

## EXECUTIVE SUMMARY AND KEY POINTS

The State of Minnesota has established new recovery goals for Hennepin County, which includes 45% recycling rate by 2015 and 47% by 2020. Hennepin County has established a recycling goal of 35% for the City of Minneapolis. The City of Minneapolis contracted a study and assessment of collection options and the impact on the value of the marketable materials, to assist in determining its next steps.

The City operates a bi-weekly at-the-curb, multi-sort collection system, which requires residents to place all items in separate paper bags in their recycling bin. Although the community accepts and supports recycling, for more than 10 years the city has seen a stagnant recycling rate, and in some years, the rate has declined. The City has a fairly good participation rate for the recycling program, yet compared to other cities in the region and the nation; the amount of material recycled by residents is far below the regional and national average.

Minneapolis conducted two pilot programs, testing the effectiveness of dual-sort and single-sort collection. Both pilot programs incorporated recycling carts and collecting on the bi-weekly schedule. The results from these pilot programs show a significant increase in number of stops that can be served by a single route and the quantity of recyclables collected per household.

### Key Points from Recycling Program Study

The study findings, summarized below, are based on information collected from the city's pilot programs and from the experiences of other cities, and from focus group meetings held with current Solid Waste and Recycling customers. The project evaluated single-sort and dual-sort collection for both weekly and biweekly collection.

#### Recovery

1. A single-sort system is projected to increase materials quantity recovered by 60% and the Minneapolis recycling rate increases from 18.1% to 32% (based on case studies such as Ann Arbor and Portland).
2. A dual-sort system is projected to increase materials quantity recovered by 36% and the Minneapolis recycling rate increases from 18.1% to 25% (based on case studies such as Ann Arbor and Portland).

#### Processing

1. The majority of local recycling centers - Material Recovery Facilities (MRF's) - are well equipped to handle single sort collection.
2. Preliminary research indicates no difference in market revenues – single vs. dual in local MRF's.

#### Operations and Operational Costs

1. Collection time for single-sort is less than dual-sort and there is no need to come off route when one compartment fills before the other.
2. A single-sort recycling system preserves space for a possible third cart for comingled yard waste and organics.
3. A semi-automated rear load truck (such as currently used for garbage collection), with 2 staff per truck, best serves alley-based collections. This is the same system that is currently used for garbage collection.
4. Single-sort collection allows for utilization of a similar truck fleet to current rear load packers, resulting in a more cost-effective fleet than adding a completely new type of vehicle for recycling collection.

## Capital Costs

1. Dual-sort collection requires an additional truck cost of \$28,000 more than single sort truck due to split body packers.
2. Cart cost for single sort (1 per unit @\$65) is estimated at \$6,800,000.  
Truck Cost (8 trucks) for a bi-weekly single sort collection program is \$1,976,000.
3. Cart cost for dual sort (2 per unit @\$50) is estimated at \$10,500,000.  
Truck Cost (9 trucks) for a bi-weekly, dual sort collection program is \$2,475,000.

## Overall Program Costs

The Net Recycling Costs are the lowest for the Single Sort Semi Automated Bi-weekly collection program by approximately 20% below current net cost while achieving a 32% recycling rate. The Dual Sort Bi-weekly program has a net cost of approximately 65% higher than the current multi-sort program and achieves a 25% recovery rate. A ten percent increase in the quantity of material collected in the single sort program achieves a 35% recycling rate with a net cost that is 40% lower than the current program. A ten percent increase in the quantity of material collected in the dual sort program achieves a 28.5% recycling rate with a net cost that is 40% higher than the current program.

Single-sort collection and processing also allow consideration of transferring recyclables from multi-family locations should Minneapolis be interested in offering recycling services in currently under-served areas. Single sort collection programs are more compatible with the development of a yard waste and organics collection program that would require another cart.

Although dual-sort recycling remains technically viable, when you consider that the market trend is toward single-sort processing and that placing recyclables all in one container, which is the most convenient to most residents, it is clear that Minneapolis should consider switching to single-sort collection.

It is further recommended that the City conduct a more detailed evaluation of the program and investment requirements associated with such a conversion to single sort collection and processing by issuing a Request for Proposal (RFP) to determine the actual collection and processing costs. This evaluation would include equipment options and costs, processing and marketing arrangements, route requirements, and program investments and savings.