

# Recycling Baseline Study of Muskegon County - 2008

Prepared for:  
**Muskegon Area Sustainability Coalition  
Recycling Committee**

Prepared by:  
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Thank you for your generous support, interest and commitment to improving recycling efforts in Muskegon County!

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- Employers Association of West Michigan
- Muskegon Chamber of Commerce
- The Lakes Mall
- Montague High School's FFA Club

**NOTE: All information presented in this document reflects the work of Woods Consulting Group. The final formatting, editing, and organization of the information were completed by a project team from the Muskegon Area Sustainability Coalition Recycling Committee.**

## **Executive Summary**

The majority of households in Muskegon's urban and sub-urban areas have access to curbside recycling services either through a local government unit (Cities of Muskegon and Roosevelt Park) or through a contract with a private waste hauler. The majority of recycled items are taken to the Community Recycling Services facility in the Port City Industrial Park, which is operated by Allied Waste.

Households in the more rural areas (villages and townships) of Muskegon County can take their recycling to one of four transfer stations or contract directly with a waste hauler. There is very limited curbside recycling available in the rural areas. The townships of Blue Lake, Dalton, Fruitland, Holton, Montague, Whitehall, and White River and the cities of Whitehall and Montague do have access to transfer stations that offer recycling services.

Muskegon County residents can also take their household waste directly to the Muskegon County landfill, located on East Apple Avenue in Egelston Township. There they can recycle cardboard and metals by placing the items in separate bins on site.

Waste haulers operating in the county estimate that 25%-40% of households they service recycle on a regular or occasional basis. Appliances, tires, and motor oil are collected for recycling by a limited number of waste haulers. Most waste haulers accept paper, cardboard, plastics, metal cans, and glass for recycling. Since the waste collection industry has many small, locally-owned operators, policies toward recycling and source separation differ among the haulers. This causes confusion among households as evidenced by survey results of nearly 900 households in the county.

A survey of small to medium sized businesses in Muskegon County indicates relatively strong interest in reducing their waste stream and in the use of recycled products within their businesses. These same businesses also report struggling to locate a vendor that will accept their waste products for recycling or that the cost for such a service is prohibitive.

The City of Muskegon is the only entity with readily available information about the volume of recycled goods collected over time. Contacts with the independent waste haulers indicate that many of the small haulers do not track the recycling volumes on a regular basis. Woods Consulting Group did ask the haulers to begin collecting recycling volumes for future study comparisons. Allied Waste has concerns about the proprietary nature and did not share the information they have regarding volumes with Woods Consulting Group. Allied Waste does provide volumes of recycling to the City of Muskegon as part of their contract with the City to provide curbside recycling service to its residents.

The City of Muskegon's historical recycling information and its current waste collection system can provide a good "laboratory" for testing of various incentives and promotions to increase the level of recycling. Increasing the number of households that recycle will likely require eliminating existing confusion about what can be recycled and to what extent the waste must be separated by the household to prepare for recycling. The availability of a financial incentive to recycle may also encourage recycling in some households.

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## Introduction

The Muskegon Area Sustainability Coalition (MASC) began as a small committee of five (5) individuals in mid-2006 and has since grown into a Coalition with 30 endorsing members and 30-50 monthly meeting attendees. The principle of **Sustainability** is: The ability to meet the needs of the world today while assuring that future generations will have the resources and ability to meet their needs. It is an integrated focus of assuring economic prosperity, minimizing the negative impact of human activity on the natural environment, and the advancement of social equity for all. The MASC is working to achieve this goal for Muskegon County. More information on the MASC can be viewed at: [www.muskegonasc.org](http://www.muskegonasc.org), or at [www.sustainablemuskegon.wikispaces.com](http://www.sustainablemuskegon.wikispaces.com).

A group within the MASC thought that recycling would be an opportune way to show the local community how one component of sustainability may be practiced throughout businesses, households, and organizations. They were hopeful that if recycling efforts could be increased in Muskegon County, it would potentially bring new businesses to the area that would be able to process and use the recycled materials. These new businesses would create new jobs and increased recycling would reduce the amount of waste entering our landfills and being dumped illegally, thereby protecting our environment.

However, in order to prove the potential results of an eventual increase in recycling, it would be necessary first to know what level of recycling is occurring in Muskegon County. Therefore, the Recycling Committee of the Muskegon Area Sustainability Coalition was formed and efforts began to conduct a baseline study of recycling efforts in Muskegon County.

Through the generous donations of the companies and individuals listed in the Acknowledgment Section above, the Recycling Committee was able to commission the study, which was completed by Woods Consulting Group. The intent of the study was to accomplish the following:

- Identify and quantify the recycling efforts currently taking place in Muskegon County
  - Businesses
  - Households
- Quantify the volume of recycling that currently occurs
- Map the flow of waste materials
- Identify current gaps in service and potential linkages that may close those gaps.

## Research

Woods Consulting Group used various methods to gather data for the study. The methods included a mix of interviews, surveys, site tours, and internet research. Specific tasks included the following:

- Conducting personal interviews with private waste haulers, landfill operators, recycling businesses, and government agencies.
- Identifying and contacting major industrial groups and commercial groups that engage in industry-specific or broad-based recycling efforts; having them describe the type and volume of materials that are recycled and/or disposed into landfills; identifying opportunities and challenges – both operational and market issues that might prevent or encourage more recycling efforts.
- Conducting a written and electronic survey of small to medium size businesses in Muskegon County for the purpose of assessing their current efforts to recycle material in their waste stream; identifying barriers or problems that these businesses may be encountering in pursuing their recycling efforts.
- Summarizing the results of the interviews; identifying major trends, preparing an analysis of strengths, weaknesses, opportunities, and threats (SWOT).
- Collecting 130 intercept surveys at the Lake Mall utilizing student volunteers from Montague High School's Future Farmers of America Club.
- Mailing 2500 random surveys in Muskegon County.
- Utilizing the on-line tool Survey Monkey™ to reach individuals/households who may be more likely to answer an electronic survey. This group is not likely to represent a “randomly-selected” segment of the market and may be more biased for recycling.
- Utilizing the Muskegon Chronicle and the internet to inform county residents of the survey and encourage their participation.
- Researching recycling trends in general using the internet.
- Collecting and tabulating the survey results for the purpose of identifying gaps in understanding, identifying opportunities for service expansion or barriers that hinder service expansion and identifying misperceptions that may exist.

## Section 1: Inventory of Current Recycling Efforts

### Local Waste Haulers

The majority of recycling in Muskegon is done as an “added service” through the local waste haulers. In order to find out what recycling options are available to households and businesses, interviews were conducted with the major waste hauling companies that provide service within the county. The information presented below summarizes the recycling information gathered and additional information from the interviews can be found in Appendix A.

<b>Product</b>	<b>Allied</b>	<b>Ames</b>	<b>Kuerth's</b>	<b>RMS</b>	<b>Waste Management</b>
Paper	Yes	Yes	Yes	Yes	Yes
Cardboard	Yes	No	Yes	No	Yes
Plastic	Yes	No	Yes	Yes	Yes
Glass	Yes	Yes	Yes	Yes	Yes
Metal cans	Yes	No	Yes	Yes	Yes
<i>Above taken to:</i>	CRS	CRS	CRS	CRS	CRS
Appliances	Extra fee	Extra fee	Extra fee	No	No
Tires	No	No	No	Yes, if cut	No
Motor Oil	No	Yes	Yes	No	No
<i>Appl. taken to:</i>	Landfill	Randy's	Landfill	-	-
<i>Tires taken to:</i>	-	-	-	Landfill	-
<i>MO taken to:</i>	-	Landfill	Haz. waste	-	-
<b>% of customers that recycle:</b>	25%-35% (estimate)	25% (estimate)	30% (estimate)	40% (estimate)	No estimate
<b>Communities served</b>	Muskegon County	Norton Shores & LaketonTwp.	Rothbury to Grand Haven	Roosevelt Park Muskegon	Rural Townships

It is interesting to note that all of the haulers take their recyclables to CRS (Community Recycling Services at Port City Industrial Park), which is owned by Allied Waste. CRS accepts all the standard items, but the haulers vary in what they will accept. Additional notes of interest learned during the interviews include:

- Allied Waste operates CRS facility and Ottawa Farms landfill
- Allied operates “specialty” trucks to pick-up recycling items
- Ames only recycles residential waste (no commercial)
- Ames requires lids and labels be removed for glass bottles; requires paper items placed in paper bag for pick-up
- Kuerth's disposes of commercial waste at Muskegon County landfill
- Kuerth's disposes of yard waste at site in Laketon Twp.
- Kuerth's disposes of large appliances at Muskegon County landfill
- RMS will recycle yard waste for residential customers only

**Other Waste Haulers**

The following waste haulers were identified in interviews with township supervisors as operating in their jurisdictions. They appear to be small operators serving a very local market and may or may not collect materials for recycling.

- A-1 (based in Newaygo – serves Casnovia)
- Kriesel Sanitation (based in northern Muskegon county; serves Whitehall Twp.)
- MCK Enterprises (based in Montague – services White Lake Solid Waste Authority)
- SWS (Solid Waste Solutions) Waste Services (based in Egelston Twp. – serves Egelston and Ravenna)
- Lakeshore Disposal, Inc. (based in Laketon Twp. serves Laketon Twp. area)

**Transfer Stations**

The following is a summary of transfer stations currently operating in Muskegon County. Most of the transfer stations are operated by a local government unit (township or solid waste authority). The majority offer recycling services at the transfer station. Most of the waste collected at these transfer stations is disposed at the Muskegon County landfill. Details of each transfer station can be found in Appendix B.

<i>Location</i>	<i>Operated By</i>	<i>Waste Collection</i>	<i>Waste To</i>	<i>Recycling Service</i>
Cedar Creek	Township	Waste Only	Muskegon Landfill	NA
Dalton	Township	Waste & Recycling	Muskegon Landfill	Paper/metals/ Plastics/organics/ Many others
Fruitland	Township	Waste & Recycling	Allied Waste	Glass/plastic/ paper/corrugated/ waste oil/metal tires/Many others
Holton	Township Recycling for Newaygo Co.	Separate transfer station for recycling	Muskegon Landfill	Full range of items
Muskegon	Township	Waste Only	Waste Management	
Whitehall*	White Lake Solid Waste Authority	Waste & Recycling	Muskegon Co. Landfill	Includes waste oil and appliances

**Rural Area Services**

As noted above, a number of Muskegon County townships provide their residents with a transfer station location as a place to bring household waste. The majority of transfer stations also offer a recycling option for residents.

Most townships go no further in terms of waste collection or recycling services for residents. Three townships (Laketon, Moorland, and Sullivan) provide their residents with a limited number of “dump passes” on an annual basis. This ranges from 2 per year in Sullivan to 4 per year in Laketon and they essentially allow the resident to bring household waste to the Muskegon County landfill at no cost to the resident (township purchases the passes).

A second service offered by many of the rural townships is regularly-scheduled “clean-up” days (Fruitport, Egelston, Sullivan).

In most townships, residents contract directly with private waste haulers to pick-up their household waste. The waste haulers mentioned as serving the rural areas were the following: Allied, Waste Management, A-1 (Newaygo-based), Kuerth’s, Lakeshore, RMS, Kriesel, Solid Waste Solutions, and MCK.

The following chart summarizes the waste collection patterns in the rural townships

	<b>Dump Passes</b>	<b>Clean-up Days</b>	<b>Transfer Station</b>	<b>Waste Haulers</b>
<b>Casnovia</b>	No	No	No	A-1, Allied
<b>Cedar Creek</b>	No	No	Yes	Allied, Waste Mgmt., Kuerth's
<b>Dalton</b>	No	Yes	Yes	
<b>Egelston</b>	Yes	Yes	Yes/Shared	SWS, Allied
<b>Fruitport</b>	No	Yes	No	RMS, Allied
<b>Fruitland</b>	No	Yes	Yes	Allied
<b>Holton</b>	No	Yes	Yes	NA
<b>Moorland</b>	Yes	Yes	No	Waste Mgmt., Allied
<b>Sullivan</b>	Yes	Yes	No	RMS, Allied, Waste Mgmt.
<b>Whitehall</b>	No	Yes	Yes	Kriesel, Waste Mgmt.
<b>Laketon</b>	Yes	Yes	No	Allied, Keurth's, Lakeshore
<b>Montague</b>	No	Yes	Yes	Kriesel, Waste Mgmt.

**Notes:**

- Moorland Twp. Supervisor feels a joint transfer station operated in conjunction with Ravenna Twp. would be able to attract sufficient volume to meet the needs of both townships; residents of Moorland are reluctant to drive to Community Recycling Services to recycle (cost of fuel), but would like to drive to a site closer to home.
- Egelston Twp. Supervisor claims that the township’s greatest enforcement challenge involves junk cars and used appliances; she believes this indicates that interest in recycling is not strong.
- Dalton Twp. – contractors with a building permit in the township and a business address are allowed to bring waste to the transfer station site.
- Village of Fruitport contracts with RMS for residential waste disposal; RMS provides recycling services also and Village residents are billed on an annual basis by the Village for the service.
- No information was received from the following townships despite multiple contacts: Blue Lake and White River (both are partners in the White Lake Solid Waste Authority) and Ravenna.

**Municipal Programs**

The collection of household waste and recyclables is distinctly different in the urbanized areas of Muskegon. Residents are more likely to have curb-side recycling available to them. Waste collection and recycling are more likely to be performed under municipal contract (vs. each household contracting with a waste hauler), and the cost of both collection and recycling is more likely to be included in a household’s annual tax bill.

The following section summarizes the policies and practices of the major communities in the Muskegon “metropolitan” area regarding the collection of municipal waste and recycling. Additional information regarding waste management programs in the urban areas can be found in Appendix C.

<b>Municipality</b>	<b>Curb-side Recycling</b>	<b>City Service</b>	<b>Residents contract with Hauler</b>	<b>Waste Haulers in community</b>	<b>Transfer Station</b>
<b>Muskegon</b>	Yes	Yes	No	Allied	No
<b>Muskegon Heights</b>	No	Yes	No	Allied	No
<b>Muskegon Township</b>	Partial	Partial	Partial	Multiple Haulers	Yes
<b>Norton Shores</b>	Yes	No	Yes	Multiple Haulers	No
<b>North Muskegon</b>	Yes	No	Yes	Multiple Haulers	No
<b>Roosevelt Park</b>	Yes	Yes	No	RMS	No
<b>Whitehall/Montague</b>	No	No	Yes	Multiple Haulers	Yes

**Notes:**

- The cities of Muskegon and Roosevelt Park each contract with a single waste-hauler to collect both household waste and recyclables. Muskegon contracts with Allied Waste while Roosevelt Park contracts with RMS.
- Recyclables from both communities are taken to the CRS site in Port City Industrial Park.
- Waste from Muskegon is taken to the Ottawa Farms landfill while household waste from Roosevelt Park is taken to the Muskegon county landfill.
- Muskegon Township staff provides a waste collection service for a limited number of homes in the Township; the majority of township residents must contract with a private waste hauler.
- Residents of Norton Shores, North Muskegon, Whitehall, and Montague contract with individual waste haulers for both waste collection and recycling services. Multiple trucks from multiple haulers may be operating on the same street on the same day in each of these communities.

**Survey of Area Businesses**

The Muskegon business community is dominated by “small-medium” sized businesses according to the Muskegon Area Chamber of Commerce. The following section reflects some of the

challenges faced by small businesses in seeking to recycle their waste stream products and/or utilize recycled materials in their business.

The survey was distributed to two (2) business groups utilizing different formats:

- 600-plus surveys were mailed to members of the Muskegon Area Chamber of Commerce who had 10 or more employees.
- The Employers Association of West Michigan (EAWM) sent an electronic survey to its members utilizing the on-line service Survey Monkey™. Organizations who were members of EAWM and also the Chamber were removed from the direct mail list prior to its mailing in order to avoid duplication.
- Both groups received the same survey questions and the results are combined.

A total of 51 completed surveys were received. The responses are summarized below:

Question #1: How important is it to your organization to recycle materials that are currently in your waste-stream (materials that you currently dispose)?

Had to rate from “1” – not important to “5” very important. Average rank: 4.41

Question #2: Which of the following materials are in your waste stream on a regular basis (please check all that apply)?

Paper Products	48 Responses
Cardboard	45
Plastic Products	38
Wood Products	29
Metal Products	24
Corrugated Paper	23
Electronics	21
Oil Products	13
Glass Products	11
Chemicals	8
Clothing/textiles	6
Other Products	1

Question #3: Which of the following products in your waste stream are the top 3 in terms of volume (please check #1, #2, #3):

Paper products	65.2%
Cardboard	47.8%
Plastic products	39.1%
Wood products	26.1%
Metal products	26.1%
Other (see below)	21.7%
Corrugated paper	17.4%

Other products listed: lamps, alkaline batteries, printer cartridges, tires, used anti-freeze, food waste, sand and sludge, employee-generated waste, printer and copier (toner and drums), coolant, medical waste.

Question #4: How easy is it for your organization to locate organizations or places that will take your waste products for recycling?

Somewhat/very difficult:	23.5%
Neutral	35.3%
Relatively easy	29.4%
Very easy	11.8%

Question #5: Which of your current waste products are most difficult to recycle?

Plastics (10), electronics (8), Paper (4), Old furniture (2), Chemicals and toxic products (2), Cardboard (2), Others: metal lighting fixtures, plastic bags, non-textiles, wood, dust collector fines, grinding belts/wheels/discs; printer drums; hazardous chemicals.

Question #6: What makes these products difficult to recycle?

Lack of vendor	27
Cost of disposal	13
Cost/time to prepare materials	11
Transportation is difficult	8
Travel distance to vendor	6

Other comments:

- Staffing to separate, store, and transport recyclable materials
- Lack of good recycling procedure
- Recycler unknown

Question #7: What re-cycled materials are you currently using in your business?

Paper products	24
Paper towels	3
Metals	4
Copy/printer paper	3
Cardboard	8
Plastics	6
Toner cartridges	3
Steel	3
Wood	2
Various office products	2
Toner cartridges	2
Wood pallets	1

Question #8: If a web-site were available to assist companies with the sale or removal of legitimate by-products of production for re-use by another organization, how interested would you be in utilizing such a service?

Not/somewhat interested:	4.2%
Neutral	16.6%
Moderately/very interested:	79.2%

Question #9: What recycled materials would you be able to use in your business if they were readily available:

Paper products	13
Copy/printer paper	3
Toilet paper	2
Paper towels	2
Plastics	2
Toner cartridges	1
Cardboard	2

Question #10: How interested is your organization in reducing the volume of products in you waste stream over the course of the next year?

Slight interest	2.0%
Moderate interest	27.5%
Strong interest	45.0%
Very high interest	25.5%

Other comments received:

- One health-care company already uses a handler for bio-waste, which is a majority of its waste stream.
- While all textile items have been re-used and recycled for years, we still had over 3 million pounds of goods which went into a landfill in 2007.

Summary of employer survey results:

- The majority of respondents said it is “very important” to their organization to recycle waste-stream materials.
- The most common items found in the waste stream of respondents were: paper products, cardboard, plastic products, wood products, metal products, and corrugated paper.
- The top 3 waste stream products in terms of volume were paper products, cardboard, and plastic products.
- 40% of respondents stated that it is “relatively” or “very” easy to locate organizations or places that will take their waste products for recycling. 23.5% stated that it was “somewhat” or “very” difficult to locate such an organization or place.
- Respondents stated that the most difficult products to recycle were plastics, electronics, paper, and chemicals/toxic products.
- Respondents reported that the products that were most difficult to recycle were because of the lack of vendor, the cost to dispose of the items, or the cost/time to prepare the materials for disposal.
- Respondents primarily use recycled paper products in their businesses, followed by cardboard and plastic products.
- 80% of respondents would be interested in a web-site that would assist companies with the removal and marketing of waste products for re-use by another organization (on-line market-place for waste materials); none of the respondents reported that they were currently using waste products from another company
- Recycled paper products were most likely to be used in respondents’ business if readily available.

- 70% of respondents reported a “strong” or “very high” interest in reducing the volume of products in their waste stream over the course of the next year.

Interviews were also held with Muskegon based waste material processors, since they are small-medium sized businesses as well. Details of those interviews and trends reported by those businesses are outlined in Appendix D. Information shared by the larger sized businesses is outlined in Appendix E.

### **Survey of Households**

The purpose of the household survey was to estimate the current level of recycling activity among households in Muskegon County and to gain a better understanding of the existing (real or perceived) barriers to an increased level of recycling.

#### *Survey Methods:*

- A nine-question survey was created and posted on SurveyMonkey.com. Woods Consulting Group sent an email link to the site to members of the Recycling Committee. Links were sent to various other groups/individuals throughout the county directing them to the web link and requesting that the recipients complete the survey. As of October 16, 2008, 546 individuals had started the survey and 537 had completed it. It was anticipated that this method would likely attract those households that currently recycle at some level. According to the responses 62% of respondents claimed that they always recycle while only 23% claimed to never recycle.
- Woods mailed (USPS) 2,500 surveys to randomly-selected households throughout Muskegon County (household mailing labels randomly selected and furnished by USA Data). The 2,500 surveys were equally divided (50%) between households in the five (5) urban zip codes – 49441, 49442, 49443, 49444, 49445; and between households in six rural or suburban zip codes – 49415, 49425, 49437, 49451, 49457, and 49461. The 1,250 labels were further allocated within each zip code based upon the total number of addresses in each zip code. This method was utilized to eliminate more of the pro-recycling bias.
- Woods also distributed surveys at various work sites that were primarily “blue collar” in order to assure that this economic group was accurately represented.
- On Saturday, October 4, four (4) students from Montague High School FFA Club conducted “intercept” surveys with shoppers at The Lakes Mall utilizing the same survey instrument that was mailed to all households. The students self-selected the persons to interview and completed 130 interviews in a 3-hour period.
- A total of 336 surveys were received from this grouping: 109 county residents from the Lakes Mall intercepts, 227 from direct mail returns and returns from work-sites of October 31, 2008. Approximately 160 surveys were returned from the direct mail effort. This represented a 6.4% rate of return and provides a 90% confidence limit plus/minus 9%, given a universe of all households in Muskegon County.

The survey results reported below under “Direct Mail” include all the surveys collected from the Mall interviews, direct mail returns, and returns from “blue collar” work-sites.

Direct Mail Sample Configuration:

The following is a break-down of the number of households in each zip code in Muskegon County that received a survey in the mail.

<i>Urban Areas</i>		<i>Rural Areas</i>	
<i>Zip Code</i>	<i># Surveys Mailed</i>	<i>Zip Code</i>	<i># Surveys Mailed</i>
49441	384	49415	185
49442	388	49425	108
49443	10	49437	214
49444	256	49451	168
49445	213	49457	305
		49461	270

Household Survey Results

Note: Survey respondents did not answer all questions on the survey. The totals reported below and the accompanying percentages reflect the responses of those that answered the particular question. Additional comments survey participants are listed in Appendix F of this report.

1. Does your household recycle on a regular basis?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Yes, we always recycle	336	169
Yes, we occasionally recycle	80	51
No, we never recycle	126	116

- 62% of the Survey Monkey respondents claimed to always recycle vs. 50.2% of the direct mail sample.
- 23% of the Survey Monkey respondents claimed to never recycle vs. 34.5% of the direct mail sample

2. How do you recycle?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Place recycling in bin provided by city/village	176	102
Use a private waste hauler to collect recycling	137	45
Take recycling to transfer station	38	43
Take recycling to Community Recycling Service	48	31
Neighbor takes recycling somewhere	14	14

- 76% of all the Survey Monkey respondents either used some form of curbside service (governmental or private hauler)
- 60% of all Direct mail sample used some form of curbside service

- 17.6% of Direct mail sample took recycling to a transfer station vs. 9.2% of Survey Monkey sample

3. Which of the following materials do you recycle on a regular basis?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Plastic bottles	#1	#1
Newspaper	#2	#2
Other plastic	#3	#4
Glass bottles	#4	#3
Catalogues/magazines	#5	#5
Cardboard	#6	#6
Metals	#7	#7
Other	#8	#8

(Results listed in order of frequency of responses)

- Only slight variation between groups.

4. What items are most difficult for your household to recycle?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Paint and other hazardous waste	#1	#1
Used tires	#2	#2
Used motor oil	#3	#3
Appliances	#4	#4
Other	#5	#5

(Results listed in order of frequency of responses)

- Same order of materials in both groups.

5. Which of the following statements best describes why you recycle?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Believe it is the right thing to do	#1	#1
Important to reduce volume of waste going into landfills	#2	#2
We can re-use many of the things we typically throw away	#3	#3
Other	#4	#4

(Results listed in order of frequency of responses)

- Same ranking of reasons in both groups.

6. Which of the following best describes why you don't recycle?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Confusing – I don't know what I can recycle	#1	#3
Don't know where I can take recyclable items	#2	#1
Other	#3	#4
Takes too much time to separate for recycling	#4	#6
I don't have waste hauler that takes recycling	#5	#2
Costs too much to get recycling bin from hauler	#6	#5

Recycling bins are too small	#7	#8
I don't think it is very important	#8	#7

(Results listed in order of frequency of responses)

- Lack of information (confusing/don't know where to take items) and convenience are important barriers for both groups of respondents
- The Direct Mail group was more likely to be affected by the lack of a waste hauler that offers recycling services.

7. Are there any incentives that might get you to consider recycling?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Recycling service that is easy and affordable	#1	#1
I know that recycle materials don't really enter landfill	#2	#4
If I didn't have to spend time separating my waste	#3	#3
Other	#4	#2
I began to see my neighbors recycle on a regular basis	#5	#5

(Results listed in order of frequency of responses):

- "Other" reasons include: receive a discount for recycling; labels easier to remove; more information about program in newspaper; eliminate extra cost for recycling; increase fee if you don't recycle; need bigger bins; more public education; recycling pick-up available for multi-family apartments.

8. Would some form of financial reward or incentive make recycling more appealing?

	<i>Survey Monkey</i>	<i>Direct Mail</i>
Strong interest	120	54
Somewhat motivated	76	31
Neutral	123	17
Not sure	21	3
Not at all	97	15

- 71% of direct mail respondents are likely to be motivated by a financial incentive vs. 45% of Survey Monkey respondents

Zip Code of Respondents:

	<i>Survey Monkey</i>	<i>Direct Mail</i>
49441	227	69
49442	58	49
49444	51	39
49437	13	33
49461	23	23
49457	0	26
49445	121	29

49415	15	23
49451	1	18
NA	12	17
49425	0	6
49456	16	3
49440	0	1
Totals	525	336

- 87% of respondents to the Survey Monkey survey reported living in the “urban” area zip codes: 49440, 49441, 49442, 49444, and 49445 vs. 52% of respondents to the Direct Mail/intercept survey
- 55% of the respondents to the Direct Mail/intercept survey reported residing in one of the “urban area” zip codes.
- 66% of the Survey Monkey respondents reported residing in 49441 or 49445 zip codes.

## **Section 2: Recycling Volumes**

None of the haulers shared volume information, either for proprietary reasons or because they simply didn't track the tons of recycled materials they collected. One exception to tracking volumes is the City of Muskegon because they have required their contracted hauler (Allied Waste) to document the volume of recycled materials collected since 2004. The City reports that the average monthly volume of recyclables per household is 8-9 pounds/household/month.

The City of Muskegon records for recycling volumes are:

Year	Volume
2005	588 tons
2006	559 tons
2007	629 tons
2008 Y-T-D*	384 tons

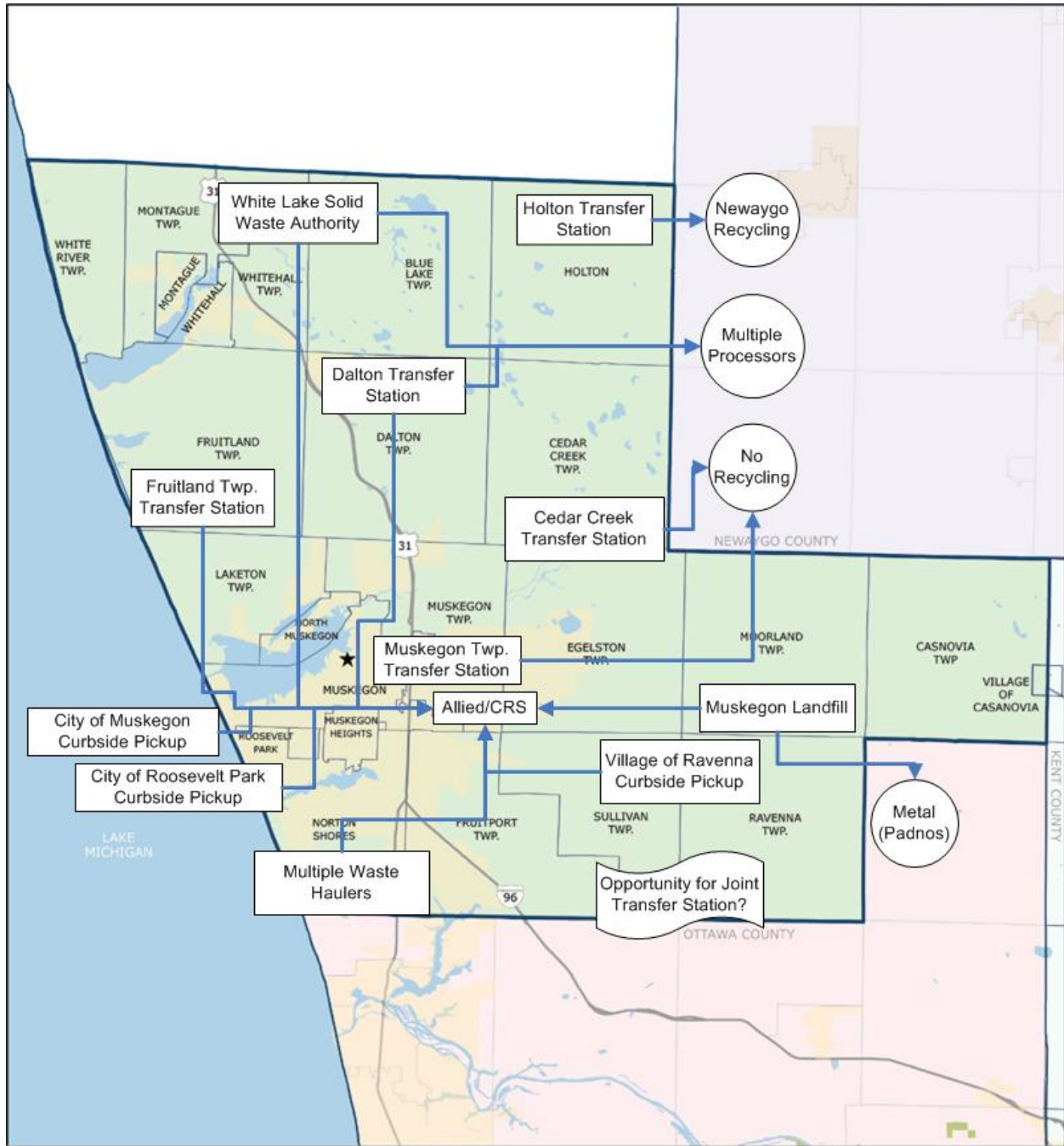
- \*2008 reported volume is for the period from January through July 31, 2008.
- The volume of waste reported is 95% plus from residents; there may be some small amount collected from churches, but no other commercial recyclables.
- The peak year for City of Muskegon recycling was 2004, in which the City collected 789 tons of recyclables.

As a result of the recycling baseline study, many haulers have agreed to start tracking the volumes of recycled materials they collect. They also were willing to report the volumes of recycled products for a multi-year period to track any changes in volumes over time. Ames, RMS, and Waste Management have agreed to provide information about 2008 volumes.

Allied Waste, the largest volume hauler and the operator of the CRS facility, was not willing, at this time, to share information about the volume of recycled good received at its recycling facility. Allied and a minority of the small waste-haulers cited this as proprietary information. Allied also expressed concern that future plans would attempt to direct all recycled goods toward a regional recycling facility proposed for Kent County (this would be viewed as a threat to their business).

Allied did advise Woods that measuring changes in the volume of recycled goods will need to measure two factors: the number of households who recycle on a regular basis (market share) and the volume of waste generated by each household (share of customer). An increase in the overall volume of recycled materials might reflect either or both of these factors.

### Section 3: Map of Flow of Recyclables



## MUSKEGON COUNTY, MI

**County Office:**  
141 E. Apple Ave  
Muskegon, MI 49442  
**Phone:** (231) 724-6221  
**Website:** co.muskegon.mi.us

★ County Office    □ Municipal Boundary

■ 2000 Urban Area

Prepared by the Community Research Institute  
www.cridata.org  
Sources: REGIS, CRI, IT Department- Kent County, MI

0    2.5    5    10 Miles

### Section 4: Findings

### **Gaps in Services**

Based upon the results of the household survey, the following “gaps” exist in the availability of recycling services in Muskegon County:

- Limited curbside recycling is available to residents residing in rural areas of the county. Since 70% of households that recycle on a regular basis utilize some form of curbside pick-up, the availability of this service is a key factor in the decision to recycle (convenience to the household).
- Limited recycling is currently being done by small business in Muskegon county (those with less than 10 employees)
- Confusing information and policies among waste haulers/recycling providers regarding the preparation/separation of products for recycling (some require detailed separation and others claim to require little or no separation) is acting as a barrier to recycling for some households.
- The lack of a cost effective, convenient program to recycle waste from small business is limiting the participation of small business in recycling efforts unless there is a committed individual or group of individuals who take additional measures to recycle their organization’s waste.

### **Barriers to Improvements**

- Many households in the urban areas of Muskegon lack the availability of curbside recycling available as a “municipal” service (the cost of which is part of the tax basis). This significantly reduces the “cost” as a barrier to recycling.
- The waste collection/recycling industry in Muskegon County is dominated by small, family-owned businesses that have developed their own policies for source separation and collection. The lack of clear, coordinated policies by the waste haulers and good communication of those policies to their customers limits the participation of some households who find the exercise “confusing” and time-consuming.
- Based upon the zip codes of the households that responded to the Survey Monkey survey (66% resided in zip codes 49441 and 49445) and the reported commitment to recycling (62% “always recycle”), there is likely a strong link between household income (and education level) with the willingness/interest in recycling.

### **Community Attitudes**

- 878 Muskegon County households completed a survey about their current recycling habits; 57% of respondents claimed that they “always recycled” while 14.9% claimed to recycle “occasionally” and 27.7% claimed to “never recycle”. The method(s) of collection are likely to have biased the survey toward households that are more favorable toward recycling. Individuals who do not currently recycle may have been more likely to not complete the survey.
- The survey process did receive information from 242 households that currently do not recycle and an additional 131 households that recycle only on a limited/occasional basis.
- 70% of all respondents reported that they used some form of curbside service (provided by local government or private waste hauler), while 9% reported taking their recycling to a transfer station.

- Respondents reported that the top five (5) items recycled are plastic bottles, newspaper, other plastic items, glass bottles, and catalogues/magazines. The most difficult items to recycle are paint and other hazardous waste, used tires, used motor oil, and appliances.
- Those who chose to recycle did so because “it is the right thing to do” or because it is “important to reduce the volume of waste going into landfills.”
- The most-frequently reported barriers to recycling are: confusion – not knowing what can be recycled and how; lack of knowledge on where to take items for recycling; the time required to separate items for recycling; the lack of a waste hauler that accepts goods for recycling; and the cost of getting a recycling bin. The lack of information and customer convenience appear to be the most important barriers reported in the survey.
- Survey respondents who do not recycle would be more likely to do so if recycling was “easy and affordable”, they are assured that “recycled materials don’t enter the landfill”, and the time needed to separate waste at the household is reduced or eliminated.
- 50.4% of all respondents claimed they would be more motivated to recycle if there was some form of financial incentive offered.
- 74.6% of all survey respondents resided in the urban areas of Muskegon County, with the great majority of those residing in 49441 and 49445 zip codes.

### **Additional Findings**

- Allied Waste is the largest waste hauler (in terms of the area served) and would appear to have the most “dedicated” equipment available for collecting recyclables.
- Most, if not all, of the recyclables collected in the metropolitan area are taken to Community Recycling Service, operated by Allied Waste, and located in the Port City Industrial Park.
- Household waste collected in the metropolitan area is taken primarily to the Ottawa Farms landfill (operated by Allied) near Coopersville or to the Muskegon County landfill.
- There are currently six (6) transfer stations operating in the townships outside of the metropolitan area. Four (4) of the six (6) have recycling available at the transfer stations. The White Lake Solid Waste Authority operates a transfer station that serves 2 cities and 4 townships. The transfer station in Holton is operated in conjunction with a private non-profit, recycling for Newaygo County that also serves Newaygo. The transfer stations that offer recycling services offer a broad range of services (range of items that can be recycled).
- The majority of household waste collected at the various transfer station is transported to the Muskegon County landfill. The Fruitland station is served by Allied (Ottawa Farms landfill) and Muskegon Township is served by Waste Management (Zeeland landfill).
- Residents of rural townships in Muskegon county have several options offered to them: “dump passes” (to the Muskegon County landfill) paid for by the townships, “clean-up” days paid for by the township, some transfer stations, and/or contract with private waste haulers. Many of the same waste haulers that serve the urban areas also serve the rural communities, but may not offer recycling as an option in these areas: Allied, Keurth’s, RMS, and Waste Management. There are also several smaller haulers that serve distinct rural markets: A-1, Solid Waste Solutions, Lakeshore, and Kriesel.
- The volume of recyclables currently collected in Muskegon County is not readily available at this time. Information is available from the City of Muskegon on a multi-

year basis. Many of the smaller waste haulers do not keep yearly records of the volume of recyclables taken to the CRS facility. A number of them have agreed to begin tabulating those records beginning with 2008 and continuing into the future. Allied Waste, the operator of the CRS facility, is still considering whether to share its information. Allied considers this information proprietary and possibly of competitive value.

- The waste stream from small business is most likely to consist of paper products, cardboard, plastic products, wood products, and metals. The small businesses find it most difficult to dispose of plastics, electronics, paper, and chemicals/toxic products.
- The following waste haulers service commercial as well as residential locations: Allied Waste, Kuerth's, RMS, and Waste Management.

Information found while doing internet research applied mostly to the state. Information regarding the State perspective on recycling is shown in Appendix G, as a reference.

### **SWOT Analysis**

Based upon the above findings, the current recycling effort in Muskegon County has the following strengths, weaknesses, opportunities, and threats:

#### **Strengths:**

- The majority of households in the Muskegon metropolitan area have access to curb-side recycling services either through the local government unit that contracts with a single waste hauler (Cities of Muskegon and Roosevelt Park) or by contracting directly with a waste hauler that offers recycling services. The villages of Fruitport and Ravenna also are served by a single, contracted waste hauler that also offers recycling service.
- The majority of recycled items collected in the metropolitan area are taken to a single place for distribution to re-processing entities – the Community Recycling Service facility in the Port City Industrial Park operated by Allied Waste.
- There are four transfer stations in Muskegon County that provide recycling services to residents of Montague, Whitehall, White River, Blue Lake, Holton, Dalton, and Fruitland townships plus the cities of Whitehall and Montague.
- A survey of small-medium sized businesses in Muskegon County indicates a relatively strong interest in both reducing their waste stream and in the use of recycled products in their businesses.
- Muskegon County contains a variety of businesses dedicated to re-processing waste products. Their expertise ranges from metals to consumer electronics and foundry waste. Muskegon county and neighboring counties also contain a number of business organizations who have become leaders in their particular industry in terms of recycling efforts. These organizations appear to be willing to share their expertise with other business organizations in the county.

#### **Weaknesses:**

- Waste haulers estimate that only 25%-40% of their current customers recycle on a regular or occasional basis.
- Appliances, tires, and used motor oil are only collected for recycling by a limited number of waste haulers; the collection of used appliances typically involves payment of an

additional fee to the hauler. The appliances taken to the landfill are picked-up by a waste processor. Waste oil and tires are taken to a hazardous waste site.

- The market for waste haulers is dominated by small firms, each with its own policies on what items can be recycled and requirements for separation. These policies do not appear to be communicated to customers on a regular basis, resulting in confusion on the part of many households who might be motivated to recycle if the process was clearer.
- In those communities in which households contract directly with individual waste haulers, there are likely days on which multiple trucks from multiple waste haulers are traveling on the same residential streets performing either a waste collection function or collecting recyclables.
- Transfer stations operating in Cedar Creek and Muskegon Townships do not provide a recycling service for their residents.
- The Muskegon County landfill offers recycling only for cardboard and metals which are collected in separate bins at the landfill site.
- The volume of recyclables in Muskegon County is not readily available at this time. The City of Muskegon and Allied Waste can provide detailed information for an 8-year period. The majority of small waste haulers are unable to provide information on tons of waste recycled. (Note: many of the small haulers are willing to begin to collect, store and report this information beginning with 2008).
- Small-medium businesses in Muskegon County report that they often struggle to find a vendor to accept their products for recycling or that the cost for such a service is prohibitive. These organizations are also concerned with the cost to prepare materials for recycling.

Opportunities:

- The number of households that would willingly recycle is likely to increase if the rules/policies for recycling are made more consistent among haulers and are more consistently communicated to households in the county. This will likely require discussion and negotiation among the waste haulers and the prospect of some financial reward for increased volume of recycled products.
- Small-medium businesses have indicated support for/interest in a web-based source of information for identifying vendors that will accept their waste and for identifying waste products that might be used in their operations (one company's waste may be another company's "raw" material).
- It is likely a long-term opportunity, but municipalities in the metropolitan area would likely see greater life-span for their local roads if they were willing to limit the number of waste haulers serving various neighborhoods of their community.
- Companies like Herman Miller and Nichols Paper have a long history of recycling products in their waste stream. Both of these organizations are willing to share some of their expertise with other businesses in the area both from a "process" perspective as well as from a "corporate culture" perspective.
- The West Michigan area has been recognized as a leader in "green" applications – ranging from green building design to use of recycled products. This has been a growing trend among business in West Michigan.

Threats:

The primary threats to the current recycling efforts are from the overall economic condition in Muskegon County. The level of recycling by households and businesses would appear to follow economic cycles – increasing during “good” economic times and declining during “bad” times. At the same time, there is growing interest in utilizing recycled products (part of the effort to become more “green” in West Michigan) which may counter some of the impact from a poor economy in West Michigan.

**Opportunities for Improvements**

- The availability of curbside recycling in two communities with no “direct” cost provides a good “laboratory” for testing how to improve both the convenience of recycling and the perceived benefits of recycling to the household. It may also provide an opportunity for testing methods of communication between waste hauler and customers regarding recycling policies.
- The potential to more effectively utilize electronic (internet) methods to share information about recycling for both residential and commercial users.
- The expressed high level of interest among area businesses in reducing the volume of their waste stream; several examples of companies that are actively involved in recycling might serve as “models” for other organizations to follow or learn from.
- There exists a long-term opportunity to implement a single-stream recycling system that reduces confusion, improves convenience, and may provide opportunities for financial incentives to increase recycling.
- If a consulting firm were established to help businesses identify recyclables within their waste stream and then connect them with either a hauler that will pick the material up or a buyer, if the market exists.

## Next Steps

#1 - Increase the level of household recycling among households in the “metropolitan” areas of Muskegon County to 50% over the course of the next 1-2 years through an effective program of promotion and financial incentives that make the recycling process easier and more convenient for households in the county:

Assuming that the propensity to recycle may vary by household income level and education, develop a demonstration project that would target 2-3 neighborhoods in the City of Muskegon that have different socio-economic backgrounds and develop promotional plans that specifically target each neighborhood; measure the effectiveness of each strategy in terms of increased levels of recycling. Also include one “rural” community – Montague, for example – in the project:

- involve the City’s recycling vendor in the project design
- involve the City’s Department of Public Works to help measure the effectiveness of each promotional strategy
- affirm or modify the assumption that different socio-economic groups respond to different incentives to recycle
- develop recommendations that may be applicable to broader geographic areas based upon the results of this effort.
- the information contained in the survey of households conducted as part of this report may provide some valuable insights into actions and/or messages that can motivate households to increase their level of participation in recycling.

#2 - Increase the level of recycling among all size businesses in Muskegon County via one (or both) of the following strategies:

- Target a specific geographic area (downtown Muskegon or Henry Street corridor for example) and involve waste haulers that serve that area in designing a promotional and operational plan to increase recycling by businesses in the area; this may include placement of waste-specific receptacles, promotions, and other strategies. It would also likely include an on-site assessment of the waste stream products at each business and the identification of recycling potential for each business.
- Target a specific industry (consider schools and local government) and, working with waste haulers, develop a plan that will increase the level of recycling of paper and plastic products in the schools/government offices; involve teachers, administrative staff, and students in the design.

#3 - Create a small-business development process to support the creation of new businesses that will process waste products and create new products in Muskegon County. The purpose of this effort will be to support individuals/firms that wish to develop products utilizing recycled materials from Muskegon County and the surrounding areas. This will involve additional research into potential products, development of business plans, capitalization of the venture, and other business-related activities. This process would be conducted in partnership with Muskegon Area First, the Chamber of Commerce, and the Small Business Development Center at GVSU. Consider the model developed by the foundry industry and made operational by Resource Recovery Corporation.

## Appendix A - Detailed Profile of Waste Haulers

### Allied Waste Services

#### Kerry Rattinger, General Manager

#### Muskegon, MI

- Allied contracts with City of Muskegon and Village of Ravenna to provide waste/recycling services to residents of both communities (and the City of Muskegon Heights for waste)
- Allied does not require separation of materials at the source; driver will separate the materials as it is loaded onto the truck; Allied does request that customers place their paper waste into a container/bag that will prevent the paper from blowing around
- Allied operates trucks dedicated to recycling only – trucks have 2 compartments – the lower compartment form paper products (heavier) and the upper compartment for glass, plastics, and metals
- Estimates that 25%-35% of residential households customers recycle: % is higher during good economic times and higher among better-educated, higher-income households, higher among the elderly, and also higher among households who “care” about the environment; Allied feels that the poor economic climate in Muskegon will impede the growth of recycling until such time as conditions improve
- Households with children in school who learn about the value of recycling are also more likely to recycle
- Lower income households headed by a single parent are the least-likely to recycle – living more close to the “margin” and recycling is not a priority for them
- Allied operates recycling facility Port City Industrial Park; estimates that 90% of waste delivered to this facility is recycled through a “two-sort” operation that first removes the paper and corrugated materials and the second sorts plastics, glass, and metals
- When a truck arrives at the recycling center, each compartment is emptied separately and materials processed separately
- Allied is concerned that most households do not fully understand the waste management/collection process that occurs at their doorstep – leading to many misconceptions about the process
- Allied feels it will be a challenge to achieve a 50% recycling level without some form of either regulation (by local government) or financial incentives to households; as evidence, the “bottle bill” in Michigan greatly impacted the volume of materials in the waste stream
- Prices for recycled materials (commodity prices) have been trending up lately due to demands from China and Southeast Asia with the largest increase occurring in the price of metals; traditionally, newsprint has been the “softest” of the commodities in terms of pricing while corrugated and office paper prices have been relatively strong/stable (August statement, markets have since dropped)
- Opportunities for businesses that make use of recycled materials in some manufacturing or production process will ultimately depend upon the ability of the end product to compete on a price basis with products made from “virgin” materials
- From a long-term perspective, Allied foresees increased emphasis on recycling from both households and commercial operations

- Allied operates the landfill in Coopersville near I-96; the company prefers the landfill to have a “long” life – because a closed/capped landfill will have 25-30 years of “post-closing” expenses for monitoring leakage and potential impact on ground water
- When waste haulers encounter higher “tipping fees” at a landfill, the haulers have a greater incentive to encourage their customers to recycle; for every ton of waste diverted from the landfill to recycling, the hauler saves up to \$50/ton in tipping fee; the higher the landfill disposal rate, the greater savings from recycling.

### **Ames Disposal**

**Steve Ames, Owner**

**Muskegon, MI 49445**

- Company has operated in this industry for 35 years as a family-owned business serving Norton Shores (90%) and Laketon Township (10%); company operates 5 trucks serving both residential and commercial customers
- Ames transports recycled items to Community Recycling Center (operated by Allied)
- Only pick-up recyclables from residential customers (not from commercial)
- Items recycled include the following: glass (clear, green, and brown) with labels removed, lids off and rinsed; newspaper, magazines, catalogs, telephone books, and boxboard (paper materials flattened, placed in a paper bag, and bind with string)
- Estimates that 25% of customers recycle; also estimates that only 25% of customers properly prepare the materials for recycling
- Ames provides 18-gallon green bins for recycling at no cost to customer
- Ames rents large containers for household waste at \$1.50 per month
- Ames believes the amount of material being recycled has increased with peak volumes in the spring and dissipating in winter
- Special items: large appliances - \$10 charge (each); tires taken to Randy’s on S. Wolf Lake Road; hazardous waste to the Muskegon County hazardous waste site

### **Kuerth’s Disposal, Inc.**

**Cindy Kuerth, Co-Owner**

**Twin Lake, MI**

- Family-owned business based in Twin Lake operating 8 trucks and serving broad area from Rothbury to Grand Haven; recently acquired Big Bear Disposal (2007)
- Serve both residential and commercial customers; residential served on a regular-scheduled route and commercial served on an “as-needed” basis (some served on a daily basis)
- Collections from commercial customers taken to Muskegon County landfill; no recycling at this site
- Recycled items include glass, cardboard, paper, plastics, metal, and motor oil: paper and cardboard must be cut to fit into a brown paper grocery bag; accept green, brown, and clear glass; accept plastic #1 through #7; tin, aluminum and aluminum foil accepted; accept waste motor oil if contained in plastic containers
- Collect yard waste on Friday and take that to a licensed site in Laketon Twp. One time per week
- Will not take tires
- Estimate that 15% of commercial customers do some form of recycling

- Estimate that 30% of residential customers recycle
- All recycled materials taken to Allied Waste's CRS facility in Muskegon
- Large items – appliances, automotive parts- will be picked-up and take to county landfill based upon agreed price between customer and Kuerth's
- Would like to see more recycling facilities in Muskegon area
- See Kuerth's "Recycling Guide" in appendix – policies pertaining to recycled goods

### **RMS Disposal**

**Russ Jones, Owner**

**Fruitport, MI**

- Territory includes both Muskegon and Ottawa counties; serve as contract waste hauler for City of Roosevelt Park; serve both residential and commercial customers
- Will only recycle cardboard for commercial customers; for residential customers, will recycle organic material, plastic, bottles, paper; all recycled materials taken to Allied facility in Muskegon. *Above chart suggests they take glass and metal too.*
- Estimates that 40% of residential customers recycle; recycled goods picked-up every other week
- Commercial service is individually negotiated and typically occurs once per week
- Furnish a yard waste container (90 gallons) to customers that is a different color from the household waste can
- Will not recycle large appliances, tires (unless cut in half), or toxic materials
- Foresee an upward trend in recycling due to increased awareness of environmental issues

### **Waste Management, Inc. (Information from web-site)**

- Operate landfill in Zeeland area
- Serve primarily commercial/industrial market in Muskegon County – primarily waste collection (very limited residential service in Muskegon)
- Also offers programs/services for variety of industrial/special wastes: drums, hazardous waste, LiquiFix Solidification, PCB's, deep-well disposal; and transfer stations

### **Other Recycling Facilities in Muskegon County**

- Community Recycling Center (Allied) Sanitary Disposal and Recycling Services, Inc. – Twin Lake
- Holton Wrecker and Recycling – Fremont
- Advanced Plastic Recycling – Grand Haven
- Ken Cooper Concrete Recycling – Fruitport (concrete, asphalt, brick and block)
- White Lake Excavating – Whitehall Township (concrete, asphalt, brick and block)
- VerPlank Trucking – Muskegon - sidewalk, concrete and block
- Automotive Racking Systems – Muskegon
- Beacon Recycling – Muskegon
- Shoreline Recycling (Padnos) – Muskegon (Appliances, scrap metal)
- West Michigan Recycling Center – Muskegon (Appliances, scrap metal)
- D Auto Parts and K-Mart – Muskegon (automobile batteries)
- Muskegon County Hazardous Waste Collection Program – county-wide – (batteries)
- Muskegon County Dept. of Public Works - County landfill – Hazardous household waste

- Used oil may be recycled at several auto-related stores: Auto Zone, Quick Lube Plus, and Speedy Lube
- Used tires may be disposed at several area tire dealers: Tom’s Tire and Auto Center, Downtown Tire, Smith Tire, Firestone Tire and Service Center, Chet’s tire Service, and Discount Tire Co.

**Summary of Findings:**

- Allied Waste is the largest provider of recycling services in Muskegon County. The company operates Community Recycling Services in the Port City Industrial Park. Allied also provides contract services for the City of Muskegon and the Village of Ravenna.
- All of the major waste haulers interviewed offered their customers curbside recycling services in select geographic areas (especially the “urban” areas). Each hauler had somewhat different policies regarding source separation – some of which may serve as a deterrent to some households.
- The majority of waste haulers deliver their recyclables to the Allied Waste facility in Muskegon.
- There are a variety of “specialty” recycling operations in Muskegon county that will collect and process items ranging from tires to batteries to broken concrete.
- Waste haulers estimated that 25%-35% of their customers currently recycle.
- It is likely that any household that wants to recycle it’s waste products can find a vendor that will serve them. It may be more difficult in the rural areas of the county to find a vendor willing to provide the service at a “reasonable” price due to the cost of transportation.
- There is likely a lack of clear communication/understanding between customers and waste haulers as to what can be recycled. There is a distinct opportunity to improve the level of understanding about what can be recycled and how to recycle among households in Muskegon County. Each hauler distributes its own information to customers, but the frequency of this distribution is uncertain (most likely one time per year at contract renewal).

**Appendix B - Detailed Overview of Transfer Stations**

### **White Lake Solid Waste Authority**

- Serves cities of Whitehall and Montague plus Whitehall, White River, Montague, and Blue Lake townships
- Located on Holton-Whitehall Road
- Trash taken to Muskegon County landfill by MCK Enterprises.
- Operator: Ken Brown – makes effort to recycle everything possible
- Contact: Susie McGee at Montague City Hall – 893-1155

### **Fruitland Township**

- Township operates transfer station located at 5281 Michillinda Road
- Recycling at transfer station includes glass, plastic, newspaper, corrugated cardboard, waste oil, all metals, trees, and yard waste
- Donald Fowler, township employee, operates transfer station; hours of operation are Thursdays and Saturdays; expand to include Tuesday evenings in summer
- Site also composts yard waste and collects brush in a pile; brush is burned on a regular basis under supervision of the Fire Department
- All recyclables collected from transfer station by Allied Waste
- Allied waste is the waste hauler for Fruitland Township
- Community has a strong interest in recycling (Greg Boughton, Supervisor)

### **Dalton Township**

- Township operates transfer station located at Michillinda and Russell Roads; station operated by township employee
- Transfer station accepts paper (sent to Grand Rapids-based insulation manufacturer), metals (Padnos), plastic/cans/bottles (Allied), cardboard (Allied), tree stumps, broken concrete, brush, and tires (tires sent to processor in Indiana); only cost to residents is for tires (cost based upon size of tire – auto to large tractor)
- All household waste taken to the transfer station is taken to Muskegon County landfill by Solid Waste Solutions
- Supervisor feels that increasing volumes of recyclables handled at transfer station is reflective of increased interest in recycling
- Township is served by following waste-haulers: Allied, Kuerth's, and Kriesels

### **Cedar Creek Township**

- Township operates a transfer station that is open every Saturday from 8:30 am – 4:30 pm. Transfer station does not include opportunities for recycling.
- All waste collected at the transfer station is transported to Muskegon County landfill.
- In addition to depositing waste at the transfer station, residents may also contract with private waste hauler such as Waste Management, Kuerth's, Sunset (Allied), and others.
- Township supervisor believes there is high interest in recycling among residents.

### **Holton Township**

- Township operates a transfer station located south of the Township Hall – residents may bring household waste and deposit in large bins at the transfer station; when filled, bins are transported to the Muskegon County landfill by Uganski
- Residents of adjoining Cedar Creek and Blue Lake townships also use the transfer station
- There is no cost to township residents to use the transfer station
- Township also operates a recycling center at a site adjoining the Township Hall at 5611 Holton Road; residents may bring paper, plastic, glass, tin cans, and other items to the center for recycling; Recycling Center is operated in conjunction with Recycling for Newaygo County
- Items collected at the Recycling Station include newspaper, magazines, catalogues, junk mail, office paper, boxboard, #1 and #2 plastics, metals, all clear and colored glass, food and beverage containers, and Styrofoam/polystyrene
- Township residents may also contract directly with a private hauler to remove their waste products
- Township supervisor reports that the level of recycling has grown slowly, yet steadily, since the opening of the Recycling Center.

### **Muskegon Township**

- Muskegon Township operates a transfer station located on Quarterline Road near the new Orchard View High School; station is also open to residents of Egleston Township
- No recycling opportunities at this transfer station
- Waste collected at the Transfer Station is picked-up by Waste Management Co. and transported to their landfill in Zeeland.

## **Appendix C - Profile of Waste Management Programs in Urban Communities**

### **City of Muskegon**

**Robert Fountain and Ted Russell**

#### **Muskegon, MI**

- City contracts with Allied Waste to collect household waste and recyclables for all city residents; cost of service is paid through city taxes
- Household waste collected on a weekly basis at no charge; 55-gallon carts provided by city (replacement cost: \$55); residents must purchase “garbage stickers” for placement on items that cart will not hold (\$2.00 each at City Hall); appliances require separate sticker – cost \$25.00
- Each city neighborhood also has a “dumpster day” (spring and fall) in which the neighborhood association places a dumpster in the neighborhood for collection of waste items
- Recycling offered to all residents at curbside every other week; recycling bins purchased from City for \$5.00; program accepts clear, brown, and green glass; metal (aluminum foil and tin cans), #1-#7 plastic jugs and bottles, cereal boxes, office paper, newspaper, magazines, phone books, junk mail, etc.
- Styrofoam used in packing boxes can be recycled locally – call City recycling office
- Special disposal needs – take to Muskegon County landfill
- City provides residents with a directory of various organizations that accept/recycle specific goods from automotive batteries to used motor oil and used tires
- City contracts with Allied for yard waste pick-up between first week in April and first week in December; waste must be placed in paper bags or rigid container only
- City recycling staff has the capability to advise business on how to reduce its waste stream via on-site visit and consultation; the availability of this service capability is not known on a broad basis
- City has multi-year data on trends in waste disposal and recycling (2000 through 2008);
  - waste stream composed of 71% mixed use, 24% waste stream, and 5% recyclables
  - mixed use refuse has averaged approximately 1000 tons per month for much of this period, with some decline in volume from 2006 through 2008
  - recycling volumes peaked at over 70 tons/month in 1998 and have declined to less than 60 tons/month in 2007-08

### **City of Norton Shores**

**Ted Jeske, Crew Leader**

#### **Muskegon, MI**

- Homeowners in Norton Shores contract directly with private waste haulers – most of whom offer some type of recycling service
- City offices recycle paper and cardboard waste utilized by the library and city hall (since 2002)
- City offers leaf collection drop-off sites at two locations; bags are picked-up by a commercial vendor and taken to a leaf recycling site
- City takes used oil from city vehicles and uses the oil to heat the city garage on Mt. Garfield Road

### **City of Roosevelt Park**

**David Boehm, City Manager, and Matthew Farrar, Public Works Superintendent**

#### **Muskegon, MI**

- Estimates that 75% of households in the city (total 1,350 households) participate in the curbside recycling offered by RMS
- City provides residential service only; this includes large items (appliances), brush, and household waste
- City provides residents with either a 60 gal. or 96-gal. container for garbage
- Recycled items are picked-up every other week; no limits on volume of goods recycled and this includes all items handled by RMS
- City provides residents with a special sticker for large items (no additional charge) and schedules a special pick-up day
- Cost of the services provided by RMS is \$170,000 per year – approximately \$100 per household; total cost is subsidized by taxes paid by Wal-Mart and other large commercial firms in the city.
- Cost of service included in annual city taxes
- City considering moving recycling pick-up to a weekly basis in order to enhance the amount of households using the service
- City picks-up leaves if left in paper bags; bags processed to composting area and used in city parks and other public areas
- City considering developing program to recycle business paper within the city (no details, yet)

### **City of Muskegon Heights**

**Lori Doody, Acting City Manager**

#### **Muskegon, MI**

- City currently contracts with private vendor to provide waste collection services to all households in the city; current contract does not include recycling
- City is considering the addition of recycling with the next contract (not affirmed)

### **City of North Muskegon**

**Dennis Stepke, City Manager**

#### **Muskegon, MI**

- City households must contract with private firms for waste collection, recycling and disposal of large appliances
- City does provide program to collect tree limbs up to 4' in length; limbs are collected at different locations in the city on a weekly basis
- City contracts with RMS to pick-up bagged leaves in the fall (RMS composts the leaves)
- City contracts with Double L company to pick up loose leaves for 4 weeks in the spring and 8 weeks in the fall
- City operates a compost site which is accessible by residents for private use and by commercial vendors

### **Muskegon Charter Township**

**Pat Jordan, Supervisor**

## **Muskegon, MI**

- City operates its own sanitation department which collects waste from part of the Township
- Allied Waste handles all recycling for the Township
- Waste Management operates a transfer station at the Township DPW yard on Quarterline Road near Orchard View HS; serves 2,800 township customers

## **Muskegon County DPW**

**John Warner, Deputy Director**

## **Muskegon, MI**

- County operates landfill on Apple Avenue east of Maple Island Road
- Landfill has an estimated 12 years capacity remaining plus an additional 3 years in the “gap” area
- RMS and Kuerth’s are waste haulers that utilize the landfill for disposal
- Landfill also accepts construction demolition waste plus waste from meat plants
- Landfill has areas in which individual households can drop-off waste products; landfill provides dumpsters to collect cardboard and metal which are recycled; all other materials are deposited in the landfill
- Landfill is selling methane gas (produced by break-down of waste) to Eagle Alloy on Evanston Ave. and is negotiating with Sun Chemical for purchase of additional methane gas (manufacturers must convert their boilers to accept the methane); transmission line installed in road right-of-way between landfill and Evanston sites.
- Noted that several townships operate transfer stations including a very active station on Michillinda Road in Fruitland Township

## **Summary of Findings**

The cities of Muskegon and Roosevelt Park are the only municipalities in the metropolitan area to offer their residents curb-side recycling on a regular basis paid from city tax revenues.

Muskegon estimates that 25%-35% of city households recycle. Recycling is very cyclical with higher participation occurring in the warm weather months beginning April. The participation level in the recycling effort differs distinctly between the various neighborhoods in the city with higher income neighborhoods generally recycling at a higher level.

Muskegon publishes and distributes a comprehensive description of recycling services available to its residents. This document can be viewed at [www.muskegon-mi.gov](http://www.muskegon-mi.gov), Click on City Services and Public Works.

Allied Waste, the city of Muskegon’s recycling service provider, states that it is no longer necessary to separate recycling items at the source – the driver will separate the waste and place it in the proper place in the Allied truck (Allied’s recycling trucks have two chambers – one is for paper and cardboard; the second is for all other materials; the customer does not have to separate the materials prior to pick-up).

Roosevelt Park estimates that 75% of its households participate in recycling on at least a part-time basis.

Muskegon Heights offers no recycling services along with its waste collection.

Norton Shores residents must contract directly with a private waste hauler in order to receive waste collection and recycling services. The city does provide collection points for autumn leaves to be dropped-off.

North Muskegon residents must contract directly with a private waste hauler in order to receive waste collection and recycling services.

Muskegon Charter Township is the only community to operate a municipal waste collection system. This is available through township employees on a limited basis. Allied Waste handles all recycling services for the township. The township also operates a transfer station for residents.

The city of Muskegon has the most comprehensive system of data collection on both municipal waste collected and recyclables collected. The city is able to track volumes by year, by month, and by the type of waste (recyclables vs. yard waste vs. “mixed refuse”).

The Muskegon County landfill is operated by the Muskegon County DPW. The landfill is the only licensed landfill in the county and it accepts waste from both within Muskegon County and from neighboring counties. The landfill has a projected life expectancy of 12 years in its current configuration and could add 3 additional years if the “gap” area is utilized. This assumes that disposal rates remain the same and do not decline significantly.

Limited recycling occurs at the Muskegon County landfill. Cardboard and metal are collected in dumpsters and recycled. All other materials brought to the landfill are deposited at the site.

The Muskegon County landfill is transporting and selling methane gas to two (2) manufacturing operations located along Evanston Avenue. The gas is used to fuel boilers at each site.

## **Appendix D - Trends Reported by Muskegon-Based Waste Material Processors**

The following section presents information collected from interviews with organizations based in Muskegon county that process waste materials. The purpose of this section is to gain insights

into trends occurring within this industry and potential opportunities to grow the industry within Muskegon County.

This is not a comprehensive list of all waste processors – it represents a sample of the industry and intentionally includes a variety of materials.

### **Goodwill Industries of West Michigan**

**Richard Carlson, President**

**Muskegon, MI**

- Goodwill operates a computer recycling program in which it receives computers and peripherals from households and goes through a “de-manufacturing” process that meets very detailed standards set by Dell Computer (strategic partner)
- When the de-manufacturing has been completed, GWI ships materials to a “re-processor” who determines what materials can be re-used and what materials have reached the “end of useable life”; re-processor pays GWI for any materials that have useable life remaining
- The system is attempting to find answers as to how to dispose of/re-use electronic waste
- Working toward an “industry standard” that is applicable to all 50 states for recycling computer electronics; computer monitors are slowing down the establishment of a standard since most of the toxic materials in a computer are found in the large, bulky monitors
- Dell subsidizes GWI’s recycling efforts on a national basis by establishing a “cap” price per pound for the “de-manufacturing” process
- GWI’s recycling effort for the period from Oct., 2005 through April, 2008: 1.93 million pounds of materials de-manufactured (compares to 7.0 million nationally for all GW organizations); Goodwill Grand Rapids is the #1 in terms of volume in the state and Goodwill West Michigan is #2
- Goodwill Grand Rapids has partnered with Robert Grooters Development to create a “green” recycling development near 76<sup>th</sup> Street and US-131 to host industries interested in processing recycled goods.

### **Shoreline Recycling (Padnos)**

**Jim Fisher**

**Muskegon, MI**

- Shoreline’s primary business is the processing of scrap metal (it also will collect and process other products)
- Shoreline collects scrap metal from various sources – either via direct customer drop-off or at various collection points in the area; metal comes from residential, commercial and industrial sources
- Metals received are “processed” – prepared as a raw material for subsequent users based upon the size, metallurgy, and contaminants present
- Operations at Shoreline are very safety-conscious due to the nature of the work and the materials being handled
- Demand for metal is very high – especially from China and Southeast Asia – who are seeking all recycled materials to fuel their economic growth (in addition to virgin materials) (*August statement, market has since declined*)

- Prices are up 20% or more for metals like copper, platinum, and aluminum and base metal prices have doubled over the past year
- Shoreline also recycles paper, plastics, and aluminum
- Padnos (parent company of Shoreline) has locations in nine West Michigan communities ranging from Buchanan to Lansing to Traverse City, with multiple locations in Holland and Grand Rapids

### **Resource Recovery Corporation**

**Mike Lenihan, President**

**Coopersville, MI**

- RRC formed by the West Michigan foundry industry to process foundry sand and other waste stream materials
- RRC has lost some original members of its association due to foundry closures but has added new members who are a greater distance away
- Markets for recycled RRC products: “soils” market not mature; asphalt market (use sand in mix) had picked-up; also growth in use of foundry sand for composting
- Exploring potential joint venture with other industries (to process their wastes)
- Members include: Eagle Alloy, CWC, Century Foundry, Harbor Castings, plus new members in Benton Harbor and Coldwater
- Opportunities: carpet/plastic recycling – add-on to existing lines
- Negative incentives: MDEQ receives a portion of all tipping fees for landfill deposits in MI

### **Summary of Findings**

- The Muskegon area contains a variety of business operations that re-process waste materials.
- Due to demand for metal from Southeast Asia, the demand for ferrous and non-ferrous waste products has seen strong growth in both demand and price. This increased market demand has proven very beneficial to Shoreline Recycling and Beacon Recycling, both based in Muskegon.
- Goodwill Industries is working with the computer industry – in particular Dell Computer – to develop a system to re-process computers and peripherals. Dell currently subsidizes Goodwill’s operations until the industry can achieve greater standards for re-processing of the waste.
- Resource Recovery Corporation was formed to manage the waste stream needs of the foundry industry in West Michigan. As the foundry industry shrinks (fewer operating foundries), RRC has expanded its market geographically (serving foundries that are at greater distances from West Michigan) and exploring new industries. RRC collects waste foundry sand from its clients, processes the sand, and markets it to a variety of customers.
- RRC’s business model may have strong applications to other industries – set-up a system of waste collection and processing and work with various end markets to receive the processed goods. Predictable volumes and ease of collection are keys to the success of business operations in the re-processing industry.
- Article in business journals and interviews with Kent County DPW indicate that there are growing markets for and increasing interest/investment in other recycled products. The

market challenge appears to be the ability of the waste processor to achieve a consistent, predictable supply of materials and a relatively easy form of transportation.

- Some businesses that are substituting a product made with recycled products (vs. virgin materials) require approvals from various entities before their product is accepted for general use (for example, the use of crushed glass as an “aggregate” in asphalt requires approval by various state highway agencies prior to use; the Muskegon County Road Commission is considering using a similar type of product on projects that are not financed in whole or part by state or federal funds).

There does appear to be an opportunity for a business able to analyze/advise small business on waste stream management (Herman Miller provides this service to its suppliers – may be willing to provide some educational sessions to other West Michigan business). The new business would assess the current waste stream, identify items that can be recycled, identify changes in packaging or production that could reduce the volume of waste, and prepare a report of actions the client company could take to reduce its waste stream and the associated costs. Note: this service is available to businesses in the City of Muskegon through its Department of Public Works and many waste haulers will provide a similar service.

## **Appendix E - Sample of Recycling Efforts by Larger Muskegon-Area Businesses**

### **Nichols Paper**

**Renae Hesselink, V.P. of Sales Management**

**Jim Rees, Distribution Manager**

**Muskegon, MI**

- Nichols began its recycling efforts 2.5 years ago yet the company has a strong ethical commitment to pursue recycling
- Wood pallets have been recycled for 2.5 years
- Stretch wrap is accumulated in bundles and sent to the Padnos reclamation program in Holland
- Cardboard is compacted, baled, and sent to Padnos
- Bottles are bagged and sent to Padnos
- Packaging foam is inserted into six-foot bags and sent to Padnos
- Office paper is shredded and sent to Lakeshore Documents; office paper that does not need to be shredded is sent to Padnos
- Waste Management is Nichols' trash hauler and hauls waste from their facility 2X per week. As a result of their recycling effort, the volume of materials picked-up by Waste Management has been reduced from 5 trucks per week to 2 trucks
- Next target is lights and batteries; program continues to evolve and the company estimates that the recycling efforts are currently 60% effective.
- Nichols received a payment of \$1,300 from Padnos for materials recycled in 2008
- Nichols currently sends one 28' truck containing 6,000 pounds of material to Padnos every 4-6 weeks
- Subsidiary locations in Grand Rapids, Holland, Jackson, and Traverse City send paper and wood products to Muskegon for recycling.

### **SAPPI Fine Paper**

**J. Thomas Porritt, Environmental Engineer**

**Muskegon**

- Recycling ethic has been developing at SAPPI over the past 5 years and is expanding to other locations of the company
- Manufacturing effluent sent to the county wastewater facility where it is recycled/re-used
- Also internal recycling of water occurs so that water is recycled several times
- Looking to further recycle the steam condensation that is discharged to the wastewater system. A significant amount has been reduced, but they would like to reduce the discharge further
- Paper mill now discharges 5 million gallons of wastewater per day into the county system (down from 15 million gallons prior to the pulp mill closing)
- Seeking to reduce the wastewater discharge to 5,000 gallons per ton down from the current 10,000 gallons (original discharge was 25,000 gallons per ton)
- Plant produces 80,000 tons of fly ash per year; currently hauled to Autumn Hills Landfill (owner by Waste Management) in Zeeland. This represents 10-14 truckloads per day and an annual cost of \$1 million; they are starting a program to reduce this amount
- Plant burns 200 tons of wood per day which produces the fly ash
- Plant does recycle wrapping paper through a local vendor

- Wood pallets, metal, and used oil are also recycled as are fluorescent light bulbs
- Considering a program to recycle office paper and considering program to recycle batteries for flashlights and portable hand-held instruments
- Plant produces 500 tons of paper per day; 20% of that is waste and it is recycled back into the raw mash that amounts to 100 tons per day. The company has reduced the loss of total fiber to the process sewer from 30 tons/day to 10 tons/day.

**Herman Miller**

**Tom Farrah, Manager – Distribution Center**

**Zeeland, MI**

- Long-term culture of environmental awareness and respect at Herman
- Company has committed to eliminating all discharges to the landfill by 2010 – are currently 90% toward goal
- Process includes reducing waste stream, working with suppliers to changes packaging materials (recyclable or re-usable), and incorporating more recyclable materials into product design.
- Corporate goal established by CEO and managers have been directed to implement plans to achieve goal.
- Herman Miller now has several products that meet the “Cradle to Cradle Certification” – using environmentally-friendly materials; design for material reutilization (re-use or composting); use renewable energy in various processes; efficient use of water; maximum water quality associated with production; and instituting strategies for social responsibility (Certification available in Silver, Gold or Platinum product)
- Herman Miller managers are working with suppliers to help them achieve packaging and content goals demanded by Herman Miller
- Herman Miller willing to present its processes/approach to reducing its waste stream to other companies/manufacturers

**Mercy-General Health Partners**

**Dave Osborn, Director of Plant Operations**

**1500 E. Sherman Blvd.**

**Muskegon, MI 49444**

- Mr. Osborn’s comments reflect practices in place only at the Sherman campus – he is not able to speak for the Hackley campus
- Recycling is very limited – only items recycled on a regular basis are cardboard and paper; paper is an elective activity while the cardboard recycling is managed through the storeroom
- Paper that is collected is shredded, loaded into bags and sent to recycling processor
- Hospital does not recycle glass, cans or plastic
- Metal is collected and sent to a processor in Muskegon
- Allied is the waste hauler for this campus
- Medical waste, including bandages, fluid, needles, etc. is collected by a specialized waste disposal company – Stencycle
- Hospital is discussing implementation of additional recycling efforts.

**County of Muskegon**

**James Elwell, Interim County Administrator**

**Hall of Justice  
Muskegon, MI**

- Mr. Elwell stated that, for the most part, recycling activities occur at different levels within each county facility – Hall of Justice, CMH, Apple Ave. campus; at this time there is no unified effort to recycle.
- One of the issues facing the county is the “sensitivity” of printed materials within various departments – CMH, judicial system, Health Dept. Mr. Elwell noted that county departments must first sort materials based upon level of confidentiality. The “confidential” items are then sorted for shredding. The shredded materials are disposed of through a vendor who maintains control over the shredded documents. The “non-confidential” paper may be collected and recycled.
- In the case of CMH, work crews composed of young adults with developmental disabilities actually perform the task of collecting the confidential documents and shredding them.
- Mr. Elwell was not aware of the name of the vendor who collects the shredded documents or the other paper documents, nor was he aware of the final disposal of these items.

**Howmet/Alcoa  
Sean Chapple, Environmental Engineer  
Whitehall, MI**

Reductions in waste stream:

- Alcoa sells boilerclave wax to a company that uses the wax as a raw material in the production of another marketable commodity; the wax was formerly deposited in the landfill. The sale of the wax reduces the landfill deposit by 530 tons annually and is fully in-place.
- Alcoa is investigating the sale of a monoshell material with high zirconium content to another company as raw material. This would potentially reduce the amount of waste deposited in the landfill by 2,260 tons.

Use of waste products from other companies in Alcoa production:

- Alcoa will be purchasing grinding materials from the monoshell/zirconium recovery program (if implemented) as a raw material

Recycling of Alcoa products:

- In general, Alcoa products are alloy-based and can be easily sold to the scrap metal market at any time during the product life-cycle.

**Appendix F – Comments from Household Survey**

<b>Question 3 - Which items do you recycle on a regular basis?</b>	<b>Question 4 - Which items are most difficult for you to recycle?</b>	<b>Question 5 - Which of the following best describes why you recycle?</b>	<b>Question 6 - Which of the following describes why you don't recycle?</b>	<b>Question 7 - Are there any incentives that might get you to consider recycling?</b>
"Other" Responses	"Other" Responses	"Other" Responses	"Other" Responses	"Other" Responses
Used motor oil	batteries, non-clear glass bottles (wine, etc.), Styrofoam	all of the above and more!	I do not think in the long run it will make a difference.	I don't want to have two containers in my house.
paint, batteries	old batteries	all the above	I buy very few items that are in recyclable containers	I recycle when necessary
oil	Plastic bags	All of the above	on occasion, time dictates whether I recycle	No
used motor oil	All of them	all Of the above	Because you make money at it and give nothing back to the resident	Point system per pound with cash in for small prizes.
oil	hazardous wastes	all of the above	I'm not aware of my options	You receive a discount for recycling
No longer take Styrofoam or paper	Plastic shopping bags, wrong numbered plastics	All of the above	No waste hauler; take garbage to township dump	removing some labels is time consuming...all labels should be easy to remove from any container
FOOD CONTAINERS	colored glass bottles (wine bottles)	Because it is included with my garbage service at no charge.	family cooperation is lacking	Start program in Twin Lake. I take mine to my mom's in Muskegon.
Styrofoam	I know of a source to properly dispose of all of the above	all of the above	I want to recycle; we should make it mandatory to save our beautiful environment.	More information continually in the newspaper

Question 3 - Which items do you recycle on a regular basis?	Question 4 - Which items are most difficult for you to recycle?	Question 5 - Which of the following best describes why you recycle?	Question 6 - Which of the following describes why you don't recycle?	Question 7 - Are there any incentives that might get you to consider recycling?
None	plastics: some types are not accepted	All of the above.	When you pick up you dump it all together but you want us to separate it. Why?	already recycle
oil	Styrofoam	all of the above	I recycle	I used to work for a waste hauler and saw that the drivers who were picking up the trash also picked up recycle items rather than leaving them for the other truck. I'd love to start recycling, and would definitely do it if there were no additional cost to me by my garbage hauler. Just getting the service for free would be incentive enough for me (see question 8)
Some things we can only recycle at the center -- the private waste hauler will not pick it up.		all of the above	I have concerns that recyclables are actually recycled - not just thrown in with trash	I do recycle
Whatever Ames accepts	Styrofoam	It is my duty to try and preserve the earth that God has given us. I am recycling to be a good steward of God's world.	We are going to begin at home.	need water/juice bottles to have deposit/returnable's
Styrofoam, plastic bags	egg cartons, Styrofoam	All of the above	Need places for old floppies, VCR tapes	does not apply -- we do recycle
tin cans	Styrofoam boards,	All of the above	I do recycle	Pay more if you don't recycle

<b>Question 3 - Which items do you recycle on a regular basis?</b>	<b>Question 4 - Which items are most difficult for you to recycle?</b>	<b>Question 5 - Which of the following best describes why you recycle?</b>	<b>Question 6 - Which of the following describes why you don't recycle?</b>	<b>Question 7 - Are there any incentives that might get you to consider recycling?</b>
USED MOTOR OIL	batteries	all of the above	none of the above	if it was free
motor oil	Styrofoam	They are ALL best and important	I wish more than just #1 and #2 plastic would get picked up by city. Also, colored glass.	More initiative from the community leaders
batteries, haz waste, paints, Styrofoam beads, old appliances, electronics	Styrofoam	all of the above	Time management, which is, of course, not a good reason. Our neighborhood only takes #1 and #2 plastics and newspaper/magazines; no food cans or bottles. We are used to other cities where recycling and garbage pickup have been convenient and relatively thorough.	In some cities, citizens are fined for not recycling. We need to do this, too.
Our private company will not take cardboard or catalogs at this time or anything but clear glass.	colored bottles, foil	we don't have unlimited resources in the world	It's messy rinsing out cans like tuna fish.	Clear instructions on what and how.
food cans	Batteries	Family finds it important	I believe it ends up at the land fill so we pay extra for nothing	I had a convenient way to recycle.
junk mail and other paper	batteries, computer disks	It is not killing the environment as quickly	I live at Hartford Terrace and they obviously don't think it is important.	we need to educate public on need to recycle
white/office paper from home use, including computer	computers	Cuts my garbage in half	My garbage company doesn't promote the service & I haven't taken the time to call for all the details.	the bin we have is not large enough

Question 3 - Which items do you recycle on a regular basis?	Question 4 - Which items are most difficult for you to recycle?	Question 5 - Which of the following best describes why you recycle?	Question 6 - Which of the following describes why you don't recycle?	Question 7 - Are there any incentives that might get you to consider recycling?
pop cans	Batteries	I believe that it should be law for people to recycle and compost their waste	I have not come up with a good place in my house to place my recycling before bringing it outside.	If I could get a bigger bin!!!!
household hazardous waste	none of the above	Extra garbage costs me extra to get rid of	When my garbage men did do recycling, they consistently forgot to pick up the recycle bin!	I was impressed that the Germans were required to recycle; I wish that we were too.
Styrofoam; CFLs	green and other colored glasses	I want a better world for my grandchildren	I do recycle	I actually want to recycle
aluminum cans, tin cans	batteries	So that we leave less junk for the next generation	I do recycle	What are the pickup days?
batteries (PH-MC), green glass (bring in to service center)	computer equipment	Habit	not enough room at house and its dirty smelly garbage	If I had more info on how and when the pickup was
batteries, aerosol cans	Styrofoam eggs carton and other Styrofoam	All the above and more	only take #1 and #2 plastics	Nicer collectors
Styrofoam from meat packing	plastic grocery bags, packaging foam and peanuts	I also recycle at 2 houses in Lakeside	Used to recycle...but the bags were put into the same spot of the truck as the regular trash & we still got charged for recycling.	I used to recycle everything but the requirements by my hauler became so stringent that I just could not spend that much time sorting. It is hard to meet all bundling requirements. Also, it isn't practical to take my recycling somewhere else. There should be an easier way

Question 3 - Which items do you recycle on a regular basis?	Question 4 - Which items are most difficult for you to recycle?	Question 5 - Which of the following best describes why you recycle?	Question 6 - Which of the following describes why you don't recycle?	Question 7 - Are there any incentives that might get you to consider recycling?
plastic bags	milk jugs, cardboard	Have been recycling for at least eight years	I live in an apartment and recycling is not offered.	I do recycle
boxboard	plastic bags have to be taken to Wal-Mart's recycling		I have been told the recycled items are often added to the Garbage Trucks and taken to landfill. Why pay extra, if it isn't being done correctly.	More friendly collectors
Metal taken to Padnos or Beacon	packaging containers not accepted by recyclers, like deli containers		Waste hauler doesn't take a lot of items	I would like instructions on how and what to recycle
dry cell batteries	batteries- energy efficient light bulbs		waste hauler limits types of glass, plastic they will accept	If it were free
plastic grocery bags- take them to Wal-Mart	dc batteries -- AAA, AA, C, 9volt, etc.		I am aware of the county recycling center on near Laketon but it is not open on times I do not work, i.e. Saturday or evenings	I would recycle more plastics if my hauler would take them
motor oil	Cardboard - our provider doesn't recycle this		not knowing where to take paint, etc	If the recycling services went all the way out to my house
Box board (such as cereal boxes)	PLASTIC GROCERY BAGS		don't believe that my waste hauler actually recycles, seems to dump everything in together after I have it all separated from the other trash	We would like a bigger recycling container

<b>Question 3 - Which items do you recycle on a regular basis?</b>	<b>Question 4 - Which items are most difficult for you to recycle?</b>	<b>Question 5 - Which of the following best describes why you recycle?</b>	<b>Question 6 - Which of the following describes why you don't recycle?</b>	<b>Question 7 - Are there any incentives that might get you to consider recycling?</b>
boxboard, junk mail	computer components		There is a cost on for recycling each month from the waster hauler on top of taking our regular garbage.	Need containers for recycling at the Cedar Creek Transfer Station
Plastic limited to 1 & 2 at our station	Spray cans		transfer station not located close by	I would like to get a bin from the City of Muskegon
Styrofoam	disposable batteries		My crap sat by the curb for a month and wasn't picked up	Which materials are recyclable?
no corrugated boxes, just cereal, etc.	plastics--our service is limited		Because the young people remove the items from the containers	I would like to get a law passed in Chicago or Milwaukee that would put a deposit on water bottles, but I do not know how to get it passed
Paperboard, office white paper, food scraps (compost!)	Glass and Plastic		If it is not easy, I am not going to do it	If it were free and there were a bin nearby
TVs, computers, electronic devices (through Goodwill)	non #1 or #2 plastics		No bin	Free or compensated for doing it.
Styrofoam	spoiled gasoline from snow blower, outboard motor		Recycling services are not offered at my apartment complex.	Some items are not recyclable
oil, Styrofoam	Styrofoam		Don't have time	
we also compost kitchen, garden and yard waste	electronics-circuit boards		Pop cans	More Bins
batteries	plastics other than #2, glass other than		I have never been offered a recycling service	I am really interested in recycling, but we need more and better

<b>Question 3 - Which items do you recycle on a regular basis?</b>	<b>Question 4 - Which items are most difficult for you to recycle?</b>	<b>Question 5 - Which of the following best describes why you recycle?</b>	<b>Question 6 - Which of the following describes why you don't recycle?</b>	<b>Question 7 - Are there any incentives that might get you to consider recycling?</b>
	clear			materials on how to recycle
plastic bags to food pantry	Styrofoam, batteries		I would if the trash collector would actually recycle the material	Need container
anything that is accepted	Styrofoam		I burn burnables	
office paper - my largest item	Non-compostable food waste (boxes, Styrofoam, etc)		How to prepare recyclables	proof that its cost effective and decreases landfill space
Paint	Batteries- all sizes		Hard to carry the container to the curb	Containers would need to be in the apt area as there is no room to store things inside my apartment
Extruded Polystyrene to Muskegon, Plastic Bags to Wal-Mart	batteries		The hauler ran over our bin and would not pick up from our new bin	If it was free to recycle from my end
Ink Cartridges	Medicines		Our waste hauler only takes newspaper and not other items	For me recycling must be free considering that someone is making \$\$ on the other end.
Phone Books	Plastic Grocery Bags		More bins	recycling requires rinsing of cans, bottles, etc. and removing paper labels, it can be very time consuming
Aluminum Cans & Foil	Light Bulbs		Don't have time	break in fees for collection

Question 3 - Which items do you recycle on a regular basis?	Question 4 - Which items are most difficult for you to recycle?	Question 5 - Which of the following best describes why you recycle?	Question 6 - Which of the following describes why you don't recycle?	Question 7 - Are there any incentives that might get you to consider recycling?
Plastic #1-7	Styrofoam		Live in an apartment- can't drive	recycling pickup for apartment dwellers and/or Longer hours at recycling center
Wine Bottles	Metals		I spent time sorting washing so the trash hauler could through it all in the same truck	especially for businesses & organizations
Tin Cans	Nature Recycles		It is easier to place in the trash and take it to the landfill	If it was at no cost
Office Paper	Styrofoam		I don't know what to recycle	Emphasizing it's importance as a community
Envelopes	Plastic Shopping Bags		Having multiple bins available	no
Oil	Styrofoam		I do recycle	weekly pickup would be nice
Used Oil	Batteries		children are absent minded about recycling	don't know
Small Batteries	Colored Glass		I live in an apartment complex that doesn't offer that. We have dumpsters to put our garbage in.	I do recycle
Junk Mail	Styrofoam Packing		Isn't offered	No
Other Paper	Egg Cartons		Collectors would say the item was not recyclable	If it was provided to apartment complexes.
Old Oil	White Paper		I believe that recycling should be mandatory. Allied waste does not give a rip whether or not they pick up the recycling.	AVAILABLE AND FREE

<b>Question 3 - Which items do you recycle on a regular basis?</b>	<b>Question 4 - Which items are most difficult for you to recycle?</b>	<b>Question 5 - Which of the following best describes why you recycle?</b>	<b>Question 6 - Which of the following describes why you don't recycle?</b>	<b>Question 7 - Are there any incentives that might get you to consider recycling?</b>
Aluminum Cans	I would do more if it were more convenient		Live in the boondocks	
LP Tanks	Styrofoam		I do not have a recycling bin	
Wood	Plastic food containers		Don't think about it.	
Glass Windows	Cardboard Boxes		We haul our garbage to the dump once a month	
Tires	Styrofoam		Never know when he is collecting	
Old Batteries	Bins are not big enough for all of our recycling		We take our garbage to the dump	
Styrofoam	Mercury		No recycling done at the Cedar Creek Transfer Station	
Batteries	Curley light bulbs		I don't know if my waste hauler offers the service	
Shopping Bags	Plastic bags		seeing the waste hauler put the recycling with the waste, even though it was separated	
Batteries	Household Batteries			
Ink Cartridges	#1/2 Plastics			
Packing beads-deliver to the UPS Store	Flashlight Batteries			
Paper	Electronics			
Styrofoam	Smoke alarms			
Batteries	Odd Batteries			
Oil				
Leaves				

<b>Question 3 - Which items do you recycle on a regular basis?</b>	<b>Question 4 - Which items are most difficult for you to recycle?</b>	<b>Question 5 - Which of the following best describes why you recycle?</b>	<b>Question 6 - Which of the following describes why you don't recycle?</b>	<b>Question 7 - Are there any incentives that might get you to consider recycling?</b>
Cans				
Cans				
Old mail				
Electronics				
Cans				
Cans				
Grocery bags				
Ink Cartridges				
Batteries				
Materials that involve refunds				
All allowed				
Junk Mail				
Plastic Flowerpots				
Aluminum Foil				
#1/2 Plastics				
Batteries				
Ink Cartridges				
Bottles/cans with deposits				
Batteries				
Construction Materials				
Mercury bulbs and batteries				

## Appendix G – A State Perspective

### Access to Recycling Services: State Perspective

A 2001 study of municipal recycling data in Michigan reported that 303 communities in the State managed or provided 347 curbside recycling programs serving approximately 3.67 million residents. The study also found that 377 communities and private businesses manage and/or operate 425 drop-off collection programs that serve 5.47 million residents in the state. The study results show that only 37% of the state population has access to curbside recycling while 55% has access to a drop-off location.

Michigan ranks LOWEST among the Great Lakes states in terms of the population's access to curbside recycling programs. The greatest growth in the Great Lakes region has occurred in Indiana. Michigan's southerly neighbor has increased the percentage of its population with access to curbside recycling by 334%.

**With 37% of Michigan residents having access to curbside recycling services, Michigan ranks well below the regional average of 65% and the national average of 50%.**

### **Survey of State Residents: Satisfaction with Recycling**

In April, 2005, Public Sector Consultants conducted a telephone-based survey of 800 Michigan residents to ascertain public opinion about comprehensive recycling and options for funding recycling. The major findings reported by Public Sector include the following (margin of error: +/- 4%):

- 85% of respondents report some type of recycling program in their community – this figure may be attributable in part to the bottle deposit law; 47% report that curbside services is available; 23% report that drop-off location is available; 8% report there is no recycling program available in their community.
- 42% of respondents in West Michigan region reported that they recycle “all the time”; this compared to a high of 58% for southeast Michigan and 53% for “southern” Michigan
- “Lack of convenience” is the most common reason reported for not recycling (43% of respondents); 13% do not recycle because of fees they would have to pay; 11% are “too busy” to recycle and 10% report recycling is “too complicated”
- Respondents did not rank themselves highly in terms of recycling: 45% felt they did a “fair” job of recycling; 29% felt they did a “pretty good” or “excellent” job and 16% felt they did a “poor” job of recycling
- 90% of respondents supported the concept of a “comprehensive” recycling effort
- **67% of respondents indicated a willingness to support funding for a comprehensive recycling program in Michigan; residents were most persuaded to support a comprehensive program when told that, if current trends continue, Michigan landfills will be full within 20 years.**