

**MUNICIPAL SOLID
WASTE (MSW) AND
RECYCLING COLLECTION
SYSTEM ANALYSIS
APRIL 2015**

**Section No. 5
Exhibit No. 34**

EXECUTIVE SUMMARY

MSW AND RECYCLABLES COLLECTION SYSTEM ANALYSIS FOR THE CITY OF HARRISBURG **APRIL 2015**

(Note – this summary is not intended to replace the full text of the report, but provides a quick overview of the major items of analysis in this report)

A. Background

1. City of Harrisburg is under Act 47 Receivership due to financial issues; the DCED Receiver heads a Recovery Team, including finance and other consulting specialists
 - a. Former Harrisburg Incinerator sold to Lancaster Co. SWMA; sale eliminates \$340 million in failed incinerator upgrade debt that was guaranteed by the City, plus additional investment to make the upgrade fully operational
 - i. LCSWMA takes over ownership and operation (with Covanta as contract operator for LCSWMA) of facility in December 2013
 - ii. Facility now titled Susquehanna Resource Management Center (SRMC)
 - b. City is contractually committed to deliver (from within the City limits/credited to the City by private haulers) a minimum “put-or-pay” of 35,000 tons per year to the SRMC for the next 20 years at \$190 per ton,
 - c. SRMC currently charges \$80 per ton for disposal of waste from other (non-City) Dauphin County waste generators
 - d. The deal with LCSWMA includes a \$1.35 million City escrow account be held to insure that City disposal fees are paid on time.
2. City maintains responsibility for waste and recyclables collection from City residents and the majority of City businesses
 - a. Residential – The City services all single-family and smaller multi-unit residential customers
 - b. Commercial collections – the City services its commercial accounts with either large carts (with a cart tipper on the back of a truck) or with dumpsters serviced with a rear loader truck using a cable winch.

- c. The AFSCME Union provides the work force for City collection crews, overseen by City DPW Bureau of Sanitation management staff.
 - d. The City currently operates nine (9) waste collection trucks and three (3) recycling collection trucks. The waste collection trucks are unreliable and have high maintenance needs, for various reasons. At times, a morning and an afternoon collection crew split use of a collection truck on a given day, because the City is short on operable trucks.
 - e. Normal crew size is two per waste collection truck (some waste crews have three) and one per recycling truck, including driver. The City's current staff for collections and other services totals 19; a complement of 21 is considered ideal for the current services provided.
 - f. The remaining 20% of the City commercial accounts (345 of 1,741), which are not serviced by City crews, are collected privately under an "exemption waiver" issued long ago by the City. The City reports that these waivers have all expired, but the City is not currently equipped to service most or all of these large-volume dumpster accounts. Most of these are serviced privately by front loader garbage trucks.
3. Other Related Services Provided by the City DPW – include but are not limited to:
- a. City parks waste and recyclables – there are 27 parks
 - b. City curbside litter baskets and recycling containers
 - c. Improper set out/ illegal dumping cleanup and disposal
 - d. Waste set out, waste dumping, recycling, and related City codes enforcement
 - e. Collection and enforcement of fees
 - f. Special event waste and recycling services and cleanup
 - g. Leaves pickup seasonally
 - h. Christmas tree collection seasonally
4. There is a "Legacy" cost of City programs and services, not part of the waste and recyclables collection program, which is funded through collection and disposal charges to City residents and businesses. A portion of this legacy cost transfer finances DPW overhead and administration costs. While the extra money is transferred into the general revenue, the authors believe that the money is required to support value-added services of the DPW (e.g.

- street sweeping, leaf collection). This legacy cost is an ongoing commitment, and must be a part of DPW's continuing funding responsibilities, at least for some period of time into the future.
5. The City currently (2014) delivers to the SRMC, either directly or through private commercial customers that declare the waste as originating from the City:
 - a. 38,320 tons of waste per year (26,150 tons delivered by DPW, 12,170 tons delivered by third parties)
 6. The City currently (2014) recycles:
 - a. 8,740 tons of recyclables per year, for an 18.6% recycling rate (the City's current recyclables processor is Penn Waste, near York)

B. 2013 System Analysis and Request for Proposal (RFP) Process Waste and Recycling Collections

1. A 2013 PSATS Technical Assistance Study, by another consultant, concluded that the Harrisburg Waste and Recyclables collection program was in serious need of improvement, either through upgrades to the DPW public collection system or by privatizing the services through an RFP process. The study identified both options as feasible, but selected the RFP (privatization) path as the easier option to implement.
2. The Receiver Team determined that the RFP process was the best way to improve the current City collection system, and issued the RFP for privatization in mid-2013.
 - a. Four bids were submitted. Republic Services was the least costly bidder.
 - b. The Receiver recommended that City Council award the bid to Republic Services.
 - c. City Council had serious reservations and questions about the bid details, and about current DPW Bureau of Sanitation services that were beyond the scope of the RFP and would still have to be provided by DPW (most of the services listed above in Outline Item A.3). Also, there was serious concern that the primary revenue stream to support

- these services would disappear (and become revenue to the private collector for only partial services provided).
- d. City Council ended up rejecting the 2013 bids.
3. The City continued providing all listed DPW services in 2013 through mid-2014 with minimal change, but recognized system shortcomings that needed to be addressed.

C. 2014 City System Bidding Assistance and Collection System Re-Evaluation

1. May 2014 – new consulting expertise (Barton & Loguidice, later assisted by MSW Consultants – collectively, the Consultant Team) was brought in to assist the Receiver Team and the City with rebidding the RFP for privatization, but also to re-evaluate options and alternatives with “Stakeholders”
 - a. Issuing a modified RFP is still an option
 - b. A new alternative, Managed Competition, was considered, that would allow the Union to sponsor a bidding team and compete head-to-head with private bidders in an RFP
 - c. The AFSCME Union representatives. felt that they could not marshal the resources (such as finances, equipment, staffing, guarantees) to prepare a complete competitive bid in an open bid format
 - d. A “hybrid” of this Managed Competition alternative was also explored, which would keep the system as a public operation with continued Union support, but:
 - i. With all parties recognizing that the current system is seriously flawed and in need of change
 - ii. With all parties willing to make wholesale system changes and system improvements and to operate more as a business, while retaining public service awareness and responsibility
2. The Consultant Team reviewed/ analyzed the current systems, data and programs; made on-site observations and assessments; identified issues and limitations; reviewed financial data; and identified possible system improvements. In summary, the Consultant Team confirmed that:
 - a. The existing DPW collection program is currently, in simple terms, “broken and unsustainable” as it currently operates. It cannot continue

without a major overhaul to its many components. Some of the issues that were identified included:

- i. Safety
 - ii. Alley collection (obstructions from cars and vegetation/trees, tight turning radii, weather impacts, “out-of-sight, out-of-mind” waste placement)
 - iii. Illegal dumping/mini-dumps
 - iv. Improper set out of materials (quantities, types of materials set out (excessive bulky items, TVs, mattresses, etc.)
 - v. Variable containers used
 - vi. Litter
 - vii. Code enforcement
 - viii. Other DPW requirements, responsibilities, staffing issues
 - ix. Condition of vehicles/equipment and maintenance
 - x. Yard waste program details
 - xi. Poor recycling/ diversion percentage
 - xii. Limited list of recyclables collected
 - xiii. Costly recyclables processing outlet
 - xiv. Capital funds shortage for necessary expenditures to improve vehicles and equipment
 - xv. \$190 per ton tip fee and 35,000 tons per year put-or-pay contractual obligations for next 20 years
 - xvi. Need for a restructured and fair service fee program, and for an alternate billing service with the separation from Capitol Region Water for billing
 - xvii. The obligation to pay “Legacy Costs” from system revenues
 - xviii. “Leakage” of privately collected City commercial waste from the City system
- b. The Consultant Team felt that the current system can be fixed, and in its opinion, can be financially sustainable if proper financing can be secured for needed system upgrades and improvements. Critical to this upgrade is a system that can work within the following basic requirements:
- i. Support \$190 per ton disposal fees at SRMC
 - ii. Deliver 35,000 tons per year to the SRMC
 - iii. Reduce or eliminate commercial waste “leakage” from City deliveries to SRMC

- iv. Increase recycling and waste diversion tonnages
 - 1. while still meeting minimum waste delivery commitment of 35,000 tons annually to SRMC
 - 2. but minimizing overages to annual put-or-pay threshold, due to costly disposal fees
 - v. Find and budget the funds to make system capital improvements
 - vi. Make the needed system staffing, equipment and operations improvements through full cooperation of City administration, City Council and the labor union
 - c. The recommended improvements can be classified into Initial, Phase 2, and Future Improvements, to be incrementally implemented and evaluated for success before proceeding to the next phase of improvements.
 - d. If the recommended initial system changes cannot demonstrate improvement to the current system, over a trial period of at least 12 months, then a determination will be made on whether the public system is “repairable and sustainable.” If not, the privatized bid is still a fallback solution that can be implemented.
3. The Consultant Team held meetings with the Mayor’s office and staff (City Engineer, DPW Management, Finance Director, etc.), AFSCME Reps, and City Council. The Act 47 Receiver was kept apprised of direction of the study.
- a. In virtually all stakeholder meetings, all City and Union representatives expressed strong interest in maintaining and improving the current system as a publicly-run program.
 - b. The Act 47 Receiver is supportive, reserving offering full support until this final study report is finalized.
4. As the Consultant Team’s study proceeded, the following improvements were made to the City DPW programs in the second half of 2014 and early 2015:
- a. City hired a Solid Waste and Recycling Coordinator – summer 2014
 - b. City hired a Code Enforcement Officer – summer 2014
 - c. City added the allowance for one bulky waste item set out weekly with trash
 - d. City reduced recycling collection staff to one person per truck (from two)

- e. City acquired a compaction-type recycling truck with a State 902 grant – underway
 - f. City acquired backup collection trucks (rear and front loaders) from available sources – process underway
 - g. City staff met with commercial accounts on intent to service all commercial accounts in City – Fall 2014-Spring 2015
 - h. City announced fiber (i.e. paper, cardboard) addition to acceptable recycling materials, and dropped glass collection except for large generators – Spring 2015
 - i. City has established new recycling guidance for commercial entities and residential customers – Spring 2015
 - j. City investigated new waste and recycling carts for uniform residential and commercial collections – 2014-2015
 - k. City Council approved a 2015 City budget that includes \$2 million in new capital expenditures to fund wholesale system improvements – Fall 2014
 - l. City is establishing a new system to bill for residential and commercial waste and recycling collection services
5. The City plans to implement wholesale improvements to residential and commercial collection programs and equipment in 2015

D. Goals and Visions for the Sanitation Program Improvements

1. Introduction: Multiple improvements to the Harrisburg Sanitation Program have been identified. Some of these improvements were requested in 2013 by the private haulers evaluating the waste collection RFP for a private contract. Other suggestions are made to achieve a more economical, reliable or safe operation. After some period of time allowing for implementation of the recommendations, if the City-provided service is considered unacceptable, then the City still has the option of pursuing privatization.
2. A phased approach is recommended since it is difficult to implement all of the recommendations within a short period of time. The goal is to have the City staff divide and conquer the recommendations in a “crawl, walk, run” scenario, building upon successful implementation and adaptation.

- a. Many initial system improvements have already been made or are underway. See outline item C.4 above.
- b. The next task is to confirm that ordinances, enforcement and billing are ready for the new Sanitation Program improvements.
- c. 2015 rollout: Several of the details for the new Sanitation Program are identified in the following text. Some portions of the recommendation will be on-going; others will have a specific date for implementation.
 - i. Commercial: While the focus of this report has been on residential waste collection, commercial waste can be used to test the City efforts to implement the recommendations of the Plan. An initial mid-2015 date of providing carts to commercial waste generators having 4 CY of less and reclaiming the exempt commercial waste is the initial goal.
 - ii. Residential: After achievement of the commercial waste program goals, an education program can be initiated for the various changes to be required of the residential waste generators to include an announcement of the date for the distribution of carts
- d. Initial system improvements: The success of the new Sanitation depends upon having waste and recycling collection trucks that can perform their intended function every working day. The Plan provides for some basic vehicle recommendations to achieve this goal prior to replacement of vehicles in future years. Additionally, City staff will need some training on the recommendations and goals identified in this plan.
- e. Review success of initial improvements: After implementation of each portion of recommendations from the Plan, some refinements will be desired. An internal method of communication of the program changes is required along with internal reevaluation of achievement of Plan goals.
- f. Confirm future of City collection system vs. privatized bid: The goal of the recommendations is to adapt the City Sanitation into a new program. If the existing Sanitation cannot be adapted, then privatization can be considered as an alternative.
- g. Phase 2 and future Improvements – As warranted, several recommendations are provided in the Plan as future suggestions. Many of these recommendations are provided as future improvements

due to recognition that insufficient money is available for a complete makeover of Sanitation. However, these future recommendations are still valuable and require implementation. One of the very basic future recommendations is to begin replacement of the aging fleet of waste collection trucks.

3. Safety: several recommendations are focused upon improved safety of the collection workers. This Plan documents several hazards of waste collection in the alleys, while recycling collection is from the street curb.

- a. Initial recommendations are to relocate waste collection from the alley to the curb. Concurrent with the curbside collection is to retrain waste collection employees regarding safety in the streets and to review safety clothing requirements. Weekly safety meetings are recommended.
- b. Other recommendations: Safety is inherent in some other recommendations that are listed under other headings.

4. Waste Collection Vehicles

- a. Initial recommendations are focused upon getting the four American LaFrance vehicles to operate reliably with a focus on replacing the emission control equipment, or replacing the vehicles. The initial recommendations also include obtaining reliable backup vehicles and revamping the vehicle maintenance program to allow for a more efficient maintenance program. Cart tippers are required for each waste collection vehicle for servicing uniform waste carts (the new waste storage container for all residential and many commercial customers).
- b. Phase 2 recommendations include an improved daily vehicle maintenance program with more reliance upon the truck crew assigned to a vehicle, along with regular washing of the vehicles. Installation of a vehicle tracking system with two-way communication is considered a mandatory safety addition to each vehicle on the road.
- c. Future recommendations include a dedicated funding source within the Sanitation fund to be used to replace the aging truck fleet in future years (i.e. capital replacement fund). Several challenges to the successful implementation of many recommendations in this Plan are

dependent upon getting newer and better waste collection vehicles into the City fleet sooner, rather than later.

5. Staffing and AFSCME
 - a. Initial recommendations focus upon training and safety awareness of waste and recycling collection staff.
 - b. Phase 2 recommendations will require redefined collection routes and crew assignments after deployment of carts and revised collection from the curbside. Increased recycling will create fewer waste collection routes to service the City. Some time of day revisions in start time will also coincide with the route changes.

6. Curbside Collection is one of the fundamental recommendations of this Plan, primarily for safety and to achieve collection efficiencies.
 - a. Initial recommendations are relocation of the waste collection to curbside along with the existing recycling collection. Education regarding the program changes will coincide with the changes in waste storage containers to a uniform cart system.
 - b. Phase 2 requires continuing education and enforcement to make the system changes work as planned, and also include the maintenance and replacement of carts as needed, as well as distribution to new residents and businesses.
 - c. Future recommendations – none identified at this time.

7. Standardized Residential Containers
 - a. Initial recommendations are focused around a ½ cubic yard cart (i.e. 96-gallon nominal size wheeled cart) as the standardized waste container for each residence, and an increase in the size of the recycling bin. One additional waste item per week will be allowed per customer per cart.
 - b. Phase 2 includes a reevaluation of the basic ½ cubic yard cart size after a year or two of operation. Some residents will embrace recycling and may prefer some cost advantages of having a reduced cart size. Multiple cart sizes are not planned as part of the initial recommendations due to the attempt to reduce the variables in the Sanitation program changes.
 - c. Future recommendations – none identified at this time.

8. Commercial Waste

- a. Initial recommendations are focused upon change out of the smaller dumpsters for ½ cubic yard carts. The existing rear loading dumpsters are a safety hazard and require a change in the waste collection program. Due to waste storage requirements, dumpsters shall only be allowed at sizes of 4 cubic yards or larger. Any commercial generator can opt for multiple carts totaling 4 cubic yards or larger. Additionally, commercial customers are required (and encouraged) to recycle.
- b. Phase 2 recommendations include elimination of the commercial exemption from City waste collection. However, some of the commercial waste may require evaluation of a modified exemption program, mostly due to roll off containers. Some customers have roll off compaction containers for their waste or other special needs that do not fit within the near term capabilities of the City. These customers should have some ability to have an exemption, but also require some form of reporting system to the City to demonstrate waste disposal at the SRMC and crediting as City tonnage deliveries.
- c. Future recommendations focus upon ensuring that all of the City waste is delivered to SRMC and properly accounted as waste generated within the City. Once the City has a better database of waste delivered to the SRMC, and waste diversion due to recycling, the City can reexamine its fee structure for commercial waste. The City needs to control the waste leakage that is not being delivered to SRMC.

9. Bulky Waste

- a. Initial recommendation are to continue the current one bulky waste item for residential disposal per week, and provide for better enforcement of this one item policy, or to establish a charge for additional items collected by City staff.
- b. Phase 2 recommendations are to reduce reliance upon curbside collection of multiple items of bulky waste, and to consider options for drop-off of bulky waste items by residential customers at a central location.
- c. Future recommendations – implement a bulky waste drop-off site and program

10. Recycling has historically been at 5% or less, when many other communities report over 20%, although the City has achieved nearly a 20% recycling rate in 2014. The City also has a significant economic incentive to have waste diversion via recycling since waste disposal cost the City \$190 per ton.

a. Initial recommendations include:

- i. switching the existing recycling bins to a larger bin
- ii. increasing the materials accepted for recycling to include paper and corrugated paper.
- iii. The City has announced that glass will no longer be collected with recyclables, except for large generators under special collection programs. The economics of glass recycling is a complicated one in Harrisburg, and an analysis of the economics of glass recycling and disposal options is recommended,
- iv. The initial recommendations also include getting the commercial establishments to recycle, as required by PA Act 101.
- v. The City has already implemented the recommendation to stop paying for the delivery of recyclable material at a Material Recovery Facility.
- vi. A robust education program is required to achieve increased recycling.

b. Phase 2 recommendations include closely monitoring the success of waste diversion via recycling. The City has a put or pay commitment to deliver 35,000 tpy to the SRMC. While the City has the opportunity to reduce its disposal costs via increased recycling, the City also stands to lose a lot of money (i.e. pay for services not provided) if insufficient waste is delivered to the SRMC. Increased recycling also translates into additional PADEP 904 recycling performance grant money.

c. Future recommendations include replacement of the existing recycling trucks with packer style trucks to allow a better payload. Better route layout for collection of recyclable materials will also be advantageous.

11. Drop-offs are recommended as an alternative disposal method to the many waste piles and non-conforming waste within the City

a. Initial recommendation is to formulate a plan of what waste types, organics and/or recyclables will be accepted at a drop-off location.

- b. Initial or Phase 2 recommendations include location and screening of potential drop-off sites in or near the City, and development of a waste drop-off layout and operations plan.
- c. Future recommendations include construction and operation of a drop-off site and program, and expanding the waste and recyclable materials accepted at the drop-off location. The drop-off location needs to consider accommodating organic materials in the future.

12. Yard Waste is not currently part of Sanitation, but it belongs in the improvements to the Sanitation Program.

- a. Initial recommendations include development of a year-round disposal method for leaves and yard waste. This report suggests including yard waste as a material accepted at a future drop-off location.
- b. Phase 2 recommendations include offering weekly collection of yard waste as a value-added service to those desiring to dispose of yard waste off-site.
- c. Future recommendations include the banning of yard waste and leaves from street storage and disposal, except for maybe one month in the spring and 6 to 12 weeks in the fall.

13. Education is fundamental to gaining acceptance and achieving the goals defined in this report.

- a. Initial recommendations include reaching out to citizens and educating them about the need to relocate waste collection to the street from the previous alley collection. One bulky waste item or garbage sack per week is allowed in addition to the cart. Recycling is encouraged to control City costs.
- b. Initial education efforts need to also encourage the elimination of “mini-dumps” throughout the City, and to enforce violations of City ordinances that outlaw this.
- c. Initial recommendations also include updating the City’s website to reflect current Sanitation Program information and requirements.
- d. Phase 2 includes reinforcement education and providing details about alternative disposal for C&D materials, anti-littering and other waste item news.

- e. Future recommendations include development and implementation of drop-off opportunities for items that may otherwise be discarded as “mini-dumps”.

14. Rates and Fees for Service

- a. Initial recommendations include maintaining the existing rate structure adapted to the carts. This is required to ensure that adequate revenue is generated to cover the current expenses of Sanitation.
- b. Phase 2: As the City gains experience and creates a database resulting from implementing the recommendations, then the City can reevaluate the fee structure and revise the fee for both cost savings (if appropriate) and fairness between residential and commercial.
- c. Future recommendations include the establishment of prepayment discounts to encourage early fee payment and to improve cash flow. Also, future consideration can be given to discount rates for low-quantity waste generators and vacant lot fees for service

15. Ordinances, Enforcement, Fines, Compliance

- a. Initial recommendations are for the City to hire a full time compliance person. This occurred during mid-2014. Ordinances require updating for consistency with the Sanitation Program to reflect several changes that have occurred with the sale of the incinerator to LCSWMA. Other changes are required to reflect the seriousness of the waste management issues within the City and to break old habits of discarding waste whenever and wherever in the City. Ordinance changes are also required to ensure non-payment result in citations.
- b. Phase 2 recommendations include photo monitoring of the mini dump sites in the City, and bringing enforcement actions against the violators for littering. Other changes that are required focus upon ensuring that commercial waste is either collected by the City, or is being properly delivered and reported to the SRMC.
- c. Future recommendations include getting Sanitation on a true “Enterprise Fund” method of accounting.

16. Other: While Sanitation is focused upon waste and recycling collection and disposal, several City services are much related to Sanitation. Such related services include street sweeping, leaf collection, Christmas tree removal, and

mini dump removal and cleanup, all related functions of keeping the City “clean.” Since the City currently collects additional revenue via the current rate structure and then transfers this money into the general fund which supports the City functions mentioned in this paragraph, it makes sense to the report authors that these other “cleaning” activities be included within Sanitation and be more fully coordinated with waste and recycling collection.

E. Conclusions

The City staff provides some amazing services to its residents. During the preparation of this report, the authors were repeatedly amazed on how City staff performed their duties every day while working around disabled equipment and other challenges. When the current Sanitation budget is examined and properly compared to other nearby privatized operations, the City residents and businesses receive very good value, especially within the constraints of the long-term put-or-pay obligations to LCSWMA and the ongoing Legacy obligations of the program.

While the City staff is performing well in their waste collection and recycling duties, the authors have documented many areas for needed improvement in Sanitation. These areas for improvement will allow the City to remain competitive in future years and to achieve some goals for improved safety, increased recycling, better collection and cost efficiencies, better cost accounting, reduced open dumping, and improved recyclables and organics collection and processing options.

This report highlights several areas of improvement for Sanitation Program improvement and achievement in the next couple of years. This report has identified many potential improvements, and focuses upon efforts required to get substantial improvements to City waste and recycling collection in the near term. As City staff becomes accustomed to the concept of “managed competition”, other improvements will come about organically from within DPW. Indeed, since mid-2014, many program improvements have already been initiated by DPW and City staff and administration. This is consistent with the direction desired by the stakeholders of waste, recyclables collection and ancillary programs that maintain cleanliness in the City, and ultimately result in benefits for the citizens

and businesses of Harrisburg. The metric for measuring success, is a periodic evaluation on how many of the recommendations in this report have become implemented, and if not implemented, reviewing the reasons behind the delay.