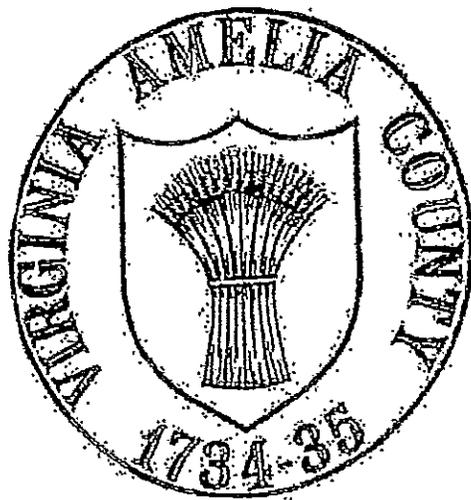


**SOLID WASTE MANAGEMENT PLAN
FOR
AMELIA COUNTY**



JUNE 2011

**CHAPTER 1.0
SOLID WASTE MANAGEMENT PLAN INTRODUCTION AND GOALS**

1.0 SOLID WASTE MANAGEMENT PLAN INTRODUCTION AND GOALS

1.1 INTRODUCTION

The Virginia Code, at Section 10.1-1411, directs the Virginia Waste Management Board (Board) to promulgate regulations specifying requirements for local and regional solid waste management plans. It is the policy of the Board to require development of a comprehensive and integrated solid waste management plan that, at a minimum, considers and addresses all components of the following hierarchy:

1. Source reduction;
2. Reuse;
3. Recycling;
4. Resource recovery (waste-to-energy);
5. Incineration; and
6. Landfilling

On July 1, 1991, the Piedmont Planning District Commission submitted on behalf of the Piedmont Planning District (of which Amelia County is a member), the Piedmont Planning District Solid Waste Management Plan to fulfill the requirements for the Virginia Waste Management Board Regulations for the Development of Solid Waste Management Plans. The Virginia Department of Solid Waste Management (now the Virginia Department of Environmental Quality) approved this regional solid waste management plan on March 24, 1992. All solid waste management plans were required by the regulations to be updated every five years. An updated plan was submitted to the Department in July 1997.

The Board amended the Regulations for Solid Waste Management Planning (9 VAC 20-130-10 et seq.) effective August 1, 2001, and the amendment to the regulations removed the requirement for the five-year update to existing solid waste management plans. However, section 9 VAC 20-130-110.B of the amended regulations states: "A complete, revised solid waste management plan in compliance with this chapter shall be provided to the department no later than July 1, 2004." An Amelia County plan was then submitted June 21, 2004 to replace the 1991/1997 plan as the County elected to submit an individual plan, rather than participate in a regional plan.

This Solid Waste Management Plan 5-year Update is intended to be the planning tool for solid waste management activities in Amelia County for the next twenty (20) years. This document is intended to comply with the Code of Virginia (Section 10.1-1411) and the *Solid Waste Planning and Recycling Regulations*,

Amendment 2 (9 VAC 20-130-175.F et seq.), which give statutory authority and regulatory responsibility and accountability to local governments for planning for the handling of all types of nonhazardous solid waste.

1.2 SUMMARY OF CURRENT WASTE COLLECTION AND DISPOSAL OPERATIONS

On January 12th, 1990, the County of Amelia entered into an Agreement (Appendix 1) with Chambers Waste Systems of Virginia, Inc., (Chambers) to provide its citizens an environmentally sound sanitary landfill for their solid waste disposal needs. Following the opening of the new commercial Maplewood landfill (Permit #540) on May 4, 1993, Amelia County closed its own landfill (Permit #350) in October 1993. USA Waste Services, Inc. acquired Chambers in 1995, then later merged with Waste Management, Inc. (WM) in 1998. WM currently operates the Maplewood landfill and six (6) trash collection and recycling sites throughout the County. The six (6) sites are presently *manned and open 40 hours per week, five days a week*, for usage by Amelia County residents. Amelia County citizens may dispose of their waste at no charge at any of these locations or at the landfill. Businesses that were in operation at the time of the signing of the Agreement between Amelia County and the landfill owners are also entitled to free disposal of their waste at the landfill only. Several haulers offer waste collection services to both county businesses and residents.

Although landfilling is the most common method of solid waste management in Amelia County, citizens and businesses are encouraged to use source reduction, reuse and recycling methods of solid waste management. To that end, several County businesses burn waste oil for heat. One local industry creates energy by burning wood waste and another produces electricity by using landfill gas to power diesel engines.

Amelia County is also very dedicated to recycling, with a reported recycling rate of 40% for 2002. Recycling programs are continually expanded and added and currently offer residents the opportunity to recycle newspaper, mixed paper, magazines, cardboard, white office paper, glass bottles and jars, plastic bottles, aluminum and tin cans, white goods (appliances), used oil, textiles, ink jet and laser computer cartridges, cell phones, rechargeable batteries, plastic bags, automotive batteries, Christmas trees, *electronics and used tires*. In addition, the county operates a permanent household hazardous waste collection program. Development of a recycling brochure, litter control and recycling programs for civic groups and schools, monthly articles in the local newspaper, displays at the annual Amelia Day celebration and the Amelia County fair, an annual America Recycles Day event, *an annual County Spring/Green event* and several computer websites are used to educate and inform the general public about the County's solid waste management activities.

1.3 PLAN GOALS

Amelia County has adopted the following goals to ensure that the County's solid waste management needs are met.

Goal 1:

Establish a planning process and document that meets Virginia Statutory and Regulatory requirements, that encourages public participation, and that ensures the County's solid waste management needs are met.

Goal 2:

Work in partnership with WM to continue to provide County citizens, businesses, industries and organizations with a state-of-the art, environmentally sound sanitary landfill for their present and future solid waste disposal needs.

Goal 3:

Work in partnership with WM to maintain and upgrade facilities to ensure that adequate options for solid waste disposal are available throughout the County.

Goal 4:

Identify, implement, and/or maintain programs for ensuring that solid wastes are managed in accordance with federal and State laws and regulations in a manner that protects public health, safety, and the environment.

Goal 5:

Sustain a Countywide recycling program that will consistently meet or exceed the State's mandatory recycling rate.

Goal 6:

Provide safe recycling and disposal options for special wastes that may pose harm to the environment and/or public health and safety.

Goal 7:

Identify, implement and or/maintain programs of education and outreach to County citizens and businesses on source reduction, reuse and recycling to reduce reliance on landfilling of solid waste.

1.3. Resolution of Approval

Upon adoption of the Solid Waste Management Plan by the Amelia County Board of Supervisors, the text of the Board's resolution of adoption will be inserted here.

CHAPTER 2.0 WASTE CHARACTERIZATION AND QUANTITIES

2.0 WASTE CHARACTERIZATION AND QUANTITIES

Population growth and the associated residential and commercial development inevitably lead to greater waste generation and increased demand for services. This Solid Waste Management Plan will identify the current waste management system and needs and in the face of anticipated continued growth, the Plan will also prepare for future demand for services and management needs.

2.1 DESCRIPTION OF PLAN AREA

Amelia County is located approximately 35 miles southwest of the City of Richmond, at the northern edge of the region known as "southside" Virginia.

The County is rural in character, covering an area of 366 square miles, with sparsely developed residences, community businesses and churches, interspersed in a gently rolling, central piedmont landscape of mostly agricultural and forestal land. The County's population in 1990 was 8,787 according to the U.S. Census, 11,400 in 2000 and *in 2010 was 12,690*. Amelia County is bordered by the Counties of Powhatan and Cumberland on the north, Prince Edward on the west, Nottoway and Dinwiddie on the south and Chesterfield on the east, with the Appomattox River forming the northern and eastern boundary (Appendix 2).

2.1.1 Amelia Courthouse Urban Area. Although the County does not have any incorporated places, the seat of government and density area is generally referred to as Amelia Courthouse. It is located at the intersection of Routes 360, 38, 681 and 614. This approximately 3.4-mile by 3.4-mile area has the greatest concentration of urban and professional services in the County. It has an estimated population of approximately *1,300 or about 10 percent* of the County's population.

2.1.2 Transportation Resources. The transportation system in Amelia County for the most provides adequate capacity for the current and short term future needs of local residents and businesses. It features an outstanding major corridor in Rt. 360, a four lane divided state highway, as well as a line of the Norfolk Southern Railroad which closely follows the alignment of Rt. 360. The rural secondary road network, while generally adequate for current needs, still has approximately 80 miles of non-hard surfaced roads, as well as increasing traffic from roadside development which has been the dominant pattern of development in the County. While the road system seems generally adequate for current local needs, its capacity and safety is at great long term risk in light of continued rural development and increased commuter and other through-traffic on Rt. 360 and other major corridors that connect the County with neighboring

jurisdictions. Two secondary roads that receive heavy use by trash haulers delivering waste to the Maplewood landfill are Routes 604 and 609. These routes, while currently in good condition, may require upgrading as a result of their heavy usage.

2.1.3 Railroad Resources. The Norfolk Southern railroad is located parallel to Rt. 360 between Routes 307/360 and Route 604 where it diverts north to Chesterfield County.

The Maplewood landfill has direct rail access to the Norfolk Southern Railroad at the northern boundary of the facility. The landfill was located and designed to utilize this rail access to accept a large portion of its waste stream via rail. A railcar staging yard is located within the facility to allow for staging of both loaded and unloaded railcars. Waste arrives at the landfill in containers such as ISO/Intermodal containers on flatcars, gondola cars, boxcars, hopper cars or end dumps. Following a permit amendment in 1998, an additional 16,000 lineal feet of railroad track was added to expand onsite storage capacity.

Rail service to the Maplewood landfill commenced in January 1994 with a slow build-up of waste deliveries. Rail deliveries peaked at 49,536 tons in September of 1997 before trailing off to none in 2000. Rail deliveries to the Maplewood landfill ceased following the acquisition by WM of other mega-fills in Virginia. Host fee structures made it more advantageous for WM to send their rail waste to other facilities. However, rail deliveries to the Maplewood landfill recommenced in 2002 and are expected to continue. *Rail deliveries in 2010 totaled 40,308 tons.*

The Conditional Use Permit (CUP) (Appendix 3) governing the operation of the Maplewood landfill requires that all rail cars delivering waste to the Maplewood landfill be unloaded within 24 hours of their arrival at the landfill. WM found this requirement to be burdensome. Following negotiations with the landfill, Amelia County granted an amendment to the CUP that allows 72 hours for unloading of rail cars.

Amelia County supports the delivery of waste by rail to the Maplewood landfill as an alternative to trucking the waste, thereby reducing traffic congestion, roadway deterioration and pollution.

2.1.4 Land Use and Development Patterns. Amelia County has an extensive land base of mostly undeveloped land in agricultural and forestal uses with only 3,439 total residential units in 1990, an estimated 4,850 units in 2000, and 5,502 units in 2009. Those units are generally dispersed, indicating that less than 7% of the County is developed with non-agricultural related uses.

Much of the undeveloped agricultural and forestal land has development potential, although a variety of significant, general constraints to development do exist. These include:

- although it is increasing as a reaction to regional growth pressures, the market demand for development is finite, both Countywide and in specific areas
- site-specific, environmental constraints such as flood plains, wetlands and percolation limitations
- infrastructure availability and cost, particularly roads, water and sewer
- owner intentions and financing capability
- County policies and regulations regarding permitted land uses and density

These constraints affect different properties in different ways, and will vary with changes in the economy, regional growth pressures, the level of government investment in infrastructure and the preferences of home buyers, businesses and industries.

General Trends in Land Use and Development. The traditional development pattern of the County has generally been one of single family dwellings on rural lots, sparsely scattered among forests and farms, as well as small clusters of structures in compact settlements. Small country stores and churches serve as community focal points, with the courthouse area the central focus for the County. New residential development has tended to occur as either incremental, single lot development or small, rural subdivisions in a somewhat scattered, "strip" pattern, based upon the opportunities provided by road frontage, permeable soils and ownership intentions to develop.

During recent years, the relatively low cost of rural residential lots, combined with the access to jobs in the Richmond and Petersburg areas have increased the demand for rural housing development in Amelia. With improved transportation and communication technologies, households and employment centers tend to become more dispersed, as home buyers seek the lowest land prices and more comfortable rural lifestyles.

The larger commercial and industrial establishments have tended to concentrate along the Route 360 corridor, north of Route 360 and along Route 153. Commercial uses have also concentrated in the Courthouse area, along with most of the public buildings. The Courthouse area has declined somewhat, however, as a commercial center for the County, likely due in part to the construction of the nearby shopping center on Route 360 and by the increased accessibility of residents to commercial centers in neighboring jurisdictions.

Development Potential. The development potential allowed by existing zoning of undeveloped land is still very large due to the total acreage involved and far

exceeds the expected land demand for the next 20 years. Thousands of houses could be built in the County under the new A-5 and RP-5 districts, in addition to the potential construction in the higher intensity RR-3 and R districts.

Even if soil limitations are assumed to limit development capacity to a small percentage of that allowed under zoning, the County still has more than enough zoning to accommodate expected development, and may still, in fact - despite the rezoning of 1995 - have enough zoning to create severe problems for groundwater supplies, rural character of the landscape and road capacity.

Development Patterns. Taken as a whole, the preceding data show several general land use and development trends in recent years have implications for the future of the County in terms of water quality, traffic, agricultural character, cost of public services and the like. These trends and implications are discussed below in terms of the rate, pattern, location and type of development and development approvals.

Rate. The overall rate of land development in the County has been relatively steady throughout the past decade. Although it has had its ups and downs, it has not been subject to the "boom and bust" cycle that many other localities have experienced. This steady growth has provided a healthy economic environment for some sectors of the local economy, but it has also raised concerns about the capacity of the public infrastructure.

The subdivision and development of single family residential lots has been relatively strong, while the rate of business and industrial construction was low during most of the past decade with a strong increase in recent years. If this steady growth continues as expected, it will help fuel the local construction and retail economy, but will also create increasing pressures for expanded public facilities and services and higher average tax burdens.

Pattern, Location and Type. Development has continued to occur in a generally scattered and dispersed pattern, spread over a wide area of the County, focused within general proximity to US Rt. 360. Because of the low density of the overall pattern and the relatively high capacity of the existing road system (particularly the main artery, Route 360), the County has been able to absorb this dispersed growth pattern with relatively few negative impacts. However, as this pattern of growth continues, it will be increasingly difficult to manage the impacts, particularly the conflicts between farms and residential units, the demand for public facility improvements and expansions and the increasing congestion and safety problems on rural roads.

2.1.5. Housing Resources.

Housing Types. Amelia County has a generally good housing stock consisting of mostly conventional single family detached dwelling units (SFD), located in

and around small traditional hamlets, in rural residential subdivisions and dispersed among farms and forested areas.

Only about two percent of all units are attached duplexes and townhouses or multi-family apartments. In recent years, about half of the County's new housing units have been mobile homes, producing an increase in the percentage of mobile homes from 14% to 24% of the total.

Homeownership is very strong in the County and has remained basically stable during the past two decades, decreasing only slightly from 81.1% in 1980, to 80.5% in 1990 and then rising to 81.9% in 2000 and falling again to 80.7% for 2005 - 2009. The overall vacancy rate has also decreased to 8% in 2000 from slightly less than 9% in 1990.

As it did in many other jurisdictions, the average household size (persons per housing unit) in Amelia County has declined during the past two decades, from 3.0 in 1980 to 2.8 persons per household in 1990, to 2.66 in 2000 and to 2.55 from 2005 - 2009. This is attributable mainly to demographic changes in the nature of household formation. When compared to population changes and dwelling construction, it also indicates that many new household formations were likely created by people moving from an existing household and establishing a new one. These were likely young people starting out, or older people retiring or relocating.

Housing Costs and Affordability. Compared to many other areas of the state and region, housing in Amelia County is relatively affordable to most residents. The median value of owner-occupied dwelling units in the County in 1990 was \$54,100, an increase of 66% from \$32,600 in 1980, but virtually unchanged in value when corrected for inflation. These values compare to median household incomes of \$29,474 in 1989 and \$14,253 in 1979, which represent an increase in median income of about 25% when corrected for inflation.

Approximately 15% of homeowners paid 30% or more of their household income in monthly owner costs. The average monthly mortgage payment for mortgaged units was \$503 in 1989. Only about 10% of renters paid 30% or more of their gross household income in rent in 1989. The median gross monthly rent was \$327.

2.1.6 Natural resources.

Geology. Amelia County is in the Piedmont physiographic province, including both eastern and central Piedmont formations, and is underlain primarily by igneous and metamorphic rocks. Sedimentary rocks of the Triassic age occur in the eastern part of the County, including sandstone and shale formations. The bedrock throughout the Piedmont is overlain by a nearly continuous layer of loose, weathered material called "regolith" which is composed of soil, saprolite (well-weathered rock) and alluvium (deposited from streams.)

Masses of coarse-grained igneous rock known as pegmatite are common, particularly in the central portion of the County. These rocks have historically been an important source of mineral production. Mica has been the most significant commercial material derived from the pegmatite and was mined intermittently for about a century, reaching a peak of activity during World War II when 55 sites were in production within the County. Some pegmatite mines have yielded feldspar and kaolin for pottery; quartz for ornamental aggregate in concrete; and beryl, columbite-tantalite, as well as a variety of gem minerals such as garnet, topaz and amazonstone.

Very limited commercial mining is currently underway in the County, although the Morefield Mine, known for its pegmatite production and located on Route 628, has been reopened for both recreational and commercial purposes. In addition, the County in recent years has granted land use approvals for two quarries for extracting rock.

Soil Types. A detailed soil survey of Amelia County has been completed and mapped by the U. S. D. A. Soil Conservation Service. The Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation in conjunction with the Information Support Systems Laboratory at Virginia Polytechnic Institute and State University has recently prepared a digitized data base of this information which is available to the County. There are seven general soil associations within Amelia County.

Groundwater. People in the Piedmont region and Amelia County have traditionally relied upon groundwater as the major source of water supply. It has been and remains a relatively abundant and economical source of water for both the region and the County. Early settlers often used springs as convenient water sources and the location of such springs was often a key determinant in the location of population settlements. Excavated wells have been the other source of groundwater and during the course of development, these have become the major source of water in Amelia County.

The use of water in Amelia County in 1983 was estimated to be 935,000 gallons per day from groundwater sources and 812,000 gallons per day from surface water sources. Most residential users rely on groundwater wells for their water,

and the County has no major public water impoundments, so groundwater remains a vital natural resource for the County's population.

Surface Water and Watersheds. Amelia County is contained entirely within the Appomattox River watershed, with all of the County's creeks and streams ultimately flowing to the Appomattox. The major surface water systems include Nibbs Creek and Flat Creek north of Route 360, Smacks Creek, Beaverpond Creek and Deep Creek south of the Amelia Courthouse area, and the Winticomack and Namozine Creeks draining the southeastern end of the County.

A gauging station on the Appomattox River north of Chula measures an average flow of 441 million gallons of water/ day, while a station on Deep Creek just east of its intersection with Route 153 measures an average of 83 million gallons/day.

Forests. Forests are a primary element in the natural landscape and economy of Amelia County and its neighboring jurisdictions in the central piedmont area. Forests cover nearly three-quarters of the County's land area and produce multiple environmental, economic and cultural benefits.

In addition to the economic benefits of timber production, forests provide habitats for many plant and wildlife species, resources for outdoor recreation, protection from sedimentation and erosion, groundwater recharge areas and visual buffers between land uses. Forests are an inherently renewable resource and therefore, with the use of proper timber management practices, the County's forest land can continue to provide these multiple benefits to the community.

2.2 POPULATION DATA AND PROJECTIONS

2.2.1 Population Trends

Local & Regional Growth. Although the size of Amelia County's population declined steadily between 1920 and 1970, the rate of decline slowed during the 1950's and 1960's. The County's population then began growing during the 1970's and has continued to grow substantially during the past two decades, with a substantial increase of nearly 30% during the 1990's. Table 1 below shows the past trends in population growth in the County.

**Table 1
Total Population Growth in Amelia County
1920 - 2000**

Year	Total Population	Population Added	Percent Change
1920	9,800	--	--
1930	8,979	-821	-8.4%
1940	8,495	-484	-5.4%
1950	7,908	-587	-6.9%
1960	7,815	-90	-1.2%
1970	7,592	-223	-2.9%

1980	8,405	+813	10.7 %
1990	8,787	+382	4.5%
2000	11,400	+2516	28.6%
2010	12,690	+1290	11.3%

Sources: U.S. Bureau of the Census; Piedmont Planning District Commission; Virginia Employment Commission; Herd Planning & Design

Much of the increase in population in recent years has come from a net “in-migration” of people moving into the County from other areas. The growth has been supplemented by a natural increase caused by a greater number of births than deaths within the population.

The rate of population increase between 2000 and 2010 was smaller than the increase in 2000, and the increase in absolute numbers of people was 1,290 for an increase of 11.3%.

It is also important to note the regional context in which Amelia County is situated in terms of growth trends and potential. Neighboring Chesterfield County to the east has grown very rapidly during the past two decades, reaching a population of over 259,903 in 2000, and 316,236 in 2010. A comparison of recent growth rates of neighboring Counties is shown in Table 2 below.

Table 2
Recent Population Growth of Neighboring Counties 1990 - 2010
(all figures are rounded)

Neighboring Counties	Total Population 1990	Total Population 2000	Percent Change	Total Population 2010	Percent Change
Chesterfield	209,000	259,903	24%	316,236	21.7%
Powhatan	16,000	22,377	40%	28,046	25.3%
Cumberland	7,800	9,017	16%	10,052	11.5%
Prince Edward	17,300	19,720	14%	23,368	18.5%
Nottoway	15,000	15,725	5%	15,853	0.8%
Dinwiddie	21,000	24,533	17%	28,001	14.1%
Total in Piedmont Planning District*	84,900	97,103	14 %	421,556	15.3%

Sources: U.S. Bureau of the Census; Herd Planning & Design

Note: *Piedmont Planning District includes the Counties of Amella, Buckingham, Charlotte, Cumberland, Lunenburg, Nottoway and Prince Edward

The proximity of the cities of Richmond and Petersburg and the Town of Farmville creates further regional growth pressure on Amelia County, particularly in terms of residential demand, as people look for more affordable land prices within a reasonable commuting distance of those employment centers.

Neighboring Chesterfield County also contributes to the regional growth pressure. Planning policies for its southern and western area, which abuts Amelia, call for a conservative approach to growth based on the limitations of

public facilities in the area and the environmental importance of the watershed that feeds Lake Chesdin. It will therefore likely be many years before that portion of Chesterfield County is opened for dense, suburban development. However, such a planning strategy does not eliminate the indirect pressures on Amelia from the rapid growth continuing to occur in the other parts of Chesterfield County.

In addition to the regional context for population growth, the state and national contexts should be noted. Virginia continued to be one of the fastest growing states in the nation during the 1990's. It has strong prospects for maintaining that status in the coming decades due to a variety of natural, cultural and economic factors.

The bulk of the Commonwealth's growth has occurred in an area often referred to as the "golden crescent", a multi-jurisdiction region stretching from northern Virginia through the Richmond area and on through tidewater Virginia. Amelia County is situated at the fringe of this dynamic area, and as such, is subject to many direct and indirect impacts, both positive and negative, of the growth that occurs in this larger region.

Population Characteristics. Although generally stable, the composition of Amelia County's population has been changing as growth has occurred. Generally, during the past decade the County's population on average has become older, more educated, earns a higher income, is more likely to have moved to the County from another place, and is more likely to commute outside of the County to their job. These trends are evident in the following comparisons of key census data from 1980 and 1990, and some of the early available data from the 2000 Census.

- *The population has become somewhat older, with a median age of 31.4 in 1980, 34.6 in 1990, 38.5 in 2000, and 41.5 in 2009.*
- *The population has attained a higher level of education on average, with 48% of adults having completed at least four years of high school in 1980 compared to 56% in 1990, 68% in 2000 and 75% in 2009.*
- *The median household income has risen from \$22,947 in 1979 to \$26,612 in 1989 to \$40,252 in 1999 and \$48,897 in 2009. In 1979, 9.3% of families in the County had incomes below the poverty level compared to 8.4% in both 1989 and 1999, and 9.1% in 2009.*
- *A greater percentage of the population has moved to Amelia from other places. In 1980, 18% of the residents had moved to the County from another County or State within the previous five years; in 1990 the percentage was 21% and in 1995 the percentage was 25.2%.*

- *A greater percentage of the work force commutes outside the area to work.* In 1980, 45% worked outside of the County compared to 58% in 1990. Note that this percentage has increased steadily in recent decades – it was 24% in 1960 and 40% in 1970. In addition the average travel time to work increased from 31 minutes in 1980 to 33 minutes in 1990 and to 41.5 minutes in 2000.
- *Average household size has fallen.* In 1980, the average size of occupied housing units was 3.0 people per household. In 1990, it had fallen to 2.8 and continued its decline to 2.66 in 2000, and 2.55 in 2009.
- *The black population has continued to decrease as a percentage of the total.* In 1980, 38% of the population was black, compared to 32% in 1990, 28% in 2000, and 23.1% in 2010. The median age of blacks rose from 31 years in 1908 to 36 years in 1990 and the number between ages 20 and 29 declined by 135, indicating an out-migration of younger people.

2.2.2 Population Forecasts

A range of updated potential forecasts has been prepared for comparative purposes, based upon the most recent data available, including forecasts made by the Virginia Employment Commission, as well as extrapolations of recent trends in development activity in the County. These updated forecasts are shown in Table 3.

It is important to note that future population growth will depend upon a variety of factors, many of which are beyond the control of the County and many of which are very difficult to predict with any certainty. Therefore, it is useful to formulate a range of forecasts, each based upon a different set of assumptions about regional as well as local factors.

Note that the original population forecasts prepared for the Amelia County Comprehensive Plan in 1994 have proven to have underestimated the population growth of the County that occurred during the late 1990's. Thus, six new alternative forecasts have been prepared, which use a different set of assumptions, based upon events during the past several years and revised expectations for changes during the next two decades. Below, these forecasts are contrasted with the low and high forecasts contained in the 1995 Comprehensive Plan.

The following updated, alternative forecasts also provide a range of alternative futures, but are based upon the following assumptions and sources, as follows:

1. The low trend forecast prepared in 1994 for the 1995 Comprehensive Plan assumed a continuation of the growth rates the County experienced during the 1980's, presuming a steady demand for rural residential lots

and a continuation of primarily residential rather than employment development, with only minor improvements in public facilities and utility capacity. The low trend assumption prepared for the 2000 Plan Update assumes a 1.0% annual growth rate which is approximately half of the annual rate experienced during the late 1990's.

2. The high trend forecast prepared in 1994 for the 1995 Comprehensive Plan assumed growth rates during the next two decades will be similar to what the County experienced during the 1970's, assuming a substantial increase in demand for rural lots, some expansion of local employment opportunities and significant expansions or improvements in public facilities and utility capacity.
3. Current forecast of the Virginia Employment Commission (extends only to 2010).
4. The forecast of Woods & Poole, a private forecasting firm that prepares forecasts for localities across the country.
5. A "Low Trend" forecast which assumes an average annual growth rate of 1.0%, or about half of the recent trend rate.
6. Extrapolation of the current VEC forecast to the years beyond 2010, at an annual rate of 2.166%.

This is the selected forecast for planning purposes because it is based on the official VEC forecast, it closely matches recent trends (option #7 below), and it reflects a "moderate" range forecast.

7. Extrapolation of the recent trend growth rate of the late 1990's, (average annual rate of 2.215%), or slightly less than the average rate for the decade as a whole.
8. A "High Trend" forecast which assumes average annual growth rate of 3.0%, a significant increase above the recent trend rate.

Table 3
Alternative Population Forecasts for Amelia County 2000 - 2025

Alternative Forecasts	Year						
	1995	2000	2005	2010	2015	2020	2025
1995 Plan (VEC Estimate)	9,130	9,488	9,770	10,059	10,355	n/a	n/a
1995 Plan (High Estimate)	9,160	9,660	10,170	10,720	11,290	n/a	n/a
Current VEC (1999)	9,700	11,303	n/a	14,003	n/a	n/a	n/a
Woods & Poole	9,680	10,530	10,900	11,300	11,720	12,150	12,550
"Low" Forecast (1.0% avg. annual)	9,700	11,303	11,880	12,486	13,122	13,792	14,495

Extrapolate VEC (2.16% avg. annual)*	9,700	11,303	12,581	14,003	15,588	17,351	19,313
Match 1994-99 Rate (2.2% avg. annual)	9,700	11,303	12,612	14,071	15,700	17,518	19,546
"High" Forecast (3.0% avg. annual)	9,700	11,303	13,103	15,190	17,610	20,414	23,666

Sources: Virginia Employment Commission; Woods & Poole; Herd Planning & Design, Ltd.
 * Selected Forecast for Planning Purposes

Based upon the trends of the past two decades and the prospects for continuing growth pressures in the Richmond region, population growth forecasts for the County have been raised above the expectations in 1995. Amelia County is expected to experience a growth rate similar to some of the faster growing Counties in the state, in the range of 25 percent per decade. This rate would produce population levels in excess of 15,000 by 2015 and nearly 20,000 by the year 2025. As the County's planning process moves forward on a continuing basis, prospects for higher or lower growth rates will be continually examined as new information becomes available. Thus, even if growth rates remain relatively high for the next two decades, Amelia County will still have a population level comparable to what several other moderately sized neighboring counties have today. This perspective may give some comfort to citizens and leaders who are concerned about the potential negative impacts of growth on the County.

2.3 EMPLOYMENT

2.3.1. Resources and Trends

Competitive Advantages. Amelia County has a strong set of fundamental local economic resources that have historically provided substantial economic stability as well as a reasonable level of prosperity for the County. These competitive advantages are based mainly on the County's natural resources, particularly the agricultural and forestal land base. In addition, the County has a variety of human resources that enhance its capability and potential for economic strength. The primary economic resources include:

- a high quality natural resource base of hardwood and softwood forests, surface and ground water supplies, farmland, clean air, developable land, various natural recreational resources, historic areas and a scenic piedmont landscape
- a good local labor force known for its honesty, work ethic and self reliance (note that in 1990 over 56% of persons over 25 years of age were High School graduates, the third highest percentage among the Counties in the Piedmont Planning District, but still well below the State average of 75%)
- proximity to economic, cultural, governmental and educational centers such as the neighboring cities of Richmond and Petersburg and the Town of Farmville

- major regional highway transportation facilities, including the Route 360 corridor and the Norfolk Southern Railway line which bisects the County
- a relatively moderate cost of living in terms of housing and local taxes
- an overall high quality of life and “small town” rural life style
- a modern landfill for solid waste disposal

Competitive Disadvantages. The County also, however, suffers from several disadvantages in terms of employment and economic development activity and potential. These include:

- very limited area served by public sewer and water
- relatively limited recreational facilities, cultural resources, health care facilities and other resources that provide a more complete community facility environment
- a relatively small number of existing employers and few major industries
- a work force, that while relatively well-trained, does not provide the capability needed for certain industries and companies
- intensifying competition, automation and productivity improvements that require higher and more specialized labor force skills
- limited job opportunities and relatively low wages which contribute to the decreasing size and capability of the labor force

Elements of Local Economic Strength. Considered as a whole, these elements reflect the basic economic strengths and weaknesses of the Amelia County community for creating, attracting and fostering economic activity. The economic strength of a given jurisdiction relies on three primary elements:

- the production and export of goods and services to other areas in order to “import” dollars into the local area and create a vibrant economy
- the diversification of the local economic base in order to provide stability and variety in employment opportunities, and
- the development of jobs that use higher skills and produce higher incomes in order to increase the prosperity of the local economy, as well as to remain competitive in the increasingly demanding and constantly changing regional, national and international economies

Factors Beyond the County's Control. Many factors that affect the local economy are largely beyond the control or influence of local citizens and leaders. These would include:

- interest rates
- energy prices
- inflation
- topography and geology
- location of federal and state government facilities, and
- national and international monetary, fiscal and trade policies

Factors the County Can Control. However, the County can exert substantial control over various critical elements such as:

- provision of public facilities and services
- quality of the local education system
- protection and enhancement of the existing natural resources, and
- availability and promotion of appropriate sites for residential, commercial and industrial development

Effects of Economic Development. The type and amount of economic development which occurs in the County can strongly influence the kind of residential development that supports it, and vice versa. The type of economic development will also affect the cost of providing local public services and facilities, the health and character of the natural environment and the overall character of the community as it grows.

While the effects of economic growth are not necessarily all positive, there is broad consensus among most local leaders that the risks of not encouraging economic development are greater than the possible "side effects" of such growth. The potential negative impacts of economic growth should be identified however, in order to begin mitigating them. These impacts can include:

- increases in new residents to hold the jobs that are created, who then demand additional public services, thereby increasing the tax burden on existing residents
- increases in traffic congestion, environmental pollution, crime and other impacts of greater population and crowding
- economic growth can produce higher incomes in the labor force, requiring increases in salaries of local government workers in order to recruit and retain them, thus causing upward pressure on local taxes, as well as greater wage competition among local employers

- to the extent that incomes rise and demand for housing increases as job opportunities expand, the cost of housing can also increase and/or its availability to broad segments of the community can decrease

The desire to capture the positive effects of economic growth while minimizing the potential negative impacts is a central purpose of community development programs. In order to be fully successful, economic growth must have a net positive effect on the overall quality of life of local residents, not just on income.

Local Economic Development Initiatives. Amelia County has undertaken a variety of substantial efforts at promoting and encouraging local economic development, including establishing its own Industrial Development Authority and the purchase of a County Industrial Park Site.

The County is proceeding with sewer line extensions along the Route 360 corridor near the Courthouse area, and installation of a water supply system, which will assist in encouraging further business development in that corridor.

In addition to its own efforts, the County is also an active member in the Piedmont Planning District Commission, which coordinates the Economic Development District Program established by the Economic Development Administration. Through this program, Amelia County has been designated as a Re-development Area since 1972, making it eligible for certain community development grant programs.

Two recent efforts that could enhance the tourism industry are now complete. First is the establishment of a Veteran's Cemetery by the U.S. Department of Veterans Affairs, located on Route 681 north of the Courthouse area. Although this project is not designed as a tourist resource, it is expected to create "spin-off" benefits by attracting visitors to the County. Second, six Counties and the City of Petersburg formed the Southern Piedmont Retreat Group which developed a driving tour of the Route of Lee's Retreat from Petersburg to Appomattox. In addition, State officials have recommended that the roads along the Route be designated as Virginia Byways that could further enhance public awareness of this historic resource.

Labor Force Trends. Labor Force participation has increased steadily during the past two decades, consistent with regional and national trends. In 1970 one third of the County's residents were included in the labor force, compared to 50% in 1980 and 65% in 1990.

Changes in the employment sectors of the County labor force between 1980 and 1990 are also largely consistent with broader trends. These are shown in Table 4 below. It is important to note that more than half of this labor force commutes out of the County to jobs located in other jurisdictions, and therefore these data describe the Amelia County labor force rather than its local economy and job

market. The table shows strong increases in the construction, transportation, communications, retail trade and public administration sectors, in conjunction with decreases in manufacturing and wholesale trade.

The County's unemployment rate during the past two decades has been consistently below the state average, ranging from 3.1% in 1970 to 8.5% during 1992, then moderating during the mid 1990's until reaching a low of 2.5% in 1999.

Table 4
Labor Force Employment Trends in Amelia County
1980 - 1990

Industry	Change 1980-1990		Amount	Percent
	1980	1990		
Agriculture, Forestry, Fisheries, Mining	397	459	62	15.6 %
Construction	398	542	144	36.2 %
Manufacturing	884	829	-55	-6.2 %
TCU	203	299	96	47.3 %
Wholesale Trade	113	91	-22	-19.5 %
Retail Trade	406	690	284	70.0%
FIRE	83	119	36	43.4 %
Services	847	938	91	10.7 %
Public Administration	156	246	90	57.7 %
Total	3,487	4,213	726	20.8 %

Sources: Bureau of the Census, U.S. Department of Commerce and Herd Planning & Design

Notes: TCU means transportation, communication and utilities; FIRE means finance, insurance and real estate

Economic and Employment Trends. Like much of the central piedmont region, Amelia County's economy has long been based on agriculture, timber and lumber. In addition, the County has rapidly become more of a "bedroom" community with more than half of the local labor force commuting out of the County to their jobs.

Agriculture, manufacturing, construction and government are the largest sectors of the County's economy. Agriculture and manufacturing are both basic industries in that they produce goods for export and thus add wealth to the community by "importing" dollars from outside. Federal and state government could also be considered a basic industry from a local perspective.

Agriculture and forestry provide a significant number of local jobs and wages in the County as well as substantial exports. They are also the County's dominant land use activity. Sales of agricultural products totaled over 57 million dollars in 1997, making Amelia one of the most agriculturally productive Counties in Virginia.

In addition, raw materials produced by the forest industry are manufactured into a variety of other goods for export, such as lumber and wood components.

While the data below show that retail and wholesale trade have declined in the County during the past decade, they indicate that the construction industry has expanded substantially. These trends appear to reflect the growing residential demand in the County, in concert with strong competition and accessibility to commercial establishments in neighboring jurisdictions and the increase in commuting lifestyles.

Table 5
At-Place Employment Trends in Amelia County
1979 - 1998

Industry	1979	1989	1998
Agriculture	324	N/A	106
Construction	168	311	583
Manufacturing	435	512	399
Wholesale Trade	122	86	205
Retail Trade	252	225	467
Services	102	147	752
Government	389	439	561
Total	1,800	1,720*	3,073

Sources: Virginia Employment Commission; Piedmont Planning District Commission;
US Dept. of Commerce, Bureau of Economic Analysis, 6/15/00.

*Does not include agriculture sector

Job growth in the local economy during the recent decades has been driven primarily by expansion in the construction, trade and service sectors. Manufacturing employment has declined in recent years, meaning that the construction, trade and service sectors are the primary areas of expansion, in addition to government. The trend of declining manufacturing jobs has also occurred elsewhere in the state and country as both productivity and competition have increased.

While tourism is not yet a major industry in Amelia County, it is growing locally, as well as in the state and the nation, and offers potential as another "export" industry that will bring in dollars from outside the County. The tourism industry actually consists of portions of several economic sectors including retail trade, services and agriculture, and is not usually shown as a separate employment category for statistical purposes. Some of the recent increases in the trade and service sectors shown in Table 5 can likely be attributed to growth in tourist-related businesses.

2.3.2 Employment Forecasts

Data in Table 5 and from the U.S. Bureau of the Census show that jobs located in Amelia County were relatively stable during the 1980's, but have increased substantially during the past decade, in concert with the dramatic increases in

population. Virginia Employment Commission (VEC) and U.S. Department of Commerce data show a gain of about 150 jobs per year between 1989 and 1998.

Services and construction have surpassed government employment as the largest category. While the most dramatic changes during the 1980's saw a major increase in the manufacturing, services, construction, and government sectors, the 1990's produced substantial increases in trade as well as continued expansion of services and construction, and a significant drop in manufacturing.

Given the strong economy of the late 1990s, it would not be prudent to base job forecasts on this trend continuing steadily or indefinitely. Therefore, the job forecasts below are a blend of the job growth rates of the 1980s and those of the 1990s, with employment expected to grow by about 50 jobs annually. Assuming recent trends, the allocation of employment by type during the planning period will occur as shown in Table 6.

Table 6
At-Place Employment Trends Scenario by Type of Industry in Amelia County
1998-2020

Industry	1998	2000	2010	2020	1998-2020 Change	
					Amount	Percent
Agriculture, Forestry	106	105	94	85	-21	-20%
Construction	583	606	758	947	364	62%
Manufacturing	399	395	356	320	-79	-20%
Wholesale Trade	205	209	230	253	48	23%
Retail Trade	467	481	577	693	226	48%
Services	752	790	987	1,234	482	64%
Government	561	567	595	625	64	11%
Total	3,073	3,153	3,597	4,156	1,083	35%

Sources: US Bureau of Economic Analysis and Herd Planning & Design, Ltd.

Of course, abrupt changes in the business climate can affect business openings, closings, and corporate realignments. In the event any of these things occur, these forecasts could be altered.

2.4 COMPOSITION OF SOLID WASTE

Solid waste is defined in the Virginia Solid Waste Management Regulations (VSWMR) as "any garbage, refuse, sludge and other discarded material, including solid, liquid, semisolid or contained gaseous material, resulting from industrial, commercial, mining and agricultural operations, or community activities but does not include (i) solid or dissolved material in domestic sewage, (ii) solid or dissolved material in irrigation return flows or in industrial discharges that are subject to a permit from the State Water Control Board, or (iii) source, special nuclear, or byproduct material as defined by the Federal Atomic Energy Act of 1954, as amended."

While detailed waste stream evaluations are desirable for use in solid waste planning, they are expensive and time consuming to perform, and often do not provide sufficient new information to justify their cost. The waste composition described here is based on the known waste handled in Amelia County by WM at the Maplewood landfill.

There are six different “waste types” generated in Amelia County. The waste types are listed and then defined below:

1. Municipal Solid Waste (MSW)
2. Construction and Demolition Waste (C&D)
3. Vegetative Waste (VW) – includes yard waste and landclearing debris
4. Consumer Separated Recyclables
5. Household Hazardous Waste (HHW)
6. Special Wastes

2.4.1 Municipal Solid Waste (MSW)

MSW is comprised of those wastes generated daily by residential, institutional, or commercial sources. Examples of MSW include household garbage, food waste, inorganic wastes, container packaging, durable and non-durable goods and agricultural wastes.

2.4.2 Construction and Demolition Waste (C&D)

C&D wastes are generated from the renovation, demolition or construction of homes, buildings or development activity. Examples of C&D waste include concrete, lumber, steel, wire, sheetrock/drywall, bricks, shingles, plaster, glass, metal and plastic construction materials.

2.4.3 Vegetative Waste (VW)

VW includes yard waste generated by lawn or yard care activities, and debris generated from landclearing activities or operations. Examples of VW include decomposable materials such as leaves, grass trimmings, brush, wood chips, tree/shrub trimmings, stumps, logs and tree trunks.

2.4.4 Consumer Separated Recyclables

Consumer separated recyclables are those materials transported to recycling collection centers. Examples of recyclables include newspapers, magazines, junk mail, cardboard, aluminum and steel cans, plastic bottles, glass bottles and jars and appliances.

2.4.5 Household Hazardous Wastes (HHW)

HHW are those residentially generated products that may contribute to ground and water contamination if disposed of improperly. Examples of HHW include oil-based paints and stains, degreasers and solvents, insecticides and pesticides.

2.4.6 Special Wastes

Special wastes are those defined in the Virginia Solid Waste Management Regulations as “solid wastes that are difficult to handle, require special precautions because of hazardous properties or the nature of the waste creates waste management problems in normal operations.” Examples of special wastes include ash, asbestos, sludge, petroleum contaminated soils, electronic devices and waste tires.

2.4.7 Tracking of Waste Types

WM provides the County with a monthly “waste type analysis” that tracks the type of waste disposed of at the Maplewood landfill (Appendix 4). Waste types include sludge, asbestos, ash, municipal solid waste, contaminated soil, and residual special wastes. WM also provides the County with a monthly report of all materials recycled by WM in the County to include commingled recyclables and white goods (Appendix 5). WM provides annual reports to the County for other waste types disposed of or recycled such as HHW, waste oil, Christmas trees, tires, etc. Furthermore, WM is required to provide Form DEQ 50-25 Solid Waste Information and Assessment Program – Reporting Table to DEQ on an annual basis which describes waste types and originating jurisdictions for the waste (Appendix 6).

2.5 SOLID WASTE GENERATION PROJECTIONS

Amelia County’s solid waste generation rate depends on previously discussed factors of population, households, employment, development and other business, institutional, industrial, agricultural and manufacturing solid waste sources.

2.5.1 Data Sources Used in Determining Waste Generation

Amelia County receives both monthly and yearly reports from WM on the amount of waste generated in Amelia County and disposed of in the Maplewood landfill. These figures are shown in Table 7 below.

Table 7

Waste generated in Amelia County and disposed of in the Maplewood landfill in tons per year

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
7,892	9,235	10,756	10,597	11,252	9,946	9,325	9,456	9,590	15,531*

2004	2005	2006	2007	2008	2009	2010
14,078	15,989**	13,472	11,705	11,088	10,158	8,638

* Spike attributed to large number of construction/renovation projects for County buildings
 ** Spike attributed to land clearing debris

Waste generated in Amelia County and disposed of at the Maplewood landfill increased fairly steadily from 1994 through 1998 and then declined to close to 1995 levels where it stayed through 2002, likely as a result of the country's economic slowdown. The large spike in waste disposal for 2003, 2004 and 2005 can be attributed to the large number of construction/demolition/renovation projects on the County's school and government buildings as well as land clearing debris brought into the landfill from County contractors.

Using the reported waste disposal figure of 8,638 tons for the year 2010 and the population for that year of 12,690 as reported by the U.S. Census, we can calculate the actual net per capita discard rate (after recovery for recycling) at 4.48 pounds per person per day. (8,638 tons of waste x 2000 = 17,276,000 lbs of waste divided by 12,690 persons = 1,361 lbs of waste divided by 365 days = 3.7 lbs per person per day.) Using the population growth estimates outlined in Table 3 of Chapter 2, we can then estimate the waste disposal amounts for the years 2005 through 2025 using a per capita disposal rate of 3.7 lbs as shown in Table 8.

Table 8

Estimated waste disposal for life of Amelia County SWMP in tons per year

2015	2020	2025
10,526	11,716	13,041

Figures calculated using actual net per capita disposal rate of 3.7 pounds for 2010.

Quantifying solid waste can serve as a basis for important policy and management decisions. Policy decisions can begin with a review of the solid waste system, how well the system is working for current and future conditions, and whether new or changed policies can affect the system. Management

decisions can be made based on waste estimates for planning desired future solid waste management infrastructure and programs.

CHAPTER 3.0 SOLID WASTE MANAGEMENT SYSTEM

3.0 SOLID WASTE MANAGEMENT SYSTEM

3.1 INTRODUCTION

This chapter describes the programs and approaches currently in place to meet the solid waste management needs of the County. The system involves citizens, private enterprises, and local government. The solid waste management system includes collection, processing, disposal, recycling, policy planning, environmental compliance and enforcement, and environmental monitoring.

3.2 COLLECTION

There are several solid waste collection and transportation companies licensed to operate in Amelia County. In addition to those companies offering solid waste disposal services, there are also a number of companies collecting and disposing of construction and demolition waste (C&D) within the County.

3.2.1 Municipal Solid Waste Collection by the Private Sector

Amelia County does not provide trash collection services to residences and businesses. Residents, businesses, property management companies, institutions and industries contract directly with private refuse collection companies.

Residents of the County have several options for meeting their solid waste disposal needs. They can hire one of several private haulers to pick up their trash or they can transport their own waste to the landfill or to one of six drop-off trash collection/recycling sites that are serviced by WM. Residents of multi-family housing units such as apartments typically receive refuse collection service utilizing dumpsters that are located in the complex by the property management

Businesses in Amelia County typically hire a private refuse collection firm to remove waste. Trash dumpsters are utilized by businesses for on-site storage of solid waste. These containers, which range generally from two to six cubic yards in volume, are placed in parking lots or specially designed enclosures. In addition, some businesses and small industries use their own company trucks to haul solid waste to the landfill.

3.2.2 Role of the County in Collection

Amelia County does not provide trash collection services to residences and businesses. The county's primary role is to regulate the storage, collection, transportation and disposal of solid waste and recyclables within the County.

"AN ORDINANCE OF THE COUNTY OF AMELIA, VIRGINIA, REGULATING THE COLLECTION, TRANSPORTATION, DISPOSAL, AND RECYCLING OF SOLID WASTE, OTHER WASTE MATERIALS AND RECYCLABLE MATERIALS; GOVERNING THE MAINTENANCE AND CONDITION OF PROPERTY; REGULATING THE STORAGE OF INOPERABLE VEHICLES; ESTABLISHING PENALTIES FOR THE VIOLATION OF PROVISIONS OF THIS ORDINANCE; REPEALING A PRIOR COUNTY ORDINANCE REGULATING THE COLLECTION AND DISPOSAL OF SOLID WASTE; AND SUPERSEDING ANY PREVIOUSLY ADOPTED COUNTY ORDINANCES IN CONFLICT WITH THE PROVISIONS HEREOF" (County Solid Waste Ordinance) (Appendix 7) was adopted and became effective on August 20th, 1997. This Ordinance regulates solid waste collection and transportation activities conducted within the County. This Ordinance also ensures that activities associated with MSW storage are conducted in a manner that does not create a public nuisance, pollute the air, cause a discharge of pollutants to the waters of the County and, in general, impair the quality of the environment or create a hazard to the public.

3.2.3 Individuals

Most residents transport their solid waste directly to the Maplewood landfill or to one of six drop-off trash collection/recycling sites located throughout the County. Residents typically transport MSW, small amounts of C&D waste, VW, source-separated recyclables, and appliances for processing, recycling, and disposal. A small number of households contract with private haulers for waste collection services.

3.2.4 Commercial Waste Collection

Businesses in Amelia County typically hire a private refuse collection firm to remove waste. Trash dumpsters are utilized by businesses for on-site storage of solid waste. These containers, which range generally from two to six cubic yards in volume, are placed in parking lots or specially designed enclosures. In addition, some businesses and small industries use their own company trucks to haul solid waste to the landfill.

3.2.5 Construction and Demolition Waste Collection

C&D collection services are provided by several private companies that supply roll-off containers. Containers are serviced when full or on a pre-arranged schedule. The contracted company picks up the roll-off and hauls it to the

landfill. C&D is also hauled by private companies in trucks or trailers directly to the landfill.

3.2.6 Vegetative Waste Collection

Residents of the County typically deliver their yard waste directly to the landfill. Businesses and institutions usually contract directly with a landscaping company for grounds maintenance services and any resulting yard waste is typically taken off site by that company. This VW is usually delivered to the landfill for disposal. Companies generating VW as part of land-clearing operations usually directly haul the waste to the landfill.

3.2.7 Special Waste and Household Hazardous Waste

Special wastes – such as waste motor oil and antifreeze, household hazardous waste (HHW), scrap tires, and automotive batteries – must receive special handling and are collected only by specialized contractors for disposal or recycling. These contractors are hired by individual businesses or entities. Special waste collectors offer services transporting regulated medical waste, HHW and waste oil, waste antifreeze, and wet cell batteries. These special waste collectors must be permitted by the DEQ and /or the Environmental protection Agency (EPA).

Citizens of Amelia County may bring HHW to the Maplewood landfill. WM then hires a contractor to pick up the HHW and ensure that the materials are recycled or disposed of properly.

3.2.8 Industrial Waste Collection

The majority of waste generated in industrial offices and warehouse is similar to household refuse in composition and is handled as MSW. A small amount of industrial waste is created that may require special handling and disposal. Such wastes receive proper treatment and disposal by specialized contractors who collect and dispose of the waste.

3.3 WASTE DISPOSAL, TRANSFER AND PROCESSING

3.3.1 The Maplewood Recycling and Waste Disposal Facility

The Maplewood Recycling and Waste Disposal Facility (Maplewood landfill) owned and operated by Waste Management of Virginia, Inc., a subsidiary of Waste Management, Inc. (WM), is a state-of-the-art, double-lined sanitary landfill. The Maplewood landfill is located approximately 37 miles west of Richmond, Virginia, and approximately 5 miles west of Amelia Courthouse. The landfill is situated on a 794.22-acre parcel that includes a waste area footprint of 403.6 acres. It is bordered by Virginia State Route 640 to the east, North Buckskin

Creek to the south, the Maplewood Branch of Buckskin Creek to the west, and the Norfolk Southern Railway and U.S. Interstate Highway 360 to the north (Appendix 8). Surrounding land use consists of small farms, undeveloped acreage, residences, and commercial properties.

The Maplewood landfill began accepting waste in May 1993 and operates under Permit No. 540, issued by the DEQ. The waste disposal area is divided into 34 phases ranging in size from 7.1 to 16.8 acres each (Appendix 9), designed to provide 47,184,22 cubic yards of solid waste disposal capacity over a projected life span of 75 years. Phases 1, 2, 3, 4, 11, 12, 13, 16, and 17 are completed and waste is currently being placed in Phases 5, 7 and 18. The side slopes of Phases 1, 2 and 3 received final cover in late 1997. Future cap and closure projects will occur as capacity is utilized.

The Maplewood landfill was projected to receive up to 5,000 tons per day (tpd) of waste but this volume has not yet been reached. Landfill tonnages have ranged from an average high of 4,000 tpd in November 1997 to an average low of 718 tpd in January 2000. Current tonnages are in the range of 1,400 tpd.

Amelia County government, schools, residents, and businesses and charitable institutions in operation at the date of the signing of the Agreement, receive free disposal of their waste at the Maplewood landfill. This county generated waste currently totals approximately 41 tpd, ranging from a low of 8.5 tpd in February 1994 to a high of 59 tpd in June of 2003. The recent increase in county generated tonnage can be attributed to a large number of construction, demolition, and renovation projects of county school and office buildings. This spike will likely level off as these projects are completed. However, projected population increases should result in an overall slow but steady increase in this county generated tonnage.

The Maplewood landfill is permitted to accept agricultural waste, asbestos, ash, commercial waste, compost, construction waste, debris, demolition waste, discarded material, garbage, household waste, industrial waste, inert waste, institutional waste, municipal solid waste, putrescible waste, refuse, residential waste, rubbish, scrap metal, sludge, tires, trash and white goods as such terms are defined by the DEQ. The landfill may not accept infectious waste, radioactive waste, hazardous waste, free liquids, wastes containing more than 1.0 parts per billion (ppb) Dioxins, solid waste containing more than 50 ppb PCB's, sludges that have not been dewatered, pesticide containers that have not been triple rinsed, or any material which is toxic, pathogenic, highly flammable, explosive or otherwise reasonably determined to be dangerous.

WM also maintains and services five trash collection and recycling sites throughout the County in addition to a site located outside of the secured area of the Maplewood landfill (Appendix 10). The sites are now fenced, and are opened and manned five days a week for a total of 40 hours for usage by Amelia County

residents for disposal of household waste. Each site contains 2-4 roll-off containers, a compactor or a tractor trailer for the collection of household waste and a recycling bin for the collection of newspaper, mixed paper, cardboard, aluminum and steel cans, plastic bottles, and glass bottles and jars.

3.3.2 Inventory of Disposal Sites

Section 9 VAC 20-130-120 of the Virginia Solid Waste Management Regulations requires localities to maintain an inventory of known disposal sites in the locality. In addition to the Maplewood landfill described above, which is owned and operated by WM, Amelia County owns and operated two waste disposal sites, Permit #129 and Permit #350, which are both now closed and inactive. These sites are monitored and maintained according to state regulations. An inventory of these facilities is maintained by Amelia County and is summarized in Appendix 11.

3.3.3 Solid Waste Diversion and Recycling in Amelia County

Title 10.1-1411 of the Code of Virginia requires that local solid waste management plans identify how the State's mandated recycling rates shall be achieved. The Code established initial recycling goals of 10% by 1991, 15% by 1993 and 25% by 1995. The Code was amended in 1995 to require the 25% rate through 1997 and again in 1997 to sustain a minimum 25% recycling rate in perpetuity. In 2006 the General Assembly established a two-tier recycling mandate of 15% and 25% (effective July 1, 2006). Individual localities or solid waste planning units/regions with population densities of less than 100 people per square mile or with unemployment rates of 50% above the state's average unemployment rate qualify for the 15% mandated level, which Amelia County does.

9 VAC 20-130-10 et seq. sets forth requirements for comprehensive and integrated solid waste management plans that follow a solid waste hierarchy which places source reduction, reuse and recycling above energy recovery/incineration and landfilling.

Free disposal of solid waste for Amelia County government, schools, residents, and businesses and charitable institutions in operation at the date of the signing of the Agreement is a great benefit, but provides somewhat of a disincentive for waste diversion and recycling. However, the CUP governing the operation of the landfill requires WM to assist Amelia County in meeting all recycling mandates as established by the state. CUP condition #39 states, WM "agrees to cooperate in good faith with the County and agrees to consult with and provide technical expertise to the County to insure compliance with 10.1-1411 of the Code of Virginia and to make such reasonable modifications in recycling operations as the County shall request..."

Recycling Infrastructure. The CUP requires WM to operate and maintain recycling drop-off stations at the Maplewood landfill and at each of the five (5) remote trash collection/recycling sites located throughout the county. These drop-off centers are designed to accept newspaper, mixed paper, magazines, cardboard, aluminum and metal cans, brown, green and clear glass, and #1 and #2 plastic bottles. In addition, white goods, used oil, antifreeze, textiles and Christmas trees are accepted for recycling at the landfill only. WM is also responsible for transportation and marketing of these recyclable materials. Amelia County is entitled to 25% of any net profits realized from recycling, but transportation and equipment costs have exceeded any revenues received to date.

Additional Recycling Programs. Amelia County also operates a recycling program in county government offices. Recycling bins are placed throughout the government complex for the collection of white office paper, mixed paper, newspaper, cans, glass and plastic bottles. The County also operates ongoing recycling programs for ink jet and laser computer printer cartridges, cell phones, rechargeable batteries, textiles, electronics, used tires and plastic bags. The local Food Lion grocery store accepts plastic bags for recycling and a local NAPA auto parts store accepts automotive batteries for recycling. In addition, a local towing company picks up and delivers many inoperable vehicles to a scrap metal yard for recycling.

Household Hazardous Waste Collection Program. Amelia County, in partnership with WM, also operates a Household Hazardous Waste (HHW) collection program at the Maplewood landfill. The County initiated this program in 1997 by partnering with Chesterfield County for their spring collection event. In April of 1998 Amelia County held its first one-day collection event at the Maplewood landfill to celebrate Earth Day. As a result of disappointing participation by County residents in these two collection events, the County worked with WM to provide a permanent HHW collection program at the Maplewood landfill. The County is responsible for collection of the HHW brought to the landfill by County citizens and WM provides for the pickup and disposal of the materials collected. Items accepted into this program include drain cleaners, oven cleaners, spot cleaners, tile cleaners, metal polish, solvents, turpentine, paint thinner, furniture strippers, pesticides, herbicides, insecticides, antifreeze, pool chemicals, oil based paints & stains, etc. Items that cannot be accepted include smoke detectors, explosives, asbestos, radioactive materials, or infectious wastes.

County of Amelia Recycling Policy. Article III of the Amelia County Solid Waste Ordinance establishes the County's recycling policy. It states, "It is the policy of the Board of Supervisors that the citizens of the County should be encouraged to recycle with the goal to meet or exceed the recycling requirements mandated by the Commonwealth of Virginia (Recycling Goals)". Recycling is not mandatory in Amelia County but is strongly encouraged through

this policy, a strong infrastructure of recycling programs, and education and outreach through presentations, local media, event displays, websites, etc.

Tracking Recycling Rates. WM submits an annual recycling report to Amelia County, which includes all materials recycled for the county for the year and a profit/loss statement for recycling activities.

Forms are sent to County businesses on an annual basis to collect their recycling tonnages for the year (Appendix 12). This information is used to comply with State regulations 9 VAC 20-130-10 *et seq.* and to complete DEQ Form 50-30, Locality Recycling Rate Report. The County uses the State formula for calculating the recycling rate: $\text{Rate} = (\text{Recycled} / \text{Total}) \times 100\%$ where "Recycled" equals the amount of principal recyclable material (plus supplemental recyclable material) received during the previous 12 months for recycling and "Total" is the amount of municipal solid waste (plus supplemental recyclable material) generated within the jurisdiction during the previous 12 months. For 2002 Amelia County reported a 40% recycling rate (Appendix 13). For the past decade, Amelia County has exceeded the state's recycling requirement for every year except one in which the guidelines provided by the state were changed, creating some confusion and underreporting.

3.3.4 Public Education

Amelia County recognizes the need for ongoing education of the public about solid waste issues and solutions. Many avenues are used to disseminate this information. The County has strived to keep a Litter Control and Recycling Coordinator on staff whose primary responsibility is public education. In addition, the Agreement governing the operation of the Maplewood landfill provides for the hiring by Amelia County of one or more landfill inspectors at WM's expense to oversee the landfill. These individuals also play an important role in educating the public about solid waste issues.

County Recycling Logo. The County of Amelia recognized early on the need for outreach and education about recycling in our community. We wanted to create a special, "catchy" recycling logo and slogan that citizens would instantly recognize. County employees brainstormed and came up with the slogan "**START A REVOLUTION: REDUCE-REUSE-RECYCLE**" which features the chasing arrows symbol outlined in a circular pattern with the words "REDUCE-REUSE-RECYCLE" surrounding the county coat of arms (Appendix 14). This design has graced recycling t-shirts, banners, brochures and projects aimed at drawing attention to recycling and imprinting recycling habits on our citizens.

Recycling Brochure. Another of the County's first recycling projects involved the development of an Amelia County recycling brochure (Appendix 15). This brochure outlines the materials currently recycled in the County, locations for collection of recyclable materials, tips on proper recycling methods, tips on

reducing trash generation, tips on reuse of materials, and related contacts and phone numbers. The County distributed this brochure to Amelia residents through the mail by including them in the annual personal property and real estate tax bill mailings. The brochure was first developed in 1993 and was updated and revised in 2003 and continues to be revised as needed. It is displayed and available for pickup in County offices and is also posted on the County's website at www.ameliacova.us. The brochure is also available for pickup at recycling displays set up at the annual Amelia Day celebration held each May, the annual Amelia County Fair held each fall and the annual America Recycles Day event held each November 15th.

Newspapers. One of the County's most successful and ubiquitous avenues of information sharing has been in partnership with the County's local newspapers. The Amelia Bulletin Monitor has published a weekly newspaper for over 30 years that is mailed to County citizens at no cost. For several years during the 1990's, a second weekly newspaper also operated in the County. Both newspapers have partnered with the County in educating the public about solid waste issues. This is accomplished by newspaper coverage of Board of Supervisor meetings, other county meetings and special events. In addition, both the Recycling and Litter Control Coordinator and the County Landfill Inspectors provide monthly reports to the newspaper, as well as pictures and articles about special events. On some occasions, The Richmond Times-Dispatch, The Farmville Herald, and the Crewe-Burkeville Journal have also featured articles about solid waste issues in Amelia County.

Presentations. Amelia County also utilizes the forum of presentations to children and school groups, as well as civic clubs and organizations to spread the word about solid waste management and recycling. The Litter Control and Recycling Coordinators and the Landfill Inspectors have presented many individualized programs over the years to local pre-schools, the County Elementary, Middle & High Schools, Amelia Academy, and to children attending public library programs. Programs and educational tours of the Maplewood landfill are offered to the local school systems on an annual basis.

In addition, Litter Control Funds have been used to bring in outside groups to present special litter control and recycling programs to schoolchildren. Two very successful programs included "The Magic of Recycling", a magic show produced by Timothy Wenke, and the "Critters Don't Need Litter" program produced by the Wildlife Center of Virginia. The magic show captivated students with magic tricks while educating them about recycling. The Wildlife Center's program mesmerized the students with snakes, owls and possums that had been injured by littering and taught them valuable lessons about litter control.

The Environmental Services Department staff also make presentations to local clubs and organizations such as the Amelia County Garden Clubs, the Ruritan

Club and the Lions Club on topics such as the Maplewood landfill, litter control and recycling.

Community Events and Displays. Several annual community events offer tremendous opportunities to reach a large segment of our County citizenry with educational materials and outreach. One is the annual Amelia Day celebration held every May to promote Amelia County's resources. We set up a litter control and recycling educational booth for this event each year. We present educational materials such as recycling brochures and tips on preventing litter, as well as giveaways such as recycling t-shirts, compost bins, automobile litter bags, pocket ashtrays, recycling bumper stickers, coloring books, pencils, stickers, etc.

We present a similar display each fall at the annual Amelia County Fair which runs for 5-7 days. Prizes are awarded for educational booths at the fair and the litter control and recycling booths have been awarded ribbons each year for their educational content.

A third annual event is America Recycles Day, held every November 15th. We set up a display at a location that experiences heavy pedestrian traffic and talk with citizens about the importance of recycling. The display includes items that can be recycled in our community, products made from those recycled materials, more hand-outs and giveaways, and drawings for prizes.

Each of these events is advertised and promoted through our local newspaper and the County website. We set up other educational displays at the County's public library and schools from time to time, as well.

The County Administrator's staff adopted the Business 360/Highway 360 interchange in 1994 and performs approximately four trash pickups of these highway ramps each year. The pickups are planned to coincide with the state's beautification and litter awareness campaigns such as Operation Spruce-Up held each April, the Annual Great State Trash-Off held each October, and the International Adopt-A-Highway Day held in September. We invite the public to participate in these events and offer incentives such as free recycling t-shirts to participants. We utilize these events to educate the public about litter prevention and control through example, direct mail, and pictures and articles in our local newspaper.

Flyers. Whenever Amelia County implements a new recycling program, or holds a special collection event (i.e., Tire Amnesty Day, textile recycling, Earth Day events, etc.), we generate flyers to be posted at each of the trash collection/recycling sites and at conspicuous locations throughout the County. Some locations include the Post Office, the Food Lion grocery store, the public library, etc.

Websites. Amelia County hosts its own website at www.ameliacova.us. Posted on this website is a copy of the County recycling brochure, regular updates on solid waste issues, copies of articles on the Maplewood landfill and recycling issues, and contact information. This Solid Waste Plan is also available for review/public comment on our website.

In addition, Amelia County participates in the www.EARTH911.org website. This website is an interactive website that provides consumers with community specific environmental information, 24 hours-a-day. Local residents can retrieve recycling and HHW information, as well as general information on topics such as energy conservation, water quality, and waste reduction. Listed on this website are directions to the Maplewood landfill and the other five drop-off trash collection/recycling sites in the County. Also listed are items that can be accepted for disposal or recycling at each site. In addition, we may list special collection events on this website such as our Christmas tree recycling event and our America Recycles Day event.

A third website that contains County solid waste and recycling information available to the public is the DEQ's website at www.deq.state.va.us. Local contact information and a listing of disposal and recycling locations are provided on this website.

3.3.5 Public/Private Partnerships

Amelia County has an outstanding public/private partnership with WM as a host community for WM's Maplewood Recycling and Waste Disposal Facility. As described previously, the Agreement and CUP governing operation of the Maplewood landfill provide the framework for this relationship. Some of the most valuable aspects of this partnership for Amelia County are listed below:

- Free disposal and recycling of solid waste for all Amelia County residents;
- Free disposal of commercial solid waste for all Amelia County businesses operating within the County on the date of the Agreement (January 12, 1990);
- Free disposal of solid waste generated by the County, its schools and charitable institutions;
- Construction, maintenance and servicing of the six drop-off trash collection/recycling sites located throughout the County by WM;
- Collection, transportation and marketing of County generated recyclable materials by WM;
- A host fee paid to the County by WM for every ton of out-of-County solid waste, or in-County solid waste for which a tipping fee is charged, that is deposited in the Maplewood landfill;
- Technical assistance and \$200,000.00 from WM for closure of the County's landfill;

- Financing of transportation and disposal of materials collected by the County's HHW program by WM;
- An annual payment to the County by WM to cover expenses for sampling and on-site County-employed Landfill Inspectors;
- Provision of waste bins and their associated servicing by WM to the County for waste disposal associated with natural disasters (tornadoes and hurricanes), County renovation projects, and County activities such as the annual Amelia County Fair and Amelia Day;
- Assistance to the County by WM for special recycling programs such as textiles, Christmas trees, tires, and electronics;
- Financial support by WM for many non-profit County organizations and activities such as our annual Spring Green/Clean event.

This public/private partnership is mutually beneficial to both parties. An adjunct to this partnership is a relationship with Industrial Power Generating Corporation (INGENCO), a 16 megawatt landfill gas-to-energy plant that is located at the Maplewood landfill. This plant was built in 2002. INGENCO purchases landfill gas produced by the Maplewood landfill and converts it to electricity using 48 diesel engines. It then sells the electricity to the Dominion Virginia Power distribution system. Amelia County receives a monthly royalty for the gas, making this another positive public/private partnership.

In addition to these partnerships, Amelia County also contracts with private companies for certain solid waste engineering services and environmental monitoring services. Furthermore, the County school system contracts with private haulers for collection and delivery of their waste to the Maplewood landfill.

CHAPTER 4.0 CONSIDERATION OF THE SOLID WASTE HIERARCHY

4.0 CONSIDERATION OF THE SOLID WASTE HIERARCHY

4.1 THE SOLID WASTE HIERARCHY

The Code of Virginia (Section 10.1-1411) and the Virginia Solid Waste Management Regulations (9 VAC 20-130-175.F *et seq.*) require local governments to develop and maintain a comprehensive and integrated solid waste management plan. The Plan, at a minimum, must consider and address all components of the solid waste hierarchy for all types of nonhazardous solid waste generated in the locality. The solid waste hierarchy ranks methods of handling solid waste from most preferred methods of source reduction, reuse, and recycling, in that order, to least preferred methods of energy/resource recovery/incineration and landfilling.

The Plan must provide an integrated solid waste management strategy that considers all elements of waste management during generation, collection,

transportation, treatment, storage, and disposal. Finally, the Plan must describe how the mandatory recycling rate of 15% of the MSW generated annually will be met or exceeded (9 VAC 20-130-120 B & C).

No single waste management approach is appropriate for all communities. Integrated solid waste management uses a combination of techniques and approaches to handle targeted portions of the waste stream. It is important to realize that the portions of the hierarchy interact with each other and that change on one level will impact or influence another level.

4.2 SOURCE REDUCTION

According to the VSWMR, "source reduction means any action that reduces or eliminates the generation of waste at the source, usually within a process. Source reduction measures include process modifications, feedstock substitutions, improvements in feedstock purity, improvements in housekeeping and management practices, increases in the efficiency of machinery, and recycling within a process."

Source reduction is the highest overall goal of solid waste management - the least expensive method of handling solid waste is not to generate it in the first place. Therefore, source reduction is at the top of the hierarchy and is the most preferred method identified to reduce both the amount of waste generated and the toxic constituents involved. Source reduction is generally a front-end waste management approach considered in the design and manufacturing of products. It is difficult to quantify source reduction because the purpose is to not produce or generate waste.

Individual consumers can practice source reduction by buying less and throwing less away. Examples include buying products with minimal packaging, using a permanent cloth bag or basket for purchases rather than accepting disposable store bags, using cloth towels instead of paper towels, and implementing a backyard composting program for kitchen waste and yard clippings.

Businesses and industries can practice source reduction by reducing packaging content for their products, a frequent source of inefficient resource utilization. In addition, they can examine their manufacturing processes and implement technology to reduce the use of hazardous materials during production.

The DEQ encourages businesses, manufacturers, consumers and local governments to implement Pollution Prevention (P2) programs to eliminate or reduce wastes at the source of generation and provides assistance for implementing these programs.

4.3 REUSE

The VSWMR defines reuse as “the process of separating a given solid waste material from the waste stream and using it, without processing or changing its form, other than size reduction, for the same or another end use.”

Reuse, like source reduction, is difficult to quantify because reused materials don't reach the end of the waste stream but are withdrawn prior to calculations of waste amounts.

Citizens can practice reuse by donating clothes to our local Clothes Cottage or consignment shop for resale. They can return their plastic grocery bags to Food Lion for reuse. Household items can be sold at yard sales and flea markets since “one man's trash is another man's treasure”! Kitchen waste and yard clippings can be composted into rich amendments to add to gardens. Magazines can be shared with libraries, doctors' offices and nursing homes. Old cellular telephones and computers can be donated to non-profit agencies for upgrade and reuse. The most appealing aspect about reuse is that the only limitation to it is one's imagination.

Many County businesses and industries practice reuse. The local Southern States Cooperative returns wooden pallets used in shipping to the pallet manufacturer. Automotive batteries are returned to manufacturers by virtually all automotive businesses in the County. The County sponsors a computer ink jet and laser cartridge “return for reuse” program. Several County businesses burn used motor oil for fuel. County tire businesses reuse large quantities of tires for retreads and also reuse antifreeze in tractor tires. Two County lumber yards and a pallet manufacturer reuse their wood waste in various ways: wood chips to paper, bark to mulch, shavings to litter, and slabs to boards. Reuse is a very important, very pervasive and very successful element of solid waste management in Amelia County. It makes good sense for the environment, the economy and the bottom line for businesses.

4.4 RECYCLING

Recycling, as defined by the VSWMR “means the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product.”

Recycling provides the opportunity to reclaim valuable resources and to minimize the amount of waste placed in landfills. Recycling diverts materials (such as metal, glass, plastic and paper) from final waste disposal back into the consumer market and contributes to considerable energy savings in the manufacturing of new products made from recycled feedstock.

Amelia County has a strong recycling infrastructure as a result of the Agreement and CUP that provides a framework for our public/private partnership with WM. The CUP requires WM to operate and maintain recycling drop-off stations at the Maplewood landfill and at each of the five remote trash collection/recycling sites located throughout the county. These drop-off centers are designed to accept newspaper, mixed paper, magazines, cardboard, aluminum and metal cans, brown, green and clear glass, #1 and #2 plastic bottles. In addition, white goods, used oil, antifreeze, and Christmas trees are accepted for recycling at the landfill only. WM is responsible for transportation and marketing of these recyclable materials.

Amelia County also operates a recycling program in county government offices. Recycling bins are placed throughout the government complex for the collection of white office paper, mixed paper, newspaper, cans, glass and plastic bottles. The County also operates ongoing recycling programs for ink jet and laser computer printer cartridges, cell phones, rechargeable batteries, textiles, electronics, used tires and plastic bags. WM partners with the County to help fund the annual used tire recycling event and Food Lion accepts our collected plastic bags into their recycling program.

County businesses are also encouraged to recycle and several have been recognized for their effort over the years with presentations and awards. The major materials recycled by businesses and industries in Amelia include tires, used oil, inoperable automobiles, automotive batteries, wood waste, cardboard, cooking oil, hatchery waste and plastic.

Forms are sent to County businesses on an annual basis to collect their recycling tonnages for the year. This information is used to complete DEQ Form 50-30, Locality Recycling Rate Report. For 2002 Amelia County reported a 40% recycling rate to the state. Though our 2010 recycling rate was only 21%, during the past decade, Amelia County has exceeded the state's 15% recycling requirement for every year except one in which the guidelines provided by the state were changed, creating some confusion and underreporting.

Amelia County is committed to maintaining recycling at a high level in its solid waste management hierarchy. It makes good sense for the environment, the economy and the bottom line.

4.5 RESOURCE RECOVERY

Resource recovery, also known as Waste-to-Energy (WTE), uses solid waste combustion to produce energy. Ash is a by-product of this program and is usually landfilled.

Since Amelia County is a host community for a large, commercial WM landfill, there have been no plans for construction of a WTE plant. The Maplewood

landfill is capable of handling both Amelia County's waste and waste from throughout the region for many years into the future. An alternative such as a WTE plant is not currently necessary or even feasible given the waste flow in the region.

Although not strictly considered WTE facilities, Amelia County has several businesses that utilize combustion of waste products for fuel or energy generation. Two lumber mills and one pallet manufacturer burn their wood waste for fuel and/or power generation. Several automotive businesses burn their waste oil for heat. And Industrial Power Generating Corporation (INGENCO) operates a 16 megawatt landfill gas to energy plant at the Maplewood landfill.

The INGENCO plant consists of 48 engines each producing 350 kW of electricity at peak rating. Each engine drives a 480 volt generator. Each group of six engines is controlled by a common switchgear unit and supplies electricity to a transformer which steps the voltage up to 34,500 volts. The power is then transmitted through the Dominion Virginia Power distribution system. The engines are equipped with an INGENCO-developed dual fuelling system which allows the engines to simultaneously burn diesel oil and landfill gas. The diesel oil serves to ignite the landfill gas and is therefore required.

The plant has three modes of operation; peak power, maximum economy, and off. In the peak mode the plant maximizes the power output by burning all available landfill gas and supplementing the fuel requirements with as much diesel as necessary to supply peak rated output. In the maximum economy mode, overall efficiency is optimized by again burning all the available landfill gas, but only burning the minimum diesel fuel required for ignition. This mode results in a plant economy rating of 9 megawatts. As the landfill gas supply increases, the economy rating will also increase. During periods of very low electric demand, the plant is shut down and all landfill gas produced during this time is consumed by a landfill gas flare.

INGENCO estimates the amount of energy produced by the Maplewood landfill is equivalent to 3,000,000 gallons of oil per year. This helps the environment by reducing dependence on imported fuels and the need to build more large power-generating plants. Prior to construction of this plant the landfill gas produced at the Maplewood landfill was simply burned off at the flare. Now, this waste product is being used as a valuable resource to generate electrical power during periods of peak demand. In addition, both Amelia County and WM receive fees for the amount of landfill gas burned by INGENCO in a definite "WIN-WIN" partnership.

4.6 LANDFILL

The most common form of waste disposal is landfilling. A sanitary landfill is an engineered waste burial facility designed to minimize the possibility of

environmental degradation to surface and ground water, soil and air. Landfills are designed and constructed with liners according to specifications set forth in Federal and State law and regulations. Operating landfills must maintain active environmental monitoring and media management programs such as leachate and gas extraction systems. Landfilling requires daily operation and maintenance of the active disposal area and also requires closure construction and post closure care for the inactive or closed areas. Landfilling is necessary to manage non-recyclable and noncombustible wastes and is the only actual waste "disposal" method in the hierarchy. If waste cannot be recycled, incineration then sanitary landfilling are the next preferred methods of treatment. While landfilling is the least preferred method in the hierarchy, it remains the most prevalent in many jurisdictions because it is the cheapest method of disposal.

In Amelia County, the presence of the WM Maplewood landfill makes landfilling the obvious choice for waste disposal, particularly since waste disposal is free for residents, local government and schools, non-profit institutions, and some businesses. At the current waste flow into the Maplewood landfill, WM calculates the expected remaining permit life of the landfill at 75 years (Appendix 6).

CHAPTER 5.0 OBJECTIVES FOR THE SOLID WASTE PLAN

5.0 OBJECTIVES FOR THE SOLID WASTE PLAN

The goals of the Solid Waste Management Plan are stated in Chapter 1 and provide a structure for evaluating the plan's success. Amelia County has set forth these goals to demonstrate that we have fulfilled our responsibility in assessing and planning for Amelia County's solid waste management needs. This Chapter outlines more specific objectives related to the goals and establishes a background for Chapter 7, Implementation of the Solid Waste Plan, which provides greater detail as to how the Goals and Objectives will be accomplished.

The chapter is structured by re-stating the Goals found in Chapter 1 followed by the related supporting objectives.

Goal 1:

Establish a planning process and document that meets Virginia Statutory and Regulatory requirements, that encourages public participation, and that ensures the County's solid waste management needs are met.

Related Objectives:

- A) Identify and project for the planning period the volume and types of waste generated in Amelia County.
- B) Identify the solid waste management system components that will handle all non-hazardous solid waste generated in Amelia County.
- C) Maintain a comprehensive, integrated solid waste management approach that addresses collection, transportation, and disposal. The approach will address the Solid Waste Hierarchy elements of source reduction, reuse, recycling, resource recovery, incineration, and landfilling, in proportions appropriate for the County's needs.
- D) Provide a framework that will allow for a periodic review and evaluation of the recommendations and guidelines set forth in the Solid Waste Management Plan to ensure that the Plan remains responsive to County needs.
- E) Foster the participation and involvement of the general public in solid waste management planning and implementation.

Goal 2:

Work in partnership with WM to continue to provide County citizens, businesses, industries and organizations with a state-of-the-art, environmentally sound sanitary landfill for their present and future solid waste disposal needs.

Related Objectives:

- A) Continue to provide County personnel to oversee the operation of the Maplewood landfill.
- B) Encourage regular meetings of the Landfill Advisory Committee for citizen input about landfill operations.
- C) Work in partnership with WM and DEQ on permit issues connected with the Maplewood landfill.
- D) Maintain good communication between WM and Amelia County concerning solid waste issues.

Goal 3:

Work in partnership with WM to maintain and upgrade facilities to ensure that adequate options for solid waste disposal are available throughout the County.

Related Objectives:

- A) Continue to provide County oversight and monitoring of the Maplewood landfill and the trash collection/recycling sites located throughout the County.
- B) Work with WM to provide new locations and programs for solid waste management.
- C) Encourage WM to invest in improvements and upgrades to solid waste collection equipment and sites.
- D) In conjunction with WM, develop an enforcement program to prevent illegal dumping at the trash collection/recycling sites located throughout the County.

Goal 4:

Identify, implement, and/or maintain programs for ensuring that solid wastes are managed in accordance with Federal and State laws and regulations in a manner that protects public health, safety and the environment.

Related Objectives:

- A) Protect the environment by fulfilling the laws, regulations, ordinances and other requirements as set forth by the County, Commonwealth of Virginia, and U.S. EPA.
- B) Inspect and oversee the environmental management and monitoring systems at the Maplewood landfill and insure that they are in compliance with the law.
- C) Promptly address environmental concerns at any privately or publicly owned solid waste management facility in accordance with the Virginia Department of Environmental Quality standards.
- D) Enforce the County's Solid Waste ordinance, which sets minimum standards and requirements for solid waste management and regulates open dumping.

Goal 5:

Sustain a Countywide recycling program that will consistently meet or exceed the State's mandatory recycling rate.

Related Objectives:

- A) Maintain minimum standards and requirements for recycling that are achievable and understandable.
- B) Preserve the recycling infrastructure currently in place and expand it when practical.
- C) Educate businesses and the public about the importance of recycling.
- D) Ensure that County government leads by example in effective recycling.
- E) Encourage the County school system to develop a recycling program.

Goal 6:

Provide safe recycling and disposal options for special wastes that may pose harm to the environment and/or public health and safety.

Related Objectives:

- A) Maintain a permanent Household Hazardous Waste collection program for residents or provide for a yearly collection event.
- B) Partner with WM and local businesses to provide recycling services for special wastes such as used motor oil, automotive batteries, antifreeze and other wastes that require special handling and transport and/or that contain hazardous materials.
- C) Provide collection programs for special wastes such as tires and electronics when funds are available.

Goal 7:

Identify, implement and/or maintain programs of education and outreach to County citizens and businesses on source reduction, reuse and recycling to reduce reliance on landfilling of solid waste.

Related Objectives:

- A) Continue to provide regular informational articles to the local weekly newspaper for publishing about solid waste management issues and programs.
- B) Continue and expand presentations to school groups and civic clubs and organizations on solid waste management issues.
- C) Continue and expand educational displays at community events and centralized locations such as schools and the public library.
- D) Distribute flyers to promote special events.
- E) Update our County website on a regular basis and identify and participate with other environmental websites to disseminate information on solid waste management issues.

**CHAPTER 6.0
IMPLEMENTATION OF THE SOLID WASTE MANAGEMENT PLAN**

6.0 IMPLEMENTATION STRATEGY

The following implementation strategy outlines the actions needed to implement the Goals listed in Chapter 1 and the Objectives outlined in Chapter 5. The implementation strategy discusses the current system elements that will continue, the plan's new initiatives, the responsible party or parties, the milestones or deadlines for accomplishing the objectives, the expected benefits and outcomes, and the anticipated sources of funding. This solid waste management plan (SWMP) has been designed to respond to Amelia County's 20-year solid waste management needs by being proactive, flexible, and responsive.

This chapter reiterates the Objectives found in Chapter 5 (identified by a Goal number and an Objective letter) and then lists the related supporting implementation strategies.

6.1 GOAL 1:

Establish a planning process and document that meets Virginia Statutory and Regulatory requirements, that encourages public participation, and that ensures the County's solid waste management needs are met.

6.1.1 Objective A: Identify and project for the planning period the volume and types of waste generated in Amelia County.

This information is presented in Chapter 2 of this document.

6.1.2 Objective B: Identify the solid waste management system components that will handle all non-hazardous waste generated in Amelia County.

This information is presented in Chapter 3 of this document.

6.1.3 Objective C: Maintain a comprehensive, integrated solid waste management approach that addresses collection, transportation, and disposal. The approach will address the Solid Waste Hierarchy elements of source reduction, reuse, recycling, resource recovery, incineration, and landfilling, in proportions appropriate for the County's needs.

A discussion of the waste hierarchy is presented in Chapter 4 of this document. Amelia County relies on landfill disposal as its primary solid waste management option with recycling as the secondary option.

Reuse and source reduction will be promoted through various public outreach and educational programs as an integral component of the overall solid waste management system. Many reuse and reduction efforts are already being practiced in the County. The County will seek opportunities with, and help from, the private sector in promoting source reduction.

Incineration, waste-to-energy (WTE) and resource recovery are not economically viable for the County at this time.

6.1.4 Objective D: Perform a periodic review and evaluation of the recommendations and guidelines set forth in the Solid Waste Management Plan to ensure that the Plan remains responsive to County needs.

WM provides Amelia County with an annual report summarizing solid waste recycling and disposal. The County will review this information and have the County's Landfill Advisory Committee (LAC) evaluate the report on a periodic basis to solicit recommendations for issues that may require attention.

6.1.5 Objective E: Foster the participation and involvement of the general public in solid waste planning and implementation.

The general public will have many opportunities to participate in preparation and implementation of this plan through the involvement of the LAC, the public hearing process, County Board of Supervisors' meetings, and display of this document on our website and at the public library and County Administrator's

office. The public will be notified of these opportunities through articles and advertisements in our local newspaper.

The County will also continue its current role in providing public information and education on solid waste issues through the local newspaper, group presentations, community events, flyers, websites, and facility tours.

6.2 GOAL 2

Work in partnership with WM to continue to provide County citizens, businesses, industries and organizations with a state-of-the-art, environmentally sound sanitary landfill for their present and future solid waste disposal needs.

6.2.1 Objective A: Continue to provide County personnel to oversee the operation of the Maplewood landfill.

The Agreement governing the operation of the Maplewood landfill provides for the hiring by Amelia County of one or more landfill inspectors at WM's expense to oversee the landfill. The County hired two inspectors in 1992 during construction of the Maplewood landfill. These two inspectors are still employed by the County and provide valuable oversight of the landfill and all solid waste management issues. The County plans to retain this important oversight capacity.

6.2.2 Objective B: Encourage regular meetings of the Landfill Advisory Committee (LAC) for citizen input about landfill operations.

The Agreement and CUP that govern the operation of the Maplewood landfill provide for a Citizens' Advisory Committee. This committee, the LAC, is comprised of five citizens appointed by the County (one from each voting district), one member of the Board of Supervisors and one employee of WM. The purpose of the committee is to review and comment on the operation of the landfill. This committee initially met on a regular basis but these meetings have subsided in recent years. The County plans to encourage more regular meetings for this group.

6.2.3 Objective C: Work in partnership with WM and DEQ on permit issues connected with the Maplewood landfill.

The County is committed to working in partnership with WM and the DEQ on all solid waste management issues affecting the County. The County can and does have an important role in facilitating permit modifications at the Maplewood landfill. The County must ensure that the modifications meet the requirements of the Agreement and the CUP prior to their approval by other agencies. The

County also assists the DEQ by providing another level of inspection and oversight of the Maplewood facility.

6.2.4 Objective D: Maintain good communication between WM and Amelia County concerning solid waste issues.

The County is dedicated to keeping the lines of communication and cooperation open between the County and WM. One of the County's most important roles in solid waste management is to ensure that WM is meeting all of the laws, regulations, Agreements and permit conditions as set forth by the County, the DEQ and the EPA. Maintaining a cooperative relationship with WM assists this process. The two County inspectors charged with oversight of the Maplewood landfill provide a liaison between the County, the community, and other regulatory agencies. In addition, the LAC is also charged with facilitating communication between the general public and WM.

6.3 GOAL 3

Work in partnership with WM to maintain and upgrade facilities to ensure that adequate options for solid waste disposal are available throughout the County.

6.3.1 Objective A: Continue to provide County oversight and monitoring of the Maplewood landfill and the trash collection/recycling sites located throughout the County.

The Agreement governing the operation of the Maplewood landfill provides for the hiring by Amelia County of one or more landfill inspectors at WM's expense to oversee the landfill and associated activities. The County hired two inspectors in 1992 during construction of the Maplewood landfill. These two inspectors are still employed by the County and provide valuable oversight of the landfill and the trash collection/recycling sites located throughout the County.

The landfill is inspected daily and the trash collection/recycling sites are each inspected no less than weekly. A weekly report on the condition of the trash collection/recycling sites is prepared for the County and WM. This report indicates whether the sites are in satisfactory shape and/or any items that need attention. This monitoring and subsequent reporting enables quick response and solution to problems. It also prevents problems from lingering until they get out of control. The inspectors perform a more extensive monthly inspection of the Maplewood landfill with an associated report prepared for WM and the County. Again, this monitoring prevents small troubles from blossoming into larger complications. The County plans to maintain this important oversight capacity of the landfill and the trash collection/recycling sites.

6.3.2 Objective B: Work with WM to provide new locations and programs for solid waste management.

The Agreement governing the operation of the Maplewood landfill required WM to construct, service and maintain four solid waste collection stations throughout the County for use by Amelia County citizens on land provided by the County. In addition, WM was required to provide a fifth station outside of the secured portion of the landfill. Amelia County later negotiated an additional two collection stations, one of which was constructed. A site has not yet been located for the seventh station. Amelia County should vigorously pursue property for construction of this additional site.

Over the years, Amelia County has encouraged WM to partner with the County in offering expanded solid waste management programs to County residents. Two ongoing successful programs include a permanent HHW collection program at the Maplewood landfill that is conducted by the County and financed by WM. A second successful program is a white goods recycling program at the Maplewood landfill. Other ventures have included an electronics recycling event and a tire recycling event. These programs are an asset to the community and the environment and we plan to expand them as circumstances allow.

6.4 GOAL 4

Identify, implement, and/or maintain programs for ensuring that solid wastes are managed in accordance with Federal and State laws and regulations in a manner that protects public health, safety and the environment.

6.4.1 Objective A: Protect the environment by fulfilling the laws, regulations, ordinances and other requirements as set forth by the County, Commonwealth of Virginia, and U.S. EPA.

The County strives to remain in compliance with all laws, regulations, and ordinances dealing with solid waste issues. In addition, intensive County oversight of the WM Maplewood landfill ensures their compliance with all laws, regulations, and ordinances applicable to landfills. Furthermore, the County Landfill Inspectors investigate and enforce solid waste management infractions throughout the County when identified.

6.4.2 Objective B: Inspect and oversee the environmental management and monitoring systems at the Maplewood landfill and insure that they are in compliance with the law.

The County Landfill Inspectors accompany WM and their contractors during monitoring events at the Maplewood landfill and collect split samples for the

County on a regular basis. Monitoring systems and reports are reviewed regularly to ensure compliance with the law.

6.4.3 Objective C: Promptly address environmental concerns at any privately or publicly owned solid waste management facility in accordance with the Virginia Department of Environmental Quality standards.

Intensive County oversight of the Maplewood landfill and the closed County landfills by the County Landfill Inspectors is expected to prevent, detect and/or mitigate any environmental concerns before they can become unmanageable. For example, odor concerns are a reoccurring issue at the Maplewood landfill, addressed by both VSWMR 672-20-10-5.1.C.13b and CUP #73. The County Inspectors promptly forward odor complaints to WM with a request to mitigate the situation in a timely manner and follow up to insure compliance with the aforementioned regulations. Usually a repair or an upgrade to the gas management system mitigates the odor issue.

The County requires WM to maintain a joint mitigation and remediation fund in escrow with the County to ensure that funds will be available to address any major environmental problems at the Maplewood landfill. This account is in addition to the financial assurance requirements imposed by the state. The account currently holds \$821,998.74. An additional \$5,000.00/acre is added to the account as each new cell becomes operational, up to a maximum of one million dollars. Interest earned will be added to the account until it reaches two million dollars at which time any interest above the two million may be paid to WM. The purpose of this fund is to pay for mitigation and remediation of environmental problems at the Maplewood landfill if it becomes necessary.

6.4.4 Objective D: Enforce the County's Solid Waste Ordinance, which sets minimum standards and requirements for solid waste management and regulates open dumping.

The County will respond to, investigate, and resolve complaints about illegal dumping and accumulation of solid waste, including inoperable vehicles, in the County.

6.5 GOAL 5

Sustain a Countywide recycling program that will consistently meet or exceed the State's mandatory recycling rate.

6.5.1 Objective A: Maintain minimum standards and requirements for recycling that are achievable and understandable.

The County has established the minimum standards and requirements for residents, businesses, and industries to ensure County compliance with the State mandated 15 percent recycling rate. During the past decade the County has exceeded the 15 percent required recycling rate in every year except one, when some confusion in State reporting requirements resulted in a lower rate. The County will strive towards consistency in recycling requirements and reporting to enhance the public's understanding and cooperation in recycling programs.

6.5.2 Objective B: Preserve the recycling infrastructure currently in place and expand it when practical.

The Agreement and CUP require that WM provide recycling collection, transportation, and marketing of certain basic recyclable materials (i.e., paper, plastic, glass, aluminum and steel cans) for Amelia County. In addition, the County has encouraged WM to add materials to their recycling programs, which they have graciously agreed to do in most instances (i.e., white goods, textiles, Christmas trees, etc.). The County plans to work with WM to maintain the existing programs while adding other programs when feasible (such as used tire collection and recycling.)

6.5.3 Objective C: Educate businesses and the public about the importance of recycling.

Amelia County recognizes the need for ongoing education of the public about solid waste issues and solutions including recycling. Many avenues are used to disseminate this information. The County has strived to keep a Litter Control and Recycling Coordinator on staff whose primary responsibility is public education. In addition, the County has developed a readily identifiable recycling logo, a County recycling brochure and a County website to disseminate recycling information. Further education is achieved by presentations to school groups and civic organizations, displays at community events, articles in the local newspaper, and promotion of special events such as Earth Day.

6.5.4 Objective D: Ensure that County government leads by example in effective recycling.

Amelia County government has made significant strides in recycling in recent years. The County operates a recycling program for government offices that collects white office paper, mixed paper, newspaper, cardboard, glass, plastic bottles, and aluminum and steel cans. The County also operates ongoing recycling programs for ink jet and laser computer printer cartridges, cell phones, rechargeable batteries, textiles, electronics, used tires and plastic bags. WM partners with the County to help fund the annual used tire recycling event and Food Lion accepts our collected plastic bags into their recycling program.

Furthermore, County government completes the “recycling loop” through purchase of items manufactured from recycled materials such as trash cans, recycling bins, benches and picnic tables made from recycled milk jugs and aluminum cans.

6.5.5 Objective E: Encourage the County school system to develop a recycling program.

In recent years we have made substantial progress in bringing recycling into our County schools. WM provides large drop-off recycling bins at each school (the elementary, middle and high schools) for the collection and recycling of commingled materials. WM also provides for the marketing and transportation of these materials to a Materials Recovery Facility. The County provides education and recycled materials collection bins for placement throughout the schools. In addition, for the past four (4) years, the County has administered an annual Spring Green/Clean event which places heavy emphasis on involvement of the school systems and their students. Contests are held and prizes are awarded for such environmental projects as classroom door decorations emphasizing recycling and litter prevention, a logo and t-shirt design contest to highlight the purpose of the program, and sustainable environmentally beneficial projects. This program continues to gain momentum each year with an ever expanding scope. Amelia County won an award from the Virginia Recycling Association for the 2009 and 2010 Spring Green/Clean events. We will continue our efforts to maintain and expand recycling in our school system.

6.6 GOAL 6

Provide safe recycling and disposal options for special wastes that may pose harm to the environment and/or public health and safety.

6.6.1 Objective A: Maintain a permanent Household Hazardous Waste collection program for residents or provide for a yearly collection event.

Amelia County, in partnership with WM, operates a Household Hazardous Waste (HHW) collection program at the Maplewood landfill. The County initiated this program in 1997 by partnering with Chesterfield County for their spring collection event. In April of 1998 Amelia County held its first one-day collection event at the Maplewood landfill to celebrate Earth Day. As a result of disappointing participation by County residents in these two collection events, the County worked with WM to provide a permanent HHW collection program at the Maplewood landfill. The County is responsible for collection of the HHW brought to the landfill by County citizens and WM provides for the pickup and disposal of the materials collected. This program has worked well over the past several years and is now a permanent program.

6.6.2 Objective B: Partner with WM and local businesses to provide recycling services for special wastes such as used motor oil, automotive batteries, antifreeze and other wastes that require special handling and transport and/or that contain hazardous materials.

The County currently partners with WM and area businesses to provide collection and recycling services for many special wastes that require special handling and transport. WM accepts used motor oil and antifreeze at the Maplewood landfill for recycling. Two area businesses also accept used motor oil for recycling. A local auto parts store accepts automotive batteries for recycling. WM also hires a licensed contractor to remove the freon from appliances brought to the Maplewood landfill for the white goods recycling program. The County will continue to investigate and explore partnerships of this sort to handle special wastes in the County.

6.6.3 Objective C: Provide collection programs for special wastes such as tires and electronics when funds are available.

The County has established a permanent collection and recycling program for electronics, cell phones, rechargeable batteries, and ink jet and laser computer cartridges. In addition, in partnership with WM, the County sponsors a tire recycling event every April and a Christmas tree recycling event every December/January. The County has also recently established a fluorescent bulb recycling program for County government and County school generated light bulbs. Furthermore, the County has partnered with Food Lion to collect plastic bags for recycling and has instituted a permanent collection program for textiles.

6.7 GOAL 7

Identify, implement and/or maintain programs of education and outreach to County citizens and businesses on source reduction, reuse and recycling to reduce reliance on landfilling of solid waste.

6.7.1 Objective A: Continue to provide regular informational articles to the local weekly newspaper for publishing about solid waste management issues and programs.

Amelia County has been very successful in partnering with the local media to disseminate information on solid waste issues. The Amelia Bulletin Monitor has published a weekly newspaper for over 30 years that is mailed to all County residents at no cost. The newspaper staff provides coverage of solid waste issues by attending and reporting on Board of Supervisor meetings, public hearings, other county meetings and special events. In addition, Environmental Services staff provide monthly reports to the newspaper, as well as pictures and articles about special events. The newspaper has always welcomed these news releases and we anticipate continuation of this cooperative relationship.

6.7.2 Objective B: Continue and expand presentations to school groups and civic clubs and organizations on solid waste issues.

Amelia County has always utilized presentations to children and school groups, as well as civic clubs and organizations to spread the word about solid waste management and recycling. The Environmental Services staff have presented many individualized programs over the years to local pre-schools, the County Elementary, Middle & High Schools, Amelia Academy, and to children attending public library programs. Programs and educational tours of the Maplewood landfill are offered to the local school systems on an annual basis. In addition, Litter Control Funds have been used to bring in outside groups to present special litter control and recycling programs to schoolchildren. The staff also make presentations to local clubs and organizations such as the Amelia County Garden Clubs, the Ruritan Club and the Lions Club on topics such as the Maplewood landfill, litter control and recycling. The County intends to continue these presentations and hopefully increase their frequency and scope, particularly in the County school system.

6.7.3 Objective C: Continue and expand educational displays at community events and centralized locations such as schools and the public library.

The County takes advantage of several annual community events to reach a large segment of our citizenry with educational materials and outreach on solid waste issues. One event is the annual Spring Green/Clean event that culminates on Amelia Day held every May to promote Amelia County's resources. We have contests and programs designed to encourage Amelia students and citizens to participate in cleanup and beautification projects for awards that are presented at Amelia Day. The awards and promotion efforts are made possible due to our partnering with McDonalds and Waste Management. We set up a litter control and recycling educational booth for this event each year. We present educational materials such as recycling brochures and tips on preventing litter, as well as giveaways such as recycling t-shirts, compost bins, automobile litter bags, pocket ashtrays, recycling bumper stickers, coloring books, pencils, stickers, etc.

We present a similar display each fall at the annual Amelia County Fair, which runs for 5-7 days. Prizes are awarded for educational booths at the fair and the litter control and recycling booths have been awarded ribbons each year for their educational content.

A third annual event is America Recycles Day, held every November 15th. We set up a display at a location that experiences heavy pedestrian traffic and talk with citizens about the importance of recycling. The display includes items that

can be recycled in our community, products made from those recycled materials, more handouts and giveaways, and drawings for prizes.

Each of these events is advertised and promoted through our local newspaper and the County website. We set up other educational displays at the County's public library and schools from time to time, as well.

The County Administrator's staff adopted the Business 360/Highway 360 interchange in 1994 and performs approximately four trash pickups of these highway ramps each year. The pickups are planned to coincide with the state's beautification and litter awareness campaigns such as Operation Spruce-Up held each April, the Annual Great State Trash-Off held each October, and the International Adopt-A-Highway Day held in September. We invite the public to participate in these events and offer incentives such as free recycling t-shirts to participants. We utilize these events to educate the public about litter prevention and control through example, direct mail, and pictures and articles in our local newspaper.

The County will add educational events and displays as new opportunities arise.

6.7.4 Objective D: Distribute flyers to promote special events.

Whenever Amelia County implements a new recycling program, or holds a special collection event (i.e., Tire Amnesty Day, textile recycling, Earth Day events, etc.), we generate flyers to be posted at each of the trash collection/recycling sites and at conspicuous locations throughout the County. Some locations include the Post Office, the Food Lion grocery store, the public library, etc.

6.7.5 Objective E: Update our County website on a regular basis and identify and participate with other environmental websites to disseminate information on solid waste management issues.

Amelia County hosts its own website at www.ameliacova.us. Posted on this website is a copy of the County recycling brochure, regular updates on solid waste issues, copies of articles on the Maplewood landfill and recycling issues, and contact information. This Solid Waste Plan is also available for review/public comment on our website.

In addition, Amelia County participates in the www.EARTH911.org website. This website is an interactive website that provides consumers with community specific environmental information, 24 hours-a-day. Local residents can retrieve recycling and HHW information, as well as general information on topics such as energy conservation, water quality, and waste reduction. Listed on this website are directions to the Maplewood landfill and the other five drop-off trash collection/recycling sites in the County. Also listed are items that can be

accepted for disposal or recycling at each site. In addition, we may list special collection events on this website such as our Christmas tree recycling event and our America Recycles Day event.

A third website that contains County solid waste and recycling information available to the public is the DEQ's website at www.deq.state.va.us. Local contact information and a listing of disposal and recycling locations are provided on this website.

Amelia County will monitor and maintain our information on these websites. In addition, we will investigate other electronic avenues for sharing of solid waste management information.

CHAPTER 7.0 SOLID WASTE MANAGEMENT SYSTEM FUNDING AND CONSTRUCTION SCHEDULES

7.0 FUNDING AND CONSTRUCTION SCHEDULES

7.1 INTRODUCTION

Amelia County is in a unique position as the host community for a large commercial WM landfill. Facing new costly regulations governing landfill construction and operation, the Amelia County Board of Supervisors elected to send out a Request For Bids (RFP) for these services in 1989. Chambers Development Company, Inc. responded with an offer to construct and operate a commercial landfill in Amelia County. In exchange, Chambers would provide free disposal of solid waste for all County citizens, its government, schools and charitable institutions, and County businesses operating in the County at the signing of the Agreement. In addition, Chambers would pay the County a host fee for every ton of waste disposed of at the landfill for which a tipping fee is charged. Additional services, such as recycling and closure of the County's own landfill, were included in the Agreement signed on January 12, 1990.

Although extremely controversial at the time, the decision to privatize solid waste management in Amelia County was the Board of Supervisors choice for long-term efficient and affordable management of the County's solid waste. When Amelia County entered into the Agreement with Chambers, it was anticipated that the Maplewood landfill would remain operational for approximately 20 years. Therefore, the contract requires the landfill operators to handle Amelia County's waste for a minimum of 20 years, or for the life of the landfill, whichever is longer. The latest FORM DEQ 50-25 Solid Waste Information and Assessment Program Reporting Table submitted by WM to DEQ lists the expected remaining permitted life of the Maplewood landfill as 75 years. As a result, the County's solid waste management needs should be covered by WM well past the 20-year horizon of this SWMP.

7.2 FUNDING PROTECTION

The Agreement also contains provisions to protect the County in the event of a default by WM (see Appendix 1). Key provisions include a requirement that WM maintain a prepared disposal area at the Maplewood landfill sufficient to dispose of the County's solid waste for a period of five years. In addition, the County requires WM to maintain a joint Mitigation and Remediation Fund in escrow with the County to ensure that funds will be available to address any major environmental problems at the Maplewood landfill. This account is in addition to the financial assurance requirements imposed by the state. The account currently holds \$821,998.74. An additional \$5,000.00/acre is added to the account as each new cell becomes operational, up to a maximum of one million dollars. Interest earned will be added to the account until it reaches two million dollars, at which time any interest above the two million may be paid to WM. The main purpose of this fund is to pay for mitigation and remediation of environmental problems at the Maplewood landfill if it becomes necessary. However, in the event of a default by WM, "the County shall be entitled to withdraw from the Mitigation and Remediation Fund an amount reasonably sufficient for the County's costs of disposal for County solid waste...for the subsequent three (3) years."

Contingency plans for waste disposal in the event of an emergency are addressed in the County of Amelia Emergency Operations Plan via mutual aid agreements with adjacent jurisdictions and private industry.

7.3 LANDFILL HOST FEES

Landfill host fees paid to Amelia County have not yet reached the level anticipated when the Agreement was signed. They gradually increased from \$388,767.41 for 1993, to a high of \$1,666,372.39 for 1997. 2010 host fees totaled \$1,592,138.00 (Appendix 16).

Although landfill host fees have not yet reached the level anticipated when the Agreement was signed, the money earned from the landfill has allowed Amelia County to invest in many capital improvement projects. These include a new public elementary school, a new public library, three new fire stations, pumper trucks and tanker trucks for the fire department, etc. Furthermore, the avoided costs of collection, transportation, and disposal of solid waste have greatly benefited Amelia County and helped to keep the tax rate low. Amelia County has one of the lowest tax rates in the state at \$0.43/\$100.00.

7.4 FUTURE FUNDING

County leaders recognized the need to plan for future solid waste management needs in Amelia County following the expiration of the Agreement with WM.

They agreed to deposit a portion of proceeds from landfill host fees in a reserve account to fund future solid waste management needs. This account is currently capped at \$2,000,000 plus interest.

To summarize, funding of the current solid waste management system in Amelia County is provided by WM. This relationship is expected to continue for the duration of this SWMP.

7.5 FUNDING OF POST CLOSURE CARE OF THE CLOSED COUNTY LANDFILL

The General Fund is the primary location of all financial activity associated with the ordinary operations of County Government. Most taxes are accrued into this fund and transfers are made out of it as appropriate. Such funding is subject to annual appropriation control by the Board of Supervisors. Historically, the General Fund has financed post closure care of the closed County landfill.

The County landfill ceased accepting waste in May of 1993 when the Maplewood landfill opened. The landfill is located on a 19.8-acre parcel of land and consists of waste placement in 9 engineered waste trenches over approximately 4 acres. The landfill accepted County generated waste for approximately 10 years. The landfill was closed pursuant to Virginia Solid Waste Management Regulations in 1994. This facility is monitored by a system of 7 groundwater monitoring wells and 12 gas monitoring points placed around the circumference of the landfill.

The required 10 year post closure period at the County landfill will likely be extended by the DEQ as a result of landfill gas issues at the closed facility. Continued monitoring and maintenance activities, as well as remediation and corrective action at this facility, will be paid for by the General Fund.

7.6 STATE LITTER CONTROL GRANT FUNDS

Localities may receive litter control grant funds from the State to conduct litter prevention and control activities. Funded through a special tax on businesses that create products that are likely to contribute to littering, the funds are allocated to each locality on an annual basis. The County administers the grant funds through a process that includes an annual application, distribution, accounting, and reporting. The County uses these funds to hire a Litter Control Coordinator, for trash and recycling receptacles, for public education, for presentations and supplies, and for special collection programs such as tire recycling. These grant funds play an integral part in the County's efforts to promote solid waste reduction, reuse and recycling.

7.7 CONSTRUCTION SCHEDULES

The Maplewood landfill waste disposal area is divided into 34 phases ranging in size from 7.1 to 16.8 acres each, designed to provide 47,184,22 cubic yards of solid waste disposal capacity over a projected life span of 84 years. Phases 1, 2, 3, 4, 11, 12, 13, 16, and 17 are completed and waste is currently being placed in Phases 5, 7 and 18. Construction of Phase 7A was completed and certified by the DEQ in July 2011. A new phase is constructed every 18 to 24 months to ensure adequate disposal capacity with no interruption of service.

CHAPTER 8.0 PUBLIC PARTICIPATION

8.0 PUBLIC PARTICIPATION

8.1 INTRODUCTION

Public participation is a key part of the solid waste management planning process. As a public planning document from a public body, public participation in an open process of deliberation, comment and review is required by State regulations (9 VAC 20-13-130). Public participation also ensures that the ideas and concerns of the varying constituent groups will be served by the plan.

8.2 PLAN PREPARATION

The Plan was prepared by County staff members charged with solid waste management. Peer review and comment were utilized during plan preparation.

8.3 LANDFILL ADVISORY COMMITTEE

The Plan was then reviewed by the seven member Landfill Advisory Committee (LAC), a group comprised of five citizens appointed by the County (one from each voting district), one member of the Board of Supervisors and one employee of WM. The original purpose of this committee was to review and comment on the operation of the landfill. Therefore, they were the natural choice for initial review and comment on the SWMP. After review and input from the LAC, the committee forwarded the Plan to the Board of Supervisors with a recommendation for approval.

8.4 THE BOARD OF SUPERVISORS

The Plan was next forwarded to the Board of Supervisors for their review and comment.

8.5 PUBLIC HEARING

State regulations require a public hearing before the Solid Waste Management Plan can be adopted by the planning district. The public hearing must be advertised for 2 consecutive weeks in a newspaper. The draft document will be on display at the Amelia County Administrator's office, the James L. Hamner Public Library, and on the county website at www.ameliacova.us for public review during that time. Members of the public are invited to speak at the public hearing and provide input, and members of the Board may discuss the draft document at that time. Changes could be made based on the results of the public hearing.

8.6 ADOPTION

After a public hearing and any resultant changes, the Board of Supervisors, in a regular business meeting, will adopt a final version of the Solid Waste Management Plan document.

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