INTRODUCTION

Background, Legal Requirements, and Authority

In 1970 the Maryland General Assembly, in response to federal requirements, amended Article 43, Section 387C, of the Annotated Code of Maryland, to require all county governments to prepare and adopt plans for the local management of solid waste. Solid waste collection and disposal is a critical and costly public service. Protection of the environment and community values require that solid waste be properly handled, transported, and disposed. Recycling and utilizing other management techniques can accomplish conservation of resources, energy, and disposal capacity. There have been major changes in State and Federal laws governing solid waste disposal and environmental protection in general. New cooperative regional programs have been created such as the Midshore Regional Solid Waste Management Facility (MRSWMF) and the Midshore Regional Recycling Program (MRRP).

The intent of requiring the development of Solid Waste Management Plans was to analyze the solid waste situation in each county and to develop and implement a comprehensive solid waste management system which would provide an optimum method of collection, transport and disposal of solid waste within the county on a long range basis. Such a plan was adopted in Talbot County in 1973. The 1973 Plan prepared by Nassaux Hemsley, Inc. was updated in 1975 and 1978 by the Talbot County Planning Department, consistent with the requirements of Article 43, Section 387C. In 1984, the Talbot County Department of Public Works updated the Plan. Article 43 was repealed by Acts 1982, c. 770, §7, and Acts 1996, c. 10, §15. This document is compliant with COMAR 26.03.03. This update is intended to provide current information concerning solid waste management issues and identifies current needs, objectives and strategies relative to the solid waste management program in Talbot County.

Definition: The Comprehensive Solid Waste Management Plan

"Solid waste management" as used in this Plan means those activities that provide for the collection, separation, storage, transportation, processing, treatment, re-use, or disposal of solid waste. Solid waste has a broad meaning, which encompasses many of the unwanted by-products of society. In addition to the trash and garbage produced in our homes, solid waste includes any recyclables, refuse, bio-soils, etc. from industrial, commercial, agricultural, or community activities. Solid waste is material that has served its useful purpose and now has been, or soon will be, discarded. At this point it enters into the "waste stream." It may be temporarily stored, but will ultimately flow to a final end such as burial in a landfill, will be incinerated, or will be reused/recycled into a new product.

The purpose of this Comprehensive Solid Waste Management Plan is to provide a comprehensive strategy for managing the solid waste stream in Talbot County during the next 10 years. The Plan includes the following major items:

- Talbot County's goals regarding solid waste management.
- Objectives and policies required to meet goals
- Waste characterization
- Current and projected population data
- Midshore Regional Recycling Program data
- Existing and projected solid waste generation
- Existing County solid waste collection practices
- Existing solid waste acceptance facilities
- Assessment of County solid waste disposal systems
- Environmental considerations regarding the Midshore Regional Solid Waste Facility
- Recycling plan for Talbot County
- Emergency response for hazardous waste audits
- Talbot County plan of action regarding solid waste management
- Solid waste disposal systems and acceptance facilities
- Management of commercial/industrial waste streams

Open meetings utilizing a work session format were held in the months that preceded the adoption of this Plan. A work session was held with the County Council on December 14, 2010. On February 2, 2011, the Talbot County Planning Commission was presented the Solid Waste Management Plan to determine if the Plan was consistent with the Talbot County Comprehensive Land Use Plan. These meetings were scheduled and published on the County website and in the Star Democrat. Copies of the draft Plan were sent to all of the incorporated towns for their review and comment. The draft Plan was also available for the general public to access and review on the County Web Site prior to adoption. A formal public hearing was held by the County Council on this Comprehensive Solid Waste Management Plan. Notice of this public hearing was given by publication in local newspapers preceding the hearing. Written notice of the hearing was also provided to the Maryland Department of the Environment and the incorporated towns in Talbot County.

CHAPTER ONE – GOALS, OBJECTIVES AND REGULATORY STRUCTURE

1.1 SOLID WASTE MANAGEMENT GOALS AND OBJECTIVES

The Talbot County Solid Waste Management Plan (SWMP) is prepared as a part of the County's continuing responsibility in protecting the public health and welfare through assurance of proper and legal handling and disposal of the solid waste generated within the County. An effective and efficient system for management of solid waste requires considerations in the provisions of storage, handling, collection, transport, disposal and recycling of solid waste materials. Talbot County's goal is to provide for all these elements in its SWMP in a manner which is orderly, efficient, environmentally sound, cost effective, and responsive to community needs.

The following objectives are designed to focus efforts toward the development of policies consistent with the aforementioned goal.

- Monitor municipal solid waste disposal, as well as facility and/or land requirements to assure long range (60 years and beyond) community disposal needs can be met.
- Manage solid waste collection techniques in response to present and future needs of the County's jurisdictions.
- Evaluate approaches to reduce, reuse, and recycle solid wastes and, when demonstrated to be cost effective, implement resource recovery opportunities.
- Work with the incorporated municipalities to evaluate the economic benefits of initiating curbside recycling to reduce the amount of wastes disposed of at the landfill.
- Develop innovative approaches to consolidating wastes at one central location for more efficient and effective management.
- In centralizing waste streams, explore waste-to-energy strategies and grant funding resources to achieve a sustainable environment through the realization of energy values within waste products.
- Develop grant applications to secure financial assistance in developing waste-to-energy programs, utilization of landfill gas for beneficial heat or energy opportunities, and enhanced recycling programs in an effort to preserve landfill capacity.
- Encourage and increase residential and commercial recycling efforts.

- Support private sector efforts to recycle asphalt, recycle concrete and other construction debris and incorporate rubberized asphalt within County roads, and County parking lots as wells as private roads and parking lots.
- Encourage private sector involvement in provision of collection services to rural residents of the County.
- Maintain cooperative efforts with the County's municipalities and provide technical assistance in meeting their waste collection and disposal needs.
- Enforce solid waste storage regulations to minimize impacts on the environment.
- Generally maintain a County Solid Waste Management Program consistent with the Talbot County Comprehensive Plan, Talbot County Comprehensive Water and Sewerage Plan and as Maryland Department of Environment Solid Waste Management mandates.

In July 1990, the Counties of Caroline, Kent, Queen Anne's and Talbot submitted their respective recycling plans to the Maryland Department of the Environment (MDE). Through these plans, each county outlined recycling goals and objectives consistent with the directives of the 1988 Maryland Recycling Act and identified the programs which the counties would adopt to achieve these goals. Realizing the advantages of joint cooperative efforts, the four Mid-Shore Counties began to develop the Midshore Regional Recycling Program (MRRP) using the counties' final recycling plan as the foundation. The MRRP is an essential part of the fully integrated regional solid waste management program. As such, it will be incorporated into this update of Talbot County's 10-year Solid Waste Management Plan.

According to the 2004 Maryland Recycling Act (MRA) Report, the quad-county MRRP region has a population of approximately 123,344 people. The MRRP Region is mandated by the Maryland Recycling Act of 1988 to maintain a recycling program which establishes goals and objectives for recycling 15% of the total solid waste generated within the Region. Table 13 and 14 of this Plan provide a quantitative breakdown of recycling magnitudes compared to the total waste generated in the quad-county region as well as Talbot County exclusively.

The recycling goals and objectives shall be achieved through the implementation of a cooperative processing, marketing and collection plan and will potentially include:

- Ongoing end-use market evaluation for the most cost effective recycling program;

- A regional recyclables collection system;
- A central materials recovery facility;
- An expanded yard waste processing program;
- A public education/information campaign;
- Municipality assistance in recycling;
- Outreach and education to residential, commercial, etc.

These activities will be considered with existing recycling mechanisms in place. The capital and annual costs of the MRRP shall be funded by a financial structure consisting of federal, state and private grants, recycling surcharge on municipal solid waste disposal fees, recycling revenues, tipping fees, loans and general County funds.

The major goal of the SWMP is to develop a systematic program within the County to:

- Develop and implement specific plans for management of scrap tires, yard waste, septage, rubble, and hazardous waste materials;
- Evaluate and promote programs, practices and techniques for solid waste minimization including source reduction programs;
- Evaluate and apply innovative techniques in solid waste management to the extent that effectiveness and cost efficiency permit;
- Assure solid waste management activities are implemented in the most environmentally sound methods possible, which maintain, and whenever possible, improve the quality of water and air, conserve natural resources, and apply optimum use of land resources;
- Participate in regionalization of solid waste planning and management activities with neighboring jurisdictions to the greatest extent possible and to achieve an advantage through economies of scale;
- Promote consolidation of resources and facilities developed to meet the needs of solid waste management activities;

The long-range plan is to create a balance between the generation and disposal of solid wastes through the implementation of innovative management techniques and through the provision of adequate solid waste disposal and handling facilities needed to effectively control the solid waste stream and protect the public interest, safety, health, and welfare.

The goals of this program will be accomplished through the continuing improvement, refinement and replacement of existing facilities and the development of new facilities, methods, or resources, to meet the changing conditions of Talbot County, Maryland.

1.2 ORGANIZATION FOR SOLID WASTE MANAGEMENT

The Talbot County Department of Public Works (TCDPW) is responsible for the management of the Solid Waste Program (SWP). The TCDPW is directed by the County Engineer, whose responsibilities are delineated in the Talbot County Charter.

Currently the Midshore Regional Landfill in Easton, Maryland is directly owned and operated by Maryland Environmental Service (MES) through a Memorandum of Understanding between Talbot County and the participating counties (see Appendix A). Leachate from the MRSWMF is discharged into the headworks of the adjacent Town of Easton Wastewater Treatment Plant (WWTP) where it is combined with influent domestic sewage and treated to ENR levels thereafter. Coordination occurs between MES and Easton Utilities, owner and operator of the Easton WWTP.

Efforts of the TCDPW are coordinated with those of the Talbot County Planning Office, Talbot County incorporated municipalities, and the Talbot County Health Department as the principal local agencies involved in the Solid Waste Management Program.

The organization of the TCDPW is represented on the flow chart provided in Figure 1. The office of the TCDPW is located at the Talbot County Government Center, 215 Bay Street, Suite 6, Easton, Maryland 21601.

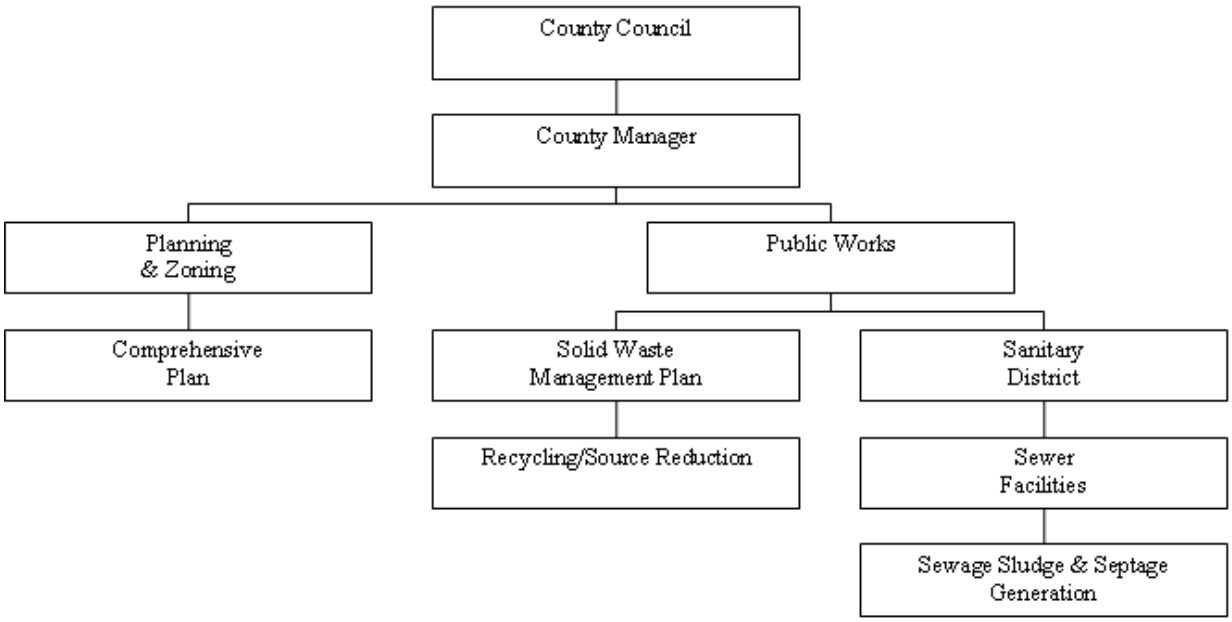
1.3 REGULATIONS AFFECTING THE SOLID WASTE PLAN

Authority

The Maryland General Assembly has enacted laws that govern all aspects of solid waste management including planning, disposal, and recycling. The laws are found in the Annotated Code of Maryland. After the enactment of these laws, the administrative agencies (currently the Maryland Department of the Environment), adopted regulations that spell out the specific requirements and procedures for each program. These regulations are found in the Code of Maryland Regulations, or COMAR.

Talbot County is required by Environment Article, Title 9, Subtitle 5 of the Annotated Code of Maryland to prepare a Solid Waste Management Plan (SWMP), included herein. The specific requirements of the Plan are detailed in COMAR 26.03.03, "Development of County Comprehensive Solid Waste Management Plans."

FIGURE 1 - TALBOT COUNTY SOLID WASTE MANAGEMENT STRUCTURE



The Talbot County SWMP has been prepared as required, and in accordance with, the provisions of Environmental Article, Title 9, Subtitle 5 of the Annotated Code of Maryland (COMAR) (see letter of approval in Introduction). The Maryland Department of the Environment's COMAR Title 26, Subtitle 3 (Water Supply, Sewerage, Solid Waste and Pollution Control Planning & Funding), Chapter 3 (Development of County Comprehensive Solid Waste Management Plans) was used as a guideline.

Relationship to Other Plans and Laws

Title 9 of the Annotated Code of Maryland also establishes other laws governing solid waste management including landfill permits (9-204.2), scrap tire recycling (9-288), sewage sludge (9-230), and recycling (9-1701).

Section 9-228 of the Annotated Code of Maryland prohibits the disposal of scrap tires in a landfill after January 1, 1994. A fee assessed per scrap tire is paid into a fund for establishing scrap tire clean up and recycling programs. This fee is collected at the retail level and transferred to the Maryland Comptroller of the Treasury. The Maryland Department of the Environment was charged with identifying scrap tire

stockpiles and requiring them to be recycled. The fees collected were used for grants to counties for clean up of existing scrap tire stockpiles.

The Maryland Recycling Act mandates recycling targets for all counties. Counties with populations less than 150,000, such as Talbot County, were required to recycle at least 15 percent of their solid waste stream by weight by January 1, 1994. Section 9-512 states that a local authority may not issue building permits (except for essential public services) after January 1, 1992 unless the county has an approved recycling plan.

COMAR 26.04.07, "Solid Waste Management" contains the detailed regulations on the construction and operation of all solid waste acceptance facilities. This includes municipal landfills, land clearing debris landfills, rubble landfills, industrial waste landfills, processing facilities, transfer stations, and incinerators.

The SWMP will be amended as necessary to remain consistent with subsequent regulations and legislative enactments. Environmental Protection Agency (EPA) and Resources Conservation & Recovery Act (RCRA) guidelines regarding pollution prevention, resource protection, and air and water quality are included by inference throughout.

This SWMP is also consistent with the overall regional plan for solid waste management. The Midshore Regional Solid Waste Management agreements for Talbot, Queen Anne, Caroline and Kent Counties are contained in the Appendices of this Plan for reference.

CHAPTER TWO - COUNTY BACKGROUND INFORMATION

2.1 HISTORY, LOCATION AND RESOURCES

Talbot County lies in the heart of the Eastern Shore of Maryland. The County is on the west-central edge of the peninsula that extends between the Atlantic Ocean and the Chesapeake Bay. It is surrounded by Queen Anne's County on the northern side, Caroline County on the eastern side, Dorchester County on the southern side, and the Chesapeake Bay on the western side. The area of the County is approximately 269 square miles. U.S. Route 50 crosses Talbot County in a general north-south direction.

Climate

Talbot County has a humid, continental type of climate. The general flow of atmospheric air is from west to east, but alternating high or low pressure systems dominate or control the climate during the colder half of the year.

The average annual temperature is about 56°F. The warmest months, June-August, have average temperatures of about 75°F, while the cooler months, December-February, average 37°F.

Annual precipitation is approximately 43 inches (see information provided below):

Yearly Precipitation (inches)	43.4
Yearly Snowfall (inches)	15.4
Summer Temperature (°F)	75.5
Winter Temperature (°F)	36.9
Duration of Freeze-Free Period (days)	203

SOURCE: Maryland State Office of Climatology based on 30-year averages.

The climate of Talbot County appears to be very suitable to year-round landfill and solid waste management operations.

Farming

The main type of farm is cash-grain, though poultry farms and dairy farms are numerous. Also, there has been a shift from vegetables and wheat to corn for grain and soybeans. Livestock farms have become fewer and a greater emphasis is placed on crops. Most farms are highly mechanized, mainly because the soils are level. Fields are large, and labor is expensive. The possibility of the farming industry creating a solid waste problem within the County is negligible. Manure from the dairy and beef cattle operations is usually spread over adjacent fields as part of the fertilization process.

Minerals

Mining & mineral processing within Talbot County is not extensive and does not involve any procedure that would tend to create a significant solid waste problem. Presently, the mineral deposits within the County are of little economic importance and have not been largely worked. In many cases the mineral in question is so abundant that the location of a solid waste disposal facility in an area containing the mineral would not noticeably decrease the availability of the mineral.

Gravel is mined from the Sassafras-Woodstown Association. The soils of this Association generally are suitable for community development (i.e. fill for road sub-grade and foundation for buildings).

Public Utilities

The Talbot County Sanitary District operates wastewater treatment facilities in the communities of St. Michaels, Tilghman, Royal Oak, Newcomb, Bellevue, Rio Vista, Tunis Mills, Unionville and Copperville. The Towns of Easton, Oxford and Trappe operate their own water supply and wastewater systems. The Town of St. Michaels operates its own water supply. Talbot County Community Utilities are summarized as shown below:

Incorporated Municipalities	Public/Community Water	Public/Community Sewer
Easton	Yes	Yes
Oxford	Yes	Yes
Trappe	Yes	Yes
St. Michaels*	Yes	Yes
Unincorporated Communities		
Rio Vista*	Yes	Yes
Royal Oak*	No	Yes
Newcomb*	No	Yes
Bellevue*	No	Yes
Tilghman*	No	Yes
Tunis Mills*	No	Yes
Unionville*	No	Yes
Copperville*	No	Yes
Claiborne**	Yes	No
Jensen's Hyde Park**	Yes	Yes
Martingham**	Yes	Yes
Back Creek*	No	Yes
Preserve at Wye Mills**	No	Yes

*Operated by Talbot County Sanitary District
** Privately owned Community System

2.2 POPULATION

Population change is governed principally by three variables: birth, death and net migration, all of which are influenced by a number of factors. In Talbot County population trends are affected by household size, retired and semi-retired people attracted to the area, employment, interest rates (the economy in general), and zoning restrictions.

Population forecasting requires an intensive study of past and present trends and assumptions as to how trends will continue. The primary sources of these data are the U. S. Bureau of Census reports and the vital statistics published by the Maryland Department of Planning. Other sources of data include building permits, school enrollment records, electric and water meter installation records and land zoning regulations.

Table 1 shows the population of the incorporated municipalities of Talbot County as provided by the 1970, 1980, and 1990 Census and as updated by the 2000 Census.

TABLE 1 - TALBOT COUNTY POPULATION

Area	Year of Census				Average % Growth
	1970	1980	1990	2000	
County Total	23,682	25,604	30,549	33,812	12.70%
Unincorporated	14,090	15,233	18,203	18,910	10.50%
Easton	6,809	7,536	9,372	11,708	19.99%
St. Michaels	1,456	1,301	1,301	1,193	-6.32%
Oxford	750	754	699	771	1.18%
Trappe	426	739	974	1,146	40.98%
Queen Anne (part)	151	50	---	84	-66.89%
Total Incorporated	9,592	10,371	12,346	14,902	15.96%

SOURCE: U. S. CENSUS BUREAU - 1970, 1980, 1990, and 2000 CENSUS, RESPECTIVELY

The population of Talbot County, according to the 2000 Census is 33,812 persons. As can be seen from Table 1, the average County percent increase in population for the past 30 years is 12.70%. Table 2 shows the 2000 population distribution relative to number of housing units in the County's incorporated municipalities.

TABLE 2 -TALBOT COUNTY 2000 POPULATION & HOUSING UNITS

MUNICIPALITY	POPULATION		HOUSING	
	PERSONS	% TOTAL	UNITS	% TOTAL
Easton	11,708	34.63%	5,399	32.72%
St. Michaels	1,193	3.53%	671	4.07%
Trappe	1,146	3.39%	450	2.73%
Oxford	771	2.28%	523	3.17%
Queen Anne (part)	84	0.25%	34	0.21%
Total County	33,812	44.07%	16,500	42.89%

SOURCE: U. S. CENSUS BUREAU - 2000 CENSUS

It should be pointed out that the population for the town of Queen Anne represents only that portion of the Town which is actually in Talbot County, with the remainder of the town being in Queen Anne's County. From the tables it can be seen that almost one-third of the County's population lives in the Easton Election District. When the populations for all five municipalities are combined, it can be seen that about 44% of the population resided in these towns in 2000.

Population Density

Generally a rural area, the Eastern Shore is much less dense than the state average for either Maryland (396.6 persons per square mile) or Delaware (276.5 persons per square mile). Talbot County has 125.6 persons per square mile, which is moderately higher than other rural Eastern Shore counties.

Population Growth

In Talbot County, the historic growth curve was relatively flat until the 1940's when the rate increased slightly. From 1950 to 1980, the County's growth rate stabilized at a moderate rate of about 10% increase per decade. Talbot County's growth was accelerated during the decade of 1980-1990 when it increased by 19.3%. The 19.3% increase in Talbot County represented an actual numerical increase of 4,945 persons during the decade 1980-1990. According to 2000 Census figures, Talbot County's growth during the decade of 1990-2000 was 10.7%. The 10.7% increase in Talbot County represented an actual numerical increase of 3,263 persons during the decade 1990-2000.

Current Population

See Tables 2 & 3 for population data. Data in the Tables provided primarily by the U.S. Census Bureau and the Maryland Department of Planning.

Population Projection

There are a number of factors which will affect the population growth patterns of the Eastern Shore during the next several decades. National events and trends such as wars, economic cycles, and urbanization have influenced growth in the past. While these continue to be important factors, they are difficult to predict. National decreases in household size will also affect the Eastern Shore as well as the attractiveness of waterfront properties to retired and semi-retired persons.

Table 3 below lists the previous and projected population as well as previous and projected housing units within Talbot County. The table indicates the population of Talbot is projected to increase but with an

overall decrease in percentage growth as compare to the significant growth experience in the 1980's and 1990's.

TABLE 3 -TALBOT COUNTY POPULATION AND HOUSEHOLD PROJECTIONS

	POPULATION		HOUSING	
YEAR	PERSONS	% GROWTH	UNITS	% GROWTH
1970	23,682		7,914	
1980	25,604	8.12%	9,934	25.52%
1990	30,549	19.31%	12,677	27.61%
2000	33,812	10.68%	14,307	12.86%
2010	*37,050*	*9.58%*	*16,275*	*13.76%*
2020	*40,050*	*8.10%*	*17,800*	*9.37%*
2030	*42,100*	*5.12%*	*18,850*	*5.90%*
	AVERAGE	10.15%		15.84%

SOURCE MARYLAND DEPARTMENT OF PLANNING, October 2007.

Employment History

Employment for the last six years in the State of Maryland, and Talbot County, is represented in Tables 4 and 5 below. The information was summarized from reports published on the Maryland Department of Labor, Licensing & Regulation website www.dllr.state.md.us. As can be seen in the tables, job growth in Talbot County is experiencing an average annual increase of 0.56% as compared to the 0.97% increase throughout the entire State of Maryland.

TABLE 4 – STATE OF MARYLAND EMPLOYMENT TRENDS

YEAR	2002	2003	2004	2005	2006	2007	Avg % Increase
TOTAL EMPLOYMENT	**2,427,396**	**2,434,480**	**2,461,074**	**2,497,416**	**2,530,129**	**2,546,850**	**0.97**
GOVERNMENT SECTOR -- TOTAL	**450,215**	**450,458**	**446,342**	**448,627**	**455,492**	**461,356**	**0.49**
Federal Government	128,314	128,264	126,922	125,737	125,178	124,843	-0.55
State Government	98,415	97,069	95,928	96,707	97,519	98,634	0.05
Local Government	223,486	225,125	223,492	226,183	232,795	237,879	1.26
PRIVATE SECTOR TOTAL	1,977,181	1,984,022	2,014,732	2,048,789	2,074,637	2,085,494	**1.07**
GOODS-PRODUCING	328,847	321,733	325,826	330,435	331,590	326,133	-0.15
SERVICE PROVIDING	1,644,350	1,660,125	1,686,668	1,716,583	1,741,777	1,758,249	1.35

TABLE 5 – TALBOT COUNTY EMPLOYMENT TRENDS

YEAR	2002	2003	2004	2005	2006	2007	Avg % Increase
TOTAL EMPLOYMENT	**18,930**	**19,052**	**18,893**	**19,124**	**19,295**	**19,459**	**0.56**
GOVERNMENT SECTOR -- TOTAL	**1,870**	**1,885**	**1,876**	**1,845**	**1,869**	**1,855**	**-0.16**
Federal Government	274	272	265	267	266	252	-1.64
State Government	215	216	218	203	198	198	-1.59
Local Government	1,381	1,397	1,393	1,375	1,405	1,405	0.35
PRIVATE SECTOR TOTAL -	**17,060**	**17,167**	**17,017**	**17,279**	**17,426**	**17,604**	**0.63**
GOODS-PRODUCING	3,856	3,721	3,371	3,373	3,373	3,304	-2.98
SERVICE PROVIDING	13,200	13,445	13,638	13,901	14,053	14,300	1.61

Employment Projections

Table 6 below summarizes the employment projections for both the Upper Eastern Shore Region and the State of Maryland. The information was obtained from published reports on the Maryland Department of Labor, Licensing & Regulation website www.dllr.state.md.us. Although Talbot County specific information was not available, the regional statistics are thought to be representative of anticipated growth in Talbot County. Employment in the Upper Shore region is projected to grow at a slightly higher rate than the entire State of Maryland.

TABLE 6 – EMPLOYMENT PROJECTIONS

	Upper Shore*			Maryland		
Occupational Title	**2004**	**2014**	**% Growth**	**2006**	**2016**	**% Growth**
Total, All Occupations	65,695	76,230	16.04%	2,759,535	3,147,180	14.05%

*Upper Shore is comprised of Caroline, Dorchester, Kent, Queen Anne's, & Talbot counties.

The rural demographic nature of the County places a unique strain on central collection and therefore the management of solid waste. However, the projected growth and employment trends in the County are not expected to create any adverse demands on existing and proposed County facilities during the term of the SWMP and the Plan will be flexible to accommodate the possibility of accelerated growth that could result as industry and housing move out of urban areas.

Regardless of the pace of growth within Talbot County, the SWMP will attempt to assure that expansion is orderly and does not harm the ecological character of the region that provides a good balance between business, family-owned business, light industry, commercial watermen, recreational boating, hunting and agriculture.

2.3 MUNICIPAL, FEDERAL AND SOLID WASTE FACILITIES

Figure 2 illustrates all Federal Facilities and Municipalities along with major roads while Figure 3 illustrates all Solid Waste Handling Facilities along with major roads. Figure 4 is a depiction of the existing MRSWMF and Transfer Station and the adjacent Town of Easton Wastewater lagoon to which the landfill leachate is discharged.

2.4 TALBOT COUNTY, MARYLAND ZONING ORDINANCE

The Talbot County Code applies to the unincorporated areas of Talbot County. The Zoning Chapter of the Talbot County Code was adopted by the County Council on March 26, 1991 by Bill 450. A comprehensive rezoning within the unincorporated areas of Talbot County occurred in 2007, followed by a rewrite of the zoning chapters of the Code. Chapter 190, Zoning, Subdivision and Land Development, as amended was adopted by the County Council on April 14, 2009 by Bill 1162. The Comprehensive Plan for Talbot County was adopted on February 15, 2005.

Zoning requirements and districts are established in accordance with the Talbot County Comprehensive Plan and are designed to promote the health, safety and general welfare of the citizens of Talbot County, Maryland. They are made with thoughtful consideration for existing property use, trends in growth, character of the district including its unique suitability for particular uses and with a view towards conservation of property values and the most appropriate use of land. The "Zoning District Map of Talbot County, Maryland" is filed as part of this ordinance in the Planning Office. The map, with subsequent amendments is conclusive as to the current zoning status of land.

Review of the Talbot County Zoning Ordinance indicates that solid waste disposal sites (i.e. transfer stations) are permitted by special exceptions in most zoning districts within Talbot County. A Recycling Processing Center is allowed in the Limited Industrial Zoning District. Landfills and rubblefills are permitted in all zoning districts pending County Council approval. All public and commercial solid waste disposal sites must conform to the provisions of Section 190.25 of Talbot County Zoning Ordinance (i.e. setbacks from property lines, screening from view on all sides by planting, etc.).

This Plan shall not be used to create or enforce local land use and zoning requirements, and shall not be used to replace local approval processes related to land use and zoning decisions.

Talbot County Solid Waste Management Plan
Government Facilities

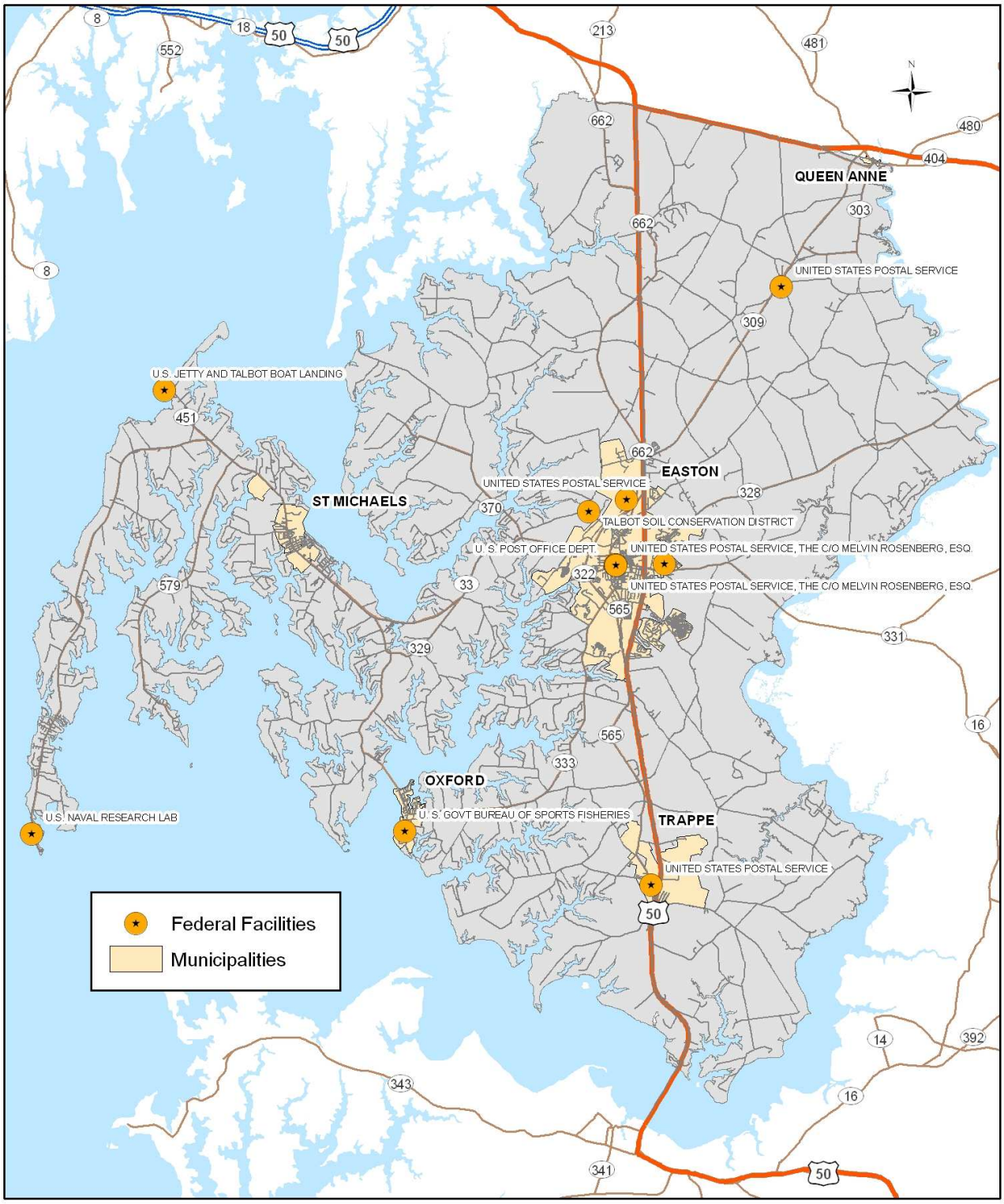


Figure 2

Talbot County Solid Waste Management Plan
Solid Waste Handling Facilities

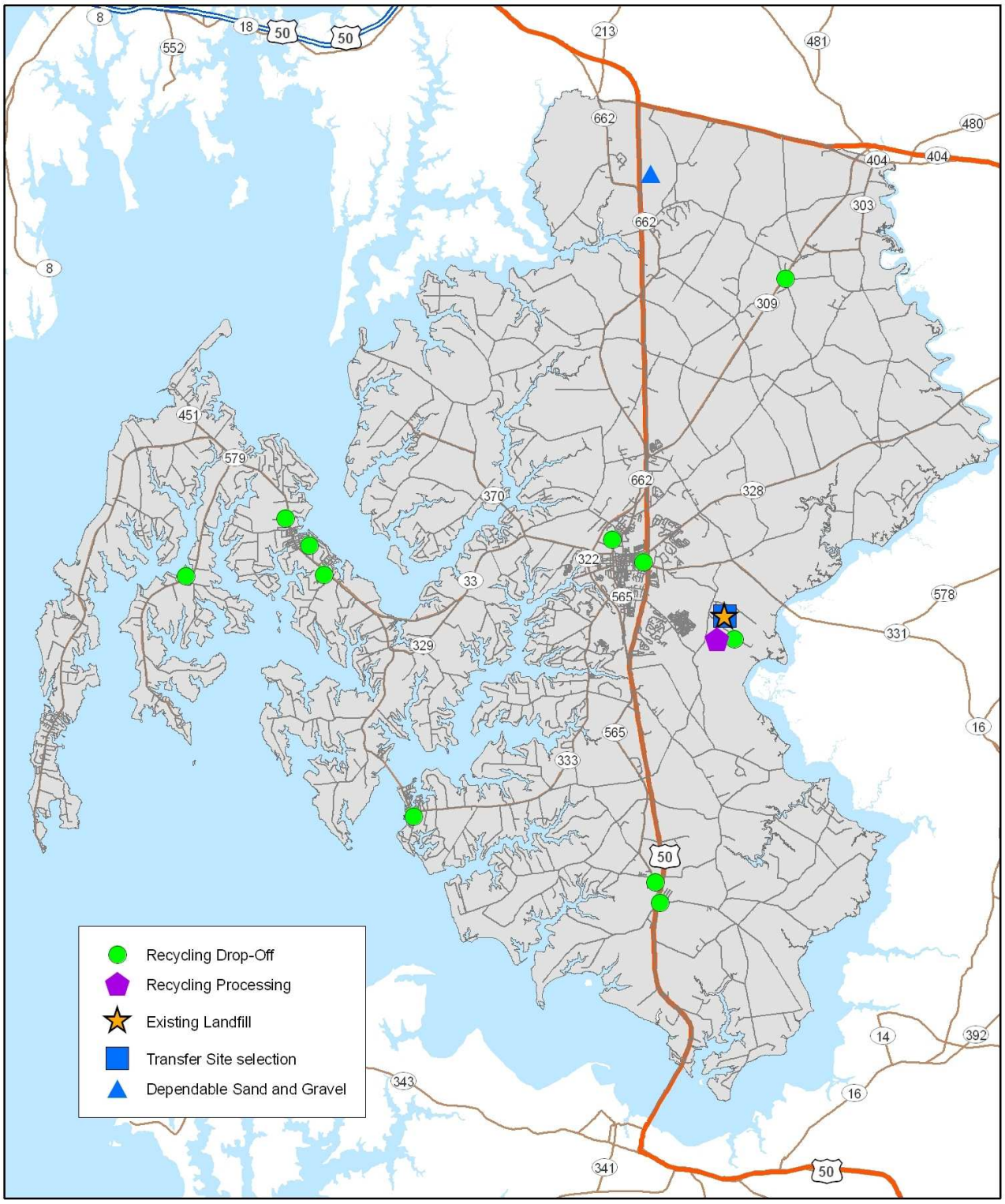


Figure 3

TALBOT COUNTY SOLID WASTE MANAGEMENT PLAN
MIDSHORE I REGIONAL SOLID WASTE FACILITY

Figure 4

The Planning Commission and the County Council review the zoning regulations and Zoning District Map for consistency with the Comprehensive Plan and revise accordingly if there are amendments.

Floating and Overlay Zoning Districts

Floating and Overlay Zoning Districts are provided in this Ordinance to allow for needed flexibility in allowing certain types of uses to occur, and/or the application of special regulations. Floating zoning districts are used where a particular type of activity is desired for a general area but the specific area has not been located in the County. In this Ordinance, floating zoning districts apply to manufactured home developments and affordable housing developments. Overlay zoning districts are used to apply additional regulations based upon the use of the property. In this Ordinance overlay zones apply to the Easton Airport and Historic Districts.

2.5 TALBOT COUNTY COMPREHENSIVE PLAN

The 2004 Talbot County Comprehensive Plan is a long-range guide for growth, land use and development which apply to a broad range of residential, commercial, industrial and institutional development and facilities. The intent of the Plan is to provide adequacy for community needs and is not limited to solid waste management facilities. This section is a summarization of topics contained in the Comprehensive Plan which relate to the goals and objectives of this SWMP.

Ensuring that the provision of community services and facilities are phased with demand or need is a major component of County growth management. The adequacy and quality of community services and facilities strongly contributes to the overall quality of life in Talbot County.

The need for various community services and facilities is determined by the size and composition of the County's population. Community services and facilities should be provided in response to changes in the population which have already occurred, or are anticipated.

Goal

Provide an equitable system, and/or public facilities and services that are adequate for community needs and are consistent with planned land use patterns.

Policies

- Public facilities and service improvements designed to correct existing system inadequacies should be completed prior to beginning County-funded improvements designed to accommodate new growth.
- Public facility and service improvements should be efficiently coordinated with the County's Land Use Plan, Comprehensive Water and Sewer Plan, Master Plan for Education and other County plans related to capital improvements programming.
- All planned major County public facilities should be prioritized and scheduled as part of a Comprehensive Six Year Capital Improvements Program.
- Public Facilities and service should be scaled to the needs of the area which is served. Rural areas of the County should be provided facilities and services which match rural needs. Planned growth areas around towns should be provided a level of facilities and services matched to more intensive needs.
- The costs of new or expanded community facilities and services should be equitably and proportionally shared by all those who will benefit from the improvements.
- New development projects should not be approved or built in areas of the County where infrastructure and services such as roads, schools, sewer service, water supply, fire and police protection are not adequate to accommodate the needs of the development.
- Public facilities and services which are intended to meet countywide needs should be centrally located. Likewise, those facilities and services intended to serve local community needs should be located within the community.
- Wherever possible, the existing public facilities and services of the County and its towns should be efficiently expanded rather than creating new services and facilities.
- The County should explore the feasibility of improving the existing solid waste collection system.
- The County should encourage the recycling of solid waste resources in order to prolong landfill life and conserve natural resources, and to support this policy, the County should encourage the municipalities to complete an economic analysis on the benefits of providing curbside recycling.

CHAPTER THREE- EXISTING SOLID WASTE MANAGEMENT

3.1 EXISTING AND PROJECTED SOLID WASTE MANAGEMENT

As mentioned previously, currently all municipal solid wastes including rubble, construction and demolition debris, recyclables, sludges, etc. generated in the four county midshore regions were managed at the MRSWMF in Talbot County until December 31, 2010. Beginning January 3, 2011, these wastes will be processed at the waste transfer station located at the MRSWMF in Talbot County and transported to the new MRSWMF in Caroline County for disposal. To analyze the waste managed at MRSWMF generated from all four counties as well as Talbot County only, Table 7, 8.1, 8.2 and 9 are provided below.

Waste Generated in Talbot County

Table 7 below details the solid waste composition of all waste managed at the MRSWMF and originating in Talbot County. The table is based upon weigh data provided by MES. It should be noted that the MRSWMF manages waste from the entire midshore region and Table 7 shows the composition of the municipal waste streams managed at the MRSWMF which are generated from Talbot County only. Further details of all waste managed at the MRSWMF can be found in Table 9 as a point of reference.

TABLE 7 - TALBOT COUNTY MUNICIPAL SOLID WASTE COMPOSITION

INBOUND MATERIAL TYPE	TALBOT COUNTY YEARLY TOTALS (Tons)							
	2000	2001	2002	2003	2004	2005	2006	2007
Not Specified	0.0	1.2	0.0	0.0	0.0	0.0	2.1	0.0
Tin	4.2	0.0	0.0	0.0	1.6	0.0	0.0	0.0
White Goods	108.3	73.4	137.0	210.1	191.6	149.4	114.7	80.9
Mixed Metal	48.0	40.4	43.7	75.8	50.5	35.4	35.5	32.3
Brown Glass	1.1	0.1	0.0	42.3	52.6	69.5	2.4	0.0
Clear Glass	45.4	72.1	63.8	42.8	65.6	76.1	87.1	99.3
Green Glass	76.1	0.0	0.0	0.0	0.0	0.0	0.0	1.9
Mixed Glass	126.3	134.2	136.3	105.2	92.1	83.3	152.9	186.8
Brush	2625.6	2562.3	2765.9	4616.9	4123.8	3961.6	4873.1	4320.1
Plastic	0.2	0.9	0.0	0.0	4.9	3.6	2.0	3.2
Plastic/ONP	705.4	689.6	750.6	746.2	726.3	724.4	805.0	791.2
Cardboard	21.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0
ONP	23.6	10.3	1.2	0.4	3.6	0.0	7.1	11.0
Tires by Weight	31.5	22.3	32.7	38.3	27.8	30.7	39.8	74.3
Tires Each	1.6	0.6	0.0	0.0	0.0	0.1	0.5	0.9
Tires Shredded	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Tires - Industrial	2.4	1.0	2.4	4.0	1.4	1.8	0.0	1.1
Commingled	15.1	4.1	0.0	0.0	5.9	0.0	0.0	0.0
Transfer Commercial MSW	13051.3	12214.1	13107.3	13628.9	12880.3	13219.2	12104.7	12044.6
Transfer Residential MSW	2085.9	2173.6	1812.2	2327.2	2246.7	1918.6	1287.5	472.8
Commercial MSW	11744.1	14558.9	19259.9	17965.4	17294.8	15814.4	20183.1	14292.8
Residential MSW	16847.7	15522.2	17204.8	19826.9	19804.0	19222.4	20188.2	19199.7
Homeowner Area MSW	2782.5	335.7	497.5	449.7	133.4	79.3	102.5	316.4
Construction Debris	6190.1	6321.7	6725.8	9667.9	14493.9	16226.7	19573.6	17962.8
Land Clearing Debris	129.0	320.2	731.7	861.8	834.4	642.9	789.8	695.8
Asbestos	73.3	56.3	60.2	55.9	77.3	85.9	83.1	54.1
Textile	1.4	0.0	0.0	0.0	31.2	0.0	0.0	0.0
Clean Soil	2940.2	4892.1	13929.1	18502.2	35263.2	26842.7	60580.2	33076.3
Recovermat	0.0	0.0	0.0	3483.4	1008.5	0.0	0.0	0.0
Clean Rubble	462.9	881.7	1136.0	1048.3	1315.7	2359.6	0.0	2679.3
Contaminated Soil	77.7	35.9	48.2	39.1	133.0	52.1	0.0	72.1
Sewage Sludge	349.2	320.2	279.2	336.8	355.6	896.8	320.8	291.7

Source: MES scale records from Midshore Regional Solid Waste Facility
ONP = Old News Paper, MSW = Municipal Solid Waste

Table 8.1 is an illustration of actual wastes, projected wastes, and projected population for Talbot County only. The basis for the data is explained in the notes below the table and is based upon Annual Tonnage Reports to MDE for the MRSWMF.

It should be noted that the Talbot County waste production (Table 8.1), as compared to the total regional waste managed in the county (Table 8.2 - waste generated by all four counties), is unusually high. The Average Total Waste Production by Talbot County accounts for approximately 54.7% of the region's Average Total Waste Accepted at the MRSWMF. There are several explanations for the seemingly high percentage of waste generated by Talbot County. One possible cause could be inaccuracies in the assigning of County origins at the MRSWMF. For example, a waste hauler may declare he has waste from Talbot, Caroline and Kent Counties and the waste is assigned to all counties equally (1/3, 1/3, 1/3) when in fact the waste was mostly collected in only one of the three counties. A second possible cause is the method for assigning origin to undeclared waste or waste of an unknown origin. The MRSWMF

assigns waste to Talbot County by default if the origin is unknown or undeclared. Another explanation may be that some of the waste from the other three counties is being transferred to other landfills.

Table 8.1 illustrates the average waste produced in pounds per person per day for all waste production as well as for residential waste only. The resulting averages are 15.48 lbs./person/day for the total waste production relative to population and 3.50 lbs./person/day for the residential waste production.

Waste Managed in Talbot County

Table 8.2 illustrates the existing and projected waste managed within Talbot County. The basis for the data is explained in the notes below the table. It can be seen that there will be a significant drop in waste managed within Talbot County starting in 2011 when the MRSWMF is closed. As previously mentioned, there may also be a significant reduction in waste originating from Talbot County as reported at the new Midshore II facility if the same practice of assigning waste to the county hosting the landfill continues. The disposal rows at the bottom of each table are meant to illustrate the amount of in-county and out-of-county waste disposal.

TABLE 8.1 –EXISTING AND PROJECTED SOLID WASTE PRODUCTION

Waste Stream Type	COL. ID	Formula	ACTUAL TONS/YEAR					PROJECTED TONS/YEAR										
			2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Residential MSW	a		22,899	24,895	21,984	21,707	21,917	22,907	23,136	23,368	23,601	23,837	24,076	24,316	24,560	24,805	25,053	25,304
Commerical MSW	b		17,963	30,191	15,813	20,262	14,311	19,905	20,104	20,305	20,508	20,713	20,921	21,130	21,341	21,554	21,770	21,988
Asbestos	c		56	77	86	83	54	72	73	73	74	75	76	76	77	78	79	79
C&D	d		9,679	14,503	16,227	19,574	17,971	15,747	15,904	16,063	16,224	16,386	16,550	16,715	16,883	17,051	17,222	17,394
LCD	e		876	834	642	790	696	775	783	791	799	807	815	823	831	839	848	856
Scrap Metal	f		0	0	185	0	238	85	86	87	88	89	90	91	92	93	93	94
Scrap Tires	g		898	29	35	41	93	221	224	226	228	230	233	235	237	240	242	245
Sewage Sludge	h		337	356	897	321	292	445	449	454	458	463	468	472	477	482	487	491
Soil	i		18,502	35,274	26,841	60,674	33,148	35,237	35,589	35,945	36,304	36,667	37,034	37,404	37,778	38,156	38,538	38,923
Clean Rubble	j		1,048	1,316	2,360	3,917	2,679	2,287	2,310	2,333	2,356	2,379	2,403	2,427	2,452	2,476	2,501	2,526
Recyclables	k		--	--	1,322	1,207	1,219	1,262	1,274	1,287	1,300	1,313	1,326	1,339	1,353	1,366	1,380	1,394
Yard Waste	l		--	--	3,859	4,869	4,420	4,426	4,471	4,515	4,561	4,606	4,652	4,699	4,746	4,793	4,841	4,890
Total Waste Production (Tons)	m	sum a-l	72,257	107,475	92,611	133,445	97,038	101,571	102,587	103,612	104,649	105,695	106,752	107,820	108,898	109,987	111,087	112,197
Population (persons)	n		34,561	35,191	35,639	36,077	36,193	36,479	36,764	37,050	37,360	37,670	37,980	38,290	38,600	38,890	39,180	39,470
Average Waste Production (Lb./person/day)	o	(m*2000) / (n*365)	11.5	16.7	14.2	20.3	14.7	15.26	15.29	15.32	15.35	15.37	15.40	15.43	15.46	15.50	15.54	15.58
Average Residential MSW (Lb./person/day)	p	(a*2000) / (n*365)	3.6	3.9	3.4	3.3	3.3	3.4	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5

Notes:

1. MSW - Municipal Solid Waste, C&D - Construction & Demolition, LCD - Land Clearing Debris
2. Recycleables and Yard Waste not reported in Tonnage Reports for Talbot County Only in years 2003-2004.
3. Residential and Commercial MSW are summations of weigh records from the MRSWMF
4. Total Waste Production is based upon Midshore Regional Recycling Program annual reports and is not a summation of waste stream types in this table nor does it include recylcables and yard
5. Population is based upon data obtained from Maryland Department of Planning website.
6. Source Midshore Regional Landfill and Transfer Station Tonnage Reports to MDE.
7. Waste projections are based upon the average 1% annual increase in Total Waste Production and Population Increase demonstrated for years 2003-2007.
8. Population estimates are based upon information obtained from Maryland Department of Planning.

TABLE 8.2 –EXISTING AND PROJECT SOLID WASTE MANAGEMENT

	WASTE STREAM TYPES	COL. ID	Formula	ACTUAL TONS/YEAR					PROJECTED TONS/YEAR										
				2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
WASTE PRODUCTION	Residential MSW	q		62,100	57,834	55,505	57,611	56,121	*58,413*	*58,997*	*59,587*	*23,601*	*23,837*	*24,076*	*24,316*	*24,560*	*24,805*	*25,053*	*25,304*
	Commerical MSW	r		42,296	77,778	40,753	70,393	39,653	*54,716*	*55,263*	*55,816*	*20,508*	*20,713*	*20,921*	*21,130*	*21,341*	*21,554*	*21,770*	*21,988*
	Asbestos	s		64	86	105	126	88	*95*	*96*	*97*	*73*	*74*	*75*	*76*	*76*	*77*	*78*	*79*
	C&D	t		10,892	16,512	20,732	24,772	22,234	*19,219*	*19,411*	*19,605*	*16,063*	*16,224*	*16,386*	*16,550*	*16,715*	*16,883*	*17,051*	*17,222*
	LCD	u		894	841	665	837	733	*802*	*810*	*818*	*799*	*807*	*815*	*823*	*831*	*839*	*848*	*856*
	Scrap Metal	v		0	0	207	0	257	*94*	*95*	*96*	*88*	*89*	*90*	*91*	*92*	*93*	*93*	*94*
	Scrap Tires	w		902	37	50	56	159	*243*	*246*	*248*	*228*	*230*	*233*	*235*	*237*	*240*	*242*	*245*
	Sewage Sludge	x		685	667	1,647	598	647	*857*	*866*	*874*	*458*	*463*	*468*	*472*	*477*	*482*	*487*	*491*
	Soil	y		19,173	35,440	27,075	61,161	34,133	*35,750*	*36,108*	*36,469*	*36,304*	*36,667*	*37,034*	*37,404*	*37,778*	*38,156*	*38,538*	*38,923*
	Dependable Co. NWWP Processing (Tons)	z		--	--	8,000	2,259	1,797	*4,059*	*4,099*	*4,140*	*4,182*	*4,224*	*4,266*	*4,308*	*4,352*	*4,395*	*4,439*	*4,483*
	R.B. Baker & Sons C&D from Talbot County	aa		1,391	892	1,237	466	450	*896*	*905*	*914*	*923*	*932*	*942*	*951*	*961*	*970*	*980*	*990*
	R.B. Baker & Sons LCD from Talbot County	bb		196	207	399	311	308	*287*	*290*	*293*	*296*	*299*	*302*	*305*	*308*	*311*	*314*	*317*
	Clean Rubble	cc		1,126	1,375	2,431	4,536	3,600	*2,640*	*2,666*	*2,693*	*2,356*	*2,379*	*2,403*	*2,427*	*2,452*	*2,476*	*2,501*	*2,526*
DISPOSAL	Total Waste Accepted at MRSWMF	ff		174,699	197,727	155,202	227,003	164,429	*185,650*	*187,507*	*189,382*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Total Waste Managed in Talbot County	gg	(z + dd)	174,699	197,727	163,202	229,262	166,226	*188,085*	*189,966*	*191,866*	*108,830*	*109,919*	*111,018*	*112,128*	*113,249*	*114,382*	*115,526*	*116,681*
	MSW Transferred Out of County	hh		31,983	37,467	34,373	32,533	30,923	*33,790*	*34,128*	*34,470*	*44,110*	*44,551*	*44,996*	*45,446*	*45,901*	*46,360*	*46,823*	*47,291*
	Other Waste Transferred Out of County	ii	(aa + bb)	1,587	1,099	1,636	777	758	*1,183*	*1,195*	*1,207*	*64,721*	*65,368*	*66,022*	*66,682*	*67,349*	*68,022*	*68,702*	*69,389*
	Total Waste Transferred Out of County	jj	(hh + ii)	33,570	38,566	36,009	33,310	31,681	*34,973*	*35,323*	*35,676*	*108,830*	*109,919*	*111,018*	*112,128*	*113,249*	*114,382*	*115,526*	*116,681*
	Recycleables Transferred Off-Site	kk		2,240	2,236	5,331	2,264	2,406	*2,924*	*2,954*	*2,983*	*1,300*	*1,313*	*1,326*	*1,339*	*1,353*	*1,366*	*1,380*	*1,394*
	Total Waste Landfilled at MRSWMF	ll		130,476	109,312	112,899	124,405	127,344	*122,096*	*123,317*	*124,550*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Notes:

1. MSW - Municipal Solid Waste, C&D - Construction & Demolition, LCD - Land Clearing Debris, NWWP - Natural Wood Waste Product
2. Source: MDE Annual Tonnage Reports.
3. Total Waste Accepted at MRSWMF is as reported to MDE in annual Tonnage Reports and is not a sum of waste stream types in this table.
4. Total Waste Managed in Talbot County is as reported in MRSWMF and Transfer Station Annual Tonnage Reports plus Dependable Co. and is not the sum of waste stream types in this table.
5. MSW Transferred Out of County is based upon Annual Tonnage Reports for the Midshore Regional Solid Waste Transfer Station.
6. Total Waste Landfilled at MRSWMF is based upon Annual Tonnage Reports.
7. Other Waste Transferred Out of County includes LCD and C&D deposited at R.B. Baker & Sons.
8. Waste Transferred Out of County for 2003-2010 is based upon records from Midshore Regional Transfer Station and R.B. Baker Annual Tonnage Reports
9. It is assumed that all NWWP will be processed and later removed from the Dependable Sand, Stone & Recycling Co. facility.
10. Waste Transferred Out of County for 2011-2019 is based upon the closure of the MRSWMF and opening of the Midshore II facility in Caroline County.
11. Commercial Waste includes Industrial and Institutional wastes. No quantity data is available for Controlled Hazardous Substances, Dead Animals, or Septage.
12. Waste projections are based upon the average 1% annual increase in Total Waste Production and Population Increase demonstrated for years 2003-2007 (see Table 8.1).

Midshore Regional Recycling Program (MRRP)

As previously stated, Talbot, Kent, Queen Anne's and Caroline Counties established the Midshore Regional Recycling Program (MRRP) as a cooperative agreement in 1991. Tables 9 and 10 detail the recycling effort within the four county region as well as Talbot County solely. Table 9 represents the recycling data as provided by the MRRP coordinator for the year 2007. It should be understood that the MRRP is not required to track all waste streams (e.g., soil) and as a result the MRRP values for Total Waste Disposed are lower than the actual Totals in Table 8.1-8.2. The reporting methods and basis for calculations by the MRRP are consistent with requirements by the Maryland Recycling Act of 1988.

Table 10 details the waste diversion rate for Talbot County exclusively over a six year period. Food By-Product (FBP) is a significant contributor in the region as well as Talbot County. Therefore, the MRRP coordinator has provided figures which show the recycling rate with and without the FBP waste included. Even without the FBP, the recycling rates exceed the 15% recycling goal mentioned earlier and demonstrate a progressive increase in the waste diversion rate. There is hope that the waste diversion rate can increase even further with continued education and outreach as well as possible future curbside recycling programs.

TABLE 9 – 2007 MARYLAND RECYCLING ACT (MRA) REPORT

Data related to Maryland Recycling Act (MRA) Report - Midshore Region - JAN-DEC., 2007
Regional totals for Forms A and B reported to MDE per 1988 Maryland Recycling Act
County totals are informational

	Column ID	Formula	CAROLINE COUNTY	KENT COUNTY	QUEEN ANNE'S COUNTY	TALBOT COUNTY	MIDSHORE REGION
Form A - Table A1 Waste Disposed (1)							
MRA Waste Disposed (tons)	a		18,594.94	17,232.27	41,124.05	48,817.72	125,768.97
Non-MRA Waste Disposed (tons)	b		1,688.43	1,531.97	1,444.36	19,036.74	23,701.50
Total Waste Disposed (Tons)	c	a + b	20,283.37	18,764.24	42,568.41	67,854.46	149,470.47
Form B - Table B1 MRA Materials Recycled (2)							
Total MRA Recyclables - Residential (tons)	d		2,369.98	3,716.50	6,113.58	5,954.62	18,154.68
Avoided Landfill Tipping Fee	e	d x $47.50	$ 112,574	$ 176,534	$ 290,395	$ 282,844	$ 862,347
Total MRA Recyclables - Commercial (tons)	f		17,159.68	8,714.50	38,194.61	46,465.44	110,534.24
FBP in MRA Recyclables - Commercial (tons)	f 1				33,860.58	36,473.21	70,333.79
Avoided Landfill Tipping Fee	g	f x $47.50	$ 815,085	$ 413,939	$ 1,814,244	$ 2,207,109	$ 5,250,376
Total MRA Recyclables	h	d + f	19,529.66	12,431.00	44,308.19	52,420.06	128,688.91
Avoided Landfill Tipping Fee	i	h x $47.50	$ 927,659	$ 590,473	$ 2,104,639	$ 2,489,953	$ 6,112,723
Form B - Table B2 Non-MRA Materials Recycled (3)							
Total Non-MRA Recyclables - Residential (tons)	j		1,114.27	405.20	204.91	35,861.22	37,585.60
Avoided Landfill Tipping Fee	k	j x $47.50	$ 52,928	$ 19,247	$ 9,733	$ 1,703,408	$ 1,785,316
Total Non-MRA Recyclables - Commercial (tons)	l		868.11	27,895.87	9,252.51	11,086.67	49,103.17
Avoided Landfill Tipping Fee	m	l x $47.50	$ 41,235	$ 1,325,054	$ 439,494	$ 526,617	$ 2,332,400
Total Non-MRA Recyclables	n	j + l	1,982.38	28,301.07	9,457.42	46,947.89	86,688.77
Avoided Landfill Tipping Fee	o	n x $47.50	$ 94,163	$ 1,344,301	$ 449,227	$ 2,230,025	$ 4,117,716
Total Avoided Tipping Fees	p	i + o	$ 1,021,822	$ 1,934,773	$ 2,553,866	$ 4,719,978	$ 10,230,440
Form B - Table B3 MRA Waste Diversion Rate Calculation							
Total MRA Waste (Disposed)		a	18,594.94	17,232.27	41,124.05	48,817.72	125,768.97
Total MRA Recyclables		h	19,529.66	12,431.00	44,308.19	52,420.06	128,688.91
Total MRA "Discards"	q	a + h	38,124.60	29,663.27	85,432.24	101,237.78	254,457.89
MRA Recycling Rate	r	(h / q) x 100	51.23%	41.91%	51.86%	51.78%	50.57%
Source Reduction Credit	s						
Waste Diversion Rate	t	r + s	51.23%	41.91%	51.86%	51.78%	50.57%
Recycling rate without food by-products (FBP) - informational							
Total MRA Recyclables excluding FBP	u	h - f 1	19,529.66	12,431.00	10,447.61	15,946.85	58,355.12
Total MRA "Discards" excluding FBP	v	a + h - f 1	38,124.60	29,663.27	51,571.65	64,764.57	184,124.09
MRA Recycling Rate excluding FBP	w	(u / v) x 100	51.23%	41.91%	20.26%	24.62%	31.69%

(1) County totals are subject to the accuracy of assigning County origins for waste delivered to disposal facilities. Exportation of Waste outside of the Region is least likely to occur for Talbot wastes due to proximity to MRSWF.

(2) Commercial recycling tonnages are subject to responses for surveys sent to business requesting recycling tonnages. Queen Anne's County and Talbot County Commercial tonnages include significant tonnages for food processing by-products.

(3) Non-MRA recycling tonnages are subject to responses for surveys sent to business requesting recycling tonnages. Because Non-MRA recyclables are not included in the MRA rate calculation, capturing these tonnages is a secondary priority. Therefore, actual recycling activity is likely greater than reported tonnages.

MRA - Maryland Recycling Act of 1988.

MRA Materials - Waste or Recycled commodities that are considered under MRA guidelines to have originated from municipal and commercial sources and typically would be disposed at municipal solid waste facilities unless they are recycled. Certain wastes are excluded as noted in Non-MRA materials.

Non-MRA Materials - Wastes or Recycled commodities excluded from MRA guidelines and recycling rate calculations are materials that are collected for disposal or recycling such as Hospital waste (special waste), land clearing debris, rubble, scrap material, sewage sludge, and waste generated by a single individual or business and disposed of in a facility dedicated solely for that entity's waste.

TABLE 9 (cont.) – 2007 MARYLAND RECYCLING ACT (MRA) REPORT

Data related to Maryland Recycling Act (MRA) Report - Midshore Region - JAN-DEC., 2007 **Regional totals for Forms A and B reported to MDE per 1988 Maryland Recycling Act** **County totals are informational**							
	Column ID	Formula	**CAROLINE COUNTY**	**KENT COUNTY**	**QUEEN ANNE'S COUNTY**	**TALBOT COUNTY**	**MIDSHORE REGION**
Waste & Recycling Per Capita (tons/per person/year)							
Population (2000 Census)	x		29,772	19,197	40,563	33,812	123,344
MRA Waste (Disposed)	y	a / x	0.62	0.90	1.01	1.44	1.02
Non-MRA Waste (Disposed)	z	b / x	0.06	0.08	0.04	0.56	0.19
Total Waste Disposed	aa	c / x	0.68	0.98	1.05	2.01	1.21
MRA Recyclables	bb	h / x	0.66	0.65	1.09	1.55	1.04
Non-MRA Recyclables	cc	n / x	0.07	1.47	0.23	1.39	0.70
Total Recyclables	dd	bb + cc	0.72	2.12	1.33	2.94	1.75
Total MRA "Discards"	ee	y + bb	1.28	1.55	2.11	2.99	2.06
All "Discards"	ff	aa + dd	1.40	3.10	2.37	4.95	2.96
Waste & Recycling Per Capita (lbs/per person/day)							
Population (2000 Census)	x		29,772	19,197	40,563	33,812	123,344
MRA Waste (Disposed)	gg	y x 2000/365	3.42	4.92	5.56	7.91	5.59
Non-MRA Waste (Disposed)	hh	z x 2000/365	0.31	0.44	0.20	3.09	1.05
Total Waste Disposed	ii	aa x 2000/365	3.73	5.36	5.75	11.00	6.64
MRA Recyclables	jj	bb x 2000/365	3.59	3.55	5.99	8.50	5.72
Non-MRA Recyclables	kk	cc x 2000/365	0.36	8.08	1.28	7.61	3.85
Total Recyclables	ll	dd x 2000/365	3.96	11.63	7.26	16.10	9.57
Total MRA "Discards"	mm	ee x 2000/365	7.02	8.47	11.54	16.41	11.30
All "Discards"	nn	ff x 2000/365	7.69	16.98	13.01	27.10	16.21

TABLE 10 - TALBOT COUNTY MRA WASTE DIVERSION RATE

Waste Description	**Year**					
	2002	**2003**	**2004**	**2005**	**2006**	**2007**
MRA Waste (tons) [A]	54,449.54	56,861.30	55,086.50	48,634.18	51,209.12	48,817.72
Recycled (tons) [B]	24,455.27	52,689.00	53,278.04	52,485.08	56,487.11	52,420.06
Total Waste (tons) [A + B]	78,904.81	109,550.30	108,364.54	101,119.26	107,696.23	101,237.78
Recycling Rate (%) [B/(A+B) x 100]	**30.99%**	**48.10%**	**49.17%**	**51.90%**	**52.45%**	**51.78%**
Poultry Processing By-Product [C]	11,553.75	36,725.78	38,568.15	38,991.45	40,238.84	36,473.21
Adjusted Recycling Rate (%) [(B-C)/(A+B-C) x 100]	**19.16%**	**21.92%**	**21.05%**	**21.72%**	**24.09%**	**24.62%**

MRA is Maryland Recycling Act of 1988

Source: Midshore Regional Recycling Program Annual Reports

3.2 EXISTING SOLID WASTE TYPES

COMAR 26.03.03.03D(1)(a-l) requires the County to account, monitor and report the quantities of specific waste materials. Accurate and available information on some waste streams including Industrial, Institutional, Controlled Hazardous Substances (CHS), Dead Animals, and Septage is difficult to obtain

due to the extensive use of private haulers, limited or denied access to their records, and inconsistencies between the COMAR regulation and tracking methods used at MRSWMF.

Commercial (Industrial and Institutional)

The MSWMF classifies all commercial, industrial and institutional waste as "Commercial". Due to the tracking method, it is not possible to list existing or projected waste quantities from Commercial, Industrial and Institutional sources exclusively. A request will be made to MES as operator of the MRSWMF to track the three waste streams independently. A discussion of some of the existing commercial, industrial and institutional sources of waste is presented below.

The main area of commercial concentration is in Easton. Talbot's 1,605 businesses employ 17,786 workers (based on 2009 Labor Reports); 14 of these businesses have 100 or more workers. Manufacturing accounts for 19% of total employment. Major employers in the County include Easton Memorial Hospital (1,182), SFA Defense (100), Allen Family Foods (512), Waverly Press (250), and William Hill Manor (175).

Commercial requirements for solid waste disposal have not placed a burden on the County for disposal and will not upset present or planned County disposal practices. The manufacturing industries within the County are such that their total demand for solid waste disposal facilities is within the County's capability and no unique solid waste problems are foreseeable.

Commercially generated wastes in Talbot County are basically comprised of cardboard, packing, and similar dry wastes. Most collections include residential and commercial wastes at the same time, with much of the commercial wastes being stored in bulk containers.

The Institutional category refers to schools, churches, medical facilities, etc. As with the commercially generated wastes in the County, these materials are picked up by private carrier and deposited at the Midshore Landfill as Commercial Waste.

Maritime Industry

There are 22 marinas located within Talbot County. Boats registered by residence of owner total 4,326 in Talbot County. These numbers do not include boats that are trailered. Trailered boats are not registered to a specific county. The number of boats trailered in Talbot County is unknown.

At marinas where maintenance is performed, the owners must obtain an NPDES permit to discharge stormwater from a site where boat maintenance takes place. The requirement was put into effect in November 1990.

Solid waste generated at marinas is collected by commercial haulers and disposed of at the Midshore facility as Commercial waste.

Waste from painting and fiberglass operations is either stored on site or disposed of by marina operators. As of this date these wastes are not regulated except by the NPDES permit required for discharge from maintenance areas. EPA, however, is working toward regulating the marina waste stream more closely and it is expected that regulatory guidelines will soon be available.

Recreational

The County contracts with a local hauler to have fifteen (15) of the Public Landings serviced. During the months from April to July, two (2) hauls weekly are necessitated, (three (3) of the landings require three (3) hauls a week), the remainder of the year requires only one pull.

Talbot County maintains ten (10) active ballparks with each site equipped with a green box for waste collection. The County contracts with local haulers on a yearly basis for collection, and refuse deposited at the Midshore Landfill for the following sites: four landings, five parks, one Golf Course, the Courthouse, a Library, Public Safety Center, Operations Center, and Community Center. There are no figures available for recreational facilities exclusively.

Public Utilities

Waste from water and wastewater treatment processes are disposed of at the MRSWMF and classified as sludge or commercial waste at the MRSWMF. Details for the Counties specific Public Utilities is contained in Chapter Two.

Sewage Sludge

It is estimated that Talbot County generates 1950 pounds of sewage sludge per day. All five public wastewater treatment plants in Talbot County (Easton, Oxford, St. Michaels, Tilghman & Trappe) produce sewage sludge as well as Martingham, Calhoon MEBA and Jenson's Hyde Park. Of these systems, all but Region II - Enhanced Nutrient Removal (ENR) Wastewater Treatment Plant (WWTP) in St. Michaels and the Town of Easton's WWTP are lagoon types which do not regularly produce a stream

of sewage sludge. Instead, the sewage sludge settles to the bottom of the lagoon where slow rate anaerobic decomposition called "sewage sludge digestion" reduces the organic content and volume of the residual sewage sludge over a long period of time. At Oxford and Trappe, where lagoons are aerated, the sewage sludge is digested aerobically, resulting in a higher rate of digestion.

The only lagoons which have potentially experienced enough of a build-up to require sewage sludge removal are Oxford and Trappe. A 1-1/2 to 2 feet of sewage sludge accumulation was removed from Oxford's primary lagoon in 1983. The sewage sludge was not creating a problem, but was removed during installation of the aeration equipment. The sewage sludge was tested and found to be well digested and stabilized with high grit content due to infiltration and inflow in the Town's collection system. Sewage sludge was removed from the primary lagoon in Trappe in 1990.

The Region II St. Michaels WWTP utilizes a belt filter press to dewater waste sewage sludge from the WWTP's ENR process. After sewage sludge is thickened to approximately 2% solids (20,000 mg/l), the sewage sludge is transferred to the belt filter press where most of the free liquids are removed and recycled back through the treatment plant. The dewatered sewage sludge (at approximately 20% solids or 200,000 mg/l) is conveyed to a roll-off container for transportation to the Midshore Regional Solid Waste Management Facility. This occurs approximately 3 to 4 times per week.

The Town of Easton's WWTP uses a sludge holding tank to settle the waste sewage sludge and then transfers the solids to a centrifuge where they are thickened to approximately 18-20%. A gas dryer is then utilized to further dry the sewage sludge to over 90% solids. Currently the dried sewage sludge is stored in a silo and utilized as a soil enhancer for grass growth at the WWTP site. The Easton WWTP has acquired a Class A sewage sludge treatment status and is planning future bids to sell the sewage sludge to local farms, landscapers, etc.

Septage/Grease

Based on recent census data, there are approximately 9,000 dwelling units in unincorporated Talbot County. About 1,000 of these are served by wastewater collection systems. Assuming that each of the remaining 8,000 dwelling units has a septic tank, the tanks are pumped every 2-3 years, and the tank pump-out volume is 2,000 gallons of septage per pump out, Talbot County could generate approximately 20,000 gallons per day (GPD) of septage. This correlates well with the local Waste Haulers Association report that they pump an average of approximately 21,000 GPD. All septage is currently being lime stabilized and land applied at an MDE approved site or transported to a WWTP.

It is estimated that approximately 5,000 gallons per day of grease is generated, mainly from commercial and institutional entities. Grease is currently processed at out-of-county wastewater facilities such as the Town of Cambridge and the Town of Hurlock.

In the past, Talbot County designated a private sector facility, Waste Water Recycling (WWR), as the receiving, treatment and disposal location for septage/grease generated within its borders. Caroline County also utilized WWR as their designated septage/grease receiver. This option ended when the company that owned and operated the facility closed business in November 2005.

As a result of WWR closing, both Talbot and Caroline Counties entered into a partnership to study alternatives. Beginning in 2006, seven alternatives were identified and reviewed to determine the optimum septage/grease management solution. The alternatives included:

- Lease the WWR site and continue operation jointly for Caroline and Talbot Counties;
- Purchase the WWR site and continue operation jointly for Caroline and Talbot Counties;
- Arrange a long-term use agreement of an existing receiving and treatment facility within or outside of the counties;
- Purchase the WWR site and modify it to treat leachate from the Midshore Regional Solid Waste Management Facility(s) as well as continue the septage/grease disposal operation jointly for Caroline and Talbot;
- Construct a facility to treat septage/grease/leachate at or contiguous to the Midshore Regional Solid Waste Facility (Midshore I) at its present location in Easton;
- Construct a facility to treat septage/grease/leachate at the planned Midshore II Regional Solid Waste Facility at its planned location in Caroline County;
- Construct a facility to treat septage/grease/leachate at some location in the Midshore region to service Caroline/Talbot/Queen Anne's/Kent Counties;

The selected alternative for Talbot County (as well as Caroline, et al.) was for Talbot County to purchase, permit and re-activate the WWR facility which was done in the fall of 2007. The facility was renamed the Talbot County Bio-Solids Utilization Facility (TCBUF) and is currently operated by Talbot County. The County assesses a rate per gallon of treatment that covers the operation and maintenance of the facility, debt, and the repair and replacement of equipment. Septage received at the TCBUF is lime

stabilized and spray irrigated onto a nutrient uptake crop. The facility is regulated under MDE's Sewage Sludge Utilization (SSU) permit and nutrient management plan. This alternative provides an environmentally sound disposal option.

Motor Oil

Motor oil from vehicles can be recycled in Talbot County by utilizing any of the three (3) drop-off sites owned and operated by Maryland Environmental Service.

Controlled Hazardous Substances (CHS)

Hazardous wastes generated in Talbot County are presently disposed of at permitted sites outside the County. There are a number of private commercial firms on the Eastern Shore that are licensed to collect and transport hazardous wastes from Talbot County.

Much of the remaining hazardous waste treated or disposed within Maryland is handled at facilities dedicated to a specific industry, and not open to general public use. The only open hazardous waste treatment facility in Maryland is Clean Harbor of Baltimore, Inc., which specializes in wastewater treatment and solvent processing. All other Maryland hazardous waste facilities are storage or transfer facilities.

Out-of-state facilities, which are common disposal points for Maryland hazardous wastes, include:

Midland Disposal, Michigan	Large quantities of hazardous waste
Chemical Conservation, Georgia	Gasoline, paint, contaminated oil
Republic Environmental, Hatsfield, PA	Restricted industrial wastes
Laidlaw, North Carolina	Restricted industrial wastes
Culver City, Kentucky	Hazardous waste incinerator

Dead Animals

No tracking or recording of dead animals occurs and therefore no quantitative information is available for use in this report. Some of this material is now recycled through commercial rendering facilities outside of Talbot County. Valley Proteins in Baltimore is the only rendering plant known to be currently accepting animal wastes from Talbot County. Some animal waste material is incinerated at the Maryland Department of Agriculture's Animal Health Lab near Centreville as well as private pet cremations at Talbot County Humane Society. All dogs and cats found dead along the County's roads are supposed to

be brought to Talbot County Humane Society where they are then disposed of by a private waste management company, currently Stericycle of Pennsylvania, and taken outside of the County.

Litter Waste

State Highway and municipal public works crews pick up litter which accumulates in their right-of-ways and disperses of the same at the Midshore Regional Solid Waste Management Facility. No tracking or recording of litter wastes occurs and therefore no information is available for use in this report.

Appliances

Federal Environmental Protection Agency regulations, under the Clean Air Act, Section 608, establish a mandatory recycling program for ozone depleting refrigerants such as chlorofluorocarbon (CFC) during disposal of all air conditioning and refrigeration equipment. The following appliances must be segregated for appropriate disposal by a certified recycling contractor:

1. Refrigerators
2. Freezers
3. Air conditioners
4. Water coolers
5. Dehumidifiers
6. Any other appliances that contain Freon, etc.

These materials are currently recycled through a MRRP contract with MES to evacuate all CFC or PCB toxins. These current practices are adequate.

Autos

There are two auto junk yards and recyclers in Talbot County: Ewing Auto Recyclers in Easton and Ewing Motor Parts in Cordova. These are the prime entities within the County to deal with junk automobiles, although numerous automobile yards are in adjacent counties and Delaware.

Junk cars are recycled through private commercial salvage yards registered with the Maryland Motor Vehicle Administration. Talbot County does not license junkyards or auto salvage yards. There are no anticipated shortages in capacity for junk cars or appliances.

3.3 SOLID WASTE MANAGEMENT AND COLLECTION PRACTICES

The solid waste processing and disposal system in Talbot County consists of: 1) Curbside pick-up in the Towns of Easton, St. Michaels, Oxford and Trappe; 2) private collection in the unincorporated areas; and

3) a homeowner drop-off Station at the MRSWMF. The Town of Easton has its own collection crews, whereas the Towns of St. Michaels, Oxford, and Trappe have contracts with private haulers.

Residential waste pick-up in the unincorporated sections of the County is provided by private haulers contracted directly by the residents. There is no solid waste transfer station serving the residents of Talbot County. The only solid waste transfer station within Talbot County is located at the Midshore Regional Solid Waste Management Facility and is presently privately owned and operated. In an effort to assist the residents of Talbot County, a homeowners drop off (HODO)has been provided at the Midshore Regional Solid Waste Management Facility to allow residents to dispose of seven (7) bags of trash on any given day.

In Easton, the town picks up waste from small commercial establishments. Otherwise, throughout the county, commercial pick-up is done by private haulers. A list of private residential and commercial waste haulers servicing the Talbot County area can be found in local telephone directories, on the County website, and on the Internet.

3.4 EXISTING SOLID WASTE ACCEPTANCE FACILITIES

Talbot County solid waste is managed at several in-county and out-of-county facilities. Table 11 lists the in-county facilities. However, there is currently only one (1) trash transfer station and one landfill for waste disposal in operation in the county, the Midshore Regional Solid Waste Management Facility (MRSWMF). There are no operational resource recovery facilities in Talbot County at this time.

Most waste is hauled to the Midshore Regional Solid Waste Management Facility (MRSWMF), owned and operated by Maryland Environmental Service, where it is landfilled or transferred to other landfills out of the county. The MRSWMF accepts waste from Talbot, Queen Anne's, Kent and Caroline Counties as part of the four county regional agreements (see Appendices). Of the total waste accepted, approximately 30,000-35,000 tons/year is transferred to facilities outside the Midshore Region, including the Waverly, Middle Peninsula, and King George's landfills in Virginia, per an ongoing agreement between MES and Waste Management, Inc.

Recyclables are stored in designated areas (see Table 11), bunkers and roll off containers and then transported to markets for each commodity. Yard waste is ground and used on-site for daily cover or roads at the MRSWMF. The MRSWMF accepts residential and commercial municipal solid waste, white

goods, yard and wood waste, construction and demolition debris, and scrap tires. Some of Talbot County's rubble and land clearing debris is processed at the R.B. Baker & Sons waste rubble facility in Queen Anne's County and at Dependable Sand, Stone and Recycling Company in Talbot County.

TABLE 11 – TALBOT COUNTY EXISTING SOLID WASTE FACILITIES

RECYCLING DROP-OFF SITES	TOWN	PROPERTY OWNER	GRID COORDINATES X	GRID COORDINATES Y	SIZE (Acres)	Permit Status & Number	Anticipated Life Years Remaining
1. Bozman Store	Bozman	John A. & Janet Bridges, PO Box 158, Bozman, MD 21312-0158.	1007252	341946	0.01	None	Indefinite
2. Route 309 near Fire Hall	Cordova	Maryland State Railroad Administration	1086010	381037	0.01	None	Indefinite
3. Next to Auto Zone	Easton	Cheaspeake Rehabilitation Center, Inc., c/o Auto Zone, PO Box 1906, Easton, MD.	1067378	343801	0.01	None	Indefinite
4. Midshore Regional Landfill	Easton	Maryland Environmental Service, 259 Najoles Rd., Millersville, MD 21108-2515.	1078305	335767	0.01	None	Indefinite
5. Easton Plaza	Easton	Easton Shopping Center LLC, 13404 Day Valley Ct., Centreville, VA. 20120-6422	1063203	346780	0.01	None	Indefinite
6. Tennis Courts	Oxford	Commissioners of Oxford, PO Box 339, Oxford, MD 21654.	1037166	310314	0.01	None	Indefinite
7. Graul's Store	St. Michael's	Clark's Supermarket Inc., PO Box 1139, St. Michaels, MD 21663-1139.	1025370	342100	0.01	None	Indefinite
8. Park (Perry Cabin Field)	St. Michael's	Talbot County Maryland, 11 N. Washington St., Easton, MD. 21601-3195	1020312	349535	0.01	None	Indefinite
9. High School	St. Michael's	Talbot County Board of Education, 12 Magnolia St., Easton, MD 21601.	1023465	345956	0.01	None	Indefinite
10. Shore Stop	Trappe	Mary Jean Wise, c/o Jean Wise Blades, 2812 Ocean Gtwy., Trappe, MD 21673-1764.	1069493	298975	0.01	None	Indefinite
11. Next to Fire House	Trappe	Trappe Volunteer Fire Co. Inc., PO Box 86, Trappe, MD 21673-0086.	1068945	301702	0.01	None	Indefinite

SOLID WASTE FACILITIES	TOWN	PROPERTY OWNER	GRID COORDINATES (MD NAD 27 Feet) X	GRID COORDINATES (MD NAD 27 Feet) Y	SIZE (Acres)	Permit Status & Number	Anticipated Life Years Remaining
12. Midshore Regional Landfill	Easton	Maryland Environmental Service, 259 Najoles Rd., Millersville, MD 21108-2515.	1078672	336779	67	Active, 2005-WMF-	2, (12/31/2010)
13. Midshore Regional Transfer Station	Easton	Maryland Environmental Service, 259 Najoles Rd., Millersville, MD 21108-2515.	1078075	335816	0.03*	Active, 2004-WTS-	2, (12/31/2010)
14. Dependable Sand, Stone and Recycling	Queen Anne	Dependable Sand, Stone & Recycling Co. Inc., PO Box 130, Queen Anne, MD 21657-0130.	1068281	394889	343	Active, 2005-NWW-	Indefinite

*Site area is within 67 acres of Midshore Regional Landfill

Midshore Regional Solid Waste Management Facility (MRSWMF)

Talbot County, along with Caroline, Kent and Queen Anne's Counties, is currently disposing of solid waste at Midshore Regional Solid Waste Management Facility. The facility is expected to hold approximately 2.0 million tons of waste and will serve the four counties until December 31, 2010. When the facility is closed, another regional landfill, currently scheduled to begin construction in May 2009 in Caroline County, will be ready to accept solid waste for approximately 20 years, with future landfills after that being constructed in Queen Anne's and then Kent County.

The operational part of the landfill facility covers 67 acres and is surrounded by a visual buffer which includes both existing woodlands and a six foot earthen berm planted in grass, trees and shrubs. The landfill is divided into five cells which were developed in sequence. Each cell has its own earthen berm walls and is double-lined with high density polyethylene. Ultimately, the wastewater (leachate) is discharged into the Easton Wastewater Treatment Facility adjacent to the landfill (see Figure 4). The landfill is able to accommodate sewage sludge generated by local wastewater treatment plants. There is a separate area at the landfill for rubble disposal.

The landfill is owned and operated by the Maryland Environmental Service (MES), a non-profit, quasi-state agency. MES operates the landfill under the general direction of representatives of the four counties. Officials from Talbot, Caroline, Kent and Queen Anne's Counties meet regularly to approve budgetary matters and to review operations.

The Talbot County Council has directed the Department of Public Works (DPW) to conduct a Solid Waste and Recycling Study which will examine curbside trash and/or recycling pick-up and evaluate the needs for one or more transfer stations with the closing of the Midshore Regional Solid Waste Management Facility in Talbot County and the opening of the new Midshore II Regional Solid Waste Facility in Caroline County opening on January 1, 2011. This SWMP is consistent with the objective of the past solid waste management plan which anticipated the potential that when the regional landfill is moved to another county, it may become necessary for Talbot to develop and implement a countywide solid waste collection system. The Talbot County DPW has created a Talbot County Solid Waste and Recycling Study Team to evaluate the options for solid waste management in Talbot County beyond the closure of the MRSWMF in 2010. The study began in September of 2007 and is ongoing so no results are currently available. However, further details regarding the study are contained in Chapter Five of this SWMP.

Weigh records from the MRSWMF show that the facility currently accepts about 22,770 tons per year of rubble waste from the region. Of this total, 18,926 tons is generated in Talbot County. A continual effort is made to reuse or recycle the rubble waste, including using the clean rubble for cover or roads, and recycling the appliances and scrap tires. Any material not reused or recycled is buried at the MRSWMF.

Table 10 depicts the composition of the rubble waste that has been delivered to the MRSWMF. Under the present agreement, all material received at the facility is either recycled or land-filled as follows:

1. Scrap tires are collected and stockpiled at the facility for subsequent recycling. Scrap tires are transported from the site for recycling into various products, including tire mulch, and ground rubber for use as raw material for various applications, including sports surfaces. Land filling of scrap tires is not permitted.

2. Household appliances, white goods, and scrap metal are stockpiled and sold to a scrap metal dealer for recycling.

3. Broken concrete, clean fill and similar material are separated and used on site as cover soil or for haul road maintenance.

TABLE 12 – MRSWMF RUBBLE WASTE COMPOSITION

TYPE OF WASTE	AMOUNT (%)
Construction Debris	87
Appliances	1
Scrap tires	1
Clean Rubble	7
Land Clearing Debris	4

SOURCE: Weigh Records from Midshore Regional Solid Waste Management Facility

Midshore Solid Waste Transfer Station

As previously mentioned, the only solid waste transfer station within Talbot County is located at the MRSWMF and is presently privately owned and operated. In an effort to assist the residents of Talbot County, a homeowners drop off has been provided at the MRSWMF to allow residents to dispose of seven (7) bags of trash on any given day. Talbot County will review options to utilizing this waste transfer station in the future with the landfill operations moving to Caroline County and then to the other two counties.

Other Waste Management Facilities

As previously mentioned, some of Talbot County's rubble and land clearing debris is processed and/or disposed of at the R.B. Baker & Sons waste rubble facility in Queen Anne's County, and rubble as well as wood waste is processed at the Dependable Sand, Stone and Recycling Company in Talbot County. The Dependable Sand, Stone & Recycling Co. has no disposal facilities.

R.B. Baker & Sons Waste Rubble Facility

Table 13 below shows the composition of the municipal solid waste stream generated in Talbot County and processed at the R.B. Baker & Sons waste rubble facility in Queen Anne's County according to their Annual Tonnage Reports submitted to MDE.

TABLE 13 – TALBOT COUNTY WASTE MANAGED AT R.B. BAKER AND SONS

WASTE DESCRIPTION	YEAR				
	2003	2004	2005	2006	2007
Construction & Demolision Debris (Tons)	1,391.00	892.00	1,237.00	466.00	449.83
Land Clearing Debris (Tons)	196.00	207.00	399.00	311.00	308.19

Source: MDE Annual Tonnage Reports

Dependable Sand, Stone and Recycling Company

Table 14 show the yard and land clearing debris managed at the Dependable Sand, Stone & Recycling Company in Talbot County. It should be noted that the Annual Tonnage Reports from which the information was extracted did not delineate the origin of the waste, so the origin of the waste managed is unknown.

TABLE 14 – WASTE MANAGED AT DEPENDABLE SAND, STONE AND RECYCLING CO.

WASTE DESCRIPTION	YEAR		
	2005	2006	2007
NWWP* Processing (Tons)	8,000.00	2,258.70	1,797.00
NWWP Removed (Tons)	7,143.93	6,236.00	2,965.00
Residual Waste Removed** (Tons)	96.00	96.00	96.00

*NWWP = Natural Wood Waste Product

**Monthly Dumpster Pickup

Source: MDE Annual Tonnage Reports

CHAPTER FOUR- FUTURE SOLID WASTE MANAGEMENT

4.1 ASSESMENT OF COUNTY SOLID WASTE DISPOSAL SYSTEMS

Solid Waste Disposal

Generally, solid waste is disposed of at the Midshore Regional Solid Waste Management Facility. Residential and commercial waste, along with roadside litter and furniture, are disposed of at the Midshore Regional Solid Waste Management Facility, after recyclables are extracted. Scrap tires, white goods, forestry/yard waste and broken concrete are recycled at various locations.

Talbot, Queen Anne's, Caroline, and Kent Counties form the four county Midshore Region and all are currently disposing of solid waste at the Midshore Regional Solid Waste Management Facility (MRSWMF) located in Easton, Maryland, owned and operated by the Maryland Environmental Service (MES). The MRSWMF facility has a remaining life expectancy of two (2) years, and is due to close on December 31, 2010. All residential and commercial solid waste generated in Talbot County that is not recycled is hauled to the MRSWMF for disposal. As stated throughout this Plan, refer to Chapter Three for a quantitative breakdown of disposed versus recycled materials that make up the waste generated in Talbot County.

Based upon the 2007 MRSWMF Annual Tonnage Report to MDE and an additional 8' in the final elevation of the entire landfill (MDE approved as of July 29, 2008), the remaining disposal capacity of the MRSWMF was estimated at 817,992 cubic yards (cu.yd.). Using a conservative airspace utilization density of 1,100 lbs./cu.yd., the remaining capacity of the MRSWMF is 449,896 Tons. From Table 12.2 it can be seen that the average annual waste landfilled at the MRSWMF has been 120,887 tons/year. Table 12.3 estimates the future waste landfilled for the years 2008-2010 will equal a total weight of 369,963 tons. Therefore, the estimated remaining capacity at the closing of the MRSWMF on December 31, 2010 will be approximately 79,933 tons. The tonnage reports indicate there is adequate capacity at the MRSWMF for disposal of the Midshore Region's solid waste through the anticipated closure date of December 31, 2010.

When the MRSWMF closes in December 2010, "Midshore II" will open in Caroline County and is intended to serve the solid waste management needs of the four counties (Queen Anne's, Talbot, Kent and Caroline) presently being served by MRSWMF. The design capacity of Midshore II is based on previous and projected tonnage reports from the four Midshore counties. Projected population data for the four counties was obtained from the Maryland Department of Planning. In order to account for a 9 –10%

estimated shortfall between the Maryland Department of Planning population projections and the U.S. Census Bureau population projection estimates for the State of Maryland, a 10% escalation factor was applied to the Maryland Department of Planning projections to bring them in line with more conservative U.S. Census estimates. Empirical data collected over the past fifteen years regarding per capita/day waste generation rates in the four Midshore counties was close to 6 lb./capita/day. Using the six-pound per capita waste generation rate for the projected population data, and the anticipated 20-year life of the landfill, it is anticipated that the requisite design capacity of the landfill is 3,652,285 tons. Using the best available data, tonnage for 2006 is 128,864 tons. With an historical 1.01% annual increase applied to the baseline 2006 tonnage delivered to MRSWMF, the anticipated tonnage requirements for Midshore II will be 2,982,196 tons. The design capacity of 3,652,285 tons is well over the anticipated needs of the four Midshore counties over its 20-year lifespan.

Transition to the Midshore II should occur in late 2010 to provide for a layer of "soft trash" to help protect the liner before the Caroline County facility is fully open to all wastes on January 1, 2011. As long as each participating county and MES uphold their obligations under the Midshore agreement(s), the project will meet all of the long term municipal waste disposal needs of Talbot County through 2030, well past the 10-year period covered by this Plan. If MES is not able to perform satisfactorily, the four participating counties have an option to take over operation of the facility. Only if the counties also fail in operation of the facility would Talbot County be forced to locate, design, permit, finance, construct, and operate its own solid waste management facility before the currently scheduled timeline.

Rubble Disposal

Talbot County currently disposes of approximately 10,680 tons per year of rubble waste material at the Midshore Regional Solid Waste Management Facility (MRSWMF) located near Easton, Maryland. The Midshore site is the only permitted rubble disposal site in the County.

Efforts to recycle and reuse rubble waste shall be increased and the residual material placed in the existing municipal waste cell at the MRSWMF, which currently possesses a liner and leachate collection system. Clean separated rubble is currently recycled and is primarily used for interior landfill road construction.

Asbestos Disposal

There are two primary types of asbestos waste. Friable asbestos is any product containing more than 1% asbestos and can be crumbled, pulverized, or reduced to powder with ordinary human hand pressure.

Non-friable asbestos is any product containing more than 1% of asbestos and cannot be crumbled, pulverized, or reduced to powder with ordinary hand pressure.

The MRSWMF accepts non-friable asbestos and disposes of the asbestos in the landfill along with the other waste. Most non-friable asbestos waste is in the form of roofing shingles or floor tiles. Historical data for asbestos disposal at MRSWMF is contained in Chapter Three. There are no anticipated capacity issues for disposal of non-friable asbestos. Friable asbestos is not accepted at the facility and must be disposed of through a private hazardous waste handler.

4.2 TALBOT COUNTY FUTURE SOLID WASTE ACCEPTANCE FACILITIES

No future solid waste acceptance facilities are planned in the next 10-year period. Due to the four county regional agreements (see Appendices), future waste acceptance facilities for Talbot County will be located in Caroline County for the years 2011-2030 and later in Queen Anne's and Kent County until 2070.

In July 2009, Talbot County initiated a review of various options of processing and transporting municipal wastes including rubble, construction and demolition debris, recyclables, etc. to the Midshore Landfill in Caroline County. In October 2010, the County Council of Talbot County approved an intergovernmental agreement with the Maryland Environmental Service (MES) to have MES operate and maintain a waste transfer station at the existing MRSWMF in Talbot County. The current, permitted transfer station at the MRSWMF in Talbot County will be used. The recycling center and home-owners drop-off will be offered at the facility, but these services will be evaluated as part of the budget process at the beginning of each year.

As the Midshore Regional planning period progresses, it will become necessary to evaluate and identify available land for a solid waste acceptance facility based upon limiting factors including topography, geology, aquifers, flood plain, surface waters, soil types, etc. consistent with COMAR 26.03.03.03 E(3). If future waste acceptance is required within Talbot County more immediately, the most desirable area to locate the facility would be immediately adjacent to the existing MRSWMF. The current transfer station, recycling center, etc. could continue to be used for this purpose. Zoning issues are not anticipated. As stated in Chapter Two, solid waste disposal sites are permitted by special exceptions in most zoning districts within Talbot County. While the County has no intention of building any solid waste facilities

during the next 10-year planning period, a discussion of some of the limiting factors at the MRSWMF site follows for future reference.

Topography, Physiography

The existing MRSWMF area has two distinct physiographic features related to topography. These features are the Talbot Plain and the Wicomico Plain. The Wicomico Plain lies at higher elevations than the Talbot Plain, and is made up of older marine sediments. The escarpment is positioned roughly north and south across the site with the lowland area (Talbot Plain) to the east of the escarpment and the rolling hill area (Wicomico Plain) to the west.

After examining the topography surrounding the MRSWMF, it is evident that the ground surface slopes away from the existing landfill to the north, south and east. The topographic high for the area is located to the east of the landfill. The entire MRSWMF lies within the Choptank River Drainage Basin; however, secondary surface drainage is north to tributaries of Williams Creek and south to a tributary of Barker Creek. The MRSWMF lies above the 100-year floodplain of the Choptank River.

Soil Conditions

Soils across the MRSWMF can be grouped and defined as a Cantena. A Cantena represents soils which form a sequence due to variations in relief and drainage; they are about the same age, are derived from similar parent materials, and occur under similar conditions. The sequence described at the MRSWMF is primarily a result of drainage features. Soil map units identified at the MRSWMF included: Sassafras, Woodstown, Keyport, Elkton, Fallsington, & Pocomoke.

In general, Sassafras and Woodstown soils across the MRSWMF were found to contain more fines than is typical for these types of soils. This may be explained by losses due to erosion and/or mixing by farming implements. Low chromo mottles suggest these soils have a shallower than normal seasonal high water table. However, most morphological characteristics suggest these soils are part of the Sassafras and Woodstown series.

The Sassafras and Woodstown soils are deep, have a sandy loam/loam topsoil, and have a sandy loam/sandy clay loam subsoil. Some Sassafras soils on site have silt loam/loam surface texture. The Sassafras soils are well drained.

They have a fluctuating seasonal high water table during late winter when groundwater may come within 1.5 feet of ground surface. Keyport soils are also deep; they have a silt loam/loam topsoil with a silty clay loam subsoil and are moderately well drained. The Elkton and Fallsington soils occupy low-lying areas where the water table reaches the surface during winter months and are poorly drained. Pocomoke soils occupy depressions and have a high water table most of the year and are very poorly drained.

In general, soil map units identified in the field correlated well with map units delineated in the Talbot County Soil Survey. Sassafras soils make up about 70% of the area; the Woodstown and Keyport soils, about 20%; and minor soils, the rest. Among the minor soils are the poorly drained Elton and Fallsington soils, and the very poorly drained Pocomoke soils.

Geology

The MRSWMF lies within the Delmarva Peninsula which is part of the Coastal Plain physiographic province. The Coastal Plain deposits begin as a feather edge along the Fall Line and dip gently southeastward in a thickening wedge that rests directly on the underlying crystalline rocks that make up the basement complex. These deposits in the area of Easton are approximately 2,800 feet thick and consist of unconsolidated beds of gravel, sand, silt and clay. Previous water-resources investigations on the Delmarva Peninsula have been conducted by the U.S. Geological Survey (USGS) in cooperation with State, County and Municipal agencies. As a result, generalized stratigraphic relationships have been identified, although differences exist in the nomenclature used to describe these formations. Reports indicate that ten major sand bodies function as aquifers over wide areas of the Delmarva Peninsula. The formation names used in this section reflect information presented in publications.

The Coastal Plain deposits in the area of the MRSWMF lie in stratified layers classified as formations which are generally referred to as aquifers or aquicludes. They are distinguished on the basis of ground-water yield. Aquicludes are predominantly composed of low permeability sediments that provide partial hydraulic separation between more transmissive, sandy aquifer zones. Formations are referred herein as aquifers or aquilaids.

Using published geologic information and boring logs collected at the MRSWMF, cross sections were developed which help illustrate the hydrogeology encountered. The uppermost group of geologic formations at the MRSWMF site consists of the soil zone and underlying Pleistocene-Pliocene sediments. The Pleistocene sediments occur as stratified, lenticular deposits of buff, tan, brown sands and silt, with small amounts of clay and gravel. Boulders are encountered erratically within the top ten feet, usually at

lower depths. These deposits lie on top of red, orange and brown gravelly sand, identified as the Pliocene sediments. At the MRSWMF, hard ledges ("ironstone") were identified several centimeters thick, usually at the base of the Pliocene sediments. The soil zone/Pleistocene-Pliocene sediments were found to range in thickness from approximately 4 to 28 feet.

In descending order, the second major group of geologic formations at the MRSWMF consists of the Miocene sediments. The Miocene sediments consist of gray quartz sand zones and gray/blue silt and clay. Shells and shell fragments are found throughout the deposits. The abundance of shell material and absence of significant amounts of glauconite are characteristic of the Miocene sediments. Five regional water-bearing units (aquifers) found within the Miocene sediments are used as sources of water supply on the Delmarva Peninsula. In descending order they are: Pocomoke, Manokin, Frederica, Federalsburg, and Cheswold. Earlier publications refer to these five aquifers and their associated aquitards, collectively, as the Yorktown, St. Mary's, Choptank, and Calvert formations. The Miocene aquifers all slant upward to the northwest, are separated by silt and clay intervals, and eventually crop out. Where the Miocene aquifers approach the surface, the separation between them is limited. In the MRSWMF area, information gathered from water-supply well logs have identified the uppermost Miocene aquifer at the Frederica. The overlying Pocomoke and Manokin aquifers are found at more southern locations.

The uppermost Miocene sediments underlying the Pleistocene/Pliocene Sediments at the MRSWMF consist of blue/gray stiff to soft silty clays and clayey sills. These deposits were found to range in thickness from approximately 8 to 38 feet. The elevation of the top of this formation is approximately 45 feet above mean sea level (MSL). Directly beneath this formation lies the Frederica Aquifer which is composed of fine to medium sands with some silt and common shell fragments. The elevation of the top of this formation is estimated at 10-20 feet MSL. Published geologic literature indicated this unit to be locally at least 65 feet thick.

Underlying the Frederica aquifers, and generally separated by the silt and clay interval, is a sandy unit referred to as the Federalsburg aquifer. The Federalsburg aquifer is underlain by a silt and clay interval which separates it from the Cheswold aquifer. Previously, the Federalsburg and Cheswold aquifers have been collectively referred to as the Calvert Formation.

TABLE 15 - SOILS IN TALBOT COUNTY

SOIL	ACREAGE	PERCENTAGE (%) OF COUNTY
Barclay	9,872	5.5%
Borrow Pits	388	0.2%
Coastal Beaches	116	0.1%
Downer	2,690	1.5%
Elkton	25,209	14.1%
Fallsington	9,448	5.3%
Galestown	703	0.4%
Keyport	13,478	7.6%
Klej	321	0.2%
Madeland	696	0.4%
Matapeake	12,793	7.2%
Mattapex	18,033	10.1%
Mixed Alluvial Land	4,893	2.7%
Othello	17,777	10.0%
Plummer	99	0.1%
Pocomoke	419	0.2%
Portsmouth	358	0.2%
Sassafras	39,136	21.9%
Steep Land	2,235	1.2%
Tidal Marsh	6,122	3.4%
Woodstown	13,774	7.7%
TOTAL	**178,560**	**100%**

The next major aquifer formation, the Piney Point Formation, is composed of an olive-green to black quartz sand, slightly to moderately glaucontic, predominantly medium to coarse-grained. The Piney Point Aquifer is not known to crop out. The remaining aquifers in descending order consist of the Aquia and Rancocas, Magothy, and Nonmarine Cretaceous aquifers.

Hydrology

The major aquifer zones in Talbot County are sands of the Patapsco, Raritan, Magothy, Matawan, Aquia, Piney Point, Miocene and Pleistocene/Pliocene sediments. Some of the water-bearing sands pinch out locally, whereas others are widely distributed and their occurrence is generally predictable. Although each of the major aquifers has its own distinctive water-bearing characteristics, the sands themselves often vary considerably from one place to another in thickness, grain size, mineral content, and permeability.

The uppermost geologic formation, the Pleistocene-Pliocene sediments, is sometimes referred to as the Columbia aquifer. From a monitoring perspective, this unit constitutes the uppermost aquifer. On a countywide basis, the water quality is good, thus the Columbia is an important aquifer. The interim Talbot County Ground-Water Protection Plan categorizes the Columbia aquifer as a high potential use

source of good quality water. In the past, on a regional basis, this zone has been used to a limited extent to supply small quantities of water for farm-related and domestic uses. However, there is a limited amount of data on the Columbia aquifer in Talbot County. Many wells may be hand-dug or driven, and thus, no records are available on their existence. The Columbia aquifer is considered unconfined and receives most of its recharge through direct precipitation infiltration. As a result, it is vulnerable to surface point and non-point sources of contamination.

The second geologic formation (blue/gray silty clay, Miocene sediments) serves as a confining unit (aquitard) to the underlying Frederica aquifer. The Frederica represents a potential water-supply aquifer in the MRSWMF area. This zone receives its recharge from points west and northwest of the MRSWMF (i.e. outcrop locations) and by vertical leakage from overlying formations.

The next major unit, the Calvert Formation, is largely considered an aquitard; however, in the vicinity of Easton, several wells produce substantial quantities of water from sand stringers (i.e., Federalsburg and Cheswold Aquifers). The combination of moderately low transmissivity (3,500 gpd/foot), and small available drawdown limits the water yielding capacity of the Calvert. The formation crops out in Calvert County on the western side of the Chesapeake Bay, which represents a recharge area. In addition, some water recharged to the Calvert Formation in the Easton area is derived from downward leakage from the overlying Frederica Aquifer.

The underlying Piney Point Formation is an important aquifer to Talbot County. Sands in the Piney Point at a depth of 300 to 375 feet below sea level produce much of the water used for domestic and agricultural purposes in rural areas surrounding Easton. However, no wells at Easton are currently producing water from this formation. The Piney Point Formation has no known surface outcrop, and recharge to this aquifer is derived from leakage through adjacent formations.

The Aquia Greensand Formation, which lies beneath the Piney Point Aquifer and separated by the Nanjemoy Aquitard, is considered a potable water source. The recharge area for this aquifer is located just west of Annapolis, Maryland. The next underlying potable water source in the Easton area is the deeper Magothy Formation. The remaining underlying formations rest on the basement rock complex, and at this time, are not used as sources of water as sufficient shallower sources are available.

Typically, maximum levels are recorded in the late winter/early spring and the lowest levels are recorded during the summer and early fall. The elevation of the seasonal high water table (SHWT) will also vary

between years. This variability is controlled by rainfall, temperature patterns, wet or dry years, and long or short winters.

Groundwater elevation contours representing the lowest observed groundwater conditions were determined and suggest groundwater outside the perimeter of the existing landfill flows in a radial pattern away from the landfill. Since the observed SHWT can vary greatly between years, it is important to predict what fluctuations may occur.

The predicted maximum groundwater elevation conditions based on soil morphological characteristics are between 1 and 7 feet above the observed highest elevations.

The hydraulic conductivity of the Pleistocene/Pliocene deposits, silty clay Miocene sediments and Frederica aquifer was estimated to be 0.3 to 0.7 ft./day, 0.1 ft./day, and 0.6 to 5.5 ft./day respectively.

Water level elevations in shallow and deep monitor wells indicate that a downward component of groundwater flow exists between the Pleistocene/Pliocene deposits, the silty clay Miocene sediments and the Frederica aquifer.

A review of groundwater quality and stream water quality data collected shows that values recorded for specific conductance, alkalinity, chloride, and hardness are elevated in the monitor wells located near the closed Easton landfill perimeter, volatile organic compounds were found to be below detectable limits for all samples, metals were judged to be within natural limits and below detection limits in most cases, and, elevated nitrate-nitrogen levels found in the portion of the site where farming activities have occurred is probably a result of farm-site fertilization and mineralization of organic matter. The water quality results indicate that groundwater quality, in places, has been affected by different surface activities. This includes the influence of landfill leachate at monitoring well locations near the closed Easton landfill perimeter.

Water quality analyses from the deep monitor wells, screened in the upper portion of the Frederica aquifer, have shown no indications of groundwater quality changes due to sanitary landfill leachate.

After reviewing site geologic information and considering hydraulic conductivities presented in earlier discussions, groundwater flow at the MRSWMF, in the upper Pleistocene/Pliocene deposit, is in the horizontal direction. Both the heterogeneity of the Pleistocene/Pliocene deposits and the fine-grained

nature of the underlying Miocene sediments will promote lateral movement. Groundwater flow is likely more vertical in the fine-grained silty clay Miocene sediments and more horizontal again in the Frederica aquifer.

Source Reduction/Separation and Resource Recovery

Another consideration in future waste acceptance facilities is the quantity of waste to be disposed. In this analysis, source reduction, source separation and resource recovery must also be evaluated to reduce the requirements for future solid waste disposal facilities. Additionally, future initiatives for source reduction/separation and resource recovery may require designated facilities to store, handle, and transport the waste to be recovered or separated. There are no current plans for facilities associated with source reduction/separation and/or resource recovery. More details on Source Reduction initiatives are contained later in this Chapter.

4.3 RECYCLING PLAN FOR TALBOT COUNTY, MARYLAND

The Recycling Plan for Talbot County, Maryland, as mandated by Section 9-505 of the Maryland Recycling Act of 1988, was completed and submitted to Maryland Department of the Environment in July 1990. The Plan was amended in 1991 and finally approved by Maryland Department of the Environment's Office of Waste Minimization and Recycling in 1992. In 1991, Talbot County, together with three (3) other Eastern Shore Counties (Kent, Queen Anne's and Caroline), established the Midshore Regional Recycling Program (MRRP).

As mandated by State law, Talbot County must divert 15% of its solid waste stream through recycling. Key components to Talbot's Recycling Plan and its subsequent implementation are summarized below.

Collection

As can be seen in Table 13, 5,961 tons of residential recyclable materials were diverted from Talbot's waste stream in 2004 through regional collection programs, County collection programs and private recycling businesses. The following materials are currently collected for recycling in Talbot County:

Glass: (green, brown and clear bottles);
White paper;
Metal cans: (aluminum & steel)
White goods;
Plastic: (narrow neck Bottles only)
Newspaper;
Auto batteries;
Corrugated cardboard;
Scrap metal;
Scrap tires;
Scrap tires;
Yard waste;
Clothing & textiles;
Auto batteries,
Used motor oil;

Used antifreeze.

As mentioned previously, Talbot County is exceeding the 15% goal as defined by the 1988 Maryland Recycling Act. The MRRP has reported waste diversion rates near 25% in recent years for Talbot County, excluding some commercial wastes (see Table 14 above).

Processing & Marketing

Processing and marketing of Talbot's recyclables is handled by the Midshore Regional Recycling Program, Talbot County and private Recycling Businesses.

The Midshore Regional Recycling Program collects recyclable materials throughout the county via eleven (11) drop-off stations (see Section 2.3, 3.2, Table 7 and Figure 3). The material collected at these stations is then transported by MRRP to the Midshore Consolidation Facility located at the Midshore Regional Solid Waste Management Facility owned and operated by MES. The Midshore Consolidation Facility (MCF) is a staging area which accepts recyclables from county residents, businesses and private haulers. Quality control of materials coming through the program for marketing is maintained at the point of (a) collection; or (b) supervised delivery at the staging area. Materials staged at MCF are subsequently transported by MRRP to markets established by the Regional Program.

Talbot County, besides hosting these drop-off sites, sponsors two (2) Izaak Walton newspaper drop-off trailers. These trailers are hauled to market by Talbot County Roads Department personnel.

Talbot County also sponsors drop-off sites by Infinity Recycling, Inc. a non-profit recycling business located in Chestertown, Maryland. Processing and marketing of the materials collected at these sites is handled by Infinity Recycling.

Many private businesses through-out the County have established in-house recycling programs which utilize private haulers to process and market their recyclables.

Education

Education and outreach strategies include the following:

- Civic outreach
- School-based recycling and workshops
- Public relations brochures
- Mobile displays
- Commercial sector waste audits and surveys

Waste audits and consulting services are continually offered by TCRP at no cost to the community.

Verification

Using tonnage reports and procedures developed by the State, Talbot County must track and record all recycled material. These reports are submitted to the State biannually by the MRRP administrator. Existing data verifying the meeting of recycling goals can be found in Tables 13 and 14 above.

Source Reduction

Talbot County will continue to assess current and future efforts for source reduction within the Environmental and Recycling Sub-Study group of the on-going Solid Waste and Recycling Study (See Chapter 5 for further details on the study), but funding and other resource issues have limited the group's ability to finalize various recommendations. Talbot County presently relies on the MRRP to promote source reduction and resource reuse. The MRRP promotes reduction and reuse through its presentation available online at http://www.midshorerecycling.org/ and through Midshore Recycling Guide, also available online, which provides links to reuse resources www.freecycle.org & www.craigslist.org. It is recognized that backyard composting of yard waste and organic matter would likely provide the most source reduction by weight. Talbot County and MRRP intend on further evaluating the path toward implementing a backyard composting program. Additionally, Talbot County is actively investigating internal practices and opportunities for source reduction and reuse (e.g., stationary reuse, pallet reuse, employee training and workshops, etc.).

4.4 EMERGENCY RESPONSE FOR HAZARDOUS WASTE AUDITS

In the unlikely event of spillage or leakage of a hazardous material within the County, the flow chart is to be followed:

Routine: No public action is necessary; incident can be handled by primary responders.

Category I: Public Action is considered unlikely; incident can be handled by a minimum number of responding agencies.

Category II: Hazardous materials are involved which pose a threat to life and property; planning for public action is considered.

Category III: Safety of citizens is the first consideration because of the nature and/or quantity of the hazardous materials involved; public action is required.

CHAPTER FIVE- ACTION PLAN

5.1 INTRODUCTION

The Talbot County plan of action will outline the most practical and flexible procedures for meeting the objectives of the Talbot County Solid Waste Management Plan. Included will be a discussion of:

- A solid waste disposal system and solid waste acceptance facilities, both public and private, which will be in use through the year 2019.
- The capacity of all systems and facilities and a demonstration of their ability to handle the anticipated County waste stream through the year 2019.

To facilitate the decision making process, Talbot County DPW has created the Talbot County Solid Waste and Recycling Study Team to evaluate the options for solid waste management in Talbot County beyond the closure of the MRSWMF in 2010. The team is comprised of internal staff as well as outside consultants. The study began in September of 2007 and is ongoing. The study is divided into four sub-studies that organize the work according to local governmental concerns, and focus areas established by the Maryland Department of the Environment. Briefly, these four sub-studies are identified below.

1) Facilities Location(s) - This study component will focus on methods for assessing the ability of the Caroline County Midshore II Regional Solid Waste Facility to meet the needs of Talbot County, and the best plan for locating any potential future waste transfer stations for moving solid waste out of Talbot County to Caroline County beginning in the year 2011.

2) Homeowner Drop-off - This study component will focus on methods for assessing the current and future rate of use in homeowner drop-off services, which are defined as acceptance of waste from citizens who transport their own solid waste to a receiving facility without using a paid pick-up service. This study component arises from the fact that beginning in 2011, the Talbot County drop-off facility may close when the new regional facility opens in Caroline County.

3) Environment and Recycling - This study component will focus on an analysis of Talbot County's current recycling practices. Focus will be on the apparent demand for curbside collection of recyclables versus the current recycling drop-off locations throughout the County (see Table 7). The County is also focusing study efforts toward source reduction to lesson the amount of solid waste including recyclables.

4) Town Collaboration and Citizen Input - This study component will focus on methods for collecting and summarizing information on the needs and opinions of town governments and the County citizens as a whole. Interest in plans such as municipal collaborations and citizen involvement in recycling will be surveyed by various methods to include, for example, methods such as focus groups and possibly a true random survey. In completing these surveys, Talbot County will work with the Towns in evaluating the economic benefits of a curbside recycling program within the incorporated limits of the Towns.

5.2 SOLID WASTE DISPOSAL SYSTEMS AND ACCEPTANCE FACILITIES

The following is a discussion of the major solid waste disposal systems/acceptance facilities that are anticipated to be in operation through the year 2019.

Residential Solid Waste Transfer Station

With the planned closure of the Midshore Regional Solid Waste Management Facility, Talbot County needs to explore the option of maintaining a portion of the existing MRSWMF to serve as a solid waste transfer station and recycling center. By maintaining this site as a solid waste transfer station, Talbot County can continue to provide a homeowner's drop-off within the County. In addition, this site could serve as a central location for expanding recycling activities in Talbot County.

Since the MRSWMF is owned and operated by Maryland Environmental Service, the County must explore a contractual agreement with MES to continue operating the solid waste transfer station, homeowner drop-off, and recycling center or procure the facility from MES with Talbot County procuring necessary equipment and providing personnel. The County needs to explore both options.

Midshore Regional Solid Waste Management Facility (MRSWMF)

The MRSWMF is currently located just east of the Town of Easton in Talbot County and will continue to be the primary disposal site for municipal solid waste until it either reaches capacity or its closure on December 31, 2010. If capacity remains within the MRSWMF, it will still be closed on December 31, 2010 per the agreement with MES. A new solid waste facility will be opened on January 1, 2011 in Caroline County at the Holly Road site, consistent with the Midshore County Regional Agreement. This facility (Midshore II) will have a capacity to serve the four Midshore Counties of Talbot, Kent, Caroline, and Queen Anne's for approximately 20 years or until year 2030.

Based upon the 2007 MRSWMF Annual Tonnage Report to MDE and an additional 8' in the final elevation of the entire landfill (MDE approved as of July 29, 2008), the remaining disposal capacity of the MRSWMF was estimated at 817,992 cubic yards (cu.yd.). Using a conservative airspace utilization density of 1,100 lbs./cu.yd., the remaining capacity of the MRSWMF is 449,896 tons. From Table 12.2 it can be seen that the average annual waste landfilled at the MRSWMF has been 120,887 tons/year. Table 12.3 estimates the future waste landfilled for the years 2008-2010 will equal a total weight of 369,963 tons. Therefore, the estimated remaining capacity at the closing of the MRSWMF on December 31, 2010 will be approximately 79,933 tons. The tonnage reports indicate there is adequate capacity at the MRSWMF for disposal of the Midshore Region's solid waste through the anticipated closure date of December 31, 2010. Remaining capacity at the MRSWMF through the planned closure on is illustrated in Table 16 below.

TABLE 16 – REMAINING CAPACITY AT THE MRSWMF

	ACTUAL TONS/YEAR					PROJECTED TONS/YEAR		
	2003	2004	2005	2006	2007	2008	2009	2010
Total Waste Landfilled at MRSWMF	130,476	109,312	112,899	124,405	127,344	122,096	123,317	124,550
Cumulative Projected Waste Landfilled	--	--	--	--	--	122,096	245,413	369,963
Remaining Capacity at Landfill	--	--	--	--	449,896	327,800	204,483	79,933

Source: MDE Annual Tonnage Reports.

It is not anticipated, but if the MRSWMF reaches capacity prior to December 31, 2010 it will be transferred to another MDE approved facility, possibly the Midshore II facility if it is complete, or a permit revision may be sought allowing an additional 8' of height for the MRSWMF. At the time of this report, construction of the Midshore II facility is on schedule to be completed and ready to accept waste on or prior to December 31, 2010 goal date.

Recycling Drop-Off Centers

The eleven existing drop-off recycling stations will continue in operation (subject to agreement by the property owners). Figure 3 and Table 7 delineate the locations of the drop-off sites. Additional stations may be added as needed to improve convenience and program success or if current property owners chose to have the stations relocated. To date owners have been very receptive to the recycling stations, since there are increased opportunities for residents to patron the retail establishments and all local municipally owned properties are not limited by the space allocated to the drop-off receptacles.

Electronics Recycling

Talbot County, in partnership with Kent, Caroline and Queen Anne's Counties through the Midshore Regional Recycling Program (MRRP), began an electronic recycling program in 2002. The program

currently accepts for recycling: computers and computer peripherals including CPU's, keyboards, monitors, computer mice, printers, cables, modems, computed speakers, scanners and external disk drives. Other electronics currently accepted include: televisions, remotes, VCR's, CD and DVD players, calculators, cell phones, radios, stereos, CB radios, fax machines, answering machines and copiers. The materials are collected from residents, small businesses and schools at special collection events held twice each year throughout the four county region. These materials are transported to, or collected by, electronic recycling companies. This program is currently provided free to residents, small businesses and schools. The program was initially funded by an EPA Region 3 grant administered by MDE. Since then it has been funded by the MRRP and grants from MDE. The future viability, format and nature of the program will be contingent upon several factors including availability, costs, practices and requirements of electronics recycling organizations as well as funding sources available to meet any and all costs. In order to continue and possibly expand electronics recycling, Talbot County and/or the MRRP intends to seek available funding such as grants that may be available as a result of Maryland HB 575 in 2005 and HB 488 in 2007 and other funding sources. Talbot County and MRRP have recently partnered on a new project with the Chesapeake Center in Easton to serve as a drop-off location for computers on most weekdays. Chesapeake Center also provides disassembly work for a Maryland electronics recycler.

Household Hazardous Waste (HHW)

Talbot County, in partnership with Kent, Caroline and Queen Anne's Counties through the Midshore Regional Recycling Program (MRRP), began a Household Hazardous Waste (HHW) collection program in 1998. This program is currently provided free to residents. There is a collection day scheduled every spring and fall in the Midshore Region. Therefore, Talbot County residents have an opportunity to participate every six months. The event is held in Talbot County once every two years, typically on the first Saturday in November. The next planned schedule date for Talbot County is expected in the Fall of 2010.

Composting of Yard Waste

Talbot County will evaluate, in partnership with Caroline, Kent and Queen Anne's Counties, the potential of establishing a composting area at the current and future regional landfills to accept leaves, brush and some nitrogenous materials (yard waste). The current practice of tub grinding yard waste material will continue at MRSWMF and would be an important element to support whatever level of composting is judged feasible.

5.3 MANAGEMENT OF INDIVIDUAL WASTE STREAMS

The following mechanisms will be used for managing various waste streams. The permittee of all solid waste acceptance facilities within Talbot County is also subject to the requirements of COMAR 26.04.07 "Solid Waste Management" as well as applicable local ordinances and regulations.

Commercial, Residential, Industrial and Institutional Waste

All waste in these categories is currently disposed of at the Midshore Regional Solid Waste Management Facility in Talbot County. This facility will continue to be the sole waste disposal facility in Talbot County for solid wastes during the planning period. However, Talbot County will keep other options open for consideration during the next 10-year planning period.

The available options include diversion of municipal solid waste, if economical, to out-of-state landfills. This has some potential due to the recent development of several large commercial municipal landfills in Virginia. These facilities now contract to receive the municipal solid waste from several Maryland counties. They have a lower tipping fee than the MRSWMF, presumably due to the very large economy of scale. This option would require agreement by all four Midshore counties. The transfer station located at a facility (MRSWMF or Midshore II) could serve the purpose of exporting solid waste to landfills outside the region. A comprehensive financial analysis to evaluate hauling costs, tipping fees and the on-going costs for servicing bonds and maintenance of a "mothballed" MRSWMF would be needed as part of the decision process.

Other options include: 1) Expansion of the Midshore group to include other Eastern Shore counties. Currently Dorchester County owns and operates a municipal solid waste landfill with room for expansion; and, 2) Cooperation with the Delaware Solid Waste Authority to potentially develop a solid waste management system for the entire Delmarva Peninsula.

An increase in the percentage of the waste stream that is recycled will conserve landfill capacity and thereby extend the life of the MRSWMF. However, reducing the tonnage of waste received will increase the unit cost of disposal per ton, since fixed and operating costs are somewhat constant.

Controlled Hazardous Substances (CHS)

Hazardous wastes generated in Talbot County are presently disposed of at permitted sites outside the County. This practice will continue, as there is insufficient demand or need for such a facility in the County. The facilities accepting the CHS have no anticipated acceptance limits known by Talbot County.

There are a number of private commercial firms on the Eastern Shore that are licensed to collect and transport hazardous wastes from Talbot County. There are limited hazardous waste disposal or storage facilities located in Maryland. According to MDE, about 75 percent of all hazardous wastes generated in Maryland are shipped out of the state. Much of the remaining hazardous waste treated or disposed within Maryland is handled at facilities dedicated to a specific industry, and not open to general public use. The only open hazardous waste treatment facility in Maryland is Clean Harbor of Baltimore, Inc., which specializes in wastewater treatment and solvent processing. All other Maryland hazardous waste facilities are storage or transfer facilities.

Other out-of-state facilities, which are common disposal points for Maryland hazardous wastes, include:

Midland Disposal, Michigan	Large quantities of hazardous waste
Chemical Conservation, Georgia	Gasoline, paint, contaminated oil
Republic Environmental, Hatsfield, PA	Restricted industrial wastes
Laidlaw, North Carolina	Restricted industrial wastes
Culver City, Kentucky	Hazardous waste incinerator

Dead Animals

Much of this material is now recycled through commercial rendering facilities outside of Talbot County. Valley Proteins in Baltimore is the only rendering plant known to be currently accepting animal wastes from Talbot County. Other animal waste material is incinerated at the Maryland Department of Agriculture's Animal Health Lab near Centreville. These current management practices are adequate.

Appliances and Autos

Federal Environmental Protection Agency regulations under the Clean Air Act, Section 608, established a mandatory recycling program for ozone depleting refrigerants such as chlorofluorocarbon (CFC) during disposal of all air conditioning and refrigeration equipment. The following appliances must be segregated for appropriate disposal by a certified recycling contractor:

- Refrigerators
- Freezers

- Air conditioners
- Water coolers
- Dehumidifiers
- Any other appliances that contain Freon, etc.

These materials are currently recycled through a MRRP contract with MES to evacuate all CFC or PCB toxins. These current practices are adequate.

Automobiles are recycled through private commercial salvage yards registered with the Maryland Motor Vehicle Administration. Talbot County does not license junkyards or auto salvage yards. There are no anticipated shortages in capacity for junk cars or appliances.

Scrap Tires

Section 9-228 of the Annotated Code of Maryland prohibits disposal of scrap tires in a landfill after January 1, 1994. Talbot County currently does not operate any tire landfills. Upon the closure of the MRSWMF, future tire waste will most likely be transported to the Midshore II facility.

Passenger and light truck scrap tires less than 17 inches in diameter are accepted at the County transfer stations and loaded into 40-yard roll-off containers. Scrap tires from County vehicles are collected at the Roads Yard. The collected scrap tires are then transported to Emanual Tire in Baltimore, Maryland or to Magnus Environmental in Wilmington, Delaware for recycling. Commercially generated scrap tires, truck scrap tires, and farm equipment scrap tires are no longer accepted by Talbot County.

Antifreeze and Waste Oil

The Maryland Environmental Service (MES) operates the waste antifreeze and oil-recycling program. MES currently contracts with U.S. Filter to pick up oil and antifreeze from collection tanks at recycling stations throughout the region. Most of this waste oil is refined for use as heating oil. Most of the used antifreeze is reused and returned to market as recycled antifreeze. Upon the closure of the MRSWMF, future antifreeze and waste oil will continue to be recycled through the MES program. Waste oil and antifreeze will either be directly transferred to the Midshore II facility or a future in-County transfer station.

Sewage Sludge

Sewage sludge generated in Talbot County is currently disposed of by a variety of practices, including land application, composting, and transport to the Midshore Regional Solid Waste Management Facility. These current management practices are adequate and are expected to continue.

Septage

See Chapters Three and Four.

5.4 SCHEDULE FOR NEW SOLID WASTE MANAGEMENT FACILITIES

No new municipal solid waste disposal facilities deploying landfill techniques are planned in Talbot County during the 10-year planning period. The Midshore Regional Solid Waste Management Facility in Talbot County will continue in operation until reaching full capacity and close no later than December 31, 2010, with the next regional landfill site to be located in Caroline County for a subsequent 20-year period or until December 31, 2030.

Construction of the Midshore II facility is scheduled to begin in May of 2009 and completed by December 31, 2010. The facility will then be ready for waste acceptance by January 1, 2011. The Talbot, Queen Anne, Caroline and Kent County Administrators meet quarterly with MES to discuss the status of both the Midshore I facility and the construction of the Midshore II facility. In the unlikely event Midshore II is unable to accept waste on January 1, 2011, MES will look at alternative disposal options for the Midshore counties, one of which would be waste transfer to an MDE approved disposal facility.

The only new or expanded solid waste acceptance facility which will be required in Talbot County during the planning period is the potential continuation of using the transfer station at the existing MRSWMF.

5.5 FINANCING PROPOSED SOLID WASTE FACILITIES

As discussed above, no new publicly owned municipal solid waste disposal facilities are planned in Talbot County during the 10-year planning period. The Midshore Regional Solid Waste Management Facility and its future development are financed by the Maryland Environmental Service, utilizing its revenue bonding authority and by tipping fees collected at the site.

Continued expansion and improvement of the recycling program is expected under guidance of the MRRP. Financing for both capital and operating costs of the recycling program is obtained from the tipping fee surcharge at the Midshore Regional Solid Waste Management Facility. An additional source of funding for recycling programs is the 10 percent surcharge on tipping fees at the R.B. Baker Rubble Landfill. These funds have been programmed to supplement the development of a central materials consolidation facility (MCF) at the Centreville Transfer Station, and for continued rubble and land clearing debris recycling activities at the R.B. Baker facility.

5.6 CLOSURE PLANS

The current Midshore Regional Solid Waste Management Facility is to be closed on December 31, 2010. Closure and post closure plans are in development, funding for same will be provided by the four Midshore Counties, and revenue generated by tipping and user fees of the landfill itself.

5.7 AMENDING AND UPDATING THE PLAN

The adopted Plan for Talbot County and its incorporated Towns shall be reviewed at least triennially or as determined by MDE. The County will also adopt and submit to MDE a revision or amendment to the Plan if the County or MDE deem a revision or amendment is necessary. Every two years a progress report must be submitted to MDE.

For this purpose, municipal and County agencies, as well as owners of private facilities and other federal or State agencies having programmed solid waste management facilities, will be furnished copies of the draft changes for comment. A public hearing with the County Council will then be held. Notice of the public hearing shall be advertised in *The Star Democrat* newspaper or other local paper once each week for two consecutive weeks with the first notice appearing at least fourteen days prior to the public hearing. Following the public hearing, the County Council shall take appropriate action.

Following the decision of the County Council, the updated Plan shall be sent to MDE for its review and final approval. The updated Plan will not become effective until notification of final approval is received from the State.

In addition, COMAR 26.03.03.05 requires that the comprehensive Solid Waste Management Plan be amended on an interim basis to include the installation or extension of either a solid waste acceptance

facility or solid waste disposal system before the issuance of a permit by MDE. The same public hearing process outlined above for the triennial update shall be used for interim updates.