

**SARATOGA COUNTY RECYCLABLES TRANSFER STATIONS
EFFICIENCY & COST SAVINGS EVALUATION**

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This is a reconnaissance level study of the operation and cost of the five recyclables transfer stations owned and operated by Saratoga County. It is intended to serve as a starting point for discussions by the Board of Supervisors.

Existing System

Saratoga County owns and operates five facilities for receiving household recyclables from residents. The transfer stations are located in Clifton Park, Corinth, Milton, Moreau, and Saratoga Springs. With the exception of Milton, the facilities are co-located with solid waste transfer stations operated by the host municipality. Although there are minor differences in the buildings and layout, each facility is set up to receive seven (7) source separated categories of household recyclables; scrap metal, tin cans, corrugated cardboard, magazines, newspapers, glass and plastics. This is identified in this evaluation as multi-stream recycling. Customized roll-off containers are in place, some with shed type enclosures and grade separations to facilitate convenient deposit of recyclable materials. Each facility is staffed by one County employee. Once the containers are full they are replaced with empties and hauled to market. County employees drive all the trucks transporting recyclable material. These trucks are also used by the County Department of Public Works for other functions. The County management staff schedules the delivery of containers and markets all recyclable material received. The site visits of the transfer stations found each facility being very well run. Each was clean, orderly, laid out logically, and easy for residents to navigate. The County management staff is doing an excellent job of marketing recyclables, scheduling, record keeping, and reporting.

It should be noted that 2012 was used as the reference year for this evaluation because reliable full-year data was available from Saratoga County and other counties. However, the markets for recyclable materials vary and 2012 was a year of relatively high prices for recyclables. This does not skew the analysis because those market conditions are not unique to Saratoga County.

Findings

1. It is estimated that a total of 22,295 to 27,998 tons per year of household recyclables are recovered in Saratoga County according to the County Local Solid Waste management Plan [LSWMP]. Records show that, of that total, using 2012 as a reference year, 3517 tons of recyclables were received at the County's five transfer stations.

2. It is estimated that approximately a total of 27,054 to 35,170 residents or 12,128 to 15,291 households are served at the five transfer stations on an annual basis. Approximate estimated usage at each transfer station is shown in Table 1.

TABLE 1
ESTIMATED USAGE OF RECYCLING FACILITIES
REFERENCE YEAR 2012

LOCATION	TONS 2012	ESTIMATED NUMBER OF RESIDENTS SERVED	ESTIMATED NUMBER OF HOUSEHOLDS SERVED
Clifton Park	1,220	9,385 - 12, 200	4,207 - 5304
Corinth	309	2,377 - 3,090	1,066 - 1,343
Milton	538	4,138 - 5,380	1,855 - 2,339
Moreau	488	3,754 - 4,880	1,683 - 2,122
Saratoga Springs	962	7,400 - 9,620	3,317 - 4,183
TOTAL	3,517	27,054 - 35,170	12,128 - 15,291

Note: Calculation based on volume estimates in Saratoga County Local Solid Waste Management Plan

3. From 2008 to 2012 deliveries by residents to the transfer stations declined by 41%. The individual trend for each transfer station is shown in Table 2.

TABLE 2
TREND IN TONS DELIVERED TO RECYCLING FACILITIES

LOCATION	2008	2009	2010	2011	2012	2013 (6 Mos.)	Change 2008 - 2012
Clifton Park	1,624	1,479	1,311	1,295	1,220	556	25%
Corinth	621	566	398	384	309	156	50%
Milton	913	991	778	669	538	230	41%
Moreau	922	872	710	591	488	234	47%
Saratoga Springs	1,840	1,739	1,392	1,107	962	410	48%
TOTAL	5,920	5,647	4,589	4,046	3,517	1,586	41%

4. It costs the County a total of \$1,008,010.06 to operate the five transfer stations as shown in Table 3. A more detailed listing of expenses from the County’s budget is also available.

TABLE 3
SUMMARY OF EXPENSES

Transportation [Fuel, Labor, benefits, insurance*]	\$406,027.99
Transfer Station Operations	\$540,869.48
Other Expenses [Account Clerk Labor & Benefits]	\$61,112.59
Total	\$1,008,010.06

Note: Does not include any amount for depreciation/capitalization of equipment.

5. The cost for trucking all the materials collected to market represents 40% of the total cost, operating the transfer stations represents 54% of the total, and management and marketing represents 6% of the total.
6. The County is very successful in marketing and selling the recyclable materials. For the reference year of 2012 revenues from such sales [including late revenue] was \$530,624.35.
7. As shown in Table 4, this results in a net cost to the County of \$477,385.71, for reference year 2012. Table 4 shows the net cost per ton, per person served, per household served as well as per county resident and household.

TABLE 4
RECYCLING SERVICE COST
REFERENCE YEAR 2012

Total Expenses	\$1,008,010.06
Recyclables Revenue (Includes Late Revenue)	\$530,624.35
Net Cost	\$477,385.71
Net Cost Per Ton (3,517 Tons)	\$135.74
Net Cost Per Resident Served (27,054 - 35,170)	\$13.57 - \$17.65
Net Cost Per Household Served	\$31.22 - \$39.36
Net Cost Per County Resident	\$2.17
Net Cost Per County Household	\$4.94

8. Looking at the revenue actually achieved, Saratoga County does very well with multi-stream approach [7 separations of recyclable materials]. For reference year 2012 the County achieved an aggregate average of approximately \$150 per ton. As a point of reference, a large scale public single stream materials recovery facility in Upstate New York achieved \$117 per ton for the same year. However the net cost of recycling [total cost after revenues are subtracted from expenses] indicates that Saratoga County is higher than other Upstate counties as shown in Table 5. It must be noted that there is wide variability in the type and configuration of recycling services from county to county.

TABLE 5
RECYCLING COST COMPARISON

UPSTATE COUNTY	POPULATION	RECYCLING SERVICE	NET COST PER TON
A	55,000	Multi-Stream Public MRF	\$95
B	298,000	Single Stream Public MRF	\$29
C	122,000	Single Stream 5 Transfer Stations Private MRF	\$75
D	62,000	Single Stream 12 Transfer Stations Private MRF	\$100
Saratoga	220,000	Multi-Stream 5 Transfer Stations Direct to Markets	\$136

Efficiency & Cost Savings Opportunities

1. The first apparent opportunity for improved efficiency and potential cost savings can be in the area of transportation expenses. The County currently spends \$406,027.99 for transportation of recyclables to market. Based upon conversion to single stream, and using conservative calculation factors, Table 6 shows that Saratoga County could reduce transportation expenses to approximately \$204,000 per year, a saving of over \$202,000 per year—or nearly a 50% reduction in cost. A closer examination of employing larger containers and possibly implementing compaction could improve efficiency and savings even further. At the same time, this potential is tempered by the fact that the County DPW trucks currently used for transport of recyclables are also used for other purposes. Therefore, an examination of those other uses and the feasibility of reducing the truck fleet would have to be completed.

TABLE 6
ESTIMATION OF COST FOR PRIVATE TRANSPORTATION

Location	2012 Tons Per Year	Pulls (5 Tons Per Pull)	Cost Per Pull	Annual Cost	Contingency One Extra Pull Per Week	TOTAL
Clifton Park	1,220	244 <i>round to 1 per day</i> = 260	\$125	\$32,500	\$6,500	\$39,000
Corinth	309	62	\$300	\$18,600	\$15,600	\$34,200
Milton	538	108	\$200	\$21,600	\$10,400	\$32,000
Moreau	488	98 <i>round to 2 per week</i> = 104	\$300	\$31,200	\$15,600	\$46,800
Saratoga Springs	962	192 <i>round to 4 per week</i> = 208	\$200	\$41,600	\$10,400	\$52,000
TOTAL	3,517			\$145,500	\$58,500	\$204,000

Notes:

1. Conservative costs used per pull.
2. Tons per pull based on actual experience.
3. Above does not reflect additional efficiency and cost savings through increased container size, compaction or other improvements.
4. Based on conversion to single stream

2. The second apparent opportunity for improved efficiency and potential cost savings can be through consolidation with the municipal staff which manages solid waste at the transfer stations. [This opportunity is not possible for the Milton transfer station because there is no town service to accept waste there]. It is workable to have one attendant handle the responsibility for both solid waste and recyclables at the transfer stations. [This consolidation would work best with single stream recycling because it requires less instruction and assistance]. If this could be worked out with the municipalities, transfer station expenses could be reduced from the current \$540,869.48 to \$108,173.89—an annual savings of \$432,695.58, or nearly 80%.
3. The third apparent opportunity for improved efficiency and potential cost savings would be to convert the recycling program to single stream. Single stream recycling is now a well established method with a five year plus track record. It allows residents to comingle all categories of recyclables – no separation at the point of generation is required. This has several benefits. It is significantly more convenient for residents and experience demonstrates that increases in convenience translate into higher

participation rates and higher volumes of recyclables recovered. Single stream cuts collection costs by allowing for split packer trucks that can simultaneously collect solid waste and recyclables in the same truck. Although collection savings aren't at issue with the County's transfer stations, the added convenience [when coupled with a public information program] could be expected to increase participation and the volume of recyclables recovered. At the same time, conversion to single stream will not alone increase revenues. In fact Saratoga County currently achieves very high rates for the marketing of recyclables on a multi-stream basis and those rates may not be equaled by the rates for single stream material. However, a well operated single stream program can save on the County's transportation costs even above those estimated in Table 6.

Integration of Options

Table 7 compares the current recycling system expenses, revenue, and net cost with options that would utilize private transportation, consolidated staffing, single stream, or some combination of these opportunities. This shows that the County has some significant potential to improve efficiency and reduce costs. At the same time, it is important to emphasize that recycling markets are high and therefore the County should temper its expectations. It would not be prudent for the Board to make a decision on the expectation that the recycling system can be modified to achieve a net surplus on a sustained basis.

Option A in Table 7 shows that privatization of transportation, coupled with conversion to single stream would produce savings in transportation expenses but the overall impact would be a net increase in cost to the County compared to the current configuration.

Option B shows a complete privatization of the system [private transportation, private operation with 1 staff at each station, and private management] and conversion to single stream. This would result in a reduction in net cost of approximately 45%.

Option C shows privatization of transportation and consolidation of operating staff with the municipal waste workers while maintain management by the County and conversion to single stream. This would result in a reduction in net cost of approximately 73%.

An option to keep the current multi-stream recycling coupled with private transportation was considered. The current system delivers the seven separate recyclable commodities to 10 different market locations from 5 different transfer station locations. Attempting to change that type of operation does not lend itself to privatization and based on experience no net savings in transportation expenses would be expected if it were attempted. As noted above, opportunities like privatizing transportation and consolidating staffing will require further

examination of the other public works functions performed with the trucks used for recycling and discussions with the host towns.

TABLE 7
RECYCLING COST COMPARISON

	Expense	Revenue	Annual Net Cost
Current - Public Trans @ \$406,027.99 - Public TS Op @ \$540,869.48 - Public Mgmt @ \$61,112.59 - Multi-Stream	\$1,008,010.06	\$530,624.35	\$477,385.71
Option A - Private Trans @ \$204,000.00 - Public TS Op @ \$540,869.48 - Public Mgmt @ \$61,112.59 - Single Stream	\$805,982.07	\$246,190.00	\$559,792.07
Option B - Private Trans @ \$204,000.00 - Private TS Op @ \$242,632.00 - Private Mgmt @ \$63,000.00 - Single Stream	\$509,632.00	\$246,190.00	\$263,442.00
Option C - Private Trans @ \$204,000.00 - Consolidate Staff @ \$108,173.89 - Public Mgmt @ \$61,112.59 - Single Stream	\$373,286.48	\$246,190.00	\$127,096.48