

January 28, 2008

Mr. Gus Carayiannis P.E.
Environmental Engineer 2
NYSDEC
232 Hudson Street
P.O. Box 220
Warrensburg, New York
12885-0220

Re: Regional Solid Waste Disposal Facility
DEC #5-1699-00003/00005
Facility I.D. #17S21
Westville/Constable (T), Franklin (Co.)
CRA update

Dear Mr. Carayiannis:

As required of special condition 6B of our operating permit, please find enclosed three copies of the 2007 updated Comprehensive Recycling Analysis for your review.

Yours truly

George Eades eng.
Executive Director
CFSWMA

cc: S. Brewer
C. Lacombe
S. Menrath
D. Steenberge
D. Vitale

**Franklin County
Comprehensive Recycling Analysis
Update 2007**

Prepared by:
The County of Franklin
Solid Waste Management Authority
828 County Route 20
Constable, New York 12926

JANUARY 2008

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INTRODUCTION

Purpose of the Comprehensive Recycling Analysis Update

This document is an update of the County of Franklin Solid Waste Management Authority's (CFSWMA) Comprehensive Recycling Analysis (CRA) first published in the Final Solid Waste Management Plan for Franklin County in 1991. The CRA was subsequently updated in 2001 AND 2004. The Development of a CRA is a requirement under Part 360 of the Official Compilation of Codes, Rules and Regulations of the State of New York (Part 360) and is a requirement contained in the Authority's Landfill permit (DEC #5-1699-00003/00001). This document has been prepared to satisfy these requirements.

This Franklin County CRA update for the period 2007-10 will present:

- a brief background summary of past recycling activities
- an overview of the present recycling program
- an evaluation of the present recycling program
- an outline of future recycling plans
- an implementation schedule for future program development
- Current updated information describing Franklin County's waste stream, market information, local recycling laws and regulations.

This report is intended as a planning tool to focus the recycling efforts of the Authority during the next three years 2007-2010. This CRA update, as with other documents of this type, is presented as a broad plan for program development and implementation. As such, it will be subject to much modification in the future as the recycling program evolves. The final goal is the maintenance and improvement of a cost-efficient comprehensive recycling program for Franklin County that will serve as an economic waste management alternative to landfill disposal.

PAST RECYCLING PROGRAM

History

The establishment of the Authority's recycling program has largely been dependent upon the Authority's priority of establishing a stable waste collection and disposal system. Similar to other rural counties across New York State, the Authority has faced the challenge of establishing an economically stable waste management system in an environment characterized by unanticipated revenue shortfalls resulting from low waste volumes, loss of waste flow control regulations, and high transportation costs. The Authority has struggled through a period of years pitting predatory private sector take-over offers against political resistance to forfeit public-sector control. The following summary provides a brief description of the evolution of the Authority's recycling program since the Final Solid Waste Management Plan (SWMP) was published in 1991. Table 1 (page 8) quantifies the Authority's recycling efforts to date.

- | | |
|------|--|
| 1991 | Fifteen town owned and operated dumps were open. Recycling efforts were an unorganized variety of public and private efforts with the Authority providing technical and educational support. The Authority-Rotary sponsored periodic magazine collection drives. |
| 1992 | All but three town dumps closed. Malone, Saranac Lake, and Tupper Lake served as consolidation landfills until the Authority landfill opened. The Authority initiated a recycling drop-off program at the consolidation landfills. Newspaper, clear glass, and steel cans were collected. Glass and cans were collected as a commingled stream. Local private waste management firms including R. A. Bronson, Malone, New York and Lake Placid Disposal, Lake Placid, New York provided transportation, processing, and marketing services to the Authority. |
| 1993 | The Authority expanded recycling efforts to include corrugated containers, office paper and natural HDPE plastic (milk jugs). A local private sector waste management firm, R. A. Bronson, Malone, NY provided transportation, processing, and marketing services to the Authority. Difficulties in processing the commingled glass and steel can mix led to the decision to begin collection of materials separately. The Authority, together with Clinton and Essex Counties, established the North Country Business Recycling Program. |

- 1994 The consolidation landfills closed. The Authority opened the regional landfill at Constable, NY. Three transfer stations, in Malone, Lake Clear and Tupper Lake, were opened to provide residential and commercial waste disposal and recycling services. Authority owned trucks transported recyclable materials to R.A. Bronson in Malone, NY for processing and marketing.
- 1995 The Authority continued to accept glass, newspaper, corrugated containers, office paper, natural HDPE plastic and steel cans. R. A. Bronson, Malone, NY provided processing and marketing services. The Recycling Coordinator position was eliminated from the Authority budget.
- 1996-1997 Authority recyclables were sent to RARE (Recyclage Alexandria Recycling Equipe), Alexandria, Ontario for processing and marketing. Collection was expanded to include magazines, #1 plastics, colored HDPE, boxboard and junk mail. All paper was commingled and later sorted to grade by RARE.
- 1998-2000 RARE initiated a processing fee to compensate for lagging markets and to subsidize transportation costs. The Authority rejected the fees and terminated its relationship with RARE believing that the processing costs were excessive. Marketing of commingled paper was problematic as the Authority could not economically obtain either public or private sector processing services. The Authority purchased two vertical down stroke balers for the Malone and Tupper Lake transfer stations. Corrugated and plastic containers were baled at these locations, and transported to Malone for sale. The Authority sold mixed material loads to a local waste management company, Casella Waste Management Inc., Rutland, Vermont. Glass was transported to the Authority landfill, crushed and utilized in road construction when feasible and in the construction of leachate recirculation drainage beds. A chipper was purchased by the Authority to process yard waste collected at the transfer stations. A satellite transfer station was opened in St. Regis Falls in 1999.

2001-2004 Authority formalized contracts with American Iron and Metal Co. Inc. to transport and process scrap metal produced in the system. The Authority made arrangements with Serkil, LLC in Essex County and Waste Stream Inc. of Potsdam to process mixed paper. Corrugated cardboard and plastic continue to be baled in Malone and Tupper Lake. This material is sold to markets in Canada and the United States. Glass is transported to the landfill and crushed and mixed with aggregated for in cell road construction. Yard waste is chipped with the Authority chipper. The satellite transfer station established in St. Regis Falls in 1999 continues to operate. Batteries are collected and either shipped to AIM or Massena Metals in Massena. Currently, the existing system provides reliable market outlets and is efficient in the use of available labor and transportation resources.

2004-2007 The Authority continued with it's contracts and processing facilities as described above. The Authority constructed cell 3 of the landfill in 2003. It was placed in operation in June 04. Airspace is available until June 2009. Cell 4 will be constructed in the summer of 2008 and be available for use as required.

The Authority updated its Solid Waste Management Plan in 2005. This was approved by the DEC and extends our planning period from 2010 to 2020. This update included an increase in allowable daily and annual tonnage. The year ending June 2007 shows an improvement in our monetary position. This improvement will allow more funds to be allocated to recycling.

The Authority is currently working on a long term footprint expansion. This will ensure the viability of the solid waste management system. It will ensure the continuation of a recycling program and improvements to it as capital becomes available.

The Franklin County Legislature enacted Local Law 3 in August 2007 as proposed in the updated SWMP.

The law became effective January 2008. We anticipate the enactment of flow control will increase cash flow and allow allocation of funds to upgrade and improve the recycling program as envisioned in the updated SWMP.

Table 1
FRANKLIN COUNTY RECYCLING
TONS RECYCLED
1990-2007

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Paper																		
ONP	48	142	187	Na	Na	120	131	*	*	*	*	*	*	*	*	*	*	*
OCC	29	30	241			155	213	281	194	161	130	170	113	99	101	109	103	98
OMG	0	65	216			20	*	*	*	*	*	*	*	*	*	*	*	*
OP	0	0	34			20	*	*	*	*	*	*	*	*	*	*	*	*
Mixed	9	18	34			---	6	279	76	53	262	254	226	261	336	322	302	308
Glass																		
	10	38	137			192	150	107	31	178	46	164	60	68	54	80	72	68
Metal																		
Cans	0	21	172			104	**	**	**	**	**	**	**	**	**	**	**	**
Scrap	544	853	669			374	469	512	150	418	404	788	752	817	565	689	592	499
Plastic																		
HDPE(#2)	---	---	---			29	32	34	5	61	17	29	18	13	16	26	37	24
PET(#1)	---	---	---			---	5	7	6	11	16	19	13	17	25	11	20	14
Other	2	13	22			5	---	---	---	---	---	---	---	---	---	---	---	---
Food Waste																		
	---	---	235^			---	---	---	---	---	---	---	---	---	---	---	---	---
Yard Waste																		
	0	130	191			Na	Na	30	130	163	171	228	274	355	285	237	238	228
Tires																		
	---	---	---			40	50	110	78	59	116	123	67	186	143	145	132	246
Sludge																		
	---	---	---			629	656	582	540	1011	1024	1422	1752	1511	1797	1985	2105	2298
Batteries																		
	---	11	6			Na	5	4	3	Na	10	7	9	12	7	22	10	6
Total	642	1321	2144	Na	Na	1688	1717	1946	1213	2115	2196	3203	3286	3340	3329	3626	3611	3789

Na not available * included in mixed paper tonnage
 --- not included in recycling program

** included in scrap metal tonnage
 ^ private sector recycling

PRESENT RECYCLING PROGRAM

Facility Locations and Hours of Operation

Recycling collection and services are provided at the Authority's three major transfer stations located in Tupper Lake, Lake Clear, and Malone. These stations accept materials from residential and commercial customers. A fourth collection site in St. Regis Falls (Town of Waverly) accepts recyclables and is open only on Saturdays. No other services are provided at this site.

Malone Transfer Station
Cady Road
Malone, New York
Monday through Saturday, 7:45am to 3:30pm

Lake Clear Transfer Station
Route 30
Lake Clear, New York
Monday, Tuesday, Thursday through Saturday, 8am to 3:30pm

Tupper Lake Transfer Station
Big Wolf Pond Road
Tupper Lake, New York
Monday through Wednesday and Friday through Saturday, 7:45am to 3:30pm

Town of Waverly Transfer Station
St. Regis Falls, New York
Saturdays only, 8am to 3 pm

Materials and Services

The Authority's current recycling program involves collection of the following materials and provides the following services:

Materials collected:

- Corrugated containers (OCC)
- Commingled newspaper (ONP), magazines (OMG), boxboard, junk mail, office paper, and telephone books
- Clear glass containers
- Natural and colored high density polyethylene (HDPE) and polyethylene terephthalate (PET) plastic bottles
- Commingled scrap metal and steel cans, aluminum cans and foil products
- Waste tires
- Lead-acid batteries
- Yard waste

Services provided:

- Refrigerant recovery and recycling from discarded appliances with freon

Collection, Processing and Marketing

OCC, HDPE and PET are baled in Tupper Lake and Malone Transfer Stations using small down stroke balers. OCC/HDPE/PET material is collected in roll-off containers at the Lake Clear Transfer Station and sent to Malone for baling. Material, from Tupper Lake is transported to Malone and stored until truckload quantities are available for marketing. Mixed loads of OCC and plastic are sold to Canadian mills via brokerage services provided by Forest Fibers Inc. Brossard, Quebec..

Commingled paper is collected in roll-off containers at each transfer station. Since 2001, the Authority through an arrangement with Serkil, LLC of Essex County, ships mixed paper to their facility for processing and sale. On a fee basis, the Authority also ships mixed paper to Waste Stream Inc. in Potsdam where it is processed into animal bedding.

Glass containers are collected in open top containers at all transfer stations. The glass is transported back to the Authority's landfill, crushed and used for road construction within the landfill.

Commingled scrap metal and steel cans are collected in roll-off containers at the Landfill and Tupper Lake. Tupper Lake and Landfill scrap metal is transported to the Malone transfer station where it is transferred to large 75 yard roll-off containers provided under contract by a local scrap metal processor, American Iron and Metal Co. Inc., Montreal, Quebec.

Waste tires are stored at each of the three transfer stations and the landfill facility. They are periodically loaded into dump trailers and transported to Casings Inc. in Catskill, NY for processing or the Lafarge Cement Plant in St. Constant Quebec for use as tire derived fuel. In 2007, the Authority began using 50 yard containers for the storage of tires at each of the facilities. This provides a much better storage and handling capability. When the containers are full, they are either shipped directly or reloaded into larger trailers for transport to disposal facilities.

Lead-acid batteries are collected at each of the three transfer stations in weatherproof concrete vaults. Periodic collections are made by Authority staff and batteries are transported to American Iron and Metal Co., Inc., Montreal, Quebec for recycling or to Massena Metals in Massena, NY.

Yard waste is collected and composted in a simple windrow/pile system. A burn permit has been issued by NYSDEC for the Lake Clear Transfer Station where brush is occasionally burned. In 2007, the Authority disposed of its chipper. The small volume of waste and the danger associated with its operation did not justify keeping it.

Appliances containing ozone-depleting refrigerants are stored on site until refrigerants are recovered for recycling. Appliances are then recycled with other scrap metals.

EVALUATION OF THE PRESENT RECYCLING PROGRAM

Most successful recycling programs are preceded by successful (i.e. revenue generating) solid waste disposal programs. As previously discussed, the Authority has struggled to establish a stable revenue generating disposal system, since the opening of the regional landfill. These efforts which have been the Authority's primary objective during the past several years have to some degree been realized. In conjunction with this monetary improvement, the Authority has assembled and operates a reasonably successful recycling program utilizing limited resources and minimal infrastructure.

In the 2001 CRA, the Authority established a series of measures and an implementation schedule aimed at improving the recycling program. These included amongst other things:

- The improvement of scrap metal handling

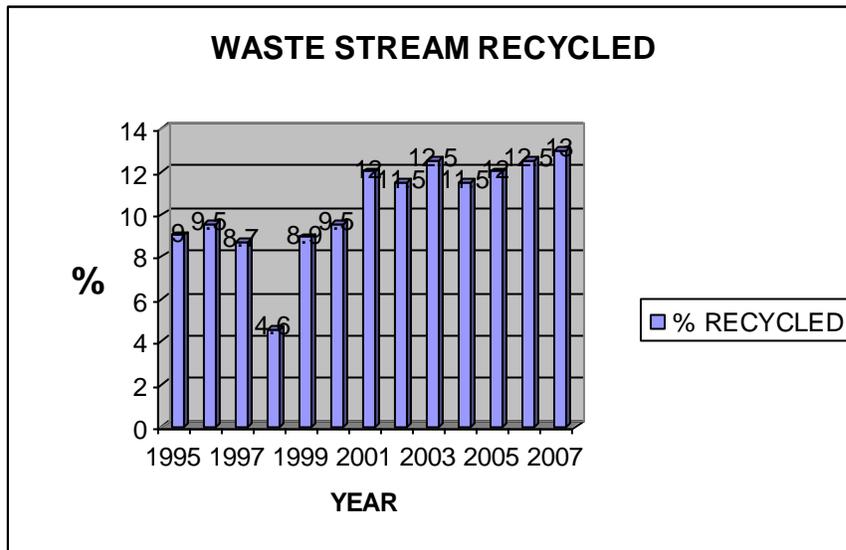
- The improvement of glass handling

- The installation of new and improved signage at the transfer stations

- Acquisition of more recycling containers.

- Review of a new MRF facility or improvement of existing infrastructure.

During this period, actions were taken on each of these proposed improvements. A review of the volumes of recyclables handled during the last three year period shows a volume increase. The rate of recycling averaged 8.4% in the period 1995-2000. In the 2001- 2003 period recycling increased to an average of 12% of waste handled by the Authority. In the 2004- 2007 period recycling increased slightly to an average of 12.5 %.



On June 19, 2004 a HHW collection day was held at the landfill. Of the 139 pre-registrants, 128 actually participated in the event. Approximately 13 tons of household hazardous waste was delivered to the Landfill for further processing. Total cost of the event was \$ 30,885.00. The Authority was awarded \$14,413 from the State of New York for sponsoring the HHW collection day.

On June 18, 2005 a HHW was held at the Lake clear transfer station. The environmental contractor was Heritage Environmental of Columbus Ohio operating from offices in Burlington, Vermont. There were a total of 107 county residents who participated in this HHW day. The total cost of the event was \$ 26,216. The Authority received a 50% grant from the state of New York for holding the HHW day.

On August 25, 2007 a HHW was held at the Landfill. The environmental contractor was Environmental Products and Services of Vermont. Sixty one residents registered to participate. Six did not show up, however 21 other unregistered residents did participate for a total 88 county residents. The total cost of the event was \$ 22,824.87. The State of New York will pay 50% of the overall cost or \$ 11,412.43

Collection

The current collection system is described below.

Corrugated cardboard, HDPE and PET are processed on site in Tupper Lake and Malone. This system works well, reduces transportation costs and limits the number of containers required for collection. Corrugated cardboard, HDPE and PET is collected in bulk at Lake Clear and transported in roll-off containers to Malone for processing.

Glass used as a construction aggregate at the Authority's landfill is collected in roll off containers at the transfer stations. The glass is hauled to the landfill where it is crushed and used for road construction within the cells.

The commingled collection of steel cans and scrap metal was unique and worked well until the price of scrap steel dropped to record low prices in 2003. At that time, our contractor requested that we minimize the amount of tin mixed with the scrap metal. Since that time tin cans have been collected separately and shipped to Serkil, LLC for further processing. Since the cans can be backhauled, the overall economic impact of this change has been minimal.

The commingled paper stream is collected in roll-off containers that maintain the integrity of the material. Spare containers are available to ensure adequate handling capacity. The paper is either transferred to Serkil, LLC. for further processing and marketing or to Waste Stream, Inc. in Potsdam for shredding and use as animal bedding. Although shipment to Potsdam is the less cost effective of the two markets, it ensures our ability to keep containers available at the transfer stations.

Lead-acid batteries are collected at each of the transfer stations and stored in weatherproof concrete vaults. Batteries are collected periodically by Authority staff and transported to Malone where they are palletized; wrapped and shipped either to American Iron and Metal Co. Inc. or to Massena Metal.

Waste tires are stored at each of the three transfer stations and the landfill facility. They are periodically loaded into dump trailers and transported to to Casings Inc. in Catskill, NY for processing or the Lafarge Cement Plant in St. Constant Quebec for use as tire derived fuel. In 2007, the Authority began using 50 yard containers for the storage of tires at each of the facilities. This provides a much better storage and handling capability. When the containers are full, they are either shipped directly or reloaded into larger trailers for transport to disposal facilities.

The Authority recognizes that additional containers for recyclables improve the efficiency of the recycling operation. The Authority has increased the number of containers available for recycling during the review period. Further acquisitions will be made as deemed necessary and as resources allow. Currently the Authority has dedicated containers for storage of recyclables. The Authority continues to evaluate the needs for containers in the recycling system and will add them as necessary.

FUTURE RECYCLING PROGRAM

During the last three years, the Authority's recycling program has continued to improve. Our objective to increase the volume of recyclables through improved management of the recycling portion of the system was met with some success. Infrastructure improvements mainly the rebuilding and reorganization of the recycling building in Malone were carried out in Malone..

In the next period 2007-10 consideration will be given to the establishment of a dedicated recycling facility at the landfill. Improvements have been made to the system and will be maintained but a dedicated facility at the landfill is probably the best solution for operation and management of the recycling system.

Materials and Services

All materials currently collected will remain in the program. Categories may be expanded to include additional items as marketing opportunities allow. Material categories will continue to be organized as follows:

- Corrugated containers (OCC)
- Commingled newspaper (ONP), magazines (OMG), boxboard, junk mail, office paper, and telephone books
- Clear and colored glass containers
- Natural and colored high density polyethylene (HDPE) and polyethylene terephthalate (PET) plastic bottles
- Aluminum cans and foil products
- Mixed scrap metal (ferrous and non-ferrous)
- Waste tires
- Lead-acid batteries

Services provided:

- Refrigerant recovery and recycling from discarded appliances

Collection, Processing and Marketing

OCC, HDPE, and PET will continue to be baled at the Malone and Tupper Lake Transfer Stations. Lake Clear will continue to collect loose materials in roll-off containers for later transport to the Malone transfer station for baling. Baled OCC, HDPE and PET plastics will continue to be marketed to Canadian mills via brokerage services provided by Forest Fibers Inc., Brossard, Quebec.

The current collection of commingled paper in roll-off containers works well. As the market dictates other options may be considered. An optional commingled paper market utilizing Haycore Inc. of Belleville, Ontario has been explored. An alternative to commingled paper would be a source separated system that would collect three categories of paper separately (ONP, OMG and Mixed Paper) in gaylord boxes, stored in van trailers located at all three transfer stations, and transported to Serkil, LLC in Lewis, New York for processing and marketing. Serkil, LLC markets currently include Kruger Paper Company Inc., (ONP, OMG) and the Cascades (Mixed Paper) reached via brokerage services provided by Forest Fiber, Inc. Brossard, Quebec. This may improve the long term markets of collected paper.

Glass (all colors) will continue to be collected in roll-off containers and transferred from all transfer station to the Authority's landfill. Glass will be crushed on a regular basis using the Caterpillar 826 landfill compactor and used in the construction of landfill roads.

Mixed scrap metal will continue to be marketed, as has been the case for the past three years, through American Iron and Metal Co. Inc., of Montreal, Quebec. The Authority will continue to provide container service from the Tupper Lake Transfer Station and Landfill. These containers will be transported to Lake Clear or Malone as needed and transferred into the scrap dealer's container. This system has significantly reduced trucking and transfer costs. Cans will be shipped to Serkil LLC. for processing. .

Lead-acid battery collection will continue as currently practiced. Batteries are placed in weatherproof concrete vaults, periodically collected by Authority staff, and recycled at American Iron and Metal Co. Inc., Montreal, Quebec or Massena Metals, Massena NY.

Infrastructure Development

The Authority recognizes that additional collection equipment, materials handling and processing equipment, and facility upgrades will continue to be required into the future. Improving the Authority owned processing equipment and facilities will provide long term stability to the Franklin County recycling program. The utilization of an intermediate processor, Serkil, LLC will continue as the Authority feels this is an economical and efficient method to process and market some materials.

In 2005, the Authority improved its small materials recovery facility (MRF) at the transfer station in Malone, New York. This facility serves as the primary processing and warehousing facility. This building was improved through the elimination of pillars, access doors and an improved loading dock. These improvements facilitated materials handling and optimized labor efficiency. The Authority will review the potential for a facility at the landfill.

Equipment and facility upgrades continue to be evaluated at each of the transfer stations. Lessons learned from the changes to the Malone facility have been implemented at the other transfer stations. Additional roll-off containers, van trailers, and material handling equipment is needed for continued improvement of the system.

Public Education / Information

Signage and printed information continues to be updated as necessary. The Authority upgraded signage at all transfer stations to clearly identify materials collected. This information helps improve public participation in the recycling program.

Although improved, the Authority's limited financial resources do not permit reinstatement of a full time recycling coordinator; a position that has remained vacant since 1996. The Authority does recognize that limited staffing can result in lapses in program oversight. In 2006 the Authority hired a staff member to deal specifically with the recycling program at the Malone Transfer Station and ensure residents were given opportunity to recycle. We have seen significant improvements to the recycling program since this addition of staff. Internal efforts continue to maintain and improve the recycling program. The Authority will also investigate funding through the New York State Department of Environmental Conservation's Municipal Waste Reduction and Recycling Program for educational activities.

IMPLEMENTATION

The Authority's intent is to continue to implement changes on an ongoing basis to the existing program as needs arise.

The Authority will continue to improve the existing program through the purchase of more containers and search for other outlets for recyclable materials.

As cash flow improves the Authority will review the possibility of a materials handling facility at the landfill.

2008

Winter Maintenance to material in Malone
Improve heating in this building
Change access doors

Spring Improve loading docks
Re-grade access to materials handling building
Improve storage and handling of recyclables in Lake Clear

2009

Winter Review the possibility of MRF building construction at landfill

Summer If viable, consider design, construction and grant funding

2010

Spring Construction of recycling building

WASTE CHARACTERIZATION

The data as presented in the previous updates and repeated below continues to effectively describe the materials handled and the ongoing potential for recycling.

Scale data from 1995 to 2000 has been averaged and used as the “base year” to establish projected annual waste generation in Franklin County (Table 2, page 21 and Table 3, page 22). The waste generation projection from 2001 forward is based upon 2000 census data. This data indicates a total county population of 51,134 and an average rate of growth of 1 % per year during the previous decade.

An average of 22,052 tons of solid waste was disposed of during the 1995-2000 period. This “base year” figure includes residential and commercial waste, non-hazardous industrial and institutional waste, construction and demolition debris, waste water treatment plant sludge, and recyclables recovered from the waste stream. This figure best represents the total average waste stream available for recovery of recyclable materials in the future.

Seasonal variations in the amount of wastes generated are readily apparent in the monthly scale data for the period 2002-2007 (Figure 1, page 23). Two main factors account for this variability. The first is tourism. The southern portion of Franklin County has a large seasonal tourist population, especially in the Saranac Lake area. The second reason for the seasonal variation is weather. The winter weather in the area is severe. January and February generally have the coldest temperatures and the highest snowfall. Residents often delay trips to the landfill during inclement weather creating a seasonal shift in disposal rates.

Using information on average total tonnage (22,052) and population figures (51,134) an average waste generation rate of 0.43 tons per person per year can be established. Using this estimated generation rate and the projected population for the next 5 years in Franklin County, a projection of waste quantities can be established. Table 3 (page 22) shows the projected population (based on a 1% annual increase) and the projected waste generated.

Waste Composition

Waste composition, the proportion of each component in the waste stream, varies widely in studies conducted throughout the Country and the State. Variations may be caused by many factors including seasonal changes, economics, population, convenience of disposal, and other political and social factors. Franklin County’s waste composition can be expected to most closely approximate those in other rural, sparsely populated Counties with limited industry, which also experience seasonal tourist related population fluctuations.

Using a waste characterization study from Hamilton County, estimates from Clinton County, and published estimates from the United States and the Northeastern U.S. (Franklin Associates, McGraw Hill) composition of the waste stream is presented in Table 4 (page 24).

Potentially Recyclable Wastes

The recycling potential of any given material in the waste stream is determined by several factors: the quantity of material available in the waste stream, the ability to separate, collect, process and market the material, and the overall economic feasibility of doing so. In general, those segments that make up the largest percentage of the waste stream are more likely to be targeted for recycling. As is true for all recyclable materials, any one component will never be 100% available for recycling. A certain portion of each will not be recyclable.

Table 4 (page 24) shows the estimated quantity of each component in the waste stream, the percent potentially available for recycling (the recycling potential), and the quantity potentially recyclable from the “base year” waste stream (7433 tons). The following section examines the components of the waste stream and outlines their potential for recycling in Franklin County.

Paper

Paper comprises the largest segment of the waste stream, an estimated 38% by weight in Franklin County. The paper stream is composed of many different types of paper, and the recyclability of each varies widely.

The potential for recycling ONP, OCC, OP, OMG, and mixed paper (boxboard, junk mail, telephone books and assorted office waste paper) is high. The potential for recycling other segments of the paper category (including poly-coated gable top cartons, hard cover books, etc.) is much lower. Much of the “other” category is unrecyclable, and includes disposable paper products such as paper toweling and tissues, plates and other food packaging and preparation products.

The largest single factor limiting the recyclability of paper is the wide spread use of burn barrels. Seasonal recovery rates can be dramatically different with summer tourism increasing supply and wood heat users reducing supplies in winter months.

Glass

Glass comprises 8% by weight of the waste stream in the County. The glass segment is composed of clear, green and brown glass containers, and other glass such as plates and dishes, plate glass, mirrors and ornamental glass. The estimated recovery of clear glass containers is high.

While traditional markets for glass are few in number, far from the County, and require very high quality material, local use of glass as a construction aggregate is the Authority's preferred market.

Metal

Metal comprises about 7% of the waste stream in the County. The metal component is divided into the following categories and percentage of the total waste stream:

Ferrous and nonferrous scrap	5.0%
Steel cans	2.0%
Aluminum (cans & foil)	0.5%

Historically, ferrous and nonferrous scrap has been the most recycled component of the waste stream in the County. Steel can recycling is well established and all factors contributing to a high recycling potential are favorable for metals.

The majority of aluminum cans are covered under the New York State Bottle Bill. The remaining portion of aluminum cans, such as juice and pet food cans, and foil make up a small part of the waste stream, and can be recycled easily with steel cans without requiring any changes in collection, processing or marketing.

Plastic

Plastics make up 7% by weight of Franklin County waste. While reliable markets exist for HDPE #2 blow-molded bottles (e.g. milk jugs and detergent bottles), other plastic resin markets are sporadic or non-existent. Plastic collection in large rural counties is expensive because the high volume/low weight characteristic of this material drives transportation costs up. This aspect is minimized in Franklin County by utilizing small down stroke balers to densify material prior to transport.

Food Waste

Food wastes make up an estimated 12% of the waste stream, and are generated by most sectors of the County. The recycling potential used in calculating the recycling projections for food waste is zero. Although food waste is a large portion of the waste stream, the practical aspects of collection and processing significantly reduce its recyclability.

Reducing food waste in the waste stream is the most cost effective method for the handling of this material. Residents are encouraged to operate compost piles to derive both the economic benefits of avoided disposal and the beneficial effect of compost on garden soil. Composting is perhaps one of the few circumstances where the rural character of Franklin County is actually an asset to recycling efforts. The only large generators of food waste that are currently composting are the State prisons. Cafeteria wastes are mixed with wood chips, as a bulking agent, and the resulting compost is used in landscaping projects at the prisons.

Yard Waste

Yard waste is estimated at 5% of the waste stream, much lower than national figures, and reflects the rural nature of the County. Many residents compost these materials or dispose of them on-site. However, the material placed in the waste stream has a high potential for recycling. Yard waste is easily segregated and technology for composting is relatively simple.

The Authority operates yard waste composting sites at each of the three transfer stations. The low-tech windrow/pile method is used. The end product is available for use by residents and for landscaping projects at the various facilities

Tires

An estimated 0.5 percent of solid waste is composed of automobile tires in Franklin County. Tires were added to the County's list of mandatory recyclables as of January 1993, excluding existing stockpiles. The potential for recycling tires is high, as they are easily segregated from the waste stream.

Textiles

Textiles make up a small portion of the waste stream, an estimated 1.5 percent. Textile recycling is a well-established technology, with businesses in place that sort, bale and market a wide range of reusable and recyclable textiles. Like other recyclable materials (e.g. paper) textiles must be kept clean and dry to be recycled. Unlike other recyclables this can be particularly difficult during the initial collection phase as well as during storage and transport. The normal “dirt and grime” that is accepted when collecting, baling, and storing paper for recycling can render textiles unrecyclable. Textile recycling generally takes place as “clothing drives” to avoid these problems.

Construction and Demolition debris

Construction and demolition debris (C&D) is comprised of a large list of materials, ranging from soil, bricks and concrete, to wood, glass and plastic. *Resource Recycling* (August 1991), reports that William F. Cosulich Associates, after several studies of counties and towns in New York State, estimated that C&D had the following composition:

Rubble based material	50%
Concrete, bricks, cinder blocks, dirt, asphalt paving materials	
Wood	25%
Pallets, land clearing debris, Construction waste, demolition waste, Treated wood	
Other	25%
Metals, tar based materials, plaster and Sheetrock, insulation, corrugated, etc.	

The recycling potential of C&D is variable, depending upon the specific C&D component. Some materials, such as insulation have limited recycling potential. Others, such as uncontaminated wood wastes and scrap metal, have a variety of options for reuse and recycling. There are limited options for recycling C&D locally. The overall potential for recycling C&D is near zero, given the high degree of contamination, regulatory oversight and required economic input.

Sludge

Waste water treatment plant sludge represents about 5% of the current waste stream. This material is utilized as an alternative daily cover at the Authority's landfill.

Miscellaneous

The miscellaneous component identified in Table 4 (page 24) includes such materials as waste oil, lead-acid batteries and other assorted inorganic wastes. State regulations have created recycling options for lead-acid batteries and waste oil and both are prohibited from disposal in the landfill. To help insure this, automobile batteries are collected by the Authority for recycling by the scrap metal industry.

Table 2
Franklin County Waste Stream (Tons) 1995-2007

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Malone Transfer Station	5435	4252	6515	8956	7719	6131	7217	8136	7827	8853	9045	8016	6921
Tupper Lake Transfer Station	3637	3112	3332	3874	4095	4390	4453	4300	4679	4590	3414	5193	5354
Lake Clear Transfer Station	3478	3899	4319	4498	5507	5556	6435	8199	6783	7469	8486	7910	7943
Waverly Transfer Station	----	----	----	----	144	143	201	150	106	96	105	127	132
Waste Hauled Directly To Landfill	<u>5080</u>	<u>4960</u>	<u>6182</u>	<u>7506</u>	<u>4067</u>	<u>4648</u>	<u>4836</u>	<u>4426</u>	<u>4112</u>	<u>4502</u>	<u>5443</u>	<u>4211</u>	<u>4953</u>
Total MSW	17,630	16,223	20,348	24,834	21,532	20,868	23140	25202	23506	25512	26593	25547	25303
Total Recyclables Recovered*	<u>1688</u>	<u>1717</u>	<u>1946</u>	<u>1213</u>	<u>2115</u>	<u>2196</u>	<u>3203</u>	<u>3286</u>	<u>3340</u>	<u>3329</u>	<u>3626</u>	<u>3611</u>	<u>3789</u>
Total Franklin County Waste Stream	19,318	17,940	22,294	26,047	23,647	23,064	26343	28488	26846	28841	30219	29068	29092
Percentage recycled	9	9.5	8.7	4.6	8.9	9.5	12	11.5	12.5	11.5	12	12.5	13

Average Total Franklin County Waste Stream 1995-2000 = 22,052 tons = "Base Year"
Total Recyclables Recovered from Table 1.

Table 3
Franklin County Waste Stream Projection for 2001-2007

	Base Year*	2001	2002	2003	2004	2005	2006	2007
Population	51,134	51,645	52,161	52,683	53,210	53,742	54,279	54,821
Estimated Waste	22,052	22,273	22,496	22,721	22,948	23,177	23,409	23,643
Actual tons		26,343	28,488	26,846	28,842	30,219	29,068	29,092

* Population is Year 2000 census count. The annual average rate of population increase of 1% reported from 1990 to 2000 was used, anticipating a similar rate of growth will occur in year 2001 and forward. Base Year estimated waste tonnage is the average annual tonnage reported for Franklin County from 1995-2000 (Table 2).

** Actual tonnage likely reflects a higher use of transfer stations as the price of curbside pickup increases rather than an increase in population or an increase in personal production of refuse.

Table 4
Franklin County Estimated Waste Composition
 Year 2000*

Components	Estimated Composition (% Total)	Recycling Potential (%)	Available in Base Year (22,052 tons)
Paper	(38)**		
<i>Newspaper</i>	5.5	65	788
Corrugated Cardboard	12.5	65	1792
<i>Mixed Paper</i>	4.0	50	441
Magazines	1.5	65	215
Other	16.0		
Glass	(8.0)		
<i>Clear containers</i>	5.0	75	827
Amber containers	1.5	75	248
Green containers	0.5	75	83
Other	1.0		
Metal	(7.0)		
<i>Steel Cans</i>	2.0	75	331
Aluminum cans/foil	0.5	65	72
Ferrous & non-ferrous scrap	4.5	80	794
Plastic	(7.0)		
HDPE (#2 bottles)	1.5	65	215
Other	5.5		
Food Waste	12.0	0	
Yard Waste	5.0	25	276
Tires	0.5	75	83
Textiles	1.5	50	165
Construction & Demolition	9.0	0	0
Sludges	5.0	100	1103
Miscellaneous	7.0		
TOTAL	100		7433***

Table 4 footnotes: (continued on next page)

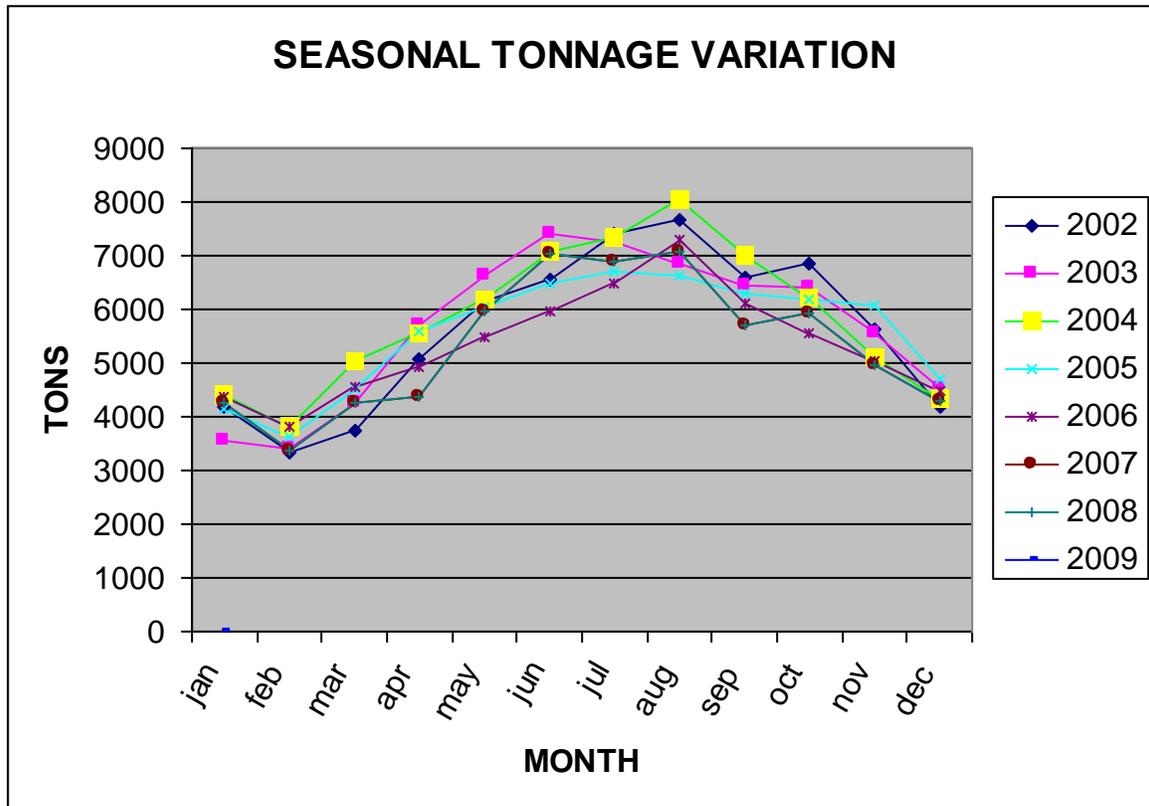
Table 4 footnotes:

* Updated revision of the 1993 Estimated Waste Composition based on information from Clinton County CRA, Hamilton County CRA, Characterization of Municipal Solid Waste in the United States 1990 Update and The McGraw Hill Recycling Handbook, 1993.

** Percentages in parenthesis represent the total percentage for each major component and are not added into the percent total.

*** Represents an average recycling rate of approximately 34%.

FIGURE 1



THE MARKET

Traditional Markets

In the world of recycling, marketing has developed a broad meaning. A market for recycled materials could be anything from a local farmer using waste paper for animal bedding to an industry involved in the manufacture of recycled products.

The Authority has kept abreast of market developments and trends through various means including contact with other recycling professionals, subscribing to market publications such as “Recycling Times” and the “OBM”, reviewing the New York State Department of Economic Development’s publications, and by direct market solicitations and contacts. Internet-based information is also readily available.

In contrast to the concerns about market availability shared by all upstart municipal programs some ten years ago, there are well-established markets for all of the materials collected in the Authority’s recycling program. As discussed previously, processing, not marketing, is the Authority’s critical weakness. Processing, or the ability to sort and bale recyclable materials, will provide long-term stability to the Authority’s recycling program.

Location clearly plays an important role in the long-term marketing of materials in Franklin County. Although located in a largely rural portion of New York State, Franklin County’s close proximity to a diverse group of Canadian paper, plastic and steel mills (Kruger, Cascades, Smurfit-Stone, Stelco McMaster, Sidbeck Dusco..) will likely dominate market choice. Several New York State mills (Solvay Paperboard, Bonded Insulation, Norfolk Paperboard..) are also accessible markets. These end-users will be accessed through the well-established channels provided by brokerage firms (Northstar Pulp and Paper, Canusa, JC Fibers, United Paperstock, Smurfit-Stone) that typically provide prompt, reliable transportation services, competitive pricing, and timely payment.

The Authority has developed specifications for materials with general market requirements in mind. Any specifications that are easily passed on to users of the system are included in the Authority’s preparation requirements. This is generally the most cost-efficient way to obtain a particular specification.

While specifications detailing material preparation and acceptable contamination levels vary somewhat from mill to mill the Authority will follow generally accepted industry practices as outlined below.

Newspaper

Clean, dry and baled.

Paper Stock Institute Guidelines are standard.

Newsprint and associated inserts delivered with the newspaper are acceptable; brown-free baled material yields grade 8 news prices.

Corrugated

Clean, dry and baled.

No waxed or coated material.

“Asian corrugated” content variable with market price and supply conditions.

Mixed paper

Includes junk mail, office waste paper, boxboard, telephone books and other low grade papers.

Clean, dry and baled.

Magazine/glossy

Clean, dry and baled.

Percentage of newsprint and white papers generally allowed, but always brown-free.

Glass

No food residue, caps, lids or rings.

Labels OK.

No laboratory glassware, plate glass, mirrors, pyrex, ceramics, etc.

Plastic –HDPE/PET

Baled.

Clean, with caps and rings removed.

Sorted by: resin type, manufacturing method, post-consumer use.

Steel cans

No food residue.

Labels OK.

Incidental aluminum cans and foil products acceptable.

Alternative Markets

One market alternative, finding new uses for materials within the local economy, has potential development possibilities that will be exploited by the Authority. Using crushed glass as a substitute for stone aggregate in construction projects can serve as a primary market for the Authority. The Authority currently utilizes crushed glass in construction of roadways at the landfill and as drainage material for installation of leachate recirculation beds. Other potential uses for crushed glass include use as an alternative daily cover and incorporation into gas venting layers during cell closure operations. Expanding its use to public works projects will provide an additional market.

The use of waste paper for animal bedding is another example of finding local uses for secondary materials. Although the Authority does not currently market paper to farmers, the option exists. Many local farmers and animal shelters currently use waste paper (secured directly from generators) or have experimented with its use in the past. Waste Stream Management, a private waste management firm located in Potsdam, NY continues to shred, bale, and sell waste paper to area farmers. The Authority will explore this option in the future by assessing potential demand (tons/yr), processing requirements, and costs and revenue estimates. The Authority believes that even a limited local use of paper can likely be developed as a potential secondary or back-up market for mixed paper recycling.

Closing the Loop

To help maintain existing recyclable markets, recycled product procurement is encouraged by the Authority. The Authority has used recycled paper for all public educational materials, thereby increasing awareness of the use of recycled materials. Recycled products have been promoted at many of the Authority's educational events, including workshops and fair displays. The Franklin County purchasing department has been supplied with a copy of the "Recycled Products Guide." The local availability of recycled products has increased significantly over the course of the past few years. Many residents, businesses, and institutions purchase recycled products within Franklin County.

OTHER RECYCLING

Other Municipal Recycling

Only one municipality (Tupper Lake) provides curbside collection of solid waste and recyclable materials. All collected materials are delivered to the Tupper Lake Transfer Station.

Private Sector Recycling

The region's three largest private waste haulers (R. A. Bronson, Waste Stream Management, and Lake Placid Disposal) are now owned and operated as divisions of Casella Waste Management Inc., Rutland, Vermont. Recyclable materials and waste collected by these companies are transported out of Franklin County. The Authority does not attempt to track and quantify this activity.

Industrial / Commercial / Institutional Recycling

There are few industrial large scale commercial operations within the County. In general, recyclables generated by the commercial sector enter the Authority's program via one of its three transfer stations or are exported from the county directly by the business or by one of the private waste hauling companies.

New York State Department of Corrections remains the largest institutional recycler. The Franklin County Correctional Facility continues to serve as a central processing location for several surrounding correctional facilities. Franklin Correctional continues to run a food waste composting program. The Authority has provided technical and marketing assistance in the past, but does not track and quantify institutional recycling efforts.

LOCAL LAWS

In August 2007, the Franklin County Legislature adopted Local Law No. 3 of 2007. This law delegates the Authority to manage solid waste and recyclables within the county and requires that all solid waste and construction and demolition debris generated within the county be disposed of at the Authority landfill.

In September of 2007 the Authority adopted regulations for the handling of solid waste within the county.

The local law and Authority regulations are included in this section.

