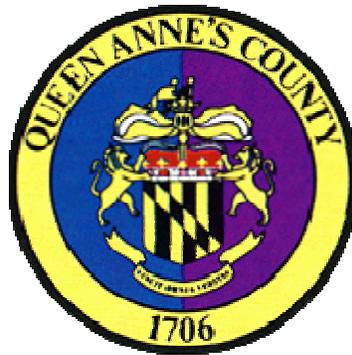


**A Study of County-Administered Contract Districts for
Collection of Residential Waste and Recyclables in
Queen Anne's County**

Prepared for:

Queen Anne's County, Maryland



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Executive Summary

A Study of County-Administered Districts for Collection of Residential Waste and Recyclables in Queen Anne's County

Queen Anne's County's population increased by approximately 60 percent between 1980 and 2000 and is projected to reach 48,500 by 2010. Over 40 percent of the population resides on Kent Island. The County also draws tourists who are attracted to its location along the Chesapeake Bay. There are currently 210 subdivisions and eight incorporated towns (See Figure 1-1), wherein 64 percent of the County's population resides.

This growth brings increased demand on the County's road network, infrastructure, facilities, and services. In particular, this growth has strained the County's system of residential convenience center sites where County residents may drop-off their residential trash and recyclables. It is estimated that approximately 58 percent of the single-family, townhouse, and mobile home households in the unincorporated area of the County regularly self-haul to these drop-off sites, with approximately 42 percent of the households having their residential waste collected at curbside on a subscription basis by commercial trash collectors. While this system served the County well when the population and population density were much lower, this high level of use and the many self-haul vehicles create traffic congestion, increased pollution, and safety hazards. It also causes trash collection rates for residents who subscribe for curbside collection to be much higher than they would be if commercial haulers were assured a greater customer base.

The County is considering the development of a County-administered system of contracted districts for curbside collection of residential solid waste and, potentially, recyclables for single-family residences and possibly certain multi-family dwellings. This system would be for the entire County or a substantial portion of the County, and would replace the open market, subscription collection system and the use of convenience center sites for residents to drop-off residential waste and certain recyclables, which has been longstanding in the County. Under this new system, the County would be responsible for contracting residential waste and, potentially, residential recyclables collection to private collectors through a competitive proposal or bid process. Collection of commercial waste and recyclables would remain an open market subscription system.

There are many advantages to a County-administered system of contract districts for residential waste and recyclables collection. These include:

- **Lower Costs to Residents** – Residents would pay less than current rates offered by private haulers to subscription customers. Residents who self-haul their waste and recyclables to convenience centers would save on not having to make 52 or more trips per year to those sites. The increase in fees that would need to be assessed for waste collection and the County's administrative expense could be minimized by cost savings the County would realize in the reduced operation of convenience centers and the associated roll-off container transport system.
- **More Service to Residents** – Residents could be provided yard waste and bulky waste collection by the contracted haulers as an extension of a contracted curbside service.

- **High Level of Customer Service** – Residents would obtain an improved quality of service, enforced by contract provisions and penalties to the contracted hauler(s) for non-compliance.
- **High Level of Control of the Collection System** – As the County would be the point of contact for customer service, provide billing, control the contracting process, and monitor the haulers, the County would have a high level of control and management of the residential waste collection system, greater than it now has. Service standards would be applied and enforced by the County.
- **Increased Recycling** – There would be an increased opportunity and greater convenience with residential curbside recycling, which should lead to a higher diversion rate to recycling in the County.
- **Reduced Traffic, Road Wear and Pollution** – Fewer trucks and, potentially, newer trucks would be used. By optimizing the contracted haulers' routes, less distance would be traveled. Less truck traffic reduces the potential for accidents and total vehicle emissions.
- **Increased Operational Efficiency of Haulers** – Contracted haulers may also benefit from centralized route optimization (and more condensed routes), which may be conducted by the County as part of the program development. Many of the smaller haulers could not afford the costly process of implementing route optimization software, but could benefit from efficiency improvements of 10-25% if optimized routes would be included in a County procurement for contract collectors.
- **Reduced Traffic Into Convenience Centers** – Fewer vehicles, and potentially, increased curbside recyclables collection, would result in less traffic, safety, and monitoring issues at convenience centers.
- **Reduction in Number of Convenience Centers and Their Operating Schedule** – Through contracted curbside collection of residential waste, adding to the contract collection service already in place in the incorporated towns, the County could phase out the receipt of household trash at convenience centers, reduce the number of convenience centers, limit their days and hours of operation and sell certain surplus equipment that would no longer be needed, all yielding a significantly lowered cost for the convenience center system. The convenience centers remaining in the system would be limited to receiving certain types of waste or recyclable materials that would not be expected to be part of a regular curbside collection at residences, such as large brush, large bulky items and white goods, used oil and antifreeze, used tires, used electronic components, used clothing, and perhaps other materials. Certain of these materials could be part of a contracted residential collection service, and that could be determined through further planning and procurement activities involving the haulers interested in contract district opportunities.
- **Secured Use of the Midshore Regional Landfill** – The collection contract(s) awarded to haulers would be expected to require the haulers to use the disposal facilities, and in the case of recyclables, the consolidation facility, designated by the County, providing a means to secure waste and recyclables supply. While waste supply has not been a problem for the

Midshore Regional Landfill in the last few years, it has been an issue and it could always become a problem in the future.

While a County-administered system of contract districts for collection of residential waste and recyclables offers many benefits, it would present a number of challenges to the County to make such a significant change and ensure a successful transition. Among the major challenges would be:

- **Opposition from Certain Residents and Haulers** – With the announcement and pursuit of an initiative to implement County-contracted districts for residential curbside collection, the County, particularly the County Commissioners, could expect to receive significant opposition from certain residents and haulers who will bring whatever pressure to bear that they can in an attempt to thwart the new program. This would divert County time and resources, and would need to be addressed and managed.
- **Implementation Costs** – To further plan, procure, and implement a system of County-administered residential contract collection districts, the County would incur substantial front-end costs, which could either be rolled into administrative fees to be recovered over time in billings to residents in the collection districts or otherwise absorbed through the General Fund.
- **Administrative and Enforcement Burden and Costs** – The County would assume a new or expanded administrative function of billing, hauler contracts management, hauler monitoring, customer calls and complaint handling, and enforcement. This would require additional staff, equipment, software, services, and possibly office space and at a significant and continuing annual cost. This cost, however, would be expected to be a small portion of the regular contract collection billing to collection district residents. Therefore, it would be recovered.
- **Expanded Public Education/Community Information Needs** – With such a dramatic change in the residential collection system and the programs, services, and facilities involved, a very substantial public education program in advance, during the transition, and on a sustaining basis thereafter would be needed. This community information program will be extensive, and borrowing on the old real estate adage, a large part of the success of a County-administered residential curbside collection contracts initiative and the smoothness of the transition will turn on “education, education, education!”
- **Potential for Increased Littering and Illegal Dumping and Need for Greater County Monitoring and Enforcement** – Depending on the convenience centers remaining open, their hours, and materials accepted, and on the types of materials to be collected by contracted haulers, there is the potential for increased illegal dumping and littering in the County. Residents in contract districts who miss a collection set-out, generate certain special waste materials but want to avoid an incremental cost for their collection, or have waste materials that are no longer accepted at convenience centers, or don't want to drive to a more distant convenience center since the one closest to them may now be closed, could seek to dump such materials illegally along roads, fields, or woods, or burn them. This would require more vigilance by the County and a stepped-up enforcement effort, particularly in the transition and early years of a new program.

- **Requirement for New Recyclables Management Facilities, Services, and Business Arrangements** – Through a curbside collection contract program for residential recyclables, the County would be making a major change in the long-standing program of drop-off igloos and containers at convenience centers where each type of recyclable material, such as different colors of glass containers, aluminum and steel cans, newspapers, old corrugated containers, magazines, mixed paper, different types of plastics, and certain other materials are deposited in separate containers. The recyclables would be collected in one (single-stream all in one container, most likely a wheeled cart) or in two (dual-stream using bins or possibly a cart) streams, with commingled containers as one stream and all paper as another stream. The recyclables would be set out at curbside and the collector would deliver them to a “materials consolidation facility (MCF),” most likely at the Centreville Convenience Center, where they would be deposited into large bulk containers or trailers with moving floors (“walking floor”), and then transported to a materials recovery facility (MRF) for separation, processing, and marketing. Under this arrangement, the County would need to develop and operate a materials consolidation facility and either provide materials transport to the MRF with County forces or contract for transport and MRF processing services. This would require new capital and operating expenditures, operating services, procurement activities, and new contracts by the County. All facilities and services would need to be in place prior to the start of curbside collection of recyclables, including the MCF.

Potential waste collection districts and recyclables collection districts were developed using a Geographic Information System (GIS) based transportation logistics modeling software package called FleetRoute. These districts are shown and described in Section 6 of this Study.

Based on the districts modeling and cost analyses conducted in this Study, the estimated cost impact of County-administered contract collection districts for curbside waste collection to single-family households in the County is presented in Tables ES-1 and for waste and recyclables collection in Table ES-2. As shown in Table ES-1 and ES-2, a cost savings to both households that currently take their waste to convenience centers and those that subscribe for curbside collection of waste could be realized through such County-administered collection districts. Details of the cost to implement such districts are provided in Sections 6 and 7 of this Study.

Residential contract collection areas have been established and competitively bid out to private collection companies in several of the larger Maryland counties, including but not limited to: Anne Arundel County, Prince George’s County, Howard County, Baltimore County, and Montgomery County. Other Maryland counties are currently considering conversion to residential contract collection as well. So, there is substantial precedent and legal foundation for such County-administered programs in Maryland.

While there is precedent and much experience with establishing and maintaining contract collection areas for residential solid waste in the unincorporated areas of several Maryland counties, the practice has not been applied in Queen Anne’s County. However, all eight incorporated towns in the County bid out residential collection service to the private sector and typically enter into a multi-year contract, although usually only for two years. The unincorporated area of the County has

been open market for years, with both large and small hauling companies competing in that market.

As noted, transitioning to contract collection would be a significant challenge for the County. The major tasks necessary to plan, develop, and implement this program would include:

1. Developing an Action Plan and Schedule
2. Obtaining County Commissioners' Approval and Direction
3. Designing a Public Education Campaign
4. Designing Collection Districts, Routes and Procurement Areas
5. Developing Program Administration and Ordinance(s)
6. Conducting the Public Education Campaign
7. Preparing Procurement Solicitations and Drafting Contract(s)
8. Conducting Procurement and Awarding Contracts
9. Emplacing all Administrative and Legislative Needs
10. Beginning Operations, Monitoring the System and Adjusting any Program Elements as Needed

Table ES-1
Queen Anne's County Curbside Collection Districts for
Residential Waste Only
Estimated Cost Impact to Households (Single-
family) in Unincorporated Area

1. Cost to Households Currently Using Convenience Centers on Regular Basis (Estimated 8,934 households)	
• Annual savings on cost of trips to convenience centers	- \$189.54 ¹
• Annual savings on purchase of tickets for use of convenience centers	- \$ 69.33 ²
• Estimated new annual assessment for curbside collection of trash in County contract district (includes disposal cost and County administrative cost) based on a uniform fee	+ \$180.84 ³
• Net annual cost impact to household	- \$ 78.03 ⁴ (savings)
2. Cost to Households Currently Receiving Subscription Curbside Collection (Estimated 6,517 households)	
• Savings on current annual subscription cost for curbside collection	- \$288.00 ⁵
• Estimated new assessment for curbside collection of trash in County contract district (includes disposal cost and County administrative cost) based on a uniform fee)	+ \$180.84
• Net annual cost impact to household	- \$107.16 (savings)

¹ Assumes average household makes one trip per week to convenience center to drop off trash and/or recyclables at average round trip of nine miles @ \$.405/mile vehicle cost based on the mileage rate for 2005 as published in U.S. Department of the Treasury Publication 15, Circular E, revised January 2005. Cost of waiting in lines at convenience center and lost time is not considered.

² Assumes average household uses 52 tickets per year at a price of \$1.33 per ticket based on current ticket book price (\$20 per book of 15 tickets).

³ Assumes uniform monthly fee of \$15.07 per household.

⁴ Assumes cost for operating convenience centers remaining open for special materials is paid through General Fund and recovered through taxes on all improved property in County and there is no increase in taxes for solid waste/recycling programs.

⁵ Assumes average monthly cost per household of \$24.00 based on survey of selected waste collectors providing residential trash collection on subscription basis in Queen Anne's County.

Table ES-2
Queen Anne's County Curbside Collection Districts for
Residential Waste and Recyclables
Estimated Cost Impact to Households (Single-
family) in Unincorporated Area

1. Cost to Households Currently Using Convenience Centers on Regular Basis (Estimated 8,934 households)	
• Annual savings on cost of trips to convenience centers	- \$189.54 ¹
• Annual savings on purchase of tickets for use of convenience centers	- \$69.33 ²
• Estimated new annual assessment for curbside collection of trash and recyclables in County contract districts (includes waste disposal cost, County administrative cost, and consolidation/transport cost for recyclables) based on a uniform fee	+ \$246.60 ³
• Net annual cost impact to household	- \$12.27 ⁴ (savings)
2. Cost to Households Currently Receiving Subscription Curbside Collection (Estimated 6,517 households)	
• Savings on current annual subscription cost for curbside collection	- \$288.00 ⁵
• Estimated new assessment for curbside collection of trash and recyclables in County contract district (includes waste disposal cost, County administrative cost and consolidation/transport cost for recyclables) based on a uniform fee	+ \$246.60
• Net annual cost impact to household	- \$ 41.40 (savings)

¹ Assumes average household makes one trip per week to convenience center to drop off trash and/or recyclables at average round trip of nine miles @ \$.405/mile vehicle cost based on the mileage rate for 2005 as published in U.S. Department of the Treasury Publication 15, Circular E, revised January 2005. Cost of waiting in lines at convenience center and lost time is not considered.

² Assumes average household uses 52 tickets per year at a price of \$1.33 per ticket based on current ticket book price (\$20 per book of 15 tickets).

³ Assumes uniform monthly fee of \$20.55 per household and does not include any credit for recyclable materials sales or cost for the MCF and recyclables management except the consolidation/transport costs.

⁴ Assumes cost for operating convenience centers remaining open for special materials is paid through General Fund and recovered through taxes on all improved property in County and there is no increase in taxes for solid waste/recycling programs.

⁵ Assumes average monthly cost per household of \$24.00 based on survey of selected waste collectors providing residential trash collection on subscription basis in Queen Anne's County.

Collection districting represents “change,” and change in a way of life that has existed for years is usually met with some resistance, even when it can be demonstrated that this change can offer significant benefits. As discussed, some private haulers serving the County would consider a collection districting initiative to be a potential threat to their market share, although it would create new business opportunities for private haulers to collect waste materials currently handled by the County and a more secure market for those haulers awarded collection contracts. There also is likely to be resistance by certain residents, particularly those who do not subscribe to curbside collection.

However, there are constructive measures that can be taken to address such expected resistance. The first is a good community information program, including an open dialogue with the residents and the hauling community to solicit their ideas on how districting could be implemented to minimize adverse impacts. Another measure is a “peer matching” of County officials with representatives in some of the other Maryland counties that have residential contract collection areas, to gain insight into how those counties managed these same issues and concerns to build support and ease the process of collection districting. While there is likely to be some attrition in the waste collection community in the County with implementation of contracted residential collection districts, the benefits of collection districting are significant, and they will become more critical, and in the interests of a larger and larger portion of the population, as County growth continues.

Section 1 Introduction and Purpose

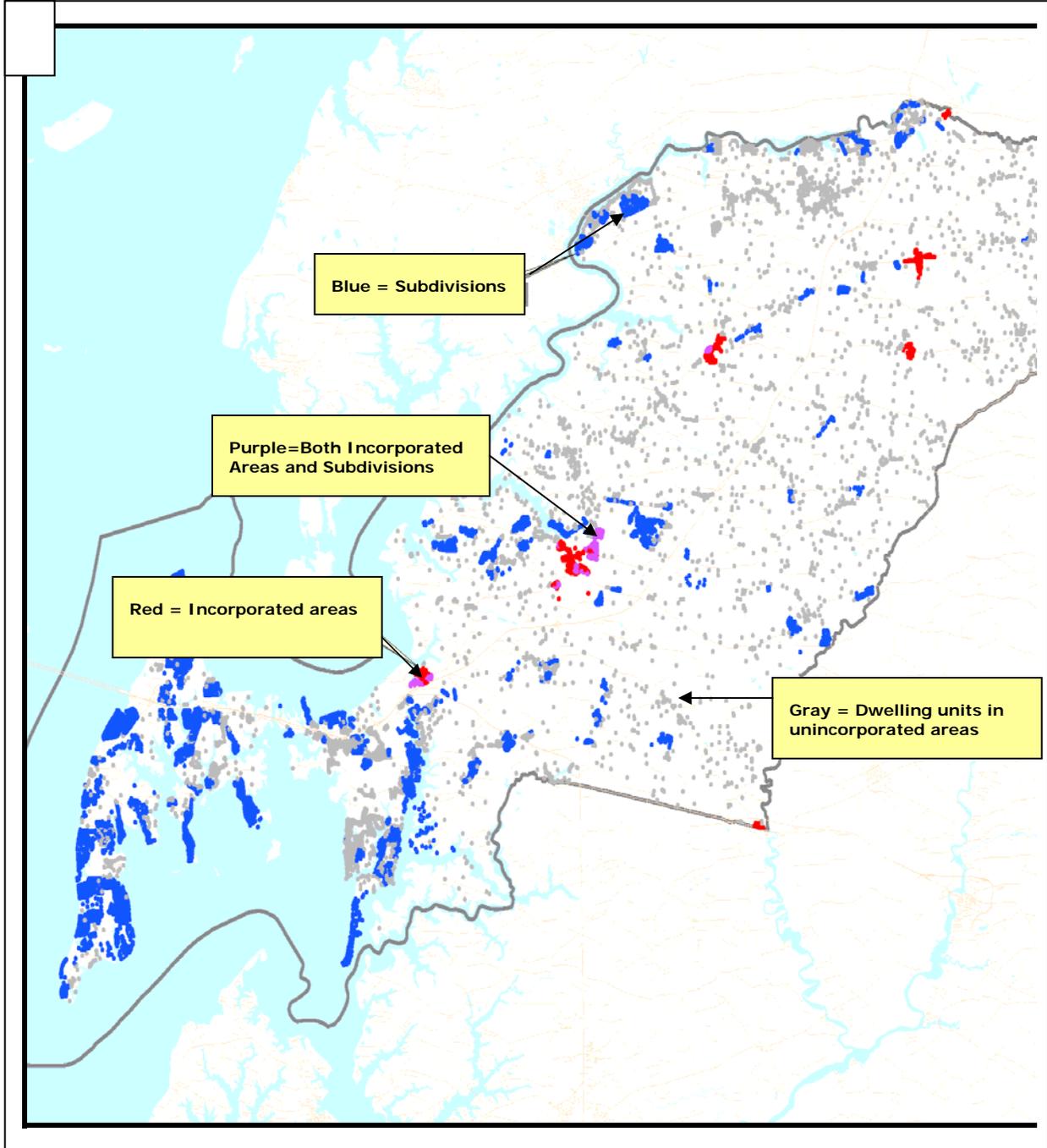
Queen Anne's County ("County") population increased by approximately 60 percent between 1980 and 2000 and is projected to reach 48,500 by 2010, with continuing growth thereafter albeit at a slower pace. The County has 210 subdivisions and eight incorporated towns (some subdivisions overlap incorporated towns) wherein 64 percent of the County's population resides. There are also some other areas of dense population outside the subdivisions and incorporated towns (See Figure 1-1). Over 40 percent of County residents reside on Kent Island at the extreme western side of the County. There are 16,972 dwellings on 16,324 land parcels in the County, and 15,451 single-family, townhouse, and mobile-home households in the unincorporated area of the County.

The County is considering the development of a County-administered system of contracted districts for curbside collection of solid waste and, potentially, recyclables for single-family residences and possibly certain multi-family dwellings. This system would be for the entire County or a substantial portion of the County. This collection arrangement would replace the open market, subscription collection system for residential waste and eliminate the use of County-owned and operated convenience center sites for residents to drop-off residential waste. Rather, it would restrict their use to special waste such as brush and/or bulky materials and certain recyclables. In addition, the number of convenience centers would be reduced. Under this new system, the County would be responsible for contracting residential waste and, potentially, residential recyclables collection to private collectors through a competitive proposal or bid process. Collection of commercial waste and recyclables would remain an open market subscription system.

The shift to contracted collection would be a significant change for County residents, who are accustomed to the existing open market system and the self-haul use of the County convenience center sites. Currently, it is estimated that approximately 58% of the single-family, townhouse and mobile home households in the unincorporated area of the County regularly self-haul residential waste to the County convenience centers and roughly 42% of such households have their waste collected at the curbside via private waste haulers through subscription. In addition, residential waste is collected under contract in the incorporated Towns of Barclay, Centreville, Church Hill, Millington, Sudlersville, Queen Anne, Queenstown, and Templeville. An unknown portion is disposed of on-site, typically through burial or burning at farms and some rural residences.

Implementing County-administered contract collection would involve direction from the County Commissioners and coordination among several County departments with responsibilities in solid waste/recycling, planning, information technology, public information, human resources, law, procurement, and finance.

Figure 1-1
Towns and Subdivisions in Queen Anne's County



A transition from its existing collection system to a County-wide system of contract collection for residential waste would require the County to undertake and coordinate several major tasks. The major tasks necessary to further plan, develop, and implement this program would include:

1. Developing an Action Plan and Schedule
2. Obtaining County Commissioners' Approval and Direction
3. Designing a Public Education Campaign
4. Designing Collection Districts, Routes and Procurement Areas
5. Developing Program Administration and Ordinance(s)
6. Conducting the Public Education Campaign
7. Preparing a Procurement Solicitation and Draft Contract(s)
8. Conducting the Procurement and Awarding Contracts
9. Emplacing All Administrative and Legislative Needs
10. Commencing Operations, and Monitoring and Adjusting the Program as Needed

If curbside residential recyclables collection is included as part of a new, County-administered contract collection program, several additional tasks would be required to plan, develop, and implement this service. These tasks would include designing the collection districts and routes, developing a materials consolidation facility for receipt of the collected recyclables and procuring the necessary equipment, procuring the processing services for the collected recyclables at one or more materials recovery facilities, and unless materials transport from the consolidation facility is conducted by the County, procuring recyclable materials transportation services.

The other tasks noted above for the residential waste collection program would also apply to recyclables collection. They would simply be expanded, as necessary, to address the recyclables collection service.

The County retained Gershman, Brickner & Bratton, Inc. (GBB) to help evaluate this potential initiative and the resource needs to develop a County-administered contract collection system. This document summarizes the findings of our evaluation and presents an overview of the cost implications, advantages and disadvantages, issues, and needs in implementing this initiative.

Section 2 Overview of Existing Residential Waste Collection Practices

2.1 General

Residential solid waste in the County is collected by private haulers through (1) subscription with County residents who desire curbside collection and (2) through contracts with the eight incorporated towns. Most residents not residing in an incorporated town or subscribing with a private hauler for curbside collection self-haul residential waste to one or more of five County convenience centers, typically one closest to their residence.

Some County residents use both the convenience centers and private collectors, as they may have additional waste, bulky waste, or special waste, such as C&D waste ("rubble") or yard waste to dispose of from time-to-time or at certain times throughout the year, which may not be collected as part of their regular curbside collection service or may require an additional fee. Also, they may want to drop-off residential recyclables at a convenience center, as there is very limited collection at curbside of residential recyclables in the County, and most haulers do not currently offer such service on a regular basis to the residential sector.

The County is empowered to register refuse collectors, require permits for refuse collection and hauling, inspect collection equipment and charge collection permit fees under existing County ordinance adopted in 1977. Existing ordinance provisions also include certain collection standards. Currently, the County does not register refuse collectors, issue collection permits, or inspect collection equipment. However, registration of refuse collectors would be good to implement now for purposes of monitoring and data collection.

2.2 Private Collectors

The County reported 11 private collectors or companies known to be operating solid waste collection service in the County in 2004. These included BFI Waste Services, Inc., owned by Allied Waste Industries; Island Disposal, Inc.; Waste Management of Maryland, Inc.; Donald Sparks; Richard Dill; Eight Days a Week; Chris Lee Roll-Off Service, Inc.; Pat's Pride Hauling; Schultz and Cahill Enterprises, LLC; Norris E. Taylor Contractors, Inc.; and Bridges Waste Management, Inc. Also, American Waste currently provides waste collection service in the County. In addition, Infinity Recycling, Inc. provides residential curbside recycling collection in the Towns of Queenstown and Queen Anne, and for some other limited residences in the County on a subscription basis.

It should be noted that Eight Days a Week has been sold to Cahill Enterprises and no longer collects in Queen Anne's County. Also, certain of the above noted private collectors only collect construction and demolition waste, yard waste and/or commercial waste through roll-off and/or front-loader service.

Table 2-1 shows the current charges for once per week subscription collection of residential waste in the County as reported by selected private haulers.

**Table 2-1
Reported Residential Subscription Waste
Collection Charges for Selected Haulers**

Hauler	Monthly Charge Per Household	Provides Residential Recyclables Collection	Annual Total Charge
BFI Waste Services, Inc.	\$27.75 (with or without cart)	No	\$333.00
Waste Management of Maryland, Inc.	\$22.00 (with or without cart)	No	\$264.00
American Waste	\$20.00 (with or without cart)	No	\$240.00
Island Disposal	\$23.00 (with or without cart)	No	\$276.00

2.3 Collection in Incorporated Towns

All incorporated towns have contract collection for residential waste although town residents may also use convenience centers. Table 2-2 shows a breakdown of the residential contract curbside collection quantities and costs reported to the County by the eight incorporated towns. It should be noted that waste quantities are estimated by the towns or as reported by the contract collector for the town, and in some cases, pursuant to the collection contract, collection includes certain “other town waste” and/or service to certain town buildings or front-load or roll-off container(s). Therefore, waste quantities reported for some towns may not represent strictly residential waste and, in such cases, may be an overestimate of residential tonnage. Further, it should also be noted that certain data reported or estimated by or for certain towns are incomplete and/or unverified due to such limitations as non-availability of contract documents and/or invoices, lack of response, and lack of verifiable weigh data specific to the town. Moreover, the Towns of Queen Anne, Millington, and Templeville are unique in their “multi-county” placement of their borders, complicating data collection specific to Queen Anne’s County.

It should also be noted that while most of the waste collected through contract in the incorporated towns is believed to be delivered to the Midshore Regional Landfill for disposal, not all town contracts require the waste to be delivered to that facility. Too, since certain contracted haulers operate from fleet depots outside Queen Anne’s County, and in at least one case, outside Maryland, and since they also service other customers along a defined route, it is possible that some of the collected tonnage is delivered to a disposal facility or transfer station other than the Midshore Regional Landfill, which may be closer to their fleet yard or depot.

**Table 2-2
Summary of Residential Contract Curbside Collection Quantities
and Costs for Incorporated Towns In Queen Anne's County**

Town of Barclay		Town of Queen Anne	
Population ¹	143	Population ¹	176
Number of Homes ¹	55	Number of Homes ¹	60
Collection Fees	\$450.00 per month	Collection Fees	\$559.75 per month
Tipping Fees ²	\$0.00 per month (est.)	Tipping Fees ²	\$411.67 per month (est.)
Cost/Household	\$8.18 per month	Cost/Household	\$16.19 per month
Tonnage ³	6 per month (est.) 50 lbs/home/week	Tonnage	8.7 per month (avg.) 66.92 lbs/home/week
Contractor	BFI	Contractor	BFI
Billing	Property Taxes	Billing	Property Taxes
Town of Centreville		Town of Queenstown	
Population ¹	1970	Population ¹	617
Number of Homes ¹	1,100	Number of Homes ¹	290
Collection Fees	\$4,939.00 per month	Collection Fees	\$1,203.50 per month
Tipping Fees ²	\$5,927.61 per month (est.)	Tipping Fees ²	\$1,669.31 per month (est.)
Cost/Household	\$9.88 per month	Cost/Household	\$9.91 per month
Tonnage	124.8 per month (est. avg.) 52.4 lbs/home/week	Tonnage	35.1 per month (avg.) 55.86 lbs/home/week
Contractor	Island Disposal	Contractor	Island Disposal
Billing	Line item on quarterly utility bill	Billing	Property Taxes

¹ 2000 Census

² Based on current Mid-Shore Landfill rate of \$47.50/ton

³ No tonnage was reported by the Town of Barclay. GBB estimates an average of six tons per month assuming average generation rate of 50 lbs. per household per week.

Table 2-2 (Continued)
Summary of Residential Contract Curbside Collection
Quantities and Costs for Incorporated Towns
In Queen Anne's County

Town of Church Hill		Town of Sudlersville	
Population ¹	530	Population ¹	391
Number of Homes ¹	232	Number of Homes ¹	180
Collection Fees	\$1,398.00 per month	Collection Fees	\$735.87 per month
Tipping Fees ²	\$823.33 per month (est.)	Tipping Fees ²	\$969.97 per month (est.)
Cost/Household	\$9.57 per month	Cost/Household	\$9.48 per month
Tonnage	17.3 per month (avg.) 34.72 lbs/home/week	Tonnage	20.4 per month (est. avg.) 52.31 lbs./home/week
Contractor	Island Disposal	Contractor	BFI
Billing	Property Taxes	Billing	Property Taxes
Town of Millington		Town of Templeville	
Population ¹	416	Population ¹	80
Number of Homes ¹	185	Number of Homes ¹	25
Collection Fees	\$560.00 per month	Collection Fees	Not Reported
Tipping Fees ²	\$996.92 per month (est.)	Tipping Fees ²	\$134.72 per month (est.)
Cost/Household	\$8.42 per month	Cost/Household	\$5.39 per month
Tonnage	21.0 per month (est. avg.) 52.39 lbs/home/week	Tonnage	2.8 per month (est. avg.) 51.69 lbs/home/week
Contractor	BFI	Contractor	BFI
Billing	Line item on quarterly utility bill	Billing	Not Reported

2.4 County Convenience Centers

As population in the County has increased, so, too, has the quantity of waste and recyclables delivered to the five County convenience centers by residents who self-haul. While the County does not allow commercial waste to be delivered to its convenience centers, it is believed that some commercial waste is delivered, and use of convenience centers by persons from out-of-County occurs. Table 2-3 shows the quantities of solid waste and rubble received at each convenience center over the last three fiscal years, and Figure 2-1 shows graphically the total waste intake at each convenience center in FY 2004.

**Table 2-3
Solid Waste and Rubble Received at County Convenience
Centers FY 2002 – FY 2004¹ (Tons)**

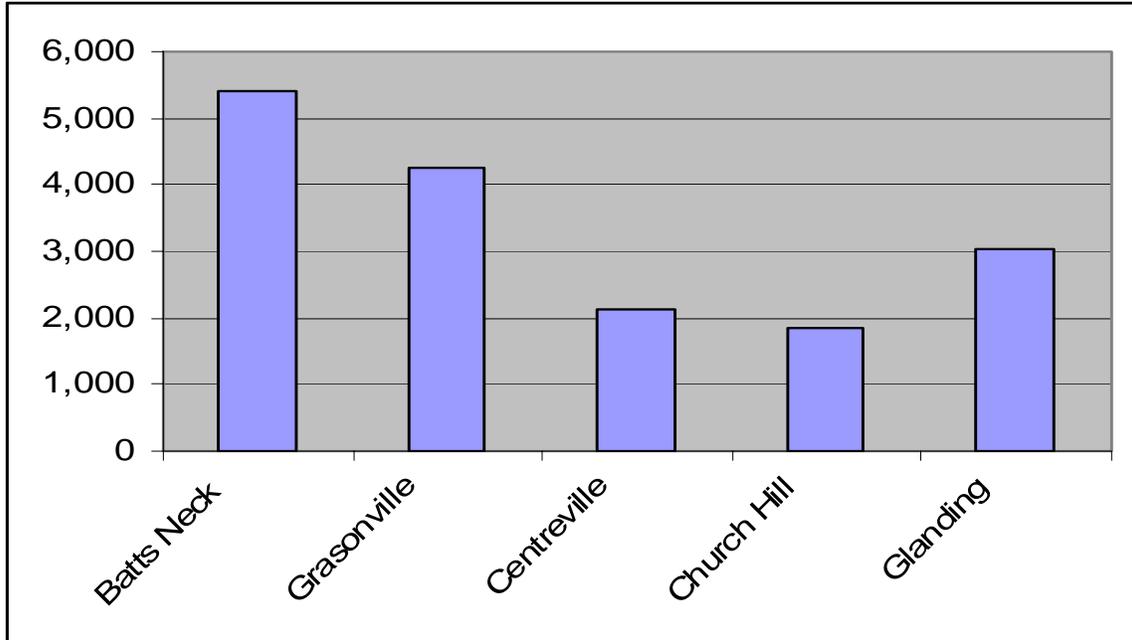
<u>Convenience Centers</u>	<u>FY04 Solid Waste</u>	<u>Rubble</u>	<u>Total</u>
Batts Neck	3,626	1,793	5,419
Grasonville	2,953	1,294	4,247
Centreville	1,557	571	2,128
Church Hill	1,257	584	1,841
Glanding	<u>2,220</u>	<u>826</u>	<u>3,046</u>
Total All Centers	11,613	5,067	16,680

<u>Convenience Centers</u>	<u>FY03 Solid Waste</u>	<u>Rubble</u>	<u>Total</u>
Batts Neck	3,198	1,094	4,292
Grasonville	2,435	1,059	3,494
Centreville	1,332	509	1,841
Church Hill	1,157	482	1,639
Glanding	<u>1,969</u>	<u>679</u>	<u>2,648</u>
Total All Centers	10,090	3,823	13,913

<u>Convenience Centers</u>	<u>FY02 Solid Waste</u>	<u>Rubble</u>	<u>Total</u>
Batts Neck	3,301	1,214	4,515
Grasonville	2,171	953	3,124
Centreville	1,236	514	1,750
Church Hill	1,024	471	1,495
Glanding	<u>1,807</u>	<u>783</u>	<u>2,590</u>
Total All Centers	9,539	3,935	13,474

¹ Excludes solid waste and rubble from miscellaneous locations and community clean-ups, and waste from Hurricane Isabel.

Figure 2-1
Combined Solid Waste and Rubble Intake
at County Convenience Centers
FY 2004
(Tons)



In addition to serving as drop-off locations for waste and rubble by residents primarily in the unincorporated area of the County who do not subscribe to curbside collection, the convenience centers serve as receiving sites for a variety of recyclable materials, including cardboard, magazines, and newspapers; metal and white goods; plastics; used clothing; used tires; clear, green and brown glass; steel and aluminum cans; used motor oil; used antifreeze; and used furniture and other bulky materials. Too, brush and yard waste are received, stockpiled, and periodically chipped or shredded for use as mulch. The share of recyclable materials received at each convenience center is unknown, as recyclables collected from the centers are combined and weighed in the aggregate by material type.

The County reports approximately 4,000 vehicles per week entering the convenience centers in the aggregate, with the heaviest traffic at Batts Neck and Grasonville Centers, and lowest at Centreville and Church Hill Centers. All of the convenience centers are reported to be operating at or near capacity based on the current site configurations and equipment in use.

Table 2-4 reflects the estimated number of households using the County convenience centers in Fiscal Year 2004. Based on certain assumptions shown with the Table, it is estimated that approximately 8,934 households or about 58 percent of the single-family, townhouse, and mobile home households in the unincorporated area of the County regularly self-haul to and rely on the convenience centers for their residential waste drop-off. This analysis also would imply that there are approximately 6,517 households or an estimated 42 percent of the households in the unincorporated area of the County subscribing with private haulers for curbside collection.

As noted earlier, the convenience centers are available to all County residents, and it is likely that from time-to-time, certain households that receive curbside collection through contract haulers in the incorporated towns also use the convenience centers.

Too, since there is believed to be some waste delivery to convenience centers by out-of-County residents and also some delivery of "commercial waste," sneaked in by small contractors and/or certain residents who have home-based businesses and combine waste from the business with their residential trash, it is likely that the "actual percentage" of households in the unincorporated area using the convenience centers is less than 58 percent. It is interesting to note that the Glanding Convenience Center is estimated to be substantially higher in projected use by households assigned to that site based on proximity and assumed waste generation. This can reasonably be explained by the low population density and limited subscription collection in this more rural area of the County, and thus the high reliance on this site by local residents, and its proximity to Delaware, which may lead to some use by out-of-State residents.

It is reasonable to assume that at least 50 percent of the households in the unincorporated area of the County regularly use the convenience centers versus subscribing for curbside collection service and between 40 and 50 percent of the households in the unincorporated area of the County subscribe with private haulers for curbside collection.

**Table 2-4
Estimated Households Using County Convenience Centers in FY 2004**

	Batts Neck	Grasonville	Centreville	Church Hill	Glanding
Solid Waste (Tons)	3,626	2,953	1,557	1,257	2,220
Households assigned by site ¹	5,287	4,630	1,822	2,212	1,500
Projected households using site based on assumed generation of solid waste per household ²	2,789	2,272	1,198	967	1,708
Projected percentage of assigned households using site	52.8%	49.1%	65.8%	43.7%	113.9%

¹ Households are assigned to convenience centers based on a review of land parcel data and number of dwellings in proximity of a convenience center.

² Assumed average residential waste generation is 50 pounds per household per week.

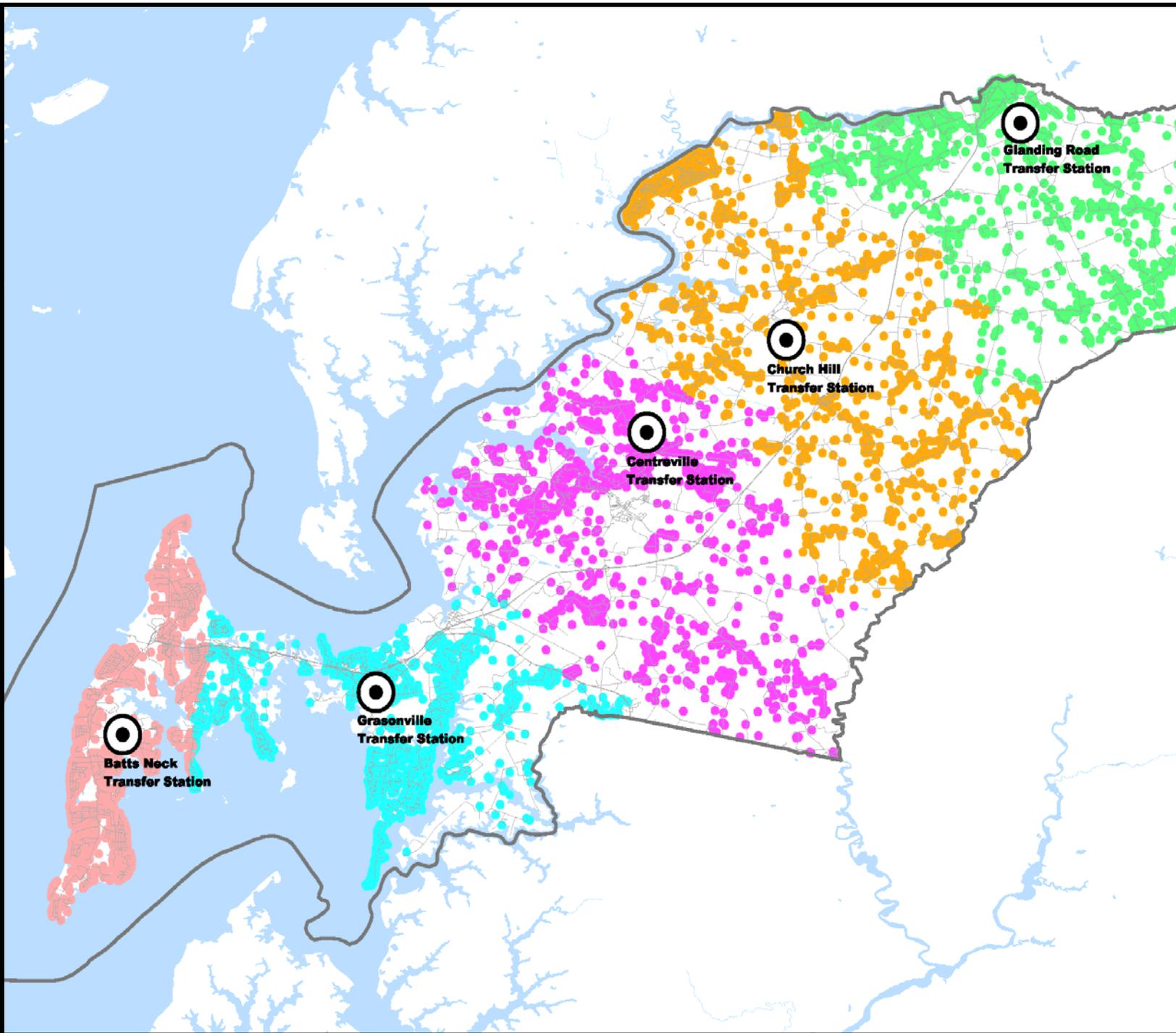
Figure 2-2- shows the areas of the County projected to be currently served by each convenience center.

The existing system of convenience centers has become increasingly costly for the County to operate and maintain, as more materials are handled and services at the convenience centers are expanded. Excluding administrative costs, the convenience center site expenditures and the transportation, and disposal costs for solid waste and rubble delivered to the convenience centers in the fiscal year ended June 30, 2004, aggregated to \$1,897,254. Co-op hauling added \$4,167. Administrative costs allocated to the convenience center sites and transfer/transportation added \$158,721, for a total of \$2,060,142. Additionally, in FY 2004, the County incurred costs of \$245,217 for the recycling box truck collection operation and associated materials handling/processing and approximately \$183,330 for the County's portion of the Midshore Regional Recycling Program (MRRP) costs associated with the igloos collection and maintenance, contract hauling, brush grinding, tire disposal, CFC removal, Midshore Consolidation Facility, and other MRRP-related expenses, exclusive of Queen Anne's County administrative expenses. However, the County is reimbursed for the MRRP related expenses from the tipping fee surcharge revenues at Midshore Regional Landfill. No County general fund money is budgeted for Midshore Regional Recycling Program operations except for the regional household hazardous waste collection program.

Administrative expenses allocated to the recycling and co-op hauling amounted to approximately \$58,705. Therefore, the aggregate solid waste system costs for FY 2004 were approximately \$2,547,394 or \$2,364,064 after reimbursement for MRRP costs, as noted above. A breakdown of these expenditures is presented in Table 2-5. Other FY 2004 statistics associated with the convenience centers and miscellaneous locations are shown in Tables 2-6 through 2-9, and convenience center site, transportation, and disposal costs, exclusive of administrative expenses and co-op hauling, are allocated by convenience center in Table 2-10.

Figure 2-2

Projected Service Areas of Existing Convenience Centers/Transfer Stations



**Table 2-5
Queen Anne's County Solid Waste and Recycling System Expenditures
Fiscal Year Ended June 30, 2004**

Site Expenditures – Convenience Centers		
Salary and Wages		\$329,221
Employee Benefits and Pension		\$140,225
Contracted Services		\$30,893
Supplies and Materials		\$46,587
Communications		\$10,291
Capital and Equipment		\$56,345
Total thru account period		\$613,562
Transfer and Disposal Cost – Convenience Centers		
Salary and Wages		\$198,658
Employee Benefits and Pension		\$123,514
Contracted Services		\$0
Supplies and Materials		\$104,463
Disposal Fees		\$734,345
Capital and Equipment		\$122,712
Total thru account period		\$1,283,692
Recycle Box Truck Collection and Processing		
Salary and Wages		\$110,253
Employee Benefits and Pension		\$59,524
Contracted Services		\$43,073
Supplies and Materials		\$16,442
Communications and Disposal Fees		\$0
Capital and Equipment		\$15,925
Total thru account period		\$245,217
MRRP Recycling Charges – ½ Of Total Charged to Queen Anne's County¹	Total	½ Portion to Queen Anne's County
Salary and Wages	\$77,821	\$38,911
Maintenance and Repairs	\$30,075	\$15,038
Employee Benefits	\$39,205	\$19,603
Site Improvements	\$0	\$0
Igloo Maintenance	\$11,560	\$5,780
Advertising	\$1,939	\$970
Contract Hauling	\$11,530	\$5,765
Processing Services – (CFC removal, Tire Disposal, Brush grinding and recycling fees)	\$133,624	\$66,812
Midshore Consolidation Facility	\$60,905	\$30,453
Total	\$366,659	\$183,330
Administrative and Co-op Hauling Expenses		
Co-op hauling		\$4,167
Administrative Costs		\$217,426
Grand Total Expenditures		\$2,547,394

¹ Queen Anne's County is reimbursed for these MRRP related expenses from tipping fee surcharges on waste received at Midshore Regional Landfill.

**Table 2-6
Person Days Labor Per Convenience Center
in Fiscal Year 2004**

Day	Batts Neck	Centreville	Church Hill	Grasonville	Glanding	Total by Day
Monday	3	1	1	3	2	10
Tuesday	3	1	1	3	1	9
Wednesday	3	1	1	3	1	9
Thursday	3	1	1	3	1	9
Friday	3	1	1	3	2	10
Saturday	4	2	2	4	2	14
Total By Site (Weekly)	19	7	7	19	9	61

**Table 2-7
Total Loads Hauled from Convenience Centers and Miscellaneous Locations
July 2003 – June 2004**

	Batts Neck	Centreville	Church Hill	Grasonville	Glanding	Misc. Locations	Total
Solid Waste	541	272	262	498	357	92	2,022
Rubble	303	112	114	216	124	10	879
Metal	78	32	24	69	29	0	232
Tires	1	1	1	1	3	2	9
Total	923	417	401	784	513	104	3,142

**Table 2-8
Total Convenience Center and Miscellaneous Tonnage
July 2003 – June 2004**

	Batts Neck	Centreville	Church Hill	Grasonville	Glanding	Misc. Locations	Total
Solid Waste Tons	3,626	1,557	1,257	2,953	2,220	482	12,095
Rubble Tons	1,793	571	584	1,294	826	94	5,162
Total	5,419	2,128	1,841	4,247	3,046	576	17,257

**Table 2-9
Other Selected Cost Statistics for Convenience
Centers and Miscellaneous Locations for FY 2004**

Total Site Cost (exclusive of administrative expenses)	\$613,562
Total Hauling and Disposal Cost (exclusive of administrative expenses)	\$1,283,692
Allocated Site Cost by Person Day	\$10,058
Allocated Haul and Disposal Cost by Load	\$408.56
Disposal Cost	\$734,345
Disposal Tons (Solid Waste and Rubble)	17,257
Disposal Cost Per Ton (Rounded Average) ¹	\$42.55

**Table 2-10
Convenience Center and Transfer/Disposal Cost Allocated by Site for FY 2004²**

	Person Days/ Week	Loads	Allocated Site Cost	Allocated Haul and Disposal Cost	Total Cost	Site Tons	Total Cost Per Ton
Batts Neck	19	923	\$191,109	\$377,100	\$568,209	5,419	\$104.86
Centreville	7	417	\$70,409	\$170,369	\$240,778	2,128	\$113.15
Church Hill	7	401	\$70,409	\$163,832	\$234,241	1,841	\$127.24
Grasonville	19	784	\$191,109	\$320,310	\$511,420	4,247	\$120.42
Glanding	9	513	\$90,526	\$209,591	\$300,116	3,046	\$98.53
Misc.	0	104	\$0	\$42,290	\$42,490	576	\$73.77
			\$613,562	\$1,283,692	\$1,897,254	17,257	

¹ Disposal Cost Per Ton is a weighted average of Solid Waste and Rubble delivered at tip fees of \$47.50 and \$30.52, respectively.

² Excludes administrative expenses.

Section 3 Advantages and Disadvantages of Existing Residential Collection System

The existing residential waste collection system of private haulers and County convenience centers has generally served the County well, but with the substantial population growth that has occurred over the last 25 years (approximately 75 percent increase and a doubling of households) and the growth that is forecasted to continue, the convenience center system will be increasingly strained. Moreover, as the County continues and expands services and facilities at convenience centers, it also continues to take on more costs and creates a disincentive for development of an organized curbside collection system with efficient routes outside the incorporated towns, as many residents will continue to opt for self-haul to convenience centers. There are advantages and disadvantages to the existing collection system for residential waste. Among the more significant are the following:

Advantages

- **In Place System** – The existing residential collection system, even with its drawbacks, is in place and functioning. Retaining the system largely as is, even for a few more years, would be keeping the “status quo” and avoiding the many challenges and issues (discussed later in this Report) that the County will confront to “change the system.”
- **Open Market Options – Freedom of Choice** – Some residents may view the ability to choose among several competing collection companies for subscription curbside collection as giving them options and not mandating a particular collector, service arrangement, service schedule, set out arrangement, and other requirements. This “freedom of choice,” including even choice and use of convenience centers, would be restricted in a modified system of County-contracted residential collection districts.
- **Flexibility** – The existing residential collection system provides substantial flexibility and back-up. With both convenience centers and multiple private haulers, residents have the ability to subscribe for collection and, if or when they choose, to also use the convenience centers for additional waste they may have accumulated and wish to dispose of before the next collection or in the event they missed the set-out time and can’t wait or store their waste for another week. Too, all residents, at certain times, generate special waste, bulky items, brush or other materials that will be accepted at convenience centers, and they can self-haul these materials to a convenience center or arrange for a hauler, albeit usually at an incremental fee.
- **Extensive Services at Convenience Centers** – The existing convenience centers, as they have evolved and expanded over the years, now will accept a wide array of waste types and recyclables. There is very little in terms of waste type or recyclable type that a County resident can’t deliver to a County convenience center. While there are quantity limitations per trip, the types of materials accepted are extensive. Too, there is a “social” phenomenon associated with convenience centers and it is likely that many residents actually look forward to their weekly or multiple trips to a convenience center. Also, they may schedule the trip as the name “convenience centers” implies, so as to be combined and convenient with a trip to the grocery store, gas station, or other required outing, thus minimizing the incremental travel time and costs that are associated with dedicated trips.

Disadvantages

- **High Cost** – Households subscribing for weekly curbside collection services are paying \$20 to \$27.75 per month for waste-only collection services and could be paying less for waste collection in a County-contracted system, whereby contracted collectors would be guaranteed a customer base for the term of contract, usually five or more years, and much greater route density.
- **Limited Recycling Collection** – Currently, there is only one residential collector reported to offer curbside collection of residential recyclables in the County. This is understandable as there is limited recyclables processing capability in the region and an extensive system of drop-off facilities for separate materials exists and is the established recycling system.
- **Recycling Opportunities Are Not Fully Realized** – Residents who do not choose to take recyclables to one of the convenience centers or one of the igloo drop-off sites or find it inconvenient to do so, simply place recyclables in with trash. A system making curbside collection of recyclables convenient and part of a regular service could be expected to yield increased resident participation and greater diversion to recycling.
- **Increased Collection Vehicle Traffic** – Vehicles from multiple companies service the same areas traversing the same streets, creating inefficiencies, increased traffic, and compromised safety.
- **More Pollution** – Multiple vehicles servicing the same areas unnecessarily generate more air pollution in the aggregate from their emissions. In addition, the vehicles' routes are not likely to be optimized, which unduly increases their run times and associated vehicle emissions and fuel consumption.
- **Convenience Center Traffic** – Increased use of convenience centers as the County population has grown contributes to increased traffic congestion, potential for accidents and difficulty in monitoring users at the sites. Further, many of the households using convenience centers could be cost-effectively and conveniently served by curbside collection today, which was not the case 10 or 15 years ago when the County was less densely populated. Too, the County has continued to add and expand services at the convenience centers, with the population growth and their elevated use, at increased costs and higher taxes.
- **Lack of Uniform Service Standards** – Under Chapter 25 of the Queen Anne's County Code, the County does have some standards for refuse containers, set-out requirements, and collection practices. However, these standards should be expanded and strengthened. Moreover, service standards of individual haulers vary, which contributes to collection inefficiency and refuse set-outs that cause litter and attract vectors.
- **Duplication of Services** – While the convenience centers have provided a valuable service to residents and a means of managing residential waste typical in rural communities with limited population density and, thus, higher costs for curbside collection service, the convenience centers now "compete" with the private haulers, since many residents are inclined to self-haul to the centers rather than subscribing to curbside collection at a higher cost. As long as the extensive system of convenience centers is available and their use is sustained, the costs of subscription collection will remain high, since private haulers, except in the incorporated towns and certain dense areas such as Kent Island, will not have the customer base and route density to significantly reduce their unit costs and offer more reasonable collection service fees.

- **More Limited Control Over Disposal Location** – While the County can control where it delivers waste from convenience centers for disposal, and incorporated towns can also make that a provision of their bidding and contracting for residential curbside collection, residential subscription with private haulers does not allow for that control and can lead to waste flowing to locations where haulers choose to take it, which may not be consistently the Midshore Regional Landfill and/or a designated rubblefill. This could tend to undermine the economics of the Midshore Regional Landfill, for example, contributing to an increase in disposal fees over the reduced waste intake.

Section 4 Advantages and Disadvantages of a System of County-Administered Contract Districts for Residential Collection

Advantages

There are many advantages that could be realized through a County-administered system of contract districts for residential waste collection or residential waste and recyclables collection. These include:

- **Lower Costs to Residents** – Residents would pay less than current rates offered by private haulers to subscription customers. The increase in fees assessed for waste collection and the County's administrative expense for the contract system could be minimized by cost savings the County would realize in the reduced operation of convenience centers and the associated container transport system and their administration.
- **More Service to Residents** – Residents could be provided yard waste and bulky waste collection at little extra cost as part of the County's collection contract(s) with hauler(s).
- **High Level of Customer Service** – Residents would obtain an improved quality of service, enforced by contract provisions and penalties to the contracted hauler(s) for non-compliance.
- **High Level of Control of the Collection System** – As the County would be the point of contact for customer service, provide billing, control the contracting process, and monitor the haulers, the County would have a high level of control and management of the residential waste collection system, greater than it now has. Service standards would be applied and enforced by the County.
- **Increased Recycling** – There would be an increased opportunity and greater convenience with residential curbside recyclables collection, which should lead to a higher diversion rate to recycling in the County.
- **Reduced Traffic, Fuel Consumption, Road Wear and Pollution** – Fewer trucks and, potentially, newer trucks would be used. By optimizing the contracted haulers' routes, less distance would be traveled. Less truck traffic reduces the potential for accidents and total vehicle emissions and fuel consumption.
- **Increased Operational Efficiency of Haulers** – Contracted haulers may also benefit from centralized route optimization (and more condensed routes), which may be conducted as part of the program development and program administration. Smaller haulers likely could not afford the costly process of implementing route optimization software, but could benefit from efficiency improvements of 10-25% if optimized routes would be included in a County procurement for contract collectors.
- **Reduced Traffic Into Convenience Centers** – Fewer vehicles, and potentially, increased curbside recyclables collection, would result in less traffic, safety, and monitoring issues at convenience centers.
- **Reduction in Number of Convenience Centers and Their Operating Schedule** – Through contracted curbside collection of residential waste, adding to the contract collection service already in place in the incorporated towns, the County could phase out the receipt of household trash at convenience centers,

reduce the number of convenience centers, limit their days and hours of operation and sell certain surplus equipment that would no longer be needed, all yielding a significantly lowered cost for the convenience center system. The convenience centers remaining in the system would be limited to receiving certain types of waste or recyclable materials that would not be expected to be part of a regular curbside collection at residences, such as large brush, large bulky items and white goods, used oil and antifreeze, used tires, used electronic components, used clothing, and perhaps other materials. Certain of these materials could be part of a contracted residential collection service, and that could be determined through further planning and procurement activities involving the haulers interested in contract district opportunities.

- **Secured Use of the Midshore Regional Landfill** – The collection contract(s) awarded to haulers would be expected to require the haulers to use the disposal facilities, and in the case of recyclables, the consolidation facility, designated by the County, providing a means to secure waste and recyclables supply. While waste supply has not been a problem for the Midshore Regional Landfill in the last few years, it has been an issue and it could always become a problem in the future.

Disadvantages

- **Opposition from Certain Residents and Haulers** – With the announcement and pursuit of an initiative to implement County-contracted districts for residential curbside collection, the County, particularly the County Commissioners, could expect to receive significant opposition from certain residents and haulers who will bring whatever pressure to bear that they can in an attempt to thwart the new program. This would divert County time and resources, and would need to be addressed and managed.
- **Implementation Costs** – To further plan, procure, and implement a system of County-administered residential contract collection districts, the County would incur front-end costs, which could either be rolled into administrative fees to be recovered over time in billings to residents in the collection districts or otherwise absorbed through the General Fund.
- **Administrative and Enforcement Burden and Costs** – The County would assume a new or expanded administrative function of billing, hauler contracts management, hauler monitoring, customer calls and complaint handling, and enforcement. This would require additional staff, equipment, software, services, and possibly office space and at a significant and continuing annual cost. This cost, however, would be expected to be a small portion of the regular contract collection billing to collection district residents. Therefore, it would be recovered.
- **Expanded Public Education/Community Information Needs** – With such a dramatic change in the residential collection system and the programs, services, and facilities involved, a very substantial public education program in advance, during the transition, and on a sustaining basis thereafter would be needed. This community information program will be extensive and costly, and borrowing on the old real estate adage, a large part of the success of a County-administered residential curbside collection contracts initiative and the smoothness of the transition will turn on “education, education, education!”
- **Potential for Increased Littering and Illegal Dumping and Need for Greater County Monitoring and Enforcement** – Depending on the convenience centers remaining open, their hours, and materials accepted, and on the types of materials to be collected by contracted haulers, there is the potential

for increased illegal dumping and littering in the County. Residents in contract districts who miss a collection set-out, generate certain special waste materials but want to avoid an incremental cost for their collection, or have waste materials that are no longer accepted at convenience centers, or don't want to drive to a more distant convenience center since the one closest to them may now be closed, could seek to dump such materials illegally along roads, fields, or woods, or burn them. This would require more vigilance by the County and a stepped-up enforcement effort, particularly in the transition and early years of a new program.

- **Requirement for New Recyclables Management Facilities, Services, and Business Arrangements** – Through a curbside collection contract program for residential recyclables, the County would be making a major change in the long-standing program of drop-off igloos and containers at convenience centers where each type of recyclable material, such as different colors of glass containers, aluminum and steel cans, newspapers, old corrugated containers, different types of plastics, and certain other materials are deposited in separate containers. The recyclables would be collected in one (single-stream all in one container, most likely a wheeled cart) or in two (dual-stream using bins or possibly a cart) streams, with commingled containers as one stream and all paper as another stream. The recyclables would be set out at curbside and the collector would deliver them to a “materials consolidation facility (MCF),” most likely at one of the County convenience centers, where they would be deposited into large bulk containers or trailers with moving floors (“walking floor”), and then transported to a materials recovery facility (MRF) for separation, processing, and marketing. Under this arrangement, the County would need to develop and operate a materials consolidation facility and either provide materials transport to the MRF with County forces or contract for transport and MRF processing services. This would require new capital and operating expenditures, operating services, procurement activities, and new contracts by the County. All facilities and services would need to be in place prior to the start of curbside collection of recyclables.

The County is currently planning the construction of a materials consolidation facility situated at the Centreville Convenience Center. Funding for this facility has been allocated, primarily from recycling surcharge fees collected from the R.B. Baker Rubble Landfill, and the general fund. Planning and design can resume pending the decision and actions taken by the County Commissioners relative to this study.

Section 5 Legislative and Administrative Considerations

5.1 Legislative Needs

Residential collection contract areas administered by County government have been established and competitively bid out to private collection companies in several Maryland counties, including but not limited to: Anne Arundel County, Prince George's County, Howard County, Baltimore County, and Montgomery County. Other Maryland counties are currently considering or planning conversion to residential contract collection as well. So, there is substantial precedent and legal foundation for such County-administered programs in Maryland. The management and administration of the contracts has typically been through the county public works department. These collection areas are entirely within the county boundaries and managed by the individual counties. The counties have ordinances that provide for such contracting and contract areas.

Queen Anne's County has traditionally left the curbside collection of residential solid waste to arrangements between residents and private collectors, except for the eight incorporated towns that contract for residential collection. The County, through Chapter 25 of the Queen Anne's County Code, and its associated ordinances has broad powers addressing solid waste collection and regulation of collection practices, refuse set-out, registration of haulers, administration of its programs, and other controls and standards related to solid waste storage and collection in the County. In particular, Part 2, Article II, empowers the County to establish solid waste subdistricts within the Sanitary District (which is the entire County exclusive of any incorporated municipality) if the County Department of Public Works determines that such subdistricting will best serve the needs of the Sanitary District, promote convenience and economy of operation, and permit the raising of revenue.

Refuse produced by households in such subdistricts is to be collected by a collector contracted by the County. The Director of Public Works is empowered to establish a fee schedule for household collection in solid waste subdistricts. Rates are to be uniform for each class of property and include a minimum charge, but the Department of Public Works may make whatever classifications it considers advisable within any subdistrict. The County may conduct billing on a quarterly, semi-annual, or annual basis, charge interest penalties for late payment, and stop service to a property after written notice if a bill remains unpaid after 30 days. The County is also empowered to place liens on properties under certain conditions.

While there are certain amendments and/or new provisions that are likely to be required to existing County ordinance(s) establishing the ability to create solid waste subdistricts, establish fees and charges for collection in such subdistricts, procure collection services and contract with collectors, and regulate solid waste storage, set-out, and collection within such subdistricts, it appears the County has in place the basic legislative foundation and empowerment to advance a County-administered contract collection program for residential waste.

One issue noted is that Chapter 25 does not address collection districts for recyclables collection and establishing rates and charges for such collection. This would need to be addressed, along with other provisions, in any new or amended ordinance, if curbside collection of residential recyclables is to be included as part of a collection districting initiative.

In the event certain residents actually have contracts with collectors, which may be the case in some homeowners' associations or certain subdivisions, there would need to be a contract transition resolved. The issue of "business takings" is often raised

by the private collectors, but, typically, legal challenges on this basis have been put aside. Other legal issues that may arise include, but are not limited to, a requirement to pay for service not used (particularly in the case in a voluntary participation curbside residential recyclables collection program), elements of the assessment and their equity, extent and type of restrictions on qualifications to bid or propose on collection districts, facility use designation, and consistency with the existing County Solid Waste Management Plan. It would be important to involve legal counsel early in the implementation planning.

In developing appropriate ordinance amendments and/or any new ordinances in support of a County-administered contract collection program, such elements as the fees, billing method, mechanism for calculating additional charges (e.g., multiple dwellings on one property, excess refuse, other), assistance to needy or senior citizen discounts, and new or revised standards for refuse (and potentially recyclables) set-outs would have to be addressed.

5.2 Administrative Needs

Implementation of residential collection districting in Queen Anne's County would entail substantial front-end planning and community information efforts and an on-going contract administration and management function once districts and contract services are in place. These ongoing functions would include customer billing and receivables collection, paying contractors, managing customer changes, monitoring collection service and contractors, resolving complaints, enforcement of ordinances and contract terms, performing record keeping and reporting, bidding and contracting collection district services, and planning future needs and changes. Most likely, the County's Department of Public Works would be the contract administrator and coordinate the overall planning, administration, and management of the collection districts and the associated bidding and contracting activities. Certain of the administrative functions may be performed by other County departments, such as Finance, that would perform billing and maintain a customer data base.

Among the key development activities following a decision to implement residential waste collection contracting by the County would be: developing an "action plan;" meeting with residents and haulers; determining collection districts; and, potentially, routes in each district; developing new ordinance(s) and/or amended ordinances; designing an effective public education/community information program and associated tools; notifying collection district customers and providing appropriate community information; designing an effective Management Information System (MIS); preparing contract specifications and procurement documents; carrying out the contractor procurement(s); evaluating proposals or bids; preparing and awarding contracts; hiring and training new staff or transitioning and training existing staff for program administration and contracts management; conducting customer billing and collections; monitoring customer service and contractor compliance; handling service requests and complaints; and maintaining records and reporting. The pre-launch and sustaining community information needs are likely to be substantial as public education will be critical to program success.

It is estimated that the costs for additional analysis, planning, and development activities needed to develop definitive collection districts; hire and train additional staff; prepare and issue procurement documents and contracts with technical specifications; develop community information materials and undertake an effective community information program; amend and adopt appropriate ordinances; evaluate bids; award contracts; put in place software, record keeping and reporting systems to effectively manage and monitor the collection districts and contractors; and

address accounting and other MIS needs, would range from \$250,000 to \$375,000 and could be expected to take up to 18 months. This would involve input and coordination among several County departments and the County Commissioners.

To maintain an effective management and administrative function, the County would likely require a program administrator/manager, and certain accounting and clerical staff, complaints and contract monitoring staff, and customer service support. It is possible that certain of these functions would not require full-time commitment to the curbside collection program, and part of their duties would include other County Public Works and/or Finance Department responsibilities. It is estimated that annual costs could reasonably range from \$250,000 to \$300,000 to manage and oversee the several collection districts, exclusive of any legal, advisory, or consulting expense. At program start-up, it is likely that several temporary staff, to help with calls and customer service needs, would be required for a few months. On a household served basis, this County administration cost is estimated to be approximately \$1.79-\$1.90 per customer household per month based on the collection districts and their customer bases as assumed in this study.

5.3 Political/Institutional Acceptability

While there is precedent and much experience with establishing and maintaining contract collection areas for residential solid waste in several Maryland counties and in thousands of local governments throughout the nation, the practice has not been applied in Queen Anne's County, except by the incorporated towns that bid out residential collection service to private collectors and enter into multi-year contracts. The unincorporated area of the County has been open market for years, with both large and small hauling companies competing in that market. It is estimated that over 50 percent of the County households rely on the County convenience centers rather than subscribe for curbside collection. In general, the private waste hauling industry serving the County could be expected to consider a collection districting initiative to be a potential threat to their market share and a possible "taking of their business," even though it would create new business opportunities and a more secure market for those haulers awarded collection contracts. The waste hauling industry in the County and their association, the Maryland-Delaware Solid Waste Association, could be expected to oppose collection districting and lobby the County Commissioners to also oppose it.

One of the major concerns when considering a transition to contract collection is protection of the small haulers. In Queen Anne's County most of the subscription collection service and contract service to the incorporated towns is done by larger hauling companies, although there are some small hauling companies collecting in the County. Some haulers, primarily smaller hauling companies or individuals, may not be able to secure the insurance, bonding and back-up equipment that would likely be required in order to bid and contract for a collection district, and/or they otherwise may not be competitive in bidding against the larger haulers. This constraint could be reduced through such approaches as small hauler set asides, limiting the number of districts any one hauling company could have, and/or requiring a certain "small hauler participation level," whereby a bidder would be required to subcontract a certain percentage of a district to a small or minority hauler, or disadvantaged business enterprise. Of course, it would be essential that certain minimum qualifications, including financial security, are met regardless of hauling company size.

Collection districting represents "change," and change in a way of life that has existed for years is usually met with some resistance, even when it can be

demonstrated that this change can lower costs to County residents, improve the environment, reduce traffic congestion and lower the potential for traffic accidents as the County continues to grow.

There are certain approaches that can be taken to address such expected resistance. The first is a good community information program, including an open dialogue with the hauling community to solicit their ideas on how districting could be implemented to minimize adverse impacts on haulers.

Typical issues and questions the haulers could be expected to raise include:

- Business “takings” from collectors’ current customers (HOAs, residential developments, others); phase-out/transition of existing contracts
- County’s schedule for going to collection districts
- Award of all collection districts to one collector and/or maximum number of districts that any single collector (collection company) can have and the cost implications
- Subcontracting requirements and Minority and Women-Owned Business Enterprises (MWBE) or small business participation or set asides
- Separate recyclables collection districts vs. same districts as refuse collection districts
- Length of contract(s), billing and payment arrangements, assumption of risk for bad accounts
- Public education and enforcement to be provided by the County and extent of education/reporting required to be provided by the contracted collector(s)
- Requirements for equipment (e.g., maximum age, extent of back-up required, emissions controls), and insurance and bonding requirements
- Requirement for office or fleet depot in-County
- Responsibility for cart(s) and/or recyclables container purchase and distribution
- Set out requirements for refuse and materials allowed for collection
- Recyclables collection frequency and materials to be accepted for collection, if recyclables collection is to be in districts
- Voluntary versus mandatory participation of residents
- Multi-family and/or size of multi-family to be included in districts
- County “hands-off” the existing commercial collection system
- Routing within collection districts
- Complaint handling/reporting responsibility and penalties
- Location of disposal facility and recyclables consolidation facility-mandatory as part of contract or hauler choice
- Opportunity to propose “options”
- Changes to County ordinance(s) or new ordinance(s) needed for program implementation
- Extent of record keeping and reporting that will be required of collector(s)
- Penalties for violation of new or revised ordinance(s) by residents and ordinances and contracts by collectors

- Ability of collectors to collect other customers (residential and/or commercial) while servicing a contracted collection district
- Participation of incorporated towns
- County's expected changes to convenience center system

Another activity that could help the County in planning a program and addressing resident and hauler resistance is a "peer matching" of County officials with representatives in some of the other Maryland counties that have residential contract collection areas. This would help the County to gain insight into how those counties managed these same issues and concerns to build support and ease the process of collection districting. Clearly, there is likely to be some attrition in the waste collection community in the County with implementation of contracted residential collection districts. However, the benefits of collection districting are significant, and they will become more critical, and in the interests of a larger and larger portion of the population, as County growth continues.

The risk of waste flow out of the County to disposal facilities other than the Midshore Regional Landfill and the local rubblefill is always present. This has been an issue on the Midshore and could again be a problem. One cannot predict what new plans and initiatives may be implemented by others that could jeopardize the economic stability of the Midshore Regional Landfill. Collection districting is a means to reduce that risk, as Queen Anne's County is an important stakeholder in that facility.

Much of Queen Anne's County is rural; however, there are increasing pockets of dense population such as Kent Island and the southwest and northwest sections of the County that should make collection districting cost-effective and should yield competitive pricing from private collectors who would be expected to respond to a procurement for collection district services. The reasons for such competitive pricing are a guaranteed customer base, increased route density with reduced driving time between stops, guaranteed payments (e.g., no lost revenue from bad or slow pay accounts), and a secure revenue stream for a fixed period (usually five or more years under contract) to borrow against and amortize capital expenditures. Of course, much of the eastern section of the County is more rural, with lower population density, and presents challenges to collection districting. It would not be as cost-effective to collect in those sections of the County as in the more densely populated areas, and fewer residences would be collected per workday.

5.4 Key Issues

A transition from the existing residential waste collection system to one of County-administered collection districts will impact many stakeholders and will require resolution of development and implementation issues. The implementation of the program requires coordination with various parties inside and outside the County's organization. Key issues revolve around these stakeholders, preferences of the County in the type and make-up of the program, and other specifications of the procurement and contracting. Provided below is a preliminary list of key issues.

Procurement and Contract Specifications

- Use of Request for Proposals (RFP) versus Invitation for Bids (IFB) for contractor solicitation
- Multiple contract awards versus one hauler for all or much of the County
- Length of contracts

- Waste types that are to be collected; arrangements and billing for extra services or special needs such as additional waste, special waste, and services to handicapped
- Limitation on the number of routes or service areas for any one contractor
- Minimum wage or living wage to contractor's employees
- Small hauler or MWBE set-asides
- Insurance and bonding levels
- New equipment requirement or equipment age not to exceed specified number of years
- Engine emission limits and noise limits
- Contractor personnel specifications
- Customer service response times and penalties for non-compliance (liquidated damages)
- Good performance incentives
- Lead time the contractors need from contract award to obtain any new equipment to start collection services
- Including residential recyclables collection as part of the collection districting and having separate recyclables collection districts versus the same as for residential waste
- Including an option or requirement for contractors to process/market collected recyclables versus the County operating a materials consolidation facility and contracting with a MRF for processing services and marketing of processed recyclables

Routing

- Including defined routes in procurement or leaving up to contracted hauler (e.g., (1) County awards "districts" but does not develop an optimized route or routes within the districts, or (2) County develops optimized routes for each district and includes them in the procurement solicitation)?
- Extent of County to be included (e.g., Countywide or phased implementation) and the actual number of participating customers
- Convenience center sites to close and/or have reduced days and hours and materials to be accepted at those remaining open
- County's time and resources to evaluate different routes for all of the collection services: residential waste and residential recycling?
- How will the routes be maintained as the population grows? Options include internalizing the software or continuing with a service bureau.

- How many truck units should be in each procurement area? Should the procurement areas include a combination of both rural and high density residential areas or keep the high density and rural in separate procurement areas? Which option would lead to the best prices?
- Handling of brush, yard waste, bulky waste collection: call-in or routed schedule?
- Should the routes be finalized with contractor input?
- Designate disposal and processing sites (e.g., Midshore Regional Landfill for residential waste disposal, County materials consolidation facility for recyclables,).

Public Education

- Is County staff prepared to take the lead for all public education needs?
- When to first disclose County's proposed change to public?
- Does County have interactive capability on its Web site?
- Should focus groups be conducted in planning program and/or for viewing the educational materials? If so, should this be with County residents or an internal County staff committee?

Program Planning and Development

- How will this be funded?
- New administrative structure for program, billing system, and form of payment that would be acceptable (e.g. Can the County accept credit card payments?)
- Timing for new hires
- Allocation of further planning and program development, procurement, and monitoring efforts among County and consultants/advisors

Legal

- Will County need new ordinance(s) or amendment of existing ordinance(s) and changes to Chapter 25 of County Code? Content of new ordinance(s)?
- Ability to establish recyclables collection districts under existing ordinance(s) and code provisions
- Set-out requirements for residents in ordinance
- Other collection controls and restrictions to be added to ordinance(s)
- Sufficiency of existing County Code provisions for new or expanded residential assessments

- Ability to assess for recyclables collection if participation is voluntary
- Exclusion from assessment certain households that are served under existing collection contract
 - Sources and basis of possible legal challenges

Section 6 Implementation Options and Scenarios with Conceptual District Service Areas

6.1 Background of the Districting Analytical Approach

In order to assess the costs that haulers would likely bid or propose under a County-administered contract collection system, collection districts were developed using a Geographic Information System (GIS) based transportation logistics modeling software called FleetRoute™. The software modeled the logistics involved in providing curbside collection to the County's citizens by defining the time it would take to run a route for each collection day, the miles traveled, and number of trucks required. These cost factors of labor hours, mileage and the number of trucks were then input into a collection cost model for each district. The model was applied to four collection types and geographies:

1. Curbside residential waste collection only in the unincorporated areas
2. Curbside residential waste collection in the unincorporated and incorporated areas
3. Curbside residential recyclables collection only in the unincorporated areas
4. Curbside residential recyclables collection in the unincorporated and incorporated areas

The FleetRoute™ routing model was used to develop districts for each of the four collection types and geographies. Each district is comprised of a five-day workweek for one vehicle and its crew, assuming collection service frequency under a contract program would be once per week. Districts were balanced on time to ensure that each district could be served by one crew/vehicle in one five-day week. Each district could subsequently be used as a procurement area in a possible future procurement for County-administered contract collection.

In order to develop the districts, GBB needed to obtain GIS data on the single-family households and the street network in Queen Anne's County. A full one-year license for street centerline data was purchased from Tele Atlas. The County provided land parcel data from the Maryland Department of Planning, which was used to identify households residing in single-family homes, town homes and mobile homes.

The determination of customers from the land parcel data (a.k.a., CAMA data) from the Maryland Department of Planning was based on the following parameters/assumptions, which defined 15,451 households in the unincorporated area and 16,972 total households when including the incorporated towns in the County:

- a. The property has been geo-coded inside the County and is not located on an island without roadway access.
- b. The property has one or more dwellings ([Dwll_total]>0).
- c. The property's dwelling type was either a mobile home, townhouse, or single-family home ([Dwll_type] = 001, 002, 003, 004, 005, or 006)
- d. For districting that does not include incorporated areas, properties were selected that were not in an incorporated area ([Towncode]=""). For districting that includes incorporated areas, properties were selected that were located in an incorporated area ([Towncode]<>"").

- e. The property is not a RV park ([Ownname]<>"BEACH HARBOR CAMPERS CO-OPERATIVE").

6-2 Residential Waste Collection Districts

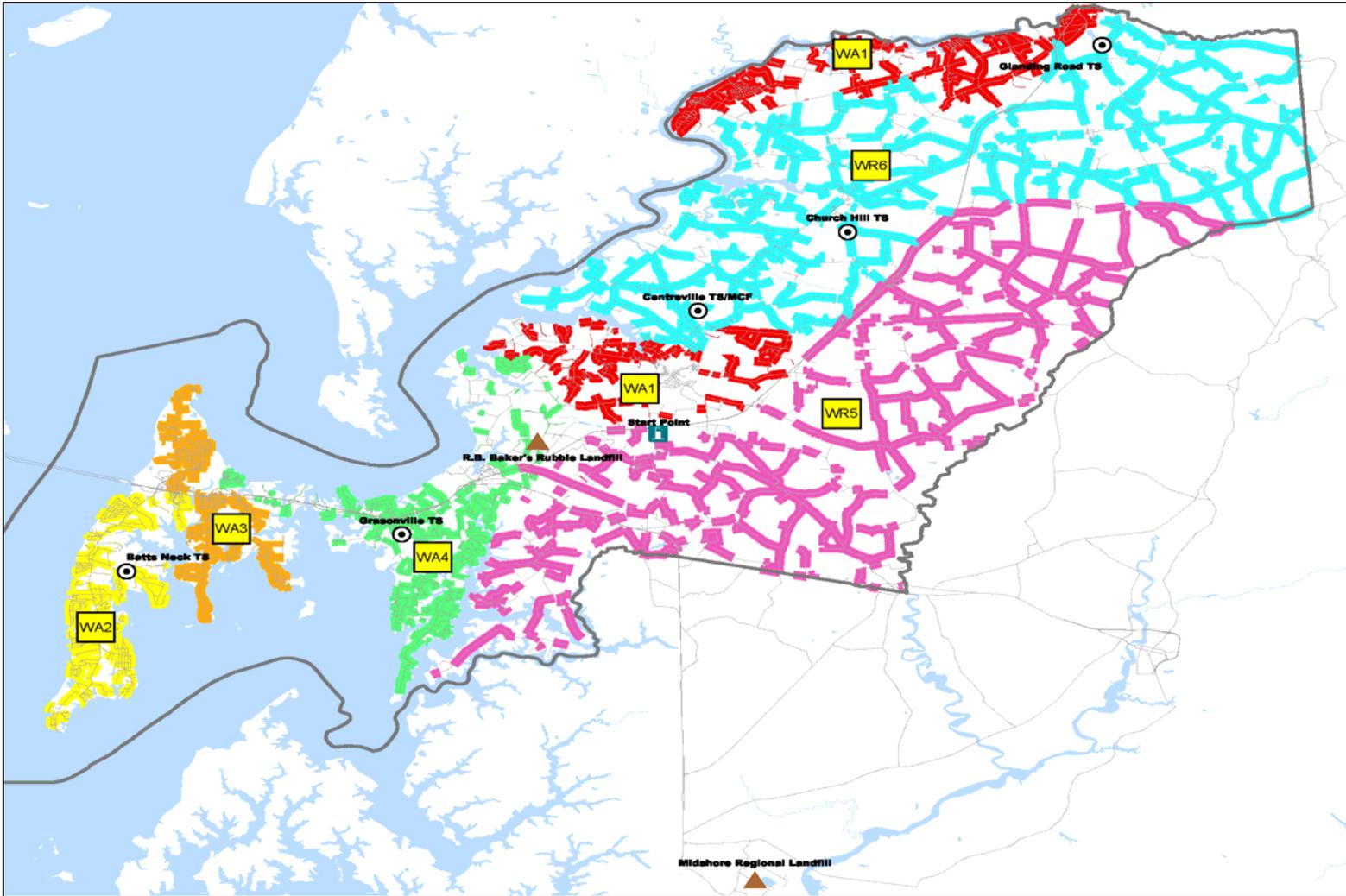
The potential residential waste collection districts with and without the incorporated areas are displayed in Figures 6-1 and 6-2 and their statistics are displayed in Tables 6-1 and 6-2.

The following key assumptions were applied in modeling residential waste collection districts:

6.2.1 Waste Collection District Assumptions

1. Collection type = Automated in dense areas using double-pass collections; semi-automated in rural areas primarily using single-pass collection (i.e., single-pass collection on all local roads, one-way major or minor arterials and highways; double-pass collection on all two-way major or minor arterials and highways).
2. Container = 96-gallon wheeled plastic cart
3. Collection frequency = 1/week
4. Crew size
 - a. Automated = 1
 - b. Rear loader = 2
5. Truck capacity = cubic yards (cy) and tons
 - a. Automated = 33 cy and 12 tons
 - b. Rear loader = 18 cy and 7.2 tons
6. Break times = 30 minutes per day
7. Depot location = 30 miles from center of County, which center is estimated to be 0.32 miles south of intersection of Route 301 and Centreville Road, with an additional 35 minutes of driving time (30 miles) to reach this starting point and an additional 35 minutes of driving time (30 miles) to return to their office at the end of the day
8. Pre-trip time and post-trip time = 15 minutes each per day
9. Average workday = 10 hours
10. Workdays per week = 5
11. Disposal facility = Midshore Regional Landfill
12. Disposal facility turnaround time = 15 minutes
13. Stop time per household/unit
 - a. Automated = 12 seconds
 - b. Rear loader = 20 seconds
14. Waste quantity collected per household/unit = 45 pounds/week

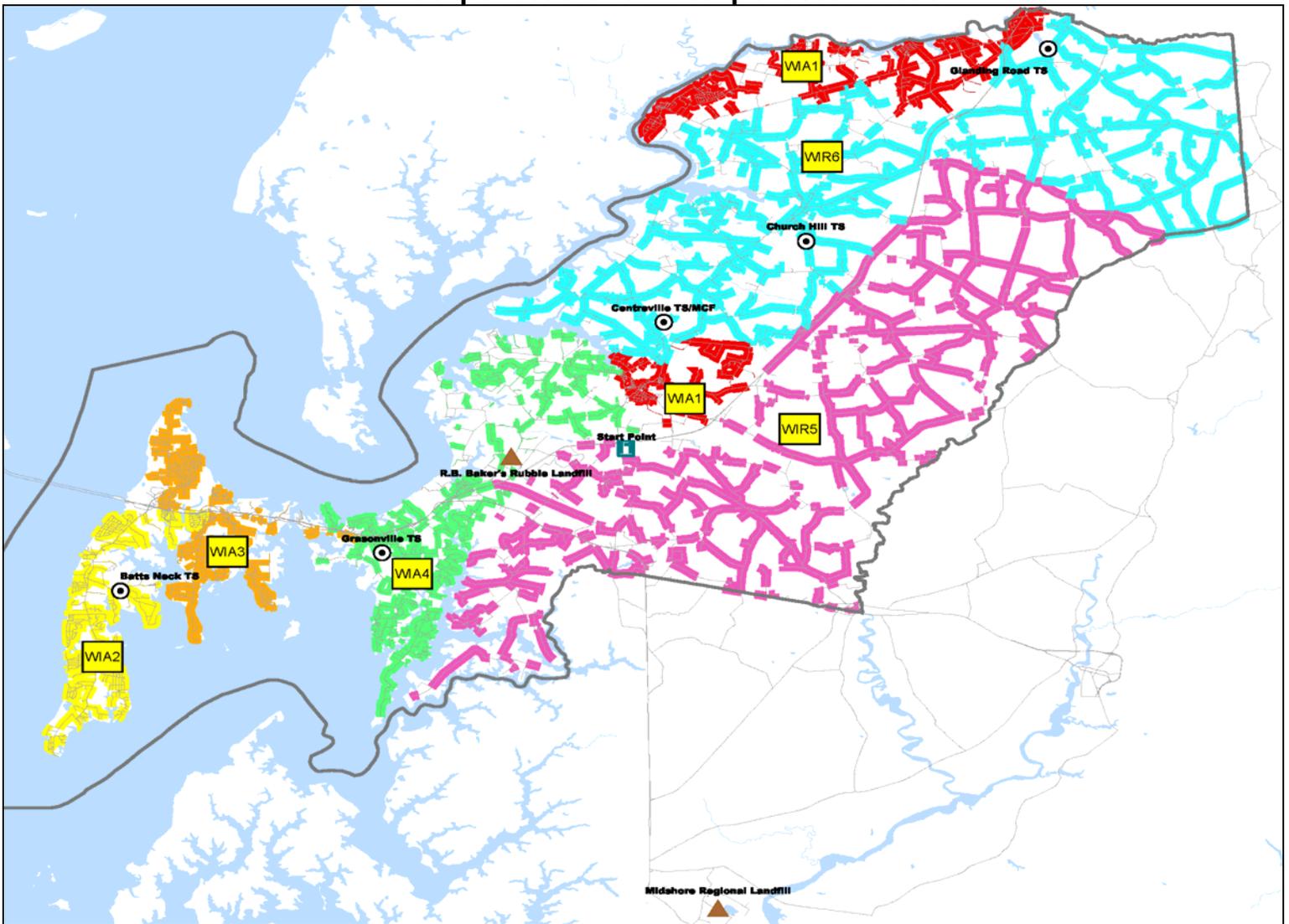
**Figure 6-1
Potential Residential Waste Collection Districts
Only in the Unincorporated Areas**



**Table 6-1
Statistics for Potential Residential Waste Collection Districts
Only in the Unincorporated Areas**

District	Hours Per Week	Tonnage	Households Per Week	Weekly Miles	Vehicle Type
WA1	48	58	2,584	981	Automated
WA2	49	71	3,170	923	Automated
WA3	44	71	3,138	830	Automated
WA4	50	78	3,459	917	Automated
WR5	48	36	1,586	982	Rear Load
WR6	49	34	1,514	1,076	Rear Load
Total	289	348	15,451	5,707	

**Figure 6-2
Potential Residential Waste Collection Districts in the
Unincorporated and Incorporated Areas**



**Table 6-2
Statistics for Potential Residential Waste Collection Districts
in the Unincorporated and Incorporated Areas**

District	Hours Per Week	Tonnage	Households Per Week	Weekly Miles	Vehicle Type
WIA1	49	66	2,921	974	Automated
WIA2	52	78	3,486	990	Automated
WIA3	51	84	3,723	962	Automated
WIA4	52	74	3,287	960	Automated
WIR5	50	39	1,750	1,031	Rear Load
WIR6	50	41	1,805	1,066	Rear Load
Total	305	381	16,972	5,985	

6.3 Residential Recyclables Collection Districts

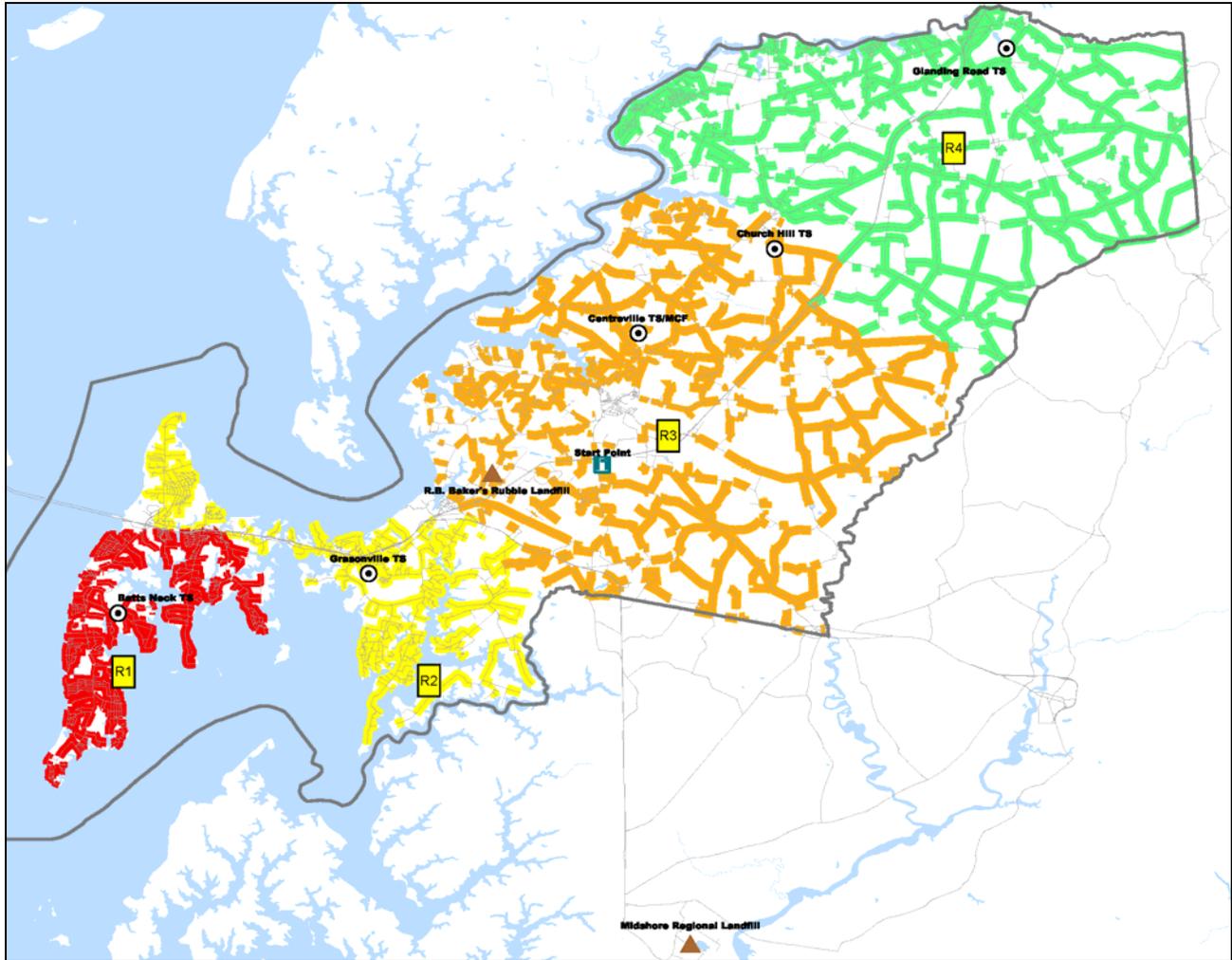
The potential residential recyclables collection districts with and without the incorporated areas are displayed in Figures 6-3 and 6-4 and their statistics are displayed in Tables 6-3 and 6-4.

6.3.1 Residential Recyclables Collection District Assumptions

The following key assumptions were applied in modeling residential recycling collection districts:

1. Materials = commingled containers and fiber (residential mixed paper) in dual-stream
2. Collection type = Dual compartment, non-compacting, right side drive truck using double-pass collection in dense areas (that are serviced via automated truck for garbage collection) and single-pass collection primarily in rural areas (that are serviced via rear load truck for garbage collection)
3. Container = 18-gallon bin for containers and bagged or bundled for fiber (residential mixed paper)
4. Collection frequency = 1/week
5. Crew size = 1
6. Truck capacity = 20 cy fiber and 20 cy commingled containers
7. Break times = 30 minutes per day
8. Depot location = 30 miles from center of County, which center is estimated to be 0.32 miles south of intersection of Route 301 and Centreville Road, with an additional 35 minutes of driving time (30 miles) to reach this starting point and an additional 35 minutes of driving time (30 miles) to return to their office at the end of the day
9. Pre-trip time and post-trip time = 15 minutes each per day
10. Average workday = 10 hours
11. Workdays per week = 5
12. Consolidation facility = Centreville Convenience Center / Materials Consolidation Facility (MCF)
13. Consolidation facility turnaround time = 15 minutes
14. Set-out Rate = 50% (largely depends upon extent of public education)
15. Stop time per household/unit = 20 seconds
16. Quantity per household/unit = 12 pounds per set-out household with 8.7 pounds fiber and 3.3 pounds commingled containers

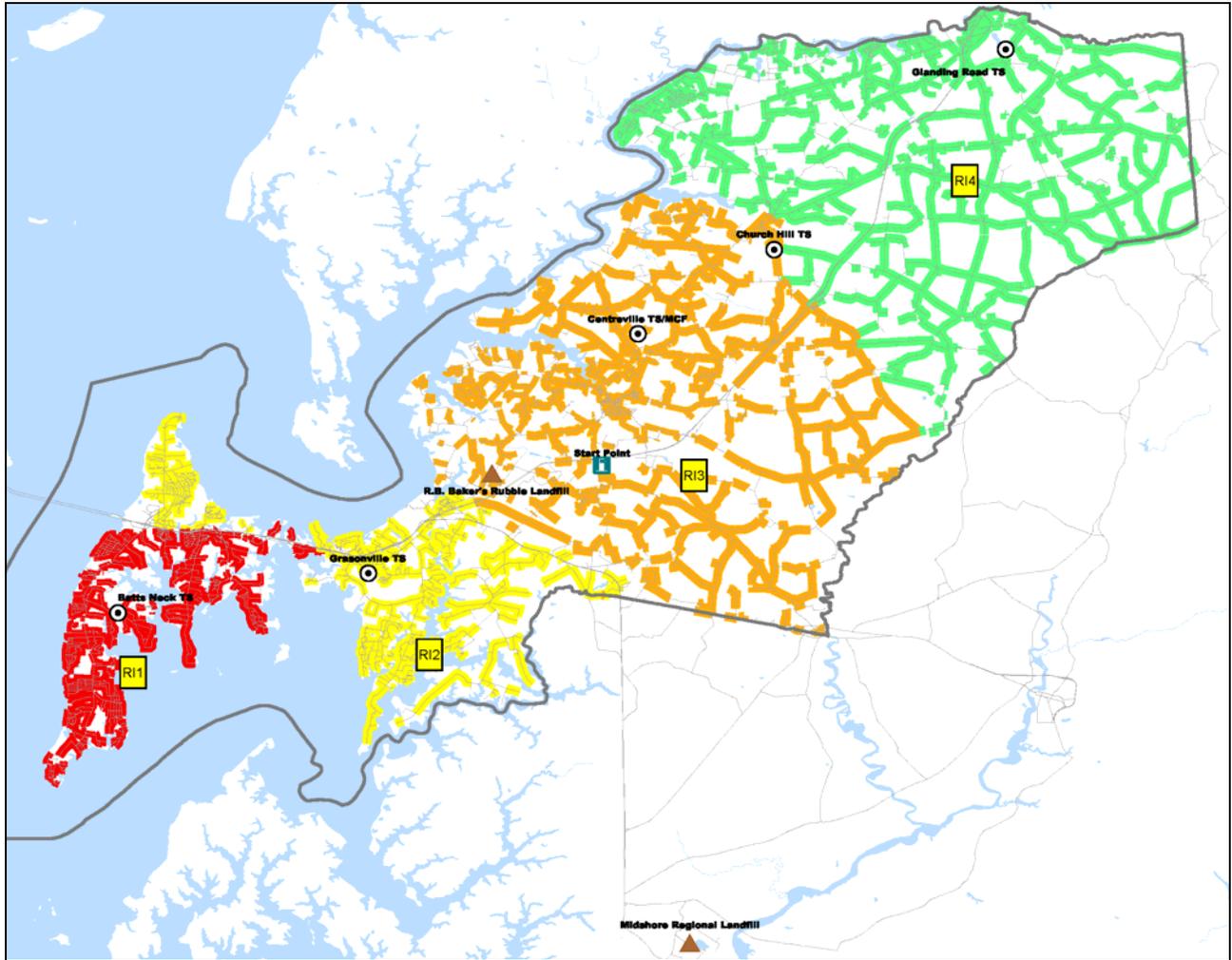
**Figure 6-3
Potential Residential Recyclables Collection Districts
Only in the Unincorporated Areas**



**Table 6-3 Statistics for Potential Recyclables Collection
Districts Only in the Unincorporated Areas**

District	Hours Per Week	Tonnage	Households Per Week	Weekly Miles	Vehicle Type
R1	50	15	4,835	837	Un-compacted, Dual Compartment
R2	51	15	4,902	870	Un-compacted, Dual Compartment
R3	48	8	2,713	937	Un-compacted, Dual Compartment
R4	50	9	3,001	1,000	Un-Compacted, Dual Compartment
Total	200	46	15,451	3,643	

**Figure 6-4
Potential Residential Recyclables Collection
Districts in the Unincorporated and Incorporated Areas**



**Table 6-4
Statistics for Potential Residential Recyclables Collection Districts in the
Unincorporated and Incorporated Areas**

District	Hours Per Week	Tonnage	Households Per Week	Weekly Miles	Vehicle Type
R11	52	15	5,007	889	Un-compacted, Dual Compartment
R12	53	16	5,189	873	Un-compacted, Dual Compartment
R13	51	10	3,369	944	Un-compacted, Dual Compartment
R14	52	10	3,407	1,013	Un-Compacted, Dual Compartment
Total	208	51	16,972	3,718	

6.4 Review of Districts

The districts for both residential waste and recyclables have exceptional amounts of non-service travel time and mileage. Given that the two major haulers (Allied/BFI and Waste Management) both have depots that are more than 40 miles away from Centreville (roughly the centroid of the County), a buffer of 60 miles per day per district was added to each district to partially account for this travel time and distance. Additional travel time before starting the route was added based on the travel district's distance from the "Starting Point" used in the model, which was placed just south of Centreville.

For waste districts, travel to and from the Midshore Regional Landfill added significant travel time and mileage, as it is located far from the service areas, being roughly:

- 15 miles from the County boundary;
- 20 miles from the Starting Point;
- 42 miles from the southern point of Kent Island on Willard Point Road; and
- 50 miles from the northeastern County boundary where Blanco Road exits the County.

This substantial travel time and mileage resulted in routes with a comparatively small number of house counts for ten-hour work days. As seen in Table 6-5, in the Waste Districts Only in Unincorporated Areas, there was an average of 618 residences collected per day in the automated areas and 310 residences collected per day in the manual (rear load) areas. The distance traveled per day was 183 miles in the automated areas and 206 miles in the manual (rear load) areas. An efficient route in a typical urban or suburban setting with double-pass collection and a ten-hour work day would collect 1,000-1,300 homes using automated equipment and 700-900 homes using manual (rear load) equipment, but these routes would have less than half the travel distance. Due to the County's geography and significant distance from the Midshore Landfill and the depots of the major regional haulers, the districts are less efficient and will therefore be less cost-effective.

Table 6-5

Average Daily Households Collected and Miles Traveled for the Potential Residential Waste and Recyclables Collection Districts

	Vehicle Type	Households	Miles
Waste Collection Districts Only in the Unincorporated Areas	Automated	618	183
	Rear Load	310	206
Waste Collection Districts in the Unincorporated and Incorporated Areas	Automated	675	194
	Rear Load	356	210
Recyclables Collection Districts Only in the Unincorporated Areas	Un-compacted, Dual Compartment	773	182
Recyclables Collection Districts in the Unincorporated and Incorporated Areas	Un-compacted, Dual Compartment	849	186

6.4.1 Impact of Population Growth to Districts

According to the Maryland Department of Planning (Planning Data Services website, <http://www.dnr.state.md.us/education/growfromhere/LESSON3/POPPROTL.HTM>), the County population will increase by 17.5% from 2005 to 2015 (from 44,600 to 52,400) with an annual average increase of 1.69% from 2005 to 2010 (<http://www.dnr.state.md.us/education/growfromhere/LESSON3/PPCTPCNG.HTM>). Given that the population growth is primarily concentrated in the water-access properties in the west and north, the districts in these areas may become too large for one vehicle to manage. If the County has separate haulers for each district, there would be a need to shift the boundaries of the districts every 3-7 years to accommodate the concentrated growth. In fact, this growth may require the re-districting sooner in the case of large sub-divisions being developed. The concentrated growth also poses problems with maintaining the balance within the districts for individual collection days, which may become off-balance requiring additional equipment to manage the days or a shift in the boundary of collection days. It is recommended that prior to issuing a procurement, the County evaluate the options in consolidating multiple districts into one procurement area and in developing collection days that can accommodate the concentrated growth. Defining the make-up of the procurement areas/districts and the collection days will be facilitated by developing individual routes for the prospective bidders/proposers. Routed districts will allow for maximizing the hauler's productivity and proper forecasting of when the districts would need to be revised due to population growth.

6.5 Estimated Hauler Costs

Table 6-6 presents examples of the common variables and calculations used in estimating costs for a hauler to service a waste or recycling district using the three different truck types: Automated (33 cu. yd.), Semi-automated Rear Load (18 cu. yd.), and Un-compacted Dual Compartment (40 cu. yd.).

**Table 6-6
Examples of Collection and Disposal Costs for Districts Serviced
by the Three Vehicle Types**

WIA1	WIR5	RI1	District
Assumptions			
Waste	Waste	Recyclables	Material
Automated	Rear Load	Un-compacted	Vehicle Type
Yes	Yes	Yes	Include Incorporated Areas
1X per week	1X per week	1X per week	Frequency of Collection
2921	1,750	5,007	Number of Households per Week
974	1,031	889	Number of Miles per Week
49	50	52	Estimated Hours per Week
			Pounds of Waste per Household per Week
45	45	6	Disposal Cost per Ton
\$47.50	\$47.50	\$0.00	Average Stops/Drive-bys per Day
584	350	1001	Driver
1	1	1	Laborer(s)
0	1	0	Days worked per week
5	5	5	Driver Day Rate
\$160	\$160	\$160	Laborer Day Rate
\$120	\$120	\$120	Equipment Cost With Spare Factor
\$211,270	\$154,170	\$154,170	Equipment Cost Without Spare Factor
\$185,000	\$135,000	\$135,000	Depreciated Life (years)
7	10	10	Cart Cost per Household per Month
\$0.85	\$0.85		Bin Cost
		\$6.00	Estimated Miles per Gallon
3.5	5.5	5.5	Estimated Fuel Cost per Gallon
\$2.25	\$2.25	\$2.25	
Monthly Operations Costs			
\$5,224	\$9,201	\$5,341	Labor
\$2,515	\$1,285	\$1,285	Vehicle Debt Service
\$2,483	\$1,488	\$751	Cart/Bin Cost
\$2,000	\$1,400	\$1,400	Maintenance
\$2,712	\$1,827	\$1,575	Fuel
\$8,021	\$7,070	\$7,070	Overhead & Profit
\$22,956	\$22,269	\$17,422	Total Monthly Cost
Monthly Costs per Household¹			
\$7.86	\$12.73	\$3.48	Collection Cost
\$4.63	\$4.63	\$0.00	Disposal Cost
\$12.49	\$17.35	\$3.48	Total Collection and Disposal Cost

The estimated collection and disposal costs by individual waste districts are summarized in Tables 6-7 and 6-8. Variable costs for mileage and labor are taken from the FleetRoute model used to develop the districts.

¹ Does not include County's administration cost and cost of recyclables consolidation and processing, which would be additional. County administration costs are shown in Tables 6-12 and 6-13, and curbside recyclables consolidation area capital costs and unloading and transportation costs are shown in Tables 6-15 and 6-16, respectively.

**Table 6-7
Costs for Potential Waste Collection Districts
Only in the Unincorporated Areas**

District	Households	Monthly Cost Per Household	Total Monthly Cost for the District	Annual Cost Per Household	Total Annual Cost for the District
WA1	2,584	\$13.39	\$34,609	\$161	\$415,302
WA2	3,170	\$11.89	\$37,687	\$143	\$452,247
WA3	3,138	\$11.81	\$37,055	\$142	\$444,655
WA4	3,459	\$10.84	\$37,504	\$130	\$450,052
WR5	1,586	\$18.42	\$29,217	\$221	\$350,603
WR6	1,514	\$19.21	\$29,090	\$231	\$349,080
Total	15,451		\$205,162		\$2,461,940

Note: Does not include the County's costs for administering the program.

**Table 6-8
Costs for Potential Waste Collection Districts in the
Unincorporated and Incorporated Areas**

District	Households	Monthly Cost Per Household	Total Monthly Cost for the District	Annual Cost Per Household	Total Annual Cost for the District
WIA1	2,921	\$12.49	\$36,473	\$150	\$437,677
WIA2	3,486	\$11.40	\$39,740	\$137	\$476,885
WIA3	3,723	\$10.99	\$40,918	\$132	\$491,016
WIA4	3,287	\$11.73	\$38,557	\$141	\$462,687
WIR5	1,750	\$17.35	\$30,368	\$208	\$364,415
WIR6	1,805	\$17.03	\$30,739	\$204	\$368,872
Total	16,972		\$216,796		\$2,601,552

Note: Does not include the County's costs for administering the program.

Tables 6-9 and 6-10 present the average costs for a hauler to service a recycling district, based on a five-day workweek of one truck and its driver. Each district is collected operating a dual compartment, open body truck with a one-person crew.

**Table 6-9
Costs for Potential Recyclables Collection
Districts Only in the Unincorporated Areas**

District	Households	Monthly Cost Per Household	Total Monthly Cost for the District	Annual Cost Per Household	Total Annual Cost for the District
R ₁	4,835	\$3.57	\$17,276	\$43	\$207,313
R ₂	4,902	\$3.54	\$17,332	\$42	\$207,986
R ₃	2,713	\$6.27	\$17,007	\$75	\$204,085
R ₄	3,001	\$5.75	\$17,244	\$69	\$206,931
Total	15,451		\$68,860		\$826,315

Note: Does not include the County's costs for administering the program and the costs for recyclables consolidation and processing.

**Table 6-10
Costs for Potential Recyclables Collection Districts in the
Unincorporated and Incorporated Areas**

District	Households	Monthly Cost Per Household	Total Monthly Cost for the District	Annual Cost Per Household	Total Annual Cost for the District
RI ₁	5,007	\$3.48	\$17,422	\$42	\$209,058
RI ₂	5,189	\$3.36	\$17,429	\$40	\$209,152
RI ₃	3,369	\$5.11	\$17,222	\$61	\$206,666
RI ₄	3,407	\$5.11	\$17,397	\$61	\$208,769
Total	16,972		\$69,470		\$833,645

Note: Does not include the County's costs for administering the program and the costs for recyclables consolidation and processing.

Table 6-11
Average Collection and Disposal Costs per Household for the
Potential Waste and Recyclables Collection Districts

	Vehicle Type	Monthly Cost	Annual Cost
Waste Collection Districts Only in the Unincorporated Areas	Automated	\$11.89	\$142.68
	Rear Load	\$18.81	\$225.70
	Combined (both)	\$13.28	\$159.34
Waste Collection Districts in the Unincorporated and Incorporated Areas	Automated	\$11.60	\$139.25
	Rear Load	\$17.19	\$206.27
	Combined (both)	\$12.77	\$153.28
Recyclables Collection Districts Only in the Unincorporated Areas	Un-compacted, Dual Compartment	\$4.46	\$53.48
Recyclables Collection Districts in the Unincorporated and Incorporated Areas	Un-compacted, Dual Compartment	\$4.09	\$49.12

Note: Does not include the County's costs for administering the program and the costs for recyclables consolidation and processing.

The estimated average collection costs by district are summarized in Table 6-11. This does not include the additional costs for the County to administer the program or the costs for operating any County recyclables consolidation center or other processing and transport costs. The average estimated monthly cost per household for collection and disposal of waste ranges from \$11.60 to \$18.81, with the higher costs being in the rear load areas. The combined average monthly cost per household for waste collection and disposal in the unincorporated area is \$13.28, which exemplifies the subsidizing of rural collection by the densely populated automated areas. Recyclables collection averages are in the range of \$4.09 to \$4.46 per month.

6.6 Costs for County Administration of the Contract Collection Program

The estimated cost for the County to administer the Contract Collection Program for residential waste only is shown in Table 6-12 and for residential waste and recyclables in Table 6-13. It is envisioned that the County would have three full-time staff members for this function: supervisor, inspector and one administrative assistant (for administrative and customer service duties). The pre-launch/start-up costs are assumed to be paid off through the household assessment over a five year amortization period. Alternatively, the pre-launch and start-up program development costs could be recovered earlier in a higher annual assessment or a one-time special assessment. On a per household basis, the cost for the County's administration of a contracted waste collection program is estimated to be \$1.79 per month, which includes the recovery of the County's pre-launch/start-up costs for the planning and development of the program.

With the inclusion of the administrative costs for a contracted recyclables collection service as part of the program, the monthly administrative cost is estimated to

increase to \$1.90 per household. These administrative costs are estimated for contracted service only to households in the unincorporated area of the County. If the incorporated towns are added to the program, there would be a marginal increase in the total administrative costs, but if they are spread over the entire service area, the unit costs per household would be reduced, as a larger customer base would be sharing the fixed costs.

**Table 6-12
Estimated County Administration Cost for Contracted
Residential Waste Collection**

Cost Elements¹	On-going Annual Cost	Months Working in Pre-Launch	Pre-Launch Cost
Salaries & Benefits ²			
Program Manager (70%)	\$40,961	2	\$9,753
Inspector (90%)	\$34,127	6	\$18,960
Administrative Assistant (S.W., 60%)	\$19,688	2	\$5,469
Administrative Assistant (Finance, 75%)	\$24,610	2	\$5,469
Benefits	\$68,493		\$19,552
Vehicles ³			\$25,000
Vehicle Maintenance, Depreciation and Fuel ⁴	\$11,850		\$2,500
Public Education ⁵	\$23,250		\$46,500
Telecommunications	\$4,200		
Supplies, Leases and Services	\$25,000		
Computers ⁶	\$3,500		
Consulting Services ⁷			\$125,000
Temp Labor for Customer Service ⁸			\$15,600
Contingency ⁹	\$13,560		\$42,920
Total Administration Expenses	\$269,239		\$316,723
Monthly Administration Expense Per Household ¹⁰	\$1.45		\$.34

¹ Expenses are for new staff and other direct costs. They do not include cost for internal administrative, human resources, legal, information technology, and other County support and services that are assumed to be handled with current staff and resources. To the extent existing staff can be used, job duties expanded, and existing equipment applied, the administrative expenses projected could be reduced.

² Numbers in parentheses represent percent of time allocable to curbside collection program, which is applied in calculating salaries to be charged to the on-going annual cost. Benefits are as calculated by the County.

³ One pick-up truck for the inspector.

⁴ Truck driving 30,000 miles/year at a cost of \$.395/mile.

⁵ Based on \$3.00/HH during pre-launch and \$1.50/HH during operations.

⁶ \$2,625/person including desktop software depreciated over 3 years.

⁷ Services for implementation planning, routing, procurement assistance, and certain public education assistance prior to start-up.

⁸ Temporary labor is calculated at 2 persons @ \$15/hour each for 3 months.

⁹ 20% of estimated costs except County salaries and benefits.

¹⁰ Pre-launch costs are assessed to 15,451 households on a monthly basis over a 5-year amortization period.

**Table 6-13
Estimated County Administration Cost for Contracted
Residential Waste and Recyclables Collection**

Cost Elements¹	On-going Annual Cost	Months Working in Pre-Launch	Pre-Launch Cost
Salaries & Benefits ²			
Program Manager (70%)	\$40,961	2	\$9,753
Inspector(90%)	\$34,127	6	\$18,960
Administrative Assistant (S.W., 60%)	\$19,688	2	\$5,469
Administrative Assistant (Finance, 75%)	\$24,610	2	\$5,469
Benefits	\$68,493		\$19,552
Vehicles ³			\$25,000
Vehicle Maintenance and Fuel ⁴	\$11,850		\$2,500
Public Education ⁵	\$31,000		\$54,100
Telecommunications	\$5,000		
Supplies, Leases and Services	\$25,000		
Computers ⁶	\$3,500		
Consulting Services ⁷			\$150,000
Temp Labor for Customer Service ⁸			\$18,000
Contingency ⁹	\$15,270		\$49,920
Total Administration Expenses	\$279,499		\$358,723
Monthly Administration Expense Per Household ¹⁰	\$1.51		\$.39

¹ Expenses are for new staff and other direct costs. They do not include cost for internal administrative, human resources, legal, information technology, and other County support and services that are assumed to be handled with current staff and resources. To the extent existing staff can be used, job duties expanded, and existing equipment applied, the administrative expenses projected could be reduced.

² Numbers in parentheses represent percent of time allocable to curbside collection program, which is applied in calculating salaries to be charged to the on-going annual cost. Benefits are as calculated by the County.

³ One pick-up truck for the inspector.

⁴ Truck driving 30,000 miles/year at a cost of \$.395/mile.

⁵ Based on \$3.50/HH during pre-launch and \$2.00/HH during operations.

⁶ \$2,625/person including desktop software depreciated over 3 years.

⁷ Services for implementation planning, routing, procurement assistance, and certain public education assistance prior to start-up.

⁸ Temporary labor is calculated at 2 persons @ \$15/hour each for 3 months and 1 person at that rate for 1 month.

⁹ 20% of estimated costs except County salaries and benefits.

¹⁰ Pre-launch costs are assessed to 15,451 households on a monthly basis over a 5-year amortization period.

6.7 Curbside Recyclables Collection and Materials Consolidation, Transport and Processing

The form of curbside collection of residential recyclables in the County that has been analyzed is weekly collection of recyclables in two streams (dual-stream) – residential mixed paper (RMP) and commingled containers – with containers set out in 18-gallon bins and paper set out in paper bags or bundled with the bins. The collection vehicle would be a low entry truck with two separate compartments – one for paper and one for commingled containers. The collection districts examined include collection of residential recyclables Countywide in the unincorporated area and collection Countywide in both the unincorporated area and the incorporated towns.

Under either scenario, the collected recyclables would be delivered to a materials unloading area, which would be part of a Materials Consolidation Facility (MCF), to be developed and operated by the County, at the Centreville Convenience Center. The MCF would include other structures, facilities, and equipment to serve the County's collection and processing of primarily old corrugated containers (OCC) from schools, certain commercial establishments and institutions and other special recyclable materials. The materials unloading area and containers for residential recyclables from contracted curbside collection would be a component of the overall MCF.

The materials unloading area would include separate, custom built compactor containers (approximately 48 cubic yards each), with feed hoppers, set on a concrete pad. A preliminary conceptual layout of the materials unloading area is shown in Figure 6-5. When a container is filled, it would be transported by the County, or a contracted hauler, on a roll-off truck to a County-contracted materials recovery facility (MRF), where the materials would be processed and then marketed for ultimate recycling to certain markets/end users. Possible materials recovery facilities at which the recyclable materials may be processed are shown in Table 6-14. This list in Table 6-14 is not all inclusive, and there could be other possible outlets within a reasonable transport distance of the County. The estimated costs to construct and operate this materials unloading area, including transport of roll-off containers, are shown in Tables 6-15 and 6-16, respectively.

There are several issues to consider with the collection and processing of residential recyclables in the County. First, much of the County is rural, and curbside collection in the rural areas will be expensive and not very efficient, due to the low housing density. Second, dual-stream collection would not be as efficient as single-stream collection at residences wherein "all" mixed recyclables, paper and commingled containers, would be placed in one container, preferably a roll-out cart of 32 or 64-gallon capacity, which could possibly be collected every other week rather than weekly, lowering the collection costs and making the collection more efficient. Moreover, use of a cart would be expected to be more convenient for the resident and increase the recyclables storage capacity. Based on experience in other communities with collection of recyclables in carts, it also could be expected to elevate the set-out quantity as a resident could place more materials in the cart, particularly larger fiber such as pizza boxes and cereal boxes, and compressed corrugated containers. The roll-out cart with lid would also protect recyclables from the weather during set-out periods. However, the primary reason dual-stream collection in bins is analyzed is that little or no materials recovery facility capacity within a reasonable haul distance of Queen Anne's County exists for residential

Figure 6-5

**PRELIMINARY CONCEPT LAYOUT
CURBSIDE RECYCLABLES UNLOADING AREA AT
MATERIALS CONSOLIDATION FACILITY**

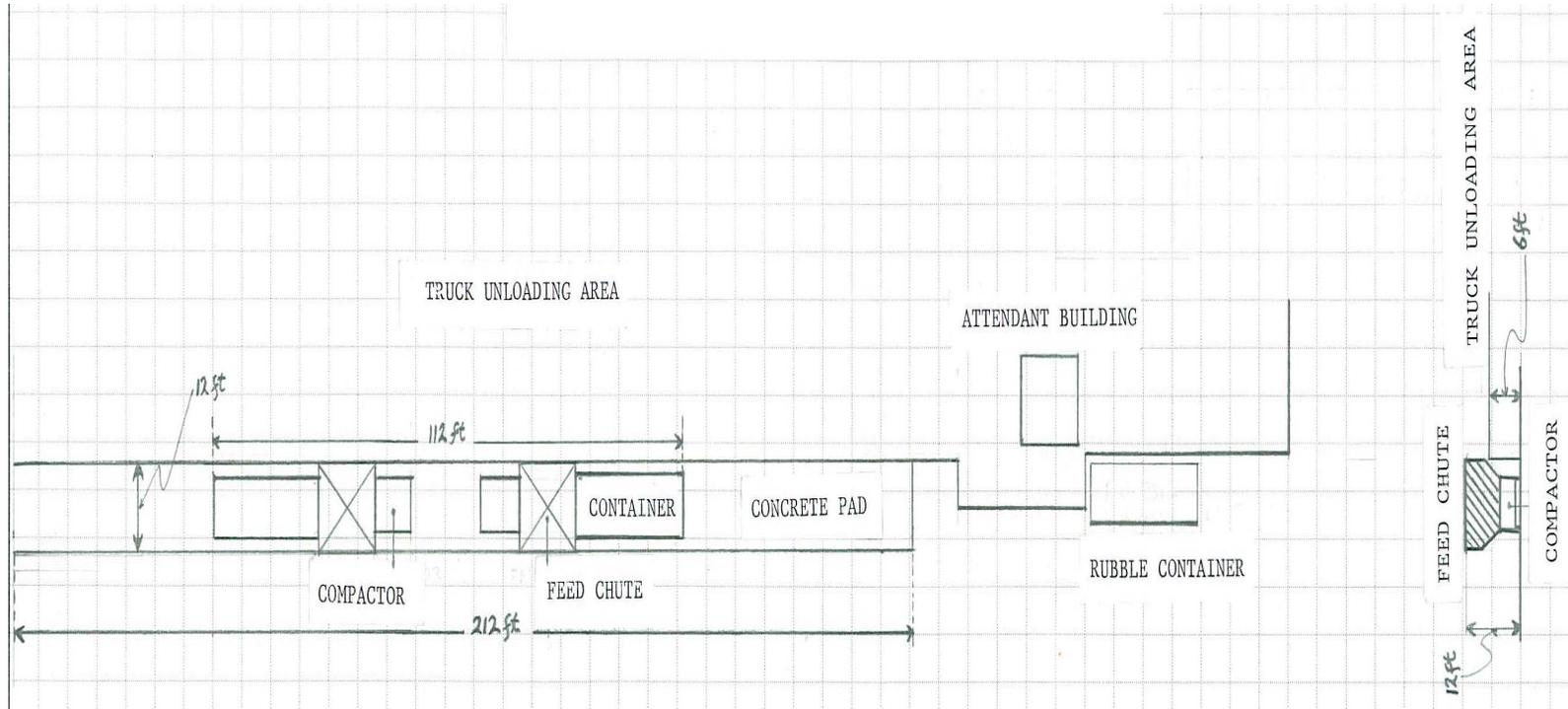


Table 6-14

Possible Materials Recovery Facilities for Recyclables from Queen Anne's County

Status	County/ State	Facility Operator	Contact	Phone Number	Type of Operation (Single-Stream (s/s), Dual Stream (d/s), both, other)	Materials Accepted (fiber, commingled, comm)	Form Acceptable (baled, loose, compacted)	Pricing (tip fee to deliver?)	Revenue Sharing (credit v. tip fee, [est.]?)	Glass Accepted? (tip/rev. share - w & w/o)	Contracting Arrangements
Existing	Wicomico County, MD	Wicomico County, MD	Rai Sharma	410-548-4810	both	Fiber=ONP/OMG; RMP & OCC must each be delivered separately	loose	no	no	No Glass	Requires letter of intent
Under Construction (to open July 2005)	Elkridge, MD	WMI Recycle America	Paul Woyciechowski	609-471-5683	s/s	fiber & commingled	loose	no	Would consider	Glass = OK	Terms to be negotiated; better price w/ longer-term contract
Existing (to be upgraded)	Queen Anne's County, MD	Infinity Recycling	Ford Schumann	410-778-5949	source-sep; 2-sort	all; #1 plastics only; no asceptic;	loose	no	Would consider	Glass OK - taken to Midshore for free	Terms individually worked out
Existing	New Castle, DE	WMI	Paul Woyciechowski	609-471-5683	no s/s	fiber only	loose	no	Would consider, depends on quality & quantity	No Glass	Terms to be negotiated; better price w/ longer-term contract
Existing	New Castle, DE	Delaware Solid Waste Authority	Rich Von Stetten	800-404-7080	no s/s	Fiber=ONP/OMG; RMP & OCC must each be delivered separately; commingled	loose	no	no	Glass must be separated from other commingled materials	Terms to be negotiated
Existing	Wicomico County, MD	Delmarva Recycling	Dave Eccleston	410-546-1111 x202	no s/s	Undetermined	Undetermined	probable tip fee	yes, formula-based revenue sharing	Glass = OK	Depends on terms negotiated
Existing	Gaithersburg, MD	Office Paper Systems, Inc.	Ron Anderson or Brian Ryerson	301-948-6301	primarily fiber but will take residential dual stream under certain terms	fiber and commingled	loose	no	Revenue share for residential mixed paper (RMP) OBM yellow sheet #8 News, S.E. Region High Side less OPS share FOB OPS MRF, with guaranteed floor price. \$20-\$25/ton paid for commingled containers with glass in current market; higher pricing without glass	Glass = OK	Terms to be negotiated

recyclables in single-stream form. There is one large, new private facility under construction in Elkrige, Maryland, which could be a potential outlet. So, a decision regarding the form of recyclables collection is not only driven by collection economics but also by availability of processing facilities and the business arrangements they offer. The more densely populated areas, such as Kent Island, Grasonville, certain incorporated towns, and other selected areas, could be more reasonably and cost-effectively collected via automated truck. Thus, in those areas, residential trash and recyclables could be stored and collected in separate roll-out carts. Of course, any decision to pursue curbside collection of recyclables single-stream in carts for any portion of the County would depend on the availability of materials processing capacity for materials delivered as a single-stream.

Another issue involves glass containers. As noted in Table 6-14, some materials recovery facility owner/operators will not accept glass or will only accept it delivered separately. Too, some processors will pay a higher price for commingled materials delivered without glass, and this issue would need to be considered when specifying materials to be included for set-out in any County-contracted recyclables collection district.

Table 6-15
Estimated Capital Cost for Curbside Recyclable Materials
Unloading Area of the MCF

Equipment and Site Development	Cost
Two Stationary Compactors with 7 yd. opening @ \$32,600 each	\$65,200
Hoppers for compactors @ \$3,000 each	6,000
Four 48 yd. compactor containers @ \$6,000 each	24,000
Transportation and installation	3,000
Concrete pad (212 ft. by 12 ft.) installed	18,000
Site preparation and other (allowance)	10,000
Contingency @ 20%	25,240
Total Estimated Capital Cost	\$151,440

Table 6-16
Estimated Curbside Recyclable Materials Unloading
Area Annual Operating Cost Including Materials Transport

Cost Component	Cost
<u>Unloading Operations</u>	
Labor and Fringes (exclusive of transport) ¹	\$50,300
Equipment Maintenance and Power (Allowance)	2,000
Equipment Replacement Fund ²	12,800
Subtotal	\$65,100
<u>Materials Transport</u>	
Labor ³	\$65,700
Truck Capitalization ⁴	20,350
Truck Maintenance	18,000
Fuel ⁵	19,200
Subtotal	\$123,250
Grand Total	\$188,350

¹ One person working 5 days per week.

² Containers, compactors, and hoppers assumed to be replaced after 10 years, with annual inflation @ 3%.

³ One driver working five days per week @ \$160/day plus 58% fringe benefits.

⁴ Roll-off truck, including spare factor, at a cost of \$159,880, financed @ 5% over 10 years.

⁵ Fuel cost @ \$2.00 per gallon and truck driven 1,200 miles per week and averaging 6.5 MPG.

Section 7 Operational and Cost Analysis of **Recommended Scenarios**

7.1 Overview of Implementation Scenarios

The primary cost components for the County's waste and recyclables management system that will be impacted by transitioning from the County's current system and implementing and operating a new contract collection system are the following:

- Curbside waste collection and disposal
- Curbside recyclables collection and the Materials Consolidation Facility
- Program administration (Start-up and On-going)
- Convenience centers
- Igloo recyclables service

This study has analyzed two core scenarios that have varying impacts on the above cost components:

1. Countywide Curbside Waste Collection
2. Countywide Curbside Waste and Recyclables Collection

These two scenarios demonstrate the implications to the cost components of the County's waste and recyclables management efforts, but these are only two of several possible scenarios, including combinations of sub-options that exist for changes to the County's system involving collection districts.

7.1.1 Scenario 1 - Countywide Curbside Residential Waste Collection

In this scenario, the County would implement a Countywide residential curbside collection program for residential waste. One or more contractors pursuant to a competitive procurement would collect curbside waste from every single-family household in the County with a total value of the contract(s) being approximately \$2.5 million per year (including disposal and excluding the County's program administration expenses).

Each household would receive a 96-gallon wheeled plastic cart for weekly collection. Although the contracts do not necessarily need to specify the collection method, the most cost-effective method would be to utilize four automated side load vehicles and two semi-automated rear load vehicles operating at approximately 48 hours per week over a five-day work week.

All households would pay the same fee of \$15.07 per month (or \$14.56, if the incorporated areas were included). A uniform fee established for all districts would enhance the implementation acceptance and program administration. This is typical in other communities. Of their monthly charge, \$1.79 would be for the County's administration of the program and \$4.63 would be compensation for disposal at Midshore Regional Landfill, which would be contractually required to be used for disposal. Although the base service would be curbside, the contracts could allow for special backdoor collection for handicapped, elderly or those desiring premium service, for an additional charge as well as an added service and charge for bulky waste or special yard waste collection.

It should be noted that the residences in the more densely populated areas would be collected (with automated equipment) for an average monthly incurred cost of

\$7.26. Whereas, the rural areas (collected with semi-automated equipment) would cost approximately \$14.18 per month. These charges are exclusive of disposal fees and County administrative costs. Given that the rural areas are nearly twice as costly to collect, the densely populated areas would be subsidizing the rural homes. The reason for the cost differential is the low density of the homes increases the mileage traveled, lowering productivity and making it unfeasible to utilize the faster automated vehicles.

The curbside waste collection program would decrease the amount of waste and recyclable materials transferred through the convenience centers. The decrease in usage would allow for two convenience centers to be closed at Batts Neck and Church Hill. Although the Centreville Convenience Center would remain at its current six-day a week schedule, the centers at Glanding Road and Grasonville would be reduced to operating three days per week. The convenience centers remaining open would no longer accept trash, but would continue to accept bulky items, brush, recyclables, and construction and demolition waste from residences.

The estimated amount of bulky items, brush, and construction and demolition materials that would be transferred through the convenience centers after the implementation of the curbside program could be expected to increase as there are less convenience centers with less total operating hours. However, the County would be encouraged to develop an arrangement with the Baker Rubblefill that would lead to more rubble and brush being directly hauled to that facility by residents reducing the demand on convenience centers. It is assumed that all residential waste would be collected at the curb; therefore, the need for waste compactors would largely be eliminated. However, the County should retain an adequate number for special events.

Under a residential waste-only contract collection program with curbside recycling not being included and two of the convenience centers being closed, the County's recycling rate may decline, as many residents would likely mix recyclables in with their curbside collected trash out of convenience. Since citizens would no longer be traveling to the convenience centers to dispose of their trash, except from time-to-time for rubble, bulky waste, and certain special materials, some may opt to stop recycling to save them the extra trip to the convenience centers or igloos.

The reduction of the convenience centers would lower the County's operating costs, which could help offset some of the assessment to residents for the curbside collection cost. By closing the Batts Neck and Church Hill Convenience Centers, the County is expected to save an estimated \$802,450 per year in labor, hauling and disposal, which was their fiscal year 2004 operating cost (exclusive of administrative expenses). See Table 7-1. Table 7-2 provides the new estimated costs with reduced labor, hauling and disposal for operating the three remaining convenience centers. The revenue from the sale of recyclables would also be expected to reduce total costs, but is not factored into this analysis.

**Table 7-1
Projected Savings By Closing Batts Neck and Church
Hill Convenience Centers (FY 2004 Costs)**

Convenience Center	Labor	Hauling and Disposal	Total
Batts Neck	\$191,109	\$377,100	\$568,209
Church Hill	70,409	163,832	234,241
Total	\$261,518	\$540,932	\$802,450

Given that the County currently spends approximately \$1.9 million per year on the convenience centers' operation, including hauling and disposal, and expenses for the modified operations of the convenience centers after implementation of curbside residential waste collection would be substantially reduced to approximately \$509,000 per year exclusive of capital expenditures and costs for clean-up and hauling from miscellaneous locations, the County could save approximately \$1.4 million annually. This does not factor in the costs of administering the new program and any changes in the County's current costs of \$428,547 for recyclables processing, box truck collection, igloo collection, tire disposal, CFC removal, yard waste grinding, and contract hauling to remote processing facilities. In addition to the estimated annual savings, the County could sell certain surplus equipment from the convenience center operations that would not be needed. It is estimated that the County could realize over \$300,000 from such equipment sales, assuming it is sold in bulk lot.

7.1.2 Scenario 2 - Countywide Curbside Residential Waste and Recyclables Collection

This scenario provides the same curbside collection for waste with the reduced number and operating hours of the convenience centers as described in Scenario 1, but adds curbside recyclables collection and the handling of collected recyclables at a County-operated consolidation facility and transport and processing of the materials. Curbside recyclables collection could be contracted together with waste collection or as a separate contract.

The total cost for county-wide residential recyclables collection is estimated at \$826,315 for the unincorporated area, or \$833,645 with the incorporated areas. The monthly uniform cost per household would be \$4.57 for the unincorporated area or \$4.20 with the incorporated areas, which includes a marginal cost of \$0.11 for the County's administration (mostly for increased public education). These costs are exclusive of processing and materials sales, which are estimated to add a "net" cost of about \$.50 to \$1.00 per month per household based on curbside collected materials values in the current market. This collection cost is roughly 50-100% higher than would be experienced in a more urban/suburban densely populated area. This is exemplified in the difference in monthly costs for the collection portion between the more densely populated areas of the County (Districts R1 and R2) being \$3.57 and \$3.54, respectively, versus \$6.27 in District R3 and \$5.75 in District R4.

Table 7-2

Estimated Annual Operating Costs for Convenience Centers After Implementation of Scenarios 1 or 2

Convenience Center	Number of Employees	Days Open/Week ¹	Allocated Cost	Hauls/Week Rubble ²	Annual Rubble Hauling and Disposal Cost	Hauls/Week Other Materials ³	Annual Other Materials Hauling and Disposal Cost	Total Costs
Grasonville	2	3	\$50,292	5	\$78,000	2	\$52,000	\$180,292
Centreville	1 ⁴	6	75,438	5	78,000	2	52,000	205,438
Glanding	2	3	50,292	3	46,800	1	26,000	123,092
Total	5	12	\$176,022	13	\$202,800	5	\$130,000	\$508,822

¹ Convenience centers are open two weekdays and Saturday.

² Rubble loads, based on FY 2004 quantities handled at convenience centers, are assumed to be reduced by 25% through a County initiative to encourage direct haul by residents to R. B. Baker's Rubblefill. All rubble loads are hauled to R. B. Baker's Rubblefill.

³ Other materials, including certain bulky waste and used furniture, are hauled to Midshore Regional Landfill.

⁴ One additional employee is needed on Saturday.

Although the convenience center cost savings of this scenario are roughly the same as the waste-only Scenario 1, the benefits to the County could be realized in an increased level of recycling, which would offset waste disposal costs. Curbside recycling collection would provide added convenience to the residents to participate in recycling, which could be even more elevated if a single-stream, cart-based collection system could be implemented (currently, there are no guaranteed available processing options for single-stream recyclables within a reasonable transport distance of the County, but there is a facility being developed by Waste Management in Elkridge, Maryland). Curbside recyclables collection would reduce the use of the igloos and convenience centers, which would result in a further reduction in hauling and processing costs.

Except for the Centreville Convenience Center, it is possible that other convenience centers could be eventually closed, if curbside recycling is included. However, the County may want to keep some of the igloos available in the more densely populated areas for multi-family residences and businesses. An important issue to resolve would be the extent of materials accepted at the convenience center sites that remain open with a curbside recyclables collection program. The County could choose to only accept such materials as used oil, antifreeze, electronics waste, textiles, and other specialty materials or additionally accept the same materials collected at the curbside. However, for the County to maintain the same level of service provided to all owners of improved lots that are paying property taxes, including the larger multi-family dwellings that may not receive curbside recycling and would need a location to drop-off recyclables, the County may need to continue accepting the same recyclable materials that are currently accepted at the convenience center sites.

Recyclables consolidation/processing at the Centreville Materials Consolidation Facility would be required to be provided by the County to make the curbside recyclables collection cost-effective. Alternatively, the County could include in the collection services procurement a requirement that contract collectors of recyclables are responsible for the haul, processing and marketing of collected recyclables. This could be an option in the procurement, and proposers would have to propose costs with and without that option. The County could then make a decision whether to make the contractors responsible for collected recyclables disposition or retain that responsibility.

7.2 Review of Cost Impacts for the Two Scenarios

Table 7-3 provides an overview of the current system versus the two scenarios with the related costs.

**Table 7-3
Comparison of Scenarios¹**

#		Current	Scenario 1 Waste Only Collection	Scenario 2 Waste & Recyclables Collection
1	Household (HH) Waste at Convenience Centers (tons) ²	11,613	0	0
2	Household waste from Curbside Collection (tons)	8,472	18,183	18,183
3	Recyclables from Curbside Collection (tons) ³	limited	limited	2,410
4	HH Serviced Curbside	6,517	15,451	15,451
5	HH Using Convenience Center for household waste ⁴	8,934	0	0
6	Convenience Center Sites Open	5	3	3
7	Annual Cost of Convenience Center Sites	\$1.9 million	\$509,000	\$509,000
8	Cost for Program Set-up		\$316,723	\$358,723
9	Annual Cost for Program Administration	-	\$269,239	\$279,499
10	Monthly Cost per HH for Program Set-up & Administration	-	\$1.79	\$1.90
11	Annual HH Assessment for Curbside Collection & Program Administration	NA	\$180.84	\$246.60

These scenarios provide cost savings to the County. Under both of these scenarios, a significant decrease in the convenience centers costs would be realized by reducing the number of convenience centers from five to three and by reducing the operational days from six to three at two of the centers that remain open. By including curbside recyclables collection, the County would also experience reduced collections at the igloos.

Each scenario also adds costs to the County and its populace, which will be offset in varying degrees from what the County and populace currently bear:

- Households would now be required to pay for the curbside collection service
 - For those that already pay for subscription waste collection on average, they are estimated to pay approximately 38% less for a savings of \$107 per year under a waste-only collection in the entire unincorporated area of the County and a uniform fee across all customer households. The cost savings when recyclables collection is included is only about 15%; however, the households are then receiving an additional service they did not have before and saving on trips to convenience centers if they self-hauled recyclables to a convenience center or igloos site.

¹ Does not include incorporated towns.

² Based on FY 2004 quantities and excludes rubble.

³ Estimated based on 50% set out rate and 12 lbs/HH/week.

⁴ Convenience centers would only be used in Scenarios 1 and 2 for special waste bulky waste, rubble, and certain other materials.

- For those households that don't currently receive and pay for collection service, they will be paying a direct cost estimated at \$180.84 per year (waste only) or \$246.60 per year (waste and recyclables) versus the current system where a portion of the cost is in their property taxes and their only "direct" or "known" cost is for the purchase of tickets for drop-off of waste at the convenience centers at an estimated \$69.33 per year on average, if they make one trip per week to a convenience center. These current self-haul citizens will also save an estimated average of \$189.54 per year in transportation costs assuming they only make one trip per week to a convenience center within 9 roundtrip miles of their residence. Savings will be lower if they make less frequent trips or travel a shorter distance, but more if they must travel a greater distance and/or if they make more trips per week.
- The citizens' cost for the service could be partially subsidized by the County's reduced costs in operating the convenience centers.
- The County will incur costs to administer the program, which will be offset by the reduced costs in administering fewer convenience centers with less total operating hours. Currently, the County has the convenience centers open for a combined 270 hours per week versus a total of 102 hours under a new program centered on County contracted curbside collection districts.
- With curbside recyclables collection, the County would incur costs to develop and operate a Materials Consolidation Facility, which could be partially offset by sale of surplus equipment, the reduced costs in servicing the igloos and from the increased revenue from the sale of a larger amount of recyclables.

Phasing in the implementation of residential waste (and recyclables) collection, as compared to implementing the program County-wide, would result in a higher implementation cost, due to the need to replicate public education programs and certain planning, development and procurement expenses each time a new district is developed. Also, many of the startup and operational costs are not based on the number of households, but are fixed. However, due to the high costs of collecting curbside in the rural areas, a phasing in of waste or recyclables is a plausible option. The County could start with contracted collection districting in the densely populated "Automated" areas and then add collection districts as sub-divisions are developed and the population grows. The down-side to this approach is that the implementation costs will be higher and all citizens in the unincorporated area of the County are not provided the same level of service until all potential districts are established.

Section 8 Conclusions and Recommended Next Steps

8.1 Conclusions

- **The County's system of convenience center sites is becoming strained and costly.** Queen Anne's County has increased in population by approximately 75 percent over the last 25 years and continues to grow. Too, the County draws many travelers and certain tourists who are attracted to its location along Chesapeake Bay, and to its golf courses, restaurants, and other amenities. Further, significant traffic passes through the County over the summer months on the way to Maryland and Delaware beaches. This growth and traffic flow brings increased demand on the County's road network, infrastructure, facilities, and services. In particular, this growth is increasingly straining the County's system of residential convenience center sites where County residents may drop-off their residential trash and recyclables. Over 50 percent of the single-family, townhouse, and mobile-home households in the unincorporated area of the County are estimated to be self-hauling to these drop-off sites, with less than 50 percent of the households in the unincorporated area collected at curbside by commercial trash collectors. While this system served the County well when the population density was much lower, this sustained high level of use and the many self-haul vehicles create traffic congestion, increased pollution, and safety hazards, particularly in the more populated areas. It also causes trash collection rates for residents who subscribe for curbside collection to be much higher than they would be if commercial haulers were assured a greater customer base.
- **A Countywide system of County-administered contract collection districts is estimated to reduce the price of curbside collection of residential waste by approximately 38 percent of rates currently charged by private haulers for subscription service.** By establishing collection districts with efficiently designed routes and bidding them out on a five-years or longer basis under a competitive procurement with a uniform assessment across the service area, it is projected that the average monthly charge paid by residents for curbside collection of waste on a subscription basis could be reduced from approximately \$24 per household per month to approximately \$15 per household per month. Including curbside recyclables collection is estimated to add another \$5.00 to \$5.50 per household per month depending on how recyclables processing and marketing are handled, level of materials sales and associated revenue share to the County, and assuming a uniform fee is applied across the entire service area. While this would require the residents who now drop-off their trash at convenience centers to change from that mode to collection of their waste at the curb, with its attendant service fee or assessment, it would represent a progressive shift for the County.
- **With curbside collection districts, the County would realize a savings in the current operating costs of its convenience center sites and roll-off transport system that would help to reduce the impact of an assessment to residents for curbside collection.** With the implementation of curbside collection districts, the County would be able to eliminate certain convenience center sites and reduce operations at others. The extent of convenience center sites to remain open and the particular sites to close would depend on whether or not the County would include the curbside collection of recyclables in collection districts and the type and extent of materials that residents could still drop-off at

convenience centers. A decision on elimination of certain convenience centers may be more politically driven than cost driven.

We estimate the County could eliminate at least two of the convenience centers (Batts Neck and Church Hill are recommended) and reduce the days of operation at those remaining open at a total projected cost reduction of approximately \$1.4 million per year. On balance, the County would incur certain costs estimated at approximately \$188,000 per year, exclusive of consolidation facility development costs, for recyclables consolidation, handling, and transport of those recyclables collected at curbside under a districting program with curbside recyclables collection. However, there could be certain revenues from recyclables sales to help offset that cost and the County would also have surplus equipment that could be sold to help pay for consolidation facility development expenses.

- **Implementation of County-administered contracts for curbside collection will be a major challenge for the County and could be expected to meet with opposition from residents and haulers.** Given (1) the long standing use of convenience center sites by the majority of County households and (2) the existing open market for private haulers, a conversion to a County-controlled and administered system of contracted collection districts, with mandatory assessment to households within those districts, would represent a dramatic change and a significant challenge for the County to implement. The County could be expected to have support from many residents, those 6,517 or more households now estimated to be subscribing to private collection and some of the residents who now use certain convenience centers. Too, there are some haulers, but certainly not all, who would embrace such contract districts, as it would give them an opportunity for increased market share and a secure revenue stream for many years. However, many residents, several haulers, and the Haulers' Association would not be expected to support this initiative and would likely lobby the County Commissioners intensely to oppose it. It will take political will to implement such a program, and the County can gain insights and suggestions from peers in other Maryland counties that have had county-administered contract collection districts in place for many years.
- **Inclusion of curbside recyclables collection would add costs to the program but would be expected to contribute to an increased recycling rate in the County.** The levels of residential recyclables taken to the County's drop-off convenience centers by residents could be expected to decrease with or without the inclusion of curbside recyclables collection as part of County-administered contract collection districts. Residents who previously deposited both waste and recyclables at convenience center sites would have less incentive to take only recyclables to such drop-off locations, and some portion of those residents would likely mix recyclables with trash for curbside pick-up as a "matter of convenience." By making curbside recyclables pick-up available as part of the contracted service, residents who now recycle would be expected to set out recyclables, and those residents who don't recycle now would have greater incentive to participate as it would be much more convenient than transporting the recyclables to a convenience center or other igloo site. With an expanded public education program, continued on a sustained basis, it is believed that a 50 percent or greater recyclables collection set out rate could be achieved, which could elevate the County's overall recycling rate.

If curbside collection of recyclables is included in the contracted services, the County would need to decide whether to develop and operate a recyclables consolidation center and retain the disposition of recyclables, once collected, as a

County function or make that a responsibility of the contracted collectors. A procurement could be structured with that as an option, and the County could make that decision once bids or proposals for that service are known.

8.2 Recommended Next Steps

- **The County needs to decide whether or not to move forward with (1) a Countywide program of contracted collection districts for residential waste only; (2) a Countywide program of contracted collection districts for residential waste and recyclables; (3) a phased program of contracted collection districts for residential waste only or residential waste and recyclables in the high density areas that can be serviced by automated collection vehicles; or (4) the existing system of convenience centers with certain improvements.**

To assist in making this decision, the County should seek input from residents and waste collectors who would be affected by the County's decision. These stakeholders will have issues with and opinions about such an important initiative being considered by the County, and the County Commissioners would want to understand such issues and opinions. Too, the County should talk with "peers" in other Maryland counties that have implemented contract collection districts in the unincorporated areas of their counties. The County should also talk with officials in the incorporated towns to determine any issues they may have with County-contracted collection districts and their possible needs and interests in a Countywide program or program serving only high density areas in the County.

In addition, a County initiative that would include contracted districts for residential recyclables collection and County development of certain recyclables consolidation and processing arrangements has impacts on the Midshore Regional Recycling Program, MES and the participating counties. The County should obtain input from those parties as it makes a decision about a course of action.

- **If the County's decision is to move forward with collection districts in any form, it needs to mobilize an implementation Task Force and prepare a detailed "Action Plan" keyed to the specific program alternatives the County intends to implement.** The Action Plan will set forth the implementation needs, roles and responsibilities, transition activities, critical path schedule, and refine the funding requirements. It would be developed with the combined input of the Task Force representatives from key departments or functions in the County, such as Public Works, Finance, Law, Public Information, Procurement, and Code Enforcement. The Action Plan would be presented to the County Commissioners for approval, and it would then guide the implementation program.
- **Based on the Action Plan, the following key pre-launch activities would be expected to be conducted:**
 - Design and development of a public education campaign
 - Design of collection districts and routes
 - Development of program administration
 - Preparing and enacting any legislative changes needed for program implementation
 - Development of any new facilities and services needed for the program

- Carrying out the public education campaign
- Preparing all necessary procurement documents and contracts and conducting procurement and contracting, including procurement of any services associated with recyclables processing, if curbside recyclables collection is to be contracted
- Hiring and training certain new staff or reassigned staff, including certain temporary labor in advance of program start-up and conducting such human resource planning and staff counseling needed for the transition and potential modification, closure, or re-configuration of existing facilities and services
- Purchasing any new equipment, software and/or arranging for any leases, offices, supplies and materials for program implementation
- Conducting pre-launch trouble-shooting, testing, and monitoring