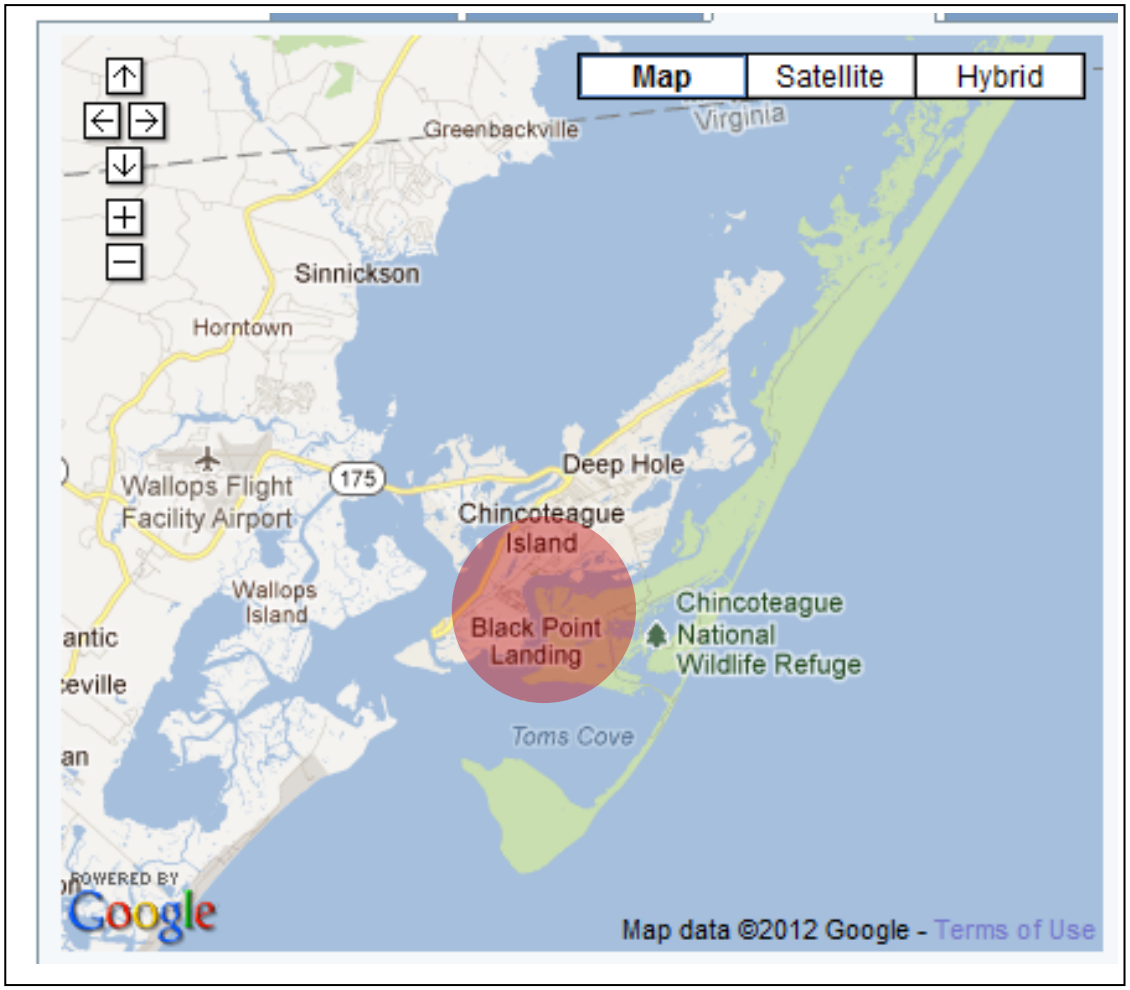
Chincoteague, VA

Geography: Coastal barrier island segment behind barrier island
9.63 square miles
Population: 4000 / 15000 to 25000 seasonal
Wastewater Plan: 0.4 mgd phase one, 0.75 to 1.5 mgd total

Continue private maintenance of existing individual septic systems, private investment to repair, replace and install advanced drainfield systems to meet State requirements. Encourage the full use and operation of permitted small treatment systems with approved channel discharge permits. Plan for a possible conversion to a centralized wastewater treatment and disposal system if feasible.

The Town currently serves approximately 3,550 lots with public water (2,500 residential, 1,000 commercial-incl. rental houses, 50 public/civic). Year round residential households are estimated to be between 1,400 and 1,700. There are approximately 5,500 total existing tax parcels, many of which may have limited future development potential.

The PER has proposed a centralized low pressure sewer collection system, pump station and 10 mile force main constructed under the coastal bays to a mainland regional treatment facility with land application to rapid infiltration basins for groundwater recharge. The system is anticipated to serve an estimated 300 to 3,500 commercial and residential connections.



Methods of Treatment/Disposal

A number of potential centralized sewage collection and treatment alternatives were discussed in the 1988 Sewer Study by Bradbury & Drenning and the "White Paper" prepared by WWMI in 2007. Those alternatives, along with several identified by the WAC, are listed below:

1. WWTF on Chincoteague with direct effluent discharge into Chincoteague Bay
2. WWTF on Chincoteague with direct effluent discharge into Fowling Gut
3. WWTF on Chincoteague; pump effluent to Assateague Island; spray irrigate wetlands
4. WWTF on Chincoteague; island-wide beneficial reuse with both surface and subsurface disposal
5. WWTF on Chincoteague; pump effluent to Atlantic Ocean outfall
6. WWTF on Chincoteague with Island based deep well injection of effluent
7. Collect sewage on the island and pump to the NASA WWTF
8. WWTF on Chincoteague; pump treated wastewater to rapid infiltration basin on mainland
9. Collection system on Chincoteague; pump untreated wastewater to WWTF on mainland for treatment and disposal

The previous studies determined that many of these alternatives were not considered feasible and all alternatives required relatively high startup costs. See the full text of these reports in the appendices for details of the alternatives. The majority of the options presented in the 1988 Sewer Study were either to discharge to surrounding waters or to land apply the treated waters on Chincoteague or Assateague Islands. These options were not favorable solutions with respect to potential environmental permitting constraints. One of the primary goals of the Town is to provide a solution to revitalize and continue to protect the surrounding waters in support of shellfish harvesting, shellfish seed beds, and recreational fishing.

The option for using the NASA WWTF has been discussed since the 1988 Sewer Study was completed, and it was decided that it will not be allowed by the federal government, so is no longer a valid option.

A recent opportunity to connect to a proposed WWTF at a new development on the mainland of Accomack County has presented a similar alternative for treatment of the Town's wastewater. The development is called Atlantic Town Center and is located near Wattsville.

Other solutions have been identified by similar communities that include a decentralized plan that manages a variety of individual and centralized wastewater treatment systems.

Cost Comparisons

A comparison of costs for wastewater management systems applicable to similar towns and villages in Massachusetts on Cape Cod is attached for reference.

Next Steps

The Town of Chincoteague Comprehensive Plan 2010 currently does not include specific implementation strategies for Wastewater Treatment (Sewerage) other than general support for economic development and a recommendation to continue study of the issue. Current activities include:

- ✓ Perform opinion/need surveys
- ✓ Continue studying the feasibility of developing public sewer collection and treatment facilities
- ✓ Review Zoning and Land Use Controls

If a preferred plan is identified as a result of the Wastewater Advisory Committee's work, it would be appropriate and necessary to hold public hearings to amend the Comprehensive Plan before a particular course of action is undertaken to expand public infrastructure.

The following steps are recommended to take action on these strategies.

Step #1 – Newsletter(s)

Prepare a first informational newsletter with a plan for public involvement, and shared information. (survey, website, meetings)

Step #2 - Council Work Session

Schedule a work session for the Town Council to receive an interim report from Committee members, Staff, consultants or interested residents/business owners. Request approval of an informational newsletter.

Step #3 – Accomack County/Atlantic Town Center

Continue to explore the feasibility of working with Accomack County, ANPDC, and the Atlantic Town Center to coordinate a regional mainland wastewater treatment and land based method of disposal system.

Step #4 – Federal and State Partners

Monitor and participate in water quality planning meetings on the Chincoteague Bay. Explore opportunities for grant funding of wastewater treatment system improvements.

Step #5 – Draft Wastewater Management Plan

Prepare a preliminary draft wastewater management plan outline that establishes Town of Chincoteague priorities for any watershed planning completed by others.

Step #6 – Establish new Town priorities and policies for a wastewater treatment utility system

Include options and small steps such as: Request trial program with State Health Department to document and evaluate the success of advanced treatment solutions for nutrient removal; Continue to encourage private wastewater treatment solutions; Encourage continued regional cooperation with Accomack County, Federal agencies and private investment; Evaluate and compare cost/financing options for a centralized system versus a phase 1 public small service area system.

Attachment A: VPDES Permits Located on Chincoteague Island

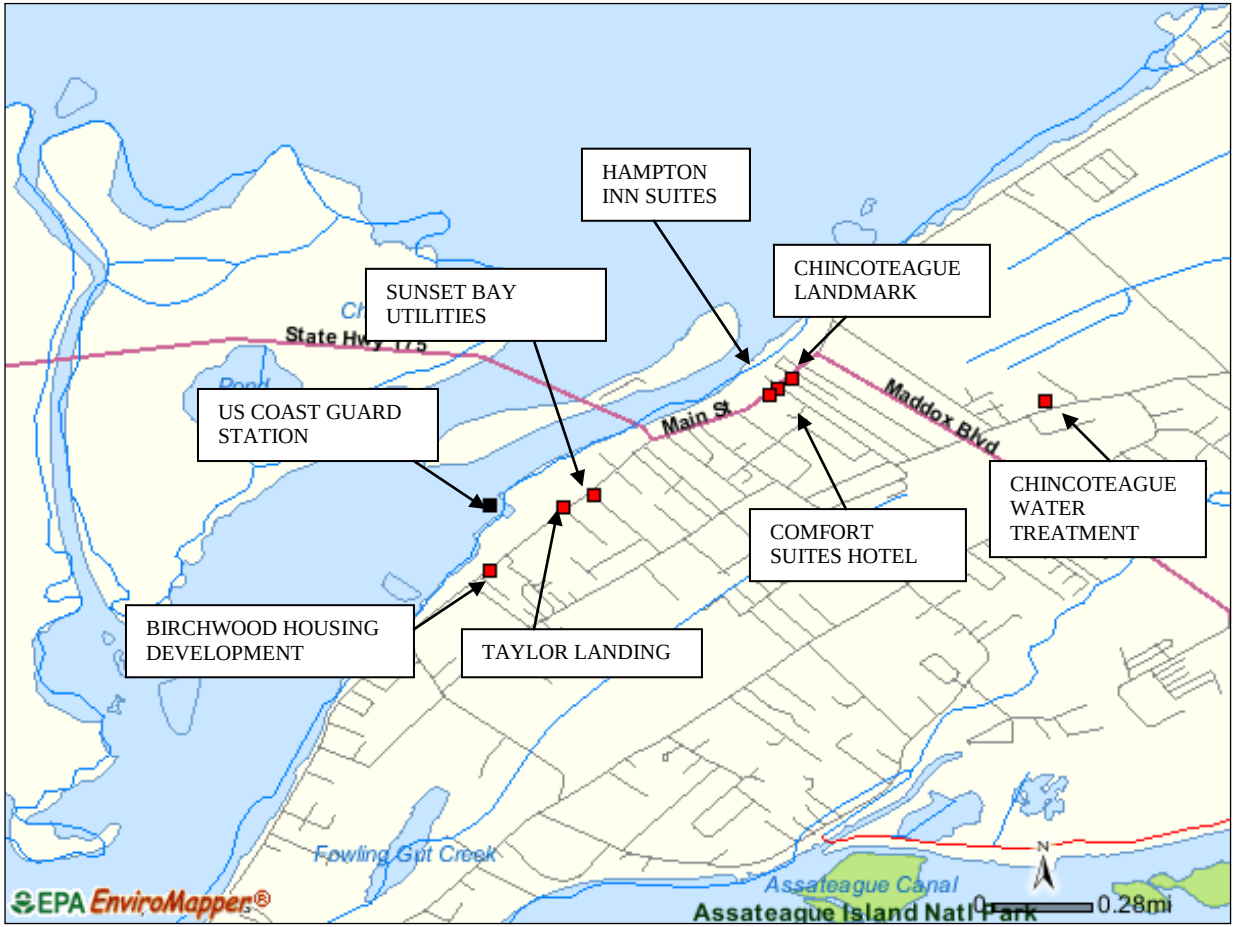
Name	Location	NPDES #	Issued	Expires	Comments
BIRCHWOOD HOUSING DEVELOPMENT	3650 MAIN ST	VA0091596	APR-13-2005	APR-12-2010	Not Constructed
CHINCOTEAGUE LANDMARK WWTP	POPLAR ST W	VA0091618	MAR-08-2005	MAR-07-2010	Not Constructed
HAMPTON INN AND SUITES	4179 MAIN ST	VA0090506	SEP-07-2005	OCT-03-2010	Active
COMFORT SUITES HOTEL	4195 MAIN ST	VA0089265	APR-25-2006	APR-24-2011	Active
TAYLOR LANDING	3801 MAIN ST	VA0091677	FEB-22-2006	FEB-21-2011	Not Constructed
SUNSET BAY UTILITIES - NORTH	3855 S MAIN ST	VA0091049	JUN-21-2007	JUL-01-2012	Not Operating
SUNSET BAY UTILITIES - SOUTH	3855 S MAIN ST	VA0054003	NOV-06-2006	NOV-05-2011	Active
US COAST GUARD	MAIN ST	VA0087327	APR-06-2007	JUN-04-2012	Active

Name	Flow (MGD)	N Load (lbs) Based on 8 mg/L	P Load (lbs) Based on 1.5 mg/L	Type
BIRCHWOOD HOUSING DEVELOPMENT	0.035	852	160	Housing
CHINCOTEAGUE LANDMARK WWTP	0.035	852	160	Housing
HAMPTON INN AND SUITES	0.01	244	46	Hotel/Motel
COMFORT SUITES HOTEL	0.09	2192	411	Hotel/Motel
TAYLOR LANDING	0.012	292	55	Hotel/Motel
SUNSET BAY UTILITIES - NORTH	0.025	609	114	Private Residential
SUNSET BAY UTILITIES - SOUTH	0.04	974	183	Restaurants
US COAST GUARD	0.006	146	27	Coast Guard

Combined Discharge Flows	Flow (MGD)	N Load (lbs)	P Load (lbs)
PROPOSAL PART A			
Base flow of Island			
Total (MGD) =	**1.0**		
PROPOSAL PART B			
Total Permitted	0.25	6161	1155
Flow (mgd) if treated to ENR Limits:		**0.67**	**0.76**
(3 mg/L TN, 0.5 mg/L TP)			
Total (MGD) =	**1.67**		
PROPOSAL PART C			
WALLOPS NASA FACILITY	0.3	7306	1370
Flow (mgd) if treated to ENR Limits:		**0.80**	**1.66**
(3 mg/L TN, 0.5 mg/L TP)			
Total (MGD) =	**2.47**		

Source: EPA Envirofacts Data Warehouse: http://www.epa.gov/enviro/html/ef_overview.html, VDEQ

Attachment B: Map of Active VPDES Permits Locations



Source: EPA EnviroMapper, http://www.epa.gov/enviro/emef/ Accessed December 21, 2007

Chincoteague

WASTEWATER ADVISORY COMMITTEE Newsletter #1 October 2012

Town Council
John H. Tarr, Mayor
J. Arthur Leonard, Vice Mayor
Terry Howard
John N. Jester, Jr.
Tripp Muth
Ellen W. Richardson
Gene W. Taylor

Wastewater Advisory Committee
Spiro Papadopoulos, Chairman
Scott Chesson
Tommy Clark
Kelly Conklin
Mike Tolbert

Town Staff
Robert Ritter, Town Manager
Harvey Spurlock, Dir. Public Works
William Neville, Dir. Planning

(757) 336-6519
www.chincoteague-va.gov

Neighbors and Members of the Business Community:

The Town of Chincoteague is in the process of conducting a comprehensive review of wastewater treatment alternatives for the future. Engineering studies were done in 1976, 1988, and 2008. With each review the Town decided that the time was not right for a wastewater treatment system. Why are we looking at this idea again?

1) Virginia has changed the Health Code to require expensive individual lot septic systems that meet advanced technology standards
2) Chincoteague Bay water quality is critical to our local seafood/shellfish industry and tourism industry
3) Opportunities to encourage private investment that will benefit the entire Town have been presented

In order to address these issues, the Town Council participated with Accomack County in the preparation of a grant funded regional wastewater study, and appointed five (5) representatives to a Town Wastewater Advisory Committee with the following goals to be completed by June 2013

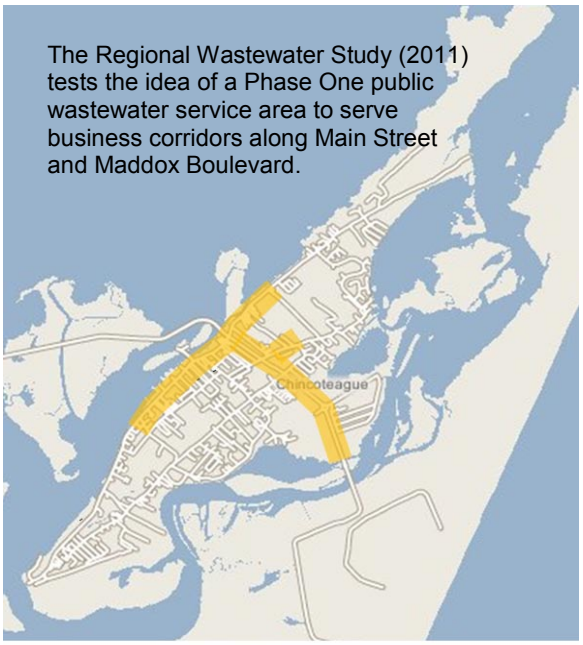
Wastewater Committee Goals

- Complete a 2 year study/work plan by June 2013
- Review wastewater needs for the community;
- Review the regional wastewater study dated March 2011, along with other studies or alternatives, and to present recommendations for action to the Town Council;
- Review and make recommendations on alternatives for wastewater treatment and disposal, a collection system and force main routing;
- Provide ideas and suggestions to the Town Council on areas to be provided with wastewater sewer service;
- Provide suggestions for acquisition of new properties for possible treatment plant or pump station site;
- Serve as a liaison to the Public and Town Council.

Public Information

The Wastewater Advisory Committee meets on the 3rd Thursday of each month at 9 am in the Town Council Chambers. All meetings are open to the public and participation is welcome.

This newsletter is the first of a series to share the information collected by the Committee and to present its recommendations to the Town Council and the Chincoteague Island community.



The Regional Wastewater Study (2011) tests the idea of a Phase One public wastewater service area to serve business corridors along Main Street and Maddox Boulevard.

CONCEPTUAL Phase One Public Sewer Infrastructure/Service Area
(Preliminary Engineering Report, Clark Nexsen, 2011)

Town of Chincoteague Water and Sewer Facts

The Town currently serves approximately 3,550 lots with public water (2,500 residential, 1,000 commercial, 50 civic)

Groundwater from wells on the mainland is treated and pumped to Chincoteague along the Route 175 causeway

Between 300,000 and 1.3 million gallons per day are delivered to our year round population/businesses (4,000) and peak-season visitors (25,000)

In 2012, Sunset Bay Utilities extended a force main from their private treatment plant to help remove as much as 7,800 gallons per day from failing septic fields and to support existing downtown businesses and civic buildings

In the last 5 years, over 150 property owners on Chincoteague Island installed advanced treatment septic systems

Chincoteague
WASTEWATER ADVISORY COMMITTEE
Newsletter #2/February 2013

Town Council
John H. Tarr, Mayor
J. Arthur Leonard, Vice Mayor
Terry Howard
John N. Jester, Jr.
Tripp Muth
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Water Quality is Important to Chincoteague Island

Chincoteague Island, Virginia is home to 4,000 people and water-based tourism is its primary industry. Seasonal residents and visitors swell this number to more than 25,000 during the summer months. Our town is a place that values its history, culture, and natural resources.

The Town of Chincoteague is faced with public service responsibilities beyond the everyday needs of a small community. Our year-round management must look for alternative wastewater treatment methods in order to support local industry and the tourism based economy. The future well-being of all residents, visitors and businesses will be determined by working together on public service issues such a new wastewater treatment utility system.

Similar coastal communities have been forced to develop 'state of the art' wastewater treatment facilities by federal regulations. In the future, Chincoteague could face similar potential issues that would require immediate action and could have a negative impact to the economy if we do not plan ahead.

Clean Water Act regulations impact Chincoteague Island…call for a pro-active plan

Surrounded by water that is managed by Federal and State agencies, Chincoteague Island must be well informed about the Clean Water Act. The CWA establishes a basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The Environmental Protection Agency (EPA) implements pollution control programs under CWA authority and can place a community under a compliance order subject to fines. Chincoteague Bay water quality is currently being measured and managed with several tools:

- **NPDES** – The National Pollutant Discharge Elimination System permit program controls discharges. It is unlawful to discharge any pollutant from a point source into navigable waters, unless a permit is first obtained. Point sources are usually concentrated flows such as pipes or man-made ditches.
- **TMDL** - The EPA has also set water quality standards for all contaminants in surface waters as measured by Total Maximum Daily Load (TMDL) of nutrients such as nitrogen and phosphorus. Virginia Institute of Marine Sciences (VIMS) is currently establishing TMDL standards for Chincoteague Bay. Failing septic drainfields and poor soils because of high water tables will not be up to the task of meeting modern TMDL standards.
- **CCMP** - The National Estuary Program (NEP) was established in 1987 by amendments to the Clean Water Act to identify, restore, and protect nationally significant estuaries of the United States. The NEP is designed to encourage local communities to take responsibility for managing their own coastal waters by implementing a formal management plan (Comprehensive Conservation and Management Plan (CCMP)) to restore and protect the estuary. The Maryland Coastal Bays Program is currently developing a CCMP for Chincoteague Bay and requesting participation by Virginia.

Federal regulations of the CWA are administered by two agencies of the Commonwealth of Virginia:

- Department of Environmental Health (VDH) for on-site septic drainfield and well approvals; and
- Department of Environmental Quality (DEQ) for waste water treatment facilities and discharge permits

The CWA also guides the actions of the Department of Interior agencies who manage public lands on Assateague Island. Studies of water quality have been completed by the National Park Service and the Maryland Coastal Bays Program that provide extensive data over the last 10 years.

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All meetings are open to the public and participation is welcome.