

# **ASSESSMENT OF THE INFRASTRUCTURE TO MANAGE ELECTRONIC SCRAP IN ILLINOIS**

*Prepared for*

**Illinois Recycling Association**

P. O. Box 3717  
Oak Park, Illinois 61802  
(708) 358-0050

*Under a Grant Provided by*

**Illinois Department of Commerce  
and Economic Opportunity**

Bureau of Energy and Recycling  
620 East Adams  
Springfield, Illinois 62701  
(217) 782-7887

*Prepared by*

**Engineering Solutions & Design, Inc.**

9393 W. 110<sup>th</sup> Street, Suite 500  
Overland Park, Kansas 66210  
(800) 298-1851



**October 17, 2007**

## **ACKNOWLEDGEMENTS**

Engineering Solutions & Design, Inc. would like to thank the following organizations and individuals for their technical review and text preparation support. Without their support this report could not have been completed successfully.

### **Illinois Department of Commerce and Economic Opportunity Bureau of Energy and Recycling Staff**

David Ross  
Diana DeWeese  
David Smith  
Sam Al-Basha

### **Illinois Recycling Association**

Rod Fletcher

## EXECUTIVE SUMMARY

The Illinois Recycling Association (IRA) received a grant from the Illinois Department of Commerce and Economic Opportunity (DCEO) to determine the current and potential electronic scrap (E-scrap) processing and/or refurbishing capacity in the State of Illinois. This effort was divided into three distinct parts: (1) determining the number of entities presently involved in the electronic scrap industry in Illinois; (2) identifying a reliable estimate of the amount of electronic scrap that is presently generated and the potential amount of electronic scrap that could be generated by 2010; and (3) providing a discussion and geographical mapping to outline information on the present electronic scrap industry and its capability to manage estimated quantities of E-scrap generated in the state.

Two parallel data collection efforts were conducted as a part of this project. One effort focused on the collection of data that could be utilized to determine the generation rate of electronic scrap for the State of Illinois. The other effort focused on identifying various entities within the state that comprise the Illinois electronic scrap recycling industry.

The search for electronic scrap recyclers within the State of Illinois began with a list of 213 potential contacts within the state. From this initial list, 78 organizations and 87 locations were found that currently are involved in electronic scrap recycling in Illinois.

For the purposes of this assessment, an E-scrap recycler is the umbrella term used for the following terms:

**Processor** – A business that utilizes manual dismantling processes and/or mechanical de-manufacturing to recover commodities.

**Refurbisher** – A business that accepts non-functioning or damaged covered electronic devices (CED's) and repairs them to a functioning state for subsequent re-use by persons other than the original owner.

**Broker** – A business that engages in the buying, selling, or trading of CED's without performing any processing or refurbishing processes.

**Collector** – A business or entity that provides a permanent drop-off or collection point.

**Reseller** – A retail business that accepts used CED's, performs cosmetic cleanup, and resells the CED to the general public.

Many of the organizations contacted provided more than one type of E-scrap recycling. There are:

- 10 organizations that collect and process E-scrap;
- 11 organizations that collect and resell E-scrap;
- 2 organizations that collect, process, refurbish and resell E-scrap;
- 20 organizations that collect and refurbish E-scrap;
- 8 organizations that collect, refurbish and resell E-scrap
- 3 organizations that processes and refurbishes E-scrap; and
- 2 organizations that collects, processes, and resells E-scrap.

Of the 78 organizations that were contacted and responded, a total of 41 of these organizations were willing to complete a questionnaire. Of the 41 organizations that provided responses to the questionnaire, 21 limited their operation to the collection of various types of E-scrap. The remaining 20 responding organizations processed or refurbished E-scrap and of these, 12 also collected E-scrap and 1 resold some electronic equipment. To compliment the state list, a list of nationally-based E-scrap recyclers was developed. Of the 142 initial contacts, 41 nationally-based organizations that recycle E-scrap for Illinois residents were identified.

The next step in the study was to develop a per capita electronic scrap generation rate for both rural and urban areas. The E-Scrap generation rate for Illinois is based on waste characterization studies that provide data that best correspond to the State of Illinois. The data from these studies was utilized to develop formulas that produced the following generation rates.

- Rural Area Per Capita Electronic Scrap Generation Rate = 9.17 pounds/year
- Urban Area Per Capita Electronic Scrap Generation Rate = 15.27 pounds/year

Utilizing these generation rates, the urban and rural E-scrap generation rates for Illinois in 2007 and 2010 were developed. The following table presents this information.

.

### **E-SCRAP GENERATION RATES FOR ILLINOIS**

<b>Area</b>	<b>Population</b>	<b>Electronic Scrap Generation (Tons)</b>	
		<b>2007</b>	<b>2010</b>
Urban	11,462,549	87,517	109,396
Rural	1,369,421	6,279	7,848
Entire State	12,831,970	93,796	117,244

Although these generation rates are based on the best available information, it is important to note that these rates are not firm, fixed numbers. They are a reflection of the best available data and it is affected by a number of variables. These variables – including the constant changes in electronics, purchasing decisions by consumers and businesses, and the rate of obsolescence of electronic products – make any E-Scrap generation rate a reasonable assumption, at best.

A potential impact on the E-Scrap system in Illinois is the pending switch from analog to digital television signals. This situation has the strong potential to initially overwhelm processors in the state and markets for CRT's and monitors from Illinois. Considering a national impact, the conversion will likely flood processors who will be unable to keep up, drop market prices for lead glass, and regrettably landfilling will become the primary management option.

The final step in the study was the determination of the ability of the E-scrap system in Illinois to process the E-scrap generated in the state. Eliminating the limited impact of E-scrap refurbishers on the system, the E-scrap processors were evaluated. Based on the E-scrap processors' responses to the questionnaire, the annual throughput for these processors was calculated by a straight-forward method of multiplying the daily throughput of each processor by 260 annual work days – a 5-day work week schedule. Based on this calculation the current annual throughput for all of the processors is 83,720 tons.

However, the determination for potential capacity includes other variables. While processors did supply the number of daily work shifts, many indicated that work shifts vary. Many shifts are only 8 hours a day, but others indicated that a work shift can range higher, from 8 up to 12 hours per day, as may be needed to accomplish their production schedules. Processors also experience down time for unexpected situations and scheduled equipment maintenance.

Utilizing the figure of 83,700 tons for the present annual throughput for the processors, an analysis of the processors' potential to increase throughput capacity was conducted. This analysis resulted in a baseline potential capacity of 125,580 tons per year and a maximum capacity of 175,812 tons per year, given the existing infrastructure. Some firms may fall short of the maximum while others may exceed their individual maximum. This then results in an operational range of existing facilities from the current throughput of 83,720 up to an estimated maximum of 175,812 tons per year. The primary concentration of processors is in the Chicago MSA with 76% of the maximum throughput or 133,224 tons per year. The St. Louis MSA has a capacity of 38,220 tons per year and represents 22% of the maximum throughput. The following table indicates that the State of Illinois could have a potential processing surplus capacity of 58,562 tons per year.

#### **STATEWIDE GENERATION VS. CAPACITY**

	<b>2010 (Tons)</b>
Estimated E-scrap Generation	117,250
Estimated Maximum Capacity	175,812
Net Difference	58,562

While it would appear that sufficient processing capacity would exist, there is a significant point to note. The survey was unable to ascertain what quantity of E-scrap is originating from out-of-state sources and currently being accepted and processed in Illinois. Survey information indicated that this was occurring now; however, it is unknown what quantities or percentage of processing capabilities this would affect in the future.

Given the rapid development and interest of private sector entities to create and expand the E-scrap processing business overall, it would be reasonable to expect that any potential deficiency in processing capacity within the state would be an opportunity not to be overlooked by in-state entities as well as regional and national processing entities. The adoption of proposed state legislation will likely trigger a combination of in-state and out-of-state partnerships and arrangements to adequately manage E-scrap

## TABLE OF CONTENTS

LIST OF TABLES. . . . .	ii
LIST OF FIGURES. . . . .	iii
1.0 INTRODUCTION. . . . .	1
2.0 DATA COLLECTION. . . . .	2
2.1 ELECTRONIC SCRAP RECYCLING ENTITIES. . . . .	2
2.1.1 Contact Procedure. . . . .	2
2.1.2 Contact Issues. . . . .	5
2.1.3 Contact Results. . . . .	5
2.1.4 Survey Results. . . . .	17
2.1.5 Nationally Based E-Scrap Recyclers. . . . .	26
2.2 GENERATION RATE DATA COMPILATION. . . . .	33
2.2.1 Comparable Studies. . . . .	33
2.2.2 Limitations of Information. . . . .	33
2.2.3 Data Analysis. . . . .	34
2.2.4 Analog Television Impact. . . . .	37
3.0 INTERACTIVE MAP. . . . .	38
4.0 GENERATION RATES. . . . .	43
5.0 PROCESSING CAPACITY. . . . .	47
6.0 CONCLUSIONS. . . . .	52
7.0 REFERENCES. . . . .	56

## LIST OF TABLES

TABLE 1	SURVEY QUESTIONS. . . . .	3
TABLE 2	E-SCRAP RECYCLERS IN ILLINOIS. . . . .	6
TABLE 3	NUMBER OF E-SCRAP RECYCLERS WITHIN EACH CLASSIFICATION. . . . .	11
TABLE 4	ILLINOIS COUNTIES WITH E-SCRAP RECYCLING LOCATIONS. . . . .	15
TABLE 5	ILLINOIS ECONOMIC DEVELOPMENT REGIONS WITH E-SCRAP RECYCLING LOCATIONS . . . . .	16
TABLE 6A	OPERATIONAL INFORMATION FOR E-SCRAP COLLECTORS IN ILLINOIS. . . . .	20
TABLE 6B	ADDITIONAL OPERATIONAL INFORMATION FOR E-SCRAP COLLECTORS IN ILLINOIS. . . . .	21
TABLE 7A	OPERATIONAL INFORMATION FOR E-SCRAP PROCESSORS AND/OR REFURBISHERS IN ILLINOIS. . . . .	24
TABLE 7B	ADDITIONAL OPERATIONAL INFORMATION FOR E-SCRAP PROCESSORS AND/OR REFURBISHERS IN ILLINOIS. . . . .	25
TABLE 8	NATIONALLY-BASED E-SCRAP RECYCLERS. . . . .	27
TABLE 9	NATIONALLY-BASED ELECTRONIC COMPANIES THAT ACCEPT E-SCRAP. . .	29
TABLE 10	OPERATIONAL INFORMATION FOR NATIONAL E-SCRAP PROCESSORS AND/OR REFURBISHERS. . . . .	32
TABLE 11	E-SCRAP GENERATION RATES FOR ILLINOIS. . . . .	43
TABLE 12	E-SCRAP GENERATION RATES FOR ECONOMIC DEVELOPMENT REGIONS. .	44
TABLE 13	E-SCRAP GENERATION RATES FOR URBAN ILLINOIS COUNTIES. . . . .	45
TABLE 14	E-SCRAP GENERATION RATES FOR RURAL ILLINOIS COUNTIES. . . . .	46
TABLE 15	E-SCRAP PROCESSING CAPACITY FOR ILLINOIS . . . . .	48
TABLE 16	STATEWIDE GENERATION VS. CAPACITY. . . . .	51



## LIST OF FIGURES

FIGURE 1	ILLINOIS COUNTIES WITH E-SCRAP RECYCLERS. . . . .	12
FIGURE 2	ILLINOIS COUNTIES WITH E-SCRAP COLLECTORS. . . . .	13
FIGURE 3	ILLINOIS COUNTIES WITH E-SCRAP PROCESSORS/REFURBISHERS. . . . .	14
FIGURE 4	INTERACTIVE MAP LISTING FEATURES AND COUNTY INTERFACE. . . . .	39
FIGURE 5	INTERACTIVE MAP WITH INSTRUCTIONS AND COUNTY INTERFACED. . . . .	40
FIGURE 6	INTERACTIVE MAP LISTING FEATURES AND ECONOMIC DEVELOPMENT REGION. . . . .	41
FIGURE 7	INTERACTIVE MAP ADMINISTRATION TOOL. . . . .	42
FIGURE 8	LOCATION OF E-SCRAP PROCESSORS WITH ESTIMATED MAXIMUM PROCESSING CAPACITY. . . . .	50

## **1.0 INTRODUCTION**

The Illinois Recycling Association (IRA) received a grant from the Illinois Department of Commerce and Economic Opportunity (DCEO) to determine the current and potential electronic scrap (E-scrap) processing and/or refurbishing capacity in the State of Illinois. In addition, the IRA desired to ascertain if the current and potential E-scrap recyclers have the capacity to meet the expected demand and adequately manage electronic scrap in the state should the proposed Electronic Scrap Recycling Act (SB 1583) be enacted by the General Assembly. This legislation is proposing to create a statewide system to recycle certain electronic devices and to ban these devices from landfills within three years of enactment.

To address this issue, Engineering Solutions & Design, Inc. (ES&D) was retained by IRA to determine the present capabilities of the electronic scrap recycling industry in the State of Illinois and to evaluate the capabilities of this industry. This effort was divided into three distinct parts: (1) determine the number of entities presently involved in the electronic scrap industry in Illinois; (2) identify a reliable estimate of the amount of electronic scrap that is presently generated and the potential amount of electronic scrap that could be generated by 2010; and (3) provide a discussion and geographical mapping that outlines information on the present electronic scrap industry and its capability to manage estimated quantities of E-scrap generated in the state.

For purposes of this study, electronic scrap (E-scrap) is defined as: a computer, portable computer, electronic printer, computer peripheral, video display device, video display device peripheral, facsimile machine, cellular telephone, portable calculator, PDA, and electronic encoding/decoding audio data storage and retrieval device. This is the same definition of a "covered electronic device (CED)" as proposed in SB 1583.

The following sections provide information on the methods utilized to gather the information needed to complete each of the three parts of this effort. The results of the information gathering are provided as well as conclusions. In addition to this report, an interactive mapping system was developed that provides easy access to information on the entities providing electronic scrap recycling services. This interactive map was developed for use either as an integrated part of a website, or it can be distributed as a stand-alone program.

## **2.0 DATA COLLECTION**

Two parallel data collection efforts were conducted as a part of this project. One effort focused on the collection of data that could be utilized to determine the generation rate of electronic scrap for the State of Illinois. The other effort focused on identifying various entities within the state that comprise the State of Illinois electronic scrap recycling industry.

### **2.1 ELECTRONIC SCRAP RECYCLING ENTITIES**

#### **2.1.1 Contact Procedure**

In order to establish contacts with various electronic scrap recyclers, ES&D first began by attempting to contact recyclers identified as operating in Illinois as listed in the *Midwest Directory of Electronic Equipment and Computer Recyclers/Reuse Organizations*. This document, created and maintained by the DCEO's Bureau of Energy and Recycling, was provided to ES&D to serve as an initial point of contact for Illinois electronic scrap recyclers.

While we attempted to contact the Illinois recyclers in the *Midwest Directory of Electronic Equipment and Computer Recyclers/Reuse Organizations*, we also assessed what counties were left without any potential contacts. While 33 counties had potential contacts in the *Midwest Directory of Electronic Equipment and Computer Recyclers/Reuse Organizations*, 69 counties did not. In an attempt to contact a recycler in each of Illinois' 102 counties, we utilized *Yahoo! Local* (an online database of organizations arranged by proximity to a variable location and search parameters). In order to identify potential electronic scrap recyclers, we searched *Yahoo! Local* sites for electronics recyclers and recyclers in the respective county seat of the 69 counties without potential contacts and the entire county for the 33 counties where E-scrap recyclers supposedly existed.

ES&D then continued contacting organizations identified in the *Midwest Directory of Electronic Equipment and Computer Recyclers/Reuse Organizations* as well as organizations identified through the *Yahoo! Local* search. A brief list of questions was developed to use when telephoning each identified contact. Table 1 presents the survey questions.

Organizations were asked if they still existed as an electronic scrap processor or collector in any capacity. If the answer was positive, we continued with the interview by asking a few basic questions about the organization. The initial questions encompassed the date the business originated, the number of personnel employed by the organization, whether the organization was a for-profit or non-profit entity, and we also reconfirmed that our contact information was correct.

**TABLE 1.  
SURVEY QUESTIONS**

<b>Question 1</b>	What date did the business start?
<b>Question 2</b>	How many personnel do you currently employ?
<b>Question 3</b>	Is your organization a for-profit or non-profit entity?
<b>Question 4</b>	How many work shifts do you have?
<b>Question 5</b>	How do you collect your electronic scrap (i.e. carry in, collection vehicles with set routes, drop-off locations, etc.)?
<b>Question 6</b>	If applicable how much scrap do you process daily or annually?
<b>Question 7</b>	Does your scrap originate from in state, out of state, or both?
<b>Question 8</b>	Is your scrap from the residential or commercial sector or both?
<b>Question 9</b>	What type of electronic scrap do you receive, or if better suited, what electronic scrap will you not accept?
<b>Question 10</b>	Is there any fee associated with your services; if so, what is it based on?
<b>Question 11</b>	What is your current storage capacity for electronic scrap?
<b>Question 12</b>	If needed, do you have the physical ability to expand your services or storage capacity?

After basic questions about the organization were asked, more descriptive questions about the organization's involvement in E-scrap recycling were asked. ES&D queried how they collected their scrap (through drop-off boxes, routes with regular pick ups, or other means); how much scrap they processed, if applicable; whether their material originated in state, out of state, or both; if the scrap was generated in the residential or commercial sector; the types of electronic scrap received; if there was a fee associated with their services and how it was determined; and the current storage capacity for electronic scrap and whether there was an ability to expand. An opportunity was provided for the contact person to include any other information they found pertinent to their electronic scrap recycling. The aforementioned question responses led to more contacts in and around Illinois and provided further insight into whether, in rare cases, the recycler resold, refurbished or brokered electronic scrap.

After initial calls were made, ES&D reassessed the methodology as many potential contacts either ignored our calls or neglected to answer after multiple attempts at reaching them. The Internet and e-mail were utilized to continue surveying the contacts that weren't responding. The *Midwest Directory of Electronic Equipment and Computer Recyclers/Reuse Organizations* listed Internet-based contact information including both e-mail addresses and websites along with applicable telephone contact information. E-mails were sent to the contacts with a survey identical to the one used in the telephone survey.

ES&D also queried out-of-state recyclers to ascertain whether they also served the Illinois area. The *Midwest Directory of Electronic Equipment and Computer Recyclers/Reuse Organizations* also listed organizations that were located in counties that bordered Illinois and national organizations that potentially served Illinois. These firms were contacted and were forwarded the same survey questions that were sent to the Illinois contacts.

Finally, in order to provide a more comprehensive database of electronic scrap recyclers in the state, additional databases at both the national and regional level were sought: the *E-Cycling Central* database, national recycling organizations were found in Appendix 3B of the *E-scrap Collection Project* for the Metro Regional Environmental Management of Portland, Oregon, and the Illinois Recycling Association's website. These three new sources were analyzed and redundant contacts were discarded and new information gathered.

### 2.1.2 Contact Issues

ES&D, while attempting to contact electronic scrap recycling organizations, encountered a variety of problems that hampered the development of the Illinois E-scrap recycling database. While a significant level of effort was allocated to this task, the following comments should be noted:

1. Some organizations were not cooperative when contacted and no information was obtained.
2. Not all information requested was provided by contacts – citing proprietary information or other concerns.
3. The E-scrap recycling business is a dynamic industry; therefore this data as presented should be viewed as a “snapshot” at this point in time. Market conditions can lead to consolidations and/or business closures.

### 2.1.3 Contact Results

ES&D began the search for electronic scrap recyclers in the State of Illinois with a list of 130 potential contacts and later added 83 more potential contacts. Out of these 213 potential contacts within the state, 78 organizations and 87 locations were found that currently are involved in electronic scrap recycling in Illinois. Table 2 provides a list of the E-scrap recyclers, the services each provides, and locations. The table is organized by county.

For the purposes of this assessment, an E-scrap recycler is the umbrella term used for the following terms:

**Processor** – A business that utilizes manual dismantling processes and/or mechanical de-manufacturing to recover commodities.

**Refurbisher** – A business that accepts non-functioning or damaged CED’s and repairs them to functioning state for subsequent re-use by persons other than the original owner.

**Broker** – A business that engages in the buying, selling, or trading of CED’s without performing any processing or refurbishing processes.

**Collector** – A business or entity that provides a permanent drop-off or collection point.

**Reseller** – A retail business that takes in used CED’s, does cosmetic cleanup, and resells the CED to the general public.

**TABLE 2.**  
**E-SCRAP RECYCLERS IN ILLINOIS**

County	Name	Address	Phone	E-Mail/Website	Coll	Proc	Refur	Brok	Resell
Champaign	Mack's Twin City Recycling	2808 N. Lincoln Ave., Urbana IL, 61802	(217) 328-2100	www.macksrecycling.net	x				x
Champaign	Bench Mark Computer	126 W. Main, Urbana IL, 61801	(217) 367-9716		x		x		x
Clay	Clay County Rehab Center	P.O. Box 659, 530 W. Fourth Street, Flora IL, 62839	(618) 662-4916	www.clayrhab.com	x		x		x
Clinton	A1 Laptop Shop	1254 N. Poplar, Centralia IL, 62801	(618) 553-3355	a1laptopssales@sbcglobal.net	x		x		
Cook	Fastpace Business Services	3815 N. Ventura Drive, Arlington Heights IL, 60004	(847) 398-5757		x		x		x
Cook	Air Cycle Corporation	2000 S. 25th Ave., Suite C, Broadview, IL 60155	(800) 909-9709 Ext: 4	www.Aircycle.com				x	
Cook	Assistive Technology Exchange Network A Program of United Cerebral Palsy of Greater Chicago	7550 West 183rd St., Tinley Park, IL 60477	(800) 476-2836	www.ucpnet.org	x		x		
Cook	Cartridge World- Danada	97 Danada Square East, Wheaton IL, 60187	(630) 849-4126		x				
Cook	Cartridge World- Lakeview	3259 N. Ashland Ave., Chicago IL, 60657	(773) 273-3455	www.chicagocartridgeworld.com	x				
Cook	Cartridge World- Lincoln Park	2634 N. Clark Street, Chicago IL, 60614	(773) 273-3455	www.chicagocartridgeworld.com	x				
Cook	Chicago Coalition for Information Access Community Technology Assistance Program C/O NFD	3411 W. Diversy Suite 1, Chicago, IL 60647	(773) 384-8827	cdavidson@igc.org www.cpsr.cs.uchicago.edu	x		x		
Cook	City of Chicago Electronics Collection Center	1150 N. Branch, Chicago, IL 60622	(773) 583-7575*	www.bluecartschicago.org	x		x		
Cook	Computer Depot	3145 S. Oak Park Ave., Berwyn IL, 60402	(708) 749-0800	computerdepot@mcloudusa.net	x				
Cook	Computers For Schools	Warehouse: 3350 N. Kadzie Dock 2, Chicago IL 60618 Office: 3642 N. Springfield Ave., Chicago IL, 60618	(773) 583-7575*	www.pcsforschools.org willie@pcsforschools.org	x				
Cook	Digilog Electronics Warehouse	3350 N. Kedzie Dock D., Chicago IL, 60618	(773) 583-6653	www.miscomputer.com	x	x			
Cook	Digital Workforce Education Society	2800 S. Western Ave., Chicago, IL 60608	(630) 886-3808	www.digitbridge.org www.alado.net			x		
Cook	EDCO Recycling Company	8224 S. Vincennes Ave., Chicago IL, 60620	(773) 873-1600	www.edcorecycling.com	x				
Cook	ARC International	880 Mark Street, Elk Grove Village IL, 60007	(630) 412-8000		x				
Cook	Belmont Technology Remarketing	1401 Mark St., Elk Grove Village IL, 60007	(847) 750-9354	www.belmont-trading.com	x	x			
Cook	Evergreen Supply Company	9901 South Torrence, Chicago IL, 60476	(773) 734-9873	www.everlights.com	x		x		
Cook	Give a Computer	601 N. Williams Street, Thornton IL, 60476	(708) 439-4094	www.giveacomputer.org	x		x		
Cook	Give a Computer- Bellwood Drop-off	2801 Harrison Street, Bellwood IL, 60104			x				
Cook	Green Sweep LLC.	900 N. Franklin Ave. #102, Chicago IL, 60610	(773) 348-3668	ww.green-sweep.com				x	

**TABLE 2.**  
**E-SCRAP RECYCLERS IN ILLINOIS (continued)**

County	Name	Address	Phone	E-Mail/Website	Coll	Proc	Refur	Brok	Resell
Cook	Intechra	1876 S. Elmhurst Rd., Mt. Prospect IL, 60056	(847) 472-9600	www.intechra.com	x				
Cook	Intercon Solutions Inc.	1001-59 Washington St., Chicago Heights, IL 60411	(708) 756-9838	www.interconrecycling.com	x	x			
Cook	Maine Scrap, Inc.	1274 Rand Rd., Des Plaines IL, 60016	(847) 824-3175		x				
Cook	Sipi Metals Corporation	1720 N. Elston Ave., Chicago IL, 60622	(800) 621-8013	www.sipimetals.com		x			
Cook	Tele-movers Inc.	518 Pratt Ave N., Schaumburg IL, 60193	(847) 352-1101	www.tele movers.com	x				x
Cook	Time Dollar Program	P.O. Box 436964, Chicago IL, 60643	(773) 223-4442	www.timedollartutoring.org	x		x		
Cook	Universal Scrap Metals	2500 Fulton Street, Chicago, IL, 60612	(312) 666-0011	www.universalscrap.com		x			x
DuPage	Com2 Computers and Technology	1196 C. South Main Street, Lombard IL, 60148	(877) 977-2662	www.com2computers.com	x	x	x		
DuPage	Fortune Plastic and Metal Inc.	1650 W. Quincy Ave., Naperville IL, 60540	(630) 778-7776	www.fortunegroup.net	x	x			
DuPage	Give a Computer- Orland Park Drop-off	201 Orland Park Place, Orland Park IL, 60462			x				
DuPage	Give a Computer- Schaumburg Drop-off	1730 W. Irving Park Road, Schaumburg IL, 60193			x				
DuPage	Com2 Computers and Technology	195E Kehoe Blvd., Unit 3, Carol Stream IL, 60188	(630) 670-4090		x	x			
DuPage	Give a Computer- Warrenville Drop-off	30 W. 330 Butterfield Road, Warrenville IL, 60555			x				
DuPage	Give a Computer- Woodridge Drop-off	8000 S. Route 53, Woodridge IL, 60517			x				
DuPage	MICOMP	870 Lively Blvd., Wood Dale IL, 60191	(630) 860-4607	www.micomp.com	x		x		
DuPage	People's Computer Resource Center	201 S. Naperville Blvd., Wheaton IL, 60187	(630) 682-5402	www.peoplesrc.org			x		
DuPage	Proton Computers, Inc.	720 S. Main Street, Lombard IL, 60148	(630) 627-7623	abcscomputers@hotmail.com	x				
DuPage	River Shannon Recycling	13605 S. Halstead, Riverdale IL, 60827	(847) 581-2890	lckelly@rsrecycling.com	x	x			
DuPage	Supply-Chain Services, Inc.	250 W. North Ave., Lombard IL, 60148	(630) 629-9344	www.supply-chain services.com		x			
DuPage	Sims Recycling Solutions (Formerly United Recycling Industries, Inc).	1600 Harvester Road, West Chicago IL, 60185	(630) 231-8220	<a href="http://www.simsrecyclingsolutions.com">www.simsrecyclingsolutions.com</a> <a href="http://www.unitedrecycling.com">www.unitedrecycling.com</a>		x			
DuPage	R3 Systems Group	284 Lies Road, Carol Stream, IL, 60188	(866)332-6864	www.r3systems group.com	x		x		x
DuPage	Intergreat-Technology Solutions	800 Provincetown Dr., Carol Stream IL, 60188	(630) 653-7723	<a href="mailto:gwinkelman@igtekno.com">gwinkelman@igtekno.com</a> <a href="http://www.igtekno.com">www.igtekno.com</a>	x		x		
Fulton	Fulton County Health Department	700 E. Oak Street, Canton IL, 61520	(309) 647-1134	N/A	x	All E-scrap collected by mail			



**TABLE 2.**  
**E-SCRAP RECYCLERS IN ILLINOIS (continued)**

County	Name	Address	Phone	E-Mail/Website	Coll	Proc	Refur	Brok	Resell
Hancock	Hancock County Health Department	1006 E. Wabash P.O. Box 370, Carthage IL, 62321	(217) 357-3155	N/A	x				
Henry	Eagle Enterprises Recycling, Inc.	510 SE Industrial Ave., Galva IL, 61434	(309) 932-2936	N/A	x				
Jackson	Southern Recycling Center	300W. Chestnut, Carbondale IL, 63901	(618) 549-2880	N/A	x				
Kane	HOBİ International, Inc.	1202 Nagel Blvd., Batavia IL, 60510	(630) 761-0500	www.hobi.com		x			
Kane	MRK Group, Ltd.	801 North State Street Unit C, Elgin IL, 60123	(800) 972-1003	russsr@mrkgroup.com www.mrkgroup.com	x				
Kane	Kane County Recycling Department	719 Batavia Avenue, Galena, IL	(630) 208-3841	<a href="mailto:recycle@co.kane.il.us">recycle@co.kane.il.us</a>	x				
Kendall	Inter Connect, Inc.	803 Hawthorn St., Plainfield IL, 60544	(815) 436-0200	www.inter-connect-inc.com	x		x		x
Knox	Galesburg Transit Office	567 S. Farnham St., Galesburg IL, 61401	(309) 342-4242	N/A	x				
Lake	Future-Tek	731 Sheridan Rd., Winthrop Harbor IL, 60096	(847) 731-2914	www.shopfuturetek.com	x				
Lake	Maine Plastics, Inc.	1550 24th St., North Chicago IL, 60064	(847) 473-3553	www.maineplastics.com				x	x
Lake	Recycle I.T. Hardware	731 Sheridan Rd., Winthrop Harbor IL, 60096	(847) 379-8444	www.recycleithardware.com	x		x		
Livingston	Advanced Technology Recycling	415 W. Howard, Suite, Pontiac IL, 81764	(815) 844-7779	<a href="http://www.atrecycle.com">www.atrecycle.com</a>	x	x	x		x
Macoupin	We Care Recycling	330 West 1st North St., Carlinville IL, 62626	(217) 854-8888	N/A	x				
Madison	Total Metal Recycling	2684 Missouri Ave., Granite City IL, 62040	(866) 470-5763	<a href="http://www.tmrusa.com">www.tmrusa.com</a>		x			
McDonough	Colchester City Hall	500E. Roberts Street, Colchester IL, 62326	(309) 776-3005	N/A	x				
McDonough	Tricounty Regional Collection Facility	510 N. Pearl St., Macomb IL, 61455	(309) 331-4781	<a href="http://www.tricountyresource.org">www.tricountyresource.org</a>	x				
McHenry	Computer Recycling Group, LLC	7218 Virginia Rd., Crystal Lake IL, 60014	(815) 455-6300	info@echeloncomputers.net www.comprecgroup.com	x				
McHenry	Systec America, Inc.	308 Cary Point Drive, Cary IL, 60013	(800) 336-2131	<a href="http://www.mpsupplies.com">www.mpsupplies.com</a>	x				
McLean	Town of Normal Public Works	1301 Warriner St., Normal IL, 61761	(309) 454-9571	N/A	x				
Mercer	City Hall of Aledo	120 N. College Ave, Aledo IL, 61231	(309) 582-7241	N/A	x				
Mercer	Sherrad Village Hall	517 3rd Street, Sherrad IL, 61281	(309) 593-2415	N/A	x				

**TABLE 2.**  
**E-SCRAP RECYCLERS IN ILLINOIS (continued)**

County	Name	Address	Phone	E-Mail/Website	Coll	Proc	Refur	Brok	Resell
Peoria	Computer Recycle	2502 N Knoxville, Peoria IL, 61604	(309) 688-2667	N/A	x				
Peoria	Recycling for Illinois	401 NE Rock Island Ave., Peoria IL, 61603	(309) 682-0675	<a href="mailto:hodge.michael@gmail.com">hodge.michael@gmail.com</a>		x			
Rock Island	Premier Computer Services, Inc.	3003 48 <sup>th</sup> Ave., Moline, IL, 61265	(309) 764-7123	<a href="http://www.premiercomputer.com">www.premiercomputer.com</a>		x			x
Sangamon	BLH Computers	1832 Stevenson Dr., Springfield IL, 62703	(800) 416-5292	<a href="http://www.blhcomputers.com">www.blhcomputers.com</a> <a href="mailto:brian@blhcomputers.com">brian@blhcomputers.com</a>	x	x			
Sangamon	Butler Distribution	1140 West Reynolds, Springfield, IL 62702	(217) 528-9506	N/A	x				
Sangamon	Computer Banc	1023 Washington St., Springfield, IL 62703	(217) 528-9506	<a href="http://www.computerbanc.com">www.computerbanc.com</a>			x		
Schuyler	Rushville Public Works	Brown St., Rushville IL, 61462	(217) 322-3833		x				
Schuyler	Schuyler City Hall	200 West Washington, Schuyler, IL							
St. Clair	Action Computers	103 Frey Lane, Fairview Heights IL, 62208	(618) 628-3989	<a href="http://actioncomputers.biz">actioncomputers.biz</a>	x		x		
St. Clair	Interco Trading	2975 Kings Highway, Fairmont City IL, 62201	(618) 482-8206	<a href="mailto:mmcarthy@apci.net">mmcarthy@apci.net</a>		x			
St. Clair	Phoenix Recycling and Shredding	2795 South Belt West, Belleville IL, 62226	(618) 235-2712	<a href="http://phoeinixrecyclingandshredding.com">phoeinixrecyclingandshredding.com</a>	x				
Stephenson	Midwest Computing Services	218 West Exchange, Freeport IL, 61032	(815) 233-0002	<a href="http://go2mcs.com">go2mcs.com</a>	x				
Warren	Maple City Area Recycling Center	614 South 3rd St., Monmouth IL, 61462	(309) 734-6939	<a href="http://www.maplecity.com">www.maplecity.com</a>	x				
Warren	Monmouth Transfer Station	S. 11th St., Monmouth IL, 61462	(309) 735-2515		x				
Will	Give a Computer- Joliet Drop-off	2114 Oak Leaf Street, Joliet IL, 60436			x				
Will	Recycle of Chicago, Inc.	1220 Cambria Dr., Joliet IL, 60431	(877) 931-2400		x				
Will	Vintage Tech Recyclers	25503 W. Ruff Street Unit C, Plainfield IL, 60585	(815) 609-7013	<a href="http://www.vintagetechrecyclers.com">www.vintagetechrecyclers.com</a>	x	x	x		x
Will	E-scrap Technologies	3 Northpoint Court, Bolingbrook, IL 60440	(630) 378-1300	<a href="http://www.e-scraptechnologies.com">www.e-scraptechnologies.com</a>		x			x
Williamson	Community Electronics Tech Interface	116 S. Division Street, Carterville, IL	(618) 203-9443	<a href="http://www.cetiorg.org">www.cetiorg.org</a>	x		x		x
Winnebago	Richardson Computer Recycling	5488 Grove St., Roscoe IL, 61703	(815) 623-2358	<a href="mailto:www.srchr521@cs.com">www.srchr521@cs.com</a>	x				x
Coll = Collectors • Proc = Processor • Refur = Refurbisher • Brok = Broker • Resell = Reseller									
* Denotes a telephone number for multiple organizations run by the same group of people.									

Of the 78 listed organizations that provide services in Illinois, 62 collect electronic scrap, 19 process electronic scrap, 23 refurbish electronics, 3 broker and 15 resell electronic scrap. Table 3 provides the types of E-scrap recycling and the number of organizations currently providing each specific type of recycling. Many of the organizations contacted provide more than one type of E-scrap recycling. There are:

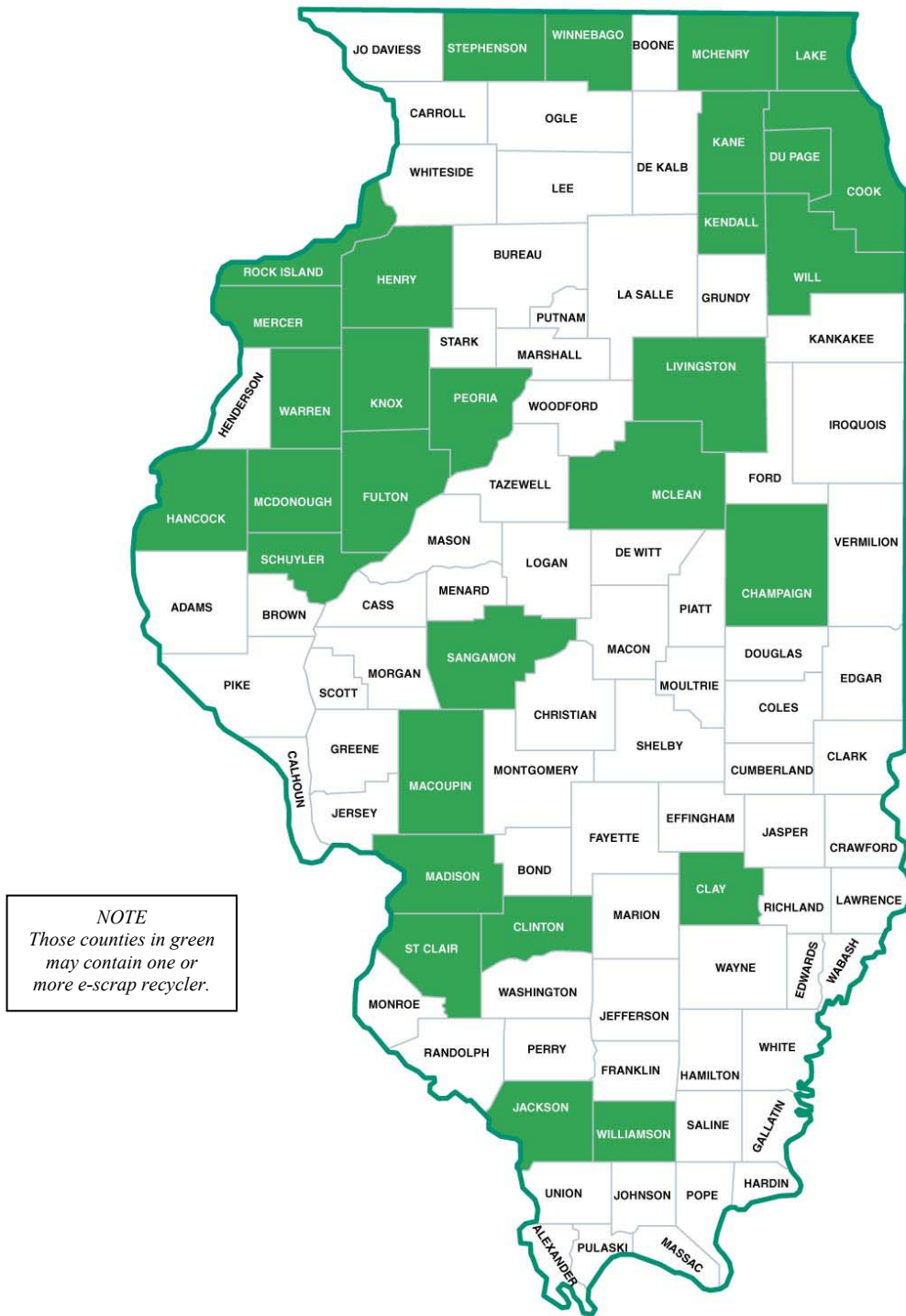
- 10 organizations that collect and process E-scrap;
- 11 organizations that collect and resell E-scrap;
- 2 organizations that collect, process, refurbish and resell E-scrap;
- 20 organizations that collect and refurbish E-scrap;
- 8 organizations that collect, refurbish and resell E-scrap
- 3 organizations that processes and refurbishes E-scrap; and
- 2 organizations that collects, processes, and resells E-scrap.

These 78 organizations are located throughout Illinois; however, there are electronic scrap recyclers in only 30 of the 102 Illinois counties. Processors responding to the survey are located in only 10 counties. Figure 1 provides a graphic representation of the Illinois counties with E-scrap recyclers. Figure 2 provides a graphic representation of Illinois counties where permanent E-scrap collection is provided. Figure 3 provides a graphic representation of Illinois counties where E-scrap processing/refurbishing is provided. Table 4 provides the number of E-scrap processors located in the 10 Illinois counties and Table 5 provides the number of E-scrap processors located within the 10 designated Illinois Economic Development Regions.

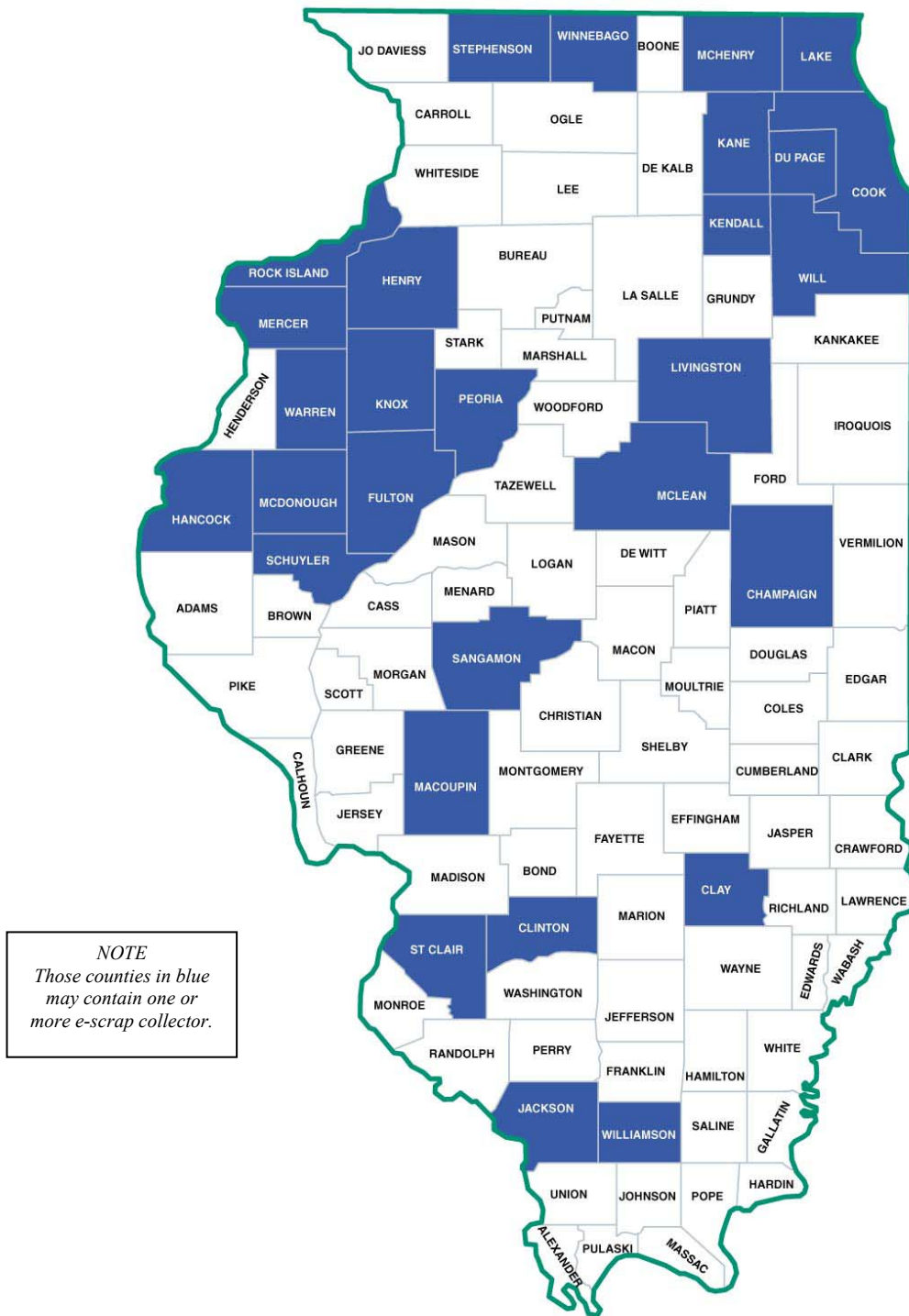
This E-scrap recycler's database does not include those government or private sector entities that provide periodic collection events and services. Dozens of one-day collection events are held every year. In addition, not-for-profit agencies, such as Goodwill and others, host collection events as well.

**TABLE 3.**  
**NUMBER OF E-SCRAP RECYCLERS WITHIN EACH CLASSIFICATION**

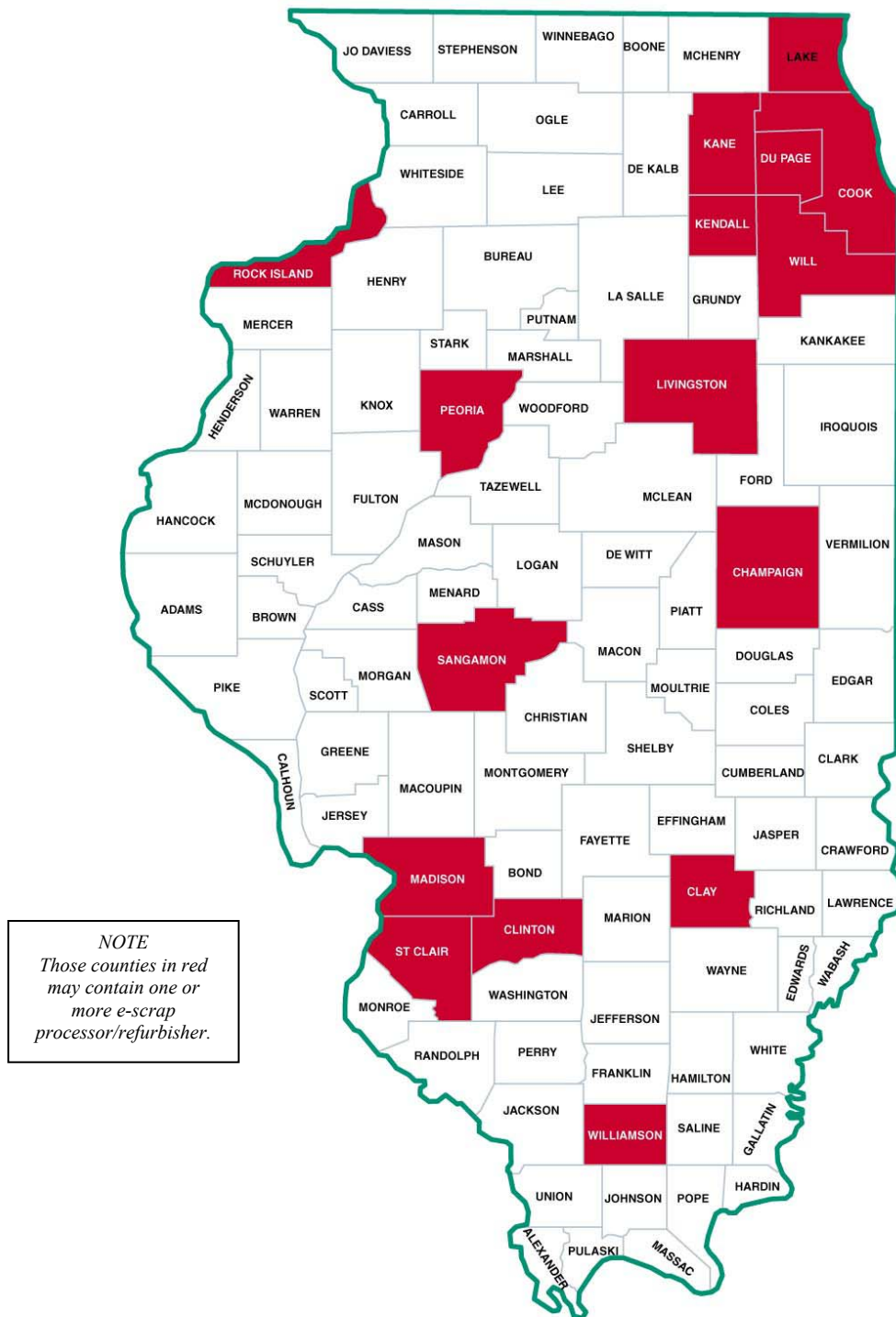
<b>Classification</b>	<b>Number of E-scrap Recyclers</b>
Collectors	62
Processors	19
Refurbishers	23
Brokers	3
Resellers	15
Collector/Processor	10
Collector/Reseller	11
Collector/Processor/Refurbisher/Reseller	2
Processor/Refurbisher	3
Collector/Refurbisher	20
Collector/Refurbisher/Reseller	8
Collector/Processor/Reseller	2



**FIGURE 1.**  
**ILLINOIS COUNTIES WITH E-SCRAP RECYCLERS**



**FIGURE 2.**  
**ILLINOIS COUNTIES WITH E-SCRAP COLLECTORS**



**FIGURE 3.**  
**ILLINOIS COUNTIES WITH E-SCRAP PROCESSORS/REFURBISHERS**

**TABLE 4.**  
**ILLINOIS COUNTIES WITH E-SCRAP PROCESSORS/REFURBISHERS**

<b>County</b>	<b>Number of Processors</b>	<b>Number of Refurbishers</b>
Champaign	0	1
Clay	0	1
Clinton	0	1
Cook	5	8
DuPage	5	5
Kane	1	0
Kendall	0	1
Lake	0	1
Livingston	1	1
Madison	1	0
Peoria	1	0
Rock Island	1	0
Sangamon	1	1
Saint Clair	1	1
Will	2	1
Williamson	0	1
<b>Total</b>	<b>19</b>	<b>23</b>



**TABLE 5.**  
**ILLINOIS ECONOMIC DEVELOPMENT REGIONS**  
**NUMBER OF E-SCRAP PROCESSORS/REFURBISHERS**

<b>Economic Region</b>	<b>Number of Processors</b>	<b>Number of Refurbishers</b>
Central	1	1
East Central	0	1
North Central	2	1
West Central	0	0
Northeast	13	16
Northern Stateline	0	0
Northwest	1	0
Southern	0	1
Southwest	2	2
Southeast	0	1
<b>Total</b>	<b>19</b>	<b>23</b>

#### **2.1.4 Survey Results**

As noted in Section 2.1.1 and 2.1.2, each of the organizations involved in E-scrap recycling was asked to complete a questionnaire. Of the 78 organizations that were contacted and responded, a total of 41 of these organizations were willing to complete the questionnaire or had sufficient information to complete the questionnaire. Of these 41 organizations that provided responses to the questionnaire, 21 limited their operation to the collection of various types of E-scrap. The remaining 20 responding organizations processed or refurbished E-scrap and of these 12 also collected E-scrap and 1 resold some electronic equipment. Table 6A and Table 6B provide operational information for the 23 organizations that only collect E-scrap. A brief analysis of this information is provided in the following paragraphs.

#### **COLLECTORS**

***Date Business Started:*** Half of the organizations started business after 1995.

***Number of Personnel:*** The number of personnel varies from less than 5 to 25. There is no indication of the responsibilities of these personnel. Two of the organizations did not know how many personnel worked at their facility. Excluding these two organizations, the average number of personnel for each organization is 8.

***Operation:*** Ten of the organizations are for-profit entities and the remaining 13 organizations are non-profit entities. This appears to be consistent with similar collection organizations in other states.

***Receiving Capacity:*** The majority of the organizations that responded did not know the amount of their operation's receiving capacity. Of the six organizations that did provide a capacity, the range is significant. This variation and uncertainty is likely a reflection of how quickly the E-scrap is shipped for processing and whether the collection of E-scrap is a mainstay of the organization or considered as an add-on service.

***Number of Shifts:*** Only one of the 23 organizations operates more than one shift.

***Origin of Materials:*** All 23 organizations accept E-scrap from in-state sources and only three accept E-scrap from out-of-state sources. The three organizations that do accept out-of-state E-scrap are all adjacent to, or very near, an Illinois state

boundary. In addition, two of these three organizations are for-profit entities which likely explains the willingness to accept out-of-state E-scrap.

**Scrap Generation Sector:** All of the organizations (except for two) accept E-scrap from residential generators while 13 organizations accept E-scrap from commercial generators. The two organizations that do not accept E-scrap from residential generators are both for-profit entities, while four of the non-profit organizations accept commercial generated E-scrap. All but one of the for-profit organizations accepts E-scrap from commercial generators.

**Ability to Expand:** Eight of the 23 organizations do not have the ability to expand. All of the other organizations have the ability to expand, except for one organization that was uncertain. Five of the six organizations that do not have the ability to expand are non-profit entities. All but one of the for-profit organizations have the ability to expand.

**Storage Capacity:** The majority of the organizations either had limited or unknown storage space or less than 5,000 square feet of storage space. The limited storage space is similar to receiving capacity in that the E-scrap received is quickly sent off to processors or other end users.

**Types of CED's Accepted:** Eleven of the 21 organizations accept the entire list of CED's. All of the organizations accept computers and computer peripherals. Video display devices are accepted by all but three of the organizations. Cellular phones, portable calculators, and PDA's are the least accepted and they are accepted by 12 of the organizations. Of the organizations that accept all of the CED's, seven are for-profit entities. Further, of the 12 organizations that accept all of the CED's, only two of these organizations are in the northeast portion of the state. The remainder are relatively dispersed throughout the state.

**Rate Structure:** There are seven organizations that do not have a rate structure. The remaining organizations' rate structures vary significantly. Fifteen of these organizations charge for computer monitors with the fee ranging from \$5.00 to \$25.00. Other than monitors, only five organizations have a fee for other CED's. Typically the charge is relatively small or the fee is for picking up the E-scrap.

**Transportation:** All organizations provide for the drop off E-scrap. Only four organizations provide a pickup service and only one organization provides a route service. None of the organizations indicated any problems with transportation – either receiving or shipping.

**TABLE 6A.**  
**OPERATIONAL INFORMATION**  
**FOR E-SCRAP COLLECTORS IN ILLINOIS**

County	Name and Address	Date Business Started	Number of Personnel	Operation		Receiving Capacity	Number of Shifts	Origin of Material		Waste Generation Sector		Ability to Expand	Storage Capacity in Square Feet (SF)
				For- Profit	Non- Profit			In- State	Out- of- State	Residential	Commercial		
Clinton	A1 Laptop Shop 1254 N. Poplar, Centralia IL, 62801	Nov. 2006	4	X		8 – 10 Units per week	1	X		X	X	Yes	3,200 SF
Cook	City of Chicago Electronics Collection Center 1150 N. Branch, Chicago, IL 60622	Jan 2007	3		X	Unknown	1	X		X		No	600 SF
DuPage	Proton Computers, Inc. 720 S. Main Street, Lombard IL, 60148	2002	6	X		Unknown	1	X		X		No	None
Fulton	Fulton County Health Department 700 E. Oak Street, Canton IL, 61520	Unknown	5		X	Gaylords	1	X		X	X	No	100 SF
Hancock	Hancock County 1006 E. Wabash P.O. Box 370, Carthage IL, 62321	Unknown	Unknown		X	Gaylords	1	X		X		No	Small
Henry	Eagle Enterprises Recycling, Inc. 510 SE Industrial Ave., Galva IL, 61434	1994	25	X		Unknown	1	X		X	X	Yes	Limited
Jackson	Southern Recycling Center 300W. Chestnut, Carbonale IL, 63901	1988	17	X		Unknown	1	X		X	X	Yes	30,000 SF
Kane	MRK Group, Ltd 801 North State Street Unit C, Elgin IL, 60123	1991	15	X		Unknown	1	X		X	X	Yes	30,000 SF
Knox	Galesburg Transit Office 567 S. Farnham St., Galesburg IL, 61401	1972	12		X	Gaylords	1	X		X		No	100 SF
Lake	Future-Tek 731 Sheridan Rd., Winthrop Harbor IL, 60096	2004	3	X		Unknown	1	X		X	X	Yes	1,000 SF
Macoupin	We Care Recycling 330 West 1st North St., Carlinville IL, 62626	1988	4		X	5 Pallets per Month	1	X		X	X	Yes	Unknown
McDonough	Colchester City Hall 500E. Roberts Street, Colchester IL, 62326	Unknown	Unknown		X	Gaylords	1	X		X		Unknown	Unknown
McDonough	Tricounty Regional Collection Facility 510 N. Pearl St., Macomb IL, 61455	1995	2		X	5 Tons	1	X	X	X	X	Yes	30,000 SF
McHenry	Computer Recycling Group, LLC 7218 Virginia Rd., Crystal Lake IL, 60014	Apr 2003	5	X		Unknown	2	X	X		X	Yes	8,000 SF
McLean	Town of Normal Public Works Garage 1301 Warriner St., Normal IL, 61761	2003	1		X	9 – 10 Tons per Month	1	X		X		Yes	Unknown
Mercer	Sherrad Village Hall 517 3rd Street, Sherrad IL, 61281	Unknown	1		X	Gaylords	1	X		X		No	Limited
Mercer	Aledo City Hall 120 N. College Avenue, Aledo, IL	Unknown	Unknown		X	Gaylords	1	X		X	X	No	Limited
Peoria	Computer Recycle 2502 N Knoxville, Peoria IL, 61604	1999	2 – 15	X		1 Ton per Month	1	X		X	X	Yes	3,000 SF
Sangamon	Butler Distribution 1140 West Reynolds, Springfield, IL 62702	2001	3	X		Unknown	1	X		X	X	Yes	10,000 SF
Schuyler	Schuyler City Hall 200 W. Washington, Schuyler, IL	Unknown	Unknown		X	Gaylords	1	X		X	X	No	Limited
Warren	Monmouth Transfer Station S. 11th St., Monmouth IL, 61462	1983	2		X	Gaylords	1	X		X		Yes	Limited
Warren	Maple City Recycling Center 614 S Third Street, Maple City, IL	Unknown	Unknown		X	Gaylords	1	X		X	X	No	Limited
Winnebago	Richardson Computer Recycling 5488 Grove St., Roscoe IL, 61703	1996	2	X		Unknown	1	X	X		X	Yes	200 SF

TABLE 6B.  
ADDITIONAL OPERATIONAL INFORMATION  
FOR E-SCRAP COLLECTORS IN ILLINOIS

County	Name and Address	Types of CED's											Rate Structure	Transportation				
		Computer	Portable Computer	Printer	Computer Peripheral	Video Display Device	Video Device Peripheral	Facsimile Machine	Cellular Phone	Portable Calculator	PDA	Data Storage Devices		Drop-off	Pickup	Routes	Collection Events	Problems
Clinton	A1 Laptop Shop 1254 N. Poplar, Centralia IL, 62801	X	X		X	X	X						No	X				
Cook	City of Chicago Electronic Collection Center 1150 N. Branch, Chicago, IL 60622	X	X	X	X	X	X	X				X	No	X			X	
DuPage	Proton Computers, Inc. 720 S. Main Street, Lombard IL, 60148	X		X	X	X	X						None	X				
Fulton	Fulton County Health Department 700 E. Oak Street, Canton IL, 61520	X			X								TV or Monitor \$25.00	X				
Hancock	Hancock County 1006 E. Wabash P.O. Box 370, Carthage IL, 62321	X		X	X	X	X						\$5.00 for Monitor	X				
Henry	Eagle Enterprises Recycling, Inc. 510 SE Industrial Ave., Galva IL, 61434	X	X	X	X	X	X	X	X	X	X	X	\$5.00 for Monitor	X				
Jackson	Southern Recycling Center 300W. Chestnut, Carbonale IL, 63901	X	X	X	X	X	X	X	X	X	X	X	None	X				
Kane	MRK Group, Ltd 801 North State Street Unit C, Elgin IL, 60123	X	X	X	X	X	X	X	X	X	X	X	No fee up to 10 items, \$5.00 for Computer	X				
Knox	Galesburg Transit Office 567 S. Farnham St., Galesburg IL, 61401	X			X	X	X						\$5.00 for Monitor	X				
Lake	Future-Tek 731 Sheridan Rd., Winthrop Harbor IL, 60096	X	X	X	X	X	X	X	X	X	X	X	Charge Businesses	X				
Macoupin	We Care Recycling 330 West 1st North St., Carlinville IL, 62626	X			X								None	X				
McDonough	Colchester City Hall 500E. Roberts Street, Colchester IL, 62326	X	X	X	X	X	X	X	X	X	X	X	\$5.00 for Monitor	X				
McDonough	Tricounty Regional Collection Facility 510 N. Pearl St., Macomb IL, 61455	X	X	X	X	X	X	X	X	X	X	X	\$5.00 for Monitor	X				
McHenry	Computer Recycling Group, LLC 7218 Virginia Rd., Crystal Lake IL, 60014	X	X	X	X	X	X	X	X	X	X	X	\$2.00 - \$5.00 for Monitor \$125.00 Pickup Charge	X	X			
McLean	Town of Normal Public Works Garage 1301 Warriner St., Normal IL, 61761	X			X	X	X						\$5.00 for Monitor	X				
Mercer	Sherrad Village Hall 517 3rd Street, Sherrad IL, 61281	X	X	X	X	X	X	X	X	X	X	X	\$5.00 for Monitor	X				
Mercer	Aledo City Hall 120 N. College Avenue, Aledo, IL	X		X	X	X	X	X				X	\$5.00 for Monitor	X				
Peoria	Computer Recycle 2502 N Knoxville, Peoria IL, 61604	X			X							X	Pickup Charge	X	X			
Sangamon	Butler Distribution 1140 West Reynolds, Springfield, IL 62702	X	X	X	X	X	X	X	X	X	X	X	Unknown	X				
Schuyler	Schuyler City Hall 200 W. Washington, Schuyler, IL	X		X	X	X	X	X				X		X				
Warren	Monmouth Transfer Station S. 11th St., Monmouth IL, 61462	X		X	X	X	X	X				X	\$5.00 for Monitor	X				
Warren	Maple City Recycling Center 614 S Third Street, Maple City, IL	X		X	X	X	X	X				X	\$5.00 for Monitor	X				
Winnebago	Richardson Computer Recycling 5488 Grove St., Roscoe IL, 61703	X	X	X	X	X	X	X	X	X	X	X	None	X	X			

Table 7A and Table 7B provide operational information for the 24 organizations that responded to the survey and process and/or refurbish E-scrap. A brief analysis of this information is provided in the following paragraphs.

### **PROCESSORS/REFURBISHERS**

**Date Business Started:** Sixteen of the organizations started business during or after 1995.

**Number of Personnel:** The number of personnel varies from less than 10 to 140. There is no indication of the responsibilities of these personnel. Only one organization indicated it utilized volunteers.

**Operation:** Nineteen of the organizations are for-profit entities and the remaining organizations are non-profit entities.

**Current Throughput:** The current throughput of the 24 organizations varies from less than one ton to over 67 tons per day. Six of the organizations had no idea of their current throughput. Of these six organizations, three are non-profit entities. A more detailed discussion of potential processing capacity is provided in Section 5.

**Number of Shifts:** Only one of the 24 organizations was unsure of how many shifts it operates. Four of the organizations operate more than one shift.

**Origin of Materials:** All 24 organizations accept E-scrap from in-state sources and 15 accept E-scrap from out-of-state sources. All of the organizations that accept E-scrap from out-of-state sources are for-profit entities. Additionally, three of these organizations operate more than one shift.

**Scrap Generation Sector:** All of the organizations (except for seven) accept E-scrap from residential generators while 22 organizations accept E-scrap from commercial generators. Six of the organizations that do not accept E-scrap from residential generators are for-profit entities; one is a non-profit entity. Of the 15 organizations that accept out-of-state E-scrap, all accept commercial E-scrap.

**Ability to Expand:** Only one of the organizations does not have the ability to expand. Two other organizations have limited space to expand or the information is unknown.

**Storage Capacity:** Four of the organizations were uncertain of their storage space. Three of these organizations are for-profit businesses. Excluding these four organizations, the remaining 20 organizations' storage capacity is 1,591,070 square feet. The average storage capacity is 79,554 square feet. If the three organizations with the largest storage capacity are not considered, the average storage capacity of the remaining 14 organizations reduces to 23,000 square feet. Of the three organizations with the largest storage capacity, two are in the Chicago area and one is located near St. Louis.

**Types of CED's Accepted:** Ten of the 24 organizations accept the entire list of CED's. All of the organizations accept computers. Video display devices are accepted by all but six of the organizations. Cellular phones are the least accepted and they are accepted by 13 of the organizations. Of the ten organizations that accept all of the CED's, eight are for-profit entities. Further, of the ten organizations that accept all of the CED's, six of these organizations are in the northeast portion of the state; one is near St. Louis; one is in Springfield; one is in the Quad Cities area; and only one is not near a large urban area.

**Rate Structure:** There are six of the 24 organizations that do not have a rate structure or it is unknown. The remaining organizations' rate structures vary significantly. Eight of these organizations indicate that they charge for computer monitors with the fee ranging from \$5.00 to \$15.00. Other charges are based on weight or by piece. One organization sets its fees based on the value of the E-scrap.

**Transportation:** Twenty-three of the 24 organizations provide for the drop off of E-scrap. Fifteen organizations provide a pickup service and three organizations provide a route service. None of the organizations indicated any problems with transportation – either receiving or shipping. Eight of the organizations utilize collection events. Unlike the collectors, the processing and/or refurbishing organizations are much more aggressive about capturing E-scrap.



TABLE 7A.  
OPERATIONAL INFORMATION FOR E-SCRAP  
PROCESSORS AND/OR REFURBISHERS IN ILLINOIS

County	Name and Address	Operation*	Date Business Started	Number of Personnel	Operation		Current Throughput (per day)	Number of Shifts	Origin of Material		Waste Generation Sector		Ability to Expand	Storage Capacity in Square Feet (SF)
					For- Profit	Non- Profit			In- State	Out- of- State	Residential	Commercial		
Clay	Clay County Rehab Center P.O. Box 659, 530 W. Fourth Street, Flora IL, 62839	Refurb	July 1974	65		X	Unknown	2	X		X	X	Yes	30,000 SF
Cook	Assistive Technology Exchange Network A Program of United Cerebral Palsy of Greater Chicago 7550 West 183rd St., Tinley Park, IL 60477	Refurb	1995	7		X	2,500 Pounds	1	X		X	X	Yes	5,000 SF
Cook	Chicago Coalition for Information Access Community Technology Assistance Program C/O NFD 3411 W. Diversy Suite 1, Chicago, IL 60647	Refurb	1989	1 Full Time 6 Volunteers		X	100 Units	1	X			X	Yes up to 500 SF	150 SF
Cook	Digilog Electronics Warehouse 3350 N. Kadzie Dock D., Chicago IL, 60618	Process	2000	30	X		20 Tons	1	X	X	X	X	Yes	40,000 SF
Cook	Intercon Solutions Inc. 1001-59 Washington St., Chicago Heights, IL 60411	Process	1987	20 – 25	X		38 Tons	1	X	X		X	Yes	250,000 SF
Cook	Universal Scrap Metals 2500 Fulton Street, Chicago, IL 60612	Process	1972	74	X		6 Tons	1	X	X		X	Yes	Limited
DuPage	Fortune Plastic and Metal Inc. 1650 W. Quincy Ave., Naperville IL, 60540	Process	July 2003	25	X		20 Tons	1	X	X	X	X	Yes	50,000 SF
DuPage	Com2 Computers and Technology 195E Kehoe Blvd., Unit 3, Carol Stream IL, 60188	Process	2002	25	X		10 Tons	2	X	X	X	X	Yes	17,000 SF
DuPage	People's Computer Resource Center 201 S. Naperville Blvd., Wheaton IL, 60187	Refurb	Unknown	Unknown	X		Unknown	1	X		X		Unknown	Unknown
DuPage	River Shannon Recycling 13605 S. Halstead, Riverdale IL, 60827	Process	2003	6	X		5.5 Tons	1	X	X	X	X	Yes	60,000 SF
DuPage	Supply-Chain Services, Inc. 250 W. North Ave., Lombard IL, 60148	Process	Nov 1997	50	X		29 Tons	2	X	X	X	X	Yes	50,000 SF
DuPage	Sims Recycling Solutions 1600 Harvester Road, West Chicago IL, 60185	Process	1995	140	X		67 Tons	1	X	X		X	Yes	250,000 SF
DuPage	Intergreat-Technology Solutions 800 Provincetown Dr., Carol Stream IL, 60188	Refurb	2000	12	X		19 Units	2	X			X	Yes	1,200 SF
Kane	HOBİ International, Inc. 1202 Nagel Blvd., Batavia IL, 60510	Process	Feb 1992	15	X		20 Tons	1	X	X	X	X	Yes	50,000 SF
Livingston	Advanced Technology Recycling 415 W. Howard Street, Pontiac IL, 61764	Process	Sept 2005	8	X		1 Ton	1	X	X	X	X	Yes	20,000 SF
Madison	Total Metal Recycling 2684 Missouri Ave., Granite City IL, 62040	Process	2001	120	X		20 Tons	1	X	X	X	X	Yes	700,000 SF
Peoria	Recycling for Illinois 401 NE Rock Island Ave., Peoria IL, 61603	Process	2006	10		X	1 Ton	1	X		X	X	Yes	Unknown
Rock Island	Premier Computer Service 3003 48 <sup>th</sup> Avenue, Moline, IL 61265	Process	1993	24	X		5 Tons	1	X	X		X	Yes	12,000
Sangamon	BLH Computers 1832 Stevenson Dr., Springfield IL, 62703	Process	1998	8	X		1 Ton	1	X		X		Yes	11,000 SF
Sangamon	Computer Banc 1023 Washington St., Springfield, IL 62703	Refurb	1999	5		X	Unknown	Unknown	X		X	X	Yes	1,120 SF
St. Clair	Action Computers 103 Frey Lane, Fairview Heights IL, 62208	Refurb	May 1997	8	X		Unknown	1	X		X	X	No	Unknown
St. Clair	Interco Trading 2975 Kings Highway, Fairmont City IL, 62201	Process	1996	15	X		50 Tons	1	X	X		X	Yes	12,000 SF
Will	E-Scrap Technologies 3 Northpoint Court, Bolingbrook, IL 60440	Process	2005	8	X		20 Tons	1	X	X	X	X	Yes	25,000
Will	Vintagetech Recyclers 25503 Ruff Street, Plainfield, IL 60585	Process	2005	12	X		3 Tons	1	X	X	X	X	Yes	6,600

\* Refurb – Refurbish Computers      •      Process – Processing Computers

**TABLE 7B.**  
**ADDITIONAL OPERATIONAL INFORMATION FOR E-SCRAP**  
**PROCESSORS AND/OR REFURBISHERS IN ILLINOIS**

County	Name and Address	Types of CED's											Rate Structure	Transportation				
		Computer	Portable Computer	Printer	Computer Peripheral	Video Display Device	Video Device Peripheral	Facsimile Machine	Cellular Phone	Portable Calculator	PDA	Data Storage Devices		Drop-off	Pickup	Routes	Collection Events	Problems
Clay	Clay County Rehab Center P.O. Box 659, 530 W. Fourth Street, Flora IL, 62839	X	X	X	X	X	X	X	X	X	X	X	Based on Resale Value, Parts Value , and Commodity Value	X	X		X	
Cook	Assistive Technology Exchange Network A Program of United Cerebral Palsy of Greater Chicago 7550 West 183rd St., Tinley Park, IL 60477	X	X	X	X	X	X	X	X	X	X	X	None	X			X	
Cook	Chicago Coalition for Information Access Community Technology Assistance Program C/O NFD 3411 W. Diversy Suite 1, Chicago, IL 60647	X			X								None	X			X	
Cook	Digilog Electronics Warehouse 3350 N. Kadzie Dock D., Chicago IL, 60618	X				X							None	X			X	
Cook	Intercon Solutions Inc. 1001-59 Washington St., Chicago Heights, IL 60411	X	X	X	X	X	X	X	X	X	X	X	Rate per Pound, Typically \$0.25	X		X		
Cook	Universal Scrap Metals 2500 Fulton Street, Chicago, IL 60612	X	X	X	X			X	X	X	X	X	None	X	X			
DuPage	Fortune Plastic and Metal Inc. 1650 W. Quincy Ave., Naperville IL, 60540	X		X	X	X			X			X	Per Pound Cost except Monitor which by Unit	X	X	X		
DuPage	Com2 Computers and Technology 195E Kehoe Blvd., Unit 3, Carol Stream IL, 60188	X	X	X	X	X	X	X	X	X	X	X	Computer by Piece, Other by Pound	X	X	X		
DuPage	People's Computer Resource Center 201 S. Naperville Blvd., Wheaton IL, 60187	X			X								Unknown	X	X		X	
DuPage	River Shannon Recycling 13605 S. Halstead, Riverdale IL, 60827	X			X	X	X						\$ for CRT, CPU \$0.30 per Pound, Peripherals \$0.40 per Pound	X	X			
DuPage	Supply-Chain Services, Inc. 250 W. North Ave., Lombard IL, 60148	X	X	X	X	X	X	X	X	X	X	X	Based on Pounds	X	X	?	?	
DuPage	Sims Recycling Solutions 1600 Harvester Road, West Chicago IL, 60185	X	X	X	X	X	X	X	X	X	X	X	Based on Pounds	X				
DuPage	Intergreat-Technology Solutions 800 Provincetown Dr., Carol Stream IL, 60188	X			X	X	X						\$5.00 per Monitor, \$5.00 per Computer, \$0.20 per Pound for others	X	X			
Kane	HOB International, Inc. 1202 Nagel Blvd., Batavia IL, 60510	X			X				X				Unknown	X	X			
Livingston	Advanced Technology Recycling 415 W. Howard Street, Pontiac IL, 61764	X	X	X	X	X	X		X		X	X	Fee for Pickup Only	X	X		X	
Madison	Total Metal Recycling 2684 Missouri Ave., Granite City IL, 62040	X	X		X							X	Buy Circuit Boards and Peripherals Only	X	X			
Peoria	Recycling for Illinois 401 NE Rock Island Ave., Peoria IL, 61603	X	X		X	X	X	X	X			X	\$5.00 per Monitor	X				
Rock Island	Premier Computer Service 3003 48 <sup>th</sup> Avenue, Moline, IL 61265	X	X	X	X	X	X	X	X	X	X	X	Variable per Pound Variable for TV/Monitors	X	X			
Sangamon	BLH Computers 1832 Stevenson Dr., Springfield IL, 62703	X	X	X	X	X	X	X	X	X	X	X	Charge Local Government per Agreement with County	X			X	
Sangamon	Computer Banc 1023 Washington St., Springfield, IL 62703	X			X								Outside County	X			X	
St. Clair	Action Computers 103 Frey Lane, Fairview Heights IL, 62208	X		X	X	X	X	X					\$5.00 per PC and Printer, \$10.00 per Monitor	X				
St. Clair	Interco Trading 2975 Kings Highway, Fairmont City IL, 62201	X	X	X	X	X	X	X	X	X	X	X	\$0.15 per Pound, \$6.00 - \$8.00 per Monitor	X	X			
Will	E-Scrap Technologies 3 Northpoint Court, Bolingbrook, IL 60440	X	X	X	X	X	X	X	X	X	X	X	\$10 TV; \$5 Monitors	X	X		X	Resale of Monitors a Challenge
Will	Vintagetech Recyclers 25503 Ruff Street, Plainfield, IL 60585	X	X	X	X	X		X	X	X	X	X	Fee per Pound, \$15 TV/Monitor		X			

### **2.1.5 Nationally Based E-Scrap Recyclers**

ES&D also developed a list of nationally-based E-scrap recyclers. We started with a database of 78 potential contacts and later added another 64 potential contacts. Table 8 provides a list of the nationally-based organizations that provide E-scrap recycling for Illinois residents and the services each provides. Of the 142 potential contacts, we found 41 nationally-based organizations that recycle E-scrap for Illinois residents. Of these 41 organizations:

- 31 collect E-scrap;
- 29 process E-scrap;
- 10 refurbish E-scrap;
- 1 brokers E-scrap;
- 17 resell E-scrap;
- 11 collect and process E-scrap;
- 6 collect, process and resell E-scrap;
- 4 collect and resell E-scrap;
- 3 collect, process and refurbish E-scrap;
- 3 collect, refurbish and resell E-scrap;
- 2 process, refurbish and resell E-scrap;
- 1 collects, processes, refurbishes and resells E-scrap; and
- 1 processes and refurbishes E-scrap.

In addition, ES&D found 10 nationally-based electronics companies that accept electronic scrap at their stores around Illinois or by having users ship their E-scrap to a designated location outside Illinois. These companies are listed in Table 9.

**TABLE 8.**  
**NATIONALLY-BASED E-SCRAP RECYCLERS**

State	Name	Address	Phone	E-Mail/Website	Coll	Proc	Refur	Brok	Resell
<b>E-SCRAP RECYCLERS LOCATED IN STATES BORDERING ILLINOIS</b>									
IA	Electronic De-Manufacturing Facility (serves Rock Island)	1048 E. 59th St., Davenport, IA 52807	(563) 823-0119	www.waastecom.com	x				x
IN	Butler-MacDonald, Inc.	5955 W. 80th Street, Indianapolis, IN 46278	(317) 872-5155	www.butlermacdonald.com	x	x			
IN	Cascade Asset Management	853 Columbia Rd., Suite 125, Plainfield, IN 46168	(888) 222-8399	www.cascade-assets.com		x	x		x
IN	Chesapeake Recycling	1600 South US 35 P.O. Box 160, Winamac, IN 46996	(866) 946-6602	www.chesapeakerecycling.com	x	x			
IN	Goldsmith Group, Inc.	2107 N. Adams St., Indianapolis, IN 46218	(800) 989-7295	www.goldsmithgroup.com	x	x	x		
IN	Lighting Resources, LLC	498 Park 800 Drive, Greenwood, IN 46143	(866) 375-7340	www.lightingresourceinc.com	x	x			
IN	Mervis Industries	1600 Anne Street, Kokomo, IN 46901	(765) 457-4370	www.mervis.com					x
MO	The Surplus Exchange	518 Santa Fe, Kansas City, MO 64105	(816) 472-0444	www.thesurplusexchange.com	x				x
MO	WITS	647 E. Holly, St. Louis, MO 63147	(314) 382-1650	www.witsinc.org	x	x	x		
WI	5R Processors, LTD	P.O. Box 195 600West Gates Ave., Ladysmith, WI 54848	(715) 532-2057	www.5rprocessors.com		x	x		
WI	BMEX of Wisconsin	136 West Grand Ave., Suite 100, Beloit, WI 53511	(800) 364-3233	www.bmex.org				x	
WI	CRT Processing	1227 Barberry Dr., Janesville, WI 53545	(608) 754-3400	www.crtprocessing.com	x	x			
WI	Resource Solutions Corp.	5493 Express Circle, Madison, WI 53704	(888) 922-5451	www.recyclethatstuff.com	x	x			
WI	Scientific Recycling, Inc.	659 Commerce St., Holmen, WI 54636	(800) 917-1969	www.scientificrecycling.com	x	x			x
<b>E-SCRAP RECYCLERS LOCATED THROUGHOUT UNITED STATES</b>									
AZ	Earth Protection Services, Inc.	10 S. 48th Ave., Suite 4, Phoenix, AZ 85043	(602) 353-9282	www.earthpro.com	x	x			x
CA	HMR USA, Inc.	435 23rd St., San Francisco, CA 94107	(415) 647-6071	www.hmrusa.com	x	x			x
CA	Simply Sellular (cell phones mail in only)	7272 Saturn Drive, Suite P, Huntington Beach, CA 92647	(714) 841-8898	www.simplysellular.com	x				
CA	The Big Green Box (mail in portable electronics only)	125 E. Commercial St., Suite A, Anaheim, CA, 92801	(714) 278-9211	www.biggreenbox.com	x				
CO	Technology Recycling Metro Point One	4600 South Ulster St., Suite 150, Denver, CO 80237	(866) 400-8615	www.techrecycle.com		x			
CT	Computer Recycling USA	198 Inverary Dr., Watertown, CT 06795	(877) 729-2783	www.computerrecyclingusa.com	x	x			
FL	EnviroLight & Disposal, Inc.	3200 44th Ave., North St. Petersburg, FL 33714	(800) 600-3738	www.envirodisp.com	x				x
FL	Global Investment Recovery, Inc.	5409 East Henry Ave., Tampa, FL 33610	(800) 886-8086	www.girpreciousmetals.com		x			

**TABLE 8.**  
**NATIONALLY-BASED E-SCRAP RECYCLERS (continued)**

State	Name	Address	Phone	E-Mail/Website	Coll	Proc	Refur	Brok	Resell
GA	Electrical Telecom Recycling	1737 Hillsdale Rd., La Fayette, GA 30728	(866) 638-8060	www.escrapetr.com		x			
KS	PC Disposal	900 E. Loula, Olathe, KS 66062	(877) 244-0250	www.pcdisposal.com	x	x			
MA	ARS Computer Asset Recovery Services	125 Southbridge Rd., North Oxford, MA 01537	(877) 277-3879	www.asset-recoveryservices.com		x	x		x
MI	COMPRENEW Environmental	629 Ionia Ave., Grand Rapids, MI 49503	(616) 451-4400	www.comprenew.com	x		x		x
MI	Dcal Services	2609 Rock Hill Industrial Court, St. Louis, MO 63144	(314) 918-8833	www.dcalservices.com	x		x		x
MI	Great Lakes Electronic Recycling	12600 Greenfield Rd., Detroit, MI 48227	(313) 838-7000	www.recycleelectronics.com	x				x
MI	TEK Systems	1610 East Highwood Drive, Pontiac, MI 48340	(248) 253-0111	www.motorcitycomputer.com	x	x			x
MI	Valley City Environmental Services, Inc.	1040 Market St. SW, Grand Rapids, MI 49503	(616) 235-1500	www.valleycityes.com	x	x			x
MN	Asset Recovery Corp.	2299 Territorial Road, Saint Paul, MN 55114	(800) 472-2081	www.assetrecoverycorp.com	x	x			x
MN	Computers for Schools Program	970 Pickett St., Bayport, MN 55003	(615) 779-2816	www.cfsrp.state.mn.us	x	x	x		
MN	Enviro-Chem	21821 Industrial Blvd., Rogers, MN 55374	(763) 428-4002	www.enviro-chem.bz	x	x			
MN	Materials Processing Corporation	2805 West Service Road, Eagan, MN 55121	(866) 661-6723	www.materialsprocessing.com		x			
MN	PartStock Computer Solutions	504 SE Malcolm Ave., Minneapolis, MN 55414	(877) 928-4800	www.partstockpc.com	x		x		x
MN	Retrofit Companies	3855 W. Hwy. 14, Owatonna, MN 55060	(800) 795-1230	www.retrofitcompanies.com	x	x			
NJ	Advance Recovery, Inc.	223 Verona Ave., Newark, NJ 07104	(973) 450-9797	www.advancedrecovery.com		x			
NY	Amandi Services, Inc.	200 Stage Rd., Vestal, NY 13850	(607) 321-2079	www.amandi.com	x	x	x		x
OH	ReUse Industries	74815 U.S. Hwy. 50, Albany, OH 45710 (local drop-offs)	(740) 698-8200	www.reuseindustries.org	x				
OH	USA Lamp & Ballast Recycling, Inc.	7806 Anthony Wayne Ave., Cincinnati, OH 45216	(800) 778-6645	www.usalamp.com	x	x			
WA	GreenDisk, Inc.	1988 18 <sup>th</sup> Avenue NE, Suite B, Issaquah, WA 98029	(425) 392-8727	www.greendisk.com	x	x			
Coll = Collectors • Proc = Processor • Refur = Refurbisher • Brok = Broker • Resell = Reseller									

**TABLE 9.**  
**NATIONALLY-BASED ELECTRONIC COMPANIES THAT ACCEPT E-SCRAP**

<b>Name</b>	<b>Address</b>	<b>Phone</b>	<b>E-Mail/Website</b>
Best Buy Co., Inc.	P.O. Box 9312 Minneapolis, MN 55440	(612) 291-1000	www.bestbuy.com
Circuit City	9950 Maryland Dr., Richmond, VA 23233	(804) 486-4000	www.circuitcity.com
CompUSA	14951 Dallas Pkwy Dallas, TX 75254	(972) 982-4000	www.compusa.com
Dell Computers	One Dell Way Round Rock, TX 78682	(888) 560-8324	www.dell.com
Hewlett-Packard	3000 Hanover St. Palo Alto, CA 94304	(650) 857-5518	www.hp.com
IBM Corporation	1 New Orchard Rd. Armonk, NY 10504	(800) 426-4968	www.ibm.com
Motorola, Inc.	One Symbol Plaza Holtsville, NY 11742		www.motorola.com
Verizon Wireless	133 Calkins Rd. Rochester, NY 14623	(585) 321-7000	www.verizonwireles.com
Sony Electronics, Inc.	16450 West Bernardo Dr. San Diego, CA 92127	(858) 942-2729	www.sony.com
Apple Computers	1 Infinte Loop Cupertino, CA 95014	(408) 996-1010	www.apple.com

The survey questions utilized when interviewing E-scrap organizations in Illinois were also distributed to a number of national E-scrap organizations. The response to the questionnaire was limited, with only six organizations responding. Table 10 provides operational information for the six national organizations that process and or refurbish E-scrap. A brief analysis of this information is provided in the following paragraphs.

**Date Business Started:** All six organizations have been operating for at least 15 years. Based on the information provided, it appears that all six of these organizations have been involved in some manner of recycling for some time and added E-scrap processing within the past few years.

**Number of Personnel:** The number of personnel varies from less than ten to 500. There is no indication of the responsibilities of these personnel. Only one of the organizations indicated it operates internationally.

**Operation:** All of the organizations are for-profit businesses.

**Throughput:** The throughput of the six organizations varies from 1,400 pounds to 385,000 pounds per day. One of the six organizations appears to be regionally focused given its smaller throughput. If this organization is not considered, the total throughput of the remaining organizations is 698,400 pounds per day or an average of 139,680 pounds per day. The total number of personnel working at facilities in North America for the remaining five organizations is 949. The production rate for these personnel is 736 pounds (0.37 tons) per day. If we assume 10% of the personnel are not directly involved in processing the E-scrap, the production rate of the personnel increases to 818 pounds (0.41 tons) per day.

**Number of Shifts:** Four of the six organizations operate one shift and will operate two shifts, if needed. Two of the six organizations operate two shifts at the present time. It is uncertain if the other four organizations are operating one shift or two shifts when the questionnaire was completed. Utilizing information from the two organizations that operate two shifts, the production rate per shift is 26,500 pounds. The production rate per personnel at these two organizations (taking into consideration the 10% non-process factor) is 349 pounds (0.17 tons) per day.

**Origin of Materials:** All six organizations accept E-scrap from in-state and out-of-state sources.

**Scrap Generation Sector:** All of the organizations (except for one) accept E-scrap from residential generators and all six organizations accept E-scrap from commercial generators.

**Ability to Expand:** All six of the organizations have the ability to expand.

**Storage Capacity:** The storage capacity of five of the six organizations is 2,450,000 square feet. The average storage capacity is 490,000 square feet. If the organization with the largest storage capacity is not considered, the average storage capacity of the remaining organizations reduces to 362,500 square feet.

**Types of CED's Accepted:** Five of the six organizations accept the entire list of CED's. One of the organizations accepts the entire list of CED's with the exception of facsimile machines, cellular phones, and portable calculators.

**Rate Structure:** All six organizations charge a fee for their services. These fees vary and are based on weight, volume, distance to the generator, and value of the E-scrap. One of the organizations offers a revenue-sharing option for its customers.

**Transportation:** All six organizations provide for the drop off and pickup of E-scrap. Five of the organizations provide a route service. None of the organizations indicated any problems with transportation – either receiving or shipping. Two of the organizations utilize collection events.



TABLE 10.  
OPERATIONAL INFORMATION  
FOR NATIONAL E-SCRAP PROCESSORS  
AND/OR REFURBISHERS

State	Name and Address	Date Business Started	Number of Personnel	Operation		Throughput (per day)	Number of Shifts	Origin of Material		Waste Generation Sector		Ability to Expand	Storage Capacity in Square Feet (SF)
				For-Profit	Non-Profit			In-State	Out-of-State	Residential	Commercial		
MN	Materials Processing Corporation	1983	35	X		31,000 pounds	2	X	X	X	X	Yes	50,000 SF
MA and CA	Metech	1968	45	X		65,400 pounds	1 or 2	X	X		X	Yes	Over 1,000,000 SF
NY and AZ	Amandi Services	2005*	226	X		195,000 pounds	1 or 2	X	X	X	X	Yes	400,000 SF
International	SIMS Recycling Solutions	1950	3,300**	X		385,000 pounds	1 or 2	X	X	X	X	Yes	800,000 SF
WI ***	Veolia Environmental Services	1990	143	X		22,000 pounds	2	X	X	X	X	Yes	200,000 SF
WA	Green Disk, Inc.	April 1992	4 part time 2 full time ****	X		1,400 pounds	1 or 2	X	X	X	X	Yes	Unknown

\* Amandi is a merger of Envirocycle and Nxtcycle – Envirocycle started in 1990 and Nxtcycle started in 2000.

\*\* This is globally; nationally approximately 500

\*\*\* Wisconsin is main office. Have four sites nationally.

\*\*\*\* Out source a number of activities.

State	Name and Address	Types of CED's											Rate Structure	Transportation				
		Computer	Portable Computer	Printer	Computer Peripheral	Video Display Device	Video Device Peripheral	Facsimile Machine	Cellular Phone	Portable Calculator	PDA	Data Storage Devices		Drop-off	Pickup	Routes	Collection Events	Problems
MN	Materials Processing Corporation	X	X	X	X	X	X	X	X	X	X	X	Based on Value or lack of value	X	X	X		
MA and CA	Metech	X	X	X	X	X	X	X	X	X	X	X	Per pound basis based on material; mostly large commercial accounts	X	X	X		
NY and AZ	Amandi Services	X	X		X	X	X	X	X	X	X	X	Depends on type of equipment	X	X	X	X	
International	SIMS Recycling Solutions	X	X	X	X	X	X	X	X	X	X	X	Fee based on per pound and offer revenue share to customer	X	X	X		
WI	Veolia Environmental Services	X	X	X	X	X	X				X	X	Fee based on volume and distance to collection point	X	X	X	X	
WA	Green Disk, Inc.	X	X		X	X	X	X	X	X	X	X	By weight and shipping cost	X	X			

**NOTE:** These processors/refurbishers have received e-scrap from Illinois and aggressively seek e-scrap in Illinois.

## **2.2 GENERATION RATE DATA COMPILATION**

### **2.2.1 Comparable Studies**

For the purposes of this project, data was compiled from a number of different reports relating to electronic scrap. To find relevant reports, the Internet was used to search for documents produced by credible and reputable sources. The search engines *Yahoo!* and *Google* were the main starting points for the initial search; however, references from the websites yielded by the search were then used to find additional information. The reports that resulted from the search ranged from small municipal-level reports to nationwide reports discussing the state of E-scrap in the United States. In addition, the reports ranged from waste characterization studies to legislation outlines, assessments of E-scrap collection and processing, waste management studies, E-scrap recycling pilot programs, reports intended for consumer information, and solid waste stream studies. All reports of possible value were then fully reviewed and assessed for relevance to this project. Once a report was deemed appropriate, all relevant information and statistics were isolated and included in a report summary.

### **2.2.2 Limitations of Information**

Upon reviewing the selected third-party reports it became apparent that there were a number of variances with the pertinent data. The most notable issue was the varying definition of electronic scrap from report to report. All the reports' definitions included the same basic core that encompassed computers, computer peripherals, televisions, and monitors. However, items such as video gaming systems, DVD players, VCR's, printer cartridges, cell phones, and other similar items were included in some definitions but not others. As a result, the definition issue reduced the consistency of the data and complicated the analysis.

Data was also limited by its origin. Data contained in reports from small municipalities could not be used to reflect data from highly urbanized areas such as California. Though some reports offered data via "per capita" statistics, most offered data by unit count or by gross weight. This variance in the manner data was presented limited the ability to compare data from two largely different demographic areas.

Each report employed similar but different methodologies. Some reports based data on waste characterization studies while others used consumer sales statistics to generate data. This limitation created a variance in the data. Although this variance impacted the data, it was not significant enough to exclude the data or its source.

The final notable limitation was the manner in which data was presented. Some reports provided statistics using units as a measurement while others provided them using pounds. For example, discarded cell phones were greatly outweighed by discarded televisions; however, the pure number of discarded cell phones dwarfed the number of discarded television units. Thus, the resulting numbers for a report that included cell phones could be misleading when compared to the numbers of a report where cell phones were not included. Data was also provided with time ranges from one year to 25 years. This inconsistency in data created a problem when attempting a comparison of values for similar statistics.

Having considered these variations, there were common statistical values found in most of the reports. The values include: (1) the amount of E-scrap obsolete, discarded, and recycled; (2) the percentage of E-scrap in the total solid waste stream; (3) the amount of stockpiled equipment; and (4) the rate at which computers become obsolete. These nationwide values ranged from report to report and the ranges are as follows:

- The amount of E-scrap considered obsolete by 2005 equaled 450 million units, with an estimation of 63 million units in 2005 alone.
- The amount of E-scrap discarded was 80 to 90%.
- The amount of E-scrap recycled ranged from 10 to 20%.
- The percentage of E-scrap in the solid waste stream was 0.8 to 0.9%.
- The amount of stockpiled equipment totaled 180 to 500 million units.
- The rate at which computers became obsolete varied from 3 to 4 years.

### **2.2.3 Data Analysis**

There are two parts to the E-scrap generation analysis. The first part is a determination of the amount of E-scrap generated annually and the second is the amount of E-scrap that is being discarded into landfills. The various reviewed studies identified the amount of E-scrap generated annually. The United States Environmental Protection Agency (USEPA) has determined that the annual generation rate of E-scrap is approximately 1.9 to 2.2 million tons nationally.

Based on the results of the data search, a review of reports and studies, and our experience in conducting waste characterization studies, we determined that the most representative electronic scrap disposal rate is derived from waste characterization studies. These studies provide a direct glimpse into the actual waste stream in a variety of locations.

Seven waste characterization studies (State of Georgia, State of Iowa, State of Ohio, Johnson County Kansas, State of Wisconsin, State of Kansas, and State of Minnesota) were reviewed. These seven studies were selected utilizing the following criteria: (1) the study was completed within the past seven years; (2) the study area encompassed similar characteristics to the State of Illinois (based on either its size or proximity to the state); and (3) electronic scrap was identified as a part of the study. The definition of electronic scrap varied from study to study; however, each study's definition included many of the same materials as defined and used for this project.

Utilizing information from each study, we established a per capita electronic scrap generation rate for both rural and urban areas. From the seven waste characterization studies, the per capita generation rate in rural areas varied from 0.47 to 8.64 pounds per person (average 4.55 pounds per person); the urban area per capita generation rate varied from 1.56 to 9.9 pounds (average 5.73 pounds per person). These variances appear to be due to a number of factors.

1. The service areas for the facilities could not be easily identified in some of the studies.
2. The definition of electronic scrap varied, with some of the studies considering televisions and stereos as electronic scrap.
3. The sampling procedures for the studies typically precluded monitors and CPUs in the direct sample because of the size and weight of these items would have severely skewed the sample results.

Considering these factors, the per capita generation rates were adjusted to reflect the variations in definitions and sampling patterns. The adjustments included:

1. A percentage increase or factor to the pounds per person to account for the variation in the E-scrap definition and more closely mirror the definition used for this study. A percentage increase or factor based on the density of the service area as it would relate to rural and urban areas in Illinois.
2. An additional weight factor to the pound per person calculation to accommodate the lack of monitors and CPUs in the direct sample.

Utilizing these factors the following equations were developed:

$$\text{RGR} = 4.55 \times \text{DEF} \times \text{DSA} \times \text{CPUM}$$

$$\text{UGR} = 5.73 \times \text{DEF} \times \text{DSA} \times \text{CPUM}$$

where:

RGR is Rural E-Scrap Generation Rate per Person

UGR is Urban E-scrap Generation Rate per Person

DEF is the definition correction factor (1.08) – This factor is based on the discrepancy between the definitions of E-Scrap for this report as it compares to the waste characterization studies. For the most part the variations were relatively minor.

DSA is the Density of the Service Area factor (Urban = 1.41; Rural = 1.08) – This factor is based on the characteristics of the population base and magnitude of the urban areas in each of the areas where the waste characterization study was performed as it relates to the State of Illinois. In all cases the magnitude of the urban areas in Illinois was significantly greater than in the states where the waste characterization studies were performed. The variance between rural areas was much less significant.

CPUM is the CPU Monitor factor (1.75) – This factor addresses the variance in E-scrap weights generated in the waste characterization studies as it compares to this study. In the majority of the waste characterization studies the CPU and monitor were not weighed but counted.

These calculations resulted in the following annual generation rates:

- Rural Area Per Capita Electronic Scrap Generation Rate = 9.17 pounds/year
- Urban Area Per Capita Electronic Scrap Generation Rate = 15.27 pounds/year

Although these generation rates are based on the best available information, it is important to note that these generation rates are not firm, fixed numbers. They are a reflection of the best available data that is affected by a number of variables. These variables, including the constant changes in electronics, purchasing decisions by consumers and businesses, and the rate of obsolescence of electronic products that make any E-Scrap generation rate a reasonable assumption, at best.

#### **2.2.4 Analog Television Impact**

Congress has mandated the conversion of television broadcast signals from analog to digital format and this is scheduled to occur across the country on February 17, 2009. Analog televisions – that is, televisions without digital tuners – must be connected to cable or satellite broadcast service, or outfitted with a special digital-to-analog converter box, in order to continue displaying over-the-air broadcast signals. Without one of these options analog televisions literally will not receive over-the-air signals and will become useless, unless used for video games or other uses.

While it would be expected today that nearly every household would have a television, apparently this is not the case. The 2000 Census reported there were 4.6 million households in Illinois. However, according to the Illinois Broadcasters Association (IBA), and as reported to Congress, the most current information indicates that there are 3,899,330 households in Illinois with televisions and 17.1% of these or 810,940 households receive over-the-air transmission signals. The remaining households either receive cable or satellite transmissions. Unless the households that receive over-the-air signals elect to subscribe to cable/satellite service, purchase a converter, or purchase a new television with digital capability their televisions will become useless on the conversion date. In addition to this, secondary televisions found in any household that are not upgraded to receive digital signals will also become non-functional.

The USEPA estimates there are at least 2.5 televisions in the average household in the United States. Therefore, using IBA and USEPA data, there are at least 9,748,325 televisions in Illinois. To present a worst-case scenario, it could be assumed that one television from the 3.9 million households would become obsolete. The broadcast conversion will likely be the catalyst for households to discard analog televisions, so a significant rise in the number of televisions that will become available for recycling or disposal starting in 2008 and into 2009 should be expected.

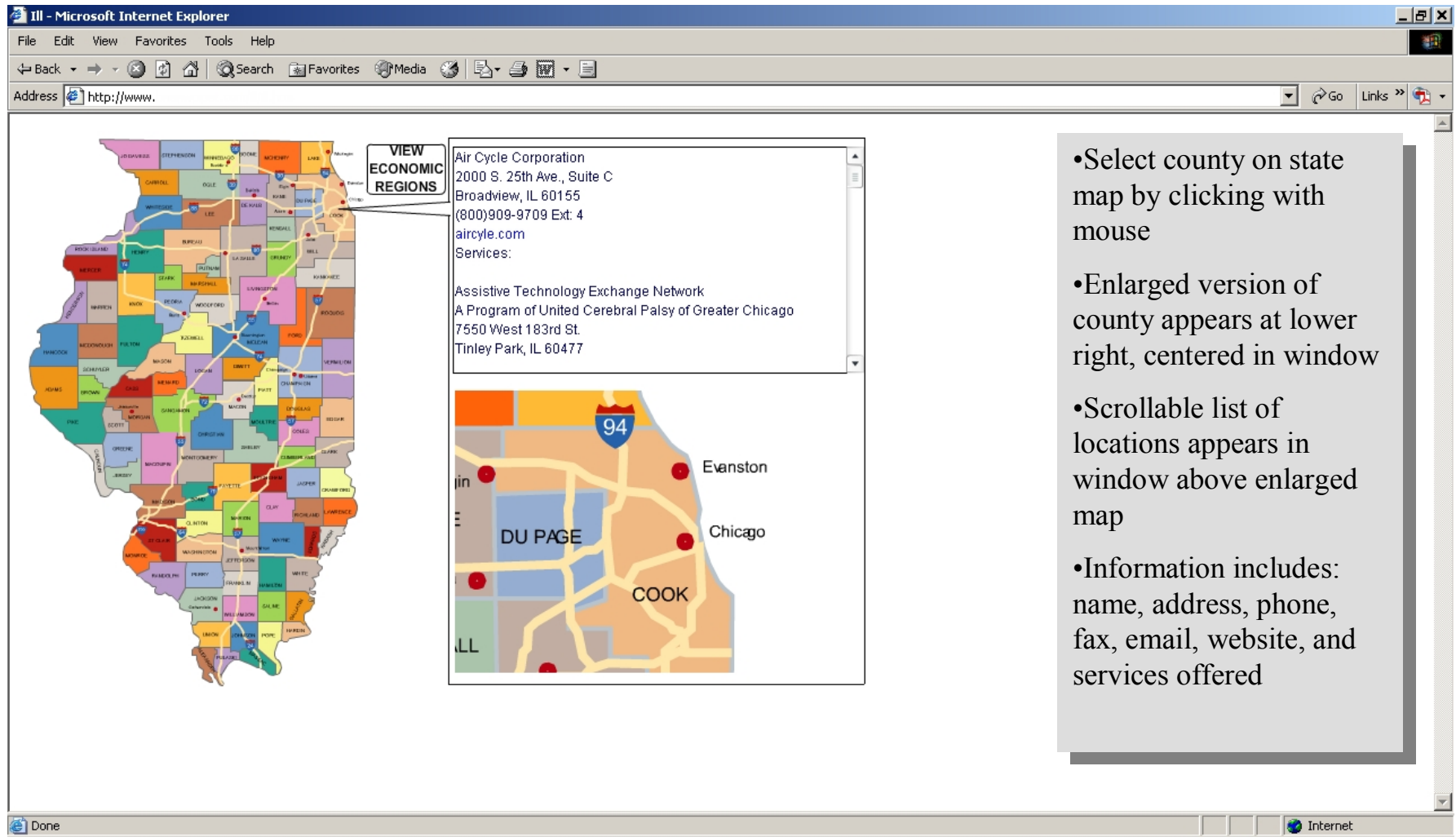
This situation has the strong potential to overwhelm processors in the state. Considering a national impact, the conversion will likely flood processors who will be unable to process the vast quantities, market prices will decline especially for lead glass, and regrettably landfill disposal will become the primary management option.

### **3.0 INTERACTIVE MAP**

In order to provide access to the various entities that comprise the electronic scrap recycling industry in the State of Illinois, an interactive map was developed. This map provides information on organizations (both public and private) that provide various services relating to the recycling of electronic scrap.

The map is easy to use. After opening the map from a website or directly from the program utilizing Microsoft Explorer, you can click on any county in the state and a list of organizations within or near a specific county that provide electronic scrap recycling services are shown. If a number of organizations are listed, the program allows you to scroll through the list. Each organization's name, address, and contact information are provided along with the recycling services the organization provides.

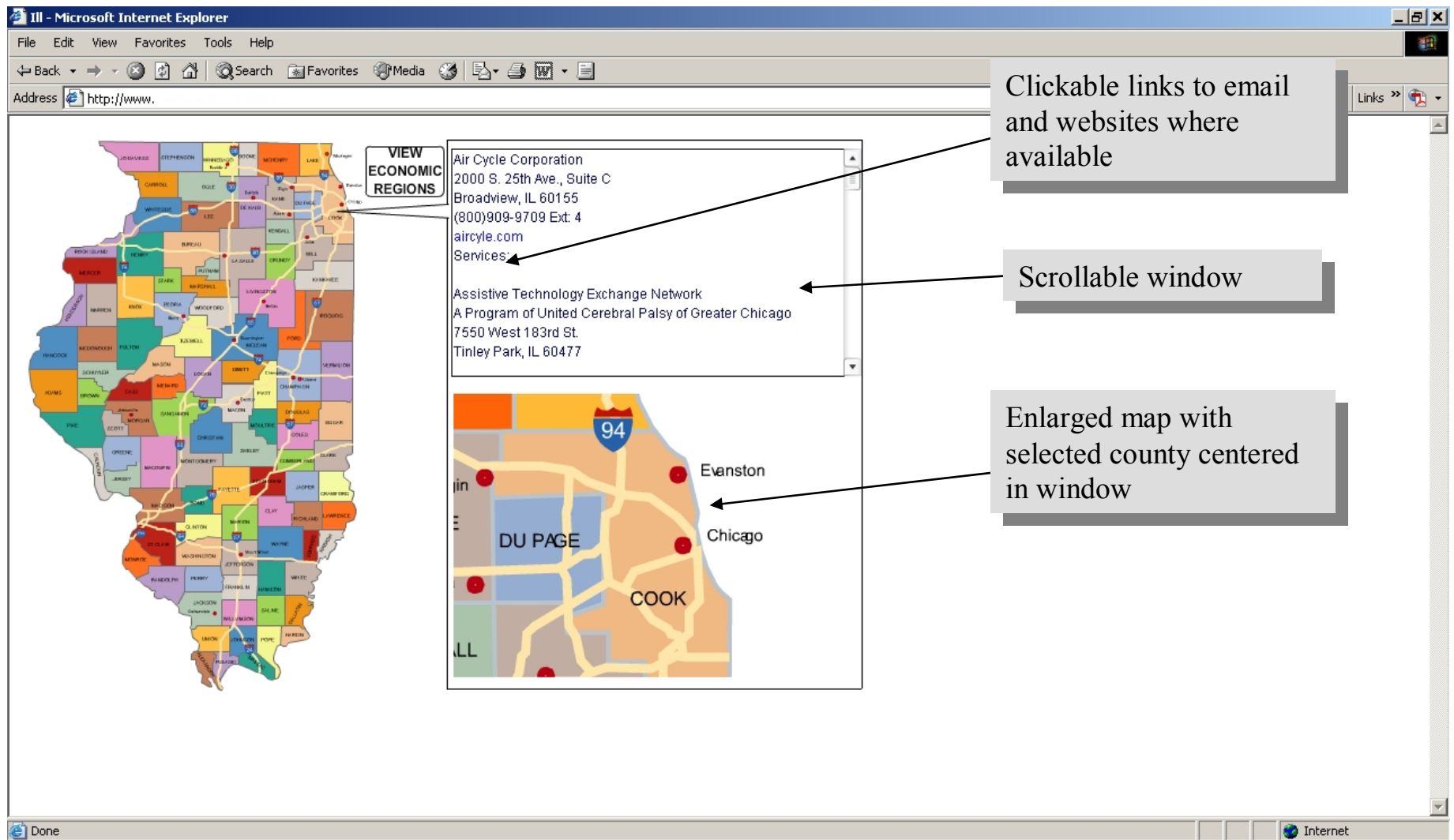
In addition, the program itself is easy to maintain and update. A service module is provided with the program that allows updates to any of the listings as well as the ability to add new listings. Figure 4, Figure 5, Figure 6 and Figure 7 present a pictorial representation of the interactive map.



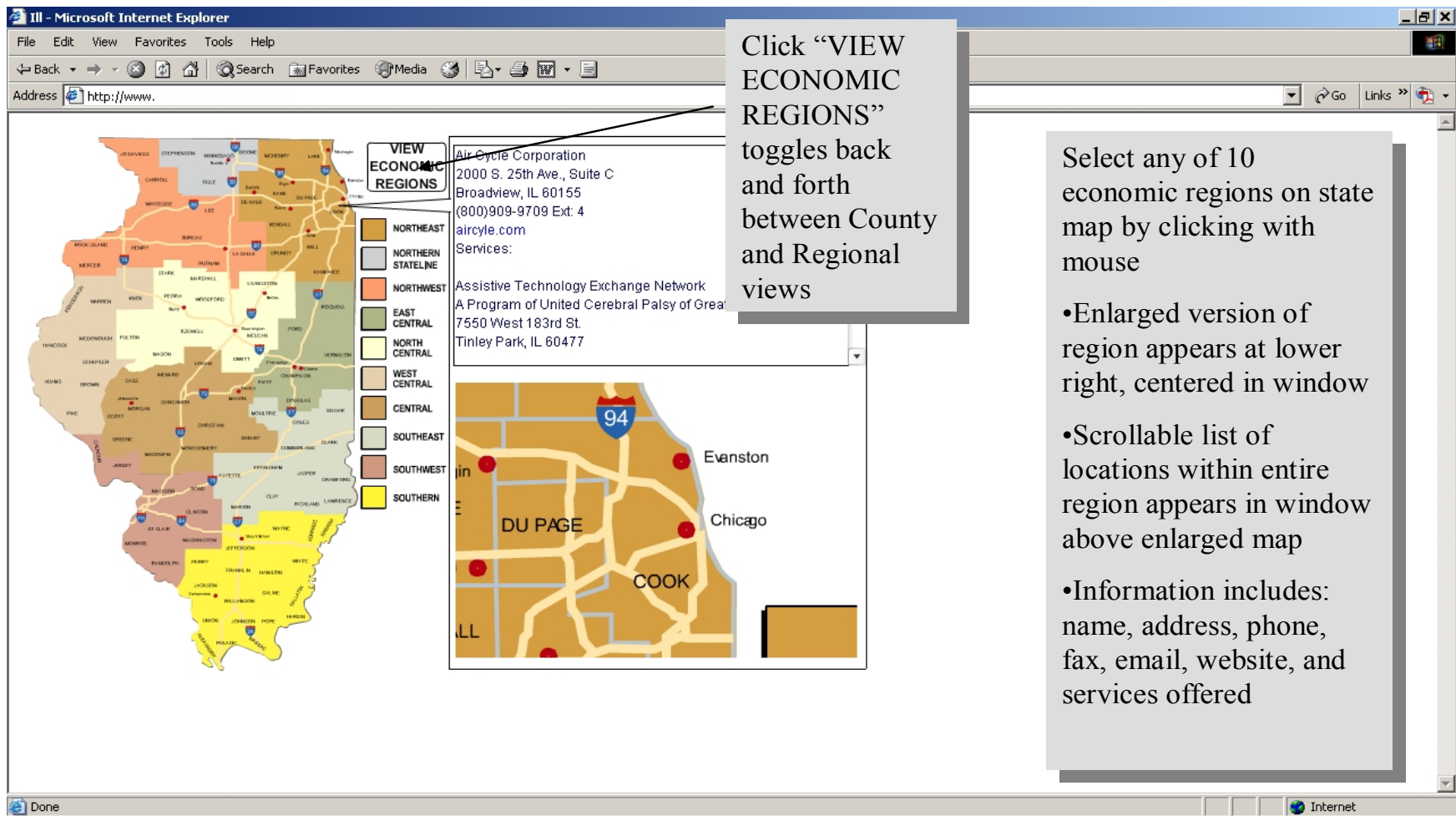
- Select county on state map by clicking with mouse
- Enlarged version of county appears at lower right, centered in window
- Scrollable list of locations appears in window above enlarged map
- Information includes: name, address, phone, fax, email, website, and services offered

**FIGURE 4.**  
**INTERACTIVE MAP LISTING FEATURES AND COUNTY INTERFACE**





**FIGURE 5.**  
**INTERACTIVE MAP WITH INSTRUCTIONS AND COUNTY INTERFACE**



**FIGURE 6.**  
**INTERACTIVE MAP LISTING FEATURES AND ECONOMIC DEVELOPMENT REGION**

Select County to be changed

Select location among  
existing entries for  
new data to be added  
or changed

Enter data

Save and upload to server

Select a county: Adams    Select a location: Air Cycle Corporation

Name 1:   
 Name 2:   
 Address 1:   
 Address 2:   
 Address 3:   
 Address 4:   
 Address 5:   
 Address 6:   
 Phone:     Fax:   
 E-mail:

☐ Collector    ☐ Processor    ☐ Refurbisher    ☐ Broker    ☐ Reseller

NEW    DELETE    SAVE    UPLOAD

**FIGURE 7.**  
**INTERACTIVE MAP ADMINISTRATION TOOL**

#### 4.0 GENERATION RATES

Based on the data collected in Section 2.2, electronic scrap generation rates for the State of Illinois were developed. Generation rates were developed for:

- Total aggregate quantity of E-scrap for entire state (in tons)
- Total aggregate quantity of E-scrap for each of the Illinois Economic Development Regions (in tons)
- Total aggregate quantity of E-scrap for each of the Illinois counties (in tons)

The first step in determining these generation rates was to define what areas of the state are urban and what areas are rural. The United States Census Bureau's listing of Metropolitan Statistical Area (MSA) was combined with counties with a population estimate (as of July 2006) greater than 50,000. A total of 34 counties are then considered urban with the remaining counties being considered rural.

Using the latest estimated population figures for Illinois as developed by the U.S. Census Bureau, it was determined that 11,462,549 people reside in urban areas (34 counties) and 1,369,421 people reside in rural areas (68 counties). The generation rates for 2007 and the predicted generation rates for 2010 were then calculated. The 2007 generation rate is based on the E-scrap per capita generation rate developed in Section 2.2.3. The predicted generation rate for 2010 was calculated by multiplying the generation rate for 2007 by a factor of 1.25. This factor is based on studies by the USEPA and the National Safety Council that predict E-scrap generation rates will increase by 25% over the next three years as the end-of-life time period for electronic products is reduced by technological advances. The urban and rural E-scrap generation rates for Illinois in 2007 and 2010 are presented in Table 11.

**TABLE 11.**  
**E-SCRAP GENERATION RATES FOR ILLINOIS**

Area	Population	Electronic Scrap Generation (Tons)	
		2007	2010
Urban	11,462,549	87,517	109,396
Rural	1,369,421	6,279	7,848
Entire State	12,831,970	93,796	117,244

To confirm the reliability of these numbers and the per capita generation rate, these results were compared to the latest information from USEPA regarding E-scrap generation. The latest figures from USEPA indicate that the entire nation generated 2.2 million tons of E-scrap. With a population of 12,831,970 the State of Illinois is 4.3% of the total population of the United States. Assuming a relatively linear comparison of population to waste generation, the total E-scrap generation of the State of Illinois, based on USEPA estimates, is 94,600 tons. This compares very favorably with the calculated generation rates.

Table 12 presents the electronic scrap generation rates for each Illinois Economic Development Region. Table 13 presents the E-scrap generation rates for those Illinois counties determined to be urban for purposes of this study. Table 14 presents the E-scrap generation rates for those Illinois counties defined as rural for purposes of this study.

**TABLE 12.  
E-SCRAP GENERATION RATES FOR ECONOMIC DEVELOPMENT REGIONS**

<b>Economic Development Region</b>	<b>Population</b>	<b>2007 Generation Rate (Tons)</b>	<b>2010 Generation Rate (Tons)</b>
Northeast	8,751,941	66,690	83,370
Northern Stateline	450,466	3,500	4,375
Northwest	503,207	2,770	3,465
East Central	329,120	2,620	3,275
North Central	639,703	4,890	6,160
West Central	226,865	1,370	1,720
Central	551,230	3,370	4,220
Southeast	303,928	1,570	1,970
Southwest	688,546	4,980	6,225
Southern	386,964	1,880	2,350
<b>Total</b>	<b>12,831,970</b>	<b>93,796</b>	<b>117,244</b>

**TABLE 13.  
E-SCRAP GENERATION RATES FOR URBAN ILLINOIS COUNTIES**

<b>County</b>	<b>2007 Generation Rate (Tons)</b>	<b>2010 Generation Rate (Tons)</b>		<b>County</b>	<b>2007 Generation Rate (Tons)</b>	<b>2010 Generation Rate (Tons)</b>
Adams	513	642		Madison	2,026	2,532
Boone	402	502		McHenry	2,385	2,981
Champaign	1,418	1,772		McLean	1,231	1,538
Clinton	280	350		Menard	96	120
Coles	389	486		Monroe	243	304
Cook	40,379	50,474		Ogle	419	523
DeKalb	765	956		Peoria	1,393	1,742
DuPage	7,121	8,901		Rock Island	1,127	1,408
Henry	384	480		Sangamon	1,478	1,847
Jackson	441	551		St. Clair	1,992	2,490
Kane	3,770	4,712		Tazewell	997	1,246
Kankakee	833	1,041		Vermillion	626	782
Kendall	673	841		Whiteside	457	571
Knox	404	505		Will	5,102	6,377
Lake	5,444	6,805		Williamson	487	603
LaSalle	863	1,079		Winnebago	2,257	2,821
Macon	835	1,043		Woodford	289	362
				<b>TOTAL</b>	<b>87,517</b>	<b>109,396</b>

**TABLE 14.**  
**E-SCRAP GENERATION RATES FOR RURAL ILLINOIS COUNTIES**

<b>County</b>	<b>2007 Generation Rate (Tons)</b>	<b>2010 Generation Rate (Tons)</b>		<b>County</b>	<b>2007 Generation Rate (Tons)</b>	<b>2010 Generation Rate (Tons)</b>
Alexander	40	49		Lawrence	73	91
Bond	83	103		Lee	164	205
Brown	31	38		Livingston	177	222
Bureau	162	202		Logan	139	174
Calhoun	24	30		Macoupin	224	280
Carroll	74	92		Marion	184	230
Cass	63	79		Marshall	60	75
Christian	161	201		Mason	71	89
Clark	78	97		Massac	69	87
Clay	64	80		McDonough	146	182
Crawford	91	114		Mercer	77	96
Cumberland	50	63		Montgomery	139	174
DeWitt	77	96		Morgan	164	204
Douglas	91	113		Moultrie	66	82
Edgar	88	110		Perry	105	131
Edwards	30	38		Piatt	77	96
Effingham	158	197		Pike	77	97
Fayette	100	125		Pope	19	24
Ford	65	81		Pulaski	31	39
Franklin	183	228		Putnam	28	34
Fulton	171	214		Randolph	151	189
Gallatin	28	35		Richland	72	90
Greene	65	82		Saline	119	149
Grundy	210	263		Schuyler	32	40
Hamilton	38	48		Scott	25	31
Hancock	88	109		Shelby	102	127
Hardin	21	26		Stark	29	36
Henderson	36	45		Stephenson	217	272
Iroquois	140	175		Union	84	105
Jasper	45	57		Wabash	57	71
Jefferson	186	232		Warren	80	100
Jersey	104	130		Washington	68	86
Jo Daviess	104	129		Wayne	76	95
Johnson	61	77		White	69	86
				<b>TOTAL</b>	<b>6,279</b>	<b>7,848</b>

## **5.0 PROCESSING CAPACITY**

The results of survey efforts discussed in Section 2.1 identified 23 refurbishers; however, only seven submitted additional operational information for a response rate of 30%. Even the additional information obtained from these seven refurbishers was minimal and did not provide complete information that was sought. Refurbishers do contribute to local E-scrap recycling, or to be more precise, the reuse of electronics, and play an important role in job training and making electronics, usually computers, available to low-income families, students, and others. Even though these organizations as a whole refurbish hundreds of units a day, they are not a primary contributor to overall management of E-scrap.

The survey identified 19 processors, and additional information was obtained from 17 of these processors, for a 90% response rate. The response information for both refurbishers and processors is found in Table 7A and Table 7B (see page 24 and page 25, respectively). Table 15 presents the 17 processors, the current daily throughput of E-scrap in tons (as provided by the processors), the annual throughput tonnage, and the baseline potential processing capacity in tons per year.

The annual throughput was calculated by a straight-forward method of multiplying the daily throughput by 260 work days – a 5-day work week schedule. Thus, the current annual throughput is 83,720 tons. However, the determination for potential capacity includes other variables. While processors did supply the number of daily work shifts, many indicated that work shifts vary. Many are only 8 hours a day, but others indicated that a work shift can range from 8 up to 12 hours per day, as may be needed to accomplish their production schedules. Processors also experience down time for unexpected situations and scheduled equipment maintenance.



**TABLE 15.  
E-SCRAP PROCESSING CAPACITY FOR ILLINOIS**

<b>Entity</b>	<b>County</b>	<b>Current Daily Throughput (TPD)</b>	<b>Current Annual Throughput (TPY)</b>	<b>Estimated Maximum Capacity</b>
Advanced Technology Recycling	Livingston	1	260	546
BLH Computers	Sangamon	1	260	546
Com2 Computers	DuPage	10	2,600	5,460
Digilog	Cook	20	5,200	10,920
E-Scrap Technologies	Will	20	5,200	10,920
Fortune Plastic & Metal	DuPage	20	5,200	10,920
Hobi International	Kane	20	5,200	10,920
Interco Trading	St. Clair	50	13,000	27,300
Intercon Solutions	Cook	40	10,400	21,840
Premier Computer Services	Rock Island	5	1,300	2,730
Recycling For Illinois	Peoria	1	260	546
River Shannon Recycling	DuPage	5	1,300	2,730
Sims Recycling Solutions	DuPage	70	18,200	38,220
Supply-Chain Services	DuPage	30	7,800	16,380
Totall Metal Recycling	Madison	20	5,200	10,920
Universal Scrap Metals	Cook	6	1,560	3,276
VintageTech Recyclers	Will	3	780	1,638
<b>TOTALS</b>		<b>322</b>	<b>83,720</b>	<b>175,812</b>

Based on this information and the fact that processors could increase their capacity using their existing facilities based upon several different variables, a range of potential capacities was developed:

**Scenario 1** (or baseline scenario) takes the daily throughput and multiplies it by the annual work days and a work shift factor of 1.5 (or a 50% increase in current hours in a shift):

$$(322 \text{ tons/day})(260 \text{ days/year})(1.5) = \mathbf{125,580 \text{ tons/year (baseline)}}$$

**Scenario 2** increases the work shift factor to 1.75 (or a 75% increase in current hours in a shift):

$$(322 \text{ tons/day})(260 \text{ days/year})(1.75) = \mathbf{146,510 \text{ tons/year}}$$

*A 17% increase over baseline*

**Scenario 3** increases the work days to 312 days per year (6 days per week):

$$(322 \text{ tons/day})(312 \text{ days/year})(1.5) = \mathbf{150,696 \text{ tons/year}}$$

*A 20% increase over baseline*

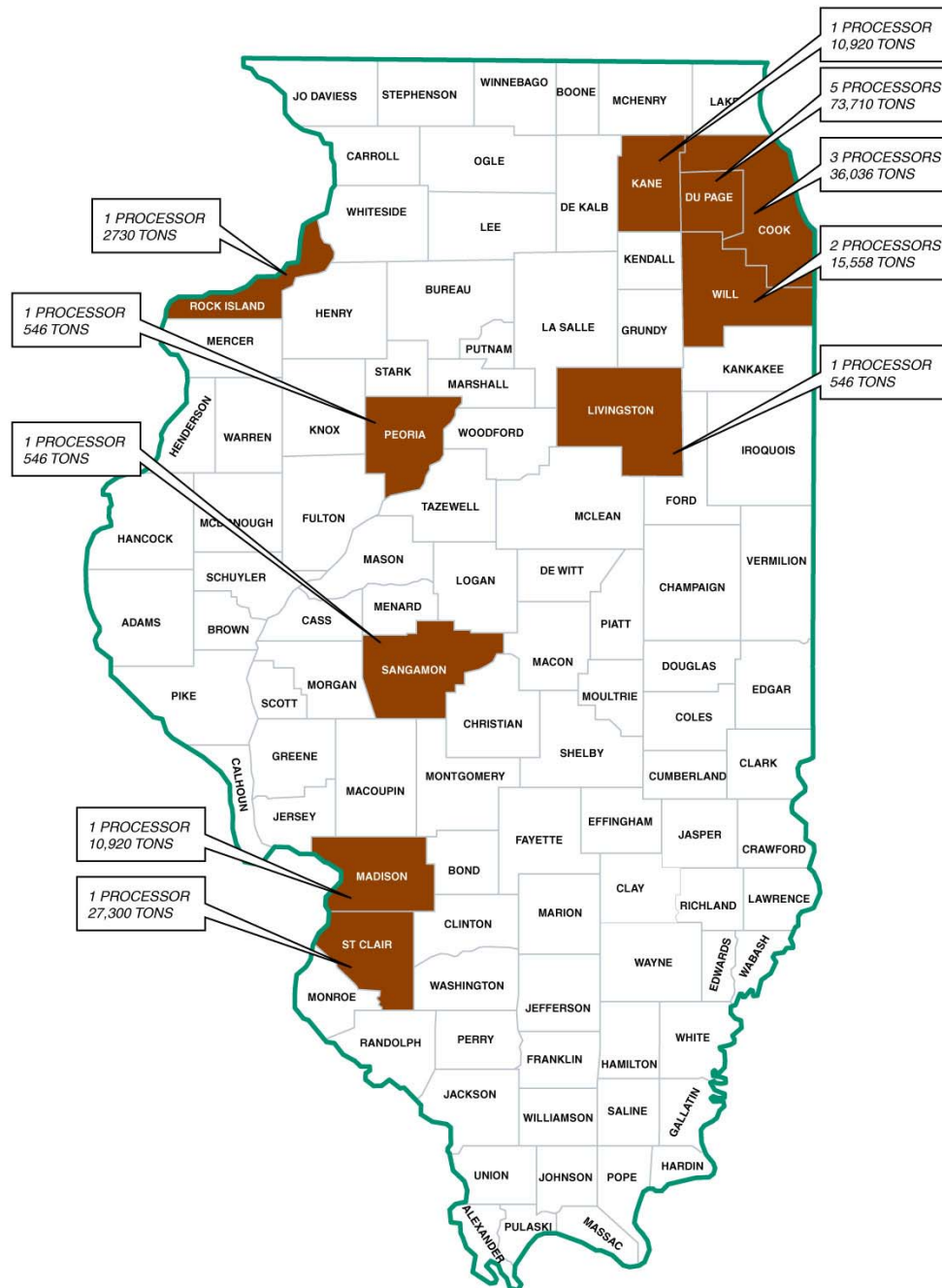
**Scenario 4** increases work days to 312 days per year and increases the work shift factor to 1.75 (or a 75% increase in current hours in a shift):

$$(322 \text{ tons/day})(312 \text{ days/year})(1.75) = \mathbf{175,812 \text{ tons/year}}$$

*A 40% increase over baseline*

The baseline potential capacity of 125,580 tons per year would be expected to be readily attained within the existing processing infrastructure. The fourth scenario of 175,812 tons per year should be viewed as the estimated maximum capacity given the existing infrastructure. Some firms may fall short of the maximum while others may exceed their individual maximum as shown on Table 15. This then provides an operational range of existing facilities from the current throughput of 83,720 up to an estimated maximum of 175,812 tons per year.

Figure 8 maps the location of the processors in the 10 counties that responded to the survey, the number of processors in those counties and the estimated maximum processing capacity. Figure 8 shows that the primary concentration of processors is in the Chicago MSA with 76% of the maximum throughput or 133,224 tons per year. The St. Louis MSA has a capacity of 38,220 tons per year and represents 22% of the maximum throughput. The remaining capacity is 2%, with 1.5% of this found in Rock Island County and the remainder spread between Peoria, Sangamon and Livingston counties.



**FIGURE 8.**  
**LOCATION OF E-SCRAP PROCESSORS**  
**WITH ESTIMATED MAXIMUM PROCESSING CAPACITY**

Table 16 indicates that Illinois could have a potential processing surplus capacity of 58,562 tons per year.

**TABLE 16.**  
**STATEWIDE GENERATION VS. CAPACITY**

	<b>2010 (Tons)</b>
Estimated E-scrap Generation	117,250
Estimated Maximum Capacity	175,812
Net Difference	58,562

While it would appear that sufficient processing capacity would exist, there is a significant point to note. The survey was unable to ascertain what quantity of E-scrap is originating from out-of-state sources and currently being accepted and processed in Illinois. Further, the survey was not able to forecast what would continue to be managed within the state in 2010. Survey information indicated that this was occurring now; however, it is unknown what quantities or percentage of processing capabilities this would affect in the future.

Given the rapid development and interest of private sector entities to create and expand the E-scrap processing business overall, it would be reasonable to expect that any potential deficiency in processing capacity within the state would be an opportunity not to be overlooked by in-state entities as well as regional and national processing entities. The adoption of proposed state legislation will likely trigger a combination of in-state and out-of-state partnerships and arrangements to adequately manage E-scrap.

## **6.0 CONCLUSIONS**

This report provides an initial review of the present electronic scrap recycling infrastructure in the State of Illinois. The study utilized a number of methods to obtain information on the present system, its structure, organizations involved in electronic scrap, estimates of current and future electronic scrap quantities, and potential processing capacities in the state. The information provided in this document and the analysis provides a "snapshot" of E-scrap generation and capabilities E-scrap recyclers in Illinois at this point in time. A number of conclusions were developed and follow:

1. Survey information indicates that there are 62 permanent drop-off locations in 30 counties. These counties account for 80% of the state's population. In addition, it is known that additional collection opportunities exist and are made possible by local governments that hold periodic one-day collection events. Further, non-profit entities, such as Goodwill and others, also offer the collection of limited types of E-scrap.
2. The types of E-scrap collected are a function of the electronic devices accepted by processors/refurbishers and their particular business focus. Of the 24 processors/refurbishers that responded to the survey, all accept computers and related peripherals, but only 18 accept TV's. Sixteen firms indicated that they accept cell phones, and 15 accept printers and TV peripherals. Items that are least collected are portable calculators, PDA's and facsimile equipment.
3. The rate structure charged by both processors and refurbishers varies greatly. Some accept items for no charge, while a majority base fees on weight. Monitors and TV's range in charges from \$5 to \$25 each.

4. The E-scrap storage capacity in the state seems to vary based on the entity's structure – non-profit vs. for profit. In general, collectors have limited storage space. However, storage space at most processing facilities is relatively significant. This storage capacity plus the rate at which E-scrap is being processed indicates that these entities are presently balancing the materials received with processing production. The implementation of a statewide program will require careful balancing of temporary storage at collection points and storage/processing capabilities at processing locations to avoid unwanted stockpiles of E-scrap. Use of shipping containers or trailers to containerize E-scrap while awaiting shipment to processors will probably become prevalent.
5. None of the organizations that responded to the survey indicated any problem with transporting E-scrap. There were indications that both collectors and processors/refurbishers had access to trucking services from various sources as well as from those that had their own fleet.
6. The for-profit organizations involved in electronic scrap were hesitant to share detailed information relating to their operation or capabilities. The non-profit organizations appear to have a lesser grasp of their capabilities and capacities.
7. Interaction among the organizations involved in electronic scrap appears to be limited, or at least inconsistent. This interaction appears to be similar to a "seller-buyer" relationship rather than a coordinated and integrated system. Coordination among the organizations involved in electronic scrap recycling would significantly improve the efficiency of the system.
8. The extent to which the organizations wish to capture electronic scrap appears to be related to their capabilities, capacities, and the focus of their organization. Based on the survey results these organizations appear to have or can acquire the space to increase the amount of E-scrap they can accept and/or process.

9. Based on the study results, the following support and improvements to the E-scrap system in Illinois would benefit the present E-scrap recyclers:
- A centralized information system that provides education, training, and coordination support.
  - On-site operation audits to provide organizations with methods to improve efficiencies.
  - The identification of areas in the state that are under served and guidance to organizations to meet this need.
  - A regularly updated list of all organizations involved in E-scrap.
  - A survey of businesses to determine how the businesses are addressing their E-scrap issues.
  - The identification of grant and loan programs that would assist existing organizations and motivate new organizations to enter the market place.
  - The development of a public education and awareness program is critical to the successful implementation and continued operational aspects of a statewide program.
10. Based on our research, the greatest impact to be realized by processors would come from the potentially large amount of CED's presently stored by both businesses and private citizens including analog televisions. These materials could likely flood the system, creating piles of E-scrap in some locations. Thus, a well conceived implementation plan is critical and should include coordination of state and local government, collectors, and processors/refurbishers in partnership development.
11. The current existing infrastructure is estimated to have a maximum processing capacity of 176,000 tons per year. The estimated generation of E-scrap in 2010 is estimated to be 117,000 tons, leaving "excess" capacity of some 58,000 tons. Attaining maximum processing capacity will involve a certain degree of internal facility "ramping up" - hiring and training of additional employees; ascertaining markets; management and facility certification processes; etc.

12. While it appears that there will be adequate processing capacity, the degree and quantity out-of-state E-scrap processing that may be taking place at the time of implementation is unknown and can affect the projected excess capacity. Given the rapid development and interest of private sector entities to create and expand the E-scrap processing business overall, it would be reasonable to expect that any potential deficiency in processing capacity within the state would be an opportunity not to be overlooked by in-state entities as well as regional and national processing entities. The adoption of proposed state legislation will likely trigger a combination of in-state and out-of-state partnerships and arrangements to adequately manage E-scrap in Illinois.



## 7.0 REFERENCES

*A Legislative Framework for Electronics Recycling*, prepared by Electronics Industries Alliance, May 2007

*Assessment of E-scrap Collection and Processing Issues for the Metro Region*, prepared by Cascadia Consulting Group, Inc. and E4 Partners, Inc., August 2002, prepared for Portland Metro Area and Metro Regional Environmental Management

*National Electronics Recycling Program Data Update*, prepared by Northeast Recycling Council, December 2002

*Electronic Scrap Management in Vermont*, prepared by Agency of Natural Resources, Department of Environmental Conservation, January 2004

*Iowa Electronics Scrap Characterization Study*, prepared by Wuf Technologies, LLC, March 2002, prepared for Department of Natural Resources

*The Region 3 eCycling Pilot*, prepared by United States Environmental Protection Agency, December 2002

*Municipal Solid Waste in the United States 2005 Facts and Figures*, prepared by United States Environmental Protection Agency and Industrial Solid Scrap Division, October 2006

*Kansas Electronic Scrap Recycling Pilot Study*, prepared by Kansas Department of Health and Environment, May 2005

*S510: Electronic Scrap Recycling Promotion and Consumer Protection Act*, prepared by Professor Steve Cohen, December 2006, prepared for The Workshop in Applied Earth Systems Management II

*Electronics Scrap Management in the United States: Approach 1*, prepared by Eastern Research Group, Inc., April 2007, prepared for United States Environmental Protection Agency Office of Solid Scrap

*State of Illinois, A Report on electronic Equipment Disposal and Recycling*, prepared by Computer Equipment Disposal and Recycling Commission, April 2006, prepared for Governor Rod R. Blagojevich and Doug Scott (Illinois Environmental Protection Agency)

*High-tech TV Means Low Tech Trash*, prepared by Jim Puzzanghera, June 2007, prepared for Los Angeles Times.

*Market Trends in Electronic Waste Generation*, prepared by United States Environmental Protection Agency, April 2007,

*Electronic Waste Management in the United States Preliminary Findings*, prepared by United States Environmental Protection Agency, February 2007

*Georgia Statewide Waste Characterization Study*, prepared by R. W. Beck, June 2005, prepared for Georgia Department of Community Affairs

*Minnesota Statewide Municipal Solid Waste Composition Study*, prepared by R. W. Beck, March 2000, prepared for Solid Waste Management Coordinating Board

*Iowa Statewide Waste Characterization Study*, prepared by R. W. Beck, February 2006, prepared for Iowa Department of Natural Resources

*Johnson County Solid Waste Analysis*, prepared by Engineering Solutions & Design, Inc., June 2007, prepared for Johnson County Kansas Environmental Health Department

*State of Ohio Waste Characterization Study*, prepared by Engineering Solutions & Design, Inc., April 2004, prepared for Ohio Department of Natural Resources

*State of Kansas Waste Characterization Study*, prepared by Engineering Solutions & Design, Inc., March 2003, prepared for Kansas Department of Health and Environment

*Wisconsin Statewide Waste Characterization Study*, Cascadia Consulting Group, Inc., May 2003, Wisconsin Department of Natural Resources