

Two Carts for Recycling are Smart

Author of the White Paper

Moore & Associates, a recycling consulting company, presents the subject evaluation in this White Paper. Founded in 1995, Moore & Associates has provided strategic services and market research for clients in recycling, solid waste, paper, packaging, and related sectors on a global basis for over 30 years. The company has served more than 500 clients in over 750 engagements, growing to become the largest provider of strategic analysis for the paper recycling sector. The two primary authors' biographies appear at the end of this paper.

Statement of Support

The purpose of this paper is to highlight the benefits of retaining a Two Cart collection system and supporting the “Shared Vision” of SPSA and AMP-Commonwealth Sortation. Working together will maximize recycling through a combination of single-stream collection and mixed waste processing, while further reducing landfill material.

Background on Southeastern Public Service Authority

Description and History

The Southeastern Public Service Authority (SPSA) is a regional organization made up of eight communities from Southeastern Virginia established in 1976. The purpose of the SPSA was to improve efficiency by moving solid waste disposal and resource recovery from individual communities to a regional authority. The SPSA primary purpose is to manage residential waste from the eight communities. Private sector commercial waste is also delivered to the SPSA.

Member Communities: Cities of Norfolk, Virginia Beach, Chesapeake, Suffolk, Franklin, Portsmouth, and Isle of Wight & Southampton Counties.

Status of the Current Two Cart System for Recycling in the SPSA Communities

Three SPSA communities currently have a two-cart system operated under individual contracts by TFC Recycling. The City of Norfolk, City of Virginia Beach, and City of Suffolk continue to separate recyclables from Municipal Solid Waste (MSW) through the two-cart system. Resident surveys from these cities continue to reinforce the value of recycling.

The City of Chesapeake discontinued a popular two cart recycling service in 2023, and attempted several unsuccessful alternative programs, before moving to the new AMP-Commonwealth Sortation mixed waste processing one cart program.

Portsmouth still uses a two-cart system, but one truck collects both carts together, resulting in mixed MSW. Their material is being shipped to the AMP-Commonwealth Sortation’s pilot plant facility in Portsmouth.

The three remaining SPSA member communities are the City of Franklin, Southampton County, and Isle of Wight County. All three are small rural areas without a two-cart collection system.

SPSA’s Plan for Managing MSW and Recycling Going Forward

The SPSA twenty year contract with Commonwealth Sortation (CS) specifies that CS receives, sorts, and processes acceptable material at their Sortation Facilities. As a result of sorting and processing CS plans to recover, market, sell, transport and/or dispose of recovered recyclables and organic material. All remaining separated biochar-eligible material will be transported to a Biochar Facility.

The Commonwealth Sortation (AMP) system would receive residential MSW mixed with recyclable materials in one cart. The material would be delivered to one of their two locations where various technological processes would attempt to separate recyclables and organics from MSW. The SPSA/CS contract guarantees a diversion rate of 50%. This is broken down into a minimum of 20% recyclables and 30% organics. In the solid waste industry these types of systems are commonly referred to as mixed waste processing (MWP).

<u>Planned Processing Locations</u>	<u>Initial Capacity</u>	<u>Target Capacity in Tons</u>	<u>Full Capacity</u>
Frederick Sortation Facility-Pilot Project Portsmouth	30,000 tons/year	Ramp up to 108,000	7-01-26
Victory Sortation Facility, Portsmouth	100,000 tons/year	Ramp up to 432,000	Early 2029
Victory Biochar Sortation Facility	Opening in 3 years	Maximum 300,000	Early 2029

Landfilling Increases Waiting for Processing Facilities to be built and Contract Start Dates

The volume of Chesapeake and Portsmouth MSW exceed current AMP capacity (Frederick plant); therefore, some material is either not being brought to AMP for MWP or is being landfilled. The Frederick Sortation Facility remains at the “pilot” capacity of 30,000 tons/year until July 1, 2026 by contract. The Victory Sortation Facility will be built in four 108,000 ton MWP capacity phases over three years. Continuing the Two Cart recycling system will reduce landfill volume during this timeframe and beyond. We do not have access to this information, but there is no other solution for “over-capacity” than landfill.

Status of Contract with Commonwealth Sortations LLC

“The Waste Supply and Services Agreement” between the Southeastern Public Service Authority of Virginia and Commonwealth Sortation LLC was signed November 20, 2025 by Commonwealth Sortation LLC, Tim Stuart, CEO and SPSA, Dennis Bagley, Executive Director.

Upcoming Benchmarks for Contract with Commonwealth Sortations LLC

Permits: Contractor shall apply for, obtain and maintain all Permits (excluding SPSA Permits) necessary for start-up and operation. Contractor shall apply for the Air Emissions Permit within 60 days (Jan. 20, 2026) following the contract date. Permit complete applications shall be submitted to the relevant Government Authorities within six (6) months (May 20, 2026) following the Contract Date.

Offtake Agreement(s) for Biochar: Contractor shall deliver to SPSA the fully executed Offtake agreement(s) no later than eight months (8) following the Contract Date (July 20, 2026).

Financing: Contractor shall finance each project in accordance with the requirements of contract sections. All proposed financing shall be approved by SPSA no later than 15 days prior to the proposed date of action. There are no specific dates given.

The Two Cart System is Compatible with the Planned Commonwealth Sortations MWP System

Recycling is the best way to manage solid waste. A separate cart for clean and dry recyclables is the most effective way to recycle and serve a community. In a national webinar held on April 13 by AMP and SPSA (“A New Approach to MSW Diversion: Inside U.S. Largest Recycling Project”), when asked about the acceptance of the Two Cart system with the planned MWP system:

- “Does SPSA intend to continue to expand traditional curbside recycling or organic programs in addition to the MSW?”
- Dennis Bagley’s Answer: “We based our contracts on the amount of waste and types of waste that was coming to our transfer stations after curbside recycling programs. If a locality wants to continue curbside recycling at the prices they are paying now, they certainly can and it doesn’t impact this project at all.”

Curbside Recycling has a Successful Track Record Throughout the US & the SPSA Area

The two-cart curbside recycling method has proven itself throughout the United States. In the SPSA area, curbside recycling started in Hampton Roads in the 1980s. It has progressed from small bins to large recycling carts collected with automation. Today, two-cart curbside recycling has expanded across America, and it is the most efficient and effective way to collect recyclables.

A survey done in 2023 in the City of Norfolk and in 2024 of Virginia Beach residents showed strong support for curbside recycling. Virginia Beach is a largest city in SPSA with almost 40% of its residents. When asked the following two questions on curbside recycling the Virginia Beach survey results were:

- How important do you think it is to have curbside recycling services as part of Virginia Beach waste management services? 91% of the almost 10,000 respondents rated it as either Essential or Important.
- If you selected an option of increased fees for curbside recycling collection, what total amount would you be able to pay for the convenience of curbside recycling collection? 75% of the respondents were willing to pay between \$1 and \$10 a month to have curbside recycling.

Residents in areas that have curbside recycling feel that it is a ‘hands on’ approach to environmental improvement that they participate in themselves.

Improving the Current Two Cart Recycling System

There are three keys to the most successful curbside recycling program:

- Make it simple
- Provide a good level of public education
- Incentivize residents to recycle

A simple program uses carts and has a well-defined, reasonable set of recyclables.

Good public education seems straightforward, but an adequate level of contact with residents is often lacking. The biggest problem in many recycling programs is “Wish-Cycling”- people putting non-recyclable items into the carts and good public education can reduce this. The HRPDC initiated a campaign providing information on how to Start Smart and Recycle Right. This valuable effort improved recycling efforts and resulted in cleaner recycling streams.

Disposal costs increase when people put more waste into trash carts. Curbside recycling costs do not increase when people recycle more. Residents have no financial incentive to recycle more and create less waste.. There are various ways in MSW and recycling programs throughout the US that could be examined as ways to provide an incentive to recycle. On the other side, programs need to discontinue financial “disincentives” such as charging for recycling and ‘free’ waste collection.

Curbside Recycling Together with the CS MWP Operation Will Produce the Maximum Diversion Possible

With curbside recycling and the CS MWP recycling, the overall recycling rate would be **45%**. Recycling plus the organics diversion to biochar in the MWP system could potentially divert 70% of the waste stream.

Recycling Rate Potential of the Two Cart System

The state of Virginia has two recycling mandates: 15% for regions with less than 100 people per square mile and 25% for all other solid waste planning units.

The communities within the SPSA have been under-performing in curbside recycling collection due to a combination of partial community curbside collection participation, lack of consistent community recycling promotion and education, and lack of incentives. For SPSA communities that offer two carts there is the potential to collect 30% of the residential waste stream with a fresh approach.

Note: The U.S. EPA MSW Composition Report dated 2018 states the following national average for recycling percentages of MSW: Paper 23%, plastics 12%, metal 8.76%, & glass 4%.

Note: The Recycling Partnership 2024 report states that Virginia’s “average residential recycling rate” statewide is 15%. See www.recyclingpartnership.org/residential-recycling-report/

The 2023 SPSA Waste Characterization Study by SCS Engineers lists significant quantities of paper,

plastics, glass, and metal found in their “residential” sampling studies in the Landstown Transfer Station (Virginia Beach) and the Chesapeake Transfer Station. This study shows there is a lot more material which could be recycled at the curbside.

Transfer Station	Paper Fiber	Plastics	Metal/Glass	Total
Landstown	15.6%	5.7%	6.5%	27.8%
Chesapeake	18.5%	5.6%	7.9%	32.0%

There are a number of cities across the U.S. that are good models for reaching recycling goals and even reducing landfill solid waste.

Seattle: Seattle Public Utilities
<https://atyourservice.seattle.gov/2025/11/06/seattles-new-waste-metrics-measuring-what-matters-most/>

Recycling Envy: Ten American Cities with Excellent Practices, by Becca Brewer 4-21-25
www.bustedcubicle.com/outside/top-american-cities-recycling

Combining Two Cart recycling collection with the AMP-CS MWP recycling would produce the highest possible recycling rate and greatest landfill diversion.

The Two Cart System Produces More Marketable Commodities

Even if they can be separated from the mixed MSW, by AMP’s own admission in their YouTube video of the Portsmouth operations, the paper and cardboard recovered will be soiled (<https://www.youtube.com/watch?v=UM-jjEVRPsc> at 1:20). No recycle paper mill will accept soiled recovered paper. The recovered paper grades currently recycled in the SPSA two cart system will be made into biochar in the MWP system. Currently the Two Cart System produces about 45,000 tons per year of saleable recovered paper. If each SPSA communities ran a state of the art curbside recycling program, they would have the potential to collect over 100,000 tons per year of saleable recovered paper.

*Based on EPA MSW Average Residential Composition data- Paper 23% (of 540,000 tons)

The Two Cart system recycles glass, which would not be recovered in the MWP process and will be disposed of as residue. Residential Mixed Paper (RMP) which is recovered as a paper grade in the Two Cart system, in the MWP process will largely be made into biochar, a lower value material. OCC recovered in the AMP system is estimated to be the cleanest 20% of the volume processed (as listed in the contract- Schedule 8, Recovered Recyclables). The Two Cart system recycles OCC at nearly 100%.

It is possible that recovered plastics from a MWP system will also be contaminated and will not be saleable at the best price. Most MWP system can successfully recover steel cans and sometimes aluminum beverage cans, but their usability and value may be reduced because of contamination.

Retaining the Two Cart System Will Allow Communities to Meet Its Recycling Goals if the MWP System Does Not Meet Its Recycling Goals

If for some reason, the MWP processing system does not meet its recycling goals, retaining and expanding the Two Cart system will allow the SPSA communities to meet their goals. Each additional ton of material recycled in the Two Cart system contributes to landfill diversion, one of the primary goals.

Retaining the Two Cart System Will Not Cause the Loss of Recovered Paper Export Business to the Port of Norfolk

Recovered paper exports from Norfolk are an important business to the container port. Port shipment volumes are measured in twenty foot equivalent units (TEUs). Approximately 95% of paper recovered from the current SPSA two cart curbside program are exported. A strong curbside recycling program covering all the SPSA communities could produce more than 3,700 TEUs of business for the port.

The MWP processing system will produce less marketable OCC and no RMP that are currently exported.

Conclusions

Moore & Associates believes retaining and expanding the two cart curbside recycling system is a good idea for SPSA and should be retained by SPSA communities even after moving to the MWP management system for the following reasons:

- The Two Cart system is compatible with the one cart, MWP system and increases landfill diversion
- Three SPSA member communities have the recycling equipment and processes in place. More can be easily added
- Curbside recycling is sustainable and has a proven success track record throughout the US
- Citizens have a very positive reaction to participating in curbside recycling
- The one cart system alone will lose valuable recyclables
- Landfill volume increases until the AMP-CS processing plants reach full capacity
- Retaining the Two Cart system will allow SPSA communities to meet their recycling goals if the MWP System does not meet its recycling goals
- The port of Norfolk will retain shipping significant amounts of recovered paper to export markets
- Recyclables are commodities which must meet rigid quality specifications, which curbside recycling can achieve
- Communities should continue the Two Cart system until the AMP-CS full capacity is reached and proof of concept is confirmed long term

Two Carts are Smart... a proven, trusted, and safe recycling solution

Biographies of Moore & Associates Authors of this White Paper

William Moore

William Moore is president of Moore & Associates, an international consulting firm that provides a range of strategic services and research to global recycling organizations. The description of the full range of services and background for Moore & Associates can be found on the company's web site at www.MARecycle.com.

He has had a fifty year career as an environmental business professional. Prior to establishing his own consulting firm, he held a series of positions in the chemical, solid waste, paper, and recycling industries. This included Director of Recycling for Waste Management, Inc., where he was responsible for the startup of the "Recycle America" program, the largest introduction of recycling services in the United States. Earlier in his career, he was a hazardous and groundwater waste expert and was at the forefront of the US manufacturing industry's move for waste reduction through process optimization. His unique knowledge base includes all aspects of the global supply and demand of recovered paper, where he is currently considered the leading expert. Details on his consulting project experience can be found at www.MARecycle.com/past-projects/.

He is sought after as a speaker throughout the world on subjects related to global recycling and the business side of environmental issues. He is highly published in the recycling field having authored more than fifty articles over the last thirty five years. A list of his publications can be found at www.MARecycle.com/articles/

Dan Gee

Dan Gee is president of Recovered Paper Consulting, LLC and has been working in the paper recycling industry for thirty-one years. His experience includes working for the Weyerhaeuser Company (20 years), International Paper (8 years), and as a self-employed recovered paper consultant since the beginning of 2017.

During the past nine years as Moore & Associate's senior associate he has completed over 90 projects working with Bill Moore. Dan Gee has a diverse geographic knowledge of the U.S. paper and recycling industry having worked based in Charlotte, NC, Seattle, WA, and currently in the San Francisco, CA bay area. Throughout his career he has toured over 100 paper mills throughout the U.S., China, Canada, and Mexico. Moore & Associates continually works with many key leaders in the recovered paper business, including the mills that are market buyers, integrated mills with recycling divisions, independent producers/brokers, and solid waste management company recycling operations.

In the past two years, Dan has led two EPR projects for Moore & Associate's client, Circular Action Alliance, evaluating responsible end markets (REM) pertaining to Oregon, California, and Colorado legislation.