CHRISTIAN COUNTY

WASTE MANAGEMENT PLAN

prepared for

CHRISTIAN COUNTY BOARD

by

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EXECUTIVE SUMMARY

CHAPTER 1: SUMMARY OF PHASE I SOLID WASTE NEEDS ASSESSMENT

Chapter 1 presents a summary of the information collected in the Phase I portion of this project. These data provided the baseline conditions upon which the planning for the Phase II programs and facilities are founded.

Table 1 (page 1-3) summarizes the estimated amounts of municipal waste generated and shows the management methods used to process or dispose of this waste. In 1992, the year of the Phase I data collection, Christian County generated an estimated total of 25,203 tons of municipal waste. Based on the 1992 total county population estimate of 34,211, an average of 4.04 pounds of municipal waste was generated per capita per day.

Table 2 (page 1-4) provides a breakdown of the recycling percentages being achieved by the current recycling activities being conducted in the County. The municipal waste recycling rate is estimated to be 12.5%.

A detailed listing of data on the types of programs and facilities currently being used to manage the County's waste stream is given in Appendix B. This appendix is a reprint of Chapter 6 of the Phase I report.

A compilation of the demographic data used in making projections over the 20 year planning period is shown in Appendix C which is a reprint of Chapter 3 of the Phase I report.

A compilation of the best available data on the composition of the County's waste stream is shown in Appendix D.

Chapter 1 summarizes the five scenarios that were prepared in Phase I to analyze the impacts of such variables as population, employment, waste generation rates, recycling rates, incineration rates, and landfill disposal rates. Of the five scenarios considered, Scenario D appears to the be the most likely scenario to actually occur. Scenario D is based on the primary assumptions that: (1) the County population will experience a 6% straightline decrease over the 20 year planning period; (2) the municipal waste generation rate will increase at an estimated rate of 0.34% per year; (3) the current recycling rate will increase to 25% by the fifth year of the program and then further increase to 35% by the twentieth year; (4) no significant increases will occur in the waste-to-energy or volume reduction incineration rates.

The programs and facilities outlined in the recommended waste management system are consistent with the basic assumptions used for Scenario D.

CHAPTER 2: DEVELOPMENT AND EVALUATION OF LIST OF POTENTIAL COMPONENTS

The first step in the Phase II planning process involved developing a list of potentially feasible components for each of the five categories of the State waste management hierarchy. The County's Waste Management Plan must comply with this hierarchy, listed here in order of preference:

1. volume reduction at the source (referred to throughout the Plan as source reduction)

2. recycling and reuse (referred to throughout the Plan as recycling)

3. combustion with energy recovery (referred to throughout the Plan as waste-to-energy incineration)

4. combustion for volume reduction (referred to throughout the Plan as volume reduction incineration)

5. disposal in landfill facilities (referred to throughout the Plan as landfill disposal)

In creating a list of components that would comply with the hierarchy, two types of options were developed: (1) program options which involve such things as educational programs, public participation activities, recyclable material collection programs, etc.; and (2) facility options which involve the construction and/or expansion of physical structures and equipment to process or dispose of the waste material.

Each component was evaluated according to the following factors:

- applicability to Christian County
- contribution to recycling or landfill diversion goals
- material or energy market evaluation
- environmental evaluation
- cost and economic impact
- technical feasibility/operational considerations
- siting considerations
- permitting considerations

The following five general categories of **source reduction options** were presented to the advisory committee for their consideration:

- *education programs for the general public*
- *education programs for the commercial, institutional, and industrial sectors (hereafter, the term "commercial" shall imply commercial and institutional businesses as well as the office and lunchroom operations of industrial businesses)*
- *education programs for the school systems*
- *economic incentive programs, including volume-based refuse collection systems*
- *local, state, and federal legislation*

Table 3 (pages 2-4 through 2-6) is the matrix that was used to help the Christian County Advisory Committee evaluate each of the source reduction options.

Seven general categories of **recycling and composting options** were considered:

- *drop-off/buy-back recycling operations*
- *residential curbside recycling programs*
- *commercial recycling programs*
- *recyclable material processing facilities - Material Recovery Facility (MRF)*
- *landscape waste compost facilities*
- *construction and demolition (C/D) debris recycling facilities*
- *mixed municipal waste compost facilities*

Table 4 (pages 2-10 through 2-16) is the matrix that was used to help evaluate each of the recycling/composting program and facility options.

Four general categories of **combustion with energy recovery options** were considered:

- *construction of a new in-county large scale waste-to-energy (WTE) incineration facility*
- *small scale WTE incineration facilities*
- *export of used tires to out-of-county Tire-Derived Fuel (TDF) processing and/or incineration facilities*
- *export of municipal waste to out-of-county large scale Refuse-Derived Fuel (RDF) processing and/or WTE incineration facilities*

Table 5 (page 2-20) is the matrix that was used to evaluate the waste-to-energy incineration options.

Five general categories of **combustion for volume reductions options** were considered:

- *construction of a new in-county large scale volume reduction incineration facility*
- *small scale volume reduction incineration facilities*
- *burn barrel usage*
- *burning of landscape waste*
- *burning of construction/demolition debris*

Table 6 (page 2-24) is the matrix that was used to help evaluate the potential volume reduction incineration program and facility options.

The following four general categories of **disposal in landfill options** were presented to the advisory committee for their consideration:

- *direct haul of waste to in-county and out-of-county landfills*
- *expansion of the existing in-county landfill*
- *construction of a new in-county landfill*
- *direct haul of waste to the in-county transfer station for transport to in-county and out-of-county landfills*

Table 7 (pages 2-27 and 2-28) is the matrix that was used to help evaluate the potential landfill disposal program and facility options.

CHAPTER 3: ASSEMBLY OF COMPONENTS INTO ALTERNATIVE WASTE MANAGEMENT SYSTEMS

After the list of potential components had been compiled and evaluated, the next step in the planning process was to assemble those potential components into four alternative waste management systems.

Each of the alternative systems contains programs and facilities in all five categories of the State's waste management hierarchy. The program and facility options in the four systems, A through D, were chosen so that system A represents the minimum, or least aggressive, system in terms of MW recycling percentage attainment and overall system cost. The components of system D, conversely, are much more aggressive and provide for the highest MW recycling percentage and also result in the most expensive system. Alternatives B and C were established to provide incremental degrees of recycling percentages and costs between the minimum alternative A and the maximum alternative D.

Shown below is a summary of the rationale used for the composition of the various alternative systems under each category of the State's waste management hierarchy.

SOURCE REDUCTION

Since the bulk of the potential source reduction programs will be conducted and/or coordinated by the staff of the Christian County Solid Waste Management Department (CCSWMD), the controlling factor in establishing the programs to be considered in each of the alternative systems was the number of CCSWMD staff to be employed. Based on this assumption, the alternative systems ranged from: Alternative A with a staff consisting of 1 full-time director, 1 full-time solid waste planner, and 1 full-time secretary; to Alternative D with a staff consisting of 1 full-time director, 3 full-time solid waste planners, and 1 full-time secretary.

RECYCLING AND COMPOSTING

The key factor in assembling the recycling alternative components was the estimated municipal waste recycling rate that would be attained by each alternate. The alternative systems ranged from the minimum system A which would result in an estimated recycling rate of 25% within five years of Plan adoption to the maximum system D which is very aggressive and would result in an estimated recycling rate of 60% by the end of the 20 year planning period.

COMBUSTION WITH ENERGY RECOVERY

Alternatives for this management option ranged from the minimum system A which consists of continuing the current level of export of used tires to out-of-county WTE incinerators and the continuation of the operation of in-county small scale WTE incineration facilities to the maximum system D which is the most aggressive alternate with added programs to pursue the closure of in-county small scale WTE incineration facilities that do not have the proper State permits, programs to build an in-county mixed waste MRF with RDF processing capabilities, and programs to build an in-county large scale WTE incinerator. Although alternate D lists programs to build an in-county mixed waste MRF and a large scale WTE incinerator, no serious consideration was ever given to include these program options into the recommended system.

COMBUSTION FOR VOLUME REDUCTION

The volume reduction incineration alternative options deal primarily with activities involving burn barrel usage, the burning of landscape waste, and the burning of C/D debris.

Alternative systems considered ranged from minimum system A which calls for the continuation of these activities at their current levels to maximum system D which includes programs to evaluate existing regulations and increase the level of enforcement in the areas of burn barrel usage, landscape waste incineration, and construction/demolition debris incineration. Alternative D also calls for the building of an in-county large scale volume reduction incinerator, however, no serious consideration was ever given to including this option in the recommended system.

LANDFILL DISPOSAL

The landfill disposal options concern both the direct haul of waste to landfills and the use of transfer stations as a means of transporting waste to landfills. Both in-county and out-of-county landfills were considered. The alternative systems considered ranged from minimum system A to maximum system D.

System A calls for the continued direct haul of waste to the in-county landfill and the continued export of waste to out-of-county landfills through an existing in-county transfer station. This alternative also has a provision for considering the expansion of the existing in-county landfill in years 11-20.

System D contains a program to consider the building of a new in-county landfill in years 11-20.

Table 8 (pages 3-5 through 3-12) shows the program and facility options which comprise each of the alternative systems for all of the waste management methods in the State hierarchy.

CHAPTER 4: EVALUATION OF ALTERNATIVE WASTE MANAGEMENT SYSTEMS

After the program and facility options had been assembled into four alternative waste management systems, the next step in the planning process was to further evaluate the benefits and limitations of each of these alternative systems.

Although there was a substantial amount of discussion among the Citizen Advisory Committee members, the CCSWMD staff, and the consultant's staff concerning the relative benefits and limitations of the program options, no formal procedures were established for comparing the various alternatives. However, in the process of narrowing down the list of program and facility options to be selected for the Plan, the following "general consensus guidelines" became apparent:

- Strong preference was given to private ownership/operation over governmental ownership/operation for providing collection, processing, marketing, and disposal services.

- Preference was given to expanding existing waste management facilities rather than to building new facilities.

- Consideration was given to out-of-county as well as in-county solid waste facilities and services since private haulers of garbage and/or recyclables have the right to haul materials to the facility of their choice and, in some instances, it is more cost effective to haul materials to an out-of-county facility than to invest in the development of a new in-county facility. Also, in the case of recyclable materials, the County or an individual in the County may choose to collect a recyclable material that is not accepted by the in-county recycling facilities.

- Cost was a major consideration for all potential programs and facilities, especially in terms of what the cost effect would be on individual residents and businesses.

- As a minimum, the State mandated municipal waste recycling goals of 15% and 25% should be met. Once these minimums are achieved, additional recycling efforts should be undertaken to attain more aggressive recycling rates - provided these additional efforts are cost effective.

- Recycling programs targeted only at the residential waste stream will not be sufficient in meeting the 15% and 25% municipal waste recycling goals. Additional recycling programs will be required that target other waste streams such as commercial and C/D debris.

- Strong focus was given to providing general solid waste management education - both to the general public and to the schools.

- There was very strong opposition to supporting any programs involving large scale in-county incineration.

- There was very little support for legislatively imposed flow-control, primarily because the relatively small quantity of waste generated and the limited number of existing facilities for the processing or disposal of waste result in no substantial "competition" locally for capture of the waste stream.

- Rather than have the County pursue the evaluation or revision of volume reduction incineration regulations, the staff of the CCSWMD should request from each of the municipalities, villages, and cities, copies of ordinances that pertain to the burning of waste in their communities. Having access to such information could be helpful to the CCSWMD staff in the event that they are faced with future issues involving the burning of waste in the County.

These "general consensus guidelines" became the underlying basis for the ultimate selection of the components in the recommended waste management system.

CHAPTER 5: SELECTION OF THE RECOMMENDED WASTE MANAGEMENT SYSTEM

This is the most important chapter in the Phase II report. It presents data on the programs and facilities for the recommended system of waste management.

Following the development and evaluation of individual program and facility options and the further evaluation of these options after assembly into alternative waste management systems, the final step in the selection process was to choose the program and facility options that would be included in the recommended waste management system.

These decisions were made jointly with input from the Citizen Advisory Committee, the Environmental Committee of the Christian County Board, the CCSWMD staff, the consultant's staff, and from input received from the general public.

In several instances, the Plan recommends that the County "support" the implementation of certain programs or the development of certain facilities. Financial support may be given in the form of grants. The CCSWMD staff may provide technical support when appropriate. The CCSWMD staff may also provide support by offering their time to assist with local projects. It is up to the County to decide the type and degree of support they feel is appropriate to give in each instance.

Table 9, shown on pages ES-10 through ES-13, tabulates the recommended program and facility options by the waste management methods of the State waste management hierarchy and by recommended year of implementation.

The recommended waste management system should result in the following estimated municipal waste recycling rates:

current recycling rate	12.5%
rate at end of Year 1	15.5%
rate at end of Year 4	27.5%
rate at end of Year 10	31.5%
rate at end of Year 20	34.5%

This recommended waste management system will be forwarded to the Christian County Board through their Environmental Committee for formal adoption.

A detailed description of the elements in this recommended system is included in the text of Chapter 5 of this Phase II report.

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
1	Continue operation of clearinghouse at CCSWMD office Continue coordination of clearinghouse operations with reference material sources at local libraries throughout the County Continue providing programs to the general public that focus on source reduction measures at the individual and household levels Continue a promotional campaign to encourage source reduction utilizing radio, newspaper, and television Continue school education programs at selected schools and selected grade levels Continue providing financial assistance to schools through County and/or State grants to help fund the development and implementation of solid waste management education Continue telephone hotline program Continue mailing and newsletter programs Develop recycled product procurement guidelines for implementation in County and Municipal governmental offices	Continue drop-off and buy-back operations Continue separation of recyclables from waste received at the in-county transfer station Continue residential curbside recycling program in Pana Continue land application of landscape waste collected through City of Taylorville drop-off Continue community clean-up programs Continue C/D debris recycling activities Continue wood chip recycling programs Continue used tire recycling activities Continue commercial in-house recycling programs Continue to support cooperative marketing efforts of private recycling facilities in the area Implement County drop-off program ***Continue to use existing in-county and out-of-county private processors to process and market recyclable materials***	Continue the export of used tires to out-of-county WTE incineration facilities ***Continue the operation of existing small scale WTE incineration facilities***	Continue the current level of landscape waste volume reduction incineration Continue the current level of C/D debris volume reduction incineration Continue the current level of burn barrel usage ***Continue the operation of small scale volume reduction incineration facilities***	Continue the current level of usage of the in-county landfill for the disposal of Christian County waste Continue the current level of export of Christian County waste to out-of-county landfills

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
2-4	Expand school education programs to eventually cover all schools and all grade levels Assist schools in planning solid waste education activities for special events such as fairs, contests, plays, art projects, etc. Expand scope of material available at clearinghouse, including new formats such as video tapes, slide presentations, "canned" programs with emphasis on local conditions Prepare promotional materials for distribution at community events Assist in the implementation of in-house source reduction programs for selected local governmental offices Establish a local speakers bureau and develop outlines for a variety of programs for presentation to local organizations Provide counseling to commercial businesses concerning methods they can implement to reduce the amount of waste they generate Develop recycled product procurement guidelines for implementation in the commercial, institutional and industrial sectors Assist in the implementation of in-house source reduction programs for selected local commercial businesses (continued on next page)	Implement single-item recycling drives Implement mobile drop-off program for communities not participating in the County drop-off program Assist with the implementation and/or expansion of recycling activities associated with community clean-up programs Assist commercial businesses with the implementation and/or expansion of in-house recycling programs ***Support the expansion of existing in-county recyclable material processing facilities*** ***Support the in-county landfill if they choose to develop a transfer station/ mixed municipal waste MRF, if in the best interest of Christian County and its citizens***	Monitor the operation and/or expansion of small scale WTE incineration facilities Pursue closure of unpermitted small scale WTE incinerators Support the expansion of used tire collection for export to out-of-county WTE incineration facilities Monitor the future development and/or expansion of out-of-county WTE incineration facilities and investigate the feasibility of exporting Christian County waste to such facilities	Compile information pertaining to existing municipal, city, and village ordinances pertaining to the burning of landscape waste and C/D debris and the burning of waste in burn barrels Monitor the development and/or expansion of small scale volume reduction incineration facilities Pursue closure of unpermitted small scale volume reduction incineration facilities	***Support an expansion of the existing in-county transfer station***

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
2-4	(continued from previous page) Establish an awards program for public acknowledgement of outstanding accomplishments by individuals, businesses, and organizations in the area of solid waste management Expand number of clearinghouse locations Prepare portable displays promoting solid waste management activities for presentation in public places and at community events Assist in the implementation of a local waste exchange program to coordinate with the existing State program targeted at the commercial and industrial sectors Expand promotional campaign to encourage source reduction utilizing radio, newspaper and television	(see previous page)	(see previous page)	(see previous page)	(see previous page)
5-10	Support the implementation of volume- based refuse collection in conjunction with traditional curbside recycling programs	Support the implementation of traditional residential curbside recycling programs in selected communities Expand County drop-off program Support the increased collection and export of landscape waste to out-of-county compost or land application facilities	No additional programs or facilities	No additional programs or facilities	No additional programs or facilities

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
11-20	No additional programs	Support the implementation of drop-off sites throughout the County for the collection of landscape waste Support the expansion of C/D debris recycling activities Support the export of C/D debris to out-of-county C/D debris recycling facility ***Support the development of an in-county landscape waste compost facility***	No additional programs or facilities	No additional programs or facilities	***Support an expansion of the in-county landfill beyond current permitted capacity if in the best interest of Christian County and its citizens***

General notes:

1. Waste management programs are shown in regular type.
2. Waste management facilities are shown in ***bold italic type.***

CHAPTER 6: IMPLEMENTATION OF THE WASTE MANAGEMENT PLAN

Following the formal adoption of the Phase II Waste Management Plan, the County will proceed into the Phase III implementation stage. Although the Solid Waste Planning and Recycling Act permits a time delay of up to one year from the date of adoption to the start of implementation, Christian County has made the decision to begin implementation immediately upon adoption. The County has, in fact, already begun an active implementation program through the establishment of the Christian County Solid Waste Management Department and the hiring of its staff.

The 20 year Plan detailed in this Phase II report will provide the basic guidelines for Plan implementation. Progress of the programs and facilities will be monitored throughout the implementation period and modifications will be made as required. The Solid Waste Planning and Recycling Act requires that the Plan be reviewed and updated every five years. The first review will be performed in 1999. Any revisions shall be submitted to the IEPA for review and comment.

GOVERNMENTAL ENTITY RESPONSIBLE FOR IMPLEMENTING THE PLAN

The Christian County Board established the Christian County Solid Waste Management Department (CCSWMD) on Oct. 1, 1991. This Department has been designated by the County as the governmental entity that will be responsible for implementing the Plan.

As called for in the Solid Waste Planning and Recycling Act, the Plan's recycling program shall provide for the designation of a recycling coordinator to administer the program. The Director of the CCSWMD serves as the recycling coordinator.

In addition to solid waste management activities, the CCSWMD also performs non-hazardous solid waste enforcement activities through a Delegation Agreement with the IEPA.

FUNDING SOURCES

There are several sources available to Christian County governmental organizations, not-for-profit organizations, and for-profit businesses which might be used to help fund the implementation activities of the Plan.

- The County is permitted by State statute to assess a landfill tipping fee surcharge of $1.27/ton for waste deposited in the in-county landfill. This assessment generated approximately $354,000 of revenue into the County's solid waste management fund in 1993. The level of revenue from this source is expected to continue, or increase, over the 20 year planning period.

- IEPA is currently in the process of drafting the rules for a Phase III Implementation Grants program. These grants are expected to fund up to 70% of the project costs, with a $500,000 limit, for further planning activities leading to the development of recycling facilities, transfer stations, landfills, and incinerators.

- The Illinois Department of Energy and Natural Resources (ENR), through its Office of Recycling and Waste Reduction (ORWR), has established an array of programs to provide funding to qualified applicants for projects directly related to the goals of the Solid Waste Planning and Recycling Act.

  The **Recycling Market Development Program** encourages private sector investment in the development, manufacture, and marketing of products containing recycled materials.

  The **Illinois Recycling Grant Program's** goal is to increase the quantity of materials recycled in Illinois and the self-sufficiency of the recycling industry. The County's drop-off recycling program was funded in part with these grant funds.

  The **Technologies and Practice Demonstration Program** has been established to support the development and application of technologies and practices that will minimize the land disposal of non-hazardous solid waste.

  The **Illinois Used Tire Fund** has been established to identify innovative and cost-effective alternatives to stockpiling and/or landfilling scrap tires. The Illinois Used Tire Fund has been used to establish grants and loans for tire recycling projects. The IEPA also uses this fund for enforcement and for tire cleanups.

  The **School Education Program's** goal is to reinforce community waste reduction programs by teaching students good conservation habits through classroom lessons and implementation of in-school waste reduction programs.

- The Farmers Home Administration (FmHA) offers grants for solid waste management.

- Christian County provides a grant program through its Solid Waste Management Department which provides funding to local government and not-for-profit organizations and to for-profit private sector businesses for solid waste management activities. The County funds this grant program from monies received from the landfill tipping fee surcharge. Grants are awarded on an annual basis.

SOURCES OF TECHNICAL SUPPORT AVAILABLE

The reference materials included in the Appendix of this report will be available to the CCSWMD staff for use in developing and implementing the programs and facilities contained in the Plan.

Appendix N lists additional solid waste references that may be consulted.

INCENTIVES AND/OR PENALTIES TO BE CONSIDERED FOR RECYCLING PROGRAMS

Incentives and/or penalties may be used to encourage participation in recycling programs. In deciding whether or not incentives and/or penalties should be used, the County should consider two broad categories - monetary and non-monetary. Examples of these types of programs are discussed in detail on pages 6-4 and 6-5 in Chapter 6.

SITING AND PERMITTING CONSIDERATIONS

As new waste management facilities are developed or existing facilities are expanded during the Phase III implementation stage, issues involving siting and permitting will arise. Appendix O, Existing Requirements for Siting and Permitting Solid Waste Management Facilities, outlines the current requirements.

The Citizen Advisory Committee has recommended that a special committee be formed to review the current County and various municipal zoning rules as they pertain specifically to waste management facilities.

DEVELOPMENT OF A STANDARD FORMAT FOR GATHERING AND REPORTING WASTE GENERATION AND MANAGEMENT METHOD DATA

In 1993, a bill was introduced in the Illinois General Assembly that, if passed, would have required mandatory reporting of recycling amounts to ENR through County Solid Waste Coordinators. The bill did not pass. Until such requirements become legislation, it is recommended that the CCSWMD develop a standard procedure and format for gathering and reporting data on waste generation rates and a breakdown of how the waste is managed.

WASTE MANAGEMENT PROGRAM AND FACILITY COST ESTIMATE DATA

The Christian County Waste Management Plan places a strong preference on private ownership/operation over governmental ownership/operation for providing collection, processing, marketing, and disposal services for managing the County's waste. As a result, the direct costs of waste management that will be incurred by Christian County will be limited primarily to three areas: (1) the cost to staff and operate the portion of the CCSWMD that deals with waste management; (2) the cost to start-up and operate the county-wide drop-

off recycling program; and (3) the cost to start-up and operate the proposed landscape waste compost facility. All other proposed waste management programs and facilities called for in the Plan will be implemented by the private sector and will be financed through direct charges by the private sector to users of their services.

Estimated Cost to Staff and Operate the Waste Management Duties of the CCSWMD

The staffing levels are expected to increase over the 20 year planning period as the number and intensity of waste management programs and facilities increases. Four staffing levels have been estimated for the following time periods:

Year 1:	1 full-time Director, 1 full-time solid waste planner, and 1 part-time secretary (20%)
Years 2-4:	1 full-time Director, 1 full-time solid waste planner, 1 summer intern (10 weeks), and 1 part-time secretary (40%)
Years 5-10:	1 full-time Director, 1 full-time solid waste planner, 1 full-time assistant planner, and 1 full-time secretary
Years 11-20:	1 full-time Director, 2 full-time solid waste planners, 1 full-time assistant planner, 1 full-time secretary, and 1 part-time secretary (25%)

Based on current base payroll rates, payroll fringe rates, insurance rates, and an estimated annual cost of $7,000 for office rent, office equipment, travel, training, telephones, and miscellaneous office supplies, the estimated annual cost (in 1994 dollars) to staff and operate the waste management duties of the CCSWMD are as follows:

Year 1:	$ 75,000/yr.
Years 2-4:	81,000/yr.
Years 5-10	113,000/yr.
Years 11-20	142,000 /yr.

Estimated Cost to Start-up and Operate the County-wide Drop-off Recycling Program

The Plan calls for the county-wide drop-off recycling program to be implemented during Year 1 of the 20 year planning period. However, the County is ahead of schedule since the drop-off program actually was started in May, 1994.

The initial estimate of the County's cost for the first year of the program, including the cost of purchasing the roll-off containers, the contractor's fee for pick-up and processing, the initial staffing and site operation cost, and the initial educational/promotional program cost was $96,824. The initial estimate of the County's cost for subsequent years of operation, including the contractor's fee for pick-up and processing and the continuing

educational/promotional program was approximately $40,000 per year. These estimates are based on data submitted by the County in their application for the ENR Illinois Recycling Grant Program.

Cost Estimate to Start-up and Operate the Proposed Landscape Waste Compost Facility

The Plan calls for the County to support the development of an in-county landscape waste compost facility during Years 11-20 of the Plan. Although preference would be given to having this facility being owned and operated by the private sector, it is possible that such a facility could be owned and operated by the County or a municipality within the County.

The cost estimate (in 1994 dollars) for this proposed facility is as follows:

one-time start up cost	$ 27,000
annual labor cost	23,500
annual equipment cost	33,500

HOUSEHOLD HAZARDOUS WASTE COLLECTION

In response to a growing awareness of the problems associated with improper disposal of household hazardous wastes, in 1988 the Illinois General Assembly gave IEPA legal and fiscal authority to conduct household hazardous waste collections throughout Illinois. Using funds from the Solid Waste Management Fund, IEPA co-sponsors the collections, which cost an average of $63,000.00 per collection event. These costs are paid by IEPA and include all contractor activities but do not include IEPA administrative expenses or costs incurred by local co-sponsors for promotions, traffic control, and volunteer assistance.

Christian County residents participated in an IEPA sponsored household hazardous waste collection day in October of 1993. According to the Cooperative Extension Service, event co-sponsor, more than 500 residents participated, representing a little more than 4% of the County's households. The cost incurred by the Cooperative Extension Service for co-sponsoring the event was approximately $500.00, most of which was spent on event promotions. The Cooperative Extension Service and Christian County Solid Waste Management Department were joined by other community volunteers in assisting IEPA with staffing the collection site.

In the months following the October, 1993 collection day, the Cooperative Extension Service office has received numerous calls from the public requesting a second collection day. These requests, along with the success of the first collection day, have prompted the Cooperative Extension Service to begin researching the feasibility of applying for a second IEPA sponsored collection event. According to IEPA, Christian County may be eligible for a repeat collection day. If a repeat collection day is implemented in Christian County, it is assumed that the staff of the CCSWMD office would assist as they did in the first collection.

CHAPTER 7: REVIEW OF PUBLIC PARTICIPATION ACTIVITIES

The public has been kept apprised of the development of the Waste Management Plan. Three public meetings were held during the course of the development of the Phase I Needs Assessment. During the development of the Phase II Waste Management Plan, two public meetings were held, one on June 15, 1993 and one on November 23, 1993. A public hearing was conducted on January 25, 1994. Discussion at these meetings included introduction of members of the Environmental Committee and County Board members, Citizen Advisory Committee members, the staff of the Christian County Solid Waste Management Department, and the Consultant's staff. At each meeting, public participation was strongly encouraged and ample time was given for those attending to offer their comments, questions and suggestions. Citizens were also encouraged to call the CCSWMD staff or the staff of Homer L. Chastain with questions they may have had after attending a meeting.

Other public participation activities have been conducted throughout the course of this project:

Local and State newspapers have provided coverage of the public meetings and hearings and have published articles concerning interviews given by the CCSWMD staff.

A series of articles covering general waste management programs was sent to all area newspapers.

The CCSWMD staff has contributed several feature articles on the development of the waste management plan for publication in the Christian County Cooperative Extension Service newsletter, which is sent to approximately 1,000 County residents.

Speeches and other general waste management programs have been presented to local civic organizations.

The CCSWMD staff, either working alone or in cooperation with other organizations, has presented area school children with educational programs and special events focusing on waste management issues.

Informational presentations have been given by the County's planning consultant to many of the municipalities in the County.

The Christian County Citizen Advisory Committee was formed in early 1992 to assist in the Phase I and II planning process. Representatives from the following areas were selected to serve on this committee: the County Board, City governments, business and industry, labor, the solid waste industry, civic organizations, education, finance and legal. Citizens and environmentalists were also chosen to serve on the committee. For a complete listing of committee members, see Appendix A.

The Citizen Advisory Committee met once a quarter during the development of Phase I. These meetings served to educate the members concerning the features and importance of integrated waste management planning. The committee met on the second Thursday of each month during the Phase II planning. Approximately one week prior to each meeting, an agenda, supplemental educational materials, and minutes from the previous month's meeting were sent to each committee member. The input from this committee was a major factor in the preparation of the Phase I and Phase II reports.

Upon County Board adoption of the Waste Management Plan, the Citizen Advisory Committee will continue to be involved in the implementation of the Plan.

INTRODUCTION

Christian County's Solid Waste Management Plan (Plan) has been prepared in response to the State of Illinois's Solid Waste Planning and Recycling Act (415 ILCS 15/1 et.seq.), which requires that "... each county with a population of less than 100,000, shall submit to the agency an officially adopted plan for the management of municipal waste generated within its boundaries." All county plans must be adopted by March 1, 1995.

The Solid Waste Planning and Recycling Act also specifies that each adopted plan must include a recycling program that "... shall be designed to recycle, by the end of the third and fifth years of the program, respectively, 15% and 25% of the municipal waste generated in the county, subject to the existence of a viable market for the recycled material."

Funding for the preparation of Christian County's Plan comes from two sources. The County has been awarded an Illinois Environmental Protection Agency (IEPA) Solid Waste Planning Grant which will cover 70% of the planning costs. The County will pay its 30% share with monies from the Landfill Tipping Fee Surcharge Fund which is generated from fees paid by the Five Oaks Recycling and Disposal Facility. No Christian County general fund monies will be used for this planning project.

This Phase II Solid Waste Management Plan follows the previously published Phase I Solid Waste Needs Assessment which was adopted by the full Christian County Board on August 10, 1993.

This Phase II report details the recommended programs and facilities contained in the 20 year Solid Waste Management Plan for Christian County and documents the steps that were taken in the development of the Plan.

Copies of this Phase II Solid Waste Management Plan report are available for public inspection at the following locations:

The City or Village Hall at all municipalities in Christian County

The Christian County Clerk's Office
Taylorville, IL

The Christian County Solid Waste Management Department
Taylorville, IL

The West Central Illinois Valley Regional Planning Commission
Carlinville, IL

The Taylorville Public Library
Taylorville, IL

The Carnegie - Schuyler Library
Pana, IL

Copies of the Phase I Needs Assessment report are available for public inspection at the following locations:

The Christian County Clerk's Office
Taylorville, IL

The Christian County Solid Waste Management Department
Taylorville, IL

The Taylorville Public Library
Taylorville, IL

The Carnegie - Schuyler Library
Pana, IL

The City of Taylorville City Hall
Taylorville, IL

The Christian County Cooperative Extension Office
Taylorville, IL

Copies of these reports may be obtained by contacting the Christian County Solid Waste Management Department. There is a charge to cover the County's cost of copying.

PROJECT APPROACH

The methods used to accomplish the objectives of this project were established during the initial stages of the Phase II planning process and were used throughout the course of the planning.

Three principal groups of people were involved in the planning process: the staff of the Christian County Solid Waste Management Department (CCSWMD); members of the Christian County Citizen Advisory Committee, and; the staff of the consultant hired by the County, Homer L. Chastain and Associates. These three groups held joint monthly meetings. See Appendix A for a listing of Citizen Advisory Committee members.

A fourth group, the Environmental Committee of the full County Board, was also involved in the planning process. Although this group did not get involved in the detailed planning activities, they were kept abreast of the progress in the planning through regular reports from the CCSWMD staff.

Prior to each advisory committee meeting, an agenda was sent to each advisory committee member along with reference material relevant to the items to be covered in the meeting. The consultant had the primary responsibility for the preparation of the reference material with input from and review by the CCSWMD staff. There were frequent meetings and/or telephone conferences between the consultant and CCSWMD staff during the preparation of material to be distributed to the advisory committee.

The reference material and other pertinent data were discussed at the monthly meetings. Questions, comments, and input were solicited from the advisory committee members.

First, efforts were made to educate members of the advisory committee concerning potential waste management programs and facilities. Each of these potential components was then evaluated and assembled into one of four alternative waste management systems. Advisory committee members were then asked to eliminate components that were not compatible with the County's goals.

All recommendations of the Citizen Advisory Committee were submitted to the Environmental Committee for review and approval. On July 12, 1994, the Environmental Committee made recommendations to the full County Board for review and adoption.

The general public was also invited to become involved in the planning process. Public informational meetings were held on June 29, 1993 and November 23, 1993. The CCSWMD staff conducted a public outreach program via radio, television, newspaper, and a newsletter to keep citizens advised of the planning progress and to solicit public input. The public participation activities associated with the development of the Plan are discussed in detail in Chapter 7 of this report.

The Solid Waste Planning and Recycling Act requires that the following activities be conducted:

> Prior to adoption (of the Plan) by the county board, the county shall submit copies of the proposed plan for review and comment to the Agency, all municipalities within the county, all area wide planning agencies, and the county health department. The county shall also make the proposed plan available for public review and comment. The period for review and comment shall be 90 days. The county shall hold at least one public hearing on the proposed plan during this period. The plan subsequently submitted to the county board for adoption shall be accompanied by a document containing written responses to substantive comments made during the comment period.
>
> The county board shall adopt a plan within 60 days from the end of the public comment period. Within 10 days of adoption, the plan shall be submitted to the Agency for review.
>
> Each county waste management plan shall be updated and reviewed every 5 years, and any necessary or appropriate revisions shall be submitted to the Agency for review and comment.

In accordance with the Solid Waste Planning and Recycling Act, copies of the Plan were submitted to the appropriate entities and made available for public comment and review. A public hearing was held on January 25, 1994. At the end of the 90 day public comment period, no substantive comments had been submitted to the CCSWMD. The Plan was adopted by the full county board on July 12, 1994. Within 10 days of adoption, the Plan was submitted to IEPA. If the Plan is returned, the County shall consider the Agency's recommendations, make any appropriate revisions, and adopt a revised Plan. All counties are required to begin implementation of their waste management plans, including the recycling program, within one year of adoption. Christian County began implementation of the Plan prior to adoption.

DISTINCTION BETWEEN MUNICIPAL WASTE AND SPECIAL WASTE

It is important to have a clear understanding of the distinction between Municipal waste and Special waste. The provisions of the Solid Waste Planning and Recycling Act are directed only at the Municipal portion of the overall waste stream and not at Special waste. Therefore, the focus of the programs and facilities which have been developed for the County's 20 year Plan are directed primarily at Municipal waste.

Municipal waste, as defined by the Solid Waste Planning and Recycling Act, means ". . . garbage, general household, institutional and commercial waste, industrial lunchroom or office waste, landscape waste, and construction and demolition debris."

Special waste, as defined by the Environmental Protection Act, includes industrial waste excluding lunchroom or office waste, sewage and wastewater sludge, potentially infectious medical waste, electrical generation plant combustion waste, and pollution control waste.

Recycling, reclamation or reuse, as defined by the Solid Waste Planning and Recycling Act, means ". . . a method, technique or process designed to remove any contaminant from waste so as to render the waste reusable, or any process by which materials that would otherwise be disposed of or discarded are collected, separated or processed and returned to the economic mainstream in the form of raw materials or products."

The following interpretations are found in the April 10, 1992 IEPA memo:

Municipal waste, as interpreted by IEPA, does include:

- abandoned or discarded household or commercial appliances, including white goods.
- abandoned or waste parts from motor vehicles normally removed as a part of regular maintenance such as tires and batteries.
- construction and demolition debris from buildings and roads.
- wastes collected in a household hazardous waste collection.
- landscape waste.

Municipal waste, as interpreted by IEPA, does not include:

- special waste.
- hazardous waste.
- earth materials moved or removed during demolition or construction.
- scrap metal from industrial operations such as machining, lathe work, tool and die operations and the like.
- abandoned or scrap motor vehicles.
- surplus or donated clothing given to charitable organizations, such as Goodwill or Salvation Army.
- surplus or donated food contributed for human consumption.
- usable or reusable commodities donated to charitable organizations, such as Goodwill or Salvation Army.

Recycling, as interpreted by IEPA, does include:

- composting operations where the waste, once composted, is returned to the economic mainstream or replaces other raw materials for fertilizer, soil conditioner or mulch.
- applying landscape (grass clippings, leaves, tree limbs, etc.) or other municipal waste directly to agricultural land at agronomic rates.
- landscape waste that is collected, separated or processed and returned to the economic mainstream in the form of raw materials or products.
- shredding operations where the waste is returned to the economic mainstream or replaces other raw materials for fertilizer, soil conditioner or mulch.
- re-using construction or demolition debris for building construction purposes or reuse as road surface materials.
- using waste for commercial feed for such things as mink farms, swine operations, or fish production.
- processing waste at a rendering facility for return to the economic mainstream.
- processing municipal waste, including white goods, for metal recovery.

CHAPTER 1
SUMMARY OF PHASE I SOLID WASTE NEEDS ASSESSMENT

Prior to the start of the Phase II planning process, the Phase I Solid Waste Needs Assessment study was conducted. The data contained in the Phase I report provides the baseline conditions upon which the planning for the Phase II programs and facilities are founded.

The primary objectives of Phase I were as follows:

- compile data on the current waste generation rates for the County - see Table 1
- calculate the County's Municipal Waste (MW) recycling rate - see Table 2
- gather data on the types of programs and facilities currently being used to manage the County's waste stream - see Appendix B for a detailed description of existing programs and facilities
- compile demographic data to be used in making projections over the 20 year planning period - see Appendix C
- compile the best available data on the composition of the County's waste stream - see Appendix D
- prepare five scenarios to be used in analyzing the impacts of such variables as population, employment, waste generation rates, recycling rates, incineration rates, and landfill disposal rates

  The following basic assumptions were used in developing the five scenarios: (1) a 6% straightline population *decrease* over the 20 year planning period was assumed for all scenarios; (2) waste management methods were limited to four options - recycling/reuse/composting, waste-to-energy incineration, incineration for volume reduction, and landfill disposal; and (3) the current rate of municipal waste volume reduction incineration was assumed to remain constant over the 20 year planning period for all scenarios.

  Scenario A, the "Do Nothing" scenario, assumed that the current municipal waste generation, recycling, incineration, and landfill disposal rates would remain constant over the 20 year planning period, with the only variable being the change in population.

  Scenario B, the "Worst Case" scenario, increased the current municipal waste generation rate by 20% based on the assumption that the current generation rate was underestimated. This scenario also assumed that the current recycling, incineration, and landfill disposal rates would remain constant throughout the planning period.

Scenario C, the "Minimum Recycling Rate Increase" scenario, assumed that the municipal waste generation rate would increase by 0.34% per year over the 20 year planning period and also assumed that the recycling rate would increase to 25% by the fifth year of the program and would remain at the 25% level throughout the balance of the 20 year planning period. Incineration rates were assumed to remain at their current levels throughout the planning period.

Scenario D, the "Aggressive Recycling Rate Increase" scenario, assumed the same 0.34% per year increase in the municipal waste generation rate as for scenario C, but also assumed that the recycling rate would increase to 25% by the fifth year of the program and would then increase further to the 35% level by the end of the 20 year planning period. Incineration rates were assumed to remain at their current levels throughout the planning period.

Scenario E, the "Maximum Landfill Diversion Rate" scenario, assumed the same waste generation rate increase (0.34% per year) and the same recycling rates (25% by the 5th year and 35% by the 20th year) as for scenario D, but also assumed that Christian County generated waste would be exported to an out-of-county waste-to-energy incineration facility. The current waste-to-energy incineration rate was assumed to remain constant until the fifth year of the planning period at which time 40% of Christian County's municipal waste would be exported for processing at the out-of-county facility. This 40% rate would remain constant for the balance of the planning period. The current volume reduction incineration rate was assumed to remain constant throughout the 20 year planning period.

Of the five scenarios considered, scenario D, the "Aggressive Recycling Rate Increase" scenario, appears to be the most likely scenario to actually occur. The waste management programs and facilities developed in the Phase II planning process are consistent with the assumptions used in scenario D.

Appendices B, C, and D all contain excerpts from the Phase I report. Each of the above mentioned objectives are presented in detail in the Phase I Needs Assessment.

note: Some of the data contained in Tables 1 and 2 of this Phase II report are not the same as the data contained in the corresponding tables of the Phase I report. At the time of the Phase I report preparation, recycled asphalt paving was considered to be included as municipal waste recycling. However, the IEPA has subsequently made the interpretation that recycled asphalt paving should <u>not</u> be included as municipal waste recycling. The differences in the data for Tables 1 and 2 reflect the adjustments that have been made as a result of this change.

TABLE 1
ESTIMATED MUNICIPAL WASTE GENERATION AND MANAGEMENT METHOD DATA FOR CHRISTIAN COUNTY - 1992
All quantities shown in Tons per Year (TPY)

Origin / Management Method	Residential Waste	Landscape Waste	Commercial & Institutional Waste	Construction & Demolition Waste	Industrial Office & Lunchroom Waste	Total Municipal Waste
Recycled	919	25	1,808	0	383	3,135
Composted	0	0	0	0	0	0
Land Applied	0	19	0	0	0	19
Incinerated - Waste-to-Energy	36	0	24	0	0	60
Incinerated - Volume Reduction	1,436	50	20	20	0	1,526
Landfilled	10,500	0	7,603	1,970	390	20,463
TOTALS	12,891	94	9,455	1,990	773	25,203

Municipal Waste Recycling Rate = 12.5%
Municipal Waste Generation Rate = 4.04 pounds per capita per day

TABLE 2

BREAKDOWN OF MUNICIPAL WASTE RECYCLING PERCENTAGES ACHIEVED BY CURRENT RECYCLING ACTIVITIES BEING CONDUCTED IN THE COUNTY

ORIGIN OF WASTE	WEIGHT (tons/yr)	MW RECYCLING %
RESIDENTIAL		
Drop-off	100	0.4
Buy-back	538	1.9
Pana curbside	33	0.1
Community clean-up programs	230	0.8
Tire recycling	18	0.1
Subtotal	919	3.6
LANDSCAPE WASTE		
Wood chips	25	0.1
Land application	19	0.1
Subtotal	44	0.2
COMMERCIAL/INSTITUTIONAL		
Buy-back/drop-off	532	1.9
In-house programs	1,238	4.4
Community clean-up programs	20	0.1
Tire recycling	18	0.1
Subtotal	1,808	7.2
INDUSTRIAL OFFICE & LUNCHROOM WASTE		
In-house programs	383	1.5
TOTALS	**3,154**	**12.5**

CHAPTER 2
DEVELOPMENT AND EVALUATION OF LIST OF POTENTIAL COMPONENTS

The first step in the Phase II planning process involved developing a list of potentially feasible components for each of the five categories of the State waste management hierarchy. This waste management hierarchy has been adopted as State policy under the Solid Waste Management Act. The County's Solid Waste Plan must comply with the hierarchy, listed here in order of preference:

1. volume reduction at the source (referred to throughout the Plan as source reduction)
2. recycling and reuse (referred to throughout the Plan as recycling)
3. combustion with energy recovery (referred to throughout the Plan as waste-to-energy incineration)
4. combustion for volume reduction (referred to throughout the Plan as volume reduction incineration)
5. disposal in landfill facilities (referred to throughout the Plan as landfill disposal)

In creating a list of components that would comply with the hierarchy, two types of options were developed: (1) program options which involve such things as educational programs, public participation activities, recyclable material collection programs, etc.; and (2) facility options which involve the construction and/or expansion of physical structures and equipment to process or dispose of the solid waste material.

Each component was evaluated according to the following factors:

- applicability to Christian County
- contribution to recycling or landfill diversion goals
- material or energy market evaluation
- environmental evaluation
- energy evaluation
- cost and economic impact (addresses economic advantages and disadvantages and life cycle costs)
- technical feasibility/operational considerations
- siting considerations
- permitting considerations

VOLUME REDUCTION AT THE SOURCE

For the purposes of this Plan, source reduction is defined as the reduction of the amount of waste generated. The source reduction options that were presented to the advisory committee for their consideration were divided into the following five basic categories:

- education programs for the general public
- education programs for the commercial, institutional, and industrial sectors (hereafter, the term "commercial" shall imply commercial and institutional businesses as well as the office and lunchroom operations of industrial businesses)
- education programs for the school systems
- economic incentive programs, including volume-based refuse collection systems
- local, state, and federal legislation

It should be noted that the education program formats discussed under source reduction can also be utilized to foster understanding of and encourage compliance with the recycling program. It was the general consensus of the Citizen Advisory Committee that even when an education program is developed that focuses on a particular solid waste management method, discussion of other solid waste management methods should be incorporated.

Reference materials distributed to the advisory committee were used as the basis for review and discussion of the potential source reduction program options to be considered. These reference materials are included in the Appendix and are listed below:

Appendix	Reference Material Title
E	General Outline of Source Reduction Considerations
F	General Solid Waste Education Program Options
G	Factors to be Considered in Volume-Based Refuse Collection vs. Flat Fee Refuse Collection

Using the reference materials as a guide, the following list of potential source reduction program options was developed:

Continue operation of clearinghouse at CCSWMD office

Expand scope of material available at clearinghouse, including new formats such as video tapes, slide presentations, "canned" programs with emphasis on local conditions

Expand number of clearinghouse locations

Continue coordination of clearinghouse operations with reference material sources at local libraries throughout the County

Continue mailing and newsletter programs

Continue telephone hotline program

Assist with the implementation of a local waste exchange program to be coordinated with existing State program targeted at the commercial and industrial sectors

Continue providing financial assistance to schools through County and/or State grants to help fund the development and implementation of solid waste management education

Continue school education programs at selected schools and selected grade levels

Expand school education programs to eventually cover all schools and all grade levels

Assist schools in planning solid waste education activities for special events such as fairs, contests, plays, art projects, etc.

Prepare portable displays promoting solid waste management activities for presentation in public places and at community events

Prepare promotional materials for distribution at community events

Provide counseling to commercial businesses on methods they can adopt to reduce the amount of waste they generate

Continue providing programs to the general public that focus on source reduction measures at the individual and household levels

Continue promotional campaigns to encourage source reduction utilizing radio, newspaper, and television

Assist in the implementation of model in-house source reduction programs for selected local governmental offices

Establish a local speakers bureau and develop outlines for a variety of programs for presentation to local organizations

Establish an awards program for public acknowledgement of outstanding accomplishments by individuals, businesses, and organizations in the area of solid waste management

Assist in the implementation of in-house source reduction programs for selected local commercial businesses

Expand promotional campaigns to encourage source reduction utilizing radio, newspaper, and television

Support the implementation of volume-based refuse collection

The benefits and limitations of each of these programs were investigated but no attempt was made at this time to eliminate any programs from further consideration. Table 3 is the matrix that was used to evaluate the above mentioned program options.

TABLE 3 - MATRIX FOR EVALUATION OF SOURCE REDUCTION COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Consider-ations	Permitting Consider-ations
Education program for general public	current active program staff available to expand applicability level high	does not count toward MW (Municipal Waste) recycling rate could increase LF (Landfill) diversion 2% - 4%	N/A	positive: increased level of awareness increased level of public participation negative: potential loss of revenue to local suppliers of products targeted for consumer source reduction	positive: increased level of awareness	difficult to estimate cost on a per ton basis County will incur cost of developing and promoting public education programs	N/A	N/A	N/A
Education program for commercial/ institutional sector	current program limited staff available to expand applicability level high	does not count toward MW recycling rate could increase LF diversion 10% - 40% in some cases	N/A	positive: increased level of awareness increased level of participation by businesses and institutions negative: potential loss of revenue to local suppliers of products targeted for commercial source reduction	positive: increased level of awareness	may result in cost savings for some businesses may require additional cost for some businesses County will incur cost of developing and implementing education programs in the commercial sector	N/A	N/A	N/A

TABLE 3 - MATRIX FOR EVALUATION OF SOURCE REDUCTION COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Consider-ations	Permitting Consider-ations
Education program for school systems	current active program applicability level high	does not count toward MW recycling rate	N/A	positive: increased level of awareness increased participation of school children in source reduction activities children encourage parents and other adults to practice source reduction negative: change in purchasing habits may negatively affect local retailers	increased level of awareness	individual schools will incur cost of developing and implementing school programs County will incur cost of coordinating County-wide curriculum program	N/A	N/A	N/A

TABLE 3 - MATRIX FOR EVALUATION OF SOURCE REDUCTION COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environmental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Considerations	Permitting Considerations
Volume-based refuse collection system	no current volume based systems applicability level high	by providing economic incentive, implementation of volume based system should cause an increase in the MW recycling rate and increased LF diversion	N/A	positive: implementation of a volume based system typically results in a decrease in the MW generation rate a decrease in the MW generation rate will have a positive environmental effect negative: potential increase in illegal dumping positive/ negative: because recycling activities typically increase with a volume based system, both positive and negative environmental effects of recycling should be considered	positive: implementation of a volume based system should decrease the waste generation rate which will have a positive effect on the conservation of energy positive/ negative: because recycling activities typically increase with a volume based system, consider both energy conservation and consumption associated with recycling	should decrease the cost of general refuse collection will require additional cost for collection of recyclables switch to volume based system will have major effect on existing haulers	N/A	N/A	N/A

RECYCLING AND COMPOSTING

As defined by the Environmental Protection Act, "recycling, reclamation or reuse means a method, technique, or process designed to remove any contaminant from waste so as to render such waste reusable, or any process by which materials that would otherwise be disposed of or discarded are collected, separated or processed and returned to the economic mainstream in the form of raw materials or products." Throughout this Plan, the term recycling will encompass recycling and composting.

The recycling and composting options that were presented to the advisory committee for their consideration were divided into the following seven basic categories:

- drop-off/buy-back recycling operations
- residential curbside recycling programs
- commercial recycling programs
- recyclable material processing facilities - Material Recovery Facility (MRF)
- landscape waste compost facilities
- landscape waste land application activities
- construction & demolition (C/D) debris recycling facilities
- mixed municipal waste compost facility

Reference materials were distributed to the advisory committee and used as the basis for review and discussion of the potential recycling program options to be considered. These reference materials are included in the Appendix and are listed below:

Appendix	Reference Material Title
H	General Factors to be Considered for a Drop-off Collection Program
I	General Factors to be Considered for a Residential Curbside Collection Program
J	Detailed listing of Factors to be Considered for a Residential Recycling Program
K	General Factors to be Considered for a Commercial/Institutional Recycling Program
L	General Factors to be Considered for the Construction or Expansion of a Recyclable Material Recovery Facility (MRF)

M Christian County Drop-off Program Outline

O Existing Requirements for Siting and Permitting Solid Waste Management Facilities

P General Factors to be Considered in Developing Local Siting Criteria for Solid Waste Facilities

Using these reference materials as a guide, the following list of potential recycling/composting program options was developed:

Continue drop-off/buy-back activities

Continue community clean-up programs

Continue land application of landscape waste collected through City of Taylorville drop-off

Continue used tire recycling activities

Continue current asphalt pavement recycling programs (Wording contained in 415 ILCS 15/3.78, a recent amendment to the Environmental Protection Act, removes asphalt pavement from the list of materials defined as municipal waste. Therefore, all other references to asphalt pavement have been removed from this report.)

Continue existing C/D debris recycling activities

Continue residential curbside recycling program in Pana

Continue wood chip recycling program

Continue commercial in-house recycling programs

Implement County drop-off program

Recyclable material to be processed and marketed by existing in-county and out-of-county private processing facilities

Implement mobile drop-off program for communities not participating in County drop-off program

Implement single-item recycling drives

Assist commercial businesses in implementing and/or expanding in-house recycling programs

Support the implementation of drop-off sites throughout the County for the collection of landscape waste

Assist with the implementation and/or expansion of recycling activities associated with community clean-up programs

Support the expansion of the existing in-county recyclable material processing facilities

Expand County drop-off program

Support the implementation of traditional residential curbside recycling programs in selected communities

Continue to support the cooperative marketing efforts of private recycling facilities in the area

Build new transfer station for the transfer of recyclable material to a regional out-of-county processing facility

Implement curbside collection of landscape waste in selected communities

Support the export of landscape waste to out-of-county compost or land application facility

Encourage expansion and/or implementation of C/D debris recycling programs

Support the export of C/D debris to out-of-county C/D debris recycling facility

Support the export of waste to an out-of-county mixed municipal waste MRF

Support the development of an in-county landscape waste compost facility

Support the development of a new in-county recyclable material processing facility

Support the export of waste to an out-of-county municipal waste compost facility

Support the development of a new in-county C/D debris recycling facility

Support the development of an in-county mixed municipal waste MRF

Support the development of an in-county mixed municipal waste compost facility

Table 4 is the matrix that was used to help evaluate each of the recycling/composting program and facility options.

TABLE 4 - MATRIX FOR EVALUATION OF RECYCLING/COMPOSTING COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environmental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Considerations	Permitting Considerations
Drop-off recycling program	several small scale programs already in place county-wide program being implemented	of current County MW recycling rate, 0.4% comes from drop-offs and 1.9% comes from buy-backs 1988 statewide ENR study shows 0.7 - 2.6% MW recycling rates from drop-offs	market conditions will have a strong effect on program operation program should have flexibility to react to market fluctuations	positive: conserves natural resources, conserves landfill space use of recycled material rather than virgin material typically reduces air & water pollution and uses less energy negative: increased air pollution from delivery and collection vehicles	positive: less energy required to manufacture products using recycled material than virgin material negative: energy is expended in delivering, collecting, and processing recyclable material	preliminary cost estimate for county-wide program (8-9 villages, 12 sites): $146,000 1st yr. $50,000 subsequent yrs $50,000 state grant received for 1st yr cost will be incurred for promotion and education (included in above figures) savings from avoided LF tipping fees - also decreases amount of LF tipping fee surcharge received by the County collection and processing will provide employment opportunities recyclables collected may attract new industry to County County-wide program may have negative effect on existing small scale programs	proven collection and processing equipment exists new technical advances being made	criteria to be considered for each drop-off site: ownership, accessibility (including ADA), visibility, and security	no State permits required individual site approval required from local jurisdiction

TABLE 4 - MATRIX FOR EVALUATION OF RECYCLING/COMPOSTING COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Consider-ations	Permitting Consider-ations
Residential curbside recycling program	generally more cost effective for larger municipalities than for smaller municipalities small scale program currently operating in Pana local processors have expressed an interest in expanding to collect and/or process curbside recyclables	of current County MW recycling rate, 0.1% comes from curbside recycling 1988 ENR Planning Guide for Residential Recycling states that the most successful programs are recycling 12%-15% of the residential waste stream 15% of the Christian County residential waste stream is approx 7% of the municipal waste stream	market conditions will have a strong effect on program operation program should have flexibility to react to market fluctuations	positive: conserves natural resources, conserves landfill space use of recycled material rather than virgin material typically reduces air & water pollution and uses less energy negative: increased air pollution from delivery and collection vehicles	positive: less energy required to manufacture products using recycled material than virgin material negative: energy is expended in collecting, processing, and delivering recyclable material to end users	estimated cost per household ranges from $3-$5 per month cost will be incurred for promotion and education (included in above figures) savings from avoided tipping fees - also decreases amount of tipping fee surcharge received by the County collection and processing will provide employment opportunities recyclables collected may attract new industry to County	operational features to be considered: • service area • collection system (bin vs blue-bag) • separate collection vs co-collection • materials to be collected • frequency of pick-up • implementa-tion schedule • hauler/ processor contract considerations	N/A	N/A

TABLE 4 - MATRIX FOR EVALUATION OF RECYCLING/COMPOSTING COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Consider-ations	Permitting Consider-ations
Commercial sector recycling	small percentage of commercial businesses are currently recycling approximately 65% of County schools are currently recycling local processors have expressed interest in expanding to collect and/or process more recyclables from the commercial sector	commercial sector currently recycles approx 19% of its waste stream, which accounts for approx 6.5% of the MW recycling rate areas with active commercial recycling programs are recycling as high as 40% of their commercial waste stream 40% of the Christian Co commercial waste stream would account for approx 13.5% of the MW stream	market conditions will have a strong effect on program operation program should have flexibility to react to market fluctuations	positive: conserves natural resources, conserves landfill space use of recycled material rather than virgin material typically reduces air & water pollution and uses less energy negative: increased air pollution from delivery and collection vehicles	positive: less energy required to manufacture products using recycled material than virgin material negative: energy is expended in collecting, processing, and delivering recyclable material to end users	County will incur cost for promoting and coordinating commercial recycling programs individual commercial entities will incur cost for setting up and operating programs savings from avoided general refuse pickup cost will offset all or part of cost of commercial recycling programs	will require the separation of recyclable material from general refuse, either by generator or hauler	N/A	N/A

TABLE 4 - MATRIX FOR EVALUATION OF RECYCLING/COMPOSTING COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Consider-ations	Permitting Consider-ations
Recyclable Material Recovery Facility (MRF)	new MRF to separate recyclables from general refuse (mixed waste MRF) being considered as not applicable for Christian County new in-county or expansion of existing in-county MRF (Midstate or U-Dump-It) to process source separated or commingled recyclables applicable for Christian County direct haul of recyclables to out-of-county MRF or new transfer station for export of recyclables applicable for Christian County	N/A	market availability and requirements have a strong effect on the size of the MRF and on the type of processing done at the MRF	positive: as a part of the recycling loop, a MRF contributes to the positive environmental effects of recycling negative: increased noise & emissions from delivery vehicles & equipment operations possible odor effect of added traffic on existing local roadway system	positive: as a part of the recycling loop, a MRF contributes to the energy savings associated with recycling negative: energy expended in processing & delivering recyclable material to end users	the capital cost per ton of daily design capacity can vary from as low as $8,000/ton if an existing building is used to as much as $35,000/ton including building construction and purchase of new equipment for a 20 ton/day MRF these capital costs would be $160,000 and $700,000 respectively the cost to expand an existing facility would vary widely depending on the amount of expansion required	MRF systems can vary from low-tech labor intensive to high-tech mechanical systems daily capacity can be increased substantially by going to more than one work shift various options of public/ private ownership and operation need to be considered	local vs. regional service area needs to be considered local siting criteria need to be developed	no State permits required site approval required from the local jurisdiction

TABLE 4 - MATRIX FOR EVALUATION OF RECYCLING/COMPOSTING COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environmental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Considerations	Permitting Considerations
Landscape waste composting/land application	backyard composting is applicable central in-county composting facility is applicable direct haul to out-of-county central composting facility may be applicable but may not be cost effective	backyard composting does count towards State mandated recycling goals if it can be measured composting in central composting facilities does count towards State mandated recycling goals landscape waste accounts for approximately 15%-18% of the residential waste stream 15% of Christian County's residential waste stream represents approximately 7% of the County's MW of the current County recycling rate, 0.3% comes from landscape waste that is land applied	high quality compost may be marketed as a soil amendment and as mulch compost may be offered free of charge to local citizens and to local governmental units revenue from the sale of compost may not cover collection and processing costs	positive: backyard composting eliminates adverse environmental effects associated with collection and processing at a central location humus produced is a valuable soil amendment negative: potential odor and vector problems increased air pollution from the collection vehicles	positive: backyard composting eliminates adverse energy effects associated with collection and processing at a central location negative: energy is expended in collecting and processing	backyard composting eliminates the cost of collection and processing cost of backyard composting units ranges from $10 to $100 humus produced reduces the need to purchase commercial fertilizer cost of collection generally varies from $0.75 to $2.00 per bag front end loader and flail type aerating equipment required for processing will cost approximately $125,000	technical assistance available for a wide variety of backyard composting methods high potential for "sharing" of processing equipment can reduce cost at multiple central compost sites (in or out-of-county) collection can be a drop-off system or a curbside collection system	local vs. regional service area needs to be considered local siting criteria need to be developed	State permit required

TABLE 4 - MATRIX FOR EVALUATION OF RECYCLING/COMPOSTING COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environmental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Considerations	Permitting Considerations
Construction & demolition (C/D) debris recycling facility	applicability level high - C/D recycling has the potential to provide very high percentages of MW recycling limited number of contractors currently recycling/ reusing C/D debris direct haul of C/D debris to out-of-county C/D recycling facility may be applicable	C/D debris recycling does count toward MW recycling rate of the total County MW recycling rate 0.1% is from C/D debris recycling	markets for C/D debris recycled material vary programs should have flexibility to react to market fluctuations	positive: conservation of natural resources and landfill space elimination of some negative environmental impacts associated with production of raw materials negative: increased air pollution from collection and processing equipment	negative: energy is expended in collection, processing, and delivering recyclable material to end users	revenue from the sale of recycled C/D debris will partially offset or, in some cases, exceed the cost of processing collection and processing of recyclable portion of C/D debris will provide employment opportunities	various options of public and/or private ownership/ operation need to be considered for a C/D debris recycling facility estimated requirements for minimum size facility (collection site only): • 8 acre site • $75,000 site development cost (excluding land cost) • $90,000 equipment cost • 1 staff person (may be part-time) • $400/month utility cost portable crushing and processing services are available on a contract basis from outside sources with the following conditions: • $5/ton processing cost (owner retains processed material) • $6.50-7.50/ton estimated revenue • 25,000 ton minimum required for processing	local vs. regional service area needs to be considered local siting criteria need to be developed	no State permits required site approval required from local jurisdiction

TABLE 4 - MATRIX FOR EVALUATION OF RECYCLING/COMPOSTING COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environmental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Considerations	Permitting Considerations
Mixed Municipal Waste (MW) compost facility	in-county MW compost facility not applicable at this time monitor future developments in MW composting technologies	does count towards MW recycling rate could provide 20-30% MW recycling rate	limited market available for use by gardeners and local city departments for parks and other projects markets would have to be developed for large users of MW compost material	positive: conservation of landfill space humus produced is a valuable soil amendment negative: potential odor, noise, and vector problems increase air pollution from processing equipment effect of added traffic on existing roadway system	negative: energy expended in collection and processing	capital costs range from $9 - $15 million for facilities with a capacity of 100 - 150 tons per day operating costs range from $1.5 - $2.5 million per year processing costs range from $75/ton to $100/ton humus produced reduces the need to purchase commercial fertilizer revenue may be generated by selling humus produced	operational considerations: • ownership/ operation options • origin of waste to be accepted - commercial only, residential only, or a mixed stream • degree to which the waste is sorted prior to delivery to the facility (none required, generator sorts, hauler sorts) • facility may be multi-faceted, recovering recyclables and/or combustibles in addition to compostable material • degree of processing will determine the grade of compost produced	local vs regional service area local siting criteria must be developed and met	State permit required

COMBUSTION WITH ENERGY RECOVERY

The following four general categories of combustion with energy recovery, referred to throughout the Plan as WTE (waste-to-energy) incineration, options were presented to the advisory committee for their consideration:

- construction of a new in-county large scale WTE incineration facility
- small scale WTE incineration facilities
- export of used tires to out-of-county Tire-Derived Fuel (TDF) processing and/or incineration facilities
- export of MW to out-of-county large scale Refuse-Derived Fuel (RDF) processing and/or WTE incineration facilities

Construction of a new large scale in-county WTE facility:

For this report, large scale incineration facilities are defined as facilities that have service areas covering an entire county or a multi-county area. These large facilities typically have capacities of 100 to 3,000 tons per day and cost from $10 million to $300 million to build. Large scale WTE facilities can be mass burn incinerators, modular incineration facilities, RDF incineration facilities, or TDF incineration facilities.

Discussions with the advisory committee centered on the fact that the combination of the low volume of waste generated in the County, the high cost of construction, and the extremely strong opposition to incineration facilities that was voiced during public meetings led to the obvious conclusion that the option of constructing an in-county large scale WTE incinerator is not feasible for Christian County.

Small scale WTE incineration facilities:

For this report small scale WTE incineration facilities are defined as facilities that serve only one building or one complex of a limited number of buildings. These small facilities typically have capacities of less than one ton per day. State permits are required for these facilities. Discussions were held in the advisory committee meetings to review the benefits and limitations of such facilities and their applicability to Christian County.

The facility options developed for dealing with small scale WTE incinerators were:

- continue the operation of existing small scale WTE incineration facilities
- monitor the development and/or expansion of small scale WTE incineration facilities

The program option developed was:

- pursue the closure of small scale WTE incineration facilities that do not have the proper State permits

Export of used tires to out-of-county TDF processing and/or incineration facilities:

The advisory committee was presented data on current and proposed central Illinois TDF programs as well as data on the current programs which export Christian County tires to such facilities.

The program options developed for dealing with the export of used tires to out-of-county TDF processing and/or incineration facilities were:

- continue the current level of export
- expand the level of export

Export of MW to out-of-county RDF or WTE facilities:

Although there are no current facilities in the central Illinois area for processing/incinerating Refuse-Derived Fuel, there are feasibility studies currently being conducted for such facilities that could potentially include Christian County as a part of their service area. The advisory committee was apprised of these studies and was presented data on the potential benefits and limitations for Christian County if the County chooses to export MW to such a facility.

The program option developed for dealing with the export of MW to out-of-county RDF or WTE facilities was:

- direct haul municipal waste to such facilities

The facility options developed were:

- build a new transfer station and/or expand the existing transfer station for the transport of municipal waste to such facilities
- if a new in-county mixed waste MRF is built, add RDF processing capabilities to the MRF and transport the RDF to out-of-county WTE incineration facilities

Summary:

The advisory committee discussed the benefits and limitations involved in all of the WTE incineration options listed above and their applicability to Christian County. Other than the decision to eliminate the construction of a new in-county large scale WTE incinerator from consideration, no steps were taken at this time to eliminate any of the other options from consideration.

Table 5 is the matrix that was used to evaluate the WTE incineration options.

TABLE 5 - MATRIX FOR EVALUATION OF WASTE-TO-ENERGY INCINERATION COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environmental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Considerations	Permitting Considerations
Mass burn or Modular incineration facility	not feasible - see note a.								
Small scale incineration facilities	can be feasible	does not count toward MW recycling rate but does count toward landfill diversion rate	N/A	no adverse effect if operated in compliance with state regulations	conserves energy by reducing the need to obtain energy from outside sources	cost will vary widely depending on case specific conditions feasibility studies need to be made for each specific case	will vary depending on case specific conditions	N/A	State permit required
Refuse Derived Fuel (RDF) incineration facility	development of an in-county facility not feasible - see note a. export of waste to out-of-county facility may be feasible - see note b.								
Tire Derived Fuel (TDF) incineration facility	export of used tires to out-of-county TDF incineration facility can be feasible	incineration of tires does not count toward MW recycling rate, but does count toward landfill diversion rate	N/A to Christian County	relieves health problems associated with the storage of used tires	N/A to Christian County	approximate cost to pick up used tires: $1/passenger tire $6/truck tire $25/tractor tire	N/A to Christian County	N/A to Christian County	N/A to Christian County

Note a. Development of an in-county or an out-of-county waste-to-energy incineration facility is not feasible due to low volumes of waste generation, high capital cost, and lack of public support.

Note b. Studies are currently being conducted in Central and South Central Illinois to determine the feasibility of building RDF incineration facilities in selected areas. Progress in these studies should be monitored. If these facilities become operational, the export of Christian County waste to an RDF incineration facility should be investigated. The waste could either be processed into RDF prior to it being shipped to the RDF incineration facility, or it could be shipped unprocessed, depending on the RDF facility's requirements.

COMBUSTION FOR VOLUME REDUCTION

Options for the following five general categories of combustion for volume reduction, referred to as volume reduction incineration throughout the Plan, were presented to the Citizen Advisory Committee for their consideration:

- construction of a new in-county large scale volume reduction incineration facility
- small scale volume reduction incineration facilities
- burn barrel usage
- burning of landscape waste
- burning of construction/demolition debris

Construction of a new large scale in-county volume reduction incineration facility:

For this report, large scale incineration facilities are defined as facilities that have service areas covering an entire county or a multiple-county area. These large facilities typically have capacities of 100 or more tons per day and cost $10 million or more to build. Large scale volume reduction incineration facilities can be either mass burn incinerators or modular incineration facilities.

Discussions with the advisory committee centered on the facts that the combination of the low volume of waste generated in the County, the high cost of construction, and the extremely strong opposition to incineration facilities that was voiced during public meetings led to the obvious conclusion that the option of constructing an in-county large scale volume reduction incinerator is not feasible for Christian County.

Small scale volume reduction incineration facilities:

For this report small scale volume reduction incineration facilities are defined as facilities that serve only one building or one complex of a limited number of buildings. These small facilities typically have capacities of less than one ton per day. State permits are required for these facilities.

The facility options developed for dealing with small scale incineration facilities were:

- continue the current level of small scale incineration
- monitor the development of and/or expansion of small scale incineration facilities

The program option developed was:

- pursue the closure of small scale incineration facilities that do not have the proper State permits

Burn barrel usage:

Burn barrel usage is common in Christian County, especially in the rural and small village areas. The responsibility for regulating and enforcing burn barrel usage currently lies with each municipality in the County.

The program options developed for dealing with burn barrel usage were:

- continue the current level of regulation and enforcement
- evaluate the current regulations on burn barrel usage and revise as needed
- increase enforcement of burn barrel usage regulations

Burning of landscape waste:

Current regulations controlling the burning of landscape waste are very general in nature and enforcement of these regulations is minimal. The Citizen Advisory Committee discussed the benefits and limitations involved in any future State or local ordinances that would ban the burning of landscape waste.

The program options developed for dealing with the burning of landscape waste were:

- continue the current level of landscape waste incineration
- evaluate the current regulations and revise as needed
- increase the enforcement of landscape waste incineration regulations

Burning of construction/demolition (C/D) debris:

Current regulations controlling the burning of C/D debris are very general in nature and enforcement of these regulations is minimal.

The program options developed for dealing with C/D debris incineration were:

- continue the current level of C/D debris incineration
- evaluate the current regulations and revise as needed
- increase the enforcement of regulations concerning the burning of C/D debris

Summary:

The Citizen Advisory Committee discussed the benefits and limitations involved in all of the volume reduction incineration options listed above. Other than the decision to eliminate the construction of a new in-county large scale volume reduction incinerator from consideration, no steps were taken at this time to eliminate any of the other options from consideration.

Table 6 is the matrix that was used to help evaluate the potential volume reduction incineration program and facility options.

TABLE 6 - MATRIX FOR EVALUATION OF VOLUME REDUCTION INCINERATION COMPONENTS

	Applicability to Christian County	Contribution to Recycling/ Landfill Diversion Goals	Material/ Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Considerations	Siting Consider-ations	Permitting Consider-ations
Mass burn or Modular incineration facility	not feasible - see note a.								
Burn barrel usage, and the burning of landscape waste and construction/ demolition (C/D) debris	currently prevalent throughout Christian County ordinances pertaining to these activities vary from municipality to municipality	does not count toward MW recycling rate does count toward landfill diversion	N/A	positive: conservation of landfill space negative: substantial adverse health problems associated with burning of leaves and general refuse increased air pollution	positive: elimination of energy consumption associated with collecting refuse or leaves	cost of collecting, processing, and/or disposing of refuse or leaves is eliminated elimination of collection, processing, and/or disposal services decreases employment opportunities	N/A	N/A	N/A

Note a. The development of an in-county or out-of-county volume reduction incineration facility is not feasible due to low volumes of waste generation, high capital costs, and lack of public support.

DISPOSAL IN LANDFILL FACILITIES

The landfill disposal options that were presented to the Citizen Advisory Committee for their consideration were divided into the following four categories:

- direct haul of waste to in-county and out-of-county landfills
- expansion of the existing in-county landfill
- construction of a new in-county landfill
- direct haul of waste to the in-county transfer station for transport to in-county and out-of-county landfills

All Christian County waste that is landfilled is currently either hauled directly to the in-county Five Oaks Recycling and Disposal Facility or hauled directly to the in-county U-Dump-It Transfer Station from which it is transported to either the Five Oaks facility or the out-of-county Macon County Landfill. The Five Oaks facility has an estimated remaining capacity of 19.6 years,as of April, 1994, (14,478,500 c.y.) and has space available for a possible future expansion at their current site.

The Macon County Landfill has an estimated remaining capacity of 2.7 years, as of April, 1994, (2,151,000 c.y.) and has submitted an application for site approval to expand their capacity at their present site. If site approval is granted by the Macon County Board and IEPA issues the required permits, the expansion is expected to add approximately 6 to 7 years of capacity to the facility.

The Phase I survey found that Sangamon Valley Landfill in Springfield also receives some waste from Christian County. However, the amount received was considered negligible since it is less than 0.1% of Christian County's landfilled waste.

The program options developed for landfill disposal were:

- continue the current level of usage of the in-county landfill for the disposal of Christian County waste
- continue the current level of transport of waste via the U-Dump-It Transfer Station to the Five Oaks facility and/or the Macon County Landfill

The facility options developed for landfill disposal were:

- support the expansion of the existing in-county transfer station
- support the expansion of the in-county landfill beyond its current permitted capacity if such an expansion is in the best interest of Christian County
- increase the level of export of waste to out-of-county landfills through the construction of a new in-county transfer station
- construct a new in-county landfill

The advisory committee investigated the benefits and limitations involved in all of these landfill disposal options but did not take any steps to eliminate any of the options from consideration at this time.

Table 7 is the matrix that was used to help evaluate the potential landfill disposal program and facility options.

TABLE 7 - MATRIX FOR EVALUATION OF LANDFILL DISPOSAL COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Consider-ations	Siting Consider-ations	Permitting Consider-ations
Continue existing direct haul of waste to in-county and out-of-county landfills	feasible to continue current activities	N/A	N/A	negative: potential risks to the environment exist positive: new Subtitle D regulations have been developed to provide adequate environmental protection	positive: recovered methane gas can be used to produce energy negative: consumption of energy in collection and disposal of waste	current tipping fees for landfills serving the Christian County area range from $13 -16/ton tipping fees are projected to increase in order to cover costs of meeting new regulations	technology exists to meet Subtitle D regulations	N/A	N/A
Expand existing in-county and/or out-of-county landfills	the 5 Oaks Landfill has space available for expansion expansion of the Macon County Landfill is currently being considered	N/A	N/A	same as above	same as above	the cost to expand is approximately $200,000 to $400,000 per acre	expansions must meet Subtitle D regulations landfill service area may have to be expanded in order to generate the revenues needed to continue operations	expansions must meet local siting approval of City or County as well as IEPA siting criteria	State permits required for development and operation

TABLE 7 - MATRIX FOR EVALUATION OF LANDFILL DISPOSAL COMPONENTS

	Applicability to Christian County	Contribution to Recycling or Landfill Diversion Goals	Material or Energy Market Evaluation	Environ-mental Evaluation	Energy Evaluation	Cost and Economic Impact	Technical Feasibility/ Operational Consider-ations	Siting Consider-ations	Permitting Consider-ations
Construct new in-county landfill	currently no plans for developing new in-county landfill	N/A	N/A	same as above	same as above	estimated cost to develop a 50 acre landfill with 300 TPD capacity is $4 million/year over a 10 year life estimated tipping fee would be $45-$50/ton tipping fee	landfill must meet Subtitle D regulations service area would have to be large enough to generate revenues needed to operate public vs. private ownership/ operation options need to be considered	site must meet local siting approval of City or County and IEPA siting criteria	State permits required for development and operation
Expand existing in-county transfer station and/or build new in-county transfer station for transfer of waste to in-county or out-of-county landfills	currently no plans to expand or construct an in-county transfer station	N/A	N/A	positive: decrease in air and noise pollution by consolidating loads and reducing haul distances negative: possible odor effect of added traffic on local roadway network must be considered	positive: fuel savings associated with consolidating loads	estimated cost to construct a 100 TPD facility is $400,000 (does not include land) $35-40/ton estimated tipping fee	technically feasible public vs. private ownership/ operation options need to be considered	transfer station must meet local siting approval and IEPA siting criteria	State permit required for development and operation

CHAPTER 3
ASSEMBLY OF COMPONENTS INTO ALTERNATIVE WASTE MANAGEMENT SYSTEMS

After the list of potential components had been compiled and evaluated, the next step in the planning process was to assemble those potential components into four alternative waste management systems.

Each of the alternative systems contains programs and facilities in all five categories of the State's waste management hierarchy. The program and facility options in the four systems, A through D, were chosen so that system A represents the minimum, or least aggressive, system in terms of MW recycling percentage attainment and overall system cost. The components of system D, conversely, are much more aggressive and provide for the highest MW recycling percentage and also result in the most expensive system. Alternatives B and C were established to provide incremental degrees of recycling percentages and costs between the minimum alternative A and the maximum alternative D.

Shown below is the rationale used for the composition of the various alternative systems under each category of the State's waste management hierarchy.

SOURCE REDUCTION

Since the bulk of the potential source reduction programs will be conducted and/or coordinated by the staff of the CCSWMD, the controlling factor in establishing the programs to be considered in each of the alternative systems was the number of CCSWMD staff to be employed. Based on this assumption, the following staff requirements were estimated for each of the systems:

Alt. System	Staff Required
A	1 full-time director 1 full-time solid waste planner 1 full-time secretary
B	1 full-time director 1 full-time solid waste planner 1 part-time solid waste planner 1 full-time secretary
C	1 full-time director 2 full-time solid waste planners 1 full-time secretary
D	1 full-time director 3 full-time solid waste planners 1 full-time secretary

RECYLING AND COMPOSTING

The key factor in assembling the recycling alternative components was the estimated MW recycling rate that would be attained by each alternate.

Alternative System A continues all current recycling programs and adds only the implementation of the County- wide drop-off program in year 1, and in years 2-4, adds the implementation of a mobile drop-off program for communities not participating in the County-wide program. The addition of these two programs is estimated to increase the County's current MW recycling rate of 21% to the 25% State goal within five years of Plan adoption.

Alternative System B includes all Alternate A programs plus, in years 2-4, the implementation of single item recycling drives, increased commercial sector recycling, landscape waste drop-off collection, increased recycling through community clean-up programs, and the expansion of existing in-county recyclable material processing facilities. In years 5-10, this system includes the expansion of the County-wide drop-off program. The estimated MW recycling rate for this system is 38%.

Alternative System C includes all Alternate B programs plus the implementation of curbside recycling in selected communities, curbside collection of landscape waste, and increased programs for construction/demolition (C/D) debris recycling. Consideration is also included for building an in-county transfer station for recyclable material, building an in-county landscape waste compost facility, and entering into cooperative marketing agreements with surrounding counties. These additional programs and facilities could raise the MW recycling rate to as high as 48%.

Alternative System D is the most aggressive system. It differs from Alternate C primarily in terms of added facilities rather than added collection programs. Alternate D calls for the building of an in-county recyclable material processing facility, an in-county C/D debris recycling facility, an in-county mixed municipal waste MRF, and an in-county mixed municipal waste compost facility. This alternate is very aggressive and could result in a 60% MW recycling rate. However, this alternate is also by far the most expensive.

COMBUSTION WITH ENERGY RECOVERY

Alternative System A is the minimum system and consists of continuing the current level of export of used tires to out-of-county WTE incinerators and the continuation of the operation of in-county small scale WTE incineration facilities.

Alternative System B calls for the expanding the export of used tires and considers the direct haul of waste to out-of-county WTE or RDF facilities if such facilities become available to the Central Illinois area.

Alternative System C adds programs to monitor the development and/or expansion of in-county small scale WTE incineration facilities and supports the export of waste to out-of-county WTE or RDF facilities through the building or expansion of an in-county transfer station.

Alternative System D is the most aggressive alternate with added programs to pursue the closure of in-county small scale WTE incineration facilities that do not have the proper State permits, programs to build an in-county mixed waste MRF with RDF processing capabilities, and programs to build an in-county large scale WTE incinerator. Although alternate D lists programs to build an in-county mixed waste MRF and a large scale WTE incinerator, no serious consideration was ever given to include these program options into the recommended system.

COMBUSTION FOR VOLUME REDUCTION

The volume reduction incineration alternative options deal primarily with activities involving burn barrel usage, the burning of landscape waste, and the burning of C/D debris.

Alternative System A calls for the continuation of these activities at their current levels.

Alternative System B adds programs to evaluate existing regulations governing burn barrel usage and to increase the level of enforcement.

Alternative System C adds similar evaluation and enforcement programs for landscape waste incineration.

Alternative System D adds similar evaluation and enforcement programs for C/D debris incineration. A program is also added in alternate D which calls for the building of an in-county large scale volume reduction incinerator, however, no serious consideration was ever given to including this option in the recommended system.

LANDFILL DISPOSAL

The landfill disposal options concern both the direct haul of waste to landfills and the use of transfer stations as a means of transporting waste to landfills. Both in-county and out-of-county landfills were considered.

Alternative System A calls for the continued direct haul of waste to the in-county landfill and the continued export of waste to out-of-county landfills through an existing in-county transfer station. This alternative also has a provision for considering the expansion of the existing in-county landfill in years 11-20.

Alternative System B includes a program for increasing the level of export of waste to out-of-county landfills through the expansion of the existing in-county transfer station.

Alternative System C includes a program for increasing the level of export of waste to out-of-county landfills through the building of a new in-county transfer station.

Alternative System D contains a program to consider the building of a new in-county landfill in years 11-20.

Table 8 shows the program and facility options which comprise each of the alternative systems.

TABLE 8 - SOURCE REDUCTION ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
1	Continue operation of clearinghouse at CCSWMD office Continue providing programs to the general public that focus on source reduction measures at the individual and household levels Continue providing financial assistance to schools through County and/or State grants to help fund the development and implementation of solid waste management education Continue telephone hotline program Continue mailing and newsletter programs Continue coordination of the clearinghouse operations with reference material sources at local libraries throughout the County Continue promotional campaigns to encourage source reduction utilizing radio, newspaper, and television Continue school education programs at selected schools and selected grade levels	Same programs listed in Alt. A	Same programs listed in Alt. A	Same programs listed in Alt. A

TABLE 8 - SOURCE REDUCTION ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
2-4	Expand scope of material available at clearinghouse, including new formats such as video tapes, slide presentations, "canned" programs with emphasis on local conditions Assist schools in planning solid waste education activities for special events such as fairs, contests, plays, art projects, etc.	<u>Same programs listed in Alt. A plus:</u> Prepare promotional materials for distribution at community events Assist in the implementation of model in-house source reduction programs for selected local governmental offices Establish a local speakers bureau and develop outlines for a variety of programs for presentation to local organizations Establish awards program for public acknowledgement of outstanding accomplishments by individuals, businesses and organizations in the area of solid waste management Expand school education programs to eventually cover all schools and all grade levels Provide counseling to commercial businesses on methods they can implement to reduce the amount of waste they generate Assist in the implementation of in-house source reduction programs for selected commercial businesses	<u>Same programs listed in Alt. B plus:</u> Prepare portable displays promoting solid waste management activities for presentation in public places and at community events Expand number of clearinghouse locations Assist in the implementation of a local waste exchange program to coordinate with the existing State program targeted at the commercial and industrial sectors Support the implementation of volume based refuse collection in conjunction with residential curbside recycling programs	<u>Same programs listed in Alt. C plus:</u> Expand promotional campaigns to encourage source reduction utilizing radio, newspaper, and television
5-10	No additional programs	No additional programs	No additional programs	No additional programs
11 - 20	No additional programs	No additional programs	No additional programs	No additional programs

TABLE 8 - RECYCLING/COMPOSTING ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
1	Continue drop-off/buy-back activities Continue community clean-up programs Continue land application of landscape waste collected through City of Taylorville drop-off Continue used tire recycling activities Continue C/D debris recycling activities Continue residential curbside recycling program in Pana Continue wood chip recycling program Continue commercial in-house recycling programs Implement County drop-off program ***Recyclable material to be processed and marketed by existing in-county and out-of-county private processing facilities***	Same programs listed in Alt. A	Same programs listed in Alt. A	Same programs listed in Alt. A

TABLE 8 - RECYCLING/COMPOSTING ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
2-4	Implement mobile drop-off program for communities not participating in County drop-off program	<u>Same programs listed in Alt. A plus:</u> Implement single-item recycling drives Assist commercial businesses in implementing and/or expanding in-house recycling programs Support the implementation of drop-off sites throughout the County for the collection of landscape waste Assist with the implementation and/or expansion of recycling activities associciated with community clean-up programs ***Support the expansion of the in-county recyclable material processing facilities*** ***Support the in-county landfill if they choose to develop a transfer station/ mixed municipal waste MRF, if in the best interest of Christian County and its citizens***	<u>Same programs listed in Alt. B plus:</u> Support the implementation of traditional residential curbside recycling programs in selected communities Continue to support cooperative marketing efforts of private recycling facilities in the area ***Support the development of a new transfer station for the transfer of recyclable material to a regional out-of-county processing facility***	<u>Same programs listed in Alt. C plus:</u> ***Support development of a new in-county recyclable material processing facility***

TABLE 8 - RECYCLING/COMPOSTING ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
5-10	No additional programs	Expand County drop-off program	Support the implementation of curbside collection of landscape waste in selected communities Support the export of landscape waste to out-of-county compost or land application facility	Support the export of waste to out-of-county municipal waste compost facility ***Support the development of a new in-county C/D debris recycling facility***
11 - 20	No additional programs	No additional programs	Encourage expansion and/or implementation of C/D debris recycling programs Support the export of C/D debris to out-of-county C/D debris recycling facility Support the export of waste to out-of-county mixed municipal waste MRF ***Support the development of an in-county landscape waste compost facility***	***Support the development of an in-county mixed municipal waste MRF*** ***Support the development of an in-county mixed municipal waste compost facility***

TABLE 8 - WASTE-TO-ENERGY INCINERATION ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
1	Continue export of used tires to out-of county WTE facility Continue existing small scale WTE incineration	Same programs listed in Alt.A	Same programs listed in Alt. A	Same programs listed in Alt. A
2-4	No additional programs	Expand collection of used tires for export to out-of-county WTE facility	Monitor the development and/or expansion of small scale WTE incineration facilities	Pursue closure of unpermitted small scale WTE incinerators
5-10	No additional programs	Direct haul general refuse to out-of county WTE incinerator or RDF processing facility	***Build new transfer station or expand existing transfer station for transport of general refuse to out-of-county WTE incinerator or RDF processing facility***	No additional programs
11 - 20	No additional programs	No additional programs	No additional programs	***Add RDF processing to in-county mixed municipal waste MRF*** ***Build large scale in-county incinerator for general refuse and/or used tires***

TABLE 8 - VOLUME REDUCTION INCINERATION ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
1	Continue the current level of burn barrel usage Continue the current level of landscape waste volume reduction incineration Continue existing level of C/D debris volume reduction incineration ***Continue the operation of small scale volume reduction incineration facilities***	Same programs listed in Alt. A	Same programs listed in Alt. A	Same programs listed in Alt. A
2-4	No additional programs	Evaluate existing burn barrel usage regulations and revise as needed Increase enforcement of burn barrel usage regulations	Evaluate existing regulations pertaining to landscape waste incineration and revise as needed Increase enforcement of landscape waste incineration regulations	Evaluate existing C/D debris incineration regulations and revise as needed Increase enforcement of C/D debris incineration regulations Monitor the development and/or expansion of small scale volume reduction incineration facilities Pursue closure of unpermitted small scale volume reduction incineration facilities
5-10	No additional programs	No additional programs	No additional programs	No additional programs
11 - 20	No additional programs	No additional programs	No additional programs	***Build large scale in-county volume reduction incinerator for the incineration of general refuse and/or used tires***

TABLE 8 - LANDFILL DISPOSAL ALTERNATIVE SYSTEMS

Yr.	Alt. A	Alt. B	Alt. C	Alt. D
1	Continue the current level of usage of the in-county landfill for the disposal of Christian County waste Continue the current level of export of Christian County waste to be landfilled at out-of-county landfills	Same programs listed in Alt. A	Same programs listed in Alt. A	Same programs listed in Alt. A
2-4	No additional programs	All programs listed in Alt. A plus: ***Increase the level of export of waste to out-of-county landfills through the expansion of the U-Dump-It transfer station***	Same programs listed in Alt. B	Same programs listed in Alt. B
5-10	No additional programs	No additional programs	Same programs listed in Alt. A plus: ***Increase the level of export of waste to out-of-county landfills through the construction of a new in-county transfer station***	Same programs listed in Alt. C
11 - 20	***Support an expansion of the in-county landfill beyond its current permitted capacity, if in the best interest of Christian County and its citizens***	No additional programs	No additional programs	***Construct a new in-county landfill***

CHAPTER 4
EVALUATION OF ALTERNATIVE WASTE MANAGEMENT SYSTEMS

After the program and facility options had been assembled into four alternative waste management systems, the next step in the planning process was to further evaluate the benefits and limitations of each of these alternative systems. Comparative data was compiled for the program options for these various alternatives and presented to the advisory committee and to the general public at a public informational meeting.

Although there was a substantial amount of discussion among the Citizen Advisory Committee members, the CCSWMD staff, and the consultant's staff concerning the relative benefits and limitations of the program options, no formal procedures were established for comparing the various alternatives. However, in the process of narrowing down the list of program and facility options to be selected for the Plan, the following "general consensus guidelines" became apparent:

- Strong preference was given to private ownership/operation over governmental ownership/operation for providing collection, processing, marketing, and disposal services. The predominate feeling was that County government's primary role should be to coordinate the activities in the Plan rather than to become directly involved as an owner or operator of the programs and facilities.

- Preference was given to expanding existing solid waste management facilities rather than to building new facilities. This would both hold down the overall costs and be less disruptive to the existing solid waste businesses.

- Consideration was given to out-of-county as well as in-county solid waste facilities and services: private haulers of garbage and/or recyclables have the right to haul materials to the facility of their choice, inside or outside the County; in some instances, it is more cost effective to haul materials to an out-of-county facility than to invest in the development of a new in-county facility; and, in the case of recyclable materials, the County or an individual in the County may choose to collect a recyclable material that is not accepted by the in-county recycling facilities.

- Cost was a major consideration for all potential programs and facilities, especially in terms of what the cost effect would be on individual residents and businesses.

- As a minimum, the State mandated MW recycling goals of 15% and 25% should be met. The Solid Waste Planning and Recycling Act states that these goals are to be met by the end of the 3rd and 5th years after Plan adoption, respectively. Once these minimums are achieved, additional recycling efforts should be undertaken to attain more aggressive recycling rates - provided these additional efforts are cost effective.

- Recycling programs targeted at the residential waste stream alone will not be sufficient in meeting the 15% and 25% MW recycling goals. Additional recycling programs will be required that target other waste streams such as commercial and C/D debris.

- Strong focus was given to providing general solid waste management education - both to the general public and to the schools.

- There was very strong opposition to supporting any programs involving large scale in-county incineration.

- There was very little support for legislatively imposed flow-control. Because of the relatively small quantity of waste generated and the limited number of existing facilities for the processing or disposal of waste, there is no substantial "competition" locally for capture of the waste stream. There is an inherent difficulty in enacting and enforcing flow control ordinances, as witness the many lawsuits observed at both the state and national levels.

- Well into the planning process, with input from the Enforcement Inspectors of the CCSWMD staff, it was decided that the Plan should not call for the County to pursue the evaluation or revision of volume reduction incineration regulations throughout the County. It was decided, however, that the staff of the CCSWMD should request from each of the municipalities, villages, and cities, copies of ordinances that pertain to the burning of solid waste in their communities. Copies of these ordinances shall be compiled and kept on file. It was agreed that having access to such information could be helpful to the CCSWMD staff in the event that they are faced with future issues involving the burning of solid waste in the County.

These "general consensus guidelines" became the underlying basis for the ultimate selection of the components in the recommended system which is discussed in detail in Chapter 5.

CHAPTER 5
SELECTION OF THE RECOMMENDED WASTE MANAGEMENT SYSTEM

Following the development and evaluation of individual program and facility options and the further evaluation of these options after assembly into alternative waste management systems, the final step in the selection process was to choose the program and facility options that would be included in the recommended waste management system.

These decisions were made jointly with input from the Citizen Advisory Committee, the Environmental Committee of the Christian County Board, the CCSWMD staff, the consultant's staff, and from input received from the general public.

In several instances, the Plan recommends that the County "support" the implementation of certain programs or the development of certain facilities. Financial support may be given in the form of grants. The CCSWMD staff may provide technical support when appropriate. The CCSWMD staff may also provide support by offering their time to assist with local projects. It is up to the County to decide the type and degree of support they feel is appropriate to give in each instance.

Table 9 tabulates the recommended program and facility options by the waste management methods of the State waste management hierarchy and by recommended year of implementation.

This recommended waste management system, with any revisions resulting from input received at the public hearing, will be forwarded to the Christian County Board through their Environmental Committee for formal adoption.

A detailed description of the elements in this recommended system is included following Table 9.

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
1	Continue operation of clearinghouse at CCSWMD office Continue coordination of clearinghouse operations with reference material sources at local libraries throughout the County Continue providing programs to the general public that focus on source reduction measures at the individual and household levels Continue a promotional campaign to encourage source reduction utilizing radio, newspaper, and television Continue school education programs at selected schools and selected grade levels Continue providing financial assistance to schools through County and/or State grants to help fund the development and implementation of solid waste management education Continue telephone hotline program Continue mailing and newsletter programs Develop recycled product procurement guidelines for implementation in County and Municipal governmental offices	Continue drop-off and buy-back operations Continue separation of recyclables from waste received at the in-county transfer station Continue residential curbside recycling program in Pana Continue land application of landscape waste collected through City of Taylorville drop-off Continue community clean-up programs Continue C/D debris recycling activities Continue wood chip recycling programs Continue used tire recycling activities Continue commercial in-house recycling programs Continue to support cooperative marketing efforts of private recycling facilities in the area Implement County drop-off program ***Continue to use existing in-county and out-of-county private processors to process and market recyclable materials***	Continue the export of used tires to out-of-county WTE incineration facilities ***Continue the operation of existing small scale WTE incineration facilities***	Continue the current level of landscape waste volume reduction incineration Continue the current level of C/D debris volume reduction incineration Continue the current level of burn barrel usage ***Continue the operation of small scale volume reduction incineration facilities***	Continue the current level of usage of the in-county landfill for the disposal of Christian County waste Continue the current level of export of Christian County waste to out-of-county landfills

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
2-4	Expand school education programs to eventually cover all schools and all grade levels Assist schools in planning solid waste education activities for special events such as fairs, contests, plays, art projects, etc. Expand scope of material available at clearinghouse, including new formats such as video tapes, slide presentations, "canned" programs with emphasis on local conditions Prepare promotional materials for distribution at community events Assist in the implementation of in-house source reduction programs for selected local governmental offices Establish a local speakers bureau and develop outlines for a variety of programs for presentation to local organizations Provide counseling to commercial businesses concerning methods they can implement to reduce the amount of waste they generate Develop recycled product procurement guidelines for implementation in the commercial, institutional and industrial sectors Assist in the implementation of in-house source reduction programs for selected local commercial businesses (continued on next page)	Implement single-item recycling drives Implement mobile drop-off program for communities not participating in the County drop-off program Assist with the implementation and/or expansion of recycling activities associated with community clean-up programs Assist commercial businesses with the implementation and/or expansion of in-house recycling programs ***Support the expansion of existing in-county recyclable material processing facilities*** ***Support the in-county landfill if they choose to develop a transfer station/ mixed municipal waste MRF, if in the best interest of Christian County and its citizens***	Monitor the operation and/or expansion of small scale WTE incineration facilities Pursue closure of unpermitted small scale WTE incinerators Support the expansion of used tire collection for export to out-of-county WTE incineration facilities Monitor the future development and/or expansion of out-of-county WTE incineration facilities and investigate the feasibility of exporting Christian County waste to such facilities	Compile information pertaining to existing municipal, city, and village ordinances pertaining to the burning of landscape waste and C/D debris and the burning of waste in burn barrels Monitor the development and/or expansion of small scale volume reduction incineration facilities Pursue closure of unpermitted small scale volume reduction incineration facilities	***Support an expansion of the existing in-county transfer station***

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
2-4	(continued from previous page) Establish an awards program for public acknowledgement of outstanding accomplishments by individuals, businesses, and organizations in the area of solid waste management Expand number of clearinghouse locations Prepare portable displays promoting solid waste management activities for presentation in public places and at community events Assist in the implementation of a local waste exchange program to coordinate with the existing State program targeted at the commercial and industrial sectors Expand promotional campaign to encourage source reduction utilizing radio, newspaper and television	(see previous page)	(see previous page)	(see previous page)	(see previous page)
5-10	Support the implementation of volume- based refuse collection in conjunction with traditional curbside recycling programs	Support the implementation of traditional residential curbside recycling programs in selected communities Expand County drop-off program Support the increased collection and export of landscape waste to out-of-county compost or land application facilities	No additional programs or facilities	No additional programs or facilities	No additional programs or facilities

TABLE 9 - RECOMMENDED WASTE MANAGEMENT PLAN

Yr.	SOURCE REDUCTION	RECYCLING/COMPOSTING	WASTE-TO-ENERGY INCINERATION	VOLUME REDUCTION INCINERATION	LANDFILL DISPOSAL
11-20	No additional programs	Support the implementation of drop-off sites throughout the County for the collection of landscape waste Support the expansion of C/D debris recycling activities Support the export of C/D debris to out-of-county C/D debris recycling facility ***Support the development of an in-county landscape waste compost facility***	No additional programs or facilities	No additional programs or facilities	***Support an expansion of the in-county landfill beyond current permitted capacity if in the best interest of Christian County and its citizens***

General notes: 1. Waste management programs are shown in regular type.

2. Waste management facilities are shown in ***bold italic type.***

DESCRIPTION OF SOURCE REDUCTION COMPONENTS
YEAR 1

Continue Operation of Clearinghouse at CCSWMD Office:	The clearinghouse, located at the Christian County Solid Waste Management office, includes reference materials, videos, audio cassettes, teacher manuals, and visual displays. Any material may be checked out, free of charge, for a two week period. The clearinghouse is utilized by teachers, students, and members of the general public.
Continue Coordination of Clearinghouse Operations With Reference Material Sources at Local Libraries Throughout the County:	All clearinghouse materials are referenced and updated yearly. An updated list is sent to all schools and public libraries within the County.
Continue Providing Programs to the General Public That Focus on Source Reduction Measures at the Individual and Household Levels:	Upon request, the CCSWMD staff provides educational programs to service and community organizations, churches, schools and other interested groups. The staff also promotes source reduction and recycling at local fairs and other special events.
Continue a Promotional Campaign to Encourage Source Reduction Utilizing Radio, Newspaper and Television:	Informational articles are prepared by the CCSWMD staff for presentation to local media. The staff has and will continue to participate in radio and television programs that focus on source reduction and other solid waste management issues.
Continue Providing Educational Programs for Selected Schools and Selected Grade Levels:	Providing educational programs to school children has been and will continue to be a main focus of the CCSWMD staff. Program format varies from grade level to grade level and may include an informational speech, a slide presentation, audio-visual aids, handout materials, and/or hands- on activities with the students.
Continue Providing Financial Assistance to Schools Through County and/or State Grants to Help Fund the Development and Implementation of Solid Waste Management Education:	A grant program was established by the CCSWMD in 1992. In 1992, two schools received a total of $8,500. In 1993, a total of $21,661 was awarded to six schools. The $30,161 awarded in the two grant rounds went toward the purchase of recycling bins, various solid waste educational materials, vermicomposting units, material for building landfill models, playground equipment made from recycled materials, can crushers, and other solid waste related materials. The Plan recommends that the CCSWMD continue to offer County grants to schools and to assist them in applying for State grants.

Continue Telephone Hotline Program:

Interested citizens are encouraged to call the CCSWMD office if they have questions concerning solid waste. During regular working hours, the staff is available to answer questions and/or refer the caller to other agencies that may be able to provide further assistance. Those calling after hours may leave a message on the office answering machine. Phone calls are returned the next business day.

Continue Mailing and Newsletter Programs:

The Christian County Cooperative Extension Service distributes a quarterly newsletter entitled "Around Again" to interested residents. The CCSWMD has consistently contributed articles for publication in the newsletter and plans to continue doing so.

Develop Recycled Product Procurement Guidelines in County and Municipal Governmental Offices:

The Plan recommends that during year one, the CCSWMD staff develop recycled product procurement guidelines to be used by local governmental offices. It is felt that governmental agencies can set a positive example, hopefully to be followed by business and industry, as well as by local residents. Guidelines should be user friendly and tailor-made to meet the needs of local offices. It is suggested that the CCSWMD staff solicit input from representatives of various governmental offices while developing the guidelines. The CCSWMD staff plan to utilize the guidelines set forth by ENR and Central Management Services and tailor them to local government.

Note: See Appendices E and F for additional data on the recommended programs for Year 1

DESCRIPTION OF SOURCE REDUCTION COMPONENTS YEARS 2-4

Expand School Education Programs to Eventually Cover All Schools and All Grade Levels:

Prior to and during year 1 of Plan implementation, the majority of educational programs have been presented at the elementary grade level. In years 2-4, the Plan recommends that the scope be broadened to include presentations given at both junior and senior high grade levels.

Assist Schools in Planning Solid Waste Educational Activities for Special Events Such as Fairs, Contests, Plays, and Art Projects:

The CCSWMD staff can provide assistance to schools in several ways. For instance, they may provide reference materials from the clearinghouse. If the school is planning a special event or fair, the staff may suggest potential exhibitors and/or vendors. The CCSWMD may assist in coordinating an event and/or they may be a participant. They have helped to organize and have participated in such events as Earth Day and Keys to Recycling.

Expand Scope of Materials Available at Clearinghouse, Including New Formats Such as Video Tapes, Slide Presentations, "Canned" Programs With Emphasis on Local Conditions:

Much of the material available through the clearinghouse has been general in nature. Most often, materials available address solid waste issues at the state or national level. The Plan recommends that the CCSWMD staff continue to update and expand this broad range of materials. In addition, the Plan suggests that the staff develop materials that include information specific to Christian County. Whereas prior slide presentations may have included slides of general solid waste topics, the updated presentation might include slides of local source reduction activities, a local community recycling program, the local landfill, etc.

Prepare Promotional Materials for Distribution at Community Events:

Use of materials such as pamphlets, brochures, buttons, and stickers not only promotes solid waste education, but also increases the visibility of the Christian County Solid Waste Management Department and the service it provides.

Assist in the Implementation of In-House Source Reduction Programs for Selected Local Governmental Offices:

As previously stated, governmental entities are often viewed as role models. Because their lead is often followed by business, industry, and local citizens, their participation in source reduction activities can serve to encourage others to participate. Using resources and their expertise, the Plan recommends that the CCSWMD staff assist local governmental offices in implementing source reduction programs.

Establish a Local Speakers Bureau and Develop Outlines for a Variety of Programs for Presentation to Local Organizations:

In order to educate an increased number of County citizens, the Plan recommends that the CCSWMD staff solicit speakers from the community to present programs to the public. The staff will develop a series of outlines in order to target a variety of different audiences. The staff will train the speakers and provide them with support materials such as handouts, slides, videos, etc. Speaking engagements will be arranged through the CCSWMD office.

Provide Assistance to Commercial Businesses on Methods They Can Implement to Reduce the Amount of Waste They Generate:

The Plan recommends that the CCSWMD provide local commercial, institutional, and industrial businesses with information pertaining to source reduction methods. At a minimum, the CCSWMD staff could begin a promotional campaign focused on informing businesses of the department's availability to provide information pertaining to source reduction. It would be up to interested businesses to contact the office for further information. A more aggressive approach would be for the CCSWMD to send out blanket mailings that include information pertaining to source reduction and/or to offer a workshop to further inform businesses of their options pertaining to source reduction.

Develop Recycled Product Procurement Guidelines for Implementation in the Commercial, Institutional and Industrial Sectors:

Once again utilizing the guidelines set forth by ENR and Central Management Services, the CCSWMD staff will develop recycled product procurement guidelines to be used by local businesses and newspapers. As with the development of guidelines for governmental offices, it is recommended that input be solicited from representatives of local businesses. Purchasing agents could provide valuable input. Guidelines should include information regarding the purchase of recycled products through the State of Illinois' procurement program.

Assist in the Implementation of In-house Source Reduction Programs for Selected Local Commercial Businesses:

The Plan recommends that the CCSWMD staff develop a pilot source reduction program which will demonstrate to businesses different methods of reducing the amount of waste they generate. To encourage businesses to participate, the staff plans to provide case studies of other businesses that have implemented source reduction programs and have saved money in addition to conserving landfill space.

Establish an Awards Program for Public Acknowledgement of Outstanding Accomplishments by Individuals, Businesses and Organizations in the Area of Solid Waste Management:

The Plan recommends that the CCSWMD establish a means of publicly recognizing outstanding achievements by members of the community. The program could be continuous, in the form of recognizing a person or a group weekly or monthly or sporadically throughout the year, with an awards banquet at the end of the year. Or, the program could consist of one award, given only at the end of the year. This latter method is less preferable as it has a very limited focus.

Expand Number of Clearinghouse Locations:

As the CCSWMD receives duplicates of reference materials, it is recommended that those materials be placed in public libraries and school libraries.

Prepare Portable Displays Promoting Solid Waste Management Activities for Presentation in Public Places and at Community Events:

Portable displays are a very effective means of presenting information to the public. They can be developed to promote a variety of messages and target a variety of audiences.

Assist in the Implementation of a Local Waste Exchange Program to Coordinate With the Existing State Program Targeted at the Commercial and Industrial Sectors:

The Illinois Material Exchange Service, administered by the IEPA's Office of Pollution Prevention, provides Illinois businesses with a means of exchanging waste among themselves rather than landfilling the waste. This exchange of waste conserves landfill space and saves the businesses money. If a company has a surplus of a product, they save landfill disposal costs by giving or selling that product to a business that can use it. In return, they may receive payment for their product or they may instead receive a product that to the other company was unusable but to them is of value. Both companies avoid landfill disposal costs while at the same time receiving materials they can use.

The CCSWMD will assist by providing local businesses with information on how to enroll in the state waste exchange program and by coordinating a local exchange if there is a need. The state program serves to match up companies throughout Illinois who wish to participate in exchanging their wastes.

Expand Promotional Campaign to Encourage Source Reduction Utilizing Radio, Newspaper, and Television:

The Plan recommends that media utilization be increased as a means of reaching more of the County's population. The CCSWMD staff will develop a series of public service announcements to be distributed among local news publications and local radio and television stations. Because the CCSWMD is a non-profit organization, these announcements should be presented by the media free of charge.

Note: See Appendices E and F for additional data pertaining to the recommended programs for Years 2-4

DESCRIPTION OF SOURCE REDUCTION COMPONENTS YEARS 5-10

Support the Implementation of Volume Based Refuse Collection:

The Plan recommends that the County support the implementation of volume based refuse collection in conjunction with the implementation of curbside recycling programs in selected communities. See Appendix G for information pertaining to garbage collection with a flat fee rate structure versus garbage collection with a volume based rate structure.

DESCRIPTION OF SOURCE REDUCTION COMPONENTS YEARS 11-20

The Plan does not list any specific programs to be added for Years 11-20. The overall source reduction activities should be evaluated as time progresses, and additional programs added as the Plan is updated at the required five year intervals.

DESCRIPTION OF RECYCLING/COMPOSTING COMPONENTS YEAR 1

As required by the Solid Waste Planning and Recycling Act, the Plan "shall provide for the designation of a recycling coordinator to administer the (recycling) program." The Christian County Waste Management Plan designates the Director of the CCSWMD to administer the recycling program with the assistance of a solid waste planner.

Christian County's Waste Management Plan (Plan) assumes that through the first year of implementation, all existing recycling and composting activities, programs and facilities will continue at their current levels of operation. Such operations, through which the County has achieved its current 12.5% municipal waste (MW) recycling rate, were described in detail in the Phase I Needs Assessment. See Appendix B for excerpts from the Phase I Needs Assessment. Many of the program options detailed in Appendix F, which includes programs that address education, may be used to promote the recycling and composting activities contained in the recommended Waste Management Plan for Year 1 and subsequent years.

The Plan recommends that the following programs, activities and facilities continue operations during Year 1:

Drop-off and Buy-Back Operations:	Existing programs serve, for the most part, the residential population, while the facilities serve both residential and commercial/industrial recycling needs. In 1992, 638 tons of residential recyclables were collected through drop-off and buy-back operations, along with 532 tons of commercial/industrial materials. If these programs and facilities continue to operate at current levels, the tonnage of materials recycled through them will represent approximately 5.0% of the MW recycling rate.
Separation of Recyclables From Waste Received at the In-county Transfer Station:	A privately owned and operated transfer station located within Christian County accepts mixed waste and performs limited material separation. Corrugated cardboard, glass, ferrous and non-ferrous metals, and plastics are recovered from the mixed waste and processed for recycling. Because this facility also functions as a buy-back and drop-off center, tonnages from the operation are included in the above mentioned figures.
Residential Curbside Recycling Program:	Some residents of Pana have been served by a curbside recycling program since 1992. In its first year of operation, the program served 187 households and collected 33 tons of recyclables. At the 1992 level of operation, the tonnage collected represents a 0.1% recycling rate.

Land Application of Landscape Waste:

Currently, one program within the County serves to land apply landscape waste. In 1992, the land application of 19 tons of landscape waste collected through the City of Taylorville's drop-off program contributed 0.1% to the County recycling rate.

Community Clean-up Programs:

As described in the Phase I Needs Assessment, 11 of the 13 Christian County municipalities participate in some form of community clean-up activities. In 1992, through such activities, 230 tons of residential materials were recovered for recycling along with 20 tons from the commercial sector. The 250 tons of recyclable material collected, comprised mainly of white goods (appliances) and other scrap metals, contributed 0.9% to the County's recycling rate.

Wood Chip Recycling Program:

The City of Taylorville expects to continue its wood chipping service, offered free of charge to City residents. Each year, 25 tons of chips are used as mulch for City beautification projects and for landscaping purposes at the Taylorville Golf Course. Use of these chips adds 0.1% to the County's recycling rate.

Used Tire Recycling Activities:

A portion of the used tires collected in Christian County are shredded and used as landscape turf, some are recycled into new rubber products, and some are sold for reuse. In 1992, recycling activities recovered 18 tons of used tires, contributing a little less than 0.1% to the County's recycling rate.

Commercial In-house Recycling Programs:

Programs implemented in the commercial/institutional and industrial sectors focus on collecting recyclables generated in the office and lunchroom. In 1992 these programs collectively recovered 1,621 tons of recyclable material, accounting for 6.4% of the County's recycling rate.

Support Cooperative Marketing Efforts of Private Recycling Facilities in the Area:

Several area recyclable material processing facilities currently participate in informal cooperative marketing activities. Non-binding co-ops have been formed between Christian County and the counties of Shelby, Sangamon, Fayette, and Macon. On the one hand, certain Christian County recyclables are exported to out-of-county processors. On the other hand, certain recyclable materials from out-of-county communities are imported into Christian County for processing and marketing. The Plan recommends that the CCSWMD staff continue to support these cooperative marketing activities by providing technical assistance whenever possible.

Support Cooperative Marketing Efforts of Private Recycling Facilities in the Area (continued):

The Illinois Cooperative Extension Office along with members of the Illinois Recycling Association are currently studying the feasibility of developing a formal recycling co-op in the state of Illinois. Some of the services and benefits provided by existing recycling cooperatives are listed below:

1. Joint processing reduces the need for duplicate equipment, thereby reducing costs.

2. Joint storage reduces the need for extra storage capacity, which is often at a premium.

3. Shared equipment reduces the need for capital and fully utilizes equipment.

4. Back hauling of materials reduces freight cost.

5. Joint marketing saves time, reduces overhead and results in higher volumes of material from one source. Higher volumes usually translate into more stable markets and higher prices paid for recyclables.

6. Training of co-op participants offers benefits. Workshops addressing end market specifications serve to increase the quality of materials to be marketed. Informal facility tours encourage the exchange of ideas and the sharing of effective collection, processing, and marketing techniques.

7. Joint purchasing of supplies, equipment and/or recycled products decreases purchasing and shipping costs.

8. Attracting end-users to locate in close proximity to where recyclables are processed provides for more stable markets and lower transportation costs. In addition, the local area benefits from the economic development that results from the start-up of a new manufacturing business.

The CCSWMD staff has attended meetings concerning the development of a downstate cooperative. The Plan recommends that the staff continue to monitor developments and to participate in selected activities.

Implement County Drop-off Program:

In addition to the continuation of the above listed activities, the Plan recommends that the CCSWMD implement the County drop-off program. The program has been developed and is targeted to begin operation in the spring of 1994. The information used in developing this program is detailed in Appendix M. The Director of the Christian County Solid Waste Management Department describes the program in the following manner:

Through the County's Solid Waste Management Department, an intense educational and promotional program will be implemented in all areas of the County. This program will not only increase awareness of the drop-off program but will enhance those programs already implemented. The goal of the drop-off program is to reduce the amount of waste landfilled.

Christian County's objective is to provide eleven roll-off containers throughout the County in order to provide citizens with a cost effective, as well as convenient, means of recycling. Containers will be placed in Assumption, Edinburg, Morrisonville, Mt. Auburn, Pana, Stonington, Taylorville, and Tovey.

Materials collected through the program will include #1 (PETE) and #2 (HDPE) plastic, aluminum cans, bi-metal cans, tin/steel cans, newsprint, corrugated cardboard, and clear and brown glass jars and bottles. Through a promotional campaign, residents will receive instructions on how to properly prepare these materials in order to satisfy end market specifications. New commodities will be added to the program as market conditions allow.

Through a strong educational awareness program of advertising via newspaper, radio, television, civic speaking engagements and other resources, this drop-off program and all other existing recycling programs in the County will benefit.

This project is jointly funded by Christian County and the Illinois Department of Energy and Natural Resources. Christian County's share of the cost will be paid using monies from the landfill tipping fee surcharge fund. No general tax dollars will be used.

Continue to Use Existing In-county and Out-of-county Private Processors to Process and Market Recyclable Materials:

As this Phase II Plan was being developed, all but one of the area processors listed in the Phase I Needs Assessment were still operating. Recycling Unlimited of Macon was purchased by Waste Recycling, located in Decatur. Waste Recycling plans to provide pick-up service to all Christian County customers previously serviced by Recycling Unlimited. Commercial, institutional and industrial recyclables collected will be brought to Waste Recycling's Decatur plant for processing and marketing.

All other recycling services listed in the Phase I Report plan to continue collecting and/or processing Christian County recyclables. See Appendix B for a detailed description of recycling services listed in the Phase I Report.

There are several reasons why out-of-county vendors are sometimes used to collect and/or process Christian County recyclables. For instance, private individuals may take recyclables to any processor they desire, in-county or out-of-county. In addition, the County or an entity within the County may want to collect a recyclable material for which there is no in-county vendor who will accept it. In that instance, an out-of-county vendor may be sought who can recycle the material.

The Solid Waste Planning and Recycling Act states that a county recycling program "shall include provisions for identifying potential markets for at least three recyclable materials." Through programs currently operating in Christian County, several recyclable materials are being collected and marketed.

If future programs include the collection of materials not currently being collected, information pertaining to recyclable material markets may be obtained through such sources as the Illinois Department of Energy and Natural Resources, the National Recycling Coalition, the Illinois Recycling Association, and other sources listed in Appendix N.

DESCRIPTION OF RECYCLING/COMPOSTING COMPONENTS YEARS 2-4

The Plan recommends that all programs listed in Year 1 are to be evaluated by the Director of the CCSWMD. Based on these evaluations, programs may either continue without modification or, when appropriate, they may be modified. The Plan calls for the following programs to be addressed in years 2-4. In addressing each of the following activities, it is recommended that in addition to implementing programs specifically called for, the role of the County be three fold: (1) utilizing information contained in the reference sheets, assist private entities wishing to implement programs; (2) offer financial assistance through the County grant program; and (3) offer assistance to those applying for State grant funds.

Implement Single-item Recycling Drives:

The Plan recommends that in years 2-4, the CCSWMD coordinate single-item recycling drives throughout the County. It is suggested that the reference sheets located in Appendices H, I, J, K, and M be reviewed prior to the development of any of these programs.

Single-item recycling drives may target materials that are not recovered through other existing recycling collection programs. These materials may be excluded from existing recycling programs due to their bulky size or heavy weight. They may be items that appear in the waste stream only at specific times or seasons of the year such as phone books or Christmas trees. Or, there simply may not be enough space in collection containers or collection vehicles to accommodate additional materials.

Single-item collections are often used to supplement traditional curbside or drop-off collection programs and may also supplement the collection of materials that are recovered through established recycling programs. Single item drives may also serve as pilot programs. In sparsely populated areas, a single-item recycling drive may serve as the sole program offered to residents.

Materials that are often collected in single-item recycling drives include Christmas trees, telephone books, magazines and catalogs, newspapers, used tires, and appliances. As is true with the collection of nearly any recyclable material, curbside collection would most likely yield higher participation and recovery rates than would drop-off collection. However, curbside collection is not economically feasible in all cases.

Implement Single-item Recycling Drives (continued):

Drop-off programs designed to collect a single item vary in mainly three aspects: (1) the number of collection sites established; (2) the length of time the site(s) are operational; and (3) whether or not they are staffed. The size of the targeted population will be the main factor in determining the required number of sites. The length of time a site is operational will vary, ranging from one or two days to as long as a week or more. Obviously, the less time a site is open, the more feasible it will be to staff the operation.

The following discussion focuses on characteristics that are unique to the collection of these particular items.

Christmas Trees: Christmas trees have historically been disposed of in the same manner as general garbage. Most are landfilled, some are burned and, unfortunately, some are illegally dumped, becoming eyesores in roadside ditches and along country fence rows. There has been some confusion concerning the legality of landfilling Christmas trees in Illinois. The Environmental Protection Act defines landscape waste as "all accumulations of grass or shrubbery cuttings, leaves, tree limbs, and other materials accumulated as the result of the care of lawns, shrubbery, vines, and trees." As of July 1, 1990, landscape waste has been banned from all Illinois landfills. But, according to the IEPA, Christmas trees are considered "ornamental" waste as opposed to landscape waste, and, are therefore not banned from Illinois landfills.

Collection: Even the most avid lovers of the Christmas season will eventually have to dispose of their shedding Christmas trees. Curbside or alley collection of Christmas trees for recycling is a natural, mainly because placing them alongside their regular garbage is what residents have been doing for years. There are basically 3 options for the curbside or alley collection of trees: (1) garbage haulers place the trees in their packer trucks along with the general refuse and en route to the landfill drop them off at a designated collection site; (2) garbage haulers make a separate trip in their packer trucks, collect only Christmas trees and deliver them to a designated site; (3) municipal crews collect the trees and deliver them to a designated site.

Drop-off programs are often implemented for the collection of used Christmas trees. Sluggish participation rates are often attributed to the shedding nature of pine trees. Due to the potential mess created by dry pine needles, many residents will not load the trees into their vehicles for

Implement Single-item Recycling Drives (continued):

delivery to a drop-off. The coordinator of one such program stresses that although her county's drop-off program recovers only 1% of the used Christmas trees in her county, the widely promoted and highly visible program is an important vehicle for increasing public awareness of recycling and reuse.

Processing and Markets: Whether or not the trees require processing (chipping) will be dependent on their end use. There are at least three possible end uses for used Christmas trees: (1) chipped trees may be used as mulch by residents, businesses, or municipalities; (2) chips, which act as a bulking agent, may be added to other compost material. According to the Illinois Department of Energy and Natural Resources, chipped pine trees will not successfully compost unless mixed with other materials such as leaves and grass; (3) whole trees may be placed in area lakes, where they serve as fish habitat. If required, chipping can be done at the curb or alley at the time of collection; at a drop-off site or at a landscape waste compost facility.

Telephone Books: Like Christmas trees, phone books are a seasonal item. High volumes of the directories appear in the waste stream directly following the distribution of the new phone books, usually in late Spring or early Summer. Because new directories are hand delivered to residences and businesses, there is a built-in opportunity for promoting the collection of the used books for recycling. Written materials promoting the used phone book recycling program can be distributed along with the new phone books.

The most successful programs coordinate collection efforts with the companies that are responsible for publishing and/or distributing the directories. In most instances, a publishing company is at least willing to pay for any promotional materials associated with the collection program. And a new trend seems to be that of the publishing company taking total financial responsibility for the collection of the used directories. The company either provides their own staff and equipment to implement the collection program or reimburses a second party for collection costs.

In 1992 and 1993, Illinois Consolidated Telephone Company has worked with Christian County in collecting and recycling phone books. The following information may be used to enhance this program or may be utilized in the event that the current program does not continue.

Implement Single-item Recycling Drives (continued):

Collection: The curbside collection of phone books could be implemented in one of two ways, keeping in mind that new directories are typically left on the front porch or at the front door of residences: (1) on the day the new books are to be delivered, residents could place their used book(s) on the porch or in the door, to be collected by the person delivering the new book; (2) the books could be collected through an existing residential curbside recycling collection program.

Used phone books could also be collected from businesses at the time the new books are delivered.

Drop-off programs for the collection of used phone books typically yield successful participation and recovery rates. Such success is partly attributed to the phone book's manageable size and weight as well as its "clean" nature. People are able and willing to toss a phone book or two in the car for delivery to the drop-off.

Phone book drop-offs are usually operational for at least the duration of the new phone book distribution period, and often run for several weeks after distribution is complete. These drop-offs may be set up any number of ways, depending on the number of trailers or drop-off boxes available, the number and location of sites and other factors discussed in the reference sheets located in Appendix H.

Processing and Markets: Most end markets will accept phone books loaded loose in a semi trailer or stored in gaylord boxes in a trailer. As with any recyclable material, end market specifications will, in part, dictate whether or not processing of the phone books is required. It would be rare that any paper mill in Illinois or surrounding areas would require processing such as baling or shredding. There has been some experimentation with adding shredded phone book pages to shredded newspaper animal bedding. Depending on the outcome of those trials, a portion of the books could be used in a local newspaper animal bedding operation.

Magazines and Catalogs: Perhaps with the thought that they may serve some later purpose, people have historically saved magazines and catalogs well beyond the time when they have been read cover to cover. Because this "pack rat" behavior is so common, organizers of magazine/catalog collection drives report that the initial drive usually yields high volumes. Volumes taper off and become more predictable once participants have cleared the stacks of periodicals from basements, attics and cubbyholes.

Implement Single-item Recycling Drives (continued):

Organizers report that items collected offer quite a lesson in history, as it is not uncommon to receive magazines dating back to the early 1900's. Local libraries, schools and historical societies may be interested in recovering some of the periodicals for their historical and educational contents.

Though magazines and catalogs are not typically considered seasonal items, mail order catalog distribution does increase during the Christmas season.

Collection: Curbside collection of magazines and catalogs is possible, though drop-off collection is more common. If examining the feasibility of curbside collection, the following factors should be considered: (1) the magazines should be secured in a container or bag at the curb to prevent them from blowing away and/or getting wet; (2) collection crews should be prepared to handle large quantities of material; (3) depending on their capacity, collection vehicles may require frequent emptying.

Drop-off collection of magazines has become quite common throughout the state. The following factors should be addressed if planning a drop-off: (1) whether staffed or unstaffed, the site(s) need to have protection from the wind and rain; (2) if it is not feasible to staff all sites, it is recommended that at least one site be staffed in order to provide assistance to the elderly and physically challenged.

Processing and Markets: Most generally, magazines and catalogs are shipped to paper mills where they are deinked (ink is removed) and used in the manufacture of recycled paper products such as writing tablet paper or tissue products. As deinking capacity of paper mills has increased, so has the demand for used magazines and catalogs. The process used to remove ink from paper during the recycling process requires the presence of clay, which is the material that coats the pages of a magazine and catalogs and gives them their glossy appearance and feel. Because magazines and catalogs add clay to the recycling process, their presence reduces the amount of clay that must be purchased by the paper mill.

The specifications of each end market will vary. Some end markets require the magazines and catalogs to be baled, others want them loose in a trailer or delivered in gaylord boxes. If the collector of the magazines and catalogs has no processing capabilities, then a market should be sought that

Implement Single-item Recycling Drives (continued):

does not require processing. As with the collection of any recyclable material, a secure end market should be established prior to the implementation of the collection program.

Used Tires: According to the IEPA, of the 242 million tires scrapped in the United States annually, less than 7% are recycled, 11% are incinerated for energy recovery, 5% are exported, and 78% are disposed of in landfills, stockpiled, or illegally dumped.

According to those closely associated with the implementation of used tire clean up activities, stockpiles of tires exist as a result of the misconception that used tires would, at some time in the future, be worth a considerable amount of money. Unfortunately for those who saved large numbers of tires, not only are they unable to sell them, they must, in most cases, pay to dispose of them.

As well as creating eyesores, stockpiled or illegally dumped tires can present a public environmental health problem. Stockpiled tires serve as breeding grounds for the tiger mosquitos, which transmits potentially life threatening diseases such as encephalitis. The open burning of tires, though illegal, is a fairly common practice that has its own associated risks. Tire fires are not only difficult to control and clean up, but also create air and water pollution.

Whole tires that are landfilled occupy a large volume of landfill space, may collect methane gas, and may attract rodents and insects in search of shelter. In addition, whole tires tend to float to the surface of a landfill, piercing its cover.

In response to the disposal challenges presented by used tires, the State of Illinois has passed several pieces of legislation. An amendment to the Environmental Protection Act, 415 ILCS 5/55.8 places a $1 per tire fee on each tire purchased through retail sales. Eighty percent of the monies generated through the collection of this fee are deposited in the Illinois Used Tire Management Fund, which supports used tire collection, processing, and market development activities conducted by the IEPA and the ENR. In addition to the imposed fee, the legislation also requires that tire retailers offer to accept from the consumer one used tire for every new tire being purchased. Because retailers have to pay to dispose of each used tire, many pass this cost on to the consumer.

Implement Single-item Recycling Drives (continued):

In addition, 415 ILCS 5/53 imposes a statewide ban on the landfilling of whole scrap tires, effective July 1, 1994. Because of the potential problems associated with whole tires, many landfill operators imposed their own bans well before the 1994 ban was scheduled to go into effect. Currently, less than half of Illinois' landfills accept whole tires. After July 1, 1994, legal methods of managing used tires will include: reusing tires with remaining tread; retreading worn tires that have usable casings; recycling scrap tires into crumb rubber products such as floor mats, carpet padding, rubberized asphalt; using shredded tires as landscape turf; incinerating tires for energy recovery, either whole, or more commonly, in shredded form referred to as TDF (Tire-Derived Fuel); and where acceptable, landfilling shredded tires. In addition to the options listed above, there are numerous other existing uses for scrap tires. The development of additional end uses continues to be encouraged and supported by the IEPA and ENR.

Whereas used tires incinerated or landfilled do not count toward the County's recycling percentage, tires collected for recycling do count. Because of their substantial weight, an average of 30 pounds per passenger car tire, the recycling of used tires can contribute significantly to the recycling percentage.

Collection: It is recommended that the initial use tire collection program be implemented with the assistance of the IEPA. To sign up with the IEPA, a written request must be submitted to the Used Tire Unit, stating where you would like the program to take place along with a target date. As long as the proposed program meets the requirements set forth by the IEPA, the IEPA will pay all costs associated with the collection, removal, processing, and marketing of the used tires.

Tires collected through IEPA sponsored programs are managed in one of two ways: tires are shredded into TDF at the drop-off site and delivered to a central Illinois co-generation plant where they are incinerated for energy recovery; or, tires are delivered whole to an Illinois Corrections facility where reusable and recyclable tires are separated out and the remaining tires are shredded and shipped as TDF to a central Illinois co-generation facility.

Implement Single-item Recycling Drives (continued):

One condition of IEPA's program is that each participant sign a consent form stating that he/she agrees to not accumulate used tires from the collection day forth.

Because the IEPA will sponsor only one used tire collection program per county, any subsequent programs will rely on the public or private sector, or a joint effort. Regardless of who actually conducts the program, the following items should be considered: trucks used to transport used tires require a special permit, which can be obtained free of charge from the Illinois Department of Transportation; depending on market specifications, tires may need to be shredded on site; significant labor, whether paid or volunteer, will be needed to handle the tires; consideration should be given to scheduling the collection at a time when farmers are not in the fields, as they may have significant numbers of large used tires.

It is also recommended that on the day of the collection, participants receive written information regarding the options available to them for the future disposal of their used tires.

Processing and Markets: According to reports from the IDENR Tire Unit, all Illinois tire processors charge a fee to collect or accept used tires, whether the intended end use is recycling, reuse or incineration. Christian County is fortunate to have one such tire processing facility located within its boundaries. Of the used tires received at the Pana used tire processing facility, some are sorted out for reuse, a small percentage are recycled into landscape turf, and the majority are processed into TDF. The facility has expressed interest in working with the County on the collection of used tires through drop-offs. Though they cannot guarantee what percentage of the collected tires would be recycled or reused as opposed to incinerated, they would make their best effort to see that at least 70% were recycled or reused.

It is important to note that in addition to increasing the County's recycling percentage, a successful tire collection program can serve to reduce the number of used tires that are illegally dumped. The clean-up of illegal dump sites requires township revenue to cover the cost of clean-up equipment and labor as well as the cost associated with the final disposal of the materials illegally dumped. If fewer tires are dumped illegally, townships within the County should realize a cost savings associated with a decrease in clean-up activities.

Implement Mobile Drop-off Program for Communities Not Participating in the County Drop-off Program:

Of the communities invited to participate in the County sponsored drop-off program, all but three accepted the invitation. Among those who declined to participate, one governmental entity expressed no interest in recycling at all. The remaining two communities who declined both expressed interest in recycling but were hesitant to locate permanent drop-off containers in their communities because of the following reasons: (1) lack of assurance that residents would use a drop-off enough to warrant having a permanent container; (2) inability to commit to providing persons within the community to staff the site; and (3) concern about the future funding of the program.

In order to provide those communities interested in recycling with an alternative means of recycling, the Plan recommends that the CCSWMD implement a mobile drop-off program. Several local recycling service providers have expressed interest in providing the components necessary to implement such a program, including:

(1) the equipment used for collecting recyclables, which could range from a semi-trailer equipped with gaylord boxes to a roll-off container built specifically for collecting separated recyclables

(2) a staff person to assist participants with unloading materials from vehicles and to ensure that materials are acceptable and that they are sorted properly

(3) the hauling of recyclable materials to a processing facility, either to a facility operated by the hauler or to a facility operated by someone else

(4) the processing and marketing of recyclable materials

As with any collection program, there are costs associated with implementing a mobile drop-off program. Of the local in-county and out-of-county service providers that expressed an interest in providing mobile drop-off services, their estimated charges range from $30/hour to $50/hour. Mobile sites are typically open to the public for a period of 4 hours. Estimated costs include a collection trailer or container, 1 staff person, mileage to and from the site, and the transportation, processing and marketing of the materials collected.

Prior to and during the implementation of the mobile drop-off program, the guidelines outlined in Appendices H, J, and M should be reviewed.

Assist With the Implementation and/or Expansion of Recycling Activities Associated with Community Clean-up Programs:

As noted in the Phase I Needs Assessment, eleven of Christian County's thirteen municipalities participate in some form of community clean-up activities. With assistance from the Christian County Solid Waste Management Department staff, those municipalities participating could increase the amount of recyclables collected through their programs and those communities not participating could possibly implement new programs. Of the eleven municipalities participating, only five recycle or reuse any of the material collected. The remaining six haul all materials directly to the landfill. If these six communities added a recycling component to their programs and the two non- participating communities implemented programs that include recycling, additional tonnage could be recycled annually. With minor adjustments to their programs, the five communities currently recycling could increase the amount of materials recovered for recycling.

In assisting communities that are starting new programs and those wanting to add recycling to their existing programs, the CCSWMD staff can provide written materials such as a copy of the residential recycling program guidelines, found in Appendix J. In addition, the CCSWMD can provide organizers with a list of local businesses which offer collection, processing, and/or hauling services.

"Veteran" recyclers responsible for implementing the recycling components of the already established clean-up programs may share insights pertaining to program implementation such as: (1) type of collection provided, either curbside or drop-off; (2) entities responsible for collection, hauling, processing, and/or disposal; (3) duration of the collection period; (4) types of materials collected; (5) average tonnage collected annually; (6) of the materials collected, the amount recycled, the amount incinerated, and the amount landfilled; (7) program costs, etc.
Even though no two community clean-up programs are exactly alike, most programs target similar items for collection. White goods, more frequently referred to as major appliances, are commonly collected through clean-up programs. Residents often keep used appliances long after they have ceased to function. Whether piled in back yards or illegally dumped along county roadsides, such discarded appliances create eyesores in a community. In an attempt to discourage this practice and decrease the costs associated with the remediation of illegal dump sites, most municipalities include white goods among the items collected through community clean-up programs.

Assist With the Implementation and/or Expansion of Recycling Activities Associated with Community Clean-up Programs (continued):

The CCSWMD staff should provide communities with information pertaining to recently created legislation which may affect the manner in which white goods are collected, recycled and/or disposed of. Effective July 1, 1994, 415 ILCS 5/22.28, bans white goods from landfill disposal, unless the "white good components" have been removed. White goods include "all discarded refrigerators, ranges, water heaters, freezers, air conditioners, humidifiers, and other similar domestic and commercial large appliances." White good components include: "any chloroflurocarbon (CFC) refrigerant gas; any electrical switch containing mercury; and any device that contains or may contain PCBs in a closed system, such as a dielectric fluid for a capacitor, ballast or other component." An appliance which has had its components removed is considered "clean" and may then be recycled or landfilled. "Clean" appliances that are not recycled may be landfilled, but only in a landfill that participates in the Industrial Materials Exchange Service. The landfill operator must list the white goods with the Industrial Materials Exchange Service. If their are no parties interested in acquiring the white goods, the landfill operator may landfill them.

The Plan recommends that the CCSWMD keep abreast of legislation pertaining to white goods and pass on pertinent information to all Christian County municipalities.

Assist Commercial Businesses With Implementation and/or Expansion of In-house Recycling Programs:

Because the commercial, institutional and industrial sectors typically generate large volumes of recyclable materials, their active participation in in-house recycling programs can have a very positive effect on the County's recycling program. The role of the commercial, institutional and industrial entities is to administer programs with technical and possibly financial assistance provided by the CCSWMD. Technical assistance offered by the CCSWMD staff may include solid waste counseling and waste audits, workshops and seminars, and assistance with implementing model recycling programs. These activities are detailed in Appendix F. Appendix K provides a list of general factors to be considered for implementing a commercial, institutional, or industrial recycling program.

Support the Expansion of Existing In-county Recyclable Material Processing Facilities:

Through conversations held during the development of this Phase II report, local recyclable material processors have all expressed interest in expanding their businesses. All are aware that as deadlines to meet State recycling mandates approach and more and more materials are banned from landfill disposal, demand for their recycling services should increase. Expansions they look to make include expanding service areas, increasing the number of services offered, increasing facility size, upgrading and/or adding equipment, etc. See Appendix L for additional information.

Support the In-county Landfill if They Choose to Develop a Transfer Station/Mixed Municipal Waste MRF:

The in-county landfill facility has applied for and received an IEPA permit to construct a mixed waste material recovery facility on their property. This permit is for the operation of a transfer station, and authorizes the facility to separate recyclables from mixed waste. If they should decide to pursue this option, the Plan recommends that the County lend its support if doing so is in the best interest of the County and its citizens.

DESCRIPTION OF RECYCLING/COMPOSTING COMPONENTS YEARS 5-10

The Plan recommends that all programs included in Years 2-4 be evaluated with the assistance of the CCSWMD at the end of Year 4. Based on the outcome of the evaluations, programs may either continue without adjustments or be modified as deemed necessary.

The Plan calls for the following programs and activities to be addressed in Years 5-10.

Support the Implementation of Traditional Residential Curbside Recycling Programs in Selected Communities:	It is assumed that the County's role in the implementation of curbside recycling will be limited to that of providing financial and technical assistance. The County will provide technical assistance in the areas of collection and processing of recyclable materials but will not be responsible for those services. The CCSWMD will help to promote the program through its ongoing promotional campaign. Details concerning curbside recycling programs are found in Appendices F, I, and J.
Expand County Drop-off Program:	The County should monitor and evaluate the performance of the initial County-wide drop-off program. If desired results have been achieved, the program could be expanded to include other interested communities.
Support the Increased Collection and Export of Landscape Waste to Out-of-county Compost or Land Application Facilities:	The feasibility of exporting landscape waste may increase in the event that local or state regulations are enacted which ban the burning of landscape waste. The Plan recommends that the CCSWMD monitor such legislation and inform municipalities of any significant developments. If in the best interest of the County, the CCSWMD should support a private business wishing to offer landscape waste collection service.

DESCRIPTION OF RECYCLING/COMPOSTING COMPONENTS YEARS 11-20

The Plan recommends that all the programs that have been in operation during Years 1 through 10 be evaluated. Programs will either continue without change or be modified, depending on the outcome of the evaluations.

The Plan recommends that implementation of the following activities be supported by the County. The role of the County is to offer technical and/or financial support. It is the role of individual municipalities or private contractors to administer and operate the activities and programs.

Support the Implementation of Drop-off Sites Throughout the County for the Collection of Landscape Waste:	The implementation of such drop-off sites will become more feasible if regulations are enacted that ban the burning of landscape waste in Christian County.
Support the Expansion of C/D Debris Recycling Activities:	The need for increased recycling of non-asphalt C/D debris such as concrete, brick and wood may increase if legislation is enacted that bans the landfilling and/or incineration of non asphalt C/D debris in Illinois.
Support the Export of C/D Debris to Out-of-county C/D Debris Recycling Facility:	In the event that there is an increase in the collection of C/D debris for the purpose of recycling, the County should support the export of such debris to an out-of-county processing facility.
Support the Development of an In-county Landscape Waste Compost Facility:	The feasibility of developing such a facility will increase if local or state regulations are adopted that ban the burning of landscape waste in Christian County communities. Such bans will likely lead to the implementation of landscape waste collection programs. An in-county landscape waste compost facility would provide a local option for processing the leaves and grass collected. Although preference would be given to having this facility being owned and operated by the private sector, it is possible that such a facility could be owned and operated by the County or a municipality within the County.

ESTIMATED MUNICIPAL WASTE RECYCLING PERCENTAGES

It is estimated that the recycling/composting programs and facilities outlined for Years 1, 2-4, 5-10, and 11-20 of the recommended waste management plan will produce the following percentages of municipal waste recycling:

Current percentage		12.5%
Estimated percentage at end of Year 1		
County drop-off program	+ 3%	15.5%
Estimated percentage at end of Years 2-4		
single item recycling drives	+ 2%	
mobile drop-off program	+ 1%	
community clean-up programs	+ 2%	
commercial recycling programs	+ 7%	27.5%
Estimated percentage at end of Years 5-10		
residential curbside programs	+ 2%	
expand County drop-off program	+ 1%	
increased collection of landscape waste	+ 1%	31.5%
Estimated percentage at end of Years 11-20		
landscape waste drop-off collection	+ 3%	
expand non-asphalt C/D debris recycling	+1%	34.5%

These percentages are rough estimates only and are intended to be used only as an approximation of the relative recycling percentages that may be obtained by the various programs.

DESCRIPTION OF WASTE-TO-ENERGY INCINERATION COMPONENTS YEAR 1

It is assumed that through the first year of implementation, all existing WTE incineration activities will continue at their current levels of operation. In 1992, only 60 tons of Christian County municipal waste was managed through WTE incineration. This tonnage represents TDF that was exported to Macon County for incineration. It is assumed that the following activities will continue during Year 1.

The Operation of Existing Small Scale WTE Incineration Facilities is Expected to Continue:

At the time the Phase I Report was written, there were no waste-to-energy incineration facilities operating in Christian County. In late 1993, one such facility became operational. Permitted by the IEPA, the new burn unit is located within a local manufacturing complex. During the winter months, the unit is expected to burn approximately 30 tons of wood scrap per month. Utilizing the burn unit, the manufacturer is able to heat 24,000 square feet of building space.

There currently are no other permitted waste-to-energy incineration facilities operating in the commercial, institutional, or industrial sectors.

The Export of Used Tires to Out-of-county WTE Incineration Facilities is Expected to Continue:

As was true at the time Phase I was written, a small amount of used tires continue to be exported to Macon County where they are incinerated in ADM's cogeneration plant for the production of steam and electricity. Particularly in light of the upcoming ban of tires from Illinois landfills, effective July 1, 1994, this activity is expected to continue.

DESCRIPTION OF WASTE-TO-ENERGY INCINERATION COMPONENTS YEARS 2-4

At the beginning of Year 2, it is recommended that the CCSWMD evaluate the WTE incineration activities that were listed in Year 1. If the results of the evaluations are favorable, activities should continue. If the results are less than favorable, some adjustments may need to be made.

Monitor the Operation and/or Expansion of Approved Small Scale WTE Incineration Facilities:

The County's role in this instance is to conduct surveys of Christian County businesses to (1) identify the existence of small scale WTE incinerators, and (2) identify businesses that could potentially benefit from the addition of a WTE incinerator.

Pursue Closure of Unpermitted Small Scale WTE Incinerators:

The County should pursue the closure of small scale WTE incinerators that are operating without the proper state permits.

Support the Expansion of Used Tire Collection for Export to Out-of-County WTE Incineration Facilities:

When economically feasible and when end markets exist, it is recommended that used tires be reused or recycled. As long as there are only a limited number of end markets for the recycling/reuse of used tires, as is the current situation, utilizing them in the form of tire derived fuel should remain an option. The ban of whole tires from Illinois landfills will result in an increase of discarded tires that must be managed in some other manner. Until enough new recycling/reuse markets are developed to handle the increase in volume, the Plan recommends that the CCSWMD support increased collection of used tires for export to out-of-county WTE incineration facilities.

Monitor the Future Development and/or Expansion of Out-of-county WTE Incineration Facilities and Investigate the Feasibility of Exporting Christian County Waste to Such Facilities:

Studies are currently being conducted to determine the feasibility of developing WTE incineration facilities in certain Central Illinois counties. Some of these proposed facilities may include Christian County in their service area. If such facilities become operational, Christian County should investigate the feasibility of exporting waste to them.

DESCRIPTION OF WASTE-TO-ENERGY INCINERATION COMPONENTS YEARS 5-10 AND 11-20

The Plan does not list any specific programs or facilities to be added during the years 5-10 or 11-20. The WTE incineration activities should be evaluated as time progresses, and additional programs considered as the Plan is updated at the required five year intervals.

DESCRIPTION OF VOLUME REDUCTION INCINERATION COMPONENTS YEAR 1

Current volume reduction incineration activities include the open burning of landscape waste (mainly leaf burning), the burning of C/D debris, the incineration of waste in burn barrels, and the burning of commercial/institutional waste in small scale incinerators. It is assumed that the following activities will continue at current levels.

The Current Level of Landscape Waste Volume Reduction Incineration is Expected to Continue:

The Current Level of C/D Debris Volume Reduction Incineration is Expected to Continue:

The Current Level of Burn Barrel Usage is Expected to Continue:

The Operation of Small Scale Volume Reduction Incineration Facilities is Expected to Continue:

DESCRIPTION OF VOLUME REDUCTION INCINERATION COMPONENTS YEARS 2-4

The Plan recommends that the volume reduction incineration activities conducted through the first year of implementation be evaluated. Based on these evaluations, the activities may or may not require modification.

It is also recommended that the CCSWMD keep abreast of State legislation pertaining to volume reduction incineration. State legislation that would have imposed a statewide ban on the burning of leaves in counties with over 100,000 population was recently vetoed by the Governor. The potential exists for this legislation to be re-introduced and expanded to ban the burning of leaves in less populated counties as well. The CCSWMD should inform all Christian County municipalities in the event that legislation is proposed or enacted that affects the County.

The Plan recommends the following activities be completed during Years 2-4 of implementation:

Compile Information Pertaining to Local Ordinances that Regulate Volume Reduction Incineration:

The staff of the CCSWMD should compile a file of the various Christian County municipality ordinances pertaining to volume reduction incineration, including the burning of landscape waste and C/D debris and the burning of waste in burn barrels.

Monitor the Development and/or Expansion of Small Scale Volume Reduction Incineration Facilities:

The CCSWMD staff should monitor the development and/or expansion of small scale volume reduction incinerators in the commercial sector. The amount of waste managed through such facilities will be helpful as the CCSWMD staff compiles waste generation and management information.

The staff should also verify that proper permits have been issued for new and/or expanding incinerators. Verification can be provided by IEPA and/or incinerator operators.

Pursue Closure of Unpermitted Small Scale Volume Reduction Incineration Facilities:

The County should pursue closure of facilities operating without the proper State permits. IEPA should be contacted concerning such matters.

DESCRIPTION OF VOLUME REDUCTION INCINERATION COMPONENTS YEARS 5-10 AND 11-20

The Plan does not call for any specific volume reduction activities or facilities to be added during Years 5-10 or 11-20. The overall volume reduction activities should be evaluated as time progresses and additional activities considered as the Plan is updated at the required five year intervals.

DESCRIPTION OF LANDFILL DISPOSAL COMPONENTS
YEAR 1

According to the Phase I Needs Assessment, 20,463 tons of Christian County MW was disposed of in landfills in 1992. Of this total, 59% was disposed of in the landfill located in Christian County and 41% was exported for disposal in out-of-county landfills. The Plan recommends that the CCSWMD continue to keep records concerning the amount of Christian County MW landfilled in-county and out-of-county. It is assumed that the following activities will continue:

The Current Level of Usage of the In-county Landfill For the Disposal of Christian County Waste is Expected to Continue:

The Current Level of Export of Christian County Waste to Out-of-county Landfills is Expected to Continue:

DESCRIPTION OF LANDFILL DISPOSAL COMPONENTS YEARS 2-4

It is recommended that the CCSWMD collect data concerning the amount of Christian County MW disposed of in the in-county and out-of-county landfills during Year 1.

During Years 2-4, the Plan recommends that the County consider the following activity:

Support an Expansion of the Existing In-county Transfer Station:	If the private owner/operator desires to investigate the feasibility of expanding the in-county transfer station, the County should cooperate by providing input for the feasibility study. If found to be feasible, the expansion should be eligible for consideration in the County's grant program.

DESCRIPTION OF LANDFILL DISPOSAL COMPONENTS YEARS 5-10

The Plan does not list any specific programs or facilities to be developed during the Years 5-10. The overall landfill disposal components should be evaluated as time progresses and additional programs considered as the Plan is updated at the required five year intervals.

DESCRIPTION OF LANDFILL DISPOSAL COMPONENTS YEARS 11-20

The County should monitor the remaining capacities of all in-county and out-of-county landfills that accept Christian County waste for disposal. The Plan recommends that during Years 11-20, the County should consider the following:

Support an Expansion of the In-county Landfill Beyond Its Current Permitted Capacity if Such an Expansion is in the Best Interest of Christian County and Its Citizens:

If the in-county landfill operator submits an application for the expansion of the landfill facility, the County, as required by the IEPA, shall hold a public siting hearing to address the request for expansion. The County must grant local siting approval before the application can be sent on to the IEPA for approval. If local siting is denied, the applicant has the option of appealing to the Pollution Control Board.

The Plan recommends that the County support a proposed expansion if such an expansion is determined by the Christian County Board to be in the best interest of Christian County and its residents.

CHAPTER 6
IMPLEMENTATION OF THE WASTE MANAGEMENT PLAN

Following the formal adoption of the Phase II Waste Management Plan, the County will proceed into the Phase III implementation stage. Although the Solid Waste Planning and Recycling Act permits a time delay of up to one year from the date of adoption to the start of implementation, Christian County has made the decision to begin implementation immediately upon adoption. The County has, in fact, already begun an active implementation program through the establishment of the Christian County Solid Waste Management Department and the hiring of its staff.

The 20 year Plan detailed in this Phase II report will provide the basic guidelines for Plan implementation. Progress of the programs and facilities will be monitored throughout the implementation period and modifications will be made as required. The Solid Waste Planning and Recycling Act requires that the Plan be reviewed and updated every five years. The first review will be performed in 1999. Any revisions shall be submitted to the IEPA for review and comment.

GOVERNMENTAL ENTITY RESPONSIBLE FOR IMPLEMENTING THE PLAN

The Christian County Board established the Christian County Solid Waste Management Department (CCSWMD) on Oct. 1, 1991. This Department has been designated by the County as the governmental entity that will be responsible for implementing the Plan. The current staff includes a director, a solid waste planner, two inspectors, and a secretary. An Assistant State's Attorney is also assigned part-time to the CCSWMD.

As called for in the Solid Waste Planning and Recycling Act, the Plan's recycling program shall provide for the designation of a recycling coordinator to administer the program. The Director of the CCSWMD serves as the recycling coordinator.

In addition to solid waste management activities, the CCSWMD also performs non-hazardous solid waste enforcement activities through a Delegation Agreement with the IEPA.

FUNDING SOURCES

There are several sources available to Christian County governmental organizations, not-for-profit organizations, and for-profit businesses which might be used to help fund the implementation activities of the Plan.

- The County is permitted by State statute to assess a landfill tipping fee surcharge of $1.27/ton for waste deposited in the in-county landfill. This assessment generated approximately $354,000 of revenue into the County's solid waste management fund in 1993. The revenue from this source is expected to continue at this level, or increase, over the 20 year planning period. The only restriction on the County's use of this fund is that the money must be allocated to solid waste management activities. The Assistant State's Attorney and the County Board decide how the money may be spent.

- IEPA is currently in the process of drafting the rules for a Phase III Implementation Grants program. These grants are expected to fund up to 70% of the project costs, with a $500,000 limit, for further planning activities leading to the development of recycling facilities, transfer stations, landfills, and incinerators. Priority will be given to projects designed to produce significant increases in waste reduction and recycling. Design work, engineering studies, soil sampling, and other tasks will be eligible. Purchase of land, equipment, or large capital items will not be eligible.

- The Illinois Department of Energy and Natural Resources (ENR), through its Office of Recycling and Waste Reduction (ORWR), has established an array of programs to provide funding to qualified applicants for projects directly related to the goals of the Solid Waste Planning and Recycling Act.

  The **Recycling Market Development Program** encourages private sector investment in the development, manufacture, and marketing of products containing recycled materials. Loans and grants require a 10 to 50 percent match, depending on total project costs. "In-kind" matches are limited. The maximum loan and grant amounts available are contingent upon program funding levels. Eligible projects are the purchase or conversion of production equipment to manufacture products from recycled materials; promotion, advertising, and marketing of recycled products; and procurement and end-testing of recycled products. Applicants may be governmental entities, not-for-profit organizations, or for-profit businesses. Eligible expenditures are capital equipment, certain promotional expenses, and costs to procure and test recycled products.

  The **Illinois Recycling Grant Program's** goal is to increase the quantity of materials recycled in Illinois and the self-sufficiency of the recycling industry. Eligible projects include the establishment of new recycling collection programs or expansions of existing collection programs. Supportable categories include residential and commercial/institutional recycling. Applicants may be governmental, not-for-profit organizations, or for-profit businesses. Grant amounts will vary based on the solicitation, generally up to a $50,000 maximum. Grants require a match of 30 to 50 percent of total project costs.

  The **Technologies and Practice Demonstration Program** has been established to support the development and application of technologies and practices that will minimize the land disposal of non-hazardous solid waste. Eligible projects are those that develop or demonstrate technology to process marketable materials from residential or commercial solid waste, recover energy from solid waste, and/or minimize the environmental impacts of solid waste disposal practices. Applicants may be governmental and not-for-profit organizations, and for-profit businesses. For-profit applicants are generally limited to loans. Loans and grants require a 10 to 50 percent match, depending upon total project costs. "In-kind" matches are limited. Preference is given to proposals requesting primarily capital equipment.

The **Illinois Used Tire Program** has been established to identify innovative and cost-effective alternatives to stockpiling and/or landfilling scrap tires. Eligible projects are those that demonstrate technologies or practices that process marketable materials from used and waste tires or projects that use tire-derived materials in product manufacture or energy production. Grants are available in limited and special circumstances. Loans require a 10 to 50 percent match, depending upon total project costs. "In-kind" matches are limited. The maximum loan amounts available are contingent upon program funding levels.

The **School Education Program's** goal is to reinforce community waste reduction programs by teaching students good conservation habits through classroom lessons and implementation of in-school waste reduction programs. Projects are eligible that assist schools in starting and expanding in-school waste reduction programs. Applicants include Regional Superintendents of Schools who in turn provide funding to schools. There is no matching requirement for this grant program. Amounts available are contingent upon program funding levels. Eligible expenditures include capital expenditures such as large storage bins for recyclable materials and other costs directly associated with promoting school waste reduction programs.

- The Farmers Home Administration (FmHA) offers grants for solid waste management. This program is offered on a national basis and is very broad-based in terms of the types of programs that are eligible.

- Christian County provides a grant program through its Solid Waste Management Department which provides funding to local government and not-for-profit organizations and to for-profit private sector businesses for solid waste management activities.

The County funds this grant program from monies received from the landfill tipping fee surcharge. Grants are awarded on an annual basis.

SOURCES OF TECHNICAL SUPPORT AVAILABLE

The reference material included in the Appendix of this report will be available to the CCSWMD staff for use in developing and implementing the programs and facilities contained in the Plan.

Appendix N, Solid Waste Reference Sources, lists additional organizations that may be consulted.

INCENTIVES AND/OR PENALTIES TO BE CONSIDERED FOR RECYCLING PROGRAMS

Incentives and/or penalties may be used to encourage participation in recycling programs. In deciding whether or not incentives and/or penalties should be used, the County should consider two broad categories - monetary and non-monetary. Following are examples of monetary incentives:

- where an awards program has been established to recognize outstanding achievements in recycling, cash awards may be given
- where residents pay for curbside collection of recyclables, those participating at a pre-determined level may receive an award in the form of a credit on their recycling bill
- where residents pay for garbage collection but collection of recyclables is "free", those participating at a pre-determined level may receive an award in the form of a credit on their garbage bill

At this time, the County has made no decisions regarding the imposition of monetary incentives or penalties.

The most common example of a non-monetary incentive is found in the form of an awards program in which individuals are publicly recognized for their participation in recycling activities. Establishment of such a program is called for in Years 2-4 of Plan implementation.

In addition to the above mentioned methods, there are other means of providing incentives and/or penalties. For example, a volume based refuse collection fee structure may serve as both an incentive and a penalty. Residents who change their purchasing habits and increase their recycling activities will reduce the amount of waste they dispose of and will therefore see a decrease in their garbage collection bill. Those who do not reduce the amount of waste they dispose of will see no cost savings and may even see an increase in their garbage collection bill. County support of a volume based refuse collection system is called for in Years 5-10 of Plan implementation.

Buy-back activities also offer an incentive or a penalty, depending on whether or not residents take advantage of what these operations offer. Buy-back facilities currently operating in Christian County pay individuals for items such as aluminum cans and scrap metal. In addition to recovering these traditional materials, a buy-back operation may target materials that are more challenging to collect and recycle, such as tires, batteries and white goods. Because of the collection, processing and/or disposal costs incurred by garbage haulers and buy-back operators when dealing with such items, more often than not, residents and businesses must pay an extra fee to get rid of them. To avoid this fee, some residents opt for illegally dumping the items, for which the County must pay to clean up. By offering to pay residents for such materials, illegal dumping is discouraged. Because of the substantial cost involved in handling these items, a typical buy-back operation could not afford to pay residents for them. If the County reimbursed the buy-back operators for the

amount they paid out for the purchase of tires, batteries, and appliances, the County would more than likely still realize a cost savings due to avoided illegal dump site remediation.

County and State grant programs serve as both incentives and penalties. Applicants who provide the grantor with requested information concerning waste generation and management methods are eligible for grant monies. Those who do not comply are not eligible to receive grant funds.

SITING AND PERMITTING CONSIDERATIONS

As new solid waste management facilities are developed or existing facilities are expanded during the Phase III implementation stage, issues involving siting and permitting will arise. Appendix O, Existing Requirements for Siting and Permitting Solid Waste Management Facilities, outlines the current requirements.

The Citizen Advisory Committee has recommended that a special committee be formed to review the current County and various municipal zoning rules as they pertain specifically to solid waste management facilities. This committee would work with the County and municipal zoning boards to develop a set of guidelines regarding siting criteria for solid waste management facilities. These guidelines would be provided to each zoning board in Christian County for their consideration, with the intent that some degree of consistency would be established throughout the County. Appendix P provides a listing of general factors to be considered when developing local siting criteria.

DEVELOPMENT OF A STANDARD FORMAT FOR GATHERING AND REPORTING WASTE GENERATION AND MANAGEMENT METHOD DATA

Currently, the IEPA collects information concerning county recycling activities through a survey sent to recycling centers throughout the State. Response to the survey is voluntary. In 1993, a bill was introduced in the Illinois General Assembly that, if passed, would have required mandatory reporting of recycling amounts to ENR through County Solid Waste Coordinators. The bill did not pass. If such a bill should be reintroduced and passed into law, the County shall comply. Until such requirements become legislation, it is recommended that the CCSWMD develop a standard procedure and format for gathering and reporting data on waste generation rates and a breakdown of how the waste is managed. Utilization of a standard reporting format will be extremely helpful to the CCSWMD staff as they document the County's MW recycling rate and prepare necessary reports for IEPA. Data gathered through use of a standard procedure will also be extremely helpful in developing and monitoring the programs called for in the 20 year Plan.

WASTE MANAGEMENT PROGRAM AND FACILITY COST ESTIMATE DATA

As previously noted in Chapter 4, the Christian County Waste Management Plan places a strong preference on private ownership/operation over governmental ownership/operation for providing collection, processing, marketing, and disposal services for managing the County's waste. As a result, the direct costs of waste management that will be incurred by Christian County will be limited primarily to three areas: (1) the cost to staff and operate the portion of the CCSWMD that deals with waste management; (2) the cost to start-up and operate the

county-wide drop-off recycling program; and (3) the cost to start-up and operate the proposed landscape waste compost facility. All other proposed waste management programs and facilities called for in the Plan will be implemented by the private sector and will be financed by direct charges by the private sector to users of their services.

Estimated Cost to Staff and Operate the Waste Management Duties of the CCSWMD

The staffing levels are expected to increase over the 20 year planning period as the number and intensity of waste management programs and facilities increases. Four staffing levels have been estimated for the following time periods:

Year 1:	1 full-time Director, 1 full-time solid waste planner, and 1 part-time secretary (20%)
Years 2-4:	1 full-time Director, 1 full-time solid waste planner, 1 summer intern (10 weeks), and 1 part-time secretary (40%)
Years 5-10:	1 full-time Director, 1 full-time solid waste planner, 1 full-time assistant planner, and 1 full-time secretary
Years 11-20:	1 full-time Director, 2 full-time solid waste planners, 1 full-time assistant planner, 1 full-time secretary, and 1 part-time secretary (25%)

Based on current base payroll rates, payroll fringe rates, insurance rates, and an estimated annual cost of $7,000 for office rent, office equipment, travel, training, telephones, and miscellaneous office supplies, the estimated annual cost (in 1994 dollars) to staff and operate the waste management duties of the CCSWMD are as follows:

Year 1:	$ 75,000/yr.
Years 2-4:	81,000/yr.
Years 5-10	113,000/yr.
Years 11-20	142,000 /yr.

Estimated Cost to Start-up and Operate the County-wide Drop-off Recycling Program

The Plan calls for the county-wide drop-off recycling program to be implemented during Year 1 of the 20 year planning period. However, the County is ahead of schedule since the drop-off program actually was started in May, 1994.

The initial estimate of the County's cost for the first year of the program, including the cost of purchasing the roll-off containers, the contractor's fee for pick-up and processing, the initial staffing and site operation cost, and the initial educational/promotional program cost was $96,824. The initial estimate of the County's cost for subsequent years of operation, including the contractor's fee for pick-up and processing and the continuing educational/promotional program was approximately $40,000 per year. These estimates are based on data submitted by the County in their application for the ENR Illinois Recycling Grant Program.

Cost Estimate to Start-up and Operate the Proposed Landscape Compost Facility

The Plan calls for the County to support the development of an in-county landscape waste compost facility during Years 11-20 of the Plan. Although preference would be given to having this facility being owned and operated by the private sector, it is possible that such a facility could be owned and operated by the County or a municipality within the County.

The following assumptions were used in planning for this facility:

Site requirements:

- 5-10 acres, including buffer zone
- electrical power and water not absolutely necessary, but very helpful
- building not absolutely necessary, but very helpful

Operating times:

- 35 weeks per year: mid-March through mid-November
- 8 AM - 3 PM, 5 days/week

Staff requirements:

- 1 full-time person to operate equipment and handle in-coming loads - assume 35 weeks/yr at direct payroll rate of $10/hr
- 1 part-time person needed to handle peak landscape waste seasons in spring and fall - assume 16 weeks/yr at direct payroll rate of $8/hr

The cost estimates (in 1994 dollars) for this facility are as follows:

One-time start-up costs:		
land	10 ac x $2,000/ac	$ 20,000
site preparation	lump sum	5,000
portable office	1 ea	2,000
		$ 27,000
Annual labor costs:		
full-time operator		
	35 wks/yr x 35 hrs/wk x $10/hr x 1.4 F&O	$ 17,150
part-time operator		
	16 wks/yr x 35 hrs/wk x $ 8/hr x 1.4 F&O	6,272
		$ 23,422

Equipment costs: (assume 10 year life)

windrow turner	1 ea x $50,000	$ 50,000
end loader	1 ea x 100,000	100,000
small tub grinder	1 ea x 60,000	60,000
chipper	1 ea x 30,000	30,000
shaker screen	1 ea x 10,000	10,000
misc. small tools	lump sum	1,000
		$251,000

$251,000 at 6% interest over a 10 year life equals an annual equipment expenditure of $33,500/year

HOUSEHOLD HAZARDOUS WASTE COLLECTION

In response to a growing awareness of the problems associated with improper disposal of household hazardous wastes, in 1988 the Illinois General Assembly gave IEPA legal and fiscal authority to conduct household hazardous waste collections throughout Illinois. Using funds from the Solid Waste Management Fund, IEPA co-sponsors the collections, which cost an average of $90,000.00 to $100,000.00 per collection event. These costs are paid by IEPA and include all contractor activities but do not include IEPA administrative expenses or costs incurred by local co-sponsors for promotions, traffic control, and volunteer assistance.

Viewed as a source reduction activity, the one-day events provide for the collection of products such as paints, paint remover, solvents, anti-freeze, insecticides, used motor oil, household cleaners, medications, pesticides, gasoline, kerosene, and other household hazardous wastes.

Once collected, wastes are directed by IEPA to the proper treatment or disposal facilities. In accordance with State Policy, IEPA strongly prefers that the wastes be reused, incinerated, or treated in such a manner to render the waste non-hazardous. Landfilling the waste, though the agency's least preferred alternative, is considered acceptable only when other management methods are unavailable.

Christian County residents participated in an IEPA sponsored household hazardous waste collection day in October of 1993. According to the Cooperative Extension Service, event co-sponsor, more than 500 residents participated, representing a little more than 4% of the County's households. The cost incurred by the Cooperative Extension Service for co-sponsoring the event was approximately $500.00, most of which was spent on event promotions. The Cooperative Extension Service and Christian County Solid Waste Management Department were joined by other community volunteers in assisting IEPA with staffing the collection site.

In the months following the October, 1993 collection day, the Cooperative Extension Service office has received numerous calls from the public requesting a second collection day. These requests, along with the success of the first collection day, have prompted the Cooperative Extension Service to begin researching the feasibility of applying for a second IEPA sponsored collection event. According to IEPA, Christian County may be eligible for a repeat collection day. If a repeat collection day is implemented in Christian County, it is assumed that the staff of the CCSWMD office would assist as they did in the first collection.

CHAPTER 7
REVIEW OF PUBLIC PARTICIPATION ACTIVITIES

The public has been kept apprised of the development of the Solid Waste Management Plan. Three public meetings were held during the course of the development of the Phase I Needs Assessment. Two public meetings and one public hearing were conducted during the development of the Phase II report. Discussion at these meetings included introduction of members of the Environmental Committee and County Board members, Citizen Advisory Committee members, the staff of the Christian County Solid Waste Management Department, and the Consultant's staff.

During the public meetings, information was presented regarding the development of Phase I and Phase II. Major points of discussion included the following:

- State mandated recycling goals and other highlights of the State Statutes
- the State's solid waste management hierarchy
- data collection methods used to prepare the Phase I Needs Assessment
- a summary of the Phase I Needs Assessment Report
- potential waste management programs the County could implement over the next 20 years
- evaluation of potential programs based on cost, contribution toward State mandates, and public acceptance

At each meeting, public participation was strongly encouraged and ample time was given for those attending to offer their comments, questions and suggestions. Citizens were also encouraged to call the CCSWMD staff or the staff of Homer L. Chastain with questions they may have had after attending a meeting.

Information regarding the development of the Plan, as well as the announcement of public meeting dates, has been delivered to the public via the media. The CCSWMD staff has participated in live radio interviews in the days prior to each public meeting. If substantial public comments were made during a meeting, a follow-up interview was conducted. Interviews have also been given in the period between meetings.

Local and State newspapers have printed announcements of upcoming meetings and have also printed interviews given by the CCSWMD staff. Reporters have attended meetings and written articles covering the highlights.

A series of articles entitled "Lifting the Lid" were sent to all area newspapers. The articles covered such topics as the law behind the mandated recycling goals, the State's solid waste management hierarchy, potential facilities and programs to be implemented during the 20 year planning period, and other topics.

The Christian County Cooperative Extension Service publishes and distributes a quarterly newsletter. The newsletter is sent to approximately 1,000 residents who have expressed an interest in recycling and other solid waste issues. The newsletter has featured several articles concerning the development of the Plan.

Speeches have been given to local civic groups to keep them abreast of the progress of the Plan's development. At each of these events, public input was solicited. The staff of the CCSWMD, either working alone or in cooperation with other organizations, has presented area school children with educational programs and special events focusing on solid waste issues.

Informational presentations have also been given by the Consultant to many of the municipalities in the County. Information presented included discussion of the general provisions of the Solid Waste Planning and Recycling Act along with a description of the steps that the County would follow in order to comply with the provisions of the Act.

The Citizen Advisory Committee was formed in early 1992. The Environmental Committee of the County Board made the decision to select an overall representation of the County. Citizens from a variety of backgrounds were contacted. Representatives from the following areas were selected: the County Board, City governments, business and industry, labor, the solid waste industry, civic organizations, education, finance and legal. Citizens and environmentalists were also chosen to serve on the committee. For a complete listing of committee members, see Appendix A.

The Citizen Advisory Committee met once a quarter during the development of Phase I. These meetings served to educate the members concerning the features and importance of integrated solid waste management planning. At the beginning of Phase II development, the committee decided to meet on the second Thursday of each month. Approximately one week prior to each meeting, an agenda, supplemental educational materials, and minutes from the previous month's meeting are sent to each committee member. These monthly meetings are expected to continue through the adoption of Phase II.

Upon County Board adoption of the Waste Management Plan, the Citizen Advisory Committee will continue to be involved in the implementation of the Plan.

CITIZEN ADVISORY COMMITTEE MEMBERS

Richard Alde	Pana	City Government
Diane Alwardt	Taylorville	Environment
Ruth Baldock	Pana	Education
Larry Bilyeu	Moweaqua	Agriculture
David Breeze	Taylorville	Finance
Carrie Cummins	Pana	Solid Waste Industry
Charles DeClerck	Taylorville	County Board
Jack Erisman	Pana	Agriculture
Bill Farr	Pana	Legal
John Ferrill	Morrisonville	Village Government
Gene Funk	Pana	Solid Waste Industry
Tom Funk	Pana	Solid Waste Industry
Harold Garner	Assumption	Citizen
Vickie Henley	Tovey	Citizen
John Howard	Taylorville	Solid Waste Industry
Neal Lebeter	Taylorville	Solid Waste Industry
Judy Lees	Pana	Citizen
John Lennon	Morrisonville	News Media
Retha Lumb	Taylorville	Citizen
Mike Marsaglia	Taylorville	News Media
Frank Mathon	Taylorville	City Government
Bob Mathon	Taylorville	Labor Council
Jim Nelson	Taylorville	Solid Waste Industry
Jim Niksch	Pana	Finance
Jerry Petty	Taylorville	Solid Waste Industry
Glenn Pusch	Taylorville	Industry
Rodger Ryan	Taylorville	County Board
Roy Shoemaker	Taylorville	Education
Linda Smith	Taylorville	Civic Organization
Robert Simpson, Sr.	Pana	County Board
Tom Strawn	Taylorville	Labor
Mike Zeitler	Taylorville	City Government

APPENDIX A

CHAPTER 6
DESCRIPTION OF EXISTING SOLID WASTE MANAGEMENT SYSTEM

Surveys were made of all existing solid waste collection, processing, and disposal systems servicing Christian County. Data gathered provides a description of programs and facilities which manage Christian County waste from the point of generation to its' final destination. Listed below are brief descriptions of each of the facilities and programs. Appendix C is a list of the facilities and programs that are open to the public, along with addresses and phone numbers.

Recycling/Reuse Programs

In-house collection program and public drop-off site operated by students.

KEMMERER VILLAGE, Assumption: A Presbyterian Home for Children, Kemmerer Village is also home to Kemmerer Earthcare, a recycling collection program staffed and operated by Village residents. In operation since July of 1991, the site consists of an indoor drop-off, sorting and storage area.

Effective November 1, 1992, recycling was made mandatory campus-wide. Materials are collected from administration buildings, school buildings, and all residential units. The drop-off is also open to members of nearby Presbyterian Churches and their friends, as well as non-residential staff wishing to bring recyclables from home.

Items are sorted, stored in a warehouse, then delivered to area processors. Recyclables accepted include: newspapers, corrugated cardboard, magazines, office paper, # 1 and #2 plastics, aluminum cans, tin and bi-metal cans, and glass containers. Of the approximately 7.75 tons of materials collected through this program annually, it is estimated that 7.70 tons (99%) comes from Christian County.

The following data represents an estimated breakdown of Christian County recyclables accepted through this program:

Residential	5.4 tpy
Commercial/Institutional	2.3 tpy
	7.7 tpy

Village drop-off site operated by service club volunteers.

DROP-OFF PROGRAM, Morrisonville: Since 1990, volunteers from the Kiwanis and Key Club have staffed and operated a drop-off site in the Village of Morrisonville. The site consists of a semi-trailer loaded with boxes for sorting the recyclables. Area residents can drop off their materials every Saturday from 9:00 to 11:00 am.

Once full, the trailer is taken to a processing facility. Items currently being accepted are newspapers and clear glass. Approximately 28 tons of recyclables are collected annually. It is estimated that 100% of the recyclables come from Christian County residents.

Residential	28 tpy

Buy-back program operated by beverage distributor.

SASSATELLI DISTRIBUTING, Taylorville: Sassatelli's has been buying aluminum cans from the public since 1981. Cans are flattened and blown into a trailer, which when full is delivered to an end market. Approximately 77 tons of cans are purchased annually from Christian County residents and businesses.

The following data represents an estimated breakdown of cans accepted from Christian County:

Residential	70 tpy
Commercial/Institutional	7 tpy
	77 tpy

Curbside recycling program provided by private hauler.

CURBSIDE PROGRAM, Pana: The city of Pana has been participating in a curbside recycling program since March of 1990. Tom's Sanitation provides the service free of charge to anyone subscribing to their garbage service. Non-customers wishing to participate in the curbside program are charged a small fee. Tom's will also provide 5 gallon buckets, free of charge, to those needing storage containers.

Tom's provides curbside recycling service to 187 households, approximately 7% of the total number of households in Pana. Pick-up of recyclables is provided once a month. Items accepted include aluminum cans, glass containers, newspapers, and corrugated cardboard. Approximately 33 tons of recyclables are collected through this program annually, all of which are processed at U-Dump-It.

Residential 33 tpy

Community drop-off site managed by local citizen's environmental group.

CHRISTIAN COUNTY RECYCLING COMMITTEE - WAL-MART SITE, Taylorville: Open since August, 1990, the Wal-Mart site is operated by the Christian County Recycling Committee. The site consists of 2 semi-trailers provided by Midstate Salvage and Recycling. Recyclables dropped off by local residents are sorted by the on-site staff and stored in the trailers. Once full, the trailers are taken to Midstate, where the recyclables are processed and marketed. Recyclables accepted include: aluminum cans and foil, steel food cans, clear and brown glass, #1 & #2 plastic containers, 6-pack rings, newspapers, computer paper, corrugated cardboard, and scrap copper, lead, brass, and aluminum.

The site is open Monday, Wednesday, Friday, and Saturday from 8:00 am to 1:00 pm. The site is staffed by one paid employee and volunteers from the Recycling Committee and the community. As needed, citizens working under the Community Service Program are appointed by the Christian County Probation Office to work at the site.

Approximately 73 tons of recyclables are collected at this site annually. Of the 1,000 households currently participating, 95% are from Christian County. Therefore, 69 tons of recyclables are being collected from Christian County residents, with another 4 tons coming from out-of-county residents.

Residential 69 tpy

Village operates drop-off site.

DROP-OFF PROGRAM, Village of Stonington: Located at the Stonington Village Garage, the program began January 1, 1993 and is operated by Village employees. Recyclables are deposited into five dumpsters, which when full, are transported to Midstate Recycling. Items accepted include: aluminum cans and foil, steel cans, clear and brown glass, #1 and #2 plastic containers, plastic 6-pack rings, and newspapers.

Open to County residents, the site operates unstaffed Monday through Friday from 8:00 am to 4:00 pm. In addition, the site is open and staffed the first Saturday of every month from 8:00 am to 12:00 noon.

Recycling/reuse programs conducted in the commercial/ institutional and industrial sectors.

BUSINESSES WITH IN-HOUSE RECYCLING AND/OR REUSE PROGRAMS: Several Christian County businesses have implemented their own in-house recycling and/or reuse programs. Typically, such programs are implemented in businesses where large volumes of recyclable/reusable materials are generated.

By recycling or reusing these materials, businesses not only make a positive environmental impact, they also avoid the cost of otherwise having to dispose of these materials in a landfill. In addition, because of the large volume of recyclables collected, most businesses get paid for their materials by shipping truckloads directly to an end market, such as a paper mill or sheet metal manufacturer. Those participating in reuse programs don't typically get paid for their materials, but they are avoiding disposal costs while making a positive environmental contribution.

Approximately 5,343 tons of materials are recycled or reused through these in-house programs annually. Materials collected include: corrugated cardboard, newsprint, office paper, print shop paper, scrap metals, grain spillage, sawdust, and wood scraps.

Commercial/Institutional	2,101 tpy
Industrial	3,242 tpy

Clean-up day programs sponsored by various municipalities.

MUNICIPAL CLEAN-UP DAY PROGRAMS: Through questionnaires and personal visits, it was discovered that all but two of the thirteen municipalities contacted participate in some form of annual "clean-up day." The two not currently participating, Morrisonville and Mt. Auburn, are both interested in starting programs.

Though the programs are all similar in nature, they vary in the way the materials are collected and managed. Some municipalities provide curbside or alley pick-up, while others provide a drop-off site where residents deposit their materials. In all instances, the service is free of charge to residents. Labor and hauling is either paid for by the municipality or donated by local organizations.

Approximately 250 tpy of waste is recycled through clean-up day programs.

Materials collected on clean-up days include building materials, scrap metal, furniture, appliances, tools and other household items. Five of the municipalities separate out recyclables, mainly white goods (appliances) and scrap metal. Approximately 250 tons of Christian County materials are recycled annually through clean-up days. The remaining communities haul all collected materials directly to a landfill.

Though recycling is encouraged, even those municipalities not separating out the recyclables are providing a valuable service to their residents. Clean-up days provide for the recycling or landfilling of materials that might otherwise create eyesores in yards and alleys. And hopefully those tempted to illegally dump materials along County roads will opt for the convenience of a free collection service.

In some communities, citizens are encouraged to "scavenge" items left at the curb during clean-up days. This legal scavenging activity encourages reuse of materials.

Phase II will address methods to increase the recycling and reuse potential of these "clean-up day" programs.

Residential 250 tpy

City sponsored drop-off site for general household waste, landscape waste, and recyclables.

CITY OF TAYLORVILLE DROP-OFF SITE: The City of Taylorville operates a drop-off site where city residents can bring their household garbage, recyclables, and grass clippings.

Garbage is deposited in two 20 yard roll-off containers. Both roll-offs are taken to the landfill an average of three to four times per week. Approximately 250 residents use the site. Though the service is offered to city residents exclusively, it is assumed that the site is used by County residents as well. There is no charge to those using the service. Site operations are paid for through the City garbage tax fund.

Recyclables accepted include aluminum cans, plastics, and glass containers. Recyclables are taken either to the Wal-Mart drop-off site or directly to Midstate Salvage and Recycling. The quantity of materials collected at the City site are reflected in Midstate's totals.

In order to deposit grass clippings at the site, residents must affix a landscape waste tag to each bag. The tags may be purchased at the City Clerk's office. Residents are responsible for emptying the bags into the collection area. The accumulated clippings are then taken to Lake Taylorville where they are either land applied or incinerated. The quantity of clippings is reflected in the Lake Taylorville Compost Site totals.

The roll-off containers and recycling containers are open to the public from 7:00 to 12:00, Monday through Friday. Grass clippings may be deposited from 7:00 to 4:00, Monday through Friday.

City offers free wood chipping service.

In addition to operating the drop-off site, the City also offers a free wood chipping service to all City residents. The City is divided into four quadrants. The City wood chipping crew works one week per month in each quadrant. Residents place materials to be chipped at the curb or alley.

A portion of the wood chips are taken to Lake Taylorville where they are burned. The remainder of the chips are used as mulch. The mulch is used by Keep Taylorville Beautiful for City beautification projects and by the Taylorville Golf Course. Approximately 25 tons of wood chips are used as mulch annually.

Recycled asphalt paving programs.

ASPHALT PAVING RECYCLING PROGRAMS: The Christian County Highway Department and the Illinois Division of Highways both have active programs for the recycling of asphalt paving material. Under these programs, asphalt material is milled off of existing pavement surfaces and recycled as either aggregate for new "hot mix" asphalt or as aggregate for use in pavement shoulder construction.

County Highway Department recycles 2,500 tpy of asphalt and Ill. Dept. of Transportation recycles 190 tpy in Christian County.

In 1992 the Christian County Highway Department recycled 2,500 tons of milled asphalt on a 12.5 mile section of County Highway No. 1. They have plans for 1993 and 1994 which are estimated to recycle approximately 2,500 tons/year on County Highway No. 12.

Over the past three years, the Illinois Department of Transportation has averaged 190 tons/year of asphalt recycling on state highway projects in Christian County.

There may be other projects in which private road building contractors are recycling milled asphalt. However, obtaining data on these other projects is very difficult, and for this report, only the quantities of

asphalt recycling documented by the County Highway Department and the Illinois Department of Transportation are being reported.

Construction & Demolition Debris	2,690 tpy

Contractors recycle/reuse construction & demolition debris.

Construction & Demolition Debris Recycling/Reuse Activities: A small number of Christian County contractors recycle or reuse debris from construction and demolition projects. It is estimated that approximately 25 tons of construction and demolition debris was recycled/reused by Christian County contractors in 1992. Of the material recycled/reused, the majority was concrete, along with a small amount of wood scrap.

Construction & Demolition Debris	25 tpy

Percentage of Christian County tires are recycled/reused.

USED TIRE RECYCLING/REUSE: As will be discussed later in Chapter 6, 1.6 tons (rounded off to 2 tons) of Christian County commercial tires are recycled/reused annually through We-Shred-It in Pana. An additional 34 tons of Christian County tires are shipped outside the County annually to be recycled/reused.

Of the additional 34 tons, 16 tons are commercial truck tires which are sent to an out-of-state facility where the innertubes are used in making children's toys and the rubber is used in making rubber cushions for farm machinery.

The other 18 tons, all passenger tires, are shipped to an out-of-County facility where the rubber is recycled into rubber products and the non-rubber materials are recycled or reused.

Residential	18 tpy
Commercial	18 tpy
	36 tpy

Recycling Facilities

Buy-back/drop-off facility processes and markets recyclables.

MIDSTATE SALVAGE AND RECYCLING, Taylorville: A for-profit business, Midstate has been in operation since 1965. In addition to Christian County, Midstate serves the counties of Shelby, Fayette, and Montgomery.

Along with operating its' drop-off/ buy back center, Midstate also offers a recyclable material pick-up service to area businesses. Midstate works with organizers of local recycling programs and accepts materials collected through such programs, including the drop-off site at Wal-Mart and school programs.

Items accepted include: newspapers, corrugated cardboard, office paper, plastics, aluminum, tin and bi-metal cans, glass containers, and scrap metals. Annually, Midstate takes in 582 tons of Christian County recyclables. The following data represents a breakdown of Christian County recyclables collected by Midstate:

Residential	512 tpy
Commercial/Institutional	70 tpy
	582 tpy

Privately operated buy back facility.

RECYCLING UNLIMITED, Macon: A for-profit firm located in Macon County, Recycling Unlimited has been in operation since 1990. Its' service area includes the counties of Macon, Christian, Piatt, Moultrie, Logan, Champaign, Sangamon, Shelby, and Effingham. The physical operation consists of a buy-back and drop-off center where materials accepted include: newspapers, corrugated cardboard, aluminum, tin and bi-metal cans, clear glass, and magazines and catalogs.

Recycling Unlimited estimates that 45 tons of Christian County recyclables are accepted at their drop-off facility annually.

Recycling Unlimited also provides a commercial recycling program throughout its service area. This program includes the collection of office paper, newspapers,

magazines, corrugated cardboard and aluminum cans. Approximately 112 tons of Christian County recyclables are collected annually through this program. This brings the total amount of material received annually from Christian County to 157 tons.

The following data represents an estimated breakdown of County recyclables collected:

Residential	45 tpy
Commercial/Institutional	112 tpy
	157 tpy

Transfer station recovers recyclables from Municipal waste.

U-DUMP-IT TRANSFER STATION, Pana: Open for business since 1978, U-Dump-It was the first transfer station to be licensed in the state of Illinois. The facility accepts waste from the counties of Christian, Shelby, Fayette, and Montgomery. Loads brought in by haulers are dumped on the tipping floor where recyclables are separated from the refuse. The pass-through waste is compacted and shipped to the Macon County Landfill. Recyclables recovered include: newspapers, glass, aluminum cans, and corrugated cardboard.

Also operates buy-back/drop-off facility.

The same recyclables are accepted from the general public through the facilities drop-off/buy back operation. A total of 299 tons of Christian County materials are recycled through the transfer/drop-off operation yearly. An additional 33 tons of recyclables collected through Pana's curbside program are processed through this facility annually. This brings the total of Christian County material recycled at U-Dump-It to 332 tons annually.

The following data represents an estimated breakdown of County recyclables collected:

Residential	92 tpy
Commercial/Institutional	240 tpy
	332 tpy

Facility processes used tires for reuse and/or recycling.

WE SHRED IT, Pana: We Shred It has been accepting and shredding tires since February, 1991. Their service area encompasses the state of Illinois. The operation takes in approximately 550 tons of tires annually, with 5.5 tons coming from Christian County. Of the 5.5 tons, 2.5 tons are shredded and stockpiled, 1.4 tons are shredded and sold as tire derived fuel (TDF), 1.4 tons are sold for re-use, and 0.2 tons are shredded and sold as landscape turf.

For this report, only the 1.4 tons sold for re-use and the 0.2 sold as landscape turf have been included in the County's overall recycling/reuse totals. The 1.6 tons has been rounded off to 2 tons and is included in the tire recycling/reuse section of this chapter. The 1.4 tons used as tire derived fuel were for a pilot program only - there are no plans currently to burn any tires from this facility on a production basis.

The amount of tires used for landscape turf is expected to increase due to the increasing demand for the product.

Commercial	2 tpy

Privately owned buy-back facility.

JOE'S SALVAGE, Pana: A for-profit buy back operation, Joe's Salvage has been in business since 1980. The service area encompasses a 40 mile radius of Pana and includes the counties of Christian, Shelby, Fayette, Montgomery, and Macon. Materials accepted include: aluminum cans and scrap, brass, copper, lead, die cast, automotive batteries, stainless steel, and radiators.

Approximately 173 tons of recyclables are accepted from Christian County residents and businesses annually. The following data represents an estimated breakdown of these recyclables:

Residential	70 tpy
Commercial/Industrial	103 tpy
	173 tpy

Local landfill to add drop-off site.

PROPOSED FIVE OAKS DROP-OFF FACILITY, rural Taylorville: Scheduled to open in early April, 1993, the drop-off site is to be located at the Five Oaks Recycling and Disposal Facility, formerly named Christian County Landfill, Inc. This facility is owned and operated by Waste Management.

Recyclables are to be collected in drop-off boxes and taken to Bear Cat Recycling in Springfield for processing. Items accepted will include: aluminum cans, steel cans, and clear and brown glass.

Open to the public, the site will operate unstaffed Monday through Friday 7:00 am to 3:00 pm and Saturday 7:00 am to 12:00 noon.

Composting/ Land Application

Municipal facility land applies landscape waste.

TAYLORVILLE COMPOST FACILITY: The City of Taylorville operates a landscape waste collection site adjacent to Lake Taylorville. Although the facility is open to residents outside Taylorville, the site manager estimates that 100% of the material received comes from Taylorville residents. Waste received is composed of leaves (90%) and grass (10%). An insignificant amount of storm debris is also accepted.

In order to use the facility, residents must place a $0.50 sticker, purchased from the City Clerk, on each bag of waste. Bag size is not limited, but because residents deliver and empty their own, bag size usually stays under 90 gallons.

The site manager estimates that approximately 19 tons of landscape waste are accepted annually from Christian County residents.

Although commonly referred to as the Lake Taylorville Compost Facility, the landscape waste received here is "land-applied", which is technically different than "composted."

"Composting" refers to the biological treatment process by which microorganisms

decompose the organic fraction of waste, producing compost. The compost can then be returned to the economic mainstream or replace other raw materials for fertilizer, soil conditioner, or mulch.

"Land applying" refers to applying landscape or other Municipal waste directly to agricultural land at agronomic rates.

Therefore, for this report, the amount of waste received at this facility has been classified as "land applied" rather than "composted."

Privately owned facility composts and land applies landscape waste.(no longer in operation)

NORRIS COMPOST FACILITY: Located in Palmer, the Norris compost facility accepted landscape waste from the City of Springfield from 1991 through the beginning of 1992. Although the facility is located in Christian County, no Christian County waste was ever deposited there.

As of early 1992, the facility stopped accepting landscape waste from Springfield and officially closed. The landscape waste that was collected prior to closing will be composted, with the finished product to be applied to local farmland.

On-site Management

Sewage sludge from the Village of Kincaid managed on site.

Village of Kincaid: To comply with legislation passed in 1988 (Section 21.d.3 of the Illinois Environmental Protection Act), all entities with on-site disposal sites are required to notify the IEPA. Notification must include the location of the site and the type and amount of material managed.

The IEPA provided a list of approved on-site disposal sites located in Illinois. The list indicates that there is only one site in Christian County. This site is located at the Village of Kincaid's sewage treatment plant. Approximately 35 tons of sewage sludge is managed on-site at the plant annually.

Electrical generation plant manages a portion of its' ash on-site.

Commonwealth Edison, Kincaid: A portion of the electrical generation plant combustion waste (ash) generated at Commonwealth Edison's plant at Kincaid is managed on-site.

Both sewage sludge and ash are categorized as Special waste and are discussed in Chapter 7.

Incineration

No waste-to-energy incineration facilities in Christian County.

INCINERATION FOR ENERGY RECOVERY: According to a report published by the Department of Energy and Natural Resources, there are no waste-to-energy incineration facilities permitted in Christian County and no waste-to-energy facilities were discovered during the survey activities.

Tires exported for out-of-county incineration.

Although there is no waste-to-energy activity occurring within Christian County, a percentage of the used tires generated in the County are exported to Macon County where they are incinerated for energy recovery. Approximately 60 tons of used tires are sent to Decatur for combustion in ADM's cogeneration facility.

Small scale incineration for volume reduction in commercial/ institutional, construction and demolition, and residential sectors.

INCINERATION FOR VOLUME REDUCTION: Using information gathered through questionnaires, visits, and telephone contacts, it is estimated that 90 tons per year of Christian County Municipal waste is incinerated for volume reduction. Of this total, 20 tons is construction & demolition debris, 20 tons is commercial/institutional waste, and 50 tons is storm debris from the residential sector.

Because it is classified as Special waste, potentially infectious medical waste (red-bag waste) incinerated by area hospitals is not included in the Municipal waste incineration totals.

Burn barrel usage prevalent in rural communities.

BURN BARREL USAGE: Through meetings and conversations with municipal leaders, it was determined that burn barrel usage is prevalent throughout Christian County. In the more rural areas, residential usage

ranges from 20% to 100%, business usage from 10% to 100%. In the more populated areas, usage is much less, ranging in both residential and commercial/institutional sectors from 0% to 5%.

Studies conducted in five other rural central Illinois counties estimated that 0.23 pounds per capita per day (pcd) were incinerated in burn barrels. For this study, it is assumed that the 0.23 pcd rate applies to Christian County. Based on the 1992 population estimate of 34,211, the total amount of waste incinerated in burn barrels is therefore estimated to be 1,436 tons per year. This amount has been included as waste incinerated for volume reduction in the County's Municipal waste generation total.

Landfill Disposal

Large regional landfill located in Christian County.

Five Oaks Recycling and Disposal Facility:
Previously named the Christian County Landfill, Inc., this landfill is located three miles west of Taylorville. The landfill site covers 213 acres, and is owned and operated by Waste Management, Inc. The site is approved by the IEPA for Municipal solid waste and special waste disposal. No hazardous wastes are accepted. The landfill has a projected intake volume of 3,130 tons per day, and operates five and a half days per week. According to the Landfill Capacity Certification document submitted to the IEPA in April, 1992, the remaining life of the landfill at current disposal rates is 28.7 years.

For 1992, a projected total of 413,830 tons of waste was to be deposited in Five Oaks Recycling and Disposal Facility. Waste is hauled into the landfill by truck and by rail. Approximately 38% arrives by rail and 62% arrives by truck.

The waste deposited in Five Oaks Recycling and Disposal Facility comes from one of three origins, either from Christian County, from other Illinois counties, or from out-of-state.

Origin of waste landfilled.

The origin of waste received in 1992 is as follows:

from other Illinois counties	53.7%
from out-of-state	41.1%
sub-total from out-of-county	94.8%
from Christian County	5.2%

For exact tonnages, see pp. 6-18 and 6-19.

As with any county having a privately owned landfill located within its' boundaries, Christian County has no legal jurisdiction concerning out-of-county or out-of-state waste entering Five Oaks Recycling and Disposal Facility.

Landfill has plans for operational improvements.

Operational improvements planned for the landfill include upgrading the road system, adding a synthetic liner, a citizen dumping area, and a new scale. Also planned are construction of additional cells that are currently permitted. In addition, Waste Management has applied to the IEPA for an expansion of their rail facility.

A permit for an on-site transfer station has been issued, but no building or planning is occurring at this time. Waste Management does plan to install a drop-off box in 1993 for the collection of recyclables.

Waste Management has no plans at this time to develop a compost site.

Post closure plans for the landfill currently include the development of the land for recreational use.

Landfill located in Macon County receives some Christian County waste.

MACON COUNTY LANDFILL: Located in rural Decatur, the Macon County Landfill is privately owned and operated. The site covers approximately 77 acres. Without expansion of the current facility, Macon County Landfill officials estimate life expectancy of the landfill is approximately 3-5 years. The owners do plan to apply for an expansion permit.

The Macon County Landfill accepts approximately 8,413 tons of Christian County waste annually.

Small amount of Christian County waste landfilled in Sangamon County.

SANGAMON VALLEY LANDFILL: The Sangamon Valley Landfill, located near Springfield, accepts approximately 17 tons of Christian County waste annually.

The landfill covers 127 acres and has a current estimated life expectancy of 32 to 36 years.

Twelve private haulers service Christian County.

REFUSE COLLECTION SYSTEM: There are currently twelve private haulers providing refuse collection service in Christian County. They are as follows:

A-1 Disposal
Area Disposal
B & D Disposal
Damery Disposal
Gene's Garbage
Harden Disposal
Mayberry Disposal
MRN Disposal
Tom's Sanitation
Town & Country Disposal
Tri-R Disposal
Waste Hauling

All twelve haulers operate under private contracts with individual residents and businesses. All haulers handle their own billing.

Neither residential nor commercial collection costs are subsidized by any municipality. The City of Taylorville operates a drop-off site where residents can dispose of their household refuse free of charge.

Of the 13 municipalities contacted, only one regulates residential waste hauling rates in their community. Most municipalities must approve any rate increase.

Six of the 13 municipalities require that all haulers operating within their boundaries obtain a special permit or license.

Waste is hauled an average of 15 miles.

HAUL DISTANCES: The majority of waste collected in Christian County is currently being taken to one of the following facilities: the Five Oaks Recycling and Disposal Facility near Taylorville, the Macon County Landfill in Decatur, or the U-Dump-It transfer station in Pana. An insignificant amount is taken to the Sangamon Valley Landfill in Springfield.

Some haulers deposit waste at only one of the facilities, while others utilize two or three of the facilities. One way hauling distances from the different municipalities serviced to the different disposal facilities range from one mile to 33 miles, with an average hauling distance of 15 miles.

392,504 tpy of landfill waste is imported into Christian County.

IMPORT OF WASTE: Federal laws of interstate commerce prohibit any governmental body from restricting the lawful movement of waste across state or county boundaries. Significant amounts of waste are transported across state and county lines en route to recycling facilities, transfer stations, compost sites, incineration operations, and landfill facilities.

As is common for many counties, Christian County both imports and exports waste to be recycled/reused, incinerated, or landfilled. Having a privately owned regional landfill within its' boundaries, the majority of waste imported into Christian County is disposed of at Five Oaks Recycling and Disposal Facility. This landfill imports a total of 392,504 tpy of refuse. Of this total, 222,218 tpy is in-state waste from other counties, and 170,286 tpy is out-of-state waste.

2,165 tpy of recyclable waste is imported into Christian County.

Christian County is also home to several recycling/reuse facilities and programs. Seven facilities/programs in the County import a total of 2,165 tpy of recyclable materials.

8,430 tpy of landfill waste is exported out of Christian County.

EXPORT OF WASTE: Though the majority of Christian County waste is managed in Christian County facilities, a total of 8,608 tpy of waste is exported to other counties for processing or disposal. Approximately 8,413 tpy of waste is exported for disposal in the Macon County Landfill and 17 tpy is exported to the Sangamon Valley Landfill.

157 tpy of recyclable waste is exported.

One hundred fifty-seven tpy of Christian County recyclable waste is exported to an out-of-county processing facility.

60 tpy of tires are exported to a waste-to-energy incineration facility.

Sixty tpy of used tires from Christian County are exported to Macon County where they are incinerated in a waste-to-energy cogeneration facility.

In summary, Christian County has a net import of 2,008 tpy of waste for recycling/reuse, a net import of 383,896 tpy of waste to be landfilled, and a net export of 60 tpy of waste for waste-to-energy incineration.

CHAPTER 3
DEMOGRAPHICS

Current and projected demographic data is an integral component in the twenty year solid waste management planning process. Total population, number of households, and average household size all affect the residential waste generation rate. The total number of employees and breakdown of employment by various classifications affect the amount of commercial, institutional and industrial waste generation.

Once baseline waste generation rates have been established for current conditions, estimates of waste generations rates over the twenty year planning period will be made based on population and employment projections. This demographic data will also be helpful in designing the programs and facilities for the operational components of the Solid Waste Management Plan.

The time and cost involved in conducting independent population and employment projection studies is far beyond the scope of this project. Therefore, the population and employment data used for this report were determined by researching a variety of existing sources of data.

Background Data

General geographic and population data.

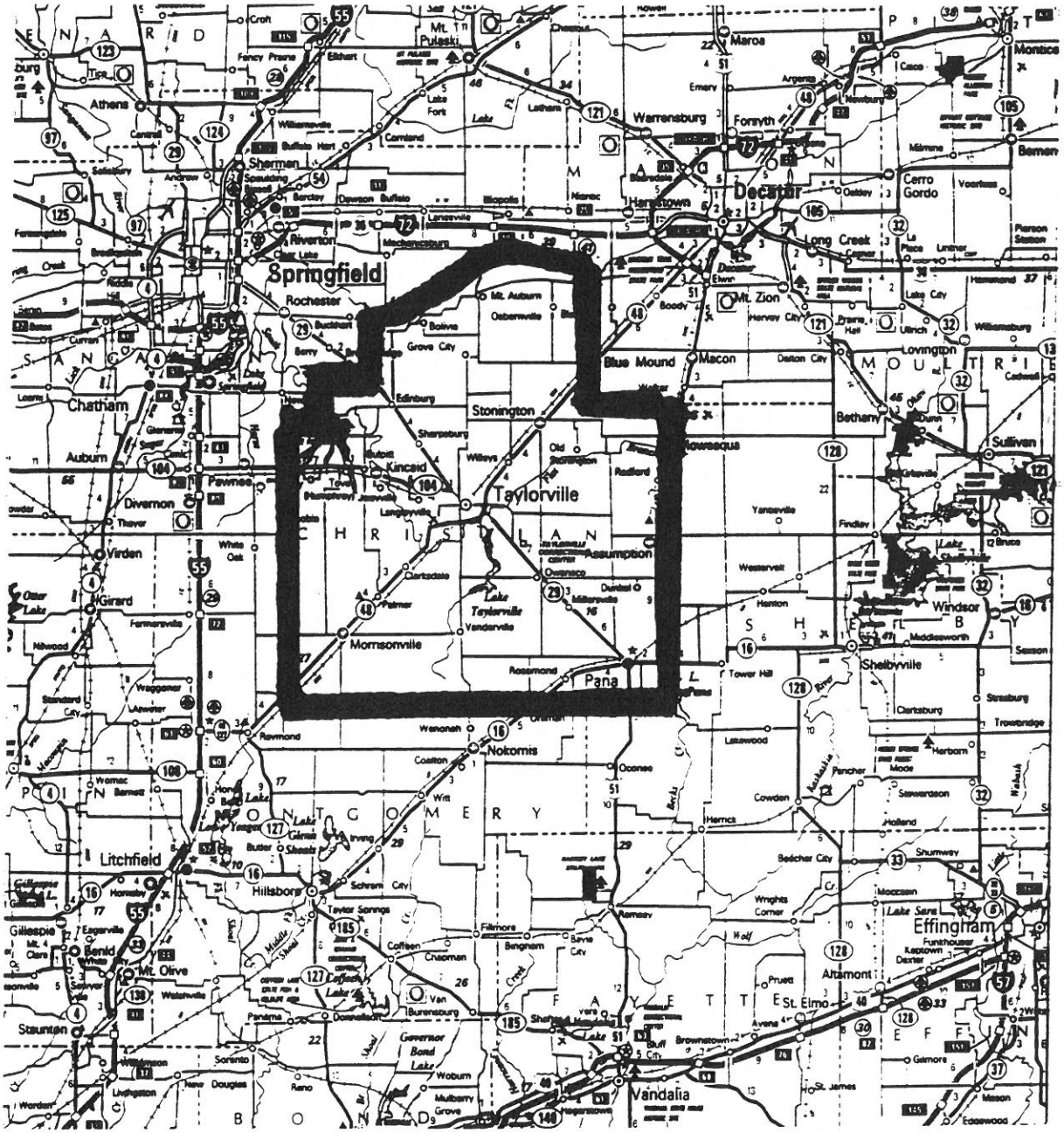
Christian County is a rural county located in central Illinois and is bordered by the counties of Shelby, Montgomery, Sangamon, and Macon. (See figure 1). The County contains an area of 709 square miles and has a total population of 34,418 according to the 1990 census. It has a population density of 48.5 people per square mile compared to the statewide population density of 205. Approximately 50% of the population resides in the cities of Taylorville (pop. 11,133) and Pana (pop. 5,796). In addition, there are eleven smaller villages/cities scattered throughout the County ranging in population from 126 to 1,353.

Highway access.

The primary highways are Ill. Rt. 48 running NE-SW diagonally through the County, Ill. Rt. 29 running NW-SE diagonally through the County, U.S. Rt. 51 running N-S along the eastern side of the County, and Ill. Rt. 104 running E-W through the center of the County.

Fig.1

Christian County Map



Railroad access.

The County is served by two railroads - the Chicago & Illinois Midland Railway (CIM) running along Ill. Rt. 104 and the Norfolk & Western Railway Company (NW) running along Ill. Rt. 48.

Population Data.

For the purpose of this study, current population data was obtained from the 1990 Census. Population projection information was available from the following two sources:

- Illinois Bureau of the Budget, Springfield, Illinois, 1990 Edition
- Woods and Poole Economics, Washington, D.C., 1990

As shown in figure 2, the Illinois Bureau of the Budget projects a 7.1% decrease in the population from 1990 to 2010. Woods and Poole project a much lower decrease of 0.1%. For the purpose of this study, more weight has been given to the projections from the Bureau of the Budget. It is felt that since the Bureau is located in Illinois, their data base has more complete information needed to make accurate projections.

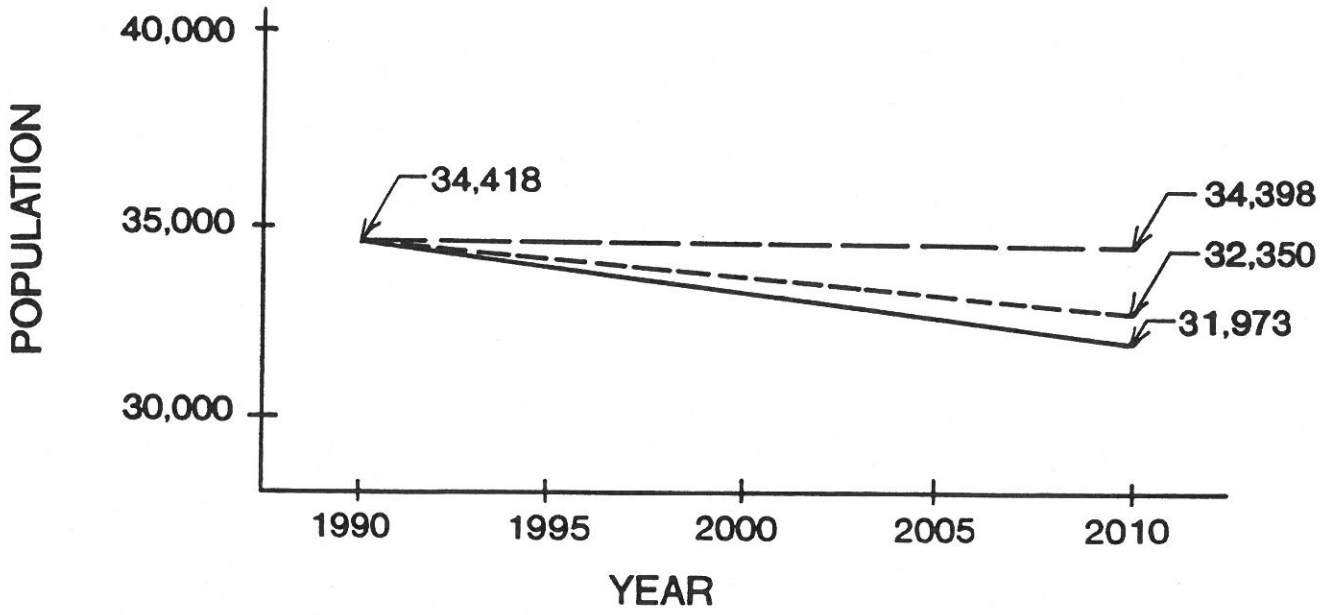
A 6% decrease in population is estimated over the twenty year planning period.

Because total solid waste generation generally decreases as the population decreases, the estimate used for this study is a conservative 6% straight-line decrease in population over the 20 year planning period from 1993 to 2013.

YEAR	POPULATION ESTIMATES
1993	34,108
1998	33,592
2003	33,076
2008	32,559
2013	32,043

Fig. 2

Christian County
Population Projections



1990 CENSUS BUREAU POPULATION = 34,418

Employment Data.

For the purpose of this study, waste generation projections in the commercial, institutional, and industrial sectors have been categorized in the standard industrial classification (SIC) codes shown in Table 1.

Current employment figures for the categories of mining, construction, manufacturing, and wholesale trade were obtained directly from Christian County businesses through questionnaires, phone contact, and personal visits.

Current employment figures for the remaining SIC code categories were taken from the Woods and Poole publication, which was the only published source of employment data found. Figures from the Illinois Bureau of the Budget are not complete in that they only include employment covered by the Illinois Unemployment Insurance Act.

Christian County employment estimated to increase by 6.6% over the twenty year planning period.

Table 1 shows the current and projected employment figures for the 20 year planning period. The projected employment figures were calculated by applying Woods and Poole's estimates of the percentage of change for each of the SIC code classifications.

During the planning period from 1993 to 2003, the number of people employed in Christian County is estimated to increase from 10,888 to 11,607. This represents an increase of 6.6%.

TABLE 1
CURRENT AND PROJECTED EMPLOYMENT DATA

SIC Code	Classification	1993	1998	2013	% Change 1993-2013
1-9	Agriculture	87	82	67	-23.0
10-14	Mining	422	386	278	-34.1
15-17	Construction	66	67	71	+7.6
20-39	Manufacturing	1,030	949	706	-31.5
40-49	Transportation, Communication, Utilities	875	932	1,105	+26.3
50-51	Wholesale Trade	76	82	98	+29.0
52-59	Retail Trade	2,670	2788	3,140	+17.6
60-67	Finance, Insurance, Real Estate	957	1002	1,137	+18.8
70-89	Services	3,182	3302	3,662	+15.1
91-97	Government, Public Administration	1,523	1478	1,343	-11.8
Totals		10,888	11,068	11,607	+6.6

Source: H. L. Chastain & Associates survey, see page 3-5 for details

TABLE 3

ESTIMATED RESIDENTIAL WASTE COMPOSITION DATA

Item	Average % for Ogle, Whiteside, & McLean Counties [1]	Adjusted % for Christian County [2]
Paper & Corrugated Cardboard	34.3	40
Glass	5.4	7
Metal	5.5	6
Plastic	10.9	13
Food Waste	15.2	18
Landscape waste	15.3	2
Other	12.9	14
Totals	100.0	100

Sources:
1. Ogle County Needs Assessment, 1991, prepared by Patrick Engineering, Inc.; Whiteside County Needs Assessment, 1989, prepared by Graef, Anhalt, and Schloemer and Assoc.; McLean County Needs Assessment, 1991, prepared by McLean County Regional Planning and Development Commission
2. Christian County survey findings, 1992

Note: a. Percentages based on weight.

TABLE 4

ESTIMATED COMMERCIAL/INSTITUTIONAL AND INDUSTRIAL WASTE COMPOSITION DATA

Item	Average % for Piatt, Logan, DeWitt, Douglas, & Ford Counties [1]	Average % for Ogle, Whiteside, & McLean Counties [2]	Adjusted % for Christian County [3]
Paper & Corrugated Cardboard	64.3	51.2	58
Glass	2.1	3.7	3
Metal	3.5	7.4	7
Plastic	6.9	8.8	5
Bldg. Mat'l & Wood	11.2	-	10
Landscape waste	0.4	5.4	0
Food Waste	6.6	10.6	11
Other	5.0	12.9	6
TOTAL	100	100	100

Sources:
1. Piatt, Logan, DeWitt, Douglas, and Ford Counties Needs Assessment, 1992, prepared by Patrick Engineering, Inc.
2. Ogle County Needs Assessment,1991; Whiteside County Needs Assessment, 1989; McLean County Needs Assessment, 1991
3. Christian County survey findings, 1992

Notes:
a. Percentages based on weight.
b. Estimates do not include construction/demolition debris, sewage/wastewater sludge, special waste, or electrical generation plant combustion waste (ash).

GENERAL OUTLINE OF SOURCE REDUCTION CONSIDERATIONS

A. **Source Reduction Method Options**

1. Residential

   a. Reduce consumption

   b. Shop environmentally

   c. Use durable products

   d. Reuse products and packaging

   e. Practice responsible landscape waste management

   f. Practice responsible burn barrel usage

   g. Practice responsible household hazardous waste management

2. Commercial/Institutional in-house source reduction programs

   a. Establish a source reduction committee

   b. Conduct a waste audit, review procurement practices, products sold, and services provided

   c. Use durable products

   d. Develop in-house reuse and waste exchange programs

   e. Revise office practices to reduce the amount of paper used

   f. Establish procurement policies to reduce waste

   g. Revise production processes to reduce waste

   h. Revise products to extend product life and decrease the amount of material used per unit

B. Source Reduction Implementation Technique Options

1. Education and information programs (see appendix F for detailed write-up on items a through j below)
   a. Establish an information clearinghouse
   b. Develop school education programs
   c. Coordinate source reduction programs with public libraries
   d. Develop public displays
   e. Provide solid waste counseling and waste audits
   f. Conduct workshops and seminars
   g. Provide promotional activities
   h. Provide public achievement awards
   i. Establish local speakers bureau
   j. Conduct model source reduction programs
2. Legislation to be considered
   a. Product and packaging bans/restrictions
   b. Toxic and hazardous material controls
   c. Governmental procurement requirements
   d. Private procurement guidelines
3. Economic incentives to be considered
   a. Loan, grant, and subsidy programs
   b. Tax incentive programs
   c. Volume based collection fees
   d. Container deposit programs and up-front payments for source reduction programs

C. **Economic Impact Assessment**

1. Possible benefits

   a. Reduced disposal costs

   b. Employment opportunities for businesses catering to source reduction activities

   c. Cost savings associated with waste reduction purchasing practices

   d. Reduced litter control costs

   e. Reduced energy consumption costs

   f. Reduced costs for hazardous material handling

2. Possible adverse economic impacts

   a. Changes in consumer purchasing practices **may** adversely affect existing businesses

   b. Costs associated with changes in product and packaging requirements **may** place financial hardships on businesses

D. **Environmental Impact Assessment**

1. Possible benefits

   a. Conserves natural resources

   b. Conserves energy

   c. Reduces pollution

   d. Reduces the amount of waste deposited in landfills

   e. Decreases the negative environmental impacts associated with material deposited in landfills

GENERAL SOLID WASTE EDUCATION PROGRAM OPTIONS

INFORMATION CLEARINGHOUSE

- Inventory existing reference material at Christian County Solid Waste Management Department office.

- If needed, expand existing reference material to include information that could be utilized by all waste generators, including those in the residential, commercial,institutional and industrial sectors.

- Distribute information:

    - Provide information to those who request it in person, by phone, or by letter.
    - Offer materials through displays at various locations throughout the County.
    - Send blanket mailings to all County residents.
    - Do mailings to select businesses/industry.
    - Include literature in newspaper supplements.

- Provide telephone response to questions from waste generators:

    - Establish hotline with staff member fielding questions during business hours. Possibly switch to a recorded message after business hours.
    - Offer hotline with recorded message 24 hours a day.

- Establish a waste exchange program through which waste generators from all sectors are matched with others who can use the waste they are generating. This County exchange program would be coordinated with the Illinois Materials Exchange Service.

BENEFITS	**LIMITATIONS**
provides materials that are relevant and accessible to all sectors of the population	success is directly related to how well the program is publicized and there could be significant cost associated with publicity
materials are centrally located and are therefore easily organized, catalogued, and updated	requires waste generators to actively seek out information
significant cost savings since the Christian County SWMD already has a reference library set up	single location limits convenience and accessibility of materials
	additional staff time would be required for expanding the program, e.g., hotline, exchange program, etc.

SCHOOL PROGRAMS

- Provide schools with financial assistance, possibly through County and/or State grants, to help fund the implementation of solid waste education.
- Continue utilization of Teachers' Planning Commission.
- Develop County-wide school program.
- Provide curriculum materials and training to participating County schools.
- Assist schools in implementing source reduction/recycling programs.
- Provide all schools with a listing of materials available through the CCSWMD reference center.
- Provide speakers to schools, either through CCSWMD or a speakers bureau.
- Once established, maintain contact with teachers through phone calls, mailings, meetings, etc.
- Assist schools in planning activities that potentially incorporate solid waste education such as special events, fairs, contests, plays, art projects, etc.

BENEFITS	**LIMITATIONS**
if implemented County-wide, information can reach large numbers of students	curriculum will reach only those students attending schools that support and implement the program
students pass on information to parents and other adults	individual teachers may not incorporate the solid waste curriculum even if their school supports it
solid waste curriculum complements existing curriculum	substantial start-up cost to cover teacher training
once curriculum training is complete, cost to CCSWMD is minimal	

PUBLIC LIBRARIES

- CCSWMD staff member visit all public libraries throughout the County to inspect solid waste materials available at each:

  - Assumption
  - Morrisonville
  - Pana
  - Taylorville

- Provide libraries with a list of materials available through CCSWMD reference center.

- Develop cross reference index to avoid duplicating materials.

- Provide libraries with solid waste display ideas.

BENEFITS	LIMITATIONS
all County citizens have free access to materials and information	cost associated with initial visits conducted by CCSWMD staff
information at libraries can compliment information available through clearinghouse	requires citizens to seek out information
cost of continued networking with the libraries is minimal	libraries are not utilized by all people
libraries with dial-a-story program could feature solid waste topics at different times	information may not reach the business and industry sectors as they are not as likely to utilize the library as are residents
libraries may have access to certain reference materials that the CCSWMD cannot obtain	

PUBLIC DISPLAYS

- Construct portable displays.
- When possible, utilize recycled or used materials in constructing displays. (use of these materials would be identified as a part of the display)
- Investigate recruiting public or private school art students to assist with the design and/or construction of displays. (may use "contest" format)
- Promote availability of displays to be used in public places such as schools, libraries, churches, public offices, etc.
- Use selected displays as sites for the distribution of solid waste information in the form of pamphlets, brochures, or flyers, and/or promotional materials such as buttons, stickers, magnets, etc. (coordinate with established "community functions")

BENEFITS	LIMITATIONS
by being portable, displays can reach a broad sector of the County's population	success of the displays depends on their appeal to the public
since displays do not have to be staffed, cost is limited to their construction, placement, and upkeep	creating displays that are flashy enough to capture attention may increase the cost
cost to maintain displays should be minimal	displays must be circulated among a number of different locations in order to reach the maximum number of people
provides positive learning experience for students participating in the design or construction of displays	

SOLID WASTE COUNSELING & WASTE AUDITS

- Focus counseling mainly on source reduction and recycling but also address other solid waste management issues.
- Promote counseling and auditing services, using available PR tools such as the press, radio, mailings, and speakers bureau.
- CCSWMD staff members conduct waste audits for organizations, facilities, businesses and industries outside the residential sector. Audits could be on an individual company and/or multi-company workshop basis.
- Conduct waste audits to identify materials in the waste stream that could be targeted for management by one of the following methods:
  - volume reduction - identify existing waste materials that could be reduced through a volume reduction program.
  - reuse - identify materials that could be reused internally or through the waste exchange program.
  - recycling - identify materials that could be recycled through a recycling program, provided in-house or by an outside contractor.
- Following audit, assist the organization in developing and implementing source reduction, internal reuse, waste exchange and/or recycling programs.
- Where needed, provide the organization with a list of area recycling firms.

BENEFITS	**LIMITATIONS**
the counseling and support offered to organizations by the CCSWMD staff will encourage the implementation of successful programs	additional training will be required to qualify CCSWMD staff in conducting audits
service focuses on non-residential waste generators, which are often overlooked	conducting audits and providing counseling takes considerable staff time
	the number of organizations that will benefit from this service is dependent not only on how many request the service, but also on the amount of time the CCSWMD staff is able to devote to providing this service

WORKSHOPS/SEMINARS

- Conduct surveys to determine which solid waste issues are seen as priorities by business and industry organizations. Develop seminars/workshops that address these issues.

- Develop workshop/seminar format, possibly expanding on speakers bureau topics.

  - Format may be strictly informational in nature.
  - Format may include specific training such as instructing employees on participating in a recycling/reuse program.

- Develop and offer programs to the general public that focus on solid waste issues as they pertain to individual and family living. (including a few workplace tips will benefit those who work outside the home)

- Develop and offer programs to business and industry that focus on issues relative to activities occurring within the workplace. (providing attendees with a bit of information they can incorporate at home will add a personal touch to the presentation)

- Design a workshop so that it is not only suitable to be presented alone as the feature event, but that it may also be presented as one part of a larger program/seminar, such as one sponsored by a private or governmental agency.

BENEFITS

because such significant amounts of information can be presented, participants are likely to experience an increased awareness and understanding of solid waste issues

workshops facilitate an exchange of ideas between different businesses and different viewpoints

workshops are a valuable tool in providing specific training to citizens and/or employees

seminar/workshop attendees receive positive public recognition

LIMITATIONS

developing a high quality format will require significant time commitments from the CCSWMD staff - the higher the quality, the higher the cost

presenting programs will take time, creating a need for additional staff or reallocation of existing staff work assignments

informing all sectors of the population of the features and availability of the programs will require time and expense

SPEAKERS BUREAU

- Develop presentation format, text, and graphics. Include a slide show personalized to Christian County. (consider developing a video presentation to be used when speakers are unavailable)
- Develop series of presentations covering a variety of solid waste topics.
- Recruit and train speakers from the community, drawing upon citizens, businessmen and women, teachers, students, etc.
- Promote availability of speakers to address citizens' groups, schools, businesses, etc.
- Distribute educational material during presentation.
- When seminars and workshops have become part of the services offered through the CCSWMD, promote their availability during Speakers Bureau presentations.

BENEFITS	LIMITATIONS
presentation and materials are free to anyone requesting them	significant amount of time and cost involved in developing format text and graphics
capable of reaching broad sector of the population	time involved in recruiting and training speakers
	if volunteer speakers are not available, added cost of hiring additional staff
	cost involved in promoting the program

PROMOTIONAL ACTIVITIES

- Develop promotional campaign for radio, newspaper, and possibly television.
- Create logo, slogan, or mascot to be used in promotional activities. This will increase visibility of CCSWMD throughout the County.
- Seek out media coverage that is offered free of charge. Radio and newspapers in particular offer free time or space to non-profit groups.
- Continue submitting "Lifting the Lid" articles.
- Continue "Dear Waste Basket" if it is providing desired results.
- Along with materials prepared by CCSWMD, utilize educational materials provided by public and/or private organizations such as ENR, IEPA, USEPA, Keep America Beautiful, etc.
- Send blanket mailings to introduce the CCSWMD and to describe the services offered.

BENEFITS	**LIMITATIONS**
using a variety of promotional tools reaches a wide audience	creating and continuously updating promotional materials requires staff time and expense
CCSWMD becomes more visible	
CCSWMD services get utilized more, which means more of the population will receive information and education	significant cost may be involved if paid advertising must be utilized

PUBLIC ACHIEVEMENT AWARDS

- Develop format for nominating, possibly establishing different categories. Solicit nominations from the general public, business and industry, schools, etc.

- Establish criteria for "judging" nominees.

- Establish award and format for presenting awards - options include, but are not limited to the following:

  - on a monthly basis, recognize all nominations that meet the criteria
  - choose one or two "winners" monthly - may choose to increase this number as program gains popularity
  - honor all winners at 6 or 12 month intervals through luncheon, banquet or other ceremony

- Compile list of individuals, businesses, schools, community organizations, churches, etc., known to participate in recycling/reuse programs.

- Through displays, Speakers Bureau, or other promotional tools, introduce awards program and ask for nominations. May choose to provide some type of form to be filled out and mailed in to the Department or allow phone-in nominations.

- Contact each nominee to obtain accurate information concerning their program and to get approval to use their name and information.

- Consider permanent display of winners' names.

BENEFITS	LIMITATIONS
gives positive reinforcement and recognition to those participating in recycling/reuse activities	developing and implementing awards program will require additional staff time
award recipients act as role models for those not participating	conducting awards ceremony may involve substantial cost
the public recognition and positive public relations resulting from the awards will be incentive for others to implement programs or upgrade existing ones	potential for resentment among those not chosen for an award, but recognizing all nominees should help eliminate this

MODEL SOURCE REDUCTION/RECYCLING PROGRAM

- Tour existing model programs in other counties.
- Develop model program features, utilizing published information that features details of existing programs that have experienced success.
- Implement initial program in County buildings. If the County will not participate, consider asking a city or highly visible organization to participate.

BENEFITS

if the County participates, their commitment to source reduction/recycling will be more visible to the public

the County's commitment may enhance their relationships with the cities and villages

cities and villages may be more willing to participate in activities if they see the County taking the lead

whoever participates acts as a positive role model to others

participants receive positive public relations

participating organizations could realize cost savings often associated with volume reduction/recycling activities

when awarding grants or providing other funding, County, State, and Federal agencies may give more consideration to those organizations participating in model programs

LIMITATIONS

cost involved in development and implementation of the model program - cost incurred by CCSWMD and the participating organization

potential difficulty in finding organizations that will participate

successful implementation will require significant time commitments and cooperation from all departments within the participating organization

FACTORS TO BE CONSIDERED IN VOLUME BASED REFUSE COLLECTION VS. FLAT FEE REFUSE COLLECTION

Cost to user:

- Flat fee system - user pays the same fee no matter how much or how little garbage they set out.
- Volume based fee system - fees vary based on the amount of garbage set out.

Billing options:

- Flat fee - direct, indirect, or "free."
- Straight volume based - user buys special bags or purchases special tags/stickers to place on their own bags. Only specified bags or bags with tags/stickers will be collected by the hauler.
- Modified volume based - user is allowed to set out a limited number of bags/cans for a set monthly fee. Any additional cans or bags must bear a tag or sticker.
- If billing is done through the water bill or governmental tax base, the County or municipality can more effectively mandate that residents subscribe to garbage hauling service.

Hauler contract provisions:

- Performance standards.
- Rate schedule.
- Flow control, if applicable.
- Service area.

Effect on current system:

- The existing recycling system may need to be upgraded to handle the increased volume of recyclables that is likely to occur in response to volume based rates.
- Implementation of mandatory volume based rates would be hindered by the "free" garbage drop-off provided by the City of Taylorville. If this drop-off closes, the City may choose another form of assisting low income residents.

- Volume based systems, especially straight volume based, may cause an increase in illegal dumping and illegal trash burning.

- If volume based rates aren't set high enough, haulers may find that their fixed costs are not covered.

- Because volume based rates offer an economic incentive to recycle, either curbside recycling or other recycling programs are offered to residents, quite often free of charge.

Effect on volume reduction and recycling percentages:

- Flat fee - offers no economic incentive to reduce or recycle.

- Volume based - offers economic incentive to reduce and recycle. In communities where volume based rates are used, recycling rates are usually higher than in communities using flat fees.

Mandatory vs. voluntary subscription:

- When residents are not required to subscribe to refuse collection or are not charged for it, they have no economic incentive to reduce or recycle. Mandatory subscription encourages volume reduction and recycling.

- Mandatory subscription works most effectively with indirect billing. Enforcement is much easier.

Educational programs:

- If subscription becomes mandatory, education will be important in helping residents with the transition.

- If volume based rates are implemented, residents will need additional education on volume reduction activities and recycling methods.

- Quite often, when volume based systems are implemented, education is promoted through local stores to encourage a positive change in purchasing habits.

Implementation schedule options:

- Phased.

- Immediate and complete implementation.

GENERAL FACTORS TO BE CONSIDERED FOR A DROP-OFF RECYCLING COLLECTION SYSTEM

Factors to be considered (based on the assumption that the County will assist in funding drop-off programs, but will not be directly involved in the collection or processing of recyclable material)

County/villages responsibilities.

Type of equipment.

Site selection criteria.

Site staffing.

Site operating hours and signs.

Recyclables to be collected.

Effect on recycling percentage.

Effect on existing recycling activities.

Hauler/processor contract provisions.

Educational/promotional program.

Cost estimates.

Program funding methods.

Implementation schedule.

GENERAL FACTORS TO BE CONSIDERED FOR A RESIDENTIAL CURBSIDE RECYCLING COLLECTION PROGRAM

FACTORS TO BE CONSIDERED

Define basic assumptions used:
- County will assist in funding curbside programs, but will not be directly involved in the collection or processing of recyclable material.

County/village responsibility options:
- County assumes all responsibility.
- Municipality assumes all responsibility.
- Joint County/Municipality responsibility.
- Private contractor assumes all responsibility.

Criteria used to determine which municipalities will participate:
- Municipalities desire to participate.
- Cost effectiveness.

Type of collection/processing equipment to be used:
- Bin system.
- "Blue Bag" system.
- Collection vehicle.
- Processing equipment.

Frequency of pick-up:
- Weekly.
- Every other week.
- Monthly.

Recyclables to be collected:
- Minimum program.
- Medium program.
- Aggressive program.

Effect on recycling percentages:

Effect on existing recycling activities:
- Possible negative impact.
- Potential for enhancing existing activities.

Hauler/processor contract considerations:
- Single county-wide contract vs. individual municipality contracts.
- Set minimum performance, equipment, and reporting standards.
- Address flow control considerations if applicable.

Education programs:

- Define roles of County, Municipality, and Contractor.
- Develop start-up education program.
- Develop on-going education program.

Cost estimates:

- Annualized collection cost.
- Annualized processing cost.
- Average per household cost.

Program funding methods options:

- Paid for by residents.
- Paid for by County and/or Municipality.
- Partially paid for by residents and subsidized by County and/or Municipality.

Implementation schedule options:

- Pilot program(s).
- Phased implementation.
- Full implementation.

DETAILED LISTING OF FACTORS TO BE CONSIDERED FOR A RESIDENTIAL RECYCLING PROGRAM

- **Assess the residents' level of recycling knowledge and their interest in participating in recycling activities.**

  - If other recycling programs exist in the community, determine the extent to which residents are using them.

  - Survey residents to collect information concerning their recycling habits. Information requested could include: whether or not they recycle, and if so, where, how often, what items, whether they receive payment for any items, etc; are there additional items they would recycle if given the opportunity; if they do not recycle, why not and what would motivate them (convenience, education and how-to instructions, monetary incentive, mandates, etc.); would they participate in the proposed recycling program and if no, why not.

  - Options for surveying residents include: a personal survey conducted at retail stores or other highly visited public facilities; surveys distributed through the public and private school systems and/or public libraries; questionnaires mailed out to the public; telephone surveys, etc.

- **Estimate residential waste generation in the community.**

  - Use data documented in the Phase I Needs Assessment.

  - Solid waste generation data, such as that reported in Phase I, may be updated every 5 years. If the proposed program is being considered five years or more after the plan has been adopted, refer to the updated data as well as the original.

- **Characterize the composition of the residential waste stream.**

  - Use data contained in the Phase I Needs Assessment.

  - If more information is desired, a detailed waste stream analysis may be conducted, which could include a sort and weigh study.

- **Decide what materials are to be collected in the program. Consider the following questions:**

  - Are there existing markets for all materials?

- Are markets located within a feasible travel distance?
- What are the processing specifications associated with each recyclable material?
- What are the existing and projected market prices for the materials?
- How much of each material exists in the residential waste stream?
- How will collection of each item affect the municipal recycling rate?
- What will it cost to collect and process the material?
- Is the capacity of the collection container(s) sufficient to hold all the materials being considered for collection?

▶ **Examine recyclable material processing/marketing options:**

- Use existing local processing facilities.
- Expand existing local processing facilities.
- Develop new processing facility(s).
- Join an existing cooperative marketing network or establish one, considering the option of using a transfer station network.

▶ **Estimate the cost of the program by conducting an economic analysis. This analysis should include estimates of the following:**

- Capital costs (1)
- Annual operating costs (2)
- Annual revenues and disposal cost savings (3)
- (Capital costs + annual operating costs) - annual revenues and disposal cost savings = net annual cost

▶ **Examine funding methods. Options include:**

- Tax exempt bonds (general obligation or revenue bonds)
- Commercial loans
- Grants - County, State, Federal, or private

- Revenue from the sale of recyclables
- Tax subsidies
- In-kind services
- Landfill tipping fee surcharge
- Fees charged for collection and/or processing of recyclables
- Savings associated with avoided disposal costs

▸ **Evaluate the potential impact of the proposed program on existing solid waste management activities such as:**

- Existing garbage collection system
- Existing recycling activities, programs and facilities
- Other proposed and/or planned recycling activities, programs and facilities

▸ **Design a kick-off campaign considering the following items:**

- Target audience
- Optional methods for distributing information to the targeted audience:
  - local newspaper, radio and television
  - existing community newsletters
  - statement stuffers (informational materials mailed out with the power bill, water bill, garbage bill etc.)
  - direct mailings
  - door hangers
  - public presentations
  - materials provided to public and private schools for distribution to students
  - neighborhood/community meetings
  - public displays
  - outdoor advertising such as banners, billboards, lighted marquees, ads on public transportation vehicles, etc.

- Educational/promotional information pertaining to the recycling program may include the following items/points:

  - an explanation of why the program is being implemented, including the environmental benefits of recycling, the potential effect the program may have on helping the County to achieve State and local recycling goals, the opportunity for participants to make a global impact by doing their part locally, and other reasons

  - an overview of program features

  - a complete list of recyclable materials to be collected

  - detailed instructions pertaining to the preparation of recyclables, such as rinsing, flattening, sorting etc.

  - collection schedule, which for any type of curbside collection would include pick-up days and times; for a drop-off program would include site location and hours of operation

  - the name and phone number of person(s) to contact with questions, complaints, and suggestions

▶ **Develop on-going educational/promotional program.**

- Consider the same options for distribution of information as those considered for the kick-off campaign.

- Information distributed may include: updates on the amount of recyclables collected; effect of the program(s) on the County recycling rate; participation and set-out rates; end uses for the materials collected; estimates of natural resources conserved such as water, energy, and landfill space,

▶ **Establish guidelines for participation, including the following:**

- A description of the residents or dwelling types to be served by the program, such as township or city residents, County residents, single-family dwellings, and/or multi-family dwellings

- The definition of the geographic area to be served by the program, such as a single city or municipality or an entire County

- **Select strategy by which recyclable materials will be sorted into separate categories. Options include:**

  - Full source separation - participant completely sorts all materials by type and/or color

  - Secondary source separation - participant partially sorts materials and collector completes sorting at the curb or at a processing facility

  - Full curbside sorting - participant sets out container of commingled recyclables and collector completely sorts materials at the curb

  - Full commingled collection - participant sets out container of commingled recyclables and collector delivers them in their commingled state to a processing facility where they are sorted

  - Modified commingled collection - participant sorts recyclables into 2 categories - paper and non-paper. All paper recyclables are placed at the curb in their own container alongside a container holding commingled non-paper recyclables. The collector empties the container of paper into one compartment on the collection vehicle, the commingled materials into another. Final sorting is conducted at a processing facility.

- **Select recyclable material storage container to be used by participants. Options include:**

  - Drop-off participants - though residents participating in a drop-off program are not required to use any particular type of container or system for storing their recyclables at home, participation rates typically increase when residents are provided with a container or system. If providing containers free of charge to participants is not feasible, it may be helpful to provide them with information regarding where to purchase them or instructions on how to make their own.

  - Curbside participants - residents participating in a curbside collection program are typically provided with some time of storage container or system.

    Container options include any of the following, either alone or in combination with one another:

    - rectangular bin - single large bin or multiple small bins, depending on the degree of separation done by the resident, units may be stackable

- bucket-type container - single bucket or multiple buckets, depending on the amount of material collected and the degree of separation done by the resident

- "blue bag" - a plastic bag may be used alone for storing commingled recyclables or may be used along with a bin or bucket system (opaque blue bags are often used because while they allow the collector to examine the contents at close range, they restrict identification of the contents by casual observation)

- kraft paper bags - where residents are asked to sort recyclables prior to setting them at the curb, bags may be used as a means of keeping recyclables sorted within a bin - quite often used by residents for storing newspapers prior to recycling, particularly in programs where the brown bag can be recycled along with the newspaper or separated and recycled alone - also used in landscape waste collection programs where materials are collected in bags

- mesh bags - may be used alone or in conjunction with a bin or buckets

▸ **Select collection vehicle(s) - consider the following program features when selecting collection vehicle(s):**

- Materials to be collected

  - number of different materials

  - shapes and sizes of materials

  - anticipated recovery rate of each material

- Degree and method of sorting

  - sorting done by participants

  - sorting done by collector

  - sorting done at a MRF

- Processing facility requirements/features

  - if recyclables have to be pre-sorted or will the facility accept them commingled

  - if there are vehicle restrictions imposed by the physical features of the unloading area

Specific truck types and styles are described in publications available from the Illinois Department of Energy and Natural Resources as well as solid waste trade magazines.

- **Determine frequency of collection.**

  - Recognize that the frequency of collection will affect other decisions to be made, such as the capacity of recycling containers and the capacity of collection vehicles

  - Options for curbside collection include:

    - weekly

    - every other week

    - monthly

  - For single item drives and other special collection programs, frequency of collection will vary from one program to another

  - For drop-off recycling programs, hours of operation and schedule for servicing drop-off containers will need to be established

GENERAL FACTORS TO BE CONSIDERED FOR A COMMERCIAL/INSTITUTIONAL RECYCLING PROGRAM

FACTORS TO BE CONSIDERED

Determine how active the County wants to be in expanding existing or implementing new recycling programs in the commercial/ institutional sector.

Options may include:

- Identify commercial and institutional businesses with existing recycling programs and assist them in expanding their programs.
- Identify commercial and institutional businesses which have the potential for implementing recycling programs and assist them in starting their own programs.
- Participate in the establishment of cooperative programs for the collection and processing of recyclables, such as cardboard and office paper collection and baling.
- Conduct workshops on how individual businesses can perform waste audits and provide recycling education for their employees.
- Assist individual businesses in obtaining recyclable material collection contracts with private recycling haulers/processors.

Develop a public relations program to identify and praise commercial and institutional businesses that are actively recycling.

Consider using a commercial or institutional business to develop and implement a model source reduction/recycling program.

GENERAL FACTORS TO BE CONSIDERED FOR THE CONSTRUCTION OR EXPANSION OF A RECYCLABLE MATERIAL RECOVERY FACILITY (MRF)

FACTORS TO BE CONSIDERED

Ownership options:
- County owned and operated.
- County owned/privately operated.
- Privately owned and operated.

Site selection criteria:
- Zoning.
- Minimum set-backs from residences, parks, schools, etc.
- Effect on existing traffic patterns.

Service area:
- Christian County only.
- Regional (with host county fees).

Effect on existing processing facilities:
- Possible negative impact caused by competition.
- Potential for enhancing or working in cooperation with existing facilities.

Design features:
- Daily capacity.
- Materials processed.
- Type of equipment used (labor intensive or mechanical).

Cost estimates:
- Annualized cost.
- Average cost to individual household.

Funding methods:
- County subsidy.
- Private funding.
- Tipping fee charged to users.
- Grants available.

Implementation schedule:
- Immediate.
- Future.
- Small initial facility with future expansion.

CHRISTIAN COUNTY DROP-OFF PROGRAM OUTLINE

INTRODUCTION

During Phase I, the current phase of solid waste planning, data is being gathered pertaining to the generation and disposal of solid waste in Christian County. In Phase II this data will be used in developing Christian County's 20 year Waste Management Plan. A comprehensive recycling plan will be an integral part of the adopted 20 year plan.

In wanting to start a County-wide recycling effort prior to the adoption of the 20 year plan, the Christian County Environmental Committee has suggested that a drop-off recycling program be implemented in the near future. Details of the proposed program are addressed in the attached outline.

Because the proposed program would be implemented prior to the adoption of the 20 year plan, it needs to be stressed that the drop-off program is not intended to be the sole component of the recycling portion of the 20 year plan. Instead, it would be a foundation to build upon. The drop-off program has been designed with the intent that it may be expanded or modified in order to blend with other future recycling activities. Research shows that drop-off programs can be compatible with other recycling activities such as curbside, volume-based refuse collection and buy-back operations.

It is apparent that this drop-off program targets the residential sector. This in no way means that the commercial and industrial sectors are not important or that they are being excluded from the planning process. Because they generate large volumes of solid waste, these sectors must recycle if Christian County is to reach the State mandated recycling goals of 15% by 1997 and 25% by 1999. Commercial and industrial recycling programs will therefore be essential components of Christian County's 20 year Solid Waste Plan.

COUNTY RESPONSIBILITIES

County will perform the following duties:

- Work with villages and potential Contractors to establish program details such as equipment to be used, recyclables to be collected, pick-up schedule, etc.
- Prepare Request for Proposal (RFP) for Contractor bid proposals.
- Choose hauling/processing Contractor.
- Coordinate initial delivery of drop-off containers.
- Design and place signs at each site.
- Train workers involved in staffing site during and/or after initial start-up period.
- Develop educational/promotional program.
- Print educational/promotional materials to be delivered by the villages.
- Train local speakers bureau personnel involved in educational/promotional programs.
- Provide reporting format to villages.
- Compile data reported by individual villages and Contractor.

County will assist villages in the following activities:

- Prepare grant applications.
- Select drop-off site(s).
- Enact or revise local ordinances concerning the drop-off program.
- Implement educational/promotional programs.

VILLAGE RESPONSIBILITIES

Prior to program implementation:

- Pass a resolution showing the governing bodies' support of the program.
- Prepare and submit a drop-off grant application to the County. The County will provide assistance in preparing the application.
- Designate village representative to act as liaison between the village, County, and Contractor.
- Work with the County to select drop-off site(s).
- Enact or revise local ordinances regarding illegal dumping, litter control, vandalism, and scavenging. The County will provide sample ordinances.
- Provide liability insurance.

Throughout program duration:

- Participate in a public educational/promotional program. The County will assist in setting up and implementing this program.
- Assure distribution of educational/promotional materials. If volunteers are not used, the village is responsible for paying wages.
- Carry out daily site operation such as opening and closing, litter control, arranging for the pick-up of a full container. If duties are not conducted by volunteers, the village is responsible for paying wages.
- Inform the County of needed site maintenance including the drop-off container and signs.
- Provide drop-off site staffing for the initial start-up period. The County will provide training and pay wages.
- Pay for any additional site staffing beyond the initial start-up period. Additional staffing is optional.
- Ensure site security through volunteer or police patrol.

VILLAGE RESPONSIBILITIES - Continued

- Compile and submit reports to the County concerning program status, spending activities, weights of materials collected, etc. A Reporting format will be provided by the County.
- Assure proper disposal of any materials illegally dumped at the site.
- Field and keep a log of questions, comments, and complaints concerning the program. When appropriate, these communications should be forwarded to the County and/or Contractor.

HAULING/PROCESSING CONTRACTOR RESPONSIBILITIES

- Pick up and transport roll-off containers.
- Process and market recyclable material collected.
- Pay each village for aluminum collected at their site.
- Compile and submit reports to all participating villages and the County.
- Clean, maintain, and repair roll-off containers.
- Provide information to support educational/promotional program.
- Submit documentation of the final destination of all recyclables collected.
- Notify the County of recyclable material market fluctuations that may affect the drop-off program.
- Inform the village and/or County of needed site maintenance.

EQUIPMENT

Roll-off containers:

- Minimum 30 yard capacity.
- Minimum of 5 separate compartments with customized compartment size to provide for uniform filling of the container, thus avoiding overflow of high volume and bulky recyclables.
- Openings on both sides of the container.
- Designed with an option to add locks.
- The County will purchase and retain ownership of the containers.
- For liability reasons, the County may lease the containers to the villages for a nominal fee such as $1/year.
- The Contractor will maintain and repair containers.

Hauling equipment:

- Must be compatible with the roll-off containers.
- The Contractor will own, maintain, and repair hauling equipment.

SITE SELECTION CRITERIA

Property ownership:

- May be publicly or privately owned.
- Find out if the owner will allow physical changes to be made, such as adding gravel, concrete, fencing, and lighting.

Accessibility:

- There must be enough space around the container for vehicles to drive through or circle around. This not only increases convenience and therefore participation, it also decreases the chance of accidents.
- The container must be accessible to the Hauler.

Visibility:

- The better the visibility of the site to the public, the better the participation and security.

Security:

- Sites located in publicly visible areas offer greater security.
- Sites located in lighted and/or fenced areas provide better security.
- Each village must arrange for routine security checks of the site, either through local police or volunteers.

Site approval:

- Prior to container placement, the potential site must be approved by the village, the Christian County Solid Waste Management Department, and the Contractor.

SITE OPERATING HOURS

- Hours should be set to meet individual village needs.
- After the initial start-up period, villages may specify certain hours or days that the site will continue to be staffed. This continued staffing will encourage participation of those residents needing assistance. The village pays staff wages after initial start-up.

SIGNS LOCATED AT THE DROP-OFF SITE

With input from the villages and the Contractor, the County will design, construct, place, and maintain all signs.

Each site will have the following 2 types of signs:

Operating hours sign - the format for all sites will be the same, but the specific information may vary from site to site. The format will include:

- village name
- days of the week the site is open
- hours of the day the site is open
- days/hours, if any, that the site is staffed
- phone numbers to call with questions, comments, complaints, and suggestions.

Instructional signs: - since all sites will be accepting the same recyclables, these signs will be identical for all sites. Information will include:

- recyclable materials accepted
- materials not accepted
- artwork/graphics depicting recyclable materials accepted
- instructions pertaining to the preparation of each recyclable material accepted such as remove lids, rinse, flatten
- instructions on how to properly deposit recyclables into the container such as remove them from plastic or paper bags before depositing
- directions to follow if container is full

RECYCLABLES TO BE COLLECTED

With input from the villages and the Contractor, the County will decide what materials are to be collected and for making changes as needed.

The number of recyclables collected may increase or decrease depending on market conditions.

Instructions on how to prepare and deposit recyclables will be provided by the County, using information supplied by the Contractor.

The following materials will be collected initially:

- aluminum and bi-metal cans
- tin/steel cans and lids
- clear and brown glass jars and bottles
- plastic 2-liter soda bottles (#1, PETE)
- plastic milk and water jugs (#2, HDPE)
- newsprint
- corrugated cardboard

The following items may be added to the program:

- aluminum foil
- green glass jars and bottles
- additional plastics
- plastic 6-pack rings
- chipboard/paperboard (cereal boxes, laundry detergent boxes, shoe boxes, etc.)
- magazines and catalogs
- mixed paper (stationery, junk mail, copy paper, etc.)
- phone books
- household batteries

HAULING/PROCESSING OF RECYCLABLES

- There will be a single County-wide contract with one hauling/processing Contractor who will service all participating villages.
- The County will pay the Contractor fees.
- During summer months (May-August), containers will be picked up a minimum of one time per month.
- During non-summer months (September-April), containers will be picked up on an on-call basis, with a minimum of 24 hour notice given to the Contractor.
- On pick-up day, the Contractor will leave an empty roll-off container and deliver the full roll-off container to the processing facility.

SUGGESTED HAULER/PROCESSOR CONTRACT PROVISIONS

Three year contract with provisions to re-negotiate the fee structure at the beginning of each year.

Include a provision to enable contract modification in the event of major recyclable material market fluctuations.

Establish one unit price for a set number of pick-ups and a different unit price for all pick-ups beyond the set number.

Include a provision for termination for cause.

The Contractor shall provide:

- proof of liability insurance
- performance bond
- letters of commitment from recyclable material end markets
- documentation of final destination of recyclable materials collected
- monthly reports on weight of recyclables collected in each village
- 100% reimbursement of aluminum can sales revenue to each village
- cooperation in working with the County and villages on educational/promotional programs

The detailed scope of work should include, but not necessarily be limited to the following:

- roll-off container pick-up and exchange
- transportation of roll-offs
- recyclable material processing
- recyclable material marketing
- care and maintenance of roll-off containers
- site maintenance

EDUCATIONAL/PROMOTIONAL PROGRAM

Start-up education and promotion:

A campaign including the following activities will be conducted prior to and during the start-up of the drop-off program:

- village meetings
- media coverage, including newspaper, radio, and television
- posters
- announcements through school and civic organizations
- distribution of instructional information to all village residents, which may be in the form of flyers, door hangers, notices mailed with utility bills or bank statements, etc.
- initial site-staffing

Instructional/Promotional information should include:

- WHY: benefits of recycling
- HOW: instructions for preparing and depositing recyclables
- WHAT: list of acceptable and non-acceptable materials
- WHEN: start date, operating hours, hours/days staffed
- WHERE: drop-off site location

On-going education and promotion:

Throughout the course of the program, the following activities may be conducted to educate and inform the public regarding program progress, weights of recyclables collected, what the recyclables are being made into, market conditions, and any upcoming program changes:

- village meetings
- progress reports periodically sent to all residents
- media coverage, with special emphasis on local recycling efforts and businesses that sell or use recycled products
- meetings with local community groups, especially those involved directly with the drop-off program
- discussion of the drop-off program in presentations given by the speakers bureau

PROGRAM FUNDING

County will:

- purchase roll-off containers
- pay Contractor fees
- pay for sign construction and maintenance
- pay for initial site staffing
- fund the preparation and printing of educational/promotional materials

Village will:

- pay for daily site operations such as litter control, opening and closing, record keeping, continued site staffing (volunteers may be used)
- fund the distribution of educational/promotional materials (volunteers may be used)

Contractor will:

- pay for and maintain hauling equipment
- pay for cleaning, maintaining, and repairing roll-off containers
- pay each individual village 100% of the revenue from the sale of aluminum collected at their site.
- keep 100% of the revenue from all other recyclable material collected

SOLID WASTE REFERENCE SOURCES

The primary solid waste reference source available to the County is:

Illinois Environmental Protection Agency
Solid Waste Management Section, Bureau of Land
2200 Churchill Road, P. O. Box 19276
Springfield, IL 62794-9276 Tel: 217-785-8604

The following list of additional sources is not intended to be comphrensive, and there are undoubtedly some organizations which have been inadvertently omitted.

GOVERNMENT

Department of Energy & Natural Resources
Office of Solid Waste & Renewable Resources
325 W. Adams Street, Suite 300
Springfield, IL 62704
217/524-5454
312/814-3896

U.S. Environmental Protection Agency
Region V
Waste Management Division (5HR-13)
230 South Dearborn Street
Chicago, IL 60604
312/886-0976

U.S. Environmental Protection Agency
Municipal and Industrial Solid Waste Division
(OS-301)
401 M Street, S.W.
Washington, DC 20460
202/475-9872
RCRA Hotline 800/424-9346
Procurement Hotline 703/941-4452

GOVERNMENTAL ASSOCIATIONS

Association of State and Territorial Waste
Management Officials (ASTWMO)
444 North Capitol Street
Washington, DC 20001
202/624-5828

National Association of Counties
440 First Street, N.W.
Washington, DC 20001
202/393-6226

National Association of Towns and Townships
1522 K Street, N.W., Suite 730
Washington, DC 20005
202/737-5200

National League of Cities
1301 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
202/626-3000

Solid Waste Association of North America
8750 Georgia Avenue, Suite 123
P.O. Box 7219
Silver Springs, MD 20910
301/585-2898

U.S. Conference of Mayors
1620 Eye Street, N.W., 4th Floor
Washington, DC 20006
202/293-7330

MIDWEST INDUSTRY ASSOCIATIONS

Central States Glass Recycling Program
2507 Brewster Road
Indianapolis, IN 46268
317/251-0131

Illinois Soft Drink Association
343 S. Dearborn, Suite 200
Chicago, IL 60604
312/939-4987

Illinois Solid Waste Disposal Association
1208 S. Sixth Street
Springfield, IL 62703
217/522-2388

Illinois Tire Dealers & Retreaders Association
P.O. Box 339
Glen Ellyn, IL 60138
708/858-2422

Institute of Scrap Recycling Industries (ISRI)
Midwest Region
5365 Camelot Estates Drive
St. Louis, MO 63129
314/892-4774

National Solid Waste Management Assoc.
Midwest Region
850 East Diehl Road, Suite 125
Naperville, IL 60563
708/505-7757

Society of the Plastics Industry
Midwest Region
O'Hare Lake Plaza
2400 East Devon Avenue, #301
Des Plaines, IL 60018
708/297-6150

NATIONAL INDUSTRY ASSOCIATIONS

The Aluminum Association
900 19th Street, N.W.
Washington, DC 20006
202/862-5100

Aluminum Recycling Association
1000 16th Street, N.W., Suite 603
Washington, DC 20036
202/785-0951

American Newspaper Publishers Association
Box 17407 Dulles Airport
Washington, DC 20041
703/648-1000

American Paper Institute
260 Madison Avenue
New York, NY 10016
212/340-0654

American Retreaders Association
P.O. Box 17203
Louisville, KY 40217
502/367-9133

Association of Petroleum Re-refiners
P.O. Box 427
Buffalo, NY 14205
716/855-2212

Can Manufacturers Institute
1625 Massachusetts Avenue, N.W.
Washington, DC 20036
202/232-4677

Council for Solid Waste Solutions
1275 K Street, N.W., Suite 400
Washington, DC 20005
202/371-5319

Council on Plastic and Packaging in the Environment (COPPE)
1275 K Street, N.W., Suite 300
Washington, DC 20005
202/789-1310

Flexible Packaging Association
1090 Vermont Avenue, N.W., Suite 500
Washington, DC 20005
202/842-3880

Food Service and Packaging Institute
1025 Connecticut Avenue, N.W., Suite 513
Washington, DC 20036
202/822-6420

Glass Packaging Institute
1801 K Street, N.W., Suite 1105-L
Washington, DC 20006
202/887-4850

Institute of Scrap Recycling Industries (ISRI)
1627 K Street, N.W.
Washington, DC 20006
202/466-4050

National Association for Plastic Container Recovery (NAPCOR)
4828 Parkway Plaza Blvd., Suite 260
Charlotte, NC 28217
704/357-3250

National Oil Recyclers Association
2600 Virginia Avenue, N.W., Suite 1000
Washington, D.C. 20037
202/333-8800

National Soft Drink Association
Solid Waste Management Department
1101 16th Street, N.W.
Washington, DC 20036
202/463-6740

National Solid Waste Management Assoc.
1730 Rhode Island Avenue, N.W., Suite 1000
Washington, DC 20036
202/659-4613

National Tire Dealers and Retreaders Assoc.
1250 Eye Street, N.W., Suite 4000
Washington, DC 20005
202/789-2300

Paperboard Packaging Council
1101 Vermont Avenue, N.W., Suite 411
Washington, DC 20005
202/289-4100

Polystyrene Packaging Council
1025 Connecticut Avenue, N.W., Suite 508
Washington, DC 20036
202/822-6424

Rubber Manufacturers Association
1400 K Street, N.W.
Washington, DC 20005
202/682-4800

Steel Can Recycling Institute
Foster Plaza 10
680 Andersen Drive
Pittsburgh, PA 15220
800/876-SCRI

United Association of Used Oil Services
P.O. Box 10296
Tallahassee, FL 32302
904/222-6127

RECYCLING ASSOCIATIONS

Illinois Recycling Association
407 S. Dearborn, Suite 1775
Chicago, IL 60537
312/939-2950

National Recycling Coalition
1101 30th Street, N.W., Suite 305
Washington, DC 20007
202/625-6406

ENVIRONMENTAL ORGANIZATIONS

Central States Education Center
809 S. Fifth Street
Champaign, IL 61820
309/452-8530

Citizens for a Better Environment
33 E. Congress Parkway
Chicago, IL 60605
312/939-1530

Environmental Action Foundation
1525 New Hampshire Avenue, N.W.
Washington, DC 20036
202/745-4870

Environmental Defense Fund
257 Park Avenue South
New York, NY 10010
800/CALL-EDF

INFORM
381 Park Avenue South
New York, NY 10016
212/689-4040

Institute for Local Self-Reliance
2425 18th Street, N.W.
Washington, DC 20009
202/232-4108

Keep America Beautiful
9 West Broad Street
Stamford, CT 06902
203/323-8987

Natural Resources Defense Council
40 West 20th Street
New York, NY 10011
212/727-2700

GENERAL RECYCLING PUBLICATIONS

Resource Recycling
1206 N.W. 21st Avenue
P.O. Box 10540
Portland, OR 97210
503/227-1319

BioCycle
P.O. Box 351
Emmaus, PA 18049
215/967-4135

Recycling Today
G.I.E. Inc. Publishers
4012 Bridge Avenue
Cleveland, OH 44113
216/961-4130

Recycling Times
5615 W. Cermak Road
Cicero, IL 60650

Waste Age
1730 Rhode Island Avenue, N.W.
Suite 1000
Washington, DC 20036
202/861-0708

Garbage
Old House Journal Corp.
435 Ninth Street
Brooklyn, NY 11215
718/788-1700

RECYCLED PRODUCTS PUBLICATIONS

Recycled Products Guide
American Recycling Market
P.O. Box 577
Ogdensburg, NY 13669
800/267-0707

EXISTING REQUIREMENTS FOR SITING AND PERMITTING SOLID WASTE MANAGEMENT FACILITIES

Drop-off sites for the collection of recyclables:

- no IEPA siting criteria
- no IEPA permit required
- local zoning/land use approval required

Recyclable material processing facility (clean MRF) - new or expansion:

- no IEPA siting criteria
- no IEPA permit required
- local zoning/land use approval required

Transfer station receiving waste from only one unit of government:

- no IEPA siting criteria
- IEPA permit required
- local zoning/land use approval required

Transfer station receiving waste from more than one unit of government:

- IEPA requires local (County or Municipal) site approval based on the 9 criteria listed in Section 39.2 of the Environmental Protection Act
- IEPA development permit required - can be applied for only after local site approval
- IEPA operating permit required - applied for after construction of the facility is complete

Landscape waste compost facility - new or expansion:

- no IEPA siting criteria
- local zoning/land use approval required
- IEPA development and operating permits required - may both be applied for at the same time following local site approval

Landfill facility - new or expansion:

- IEPA requires local (County or Municipal) site approval based on the 9 criteria listed in section 39.2 of the Environmental Act
- IEPA development permit required - can be applied for only after local site approval
- IEPA operating permit required

STATE CRITERIA FOR SITING POLLUTION CONTROL FACILITIES

Under Section 39.2 of the Environmental Protection Act, the county board of the county or the governing body of the municipality shall approve or disapprove the request for local siting approval for each pollution control facility which is subject to such review. Local siting approval shall be granted only if the proposed facility meets the following criteria:

1. the facility is necessary to accommodate the waste needs of the area it is intended to serve;

2. the facility is so designed, located and proposed to be operated that the public health, safety and welfare will be protected;

3. the facility is located so as to minimize incompatibility with the character of the surrounding area and to minimize the effect on the value of the surrounding property;

4. the facility is located outside the boundary of the 100 year flood plain or the site is flood-proofed;

5. the plan of operations for the facility is designed to minimize the danger to the surrounding area from fire, spills, or other operational accidents;

6. the traffic patterns to or from the facility are so designed as to minimize the impact on existing traffic flows;

7. if the facility will be treating, storing or disposing of hazardous waste, an emergency response plan exists for the facility which includes notification, containment and evacuation procedures to be used in case of an accidental release;

8. if the facility is to be located in a county where the county board has adopted a solid waste management plan consistent with the planning requirements of the Local Solid Waste Disposal Act or the Solid Waste Planning and Recycling Act, the facility is consistent with the plan; and

9. if the facility will be located within a regulated recharge area, any applicable requirements specified by the Board for such areas have been met.

Available from IEPA, the pamphlet "Pollution Control Facility Siting in Illinois" explains the local siting process in detail.

GENERAL FACTORS TO BE CONSIDERED IN DEVELOPING LOCAL SITING CRITERIA FOR SOLID WASTE MANAGEMENT FACILITIES

The following factors should be considered for proposed solid waste management facilities such as recyclable material processing facilities and landscape waste compost facilities, which are not covered by State siting criteria:

Conformance with zoning/land use requirements

Highway access -
- need for new access roads
- need for upgrading of existing roads

Railroad access

Effect of proposed facility on existing traffic patterns

Minimum setbacks from cultural features -
- private residences
- schools
- hospitals
- churches
- parks, recreational areas, etc.
- institutional facilities with living quarters
- restaurants
- hotels/motels
- commercial businesses

Minimum building line setbacks/visual screening requirements

Noise and odor abatement requirements

Floodplain protection

National and State Historic Preservation Act compliance

Endangered Species Act compliance

Wetlands Protection Act compliance

GLOSSARY

DEFINITIONS

Back Haul - the shipping of materials by truck in cases where the trucker normally would be returning empty. Back hauling reduces freight costs by eliminating the transporting of empty trailers.

Clean Construction or Demolition Debris - as defined by the Environmental Protection Act, Section 3.78, "...broken concrete without protruding metal bars, bricks, rock, stone, reclaimed asphalt pavement or uncontaminated dirt or sand generated from construction or demolition activities."

Cogeneration - the simultaneous production of two or more useful forms of energy, usually electrical energy and steam for process or heating use.

Commercial - for purposes of this report, implies commercial and institutional businesses as well as the office and lunchroom operations of industrial businesses. Per IEPA definition, "commercial waste as applied to municipal waste, means nonhazardous waste originating from wholesale, retail, or service establishments such as office buildings, stores, markets, theaters, hotels, motels, and warehouses."

Compost - as defined by the Environmental Protection Act, Section 3.69, "...the humus-like product of the process of composing waste, which may be used as a soil conditioner."

Composting - as defined by the Environmental Protection Act, Section 3.70, "...the biological treatment process by which microorganisms decompose the organic fraction of waste, producing compost."

Construction or Demolition Debris - per IEPA definition, "...as applied to municipal waste, means mixed nonhazardous materials, such as broken concrete, stone, rock, bricks or building or construction debris resulting from construction or demolition activities."

Deink - to remove inks, clay coatings, binders, and other contaminants from printed wastepaper. The result is a pulp which is used in the manufacture of new paper.

Direct Haul - the hauling of waste or recyclables directly from the point of generation to the point of disposal or processing. The material does not pass through a transfer station.

End Market - facilities such as paper mills, steel mills, and glass container plants where recyclable materials are reprocessed into new materials.

Energy Recovery - resource recovery process in which solid waste is processed to use its heat content for the production of hot air, hot water, electricity, synthetic fuel, or other useful energy forms.

Flow Control - a regulation or ordinance used by a governmental entity to direct waste to one or more specific locations for processing or disposal.

Gaylord Box - 1.4 cubic yard cardboard container.

Hazardous Waste - as defined by the Illinois Environmental Protection Act, Section 3.15, "waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed, and which has been identified, by characteristics or listing, as hazardous pursuant to Section 3001 of the Resource Conservation and Recovery Act of 1976, P.L. 94-580, or pursuant to (Illinois Pollution Control) Board regulations."

Household Hazardous Waste - as defined by the Household Hazardous Waste Collection Program Act (415 ILCS 90/3), "...a consumer disposed waste product intended for household use, generally containing constituents that make its disposal in municipal waste landfills or incinerators undesirable. Household hazardous waste includes, but is not limited to, the following: (1) waste oil; (2) petroleum distillate-based solvents; (3) oil based liquid paint, paint strippers, removers, and paint thinners; (4) herbicides and pesticides except, for purposes of this Act, antimicrobial and disinfectant products are excluded."

Industrial Office or Lunchroom Waste - as defined by IEPA, means "...non-industrial waste produced in industrial lunchrooms, cafeterias or food-serving functions, or non-industrial waste produced at commercial offices."

Industrial Process Waste - as defined by the Environmental Protection Act, Section 3.17, "...any liquid, solid, semi-solid, or gaseous waste generated as a direct or indirect result of the manufacture of a product or the performance of a service. Any such waste which would pose a present or potential threat to human health or to the environment or with inherent properties which make the disposal of such waste in a landfill difficult to manage by normal means is an industrial process waste. Industrial process waste includes but is not limited to spent pickling liquors, cutting oils, chemical catalysts, distillation bottoms, etching acids, equipment cleanings, paint sludges, incinerator ashes (including but not limited to ash resulting form the incineration of potentially infectious medical waste), core sands, metallic dust sweepings, asbestos dust, and off-specification, contaminated or recalled wholesale or retail products. Specifically excluded are uncontaminated packaging materials, uncontaminated machinery components, general household waste, landscape waste and construction or demolition debris."

Institutional Waste - as defined by IEPA, "...as applied to municipal waste, means non-industrial waste originating in facilities such as schools, hospitals, correctional facilities, and research institutions."

Land Application - the application of landscape or other municipal waste directly to agricultural land at agronomic rates.

Landscape Waste - as defined by Environmental Protection Act, Section 3.20, "...all accumulations of grass or shrubbery cuttings, leaves, tree limbs and other materials accumulated as the result of the care of lawns, shrubbery, vines, and trees."

Material Recovery Facility (MRF) - referred to in this report as a recyclable material recovery facility. A facility used for the further separation and/or processing of recyclables that have been separated at the source.

Mixed Waste Material Recovery Facility - a material recovery facility at which mixed waste is accepted, recyclable materials are separated out and processed, and non-recyclable materials are sent to a landfill or an incineration facility.

Mulch - any material, organic or inorganic, applied as a top dressing layer to the soil surface. Mulch may be placed around plants to limit evaporation of moisture and freezing of roots.

Municipal Waste (MW) - as defined by the Environmental Protection Act, Section 3.21, "...garbage, general household, institutional and commercial waste, industrial lunchroom or office waste, landscape waste, and construction and demolition debris."

Municipal Waste Recycling Rate - the calculation recommended by the IEPA is "the percentage derived by dividing the weight of the generated municipal waste that is being recycled (or planned for recycling) by the weight of the municipal waste generated, (or expected to be generated) within the area of concern within the same year.

Pollution Control Waste - as defined in the Environmental Protection Act, Section 3.27, means "any liquid, solid, semi-solid or gaseous waste generated as a direct or indirect result of the removal of contaminants from the air, water or land, and which pose a present or potential threat to human health or to the environment or with inherent properties which make the disposal of such waste in a landfill difficult to manage by normal means. Pollution control waste includes but is not limited to water and wastewater treatment plant sludges, baghouse dusts, landfill waste, scrubber sludges and chemical spill cleanings."

Pulp - the fibers from which paper is produced on papermaking machines. Pulp is obtained from tree and plant materials or reclaimed paper.

Recycling - as defined by the Environmental Protection Act, Section 3.30, "Recycling, reclamation or reuse means a method, technique or process designed to remove any contaminant from waste so as to render the waste reusable, or any process by which materials that would otherwise be disposed of or discarded are collected, separated or processed and returned to the economic mainstream in the form of raw materials or products."

Refuse-Derived Fuel (RDF) - the material remaining after selected recyclables and non-combustible materials have been removed from solid waste. Refuse-derived fuel is incinerated for the purpose of producing steam or generating electricity.

Sanitary Landfill - as defined by the Environmental Protection Act, Section 3.41, "...a facility permitted by the Agency for the disposal of waste on land meeting the requirements of the Resource Conservation and Recovery Act, P.L. 94-580, and regulations thereunder, and without creating nuisances or hazards to public health or safety, by confining the refuse to the smallest practical volume and covering it with a layer of earth at the conclusion of each day's operation, or by such other methods and intervals as the Board may provide by regulation."

Solid Waste Counseling - providing guidance concerning the managing of waste, particularly to those in the commercial and industrial sectors.

Source Reduction - as defined in the USEPA Consumer's Handbook for Reducing Solid Waste, source reduction is "the design, manufacture, purchase, or use of materials (such as products and packaging) to reduce the amount or toxicity of trash generated." Source reduction techniques include reusing items, minimizing the use of products that contain hazardous compounds, using only what is needed, extending the useful life of a product, and reducing unneeded packaging.

Source Separation - the removal or setting aside of recyclable materials from the waste stream, done by the consumer or generator.

Special Waste - as defined by the Environmental Protection Act, Section 3.45, "...any industrial process waste, pollution control waste or hazardous waste, except as may be determined pursuant to Section 22.9 of this Act. Special waste also means any potentially infectious medical waste."

Tipping Fee - the charge to a customer to unload waste or recyclables at a transfer station, processing plant, landfill, or other waste management facility.

Transfer Station - as defined by the Environmental Protection Act, Section 3.83, "... a site or facility that accepts waste for temporary storage or consolidation and further transfer to a waste disposal, treatment, or storage facility. Transfer station includes a site where waste is transferred from: (1) a rail carrier to a motor vehicle or water carrier; (2) a water carrier to a rail carrier or motor vehicle; (3) a motor vehicle to a rail carrier, water carrier or motor vehicle; (4) a rail carrier to a rail carrier, if the waste is removed from a rail car; or (5) a water carrier to a water carrier, if the waste is removed from a vessel."

Vermicomposting - the process of using earthworms and microorganisms to convert organic waste into black earthy-smelling nutrient-rich humus.

Virgin Material - any basic material used in industrial processes that has not previously been used, such as wood pulp trees, iron ore, crude oil, and bauxite.

Volume-Based Refuse Collection - a refuse collection system in which the customer is charged a fee based upon the amount of waste they generate. The more a customer generates, the more they pay.

Volume Reduction - the processing of waste materials to decrease the amount of space they occupy. Compaction, shredding, and burning are all methods of volume reduction.

Waste Audit - an on-site assessment of the waste stream and source reduction and recycling potential of an individual business or institution.

Waste-to-energy - the burning of solid waste to produce steam, which can be used to generate electricity.

ACRONYMS

ADA	Americans with Disabilities Act
CCSWMD	Christian County Solid Waste Management Department
C/D	Construction/Demolition
DRDF	densified Refuse-Derived Fuel
ENR	(Department of) Energy and Natural Resources
IEPA	Illinois Environmental Protection Agency
IMES	Illinois Materials Exchange Service
LF	Landfill
MRF	Material Recovery Facility
MW	Municipal Waste
ORWR	Office of Recycling and Waste Reduction (ENR)
RDF	Refuse-Derived Fuel
TDF	Tire-Derived Fuel
TPD	Tons per Day
TPY	Tons per Year
USEPA	United States Environmental Protection Agency
WTE	Waste-to-Energy