



MATERIALS RECOVERY FACILITY STUDY

Chippewa County

January 31, 2013

Executive Summary

Report



Resource Recycling Systems
Sustainable Systems for a Waste-Free Future

INTRODUCTION

The Chippewa County Land Conservation and Forest Management (LCFM) Materials Recovery Facility (MRF) Study represents multiple communities in Chippewa County – each with its own characteristics and goals – yet bound by common duties to maintain a cost-effective recycling collection system. Chippewa County and the municipalities in the County also need to comply with state recycling laws and satisfies effective recycling criteria. Many cities and solid waste districts throughout the nation are setting new, ambitious goals for higher recycling, waste recovery rates and even targeting zero waste as an attainable goal.

CHIPPEWA PROGRAM BACKGROUND

The drop-off programs in Chippewa County consist of a site selected by the municipality. Residents of the municipality haul their recyclables to the drop-off center on the designated days and hours. The municipality contracts for service with a recycling hauler to pick up the dumpsters containing recyclables at their recycling center or the municipality hauls the recyclables to a recycling processing facility or end market. The curbside recycling program provides recycling service to the residents of the municipality at their residence. The municipality contracts with a recycling hauler to pick-up recyclables at each residence. The hauler usually provides the residents with an 18-gallon recycling bin to place the recyclables in.

Each municipality obtains the tonnage reports from the recycling haulers in order to monitor the tonnage of recyclable materials collected, which is an estimate of what was picked up at each municipality. The individual categories of recyclables are not actual but rather figured by applying a formula to the total tonnage collected. Table 1: Type of Municipal Recycling Program, shows the type of recycling program for each municipality and the current recycling hauler. The Bloomer Area includes the City of Bloomer, Town of Bloomer, Town of Auburn, Town of Sampson, and the Town of Woodmohr. The Hallie Area includes the Village of Lake Hallie and the Town of Hallie.

Of the 26 RUs that provide recycling programs there are 5 RU that utilize curbside collection provided by the private sector. The following table provides information that is provided by each RU to the County as part of its obligation to report information on the quantity of recycling materials collected. The tonnage data was calculated on a per capita basis and a household basis. The costs for each municipality were also calculated on a per ton basis and a per household basis. The per household approach to evaluating costs and comparisons is the standard approach for cost allocation as the actual fees, taxes or other charges on levied on a per household basis. This approach also allows for the comparison of Chippewa County performance to best practices data from across the state and country.

The average quantity of material collected per household in Chippewa County is 276 pounds per year. The average for the State of Wisconsin is 514.3 pounds per household per year based on the reported quantities of material processed at Material Recovery Facilities (MRF) in the State of Wisconsin. There is very little difference in the pounds per household collected through curbside programs versus drop-off programs. There is a 73% higher cost per household for the curbside programs. It is not possible to distinguish the quantity of material that is collected from commercial sources, which may create higher averages than actually achieved from the residential sector.

Table ES-1: Chippewa County Current Recycling Tonnage and Costs (2011)

Municipal Recycling Programs	Participating Population	Occupied Households	Type of Recycling Program	Tons of Recyclables	Lbs. per person (Recycling)	Cost per person (Recycling)	Lbs. per Household (Recycling)	Cost per Household (Recycling)
Anson	2,084	849	CURBSIDE	114.8	110.2	\$15.29	270.4	\$37.54
Arthur	761	265	DROP-OFF	28.7	75.4	\$1.96	216.6	\$5.64
Birch Creek	518	210	DROP-OFF	29.0	112.0	\$3.36	276.2	\$8.29
Bloomer Area	7,116	2,708	DROP-OFF	414.0	116.4	\$6.07	305.8	\$15.95
Boyd	551	226	CURBSIDE	51.5	186.9	\$13.12	455.8	\$31.99
Cadott	1,437	624	CURBSIDE	95.0	132.2	\$10.96	304.5	\$25.24
Chippewa Falls	13,688	6,030	CURBSIDE	674.4	98.5	\$10.92	223.7	\$24.79
Cleveland	866	329	DROP-OFF	50.3	116.2	\$9.51	305.8	\$25.03
Colburn	862	346	DROP-OFF	15.1	35.0	\$5.01	87.3	\$12.49
Cooks Valley	818	264	DROP-OFF	18.8	46.0	\$9.77	142.4	\$30.27
Eagle Point	3,066	1,089	DROP-OFF	220.3	143.7	\$6.21	404.6	\$17.48
Edson	1,088	353	DROP-OFF	42.3	77.8	\$5.48	239.7	\$16.90
Estella	430	150	DROP-OFF	9.3	43.3	\$8.76	124.0	\$25.11
Goetz	765	264	DROP-OFF	35.9	93.9	\$7.63	272.0	\$22.11
Hallie Area	6,697	2376	DROP-OFF	633.8	189.3	\$1.74	533.5	\$4.90
Howard	797	260	DROP-OFF	23.0	57.7	\$3.77	176.9	\$11.57
Lafayette	5,778	2,194	DROP-OFF	451.4	156.2	\$1.74	411.5	\$4.58
L. Holcombe	1,031	445	DROP-OFF	39.8	77.2	\$5.60	178.9	\$12.98
Ruby	489	187	DROP-OFF	17.7	72.4	\$9.05	189.3	\$23.67
Sigel	1,043	353	DROP-OFF	53.3	102.2	\$3.53	302.0	\$10.42
Stanley	3,612	1,389	CURBSIDE	115.0	63.7	\$4.97	165.6	\$12.93
Tilden	1,493	440	DROP-OFF	58.0	77.7	\$4.58	263.6	\$15.53
Wheaton	2,707	983	DROP-OFF	244.8	180.9	\$4.74	498.1	\$13.05
TOTAL	57,697	22,334		3,436.2	119.1	\$7.58	307.7	\$19.58
AVERAGE					102.8	\$6.69	276.0	\$17.76
TOTAL CURBSIDE	21,372	9,118		1,050.7				
TOTAL DROP-OFF	36,325	13,216		2,385.5				
AVERAGE CURBSIDE					98.3	\$11.05	230.5	\$26.50
AVERAGE DROP-OFF					131.3	\$5.47	361.0	\$15.33

There are certain communities in Chippewa County that exhibit higher recovery rates on a pounds per household basis, the overall recovery for the curbside program is lower than the recovery for the drop-off system. Multi-family and commercial collection impacts are not included in the quantities that are currently collected. The curbside programs are underperforming when compared to state of the art recycling programs.

POTENTIAL INCREASES IN MATERIAL COLLECTION FOR CHIPPEWA COUNTY

Estimates of the potential increase in quantities collected, for both medium and high volume scenarios, are based on emerging best practices for collection (single sort collection, larger carts, automated collection) and for state-of-the-art communication and recovery incentive systems (e.g. social media, Pay As You Throw (PAYT) and RecycleBank style incentives) – all of which have demonstrated capability to increase household recovery well beyond the rate of the current system.

Table ES-3: Chippewa County Estimated Recycling Tonnages

Municipal Recycling Programs	Occupied Households	Single Sort (SS) Semi Auto Biweekly	Dual Sort (DS) Semi Auto Biweekly	High Performing SS Side Automated Weekly	High Performing DS Side Automated Weekly	Dual Sort Bins	Multi Sort Bins	Drop Off
Pounds per Household		600	550	750	650	450	370	300
Anson	849	255	233	318	276	191	157	127
Arthur	265	80	73	99	86	60	49	40
Birch Creek	210	63	58	79	68	47	39	32
Bloomer Area	2,708	812	745	1,016	880	609	501	406
Boyd	226	68	62	85	73	51	42	34
Cadott	624	187	172	234	203	140	115	94
Chippewa Falls	6,030	1,809	1,658	2,261	1,960	1,357	1,116	905
Cleveland	329	99	90	123	107	74	61	49
Colburn	346	104	95	130	112	78	64	52
Cooks Valley	264	79	73	99	86	59	49	40
Eagle Point	1,089	327	299	408	354	245	201	163
Edson	353	106	97	132	115	79	65	53
Estella	150	45	41	56	49	34	28	23
Goetz	264	79	73	99	86	59	49	40
Hallie Area	2376	713	653	891	772	535	440	356
Howard	260	78	72	98	85	59	48	39
Lafayette	2,194	658	603	823	713	494	406	329
L. Holcombe	445	134	122	167	145	100	82	67
Ruby	187	56	51	70	61	42	35	28
Sigel	353	106	97	132	115	79	65	53
Stanley	1,389	417	382	521	451	313	257	208
Tilden	440	132	121	165	143	99	81	66
Wheaton	983	295	270	369	319	221	182	147
TOTAL	22,334	6,700	6,142	8,375	7,259	5,025	4,132	3,350

The estimate of the potential increase in the quantity of material that could be recovered in Chippewa County indicates that if the overall performance could be increased to 600 pounds per household per year then Chippewa County could double the amount of recyclable material that is recovered to 6.700 tons per year. This level of recovery is achievable if communities implement well-designed curbside collection programs utilizing best practices that make recycling as convenient as possible with appropriate incentives and pricing. The larger communities may need to achieve somewhat higher recovery rates to achieve this recovery level on a countywide basis.

HISTORICAL PRICE ASSESSMENT: MARKETS FOR MATERIALS

In reviewing the Market Trends Data, the market demand and commodity prices for fiber, plastics, aluminum and steel have remained strong to stable. Two brief periods in the early 1990's and mid 2000's have seen brief

price tumbles. But recycled commodity price rebounds have been quick and over time have shown an almost universal strengthening. The commodity revenues associated with these materials have over time provided the financial foundation for most recycling programs, whether publicly or privately sponsored.

Discussion with broker and commodity dealers in the central Wisconsin region indicate that basic market prices in the region are consistent with the prices quoted by the Official Board Market (OBM) Yellow sheets for Chicago and plastic prices are based on the Waste News 1st Issue of Month - Chicago region. Aluminum is based on the trade publication Aluminum Metal Market Low price – 1st issue of the month. Glass is based on the Anchor Glass Container Corporation Rate for glass at the Shakopee, MN facility. The average commodity revenue (ACR) contract approach is one of the best mechanisms for a community to hedge the risks of volatile swings in the value of recycled commodities. The approach provides flexibility and helps to maximize revenues. If a community wants a minimum guaranteed price, bidders would be tempering their bids with lower expectations in order to ensure that they're not incurring large losses in instances of a market depression.

An analysis of the average commodity revenue (ACR) price approach to commodity sales is illustrated in the following table for several different periods over the past 4 years. During the first period from December 2008 to September 2009, the recession was in full swing but fiber prices had not yet fallen. The higher ACR basket price, therefore, relative to the second period (September 2009 to May 2010) was carried by the higher fiber prices. However, in the second period, container prices had started to recover while fiber prices dropped and due to the smaller portion of containers, the ACR price fell even though unit prices are considerably higher. The third period (January 2011 to November 2011) portrays overall higher prices and the considerably higher ACR price as a result of higher demand.

Table ES-3: Average Commodity Revenue (ACR) Analysis

Material	% of Stream	Dec 08 - Sep 09		Sep 09 - May 10		Jan 11 - Nov 11	
		Price	ACR Price	Price	ACR Price	Price	ACR Price
OCC	7.0%	\$108	\$7.58	\$44	\$3.09	\$150	\$10.51
ONP	30.0%	\$77	\$23.02	\$21	\$6.31	\$59	\$17.80
Mixed Paper	20.0%	\$82	\$16.31	\$28	\$5.52	\$80	\$16.02
SOP	2.0%	\$211	\$4.22	\$108	\$2.16	\$244	\$4.89
Magazines	10.0%	\$80	\$8.02	\$58	\$5.80	\$105	\$10.53
PET	5.0%	\$172	\$8.58	\$308	\$15.40	\$649	\$32.46
NHDPE	2.3%	\$369	\$8.49	\$531	\$12.21	\$736	\$16.93
CHDPE	2.4%	\$263	\$6.31	\$401	\$9.62	\$534	\$12.82
#1-7	1.8%			\$110	\$1.99	\$203	\$3.65
Cartons	1.1%						
Aluminum	1.4%	\$952	\$13.33	\$1,404	\$19.65	\$1,807	\$25.29
Steel Cans	6.0%	\$55	\$3.28	\$99	\$5.95	\$118	\$7.05
Other Ferrous	2.0%						
Film Plastic	0.0%						
Textile	4.0%						
Residue	5.0%	-33	\$(1.65)	-33	\$(1.65)	-33	\$(1.65)
ACR Price per Ton			\$97.49		\$86.06		\$156.31

RECOMMENDATIONS AND NEXT STEPS

Chippewa County needs to seriously consider switching to single-sort collection and contracting for recycling processing and end market sales. It is necessary for multiple communities to work together in order to structure a recycling market place that will provide higher services and lower overall costs. Cooperation is needed in order to develop a system that aggregates more materials and that captures more value for consumer through better contracts with regional MRFs.

It is recommended that the County move to a single sort system achieve the highest recovery rate at the lowest cost. Some variation of Management Option 1A and 2 as described in the report appears to be the most feasible approaches for Chippewa County to pursue. The alternatives that should be evaluated based on the assessment of Option 2 are:

Alternative 2A – Countywide Contracting: Build a publically owned/privately operated transfer station in Chippewa County (Lake Wissota-Chippewa Falls-Hallie Area). Contract with recycling haulers to deliver recyclables to that facility.

- Develop countywide single stream collection requirement and service contracting for designated collection zones.
- Construct a transfer station/Drop Off in Chippewa County.
- Require all contracted haulers to transport recyclables to Chippewa County transfer station.
- Develop contractual agreement with Municipal or Privately owned Material Recovery Facility (MRF) outside of the County for processing and revenue sharing.

Alternative 2B – Managed Competition: Negotiate and contract with an existing privately owned/privately operated transfer station in the Chippewa Falls/Eau Claire metro area (Waste Management, Advanced Disposal, Express Disposal, or Boxx Sanitation). Contract with recycling haulers to deliver recyclables to that facility.

- Develop single stream collection requirement municipal collection contracts.
- Require all contracted haulers to transport recyclables to a designated transfer station
- Develop contractual agreement with Municipal or Privately owned Material Recovery Facility (MRF) outside of the County for processing and revenue sharing.

Table ES-5: Pros and Cons of Option 2A

Pros	Cons
Provides RU a high level of flexibility and control over selection of MRF and how recyclable materials are marketed.	Capital costs of land purchase or lease to establish a new transfer station.
Provides a higher level of competitive bargaining power with haulers, recycling companies, and available MRF's (Material Recovery Facilities).	Time requirements to build transfer station.
Provides greater potential for higher rebates and cost savings from selecting the MRF.	Administrative costs to develop and oversee contract for transfer station services.
Provides RU a high level of flexibility and control over selection of MRF and how recyclable materials are marketed.	Increased years to recoup the capital investment.
	Concerns regarding competition as expressed by operators of existing private transfer station(s).

Table ES-6: Pros and Cons of Option 2B

Pros	Cons
Less complex.	Offers Chippewa Co. RU less flexibility and control over selection of MRF and how materials are marketed.
No upfront capital costs.	Offers a lower level of competitive bargaining power with haulers, recycling companies, and available MRF's (Material Recovery Facilities).
No time requirements or delays associated with new transfer station construction.	Provides less potential for higher rebates and cost savings from selecting the MRF.
Other	Other

There are several operating program elements that are required if Chippewa County determines that increasing the quantity of recycled material through the implementation of single sort recycling collection is the preferred management approach to solid waste and recycling. These program elements include:

1. Implement a single sort and curbside pick up for the majority of the households in the more urban southern portion of the County to achieve higher recycling volumes and the associated revenue from the sale of additional recyclables.
2. The consolidation of services through contracting and procurement will provide the necessary efficiencies and cost savings that will allow increased recovery without large increases in the cost per household for all services including waste and recycling collection.
3. Participation from Chippewa Falls and surrounding communities is critical to success because of their existing volumes and geography. Any solution moving forward will need to include those communities at a bare minimum.

4. In order to achieve cost effective shipment of recyclable materials to end market processors the recyclable material should be consolidated at a larger transfer station with drop off capabilities that would be developed by the County in the greater Chippewa Falls/Lake Wissota/Lake Hallie region. An alternative is to contract with a private transfer station in the Eau Claire metro region is necessary in order for this to occur.
5. Procuring recyclable processing contracts with a MRF that includes revenue sharing arrangements is necessary to capture the value of the collected materials and lower the overall system costs;
6. Chippewa County communities in the rural Northeast region and the Bloomer region should be given an opportunity to participate in development of a more effective countywide recycling system.
7. Utilizing a market based assessment approach with the private sector will provide the relative cost information and program effectiveness of providing single sort, curbside pickup across the County.

Figure ES-1: Conceptual Regional Transfer Options



