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1 Committee Summary

2 In April 2014, the Albemarle County Board of Supervisors formed the Albemarle County Long Range
3 Solid Waste Solutions Advisory Committee (the Committee): “to study solid waste management as a
4 public policy issue and to identify best practices for the management of solid waste in the County, now
5 and in the future, including the possibility of regional cooperation. The Committee will recommend
6 policy and implementation strategies consistent with the County’s Comprehensive Plan and the
7 organizational vision of Albemarle County”.

8 A City-County task force on solid waste reported recommendations in 1989 that initiated the Rivanna
9 Solid Waste Authority (RSWA). Many of the recommendations contained in their final report such as
10 large-scale composting and recycling were never implemented. Twenty six years later, the Ivy landfill is
11 closed, and RSWA is an important partner with both the City and County as it deals with mandated post-
12 closure activities at the landfill site. Over the years, the Board of Supervisors has considered various
13 proposals for waste management since the landfill’s closure, although none have been implemented.
14 The Board’s desire for long-term solutions led to the formation of the Committee.

15 This report is the product of the Committee’s work over the course of the last 16 months. The Board
16 appointed a diverse membership that brought dedicated energy to the biweekly Committee meetings,
17 which featured a vigorous exchange of ideas and continual learning. Committee members visited
18 municipal solid waste (MSW) facilities around the region and met with nationally accredited consultants
19 as well as local experts. They conducted public opinion surveys and hosted open house events for
20 residents and stakeholders. Two retreat-style meetings with facilitation were held using the services of
21 UVA’s Institute for Environmental Negotiation.

22 The results of this study have been compiled and prepared in this report to serve as a guidance
23 document for formulating sustainable materials management (SMM) policies in Albemarle County.
24 These policies both address immediate issues and evaluate a longer time horizon of up to 10 years for
25 implementing larger or more complex strategies. Sustainable materials management not only reduces
26 the quantity of waste destined for landfills but also conserves resources, reduces waste generation, and
27 minimizes the environmental impacts of the materials we use (EPA 2015a). These are the overarching
28 goals that the Committee believes are necessary for the County to embrace and work to achieve.
29 Through dialogue with the public and stakeholders, the Committee understands that improved services
30 for SWM are important to County residents. The SMM practice ensures that Albemarle County and its
31 citizens will continually improve the processes by which we manage our material resources and our
32 waste streams.

33 The policies developed and presented in this report, along with the implementation strategies to foster
34 SMM are consistent with the County’s Comprehensive Plan, the organizational vision of Albemarle
35 County, and the regional Thomas Jefferson Solid Waste Management Plan. The Committee’s
36 recommended policies are presented within the context of appropriate planning horizons and include
37 simple characterizations of costs and predicted impacts as being of higher or lower relative magnitude.

38 One of the priorities identified by this Committee is to create a standing SMM Committee with the
39 expectation that this new Committee, among other activities, would assist the County in the
40 development of a thorough impact analysis of recommended policy implementation. Additionally, the
41 creation of a new County staff position for a SMM Coordinator would provide the necessary manpower

1 and expertise needed to ensure that the County remains engaged and actively progresses in establishing
 2 and improving its SMM program.

3 The following pages present our recommendations in tabular format, looking at the near term (0-2
 4 years) followed by mid-term (0-5 years) implementation. The only recommendation that extends to the
 5 full 10 years involves the development of regional partnerships, which will remain a more complex and
 6 ongoing process.

7 The Committee has identified five top priorities for immediate implementation or for action in the
 8 County’s FY 2016-2017 operating budget as well as the 2016-2020 capital improvement plan, and these
 9 are presented as the lead recommendations. All have been classified by the Committee as having a
 10 higher impact on goal achievement. They are presented in order of lower to higher cost, but there is no
 11 hierarchy implied as they all represent core initiatives the Committee has determined are necessary for
 12 the County in order to proceed with the identified goals of waste minimization, resource conservation,
 13 and environmental protection.

Table 1. Top Priorities for Immediate Implementation or Action	
Near Term (0-2 Years) Implementation Strategies	Cost
<i>Establish a Standing SMM Committee</i> - No new funding required; minimal operating impact on support staff.	Lower
<i>Increase Recycling Options and Activities in Albemarle County</i> - Provide RSWA appropriation increase to expand daily hours of operation at McIntire and Ivy MUC. - increase funding for custodial services and recycling/composting programs at County facilities - Establish goals and timeframes	Lower
<i>Institute and Support Education and Outreach Programs</i> - Budget annually for educational materials and support to establish a community education program and coordinate with the City, TJPDC and UVA - Ensure that uniform and correct terminology is used in marketing and educational materials	Lower
<i>Create and Staff a County Materials Management Office</i> - Appropriate additional funds for the SMM Coordinator position	Higher
<i>Plan and Construct Ivy MUC Upgrades</i> - Use existing capital funding and augment as needed to: • Create a model recycling center • Upgrade transfer station • Establish some source separation of MSW brought in by small commercial haulers	Higher

14 To provide additional narrative for the top priorities, the Committee would like to note the following:

15 ➤ *Standing SMM Committee.* The County maintains permanent advisory boards or committees for a
 16 number of key policy areas. This Committee began with a temporary charge, yet ongoing community
 17 outreach and volunteer support to the County staff is appropriate. Many of the Committee members
 18 are willing and eager to continue their service in an ongoing capacity.

- 1 ➤ *Increase Recycling Options and Activities.* The Committee recommends increasing the limited hours of
 2 operation at McIntire and the Ivy MUC as the current schedule makes recycling inconvenient or
 3 impractical for many residents who otherwise desire to participate in source separated recycling.
 4 Further, the County should lead by example and implement its own program for source separated
 5 recycling within its operations and facilities, and establish recycling goals and timeframes as part of
 6 the SMM program framework.
- 7 ➤ *Education and Outreach.* The Committee feels strongly that a public education program is paramount
 8 to ensure that County residents are accurately informed on SMM opportunities. Effective partnerships
 9 with the City, UVA and the TJPDC promote a wider message and allow cross-networking on a regional
 10 scale.
- 11 ➤ *Materials Management Office.* The wide range of strategies recommended in this report demand a
 12 focal point within County government to provide coordination and leadership. The SMM Committee
 13 needs staff support; community partners need a liaison; contracts need to be written, managed and
 14 executed. Thus establishing a permanent, full-time position in the County to implement and manage
 15 the SMM program is viewed by the Committee as a core requirement.
- 16 ➤ *Ivy MUC Upgrades.* The transfer station requires rebuilding to achieve regulatory compliance and to
 17 improve its functionality for small haulers, businesses and residents. It supports economic stability for
 18 small commercial MSW haulers that provide specialized services for residents and largely serve the
 19 rural areas of the county. Without this, small commercial MSW haulers will likely find it unprofitable
 20 to operate because of the long distances to the alternatives. Providing facilities at the MUC for source
 21 separated residential waste would also allow small commercial operators to offer more services, and
 22 these in turn support the County’s efforts to increase recycling. Building a McIntire-style recycling
 23 center at the MUC would serve western and parts of southern Albemarle and provide County
 24 residents a well-run facility that could potentially serve as a model for other areas in the County.

25 Additional priorities that can be addressed in the near term are presented in Table 2. All are considered
 26 equally viable for the near term and are presented based on impact.

Table 2. Additional Priorities for Near Term Implementation or Action	
Near Term (0-2 Years) Implementation Strategies	Impact
<i>Expand and Increase Special Collections</i> - Budget annually for maintenance of secure collection repositories for: • Pharmaceutical diversion program	Higher
<i>Launch a Public Discussion on Creating Additional Recycling Centers</i> - No new funding required; minimal operating impact on support staff.	Higher
<i>Assess Implementation Impacts Using Established Metrics</i> - No new funding required; minimal operating impact on support staff.	Higher
<i>Grow Municipal and Public-Private Partnerships</i> - No new funding required; minimal operating impact on support staff for: • Leveraging existing resources programs with local businesses	Higher
<i>Support Economic Development</i> - No new funding required; minimal operating impact on support staff to: • Focus on business development/ financial benefits of community participation	Lower

- 1 To provide additional narrative for these near term priorities, the Committee would like to note:
- 2 ➤ *Pharmaceutical Collection.* Disposal services exist to transport waste pharmaceuticals and incinerate
- 3 them. A secure drop-off box for collections could be placed at the Ivy MUC or at secure sites such as
- 4 the 5th Street County Office Building or Fire Rescue stations in the urban or rural areas.
- 5 ➤ *Dialogue on Additional Recycling Centers.* Many residents in both urban and rural areas are not ideally
- 6 served by McIntire and the Ivy MUC. Improvements to the existing facilities and services in
- 7 conjunction with continuing community dialogue may lead to demand for recycling centers in other
- 8 parts of the county.
- 9 ➤ *Use Established Metrics for Impacts.* Metrics will be needed to evaluate the SMM program over time.
- 10 These include but are not limited to the evaluation of the cost of capital and operations over the
- 11 lifetime for each policy or practice carried forward.
- 12 ➤ *Grow Public-Private Partnerships.* The TJPDC regional plan recommends that Albemarle, “Realize
- 13 economies of scale through regional collection, disposal, and recycling opportunities.” The Committee
- 14 supports and encourages RSWA partnerships with other, neighboring solid waste authorities for
- 15 shared services and economies of scale. Further, creating new partnerships with existing local
- 16 business programs can support SMM program implementation in an economically efficient manner.
- 17 ➤ *Support Economic Development.* Support the pursuit of local economic opportunities that develop as
- 18 the result of a robust recycling environment. Examples include paint repurposing, compost hauling,
- 19 and methane production/use from anaerobic digestion.

20 There are several Committee recommendations that require a longer implementation period. Thus,

21 when looking at work to be performed within the time frame of the current Comprehensive Plan (0-5

22 years), a subset of recommendations fits into the same mid-term planning horizon. These are presented

23 in Table 3. While the Committee considers each strategy to be important and equally viable, they are

24 ordered based on impact and cost.

Table 3. Recommendations for Implementation Within the Next Five Years		
Mid-Term (0-5 Years) Implementation Strategies	Cost	Impact
<i>Increase Recycling Options and Activities in Albemarle County</i> <ul style="list-style-type: none"> • Establish a county-wide composting program and partner with the City • Encourage HOAs to adopt curbside single-stream recycling • Establish incentives & drivers to separate recyclables and compostables 	Lower	Higher
<i>Extend Recycling Collection in Urban Areas</i>	Lower	Higher
<i>Expand and Increase Special Collections</i> <ul style="list-style-type: none"> • Improve centralized universal, household hazardous waste (HHW) and e-waste collection • Consider door-to-door HHW collection program • Improve/expand hazardous materials collection (unused or leftover paints, solvents, pesticides, cleaning and automotive products, and other materials) 	Higher	Higher

<p><i>Support Economic Development</i></p> <ul style="list-style-type: none"> • Consider economic development opportunities with recycled materials • Determine what businesses are doing and where improvements could be realized in recycling & composting 	Lower	Lower
<p><i>Foster Rural and Special Services</i></p> <ul style="list-style-type: none"> • Carefully plan and establish rural recycling centers • Create a framework for curbside single stream services in the rural parts of the county 	Higher	Lower

1 To provide additional narrative for these mid-term priorities, the Committee would like to note:

2 ➤ *Increase Recycling Options and Activities.* Expand partnerships for composting. At present, a
3 potentially valuable soil resource instead goes to landfills, at considerable cost. RSWA may be able to
4 lead a partnership for expanded composting which would prove financially viable – both revenue-
5 neutral to taxpayers and attractive to a contract partner. Additionally, the Committee recommends
6 support to homeowner associations to establish single stream recycling and composting as a way to
7 leverage neighborhood density towards SMM.

8 ➤ *Urban Recycling Collection.* The Committee recommends a study of options for establishing collection
9 similar to the City’s recycling program to the county’s densely populated areas. Charlottesville’s single
10 stream recycling with biweekly collection in large carts has quickly improved recycling rates in the City.

11 ➤ *Special Collections.* The Ivy MUC should offer a location for hazardous materials available for collection
12 and/or reuse (paints as an example), and should also have routine collection bins for electronic waste.
13 Standard universal waste items that should be collected include batteries and compact fluorescent
14 lightbulbs. Compostables should also be accepted: a simple way would be to mimic the service begun
15 at City Market in the spring of 2015. McIntire could have many of these same enhancements,
16 although space is more limited there.

17 ➤ *Economic Development.* The Committee believes that there is economic opportunity in the use of
18 recycled materials and advocates supporting local businesses that engage in these practices and
19 generate new products and markets using recyclables. In addition, a study to identify what the
20 business community in the County already does as standard practice would identify where
21 improvements could be made that would mutually enhance SMM and the business environment.

22 ➤ *Rural and Special Services.* Neighboring counties offer multiple locations for MSW and recycling
23 collection. The Committee believes rural residents would benefit from similar additional collection
24 locations. Rural recycling centers would prioritize source-separated recycling, but they could also
25 provide MSW collection and perhaps some specialty services such as a reuse/swap area or donation
26 boxes, e-waste collection, or collection of tires or paint, depending upon the service area’s needs.

27 In summary, many of the policy goals and strategies presented here and further discussed in the
28 accompanying report require action by the RSWA and partnership with the City of Charlottesville.
29 Sustainable materials management is a policy area where cooperation makes a great deal of sense and
30 each partner gains through working together. This was the premise and promise of the 1989 report, and
31 it remains true to this day.

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Acronym List

BoS	Board of Supervisors
CIP	Capital Improvement Plan
EPA	Environmental Protection Agency
FY	Fiscal Year
HHW	Household hazardous waste
HOA	Homeowner association
ICMA	International City/County Management Association
MRF	Material recovery facility
MSW	Municipal Solid Waste
MUC	Material Utilization Center
NRC	National Recycling Coalition
RSWA	Rivanna Solid Waste Authority
SMM	Sustainable Materials Management
TJPDC	Thomas Jefferson Planning District ommission
TJSWD	Thomas Jefferson Solid Waste District
UVA	University of Virginia
vdL	van der Linde Recycling and Container Rentals

1 Introduction and Background

2 There is a growing awareness of the need to use resources wisely and efficiently in order to build and
3 maintain a vibrant and resilient economy. The paradigm of “waste management” is no longer sufficient;
4 rather, a life cycle materials approach called Sustainable Materials Management (SMM) is now
5 embraced by the business community, government, and non-profits that have historically worked on
6 resource recovery (NRC 2015).

7 This report has been prepared as a guidance document for formulating SMM policies in Albemarle
8 County that both address immediate issues and evaluate a longer time horizon of up to 10 years for
9 implementing larger or more complex strategies. SMM conserves resources, reduces waste, and
10 minimizes the environmental impacts of the materials we use (EPA 2015a). This practice ensures that
11 Albemarle County and its citizens continually improve the processes by which we manage our material
12 resources and our waste streams.

13 1.1 History

14 For many years, local communities had access to a municipal solid waste (MSW) landfill, initially out on
15 Avon Street Extended and later in Ivy, VA off of Dick Woods Road. This last landfill closed in 2001.
16 Today, most of the residents of Albemarle County, along with businesses and institutions, have materials
17 removed by private haulers and transported either to privately owned facilities that serve as
18 intermediaries prior to landfilling or directly to privately owned landfills in other counties.

19 1.2 Previous Committee Work

20 The Committee’s work is linked to other, similar projects from past years:

- 21 • The Charlottesville/Albemarle Solid Waste Management Task Force, which predated the formation
22 of the Rivanna Solid Waste Authority (RSWA), issued a report in 1989 that recommended strong
23 recycling programs, composting, and City-County cooperation on facilities and services.
- 24 • The County and RSWA had commissioned consultant evaluations in 2012, focused on the Ivy
25 Material Utilization Center (MUC), and in 2007, when a draft strategic plan was produced but not
26 adopted by the RSWA Board of Directors.
- 27 • The Thomas Jefferson Planning District Commission (TJPDC) produces a regional solid waste
28 management plan, last published in 2011 and due for update in 2016.

29 1.3 Albemarle County Long Range Solid Waste Solutions Advisory Committee

30 The Albemarle County Board of Supervisors (BoS) authorized the formation of this Committee in April
31 2014. The BoS sought to have MSW management in Albemarle County studied as a policy issue and to
32 have best practices identified and evaluated for the management of our MSW, both now and in the
33 future.

34 From the committee charge:

35 *“The Albemarle County Long Range Solid Waste Solutions Advisory Committee is an advisory committee*
36 *formed by the Albemarle County Board of Supervisors to study solid waste management as a public*
37 *policy issue and to identify best practices for the management of solid waste in the County, now and in*
38 *the future, including the possibility of regional cooperation. The Committee will recommend policy and*

1 *implementation strategies consistent with the County’s Comprehensive Plan and the organizational*
2 *vision of Albemarle County.”*

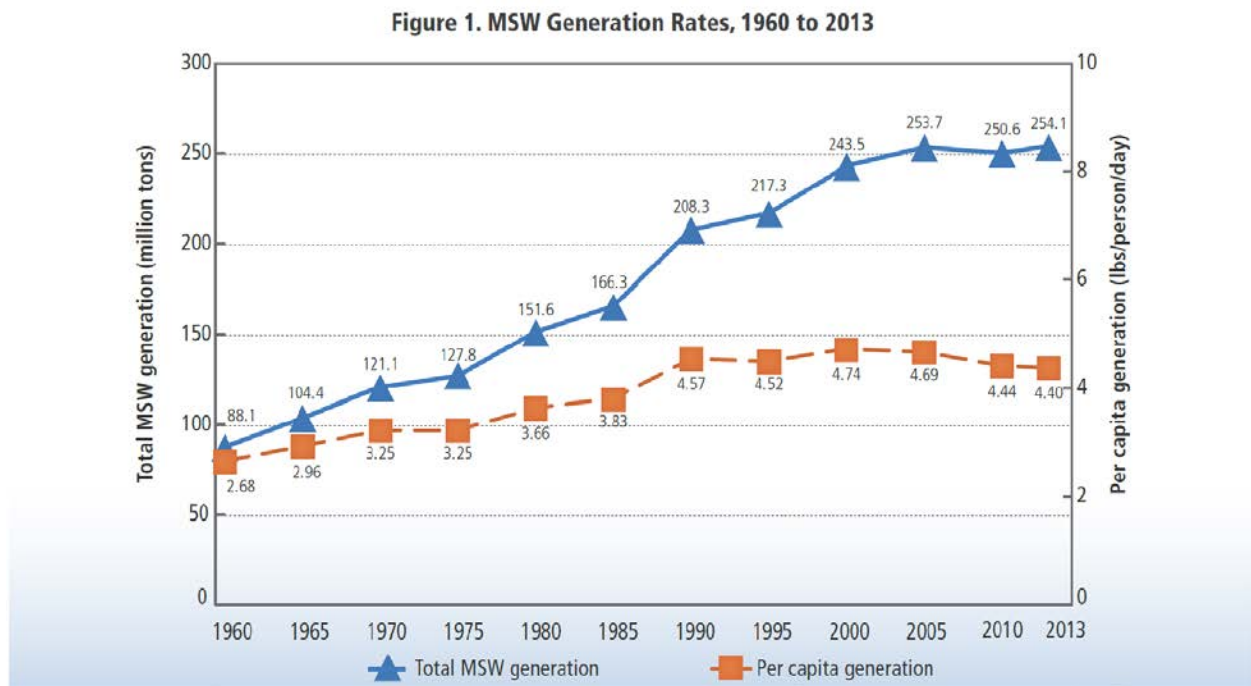
3 This report completes the charge of the Albemarle Long Range Solid Waste Solutions Advisory
4 Committee.

5 2 Existing Conditions

6 MSW has traditionally been the formal term for what is more commonly known as trash or garbage. Our
7 MSW consists of everyday items we use and then throw away, for example: product packaging, grass
8 clippings, furniture, clothing, cans, bottles, food scraps and newspapers. MSW comes from our homes,
9 schools and businesses.

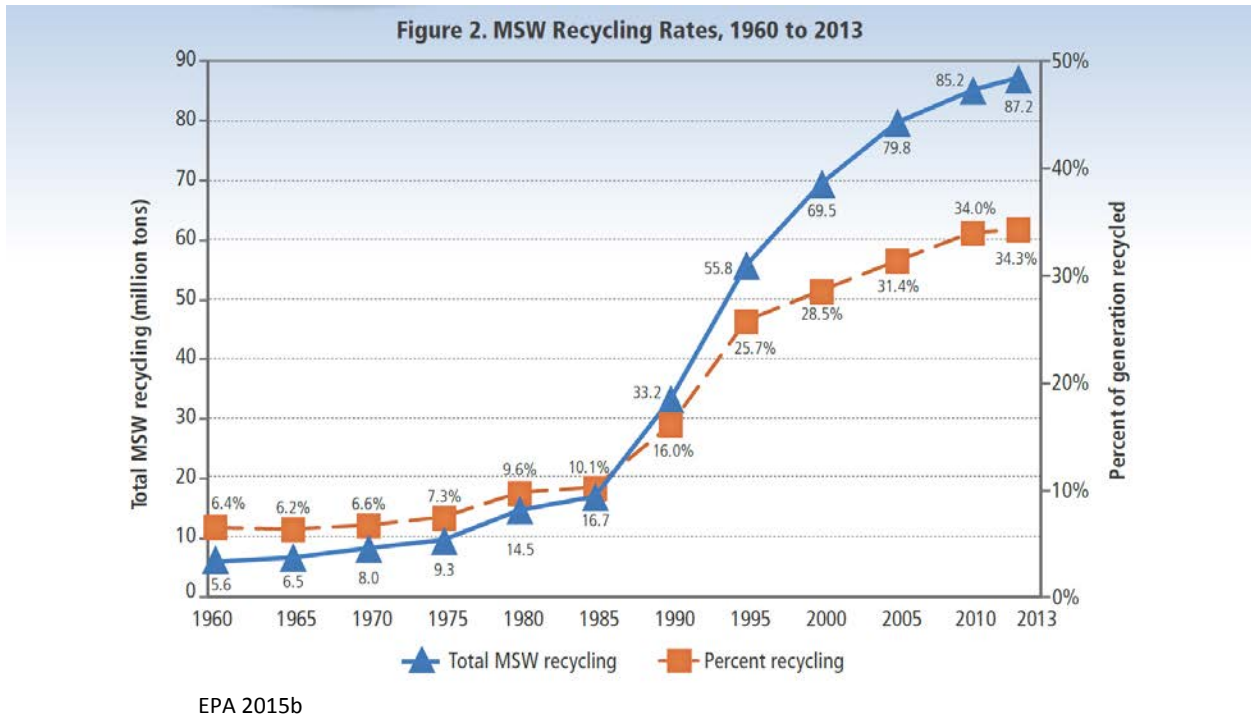
10 2.1 MSW Management on a National Scale

11 Data on the annual MSW generation rates in the United States have been collected since 1960, and the
12 Environmental Protection Agency (EPA) publishes reports that evaluate current practices and trends
13 over time. As indicated in Figure 1, the amount of waste that has been generated in the U.S. has
14 steadily grown over the last 55 years, commensurate with population growth, but also clearly
15 demonstrating a growth in the amount of waste generated on an individual basis. Over the last 10 years
16 there has been a downward turn in the amount of waste generated on a per person basis.



17
18 EPA 2015b

19 Likewise, recycling rates have improved over time, as depicted in Figure 2, below. Data show that while
20 recycling activities in general have dramatically increased compared to the rates of the 1980s, the net
21 result today is that only about one-third of total MSW is recycled. For an individual perspective, in 2013,
22 each citizen nationwide on average generated about 4.40 pounds of waste every day, with 1.51 pounds
23 either recycled or composted.



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Figure 3. Total MSW Generated, by Material in 2013 (Before Recycling) – Total: 254 Million Tons

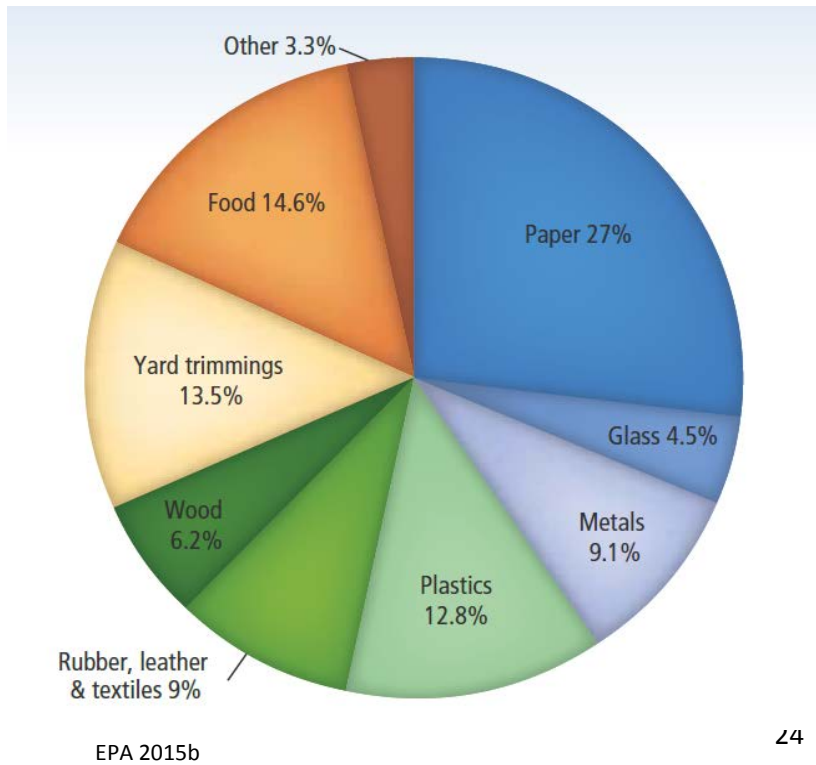


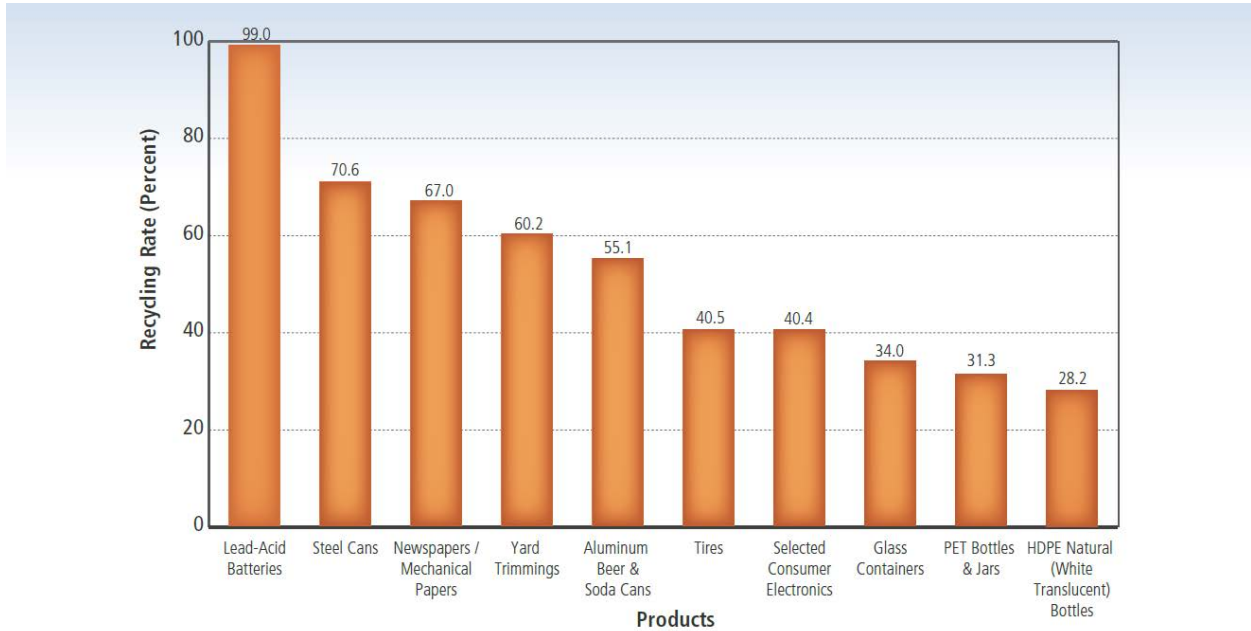
Figure 3 shows the components of the MSW stream. Plastic, metal, glass, and paper, all potentially recyclable, comprise about half of all MSW generated in the US. Another third is potentially compostable organic material – food waste, wood, and yard trimmings.

Figure 4 presents EPA estimates regarding the success of recycling and recovery of materials nationally. Car batteries are highest, because there are legal requirements and a network of business partners. Steel recycling is high because of strong resale markets and the ease of recovering ferrous metals. The

24

1 national figure of approximately 35% recycling means that many potentially recyclable or compostable
2 products are being discarded to landfills.

3 **Figure 4. Recycling Rates of Selected Products, 2013**



4
5 EPA 2015b
6 Note: These data do not include combustion with energy recovery.

7 2.2 Solid Waste Management within the Thomas Jefferson Solid Waste District

8 The Thomas Jefferson Solid Waste Planning Unit (SWPU #10) was created by the localities of Albemarle,
9 Charlottesville, Fluvanna and Greene coming together to address solid waste planning on a regional
10 scale. The Solid Waste Planning unit is administered by the Thomas Jefferson Planning District
11 Commission and is funded by the participating localities. The SWPU is responsible under Virginia code 9
12 VAC 20-130 to develop and maintain a regional solid waste management plan. The plan is required to
13 look at the region's solid waste and recycling needs 20 years into the future. Additionally, the SWPU is
14 responsible for reporting an annual recycling rate to DEQ to ensure the SWPU meets the state statutory
15 requirement of a 25% recycling rate. The data in the Recycling Rate Report is provided by haulers,
16 transfer stations and major waste generators on a voluntary basis and is not audited. The District does
17 not have the authority to compel reporting or enforce compliance. In 2013, residents in the TJSWD
18 generated close to 230,000 tons of MSW. Based on the 2013 report roughly 80,000 tons of waste was
19 diverted from landfills in the region, which represents approximately 39% of the total MSW stream
20 (TJPDC 2014).

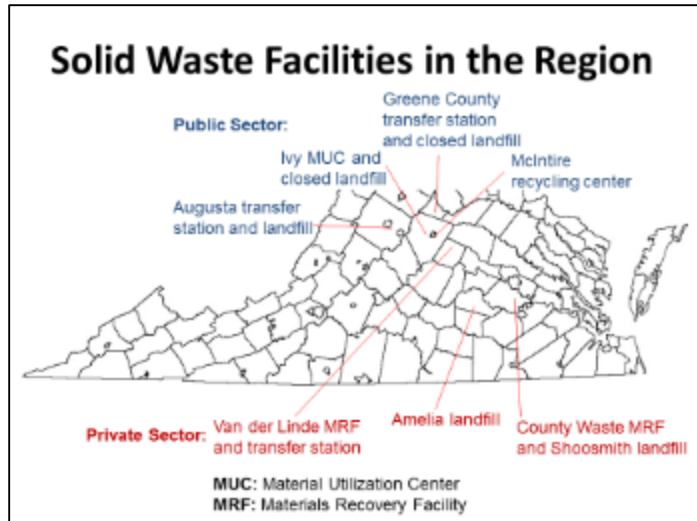
21
22 The SWPU is not a service district like Rivanna Solid Waste Authority and therefore does not control
23 solid waste activities in the localities. Its role is long term planning and regional coordination on solid
24 waste and recycling issues. In the past, the SWPU has taken on activities that have included information
25 sharing, recycling education, and a regional solid waste resource website.

26

1 2.3 MSW Management Process and Facilities in Our Region

2 Figure 5 at right shows key MSW facilities in
3 Albemarle and surrounding counties. Our
4 neighbors in Augusta and Louisa have active
5 county landfills for their residents. All of the
6 MSW from our region is transferred to
7 privately run landfills elsewhere in the
8 state. At present, the two closest landfills
9 that are the primary recipients of Albemarle
10 County MSW are a Waste Management
11 landfill in Amelia County and a Virginia
12 Waste Services facility, the Shoosmith
13 landfill, in Chesterfield County. Both are
14 approximately 80 miles away from
15 Charlottesville.

Figure 5. MSW Facilities in the Region



16 Greene County has a transfer station to
17 serve local haulers, a facility similar to the
18 RSWA's transfer station at the Ivy MUC. Fluvanna County has a public convenience center but not a
19 transfer station. Instead, they use the van der Linde Recycling and Container Rental (vdL) transfer
20 station in Zion Crossroads.

21 The City of Charlottesville, with its greater population density and higher tax rate, has a more advanced
22 recycling program. The City contracts with County Waste for regular curbside collection of commingled
23 recyclables: paper, plastic, metal, and glass in one bin. The recycling goes to a County Waste recycling
24 facility in Chester for sorting. The remaining MSW is handled separately by Waste Management and is
25 delivered to vdL for mixed waste processing to recover some recyclables. City residents can also use the
26 Ivy MUC for specialty services, and some also choose to use McIntire Recycling Center.

27 Appendix 1 shows the transfer stations and convenience centers in Albemarle and neighboring counties.
28 Greene and Fluvanna counties each have one public center for MSW. Buckingham and Rockingham have
29 five collection sites, Nelson has seven, Orange has eight, Louisa has nine and Augusta County has 11.
30 Albemarle County collection sites are limited to the Ivy MUC and McIntire Recycling Center.

31 Remote, self-serve sites have two purposes. First, they provide a place for rural residents to take MSW
32 when the area is too sparsely populated and rural for private garbage trucks to operate profitably.
33 Second, they make source-separated recycling more convenient.

34 2.4 Solid Waste Management Process and Facilities in Albemarle County

35 2.4.1 Rivanna Solid Waste Authority

36 The RSWA was created in 1990 by Charlottesville and Albemarle County with responsibility for the solid
37 waste services in the region. RSWA operated a landfill at Ivy until its closure in 2001, and now continues
38 to be responsible for post-closure care of the landfill.

39 The RSWA operates a recycling center in Charlottesville at McIntire Road with several containers for self-
40 sorting recyclables. McIntire Recycling Center (McIntire) employs source separation. When materials are

1 kept out of the residential waste stream, they remain cleaner and as a result, have a much higher value
2 to end-users compared to materials that have been combined with all wastes and are contaminated
3 with whatever else was in the trash bag, collection truck, baler, etc. RSWA bales and sells these
4 relatively uncontaminated recyclables, generating revenue and reducing landfill disposal costs. RSWA
5 collected 1,882 tons of recyclables in 2014 (RSWA 2014).

6 RSWA operates a transfer station at the Ivy MUC, where private hauling firms can pay a tipping fee to
7 unload waste collected from other businesses and residences. Individual residents may also drop their
8 household waste at the Ivy MUC. There are also a variety of recycling services at the Ivy MUC, from
9 scrap metal and appliances to tires, motor oil, brush and wood, and paper. RSWA recovers revenue from
10 tipping fees, by selling mulch, and by selling recycled commodities.

11 RSWA operates a paper sort facility in Charlottesville. It is open for government and business use, with
12 the general public directed to recycle paper at the Ivy MUC and McIntire. This facility separates and
13 packs paper into bales for sale. Bales of separated cardboard and white office paper are worth far more
14 than bales that mix both. Of the 1,882 tons noted above, 1,069 were paper and another 279 were
15 cardboard. RSWA collected 107 tons of metal, 98 tons of plastic, and 249 tons of glass.

16 RSWA also maintains three paper collection receptacles: at Sam’s Club on Route 29 North, behind
17 Pantops Shopping Center, and in Scottsville beside the baseball fields and Boys & Girls Club. These sites
18 are not staffed and are sometimes contaminated by other waste. They are also not widely advertised
19 and therefore may not be used to their potential. Each site yields between 3 and 10 tons of paper
20 recycling in an average month. These sites demonstrate some potential for operating limited remote
21 recycling facilities.

22 The RSWA presents a materials analysis in its annual report. In FY 2014, the Ivy MUC facility handled
23 6,864 tons of MSW. During the same period, RSWA handled 3,091 tons of recyclable or reusable
24 commodities, as indicated in Table 1. In FY 2013, 18,124 tons of MSW were handled at the Ivy MUC and
25 6,062 tons of recyclable or reusable commodities were diverted from landfills. Comparing the total
26 materials managed by RSWA in 2013, 24,186 tons to the 201,732 total MSW tons reported for
27 Charlottesville and Albemarle in 2013 (TJPDC 2014), it can be concluded that RSWA processes
28 approximately 12% of the total MSW generated locally. The combined recycled quantities for Albemarle
29 County and the City of Charlottesville are reported as 70,516 tons for 2013. Thus, the RSWA-managed
30 recyclables and reusables represent approximately 9% of the recyclable materials market share.

31 Comparing the quantity of MSW handled by the Ivy MUC in
32 FY 2014 (6,864 tons) and the recycling rate of both Ivy and
33 McIntire (1,882 tons), approximately 21% of the total
34 materials brought to RSWA facilities are recycled; this figure
35 does not include reusable materials (brush, tires, etc.) but
36 represents 3.7 million pounds of material diverted from
37 landfills. Including the materials that are brought to the Ivy
38 MUC and subsequently reused, the FY 2014 figure increases
39 to over 12 million pounds of materials diverted from
40 landfills.

Figure 6. A “small hauler” truck unloads MSW at the Ivy MUC.



41 The services RSWA provides generates some revenue, but the County subsidizes RSWA with annual
42 support For example, the County has earmarked approximately \$500,000 for RSWA operations in fiscal

1 year (FY) 2016. It is clear that RSWA is not a significant player in the recycling market for the area, and
2 while the possibility of high recycling rates is provided at their facilities, the current operational
3 framework results in limited customers and reach.

4 In summary, RSWA has been and remains the legally authorized entity for partnership and consolidated
5 services between Albemarle County and the City of Charlottesville. The authority remains responsible
6 for landfill remediation for at least the next 15 years. RSWA has effective relationships with businesses
7 and community residents, and a well-earned reputation for integrity and service.

8 *2.4.2 University of Virginia*

9 At the University of Virginia (UVA), individuals separate their recyclables at the source. UVA Recycling
10 picks up, sorts, bales and prepares the recyclable materials for market. A small interior sorting area,
11 with a baler, is used by UVA Recycling to separate commingled beverage containers. MSW and compost
12 is serviced by outside contractors using exterior wheeled carts, front load containers and compactors.

13 Separate receptacles are provided for MSW, paper and beverage containers. The fiber materials,
14 including white paper, mixed paper and cardboard, are separated by the user at the point of disposal to
15 minimize contamination. The beverage containers are commingled and separated into
16 distinct commodities by UVA Recycling. Composting is available in the "front" and "back" of the house
17 at most dining facilities, with planning underway for a wider rollout. Many special events, such as
18 Athletics, strive to reduce waste by promoting composting and substituting alternatives for landfill-
19 bound products.

20 *2.4.3 Private Enterprise*

21 The majority of the County's waste is collected and transported by private hauling companies. Some are
22 small local startups, and some are national-scale firms. Households and businesses in the County's urban
23 ring can select from competing firms to best serve their needs. More rural areas of the County have
24 fewer options for selecting hauling services. Household collection of MSW is most often from a single
25 container provided by the hauler. Businesses have larger containers such as dumpster bins. Typically,
26 there is a monthly fee for the collection service. The most common arrangement is to have mixed waste
27 all in one can, without separating recyclables.

28 Garbage collection trucks, with two or three axles and loads of a few tons, are less profitable if they
29 must travel long distances on highways to landfills, primarily due to the additional fuel costs, but also
30 exacerbated by higher maintenance to vehicles as a result of the greater mileage accrued. Therefore an
31 important intermediary step is the transfer station, where smaller loads are compacted into 40-foot
32 containers or 50-foot trailers. Tractor trailer trucks then carry loads of about 22 tons to the landfill. In
33 2014, the Ivy MUC received 6,864 tons of MSW (RSWA 2014), which represents an average of
34 approximately 27 tons per day based on their five day workweek and seven days of holiday closures
35 during the year. Greene County has a public transfer station, also at a former landfill, which accepts
36 some Albemarle County waste, which is then transported to the Amelia landfill operated by Waste
37 Management. The privately operated vdL transfer station in Zion Crossroads serves a larger region and is
38 the likely transfer point for most Albemarle County waste. Many of these transfer stations charge the
39 hauler a tipping fee to unload waste, then they pay another trucking firm to carry the waste to a landfill,
40 such as the one in Amelia County. Van der Linde operates their own fleet of trucks for transport of SWM
41 to a landfill.

1 Van der Linde operates a mixed waste processing facility, commonly termed a “dirty” materials recovery
 2 facility (MRF). Magnets, fans, and workers are used to extract recyclable materials from the mixed
 3 waste. In the most recent filing to Virginia DEQ, this facility reported a diversion rate of 21 percent (vdL
 4 2015). Recent upgrades to the facility may increase this diversion rate.

5 Charlottesville has Public Works contracts for separate collection of MSW and recycling from residences.
 6 This is known in the industry as “single stream” recycling. Commingled recyclables such as paper, glass,
 7 plastic, and metal are collected in one bin, at no direct cost to residents. MSW is collected from another
 8 can, with a user fee applied. This MSW fee funds both the MSW and recycling services. By making the
 9 recycling free and charging for MSW, this fee system encourages users to save money through greater
 10 recycling. The single stream contractor takes the recyclables to the County Waste, LLC MRF in
 11 Chesterfield County, which is a commercial recycling center that does not process mixed waste and is
 12 referred to as a “clean” MRF. The City subsidizes this system partly because it achieves higher recycling
 13 rates due to lower levels of contamination compared to a mixed waste system (Charlottesville 2015).

14 Another option for recycling is source separation, where recyclables are kept separated from MSW at
 15 the point of generation (households) in order to ensure the materials are minimally contaminated with
 16 wastes and therefore maintain a higher market value in reprocessing. RSWA provides source separated
 17 recycling options, as described in section 2.4.1 and 2014 figures are presented in Table 1.

18 **Table 1. 2014 RSWA Recycling Information**

Commodity	Tons Collected	Processing Firm/Destination	Some commodities produced
Plastics	98	Sonoco, VA (various)	Plastic for reuse in manufacture
Plastic film		Trex – Winchester, VA	Decking
¹ Glass	249	Reflective Recycling – Wilson, NC	Bottles & fiberglass insulation
Metal cans	34	Roanoke Metallica / VA	Shredded & resold to manufacturer
White goods (scrap metal)	73		
Cardboard	279	Sonoco, International Paper, Greif/ VA	Cardboard remanufactured
Newspapers, magazines, catalogs	640		
Mixed paper & phone books	265		
Office Paper	164		Paper remanufactured
Vegetation	2,016	Onsite mulching operation	Mulch
Pallets	71		
Tires	92	Used tire dealers, Royal Pride Mats, Emanuel Tire/VA Overseas	Resale, mats, recycled Resale
Total	3,981		

19 Source: RSWA 2014

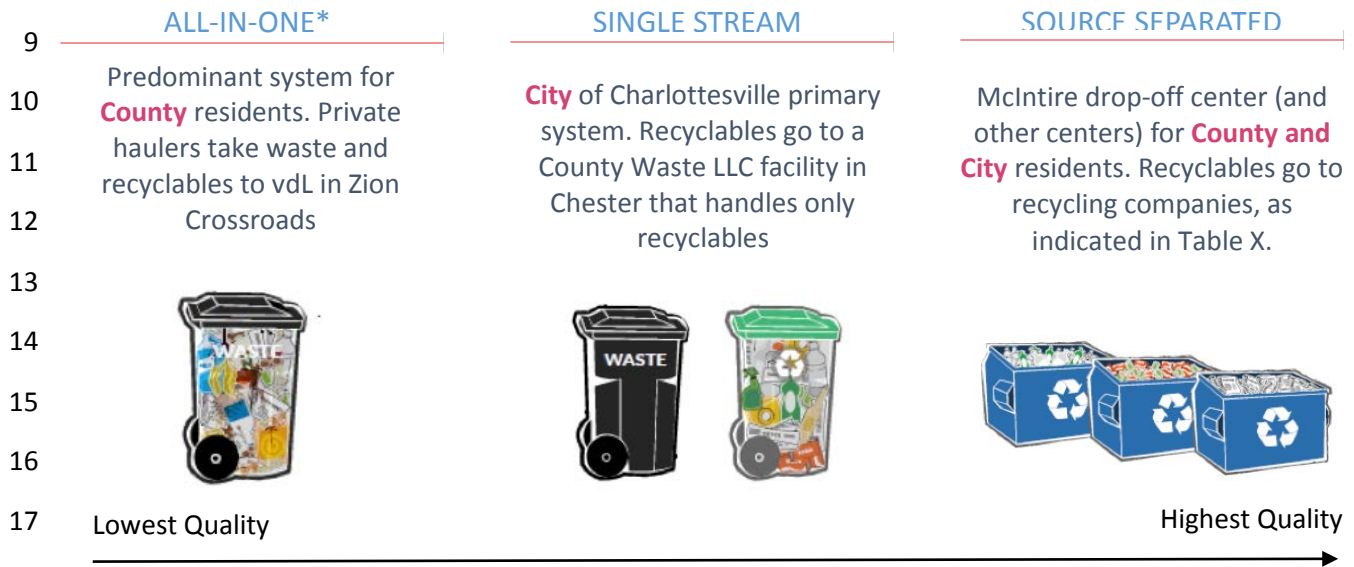
20 ¹Glass includes glass crushed and reused on roads at Ivy MC

21

1 The amount of material recycled or composted, combined with the MSW received in 2014 totals 10,845
 2 total tons of material processed through RSWA, with recycled/reused materials representing
 3 approximately 37% of the total materials.

4 Figure 7 shows the full range of recycling options that currently exist within our region, from “All in one
 5 can” to source separated recycling, with an indicator of the quality of recycled material as a result of
 6 using each of the three primary methods in use.

7 **Figure 7. Three Recycling Methods Currently in Use in the Region**



**Often incorrectly referred to as “Single Stream” within the City and County*

All-in-one uses Mixed Waste Processing at a Material Recovery Facility (often referred to as a “dirty MRF”).

- Requires no sorting
- Typically lowest recovery rates due to contamination

Single Stream requires households to separate recyclables from trash, which are then sent to what is often referred to as a “clean MRF” for further sorting.

- Requires sorting commingled recyclables from trash
- Helps communities to incentivize recycling

Source separation requires sorting by type by the consumer.

- Preferred by recyclers
- Lowest contamination

PR&A/Adapted by Green Blue & BWB

19

20 Compostable packaging, wet or soiled paper, food waste and yard trimmings can be composted locally.
 21 Currently food waste collected for composting from UVA, some City of Charlottesville and Albemarle
 22 County Public Schools, restaurants and grocers goes to a commercial facility, Black Bear, in Crimora,
 23 Virginia. An unknown number of Albemarle County households compost in their backyards or feed food
 24 scraps to animals, keeping waste out of landfills.

25 Locally, yard and wood waste are kept out of landfills through mulching operations at the Ivy MUC and
 26 privately operated mulching operations such as Panorama Farm, which accepts the City’s leaves each fall
 27 which are used to create a commercial compost product, “Panorama Paydirt.”

1 Our regional recycling rates could increase significantly from food and yard waste composting because
2 little recovery is now occurring, and the majority of this material goes to landfills. The Committee agrees
3 with the analysis provided in a report prepared by students of the UVA Batten School on the regional
4 benefits of composting (UVA 2015):

5 *“Paper is the single largest part of the MSW stream and not always recycled locally. The best*
6 *value added to the local MSW system may be to improve recycling of paper and to expand*
7 *composting of organics, both food waste and vegetative waste. The RSWA appears well suited to*
8 *support these changes.”*

9 Beyond recycling and composting, other items can also be diverted from landfills. These niche services
10 are often significant for their environmental impacts. RSWA collects appliances (“white goods”) to
11 recycle metal after removing any refrigerants. Scrapped cars can yield considerable recyclable material,
12 and both RSWA and local shops help recycle motor oil, antifreeze, and tires. Electronic waste is an
13 increasing part of the waste stream, and some local retailers such as Best Buy and Crutchfield help with
14 recycling. Pharmaceuticals are another problematic waste, potentially unsafe to the water supply, and
15 there are few local options for their safe disposal. Most other household hazardous waste (HHW) is
16 handled by RSWA through contractors during two special weekends for HHW disposal at the Ivy MUC.

17 Reuse is another valuable means of keeping resources out of landfills. Thrift and consignment stores,
18 including Goodwill, Salvation Army, SPCA and the RSWA’s Encore Shop at the Ivy MUC; the book nook at
19 McIntire; the local Habitat for Humanity Store and even yard sales play an important role in keeping
20 used but still useful books, furniture, clothing, building materials and other household goods out of
21 landfills.

22 In summary, the current waste management system in Albemarle County relies mainly on the private
23 sector for collection, reuse, recovery, and disposal services. RSWA provides niche services for many
24 residents but has limited MSW and recycling services at the Ivy MUC and McIntire facilities. Most county
25 residents and businesses have mixed waste collection contracts with private haulers. This system has
26 some recycling recovery at the vdL mixed waste processing and transfer facility. The City and UVA have
27 established different practices from the County in order to achieve higher levels of diversion from
28 landfills. Commercial composting is used extensively by UVA, and is a growing practice in area schools
29 and among restaurants and grocers, with significant potential for growth in our area.

30 **3 Issue Identification**

31 Generally, the issues that the Committee has worked on can be concisely addressed in the following
32 statements:

- 33 1. The enormous amount of waste generated in this country results in problems such as pollution,
34 resource losses, and greenhouse gas emissions that drive climate change. Communities can be
35 driving forces to implement solutions.
- 36 2. The County’s MSW public services, which are operated by RSWA, have not seen investment to
37 update our only transfer station or to further SMM.

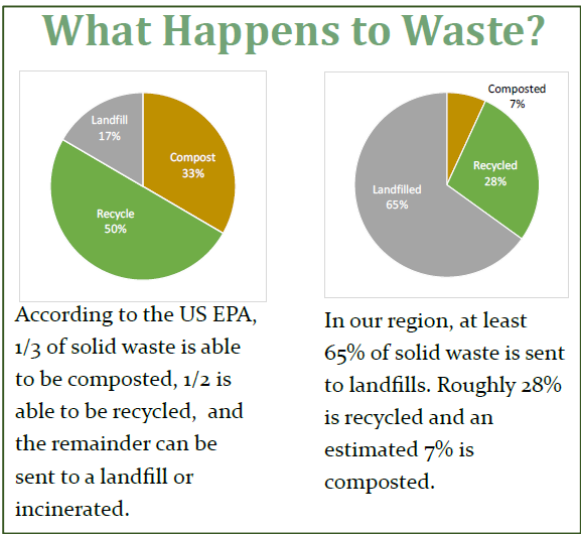
- 1 3. Advertising, marketing and signage by private haulers and waste management firms has suggested
- 2 to Albemarle County residents that mixed waste processing is an effective primary recycling
- 3 method.
- 4 4. There is a vital need for SMM to remain affordable and accessible, and to therefore discourage
- 5 illegal burning and dumping.
- 6 5. There are a lack of metrics and accurate data for management activities involving Albemarle County
- 7 MSW.

8 As a result, the Committee began to hone the larger issues into smaller, addressable issues for which
 9 policies could be developed and strategies identified for financial and timeframe planning. These
 10 include:

11 • **Reduce waste and increase the efficient and sustainable use of resources:** The Committee and
 12 much of the public believes that too much local waste, over 100,000 tons annually, gets buried in
 13 landfills elsewhere in the Commonwealth,
 14 creating environmental liabilities far into the
 15 future. The charts at right show the policy choice:
 16 whether and how to shift from the mostly landfill
 17 graph at right to the minimal landfill graph at left.

18 • **Increased recycling:** part of the waste problem
 19 relates to individual decisions of what to
 20 consume and throw away. Another is that the
 21 local recycling rate, reported at 35%, is too low.
 22 The community should strive to throw out less,
 23 recycle more, and reuse wherever possible.

24 • **Risk of monopoly:** in the past, the market for
 25 private hauling services has been competitive
 26 among small and medium-sized firms. But in
 27 recent years, technological improvements have
 28 increased the costs for both capital investment and competition and increased barriers to entry.
 29 Large firms have rapidly consolidated with acquisitions of smaller rivals. This creates monopoly risks,
 30 limiting innovation and increasing price, especially in smaller or more rural markets. Maintaining a
 31 public facility to preserve choice and competition in services is valuable.



32 *“The top two companies, Waste Management and Republic Services accounted for 39 percent of*
 33 *total industry revenue. All of the publicly traded companies together comprised 61 percent of*
 34 *total revenues. All told, the private sector represents 78 percent of the industry while the*
 35 *municipal sector controls the remaining 22 percent. This is a sharp contrast to 1992 when*
 36 *municipalities controlled 35 percent of industry revenue.” (Waste Business Journal 2012)*

37 • **Rural services:** Important segments of Albemarle’s population live in remote rural areas. Residents
 38 have reported anecdotally and in surveys that large hauling firms do not serve these areas.
 39 Historically, composting and burning helped rural residents reduce their MSW volume. Open
 40 burning of MSW has been regulated by Albemarle County ordinance for 25 years (Albemarle County
 41 1989). Some rural residents self-haul their MSW to the Ivy MUC and McIntire. Small haulers can
 42 operate more sustainably if they have nearby transfer station facilities to reduce their fuel and labor

1 costs. If rural areas are not well served by private haulers or public facilities, there is a risk of
2 increase in illegal dumping or illegal burning.

- 3 • **Special services:** There is also a public interest in preserving and enhancing certain specialty services
4 in MSW management.

- 5 ➤ **Home service:** Some residents, including the elderly and persons with disabilities, prefer or
6 require in-home or back-door pickup of MSW and recycling, rather than having to haul a large
7 bin to curbside. In the rural areas, long driveways exacerbate this problem. Aging in place and
8 maintaining independent living are important human services goals, and supporting a
9 marketplace of private haulers to provide this service is important. Table 2 below shows the
10 projected increase in Albemarle County’s elderly population, which is estimated to grow faster
11 and above the statewide rate.

12 **Table 2. Projected Increase in County and State-Wide Elderly Population**

Location	2013	2020	2030
Albemarle Co population 65+	16,480	21,617	29,861
% Albemarle Co population 65+	16.0 %	18.7 %	22.3 %
Virginia population 65+	1,106,894	1,359,168	1,767,340
% Virginia population 65+	13.4%	15.4%	18.3%

13 Source: Weldon Cooper Center (XXXX)

14 Additionally, there are a number of neighborhood areas where the roads are privately
15 maintained by HOAs and as a result, traffic from the heavy vehicles operated by the large
16 haulers is avoided in order to maintain the roads in good condition. For this reason, small
17 haulers provide a valuable service to these neighborhoods.

- 18 ➤ **Household hazardous waste:** Disposal of hazardous waste is heavily regulated for
19 environmental quality. Businesses which generate such waste pay for its proper disposal.
20 Residents have few options. The RSWA has disposal days twice annually, but limited service
21 options may result in illegal disposal and pollution in local waterways or landfills. Surveys and
22 public events report demand for increased frequency and convenience of HHW collections.

- 23 ➤ **Electronics:** E-waste is a growing component of the waste stream, as wired devices become
24 more common, quickly obsolete, and more disposable. There is some recovery value in metals,
25 but toxic substances also require careful disposal. The MSW stream is not appropriate for e-
26 waste. Local options for reuse and recycling can be identified and enhanced.

- 27 ➤ **Pharmaceuticals:** Like chemicals and electronics, drugs need special disposal to avoid pollution.
28 Sewage treatment systems are not designed to remove these drugs from the water being
29 treated. Disposing of drugs in the trash or down the drain results in contamination and health
30 risks. There are few local options for safe disposal.

31 4 Committee Study Process

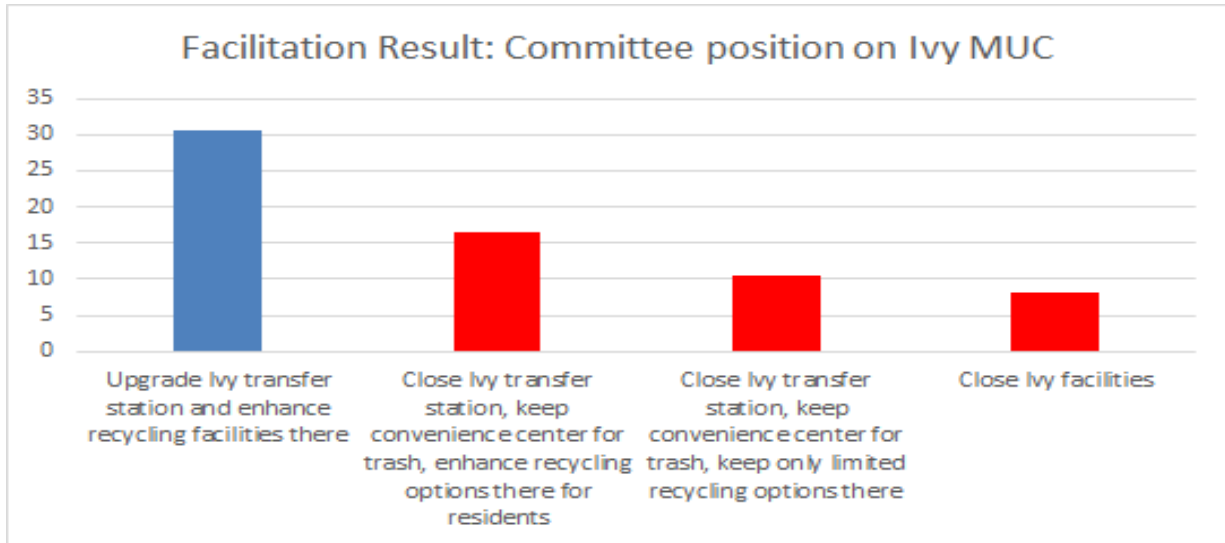
32 The Committee learned about existing waste management services and facilities in the County, and how
33 they compare with those at UVA and in the City. Committee members read and discussed consultant
34 reports from GBB and Draper Aden assessing County options, as well as articles and news about waste

1 disposal, recycling and composting. Members of the Committee visited landfills, MRFs, transfer stations
 2 and convenience centers in Greene, Nelson, Augusta, Fluvanna and Chesterfield, and had the
 3 opportunity to meet personnel at these facilities and discuss aspects of their operations in detail. The
 4 Committee benefited from the expertise of some members who have professional experience in
 5 sustainable materials management and waste hauling. The Committee also prepared survey questions
 6 and conducted a stakeholder meeting and an open house to seek public input on issues related to waste
 7 management and recycling in the County. The Committee participated in facilitation sessions to reach
 8 consensus on recommended SMM policies and strategies.

9 **4.1 Results of Work with the Institute for Environmental Negotiation**

10 The Committee contracted UVA’s Institute for Environmental Negotiation to facilitate evaluation of
 11 policy options. Through the course of two half-day retreats, committee members synthesized the best
 12 available data and considered options using a wide range of criteria. An example of the options for
 13 evaluated by the Committee can be seen in Figure 8 below, where consensus support was strongest

Figure 8. Committee Consensus on the Ivy MUC



14 increasing recycling opportunities, upgrading the Ivy MUC facilities with enhanced recycling, improving
 15 special collections, and supporting waste reduction and reuse programs. Options that would close or
 16 remove some or all facilities at the Ivy MUC were not recommended. The summary results are shown on
 17 the following page in Table 3.

18

Table 3. Weighted Evaluation of Options Evaluated by the Committee at Facilitated Meetings

Evaluation Criteria:	Right thing to do	Least Harm Globally	Environmentally Sustainable	Able to phase in	Meets Constituent Needs for Services	Meets Comp Plan	Politically Feasible	Feasible with state/fed regulation	Long-Term solution	Can Measure Success	Creates Jobs	Financially Feasible	Total
Weight (1-5):	5	5	5	5	4	4	3	3	3	3	3	3	-
Options evaluated:													
Increase recycling opportunities	2.9	2.8	2.9	2.8	2.7	3.0	2.9	2.9	2.8	2.6	2.1	2.5	32.9
Upgrade Ivy transfer station and enhance recycling facilities there	2.5	2.7	2.8	2.4	2.8	2.7	2.1	3.0	2.6	2.8	1.9	2.2	30.5
Continue/increase special collections such as household hazardous, e-waste, and pharmaceuticals	2.8	2.5	2.6	2.9	2.9	2.8	2.4	2.6	2.7	2.8	1.4	1.8	30.2
Continue/support source reduction and reuse programs	2.9	2.5	2.9	2.7	2.3	2.6	2.5	3.0	2.7	2.1	1.5	2.3	30.0
Decrease material going to Landfill	2.8	2.5	2.7	2.3	1.8	2.6	2.5	2.6	2.6	2.4	1.6	2.6	29.0
Develop an outreach/communications campaign	2.9	2.3	2.2	2.1	2.1	2.6	3.0	2.7	3.0	2.1	1.0	2.7	28.7
Establish/Enhance food composting opportunities	2.3	2.0	2.6	2.7	1.9	2.5	2.0	1.8	2.7	2.6	1.6	1.9	26.6
Improve data and metrics	2.5	2.0	2.0	1.1	1.8	2.8	2.6	2.2	2.9	2.8	1.1	2.6	26.4
Close Ivy transfer station, keep convenience center for MSW, enhance recycling options there for residents	1.2	1.1	1.3	1.1	1.2	1.6	1.4	2.1	1.2	2.1	0.9	1.3	16.5
Close Ivy transfer station, keep convenience center for MSW, keep only limited recycling options there	0.5	0.4	0.4	0.5	0.6	0.7	1.1	2.0	0.8	2.0	0.6	1.0	10.6
Close Ivy facilities	0.3	0.3	0.3	0.3	0.4	0.4	0.7	2.0	0.6	1.5	0.3	1.1	8.2

1 4.2 Public Surveys

2 The Committee emphasized public opinion research, gauging satisfaction with current services and
3 desire for specific changes. In 2006 and 2008, citizen surveys conducted by the Weldon Cooper Center
4 for Public Service found that recycling was rated very important to a substantial percentage of County
5 residents – 73% and 75%, respectively (Weldon Cooper 2009). In the 2008 survey, the results indicated
6 that provision of recycling services was ranked 13th in importance out of 34 services and 67% favored an
7 increase in recycling services. At the same time, satisfaction with the current services was ranked 34th.

8 The 2013 National Citizen Survey for Albemarle County (NRC 2013), the rating of recycling services in the
9 County were rated below the national average, though above NRC-selected university communities and
10 peer localities. The quality of the services currently provided were rated ranging from excellent (25%),
11 good (47%), fair (21%) and poor (7%).

12 Finally, a recent survey (Weldon Cooper 2015) demonstrates that recycling remains highly valued by
13 70% of the respondents. This survey also specifically asked if a source separation recycling center was
14 conveniently located, would residents use it. The survey results indicate that 70% of the survey
15 respondents would use such a facility.

16 A large majority of residents are supportive of increased recycling, but a small segment of County
17 residents participate in high-recovery practices such as self-sorting at McIntire or the Ivy MUC, as
18 evidenced by the 2014 RSWA figures.

19 4.3 Open Houses

20 The Committee also held public events to engage in more sustained dialogue. On December 16th, 2014,
21 a stakeholder roundtable attracted 23 representatives from businesses and community groups. On April
22 29th, 2015, committee member Rick Randolph made a presentation on the Committee’s work at the
23 Neighborhood Leadership Summit, with about 60 active citizens attending. Mr. Randolph made a rapid
24 straw poll. Only 8 reported using McIntire. However, half had been to Ivy for occasional services. About
25 40% would like to use a free composting site to deposit organic wastes. About 50% would like to have
26 and use a new recycling center at a more convenient location.

27 The Committee held a larger, open house community event at the 5th Street County Office Building on
28 June 4th, 2015. Approximately 50 residents attended, representing a diverse range of neighborhoods,
29 opinions, and recycling practices. Key points of public feedback included:

- 30 ● Source separation is preferable to mixed waste processing where practical.
- 31 ● Most in attendance preferred to see Ivy as a “one-stop-shop” center for resident services,
32 including composting and e-waste. There was little comment on transfer station facilities, just
33 one note that mixed waste hauling might be effective.
- 34 ● Composting collection should be offered at Ivy. Smaller compost collection points suggested by
35 the public participants included McIntire, Mill Creek, or Hollymead.

36 4.4 Report by Students of the Batten School of Leadership and Public Policy

37 Another contribution to the Committee’s broad research work came from UVA’s Batten School of
38 Leadership and Public Policy. County staffer Matt Lawless recruited a team of four graduate students for
39 a field project in Applied Policy Analysis, a program requirement for public policy. They conducted

1 independent research, site visits, and interviews, presenting conclusions to the Committee on April 21,
2 2015. Committee members contributed substantially to help the students, reviewing drafts, making
3 corrections and asking questions about how they reached their conclusions. Their 35-page report,
4 *Recycling Rates in Albemarle County*, established the benefits of increased recycling and evaluated four
5 options to increase the recycling rate. The team’s independent conclusion was, “We recommend
6 establishing four new neighborhood recycling drop-off locations and implementing a public awareness
7 campaign entitled ‘Keep Albemarle Beautiful.’” This analysis attempted to optimize the values of
8 recycling effectiveness, cost efficiency, public buy-in, and political feasibility. The Committee is grateful
9 for the students’ enthusiastic support.

10 5 Recommended Policies, Practices and Implementation Strategies

11 The following subsections detail the policies and practices that the Committee is recommending to the
12 BoS for incorporation into County planning processes. Each of the subsections represents a primary
13 policy or practice area selected for recommendation along with information gathered by the Committee
14 for consideration on implementing the policy or practice. As a part of the facilitated discussions, the
15 Committee identified individual strategies that would address the targeted policy or action and help
16 drive the implementation process. They are identified here in each subsection, with expanded
17 discussion to address the Committee’s priorities and/or concerns. It should be recognized that overlap
18 necessarily exists regarding some policies and practices. Segregation into subsection discussions should
19 help delineate where common goals are nuanced to specific policies and practices.

20 5.1 Establish a Standing SMM Committee

21 Charter and appoint a standing SMM Committee for coordination and outreach. The County maintains
22 permanent advisory boards or committees for a number of key policy areas: Fire Rescue, Social Services,
23 Historic Preservation, and Natural Heritage, among others. Such boards lead ongoing citizen
24 engagement, convey information to staff and the Board of Supervisors, and serve to liaise with other
25 stakeholders including businesses and units of government. The Long Range Solid Waste Solutions
26 Advisory Committee began with a temporary charge, yet ongoing community outreach and volunteer
27 support to the County staff is appropriate. Many of the Committee members are willing and eager to
28 continue their service in an ongoing capacity. A draft charge that could be used for consideration has
29 been included in Appendix 5.

30 5.2 Create and Staff an Albemarle County Materials Management Office

31 To lead these priority actions, authorize and staff a SMM Coordinator in the County’s General Services
32 Department. The wide range of strategies recommended in this report demand a focal point within
33 County government to provide coordination and leadership. The SMM Committee needs staff support;
34 community partners need a liaison; contracts need to be written, managed, and executed. This work is
35 beyond the scope of existing support staff in the County Executive’s Office and in General Services, the
36 current environmental management capacity of which is highly skilled but overloaded. Therefore, the
37 committee recommends funding and recruiting a position comparable to the existing Environmental
38 Compliance Manager to enhance existing programs and advance these strategies. A few initial projects
39 for coordinator could include:

- 40 • Develop and share a Green Purchasing Policy to reduce waste in purchased goods.

- 1 • Pilot a compost program, perhaps linking a fire station’s food waste to a nearby park.
- 2 • Help the SMM committee to design and publish educational materials.
- 3 • Support RSWA’s expansion of services.
- 4 • Recruit and support department champions from County staff to lead recycling in office buildings.

5

6 5.3 Increase Recycling Opportunities and Activities in Albemarle County

7 Increase the days and hours of operation at the Ivy MUC and McIntire facilities. The current limited
8 operating hours make recycling inconvenient or impractical for residents. McIntire is open from 8:30 am
9 to 5:20 pm Wednesday through Friday, 9:30 am to 5:20 pm on Saturday, and 12:30 -5:20 pm on Sunday
10 afternoon. In Charlottesville and Albemarle County, there are no drop offs for recyclables available on
11 Mondays, Tuesdays or any evenings. The RSWA has limited capacity in its management staff, but routine
12 operations are completed by part-time and temporary staff which can be increased more flexibly. The
13 County could negotiate and plan with RSWA what extension of hours at the Ivy MUC and McIntire could
14 be achieved through an increase in annual funding.

15 [Launch a public discussion of where \(and when\) additional recycling centers could be established in the](#) 16 [county](#)

17 The Committee considered practices in neighboring counties, such as a network of recycling centers
18 providing convenient services to residents around the county. Nelson County, for example, operates
19 multiple staffed collection centers and one transfer station, with a hauling contract from the station to a
20 regional landfill in Campbell County that serves the Region 2000 Services Authority. McIntire has a good
21 central location where many people work, and the Ivy MUC is close to some western, southern, and
22 rural communities, but many residents in both urban and rural areas are not ideally served by these two
23 facilities. Improvements to the existing facilities and services, plus continuing community dialogue, can
24 help identify if there is sufficient demand for recycling centers in other parts of the county.

25 [County buy-in through self-implementation](#)

26 Lead by example through County self-implementation of SMM. The County can and should serve as a
27 model at its facilities and with its personnel. At present, County buildings have mixed waste disposal and
28 negligible recycling. Leading by example involves budgeting for increased bin and liner costs and
29 coaching employees on source separation. The County can incorporate many aspects of the system
30 currently used by UVA, which has advanced recycling on campus in order to simultaneously reduce cost
31 and environmental impact. One way is to discourage individual waste receptacles and encourage
32 centralized MSW, compost and recyclable collection in common spaces such as kitchens, copy areas and
33 lobbies. In the same spirit as the open office floorplan, centralized waste is more efficient because it
34 moves from individual, overlapping services to shared infrastructure. This increases diversion by asking
35 building occupants to bring their waste to a central area where source separated containers are
36 provided, removing the incentive to "throw it in the nearest can." It also reduces housekeeping labor
37 costs because it greatly reduces the number of containers to service.

38 [Prepare a County plan that delineates specific SMM goals over time and establishes the metrics to gauge](#) 39 [success/change.](#)

40 Albemarle County will continue to participate in the Thomas Jefferson Regional Solid Waste Planning
41 efforts by providing input for plan updates and adopting the plan in accordance with state code. By

1 participating in these efforts, the county will collaborate on the development of regional and county
2 specific performance measures that will benchmark and assess efforts in recycling and implementation
3 of the waste hierarchy.

4 The County should develop a plan that benchmarks current levels of recycling and measure progress
5 with introduction of recommended SMM strategies. An increase from the present rate to a higher rate
6 should be evaluated and implemented, looking at both near term and longer term targets. Further
7 improvements should be identified as part of Albemarle County’s Environmental Stewardship Plan for
8 future years and incorporated into the County’s long-range sustainability planning.

9 [Encourage HOAs to contract private haulers in order to increase source separated material](#)

10 Currently no HOAs in Albemarle County receive single stream curbside recycling service, because most
11 private haulers only offer all-in-one-can service. County Waste LLC, which has the contract for the City’s
12 single stream curbside program, does not offer single stream service in the surrounding county.
13 Republic Services does provide single stream curbside recycling service but only if an entire HOA
14 contracts for it, because driving long distances to service individual residents across the County is not
15 financially viable.

16 Providing information to HOAs about the effectiveness of different recycling systems may encourage
17 them to bring single stream or source-separated recycling to their neighborhoods. Ensuring that the Ivy
18 MUC can accept single stream recycling for processing will give small, independent haulers the ability to
19 offer recycling services to HOAs as well, furthering SMM in the County.

20 **5.4 Institute and Support Education and Outreach Programs**

21 [Establish an ongoing education program for the community in schools and at large.](#)

22 Teaching our children about the waste hierarchy (reduce, reuse, recycle, dispose) and SMM during their
23 school years is a practical way to introduce good habits regarding resource usage and disposal. This is an
24 area where the County can lead by example, reintroducing separation of recyclables from the waste
25 stream in our schools. Some county schools already have composting programs; more schools could add
26 composting and make it a part of their science curriculum. Albemarle County Public Schools has recently
27 been awarded a grant from a Virginia company to bring commercial composting and project-based
28 learning to the western feeder pattern.

29 Likewise the broader community needs a better understanding of the benefits of SMM and how we can
30 increase recycling, expand composting, and continue to assure the safe disposal of hazardous wastes.
31 Printed materials, signage, public service announcements and direct outreach can all be used to make
32 the public aware of best practices and available services to further SMM goals in the County.

33 [Ensure that uniform and correct terminology is used in marketing and educational materials.](#)

34 Misunderstanding of recycling industry terminology in our area has caused widespread confusion among
35 residents and businesses about services and claims. For example, single stream recycling is defined by
36 the EPA as a collection program that allows, “participants to put all recyclable materials (e.g., paper,
37 bottles, cans, etc.) into one collection container” (EPA 2015c). In our area, however, many haulers that
38 provide all-in-one-can service have suggested through advertising and other means that they provide
39 single stream service as defined by the EPA. Through its outreach and educational materials, the County
40 should help residents understand the effectiveness of different systems and what type of service they
41 are receiving.

1 Coordinate education program with the City, TJPDC, and other possible partners. Develop a unified
2 message.

3 An ongoing educational program will be most effective if it is designed in partnership with other
4 organizations with recycling objectives so as to consistently reach constituents and benefit waste
5 disposal and materials management objectives throughout the region.

6 The County should communicate with HOAs, haulers, property managers and businesses about its SMM
7 objectives. The County should encourage best practices for materials management and disposal, and
8 help residents and businesses determine how to improve their practices and access available services.
9 Talk with HOAs, haulers, and property manager about best practices

10 5.5 Upgrade the Ivy MUC

11 Create a model transfer/recycling center to demonstrate how the recommended facility and program
12 can operate cost-effectively.

13 The committee recommends a model recycling center, similar to McIntire, for residents' use at the Ivy
14 MUC, as well as an efficient, durable, environmentally compliant transfer station for ongoing services.
15 The recycling center should be located in a separate area at the Ivy MUC from the transfer station, such
16 that it serves as a clear model for consideration elsewhere in the county. The transfer station tonnage is
17 not expected to reach 150 tons per day, even if another recycling center is built later - and the new
18 facility can be scaled appropriately.

19 A transfer station is a necessary element of the Ivy MUC, providing the County with a hub for SMM
20 activities and reliable and affordable transfer of waste for landfill disposal. In December 2014, the
21 Committee reviewed a report (Draper Aden 2014) prepared for the BoS regarding options for the Ivy
22 transfer station. The BoS asked the Committee for their response to the report. The Committee passed
23 the following motion unanimously:

24 *"To facilitate the work of the committee, the BoS should move forward with the proposed new*
25 *transfer station at Ivy. The committee supports the development of new transfer station facilities*
26 *and new recycling center capabilities at the Ivy location. In addition, the committee recommends*
27 *the Board explore options for the management and services of these facilities."*

28 The Committee envisions a user-friendly and efficient transfer station design that eliminates long waits
29 and the kind of mechanical problems that occur with the existing aged equipment. The operating costs
30 for a transfer station would be partially offset through tipping fees charged to residents and haulers,
31 plus the sale of recovered recyclables. Such a facility is expected to require a public subsidy, just as the
32 RSWA facilities do at present. Together with the many other public services provided at the Ivy MUC, the
33 transfer station is integral to a comprehensive SMM program. Additionally, the ability for independent
34 haulers, businesses and residents to deliver source separated recyclables to Ivy for recycling is an
35 important means of making SMM services available to all residents of the county.

36 Specific needs for the model recycling center include bins for source separation of metal, glass, plastics,
37 cardboard, white paper, other paper, compostable organics, and electronic waste. Contractors would
38 process the compost and e-waste. A compactor or other device could accept bagged MSW, perhaps for
39 a "tag a bag" fee. There should be donation boxes for clothing, such as those from Goodwill, and the
40 Encore shop should continue its operations (currently it is open on three sides—it might be well to
41 enclose one or two walls). There should also be bins and storage areas to collect bulk metal, white goods

1 (appliances), and tires. Vehicle scales are not needed for these aspects of the recycling center. The clean
2 fill service and vegetative waste mulching operations at Ivy should also continue: these services, along
3 with the transfer station, will use the vehicle scales.

4 [Establish an area/strategy for some source separation of commercial waste transferred at Ivy \(e.g.
5 sorting floor and “mini-MRF” process\)](#)

6 Establish an area and/or strategy for some source separation of recyclables from commercial waste
7 received at the Ivy MUC. As discussed previously, the Ivy MUC facility has only very basic capacity to
8 handle and recover separated recyclables from commercial waste. Mixed waste from small haulers is
9 compacted and landfilled without significant recovery of recyclables. The facility upgrades described
10 above include a covered concrete sorting floor with sorting tables and carts where some recovery could
11 occur by hand and using power equipment –for example, large pieces of dry cardboard pulled from a
12 load and recycled. This kind of simple sorting area is part of the improved transfer station design.

13 **5.6 Expand and Increase Special Collections**

14 [Develop pharmaceutical diversion program](#)

15 One example of a niche service for study and implementation is secure drop-off of pharmaceuticals’
16 disposal is at rxdrugdropbox.org. Disposal services exist to transport waste pharmaceuticals and
17 incinerate them. A secure drop-off box could be placed at the Ivy MUC or at secure sites such as the 5th
18 Street County Office Building or Fire Rescue stations in the urban or rural areas.

19 [Consider door-to-door HHW collection program](#)

20 In other parts of the country, some private firms, such as Waste Management Inc., offer door-to-door
21 collection of HHW. Potentially, door-to-door HHW service could be provided in dense residential areas
22 through homeowner association (HOA) fees or rents. The SMM committee could conduct research to
23 gauge community interest and could provide outreach and education with neighborhood groups.

24 [Better alignment of hazardous materials and universal and electronic waste at recycling centers](#)

25 McIntire and the Ivy MUC currently provide many services for recycling and disposal, but there are some
26 conspicuous gaps. The County can renegotiate RSWA operational funding to provide additional services
27 to address these issues. Adding niche services will make the other existing services more appealing. The
28 Ivy MUC should offer regular paint disposal year-round, and should also have routine collection bins for
29 electronic waste. Standard universal waste items that should be collected include batteries and compact
30 fluorescent lightbulbs.

31 Increasing the range of recyclable products accepted at RSWA facilities would entail procuring
32 containers, providing for handling either by RSWA staff or a contractor, and marketing the new service.

33 As the model recycling center develops at the Ivy MUC, the SMM Committee can study and implement
34 better alignment of HHW and universal waste services at recycling centers. There should be careful
35 ongoing study as to fees for service and central or remote locations for disposal.

36 **5.7 Foster Rural Services**

37 [Carefully plan and establish recycling locations in more distant areas of the county](#)

38 Such recycling centers would be staffed and would prioritize source-separated recycling, but they could
39 also provide MSW collection and perhaps some specialty services such as a reuse/swap area or donation
40 boxes, e-waste collection, or collection of tires or paint, depending upon the community’s needs.

1 Determining the best location and service level will be an important collaboration between county
2 residents, the SMM Committee and County staff in the coming years. Appendix 1 shows the larger
3 number of collection centers in the surrounding counties.

4 [Create framework for enhanced \(any\) curbside services in the county](#)

5 The County should help ensure that small independent haulers can offer recycling service to their
6 customers. Currently larger commercial haulers do not provide service to more rural areas as it is not
7 profitable for them due to fuel and time costs, but some smaller haulers could offer this service if there
8 is somewhere that could accept the recyclables and MSW that is in proximity to their service area. A
9 small hauler servicing rural residents should have the ability to offer single stream recycling: upgrades to
10 the Ivy facilities could ensure this for parts of the County.

11 **5.8 Evaluate Costs and Assess Policy/Practice Economic Impacts Using Recognized,
12 Established Metrics**

13 [Factor in cost of capital and operations over lifetime for each policy or practice carried forward for
14 further evaluation. Identify taxpayer cost, user cost, and externalities where known.](#)

15 Moving forward to expand and implement a SMM program requires the incorporation of many factors
16 in order to determine the real cost of the program. Some of these factors, such as capital improvements
17 and labor costs, are relatively straight forward. Other costs are either variable or are external to the
18 basic operations and thus are much harder to quantify, yet these can be just as important, i.e.,
19 greenhouse gases emitted from a landfill or jobs created to provide waste management-related
20 services.

21 As with most expenditures, the economic evaluation should be based on a timeframe that covers all
22 programmatic aspects, both short and long term, to provide the most complete picture of the actual
23 cost of the program. The final economic evaluations of the recommended program options should
24 include a lifecycle analysis, factoring in capital and operational costs. With a thorough evaluation,
25 taxpayer and user costs can be balanced to the benefit of the community.

26 Economic growth or losses generated by the program must also be considered. As an example, the
27 expansion of the Ivy MUC could create more jobs in the local sector which in turn will generate tax and
28 other revenue in the community. Conversely, if the MUC is shut down, then more waste will end up
29 being handled by national firms, taking some of the revenue out of our community.

30 [Familiarize with and understand resource realities and the drivers behind them.](#)

31 Prices for recyclable commodities fluctuate due to factors as diverse as currency exchange rates, port
32 strikes, market demand and prices for virgin materials. Nevertheless, sustainability concerns demand
33 that we continue to do our best to keep useful resources out of landfills. Ensuring that our recyclables
34 meet or exceed industry specifications increases their economic viability and can help provide steady
35 demand for them. Current economic realities are showing more often than not that source separated
36 wastes/recyclables have the best opportunity for reuse as this method of collection provides a product
37 that more closely resembles the virgin product it is replacing. Conversely, commingling of wastes and
38 recyclables produces a much lower quality of product and in some cases results in recyclable materials,
39 in the worst case, being shipped off for landfilling because they are contaminated with debris (liquids
40 and solids) that interferes with their reprocessing and reuse.

1 It is very important that the County staff keep an active watch on the markets for these reusable
2 commodities. This includes monitoring the material costs, quality issues, types of materials and the
3 vendors who are purchasing or handling the materials. This is necessary as we continue to maximize our
4 return to help cover or offset the cost of the program. Aluminum and cardboard for example, can
5 generate enough revenue to cover their respective program costs, whereas with other commodities the
6 revenue generated is strictly an offset, meaning that the cost to recycle is less than the cost to send it to
7 a landfill. As economics continue to change over time, evaluating the SMM program must take a multi-
8 year approach to assess its true value.

9 Ongoing evaluation of the waste disposal portion of the program is also important. It is unlikely that
10 there is going to be a growth in landfill opportunities as the price of land increases and the
11 environmental costs and impacts of landfill operations continue to climb. The County must remain
12 active in the evaluation of costs and alternatives as these will change over time. Locally, the closure of a
13 waste to energy plant in Harrisonburg occurred as a result of a significant reduction in the cost of
14 natural gas, making it much more economical to burn gas than MSW, which was not the case just three
15 years ago.

16 5.9 Grow Municipal and Public-Private Partnerships

17 [Determine if existing facilities elsewhere in the region can help meet any of the recommended policies](#) 18 [or practices](#)

19 Negotiate and launch regional partnerships for SMM with neighboring counties and/or UVA and the City
20 of Charlottesville. The TJPDC regional plan recommends that Albemarle, “Realize economies of scale
21 through regional collection, disposal, and recycling opportunities.” The City and County have good
22 examples in the Ivy MUC and McIntire facilities, used by residents of both localities. As the Ivy MUC
23 services improve, it should be possible to negotiate for sharing of services with regional partners at
24 minimal fiscal impact. Options include:

- 25 • Make HHW days at the Ivy MUC available to Nelson or Greene County residents in exchange for
26 access by Albemarle residents to the convenience centers at Faber or Stanardsville.
- 27 • Expand partnerships for composting. At present, only a small part of our community’s organic waste
28 is composted: a potentially valuable soil resource instead goes to landfills, at considerable cost. In
29 developing SMM, RSWA could contract for composting services through local firms. The local area
30 has some successful composting businesses. The City of Charlottesville contracts with Panorama
31 Farm to compost collected leaves and brush. Some City and County public schools also have existing
32 contracts for food waste composting. RSWA should facilitate expanded composting which will
33 decrease landfill waste and methane emissions by diverting organic matter, and which will prove
34 financially viable – both revenue-neutral to taxpayers and attractive to a contract partner.

35 [RSWA Role in implementing all strategies](#)

36 Considering the relative merits of RSWA, the advisory committee recommends that the County:

- 37 • Continue partnership with RSWA as the primary public entity for MSW disposal and SMM in
38 Albemarle County.
- 39 • Collaborate with RSWA and the City of Charlottesville and the University of Virginia to enhance SMM
40 and disposal services which benefit the entire region.

1 The Committee observed three other notable factors when assessing RSWA’s capacity to support
2 recommended actions.

3 First, the Ivy MUC facility has considerable acreage and open space around the former landfill. While
4 structures cannot be built above the waste cells there, ongoing surface operations are valued. Most
5 notably, the Ivy MUC takes disposal of vegetative waste – brush and wood – and rents a grinding service
6 to make and sell mulch. This mulch is sold at a low price but still returns positive revenue to RSWA. The
7 success of this program suggests room for expansion.

8 Second, the Ivy MUC facility is not currently operating at full capacity and is able to adapt. Legally
9 permitted to an average of 150 tons of MSW per day, the transfer station currently receives an average
10 of only 25 tons per day. The rapid spread of curbside mixed-waste service by larger hauling firms going
11 to other transfer stations outside Albemarle has significantly reduced the MSW volume entering the Ivy
12 MUC. This relatively low traffic means that facility improvements can be made in stages, using the
13 existing paved areas to maintain service levels without decreasing convenience. This data also supports
14 the Committee’s policy conclusions that the Ivy MUC is well positioned to provide ongoing and
15 affordable specialized services such as composting and HHW. These options play to the Ivy MUC’s
16 existing strengths.

17 Finally, a study of RSWA operations shows the value and potential for continuing the City and County
18 partnership on SMM. The Ivy MUC and McIntire take advantage of rural and urban locations to offer
19 different services, both of value to city and county residents. Economies of scale benefit both local
20 governments. In the past, partnership governance issues have made progress difficult owing to City and
21 County members of the RSWA Board having different priorities especially concerning maintaining the
22 fiduciary duty to their contributed funds. The Committee hopes that the policies in this report will be
23 mutually acceptable and lead to increased partnership through RSWA.

24 Leverage existing resources programs
25 Electronics retailers in the County such as Best Buy and Crutchfield already offer safe disposal of e-
26 waste. RSWA may be able to work with them to conduct e-waste drives or accept e-waste on a regular
27 basis.

28 **5.10 Support Economic Development**

29 Focus on business development and financial benefits of community participation
30 New markets bring the potential for economic growth. Due to demand from County residents and
31 businesses for commercial compost service, composting company Black Bear has recently expanded its
32 operations through a new partnership, Natural Organic Process Enterprises (N.O.P.E), to collect and haul
33 compost from clients to its facilities. There may be similar additional business opportunities once the
34 County begins implementing SMM strategies and finds that rather than sending most of its MSW to a
35 landfill, materials can be diverted and reused or reprocessed locally.

36 Consider economic development opportunities with recycled materials
37 The Committee believes that there is economic opportunity in the use of recycled materials and
38 advocates supporting local businesses that generate new products and markets using recyclables. For
39 example, the County has many thriving beer breweries, vineyards, cideries and distilleries that utilize
40 glass packaging, yet glass recycled at McIntire must be transported to Wilson, NC for manufacture into
41 new glass containers. The possibility of working with local businesses to develop an economic

1 opportunity for recycling or re-using glass locally could be a viable and effective offspring of our
2 beverage growth industry.

3 Although County residents and businesses can subscribe to a commercial compost service, the provider,
4 Black Bear, has recently developed a new partnership to help with compost collection from its clients
5 and hauling to its operation in Crimora. There may be similar additional recycling industry support
6 opportunities once the County begins implementing SMM strategies and more materials can be diverted
7 elsewhere for reprocessing.

8 Producing biogas through anaerobic digestion may be another possibility for economic development in
9 the County. Marin County and Monterey, California (Monterey Regional Waste Management District
10 2015) are localities that have partnerships to create energy from methane derived from anaerobic
11 digestion of organic waste collected from their local food vendors.

12 [Canvass local businesses to determine what they are already doing and where improvements could be
13 realized in recycling, composting, etc.](#)

14 Local businesses may already be recycling or employing other means of diversion to dispose of their
15 waste. The County should identify what the business community in the County already does as standard
16 practice and where improvements could be made that would mutually enhance SMM and the business
17 environment.

18 5.11 Enhance Urban Services

19 [Work with City to extend recycling collection in urban areas](#)

20 Study options for expanding the City’s recycling program to the County’s densely populated areas.
21 Charlottesville’s system of single stream recycling with biweekly collection in large carts has quickly
22 proven effective in increasing the quality of materials collected for recycling as a result of reduced
23 contamination (Charlottesville 2015). In addition to local government, neighborhood associations and
24 nonprofits can educate at the neighborhood level. The proposed SMM committee could support HOAs
25 and haulers in moving from all-in-one can mixed-waste to curbside source separated collection.

26 5.12 Establish and Promote Incentives and Drivers

27 [Look at incentives and/or requirements to separate recyclables and compostables from MSW.](#)

28 The SMM Committee, in conjunction with the RSWA and BoS, should evaluate and recommend from a
29 variety of funding and regulatory options for consideration with the business plan for a rebuilt transfer
30 station at the IVY MUC.

31 Other possible options for consideration by the SMM Committee, RSWA and the BOS include:

- 32 • Ways to establish onsite recycling options, including composting in multi-family units.
- 33 • Consider ways to add requirements for adequate space for recycling and composting into the
34 County Building Code.

35
36

1 **6 Solid Waste Long Range Solutions Advisory Committee**

2 Leo Mallek, Chair

3 Liz Palmer, BoS Liaison

4 Wood Hudson, TJPDC Liaison

5 Maya Kumazawa, City of Charlottesville Liaison

6 Rick Randolph, Albemarle County Planning Commission Liaison

7 Anne T. Bedarf

8 Peggy Gilges

9 Teddy Hamilton

10 Steve Janes

11 Teri Kent

12 Randy Layman

13 Jeff Sitler

14 Jesse Warren, PE

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19 Emily Kilroy

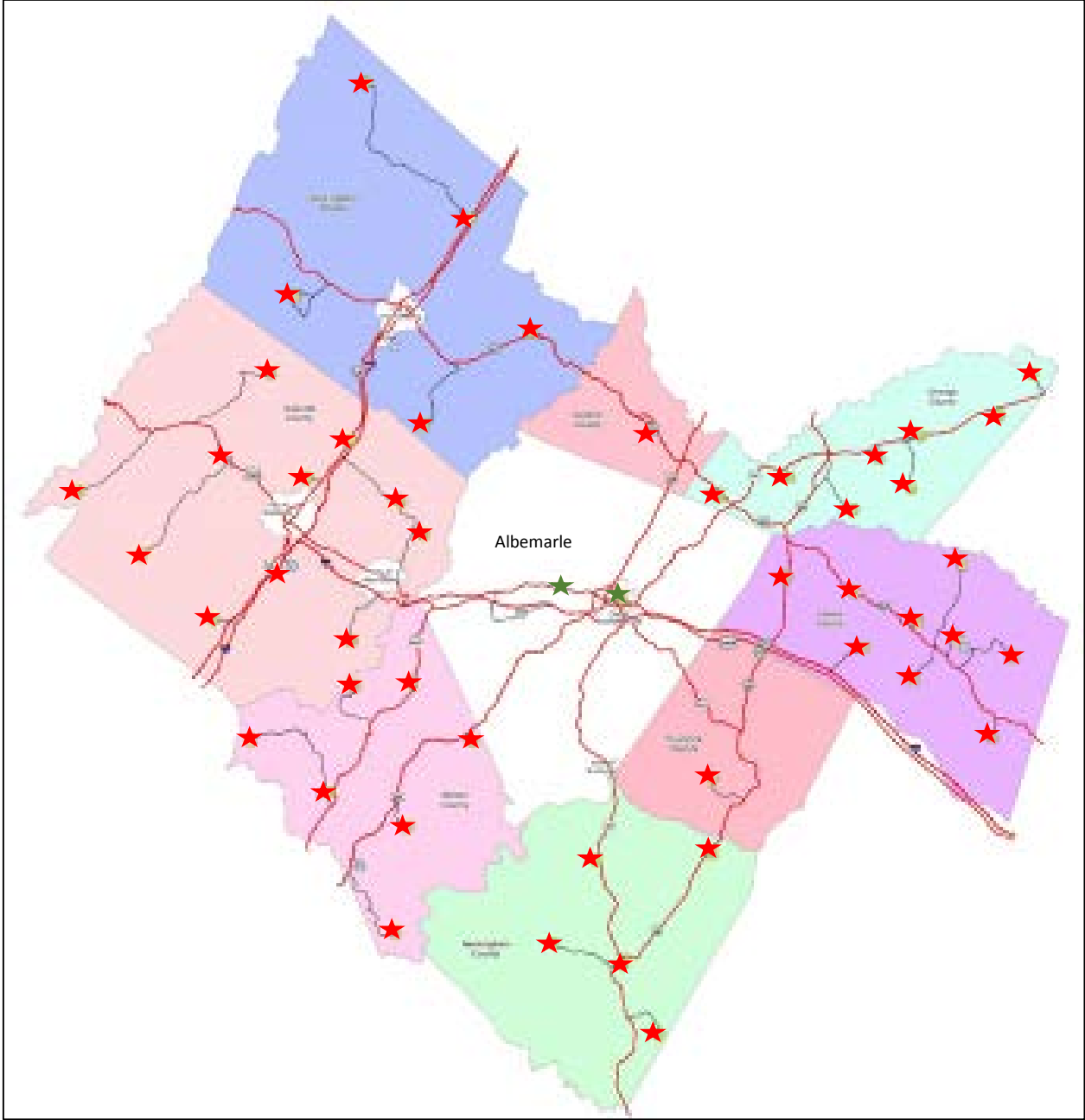
20 James Cathro

21 Angelica Botlo

Appendices

The Committee submitted to the Board of Supervisors their draft report on August 5, 2015. As we discussed in our Committee meeting of July 27, the accompanying appendices have not undergone quality assurance review and are known to contain errors and omissions. As such, the Committee would like to emphasize that readers of the draft Committee report focus on the content of the body of the report, which was reviewed and approved by the Committee for the August 5 submittal. The appendices are currently undergoing the necessary quality assurance review. The appendices will be reviewed and approved by the entire Committee prior to insertion in the final Committee report scheduled for submittal to the Board of Supervisors in early October 2015.

Appendix 1: Map of Convenience Centers and Transfer Stations in the Region



Appendix 2: References

- 1
2
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1 **Appendix 3: Public Opinion and Engagement Results – this section is**
 2 **in process of being edited.**

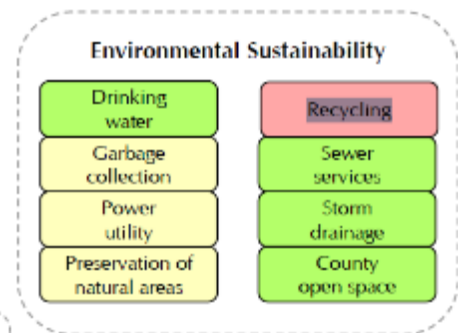
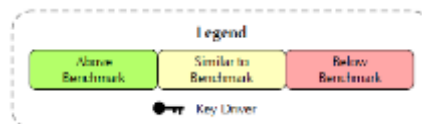
3 **2015 ICMA Citizen Survey:** This scientific sampling used similar questions and methodology as the 2011
 4 survey. Results will be available in July to add to the final report.

5 **2014 Resident Survey:** County staff worked with the Committee to design an online survey to give a
 6 snapshot of public opinion. The response sample was unscientific but diverse, with 349 responses
 7 including urban and rural areas. The survey assessed overall services and specific practices.

- 8 • Overall satisfaction with services: 58% satisfied, 23% neutral, 20% dissatisfied.
- 9 • Within the satisfaction data, the current system scores very well for convenience, well for price, and
 10 marginal for recycling. Respondents accurately assess the tradeoffs in the current system.
- 11 • About half of responding households make 1-2 bags of MSW per week, and about half make more.
 12 This suggests scope for outreach and education related to waste reduction.
- 13 • Fully 84% of participants want the community to recycle more than the stated (and unsupported)
 14 rate of 31%.
- 15 • Evaluating Ivy and McIntire is complex. On one hand, 28% of responses never use them and may
 16 know little or nothing about them. On the other hand, 12% of the sample, equating to a smaller but
 17 significant part of the County population (mainly rural), self-hauls to Ivy and values the low- fee
 18 disposal service. About half the respondents use Ivy and McIntire sometimes or often, for recycling
 19 and special collections.
- 20 • Private haulers dominate the county disposal business. 43% of respondents contract privately and
 21 another 37% contract through neighborhood, HOA, or apartment. 16% claim to self-haul.
- 22 • There are real differences of opinion about mixed-waste services and processes. Some responses
 23 express skepticism and mistrust, but others are quite satisfied and confident.

24 **2011 ICMA Citizen Survey:** A national organization runs surveys in localities using similar questions,
 25 comparing and benchmarking the results. Scientific sampling collected 378 responses. Questions
 26 assessed Garbage Collection separately from Recycling.

- 27 • Garbage Collection satisfaction was 61% Excellent/Good,
 28 14% Fair/Poor, 24% don't know.
- 29 • Recycling satisfaction was 56% Excellent/Good, 26%
 30 Fair/Poor, 18% don't know.
- 31 • Garbage and Recycling had low satisfaction scores in the
 32 cluster of environmental issues.
- 33 • Neither service was a key driver of public opinion when the
 34 importance of issues
 35 was considered.



36 **Needs to be replaced with**

2013 survey

1 **2007 Stakeholder Survey:** As part of the GBB consultant work on strategic planning, an unscientific
 2 survey was taken, with responses skewed heavily towards users of RSWA facilities. There were 404
 3 responses, gathered from attendance at an open house event and from leaflets at Ivy and McIntire.

- 4 • MSW disposal satisfaction was 58% satisfied, 16% neutral, 27% dissatisfied.
- 5 • Recycling satisfaction was 44% satisfied, 9% neutral, 47% dissatisfied.

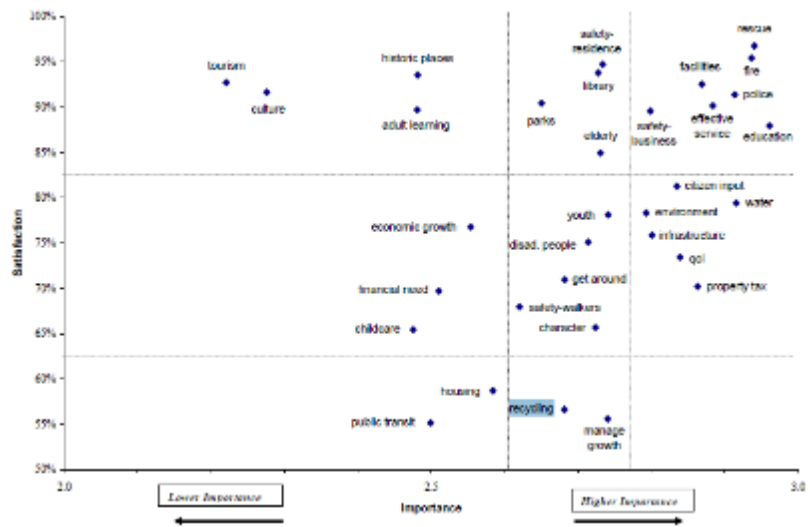
6
 7 **2008 WC Survey should be here**

8 **2006 Weldon Cooper Citizen Survey:** This survey also used a larger scientific sample (787 responses),
 9 but unlike ICMA, the results do not carry nationwide benchmarking. It assessed recycling but not MSW
 10 disposal. This is the oldest survey studied by the committee, but it has the lowest margin of error.

- 11 • Recycling was 57% satisfied, 43% dissatisfied.
- 12 • Recycling was among the services with lowest satisfaction (56.6%, 31st out of 33).
- 13 • Recycling also ranked 21st of 33 services by importance: 74% very important, 23% somewhat, 5% not
 14 important.

15 • The graphic at right shows
 16 Recycling satisfaction was 31st
 17 of 33, but the service was also
 18 rated 21st of 33 in importance.
 19 In the chart, public safety
 20 services and education are
 21 important and satisfactory;
 22 tourism and culture are
 23 satisfactory but not very
 24 important; public transit is
 25 unsatisfactory but not very
 26 important to most citizens. This
 27 kind of information can be
 28 helpful in allocating resources.

Figure 3-5: Service Item by Importance and Satisfaction Ratings



29 In addition to examining public
 30 opinion data through surveys, the Committee also completed public outreach activities to hear from
 31 interested residents directly.

32 The Board of Supervisors approved a public engagement plan for the Committee. The plan focused on
 33 ensuring an effective method for involving the community in the development of a sustainable materials
 34 management policy. Once a policy is adopted, a second phase of public engagement will involve
 35 education about implementing the identified strategies.

36 The committee identified seven critical issues for public engagement:

- 37 • The information available to the public contains certain contradictions and inconsistent terminology
 38 which make clear dialogue and engagement more difficult.

- 1 • Currently there is a lack of accurate information concerning the effectiveness of different recycling
2 and diversion methods. This has led many to believe that our area landfill diversion rate is higher
3 than it actually is.
- 4 • Solid waste management is complex and often confusing from a resident’s point of view, even
5 without the complicated local waste and recycling history.
- 6 • Consolidation of the waste industry here and around the country is reducing competition and leaves
7 fewer options for both waste hauling and disposal.
- 8 • Currently there is a lack of choices among convenient locations for do-it-yourself MSW disposal and
9 recycling. Facilities are hard to locate near neighborhoods.
- 10 • Given the large amount of current confusion about what is actually recycled or diverted, County
11 staff and the Committee need a fresh approach to inform the public in a deliberate, consistent, and
12 effective manner without being divisive. This process will require a strong spirit of transparency and
13 engagement.
- 14 • County staff and the Committee should address the perceived need as referenced in the GBB report
15 from 2008 for the community to achieve higher rates of recycling and diversion.

16 The committee’s overall goals were to strengthen public trust, to involve citizens and stakeholders in a
17 meaningful dialogue, and to benefit the entire community through development of a successful long
18 term sustainable materials management policy. The tools and activities used by the committee and staff
19 advanced these goals.

- 20 • Information on website. Staff maintained a webpage for the advisory committee within the County
21 site. It contained minutes and agendas, links to reference documents, and highlights of upcoming
22 events.
- 23 • Glossary of terms for use online and at public events. The glossary is attached as an appendix. It uses
24 definitions from the Thomas Jefferson Planning District Commission, the Virginia Department of
25 Environmental Quality, and the Environmental Protection Agency.
- 26 • Notice when public meetings are occurring, through County website calendar tools.
- 27 • Public hearing at relevant Planning Commission meetings. Most notably, a public hearing was held
28 on December 16th when the Planning Commission discussed the Community Facilities section of the
29 County Comprehensive Plan, which included a solid waste section. There was no significant public
30 comment on the solid waste section.
- 31 • A nonscientific web survey of public opinion was open between December 12th and February 8th.
32 Fully 349 residents participated. Results are noted above. In general, the survey found a high level of
33 overall satisfaction with current services for solid waste and recycling. Most residents contract
34 individually or through their HOA/landlord for mixed waste collection, conveniently and at a low
35 price. However, strong majorities of resident are unsatisfied with the region’s recycling rate and
36 believe that it is important to recycle more.
- 37 • Roundtable discussions with stakeholders, facilitated by staff and Committee members. The
38 committee hosted a stakeholder event on December 16th. There were 23 stakeholders in
39 attendance, representing local business and community groups, regional waste management firms,
40 and County residents. Lively discussion focused mainly on education programs for residents, and the
41 importance of waste reduction and recycling.

- 1 • Committee member Rick Randolph made a presentation on the committee’s work at the
2 Neighborhood Leadership Summit on April 29th, 2015. About 60 active citizens attended. Mr.
3 Randolph made a rapid straw poll. Only 8 of 60 reported using McIntire. However, half had been to
4 Ivy for occasional services. About 40% would like to use a free composting site to deposit organic
5 wastes. About 50% would like to have and use a new recycling center at a more convenient location.
- 6 • The committee held a larger, open house community event at the 5th Street County Office Building
7 on June 4th, 2015. At least 48 residents attended, representing a diverse range of neighborhoods,
8 opinions, and recycling practices. Committee members and County staff gave short presentations on
9 key facts in solid waste, then invited the public to respond and contribute to a series of exhibits and
10 displays on different policy concepts and solution options. Resident input focused on these key
11 points:
 - 12 ♦ Most in attendance preferred to see Ivy as a “one-stop-shop” center for resident services,
13 including composting and e-waste. There was little comment on transfer station facilities, just
14 one note that mixed waste hauling might be effective.
 - 15 ♦ Special collections and HHW attracted attention. Collection days should be held more often ad
16 publicized better.
 - 17 ♦ Composting collection should be offered at Ivy. Smaller compost collection points could be
18 effective at McIntire, Mill Creek, or Hollymead.
 - 19 ♦ Source separation is preferable to mixed waste processing where practical.
 - 20 ♦ There was interest in a new recycling centers. Sites for consideration include Scottsville, Mill
21 Creek, Pantops, Crozet, and Red Hill. Unstaffed sites at shopping centers is an idea.
 - 22 ♦ Outreach and education projects attracted great interest, including a SMM Committee and
23 dedicated SMM Coordinator on the County staff.
 - 24 ♦ A survey regarding recycling centers yielded 11 responses. These showed interest in City-style
25 curbside recycling if it were available, willingness drive up to 15 minutes to a recycling center,
26 and desire for such centers to be open until at least 6pm.
- 27 • Press releases to local media. Coverage online and in print help to raise awareness and stimulate
28 attendance at other events. News media attended and covered the June 4th open house.
- 29 • Social media outreach. County staff used Facebook and Twitter to boost participation in the citizen
30 survey. The Engage Albemarle discussion platform also hosted a topic, “What does your family do to
31 improve recycling and reduce waste in the environment: what do you want to change?” Results
32 from Engage Albemarle show a wide range of opinions and behaviors.
 - 33 ♦ We compost at home or use a local composting service.
 - 34 ♦ We separate recyclables like paper or aluminum and take them to the McIntire Recycling
35 Center.
 - 36 ♦ We save our HHW until the collection days at Ivy MUC, instead of putting HW in the trash.
 - 37 ♦ We are careful to buy products with less packaging, or with packaging made from recyclable
38 materials.
 - 39 ♦ We try to give unwanted items another chance using Goodwill or Freecycle, instead of throwing
40 them out.

1 ♦ We wish there were better recycling facilities at Ivy MUC, so we could recycle metal and plastic
2 there.

3 ♦ Household hazardous waste disposal needs to be more convenient.

4 In conclusion, the public engagement around solid waste shows that a segment of the local population is
5 strongly interested and committed to best practices for the environment. The “silent majority” regards
6 other issues –such as public safety, education, and taxes –as more immediately important, yet this
7 majority feels positively about recycling and is willing to make small changes if they are not too
8 expensive or inconvenient. Public engagement results informed the committee’s conclusions, and
9 ongoing public outreach is a key recommendation for the Board’s consideration.

Appendix 4: Alternatives That Did Not Reach Consensus

1. **Develop a large transfer station at Ivy with a large MRF with a recycling center for residents.**

The largest facility proposed in the Draper Aden report has a cost estimate of \$2.4 million. It has capacity of 150 tons per day. Rather than using sophisticated mechanical sorting equipment, a simple concrete floor and dedicated labor is used to sort recycling. This is effective when recycling arrives in source-separated batches: for example, a 5-ton load of plastic from a neighborhood recycling center. Drawbacks for this facility option include a high capital cost and a high operations cost involving many new RSWA staff. Revenue recovery from recycling sales could not be guaranteed, creating risk of large operating losses and subsidies from the County general fund. The maximum MSW volume is also not assured, given that Ivy currently receives an average of only 25 tons daily. Moreover, other private sector MRF facilities exist in the region, and competition at this scale is not necessary.

The Committee agreed that enhancing the current transfer station so that it operates effectively and efficiently, as well as providing a model recycling center and providing a modest source separating arrangement for small commercial haulers would provide the best balance of all the options evaluated.

2. **Close the Ivy transfer station and focus on the model recycling center.** One option at Ivy is to focus improvements there on recycling services for the self-hauling public. The Board of Supervisors investigated this option in 2013 but did not finalize any change. Draper Aden most recently (2015) estimated the cost for a limited facility at \$209,000. Commercial haulers collecting and disposing of MSW from multiple sites would be barred from the facility, while small business users disposing from their own business would be allowed. With less heavy equipment and a simpler mission, Ivy might offer a high level of citizen recycling services with similar operational costs.

The committee reached consensus on the importance of preserving transfer station services in the county and does not recommend this option.

3. **Design and launch new unstaffed recycling centers with contracted service.** A small site such as the rear of a shopping center parking lot could be used. Facilities could be as simple as four covered bins: one for mixed paper, one for rigid recycling (metal-glass-plastic), one for organic compostable waste, and one for other MSW. Lynchburg has ten such facilities for its residents. This option is not recommended primarily because unstaffed centers often have problems with contamination, dumping, vandalism, and other misuse. If sited on a partner's property, maintenance could become risky for the County, or the partnership would be jeopardized by misuse. Moreover, unsupervised contamination of source-separated recyclables with MSW or other inappropriate materials reduces their quality, value, and marketability.

The three paper recycling bins operated by RSWA at Scottsville, Pantops, and Sam's Club should continue and receive marketing support from the standing committee and its community partners, but more unstaffed recycling centers should not be a long-term strategy.

4. **Reduce RSWA's role and contract the operation of recycling centers.** For fiscal year 2015, the County supported RSWA operations with subsidies of \$109,488 for McIntire and \$383,427 for Ivy. If RSWA's results at these facilities were judged inadequate, then RSWA's responsibility

1 could be reduced to landfill remediation only, and these funds totaling \$492,915 could be
2 repurposed for contract operations of MSW and recycling services. The County could hire a
3 contract administrator, then receive bids for services including recycling, composting, MSW
4 disposal, HHW and other specialty disposal services. Procurement could specify the operation of
5 staffed recycling centers, set targets for recycling rates, and detail services where fees could be
6 charged. Subsidies up to \$400,000 could be paid to support the private operations. The Board of
7 Supervisors considered this option in 2013 and authorized an RFP for contract operations at Ivy
8 or other sites. Van der Linde Recycling was the only responsive firm, and no contract was
9 concluded.

Appendix 5: Draft SMM Committee Charge

Recommendations for Membership of the Standing Committee on Sustainable Materials Management

1. The process of establishing the standing Sustainable Materials Management (SMM) Committee should begin upon completion of the Advisory Committee's work and acceptance of this report by the Board of Supervisors.
 - General Services staff would need to work with Board of Supervisors staff to develop a fact sheet for the committee and initiate an application process, as used for the creation of all other County committees. General Services Department staff and the County Attorney's office would need to develop a set of by-laws for the Committee. Board of Supervisors and General Services staff would need to set up an interview process to assist the Board with appointments.
2. The SMM Committee should consist of 6 to 9 members; this is a good compromise between the wide experience base of a larger committee and the more efficient interaction and decision-making of a smaller group. A larger group would be cumbersome and slow to act. When additional expertise is needed, the SMM Committee should invite experts to attend meetings and provide input that the SMM Committee needs.

These standards can be included in the by-laws for the SMM Committee.

3. The SMM Committee needs to include a range of expertise in fields applicable to its tasks (see below). Membership should include individuals with experience in:
 - civil engineering
 - environmental engineering
 - solid waste management industry
 - public policy
 - members with other specific qualifications

The group should also include local landowners and citizens with interests in Solid Waste Management.

This list of fields and interests can be included in the announcement of the formation of the Committee. Prospective members would be asked in which of these areas they have experience. If necessary, staff could contact prospective members to obtain more information to help the Board in the selection process. The intent is for this to be a working committee providing professional expertise in this area; as such, general citizen representation is not emphasized.

4. All members of the Committee, no matter what their background or area of expertise, should be supportive of the SMM goals that the County has adopted into its Comprehensive Plan. The Committee's role should be to support, expand on, and implement that policy. As part of the application process for the Committee, potential members should be asked to confirm their support for SMM in the County, and their answers should be considered in the Board's selection of the most suitable candidates.

- As part of the committee application process, a question can be included requesting that prospective committee members briefly describe their background and interest in sustainable materials management, and in the areas of interest/expertise listed in #2 above. The answers could be evaluated by the Board as part of their appointment process, without any additional process.
 - Resources needed: To be included as part of establishing the Committee as described in Recommendation #1.
5. The membership of the Committee should reflect the diversity of the community.
 - General Services staff will work with Board of Supervisors staff and Public Relations staff to ensure that a variety of media outlets is used to help develop a SMM Committee that is representative of the County community.
 6. The Committee should be known as the “Standing Committee on Sustainable Materials Management.”