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WAS018

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GUIDANCE DOCUMENT FOR MEASURING AND TRACKING RECYCLABLES AND ORGANICS

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Introduction:

In 1988 the United States Environmental Protection Agency (EPA) proposed regulations for municipal waste landfills. That same year the Nebraska Legislature required the Nebraska Department of Environmental Quality (originally created as the Nebraska Department of Environmental Control (DEC)) to conduct a survey of unlicensed landfills in the State for the purpose of determining the impact these landfills were having on the environment. At that time there were over 350 open dumps operating in the State.

Over the following years there was a steady progress made toward the responsible management of Nebraska's waste. In April 1992 Legislative Bill (LB) 1257 was signed into law. The bill represented the most significant single piece of environmental legislation since the Nebraska Environmental Protection Act, which created the DEC, was passed in 1971. The primary component of LB 1257 was the Integrated Solid Waste Management Act.

The Integrated Solid Waste Management Act contained provisions which for the first time, assigned the responsibility for providing all citizens in the State the necessary systems and facilities for the safe and sanitary disposal of solid waste. The Integrated Solid Waste Management Act also required the Nebraska Department of Environmental Quality to maintain a proactive position in the responsible management of waste.

The progress that has been made in the state of Nebraska in the pursuit of responsible management of waste has truly been remarkable. Over the course of time we have gone from operating over 350 unlicensed and substandard landfills to operating 20 to 30 permitted facilities. More importantly, we no longer rely totally on landfills for our disposal system. Recycling centers, material recovery facilities, and compost operations are now common components of our integrated waste management systems.

The Nebraska Department of Environmental Quality has developed the following guidance document titled Measuring and Tracking Recyclables and Organics. This document should be utilized by the following types of organizations involved in collecting and processing recyclables and organics:

- Volunteer groups
- Non-profits
- Private/For-profit businesses
- Municipalities
- Counties
- Solid waste agencies

The guidance document, Measuring and Tracking Recyclables and Organics, can be used to assist an organization in the following ways:

- Establishing consistent methods for measuring and evaluating a program
- Making decisions on the type and capacity of solid waste systems and facilities
- Standardizing terminology
- Reducing the amount of solid waste being land disposed
- Identifying common recyclables
- Providing standard conversion factors and worksheets for measuring recyclables and organics
- Identifying the full cost associated with the program
- Maintaining accurate and consistent records of the types and quantities of commodities collected
- Measuring progress toward the State waste reduction goals
- Marketing collected commodities

Background and Project History

More than 1.8 million tons of municipal solid waste are generated in Nebraska each year, approximately 6.2 pounds per person every day. Many efforts are being made in Nebraska to reduce the amount of solid waste that is ultimately disposed in our landfills. The landfill method of disposal is not only expensive, but also wastes the resources found in materials (commodities) that can be separated from the waste stream and recycled into usable products.

Recycling has become an increasingly popular and important solid waste management option for reducing the amount of waste we landfill, as well as preserving our valuable resources. There are many new and

expanded recycling programs operating across the State. Many of the local programs collect several types of recyclables and transport them to regional processing facilities where the larger volumes of materials are shipped to recycling markets. These collection and transportation processes are working relatively well. However, how do we measure, track, evaluate, and compare our recycling efforts?

This question was posed to the Nebraska Department of Environmental Quality (NDEQ) by several recycling interests. In an attempt to hear from a broader base of the recycling industry, the NDEQ invited over 70 individuals to an informational meeting to gather and share recycling ideas. Input received at the February 1996 meeting suggested that there were benefits to establishing consistent methods for measuring and tracking recyclables. The participants felt a guidance document should be prepared that would identify common recyclables, conversion factors, standardized definitions, sample worksheets, and a reporting system. A working group was formed from those attending the informational meeting. The work group met regularly during the Spring of 1996 to review draft documents and provide feedback to NDEQ as the guidance document was prepared. Once the final draft was completed, the guidance document was presented to the original informational meeting invitees and other interested individuals for their review. Development of the guidance document, *Measuring and Tracking Recyclables and Organics* was completed in June of 1996.

Voluntary Process

The use of this guidance document for measuring and tracking recyclable and organic commodities is not mandatory. Although this measurement of materials diverted from land disposal through recycling is voluntary, this process will benefit recyclers, municipalities, and counties by protecting the environment, responding to citizen needs, reducing land disposal costs and identifying future program needs.

Solid waste agencies or local jurisdictions are encouraged to use this document to develop local or regional recycling rates. It is important that both public and private sector recycling quantities be included. This can be done through the reporting forms contained in this document. The compiling agency should ensure that recyclable materials are not double counted in determining the local or regional recycling rate.

About the Document

This guidance document is a first step in "standardizing" terms and methods for tracking recycled commodities and organics. This document lists the most common types of recyclables and defines each type and sub-type. We recommend that you measure and track all of these commodities that are collected by your program. The document also includes information on measuring and tracking organics and many not-so-common types of recyclables. These are materials that may be important in measuring and tracking your progress toward reaching waste reduction goals, but may not be as important for solving some of the other problems.

We have included all types of materials that are commonly recycled. However, there may be other materials that you will add to this list to complete the tracking of your individual program activities.

Not all portions of this guidance document will be relevant to your operation. The important thing is that the data is available to help you solve some of the problems that your program/operation is facing.

Why do You Want to use this Document?

No matter if you are a paid or volunteer recycling professional, a non-profit organization, private or for-profit business, municipality, county or agency, you are faced with many of the same problems. Some of these problems are internal and some are external, but solving problems are always easier when you have accurate information on which to base decisions. This guidance document was developed to help solve some of the problems related to information collection, tracking, evaluating and sharing. You may identify with some of the problems that are discussed here.

- **Measure and evaluate programs**

Recycling professionals in Nebraska and all areas of the nation are confronted with the need to measure and evaluate their programs. Many times this need is initiated by local governments who are faced with making decisions on the type and capacity of solid waste system and facilities needed for their service area. In order to effectively prioritize financial needs, local governments and recycling professionals must identify the economics associated with each system and facility option.

Questions frequently asked by local governments and recycling professionals are: How can we determine if our recycling program is cost effective? How do we make decisions on the most urgent needs for financial resources? How do we know if the cost associated with our collection and disposal system is reasonable?

Maintaining accurate and consistent records of the types and quantities of materials recycled in your local or regional program provides a basis for making informed decisions on these issues. It is not the only information needed, but it is an important and necessary piece to consider before implementing or expanding the program.

- **Gauge progress**

Whether you are a small, large, for-profit or non-profit program, you need to gauge your progress. How do you evaluate your progress over the last year, the last six months or from one month compared to another month? Without a consistent means to measure and track this information, an accurate evaluation cannot be performed to judge your progress or compare your program to programs in other areas of the State.

- **Assist start-up programs**

What if you are a new recycling operation? How do you know what types of materials other programs are measuring and tracking? How do you know "how" to consistently measure each type of recyclable material? This guidance document is designed to assist both existing and start-up programs by providing a list of common recyclables, conversion factors, standardized definitions, etc.

- **Address Waste Reduction Goals**

Even though the reduction goals are not mandatory, most Nebraskans understand that waste reduction and recycling results in reduced waste disposal costs while preserving our environment. Thus, there are many recycling programs working toward achieving these goals. Consistently measuring and tracking recycling efforts helps to identify progress in reaching the waste reduction goals. The amount of materials recycled can be combined with other waste reduction activities such as volume reduction at the source and reuse to calculate the progress of a municipality, county, or region towards reaching the waste reduction goals.

- **Educate Public**

Information gathered from measuring and tracking recyclables and organics can be used to educate the public on the impact of participating or not participating in these activities. Recycling programs make citizens more aware of their purchasing and disposal habits. When citizens recycle and compost organics, the amount of household waste disposed decreases.

- **Create Statewide Data Base**

The Nebraska State Recycling Association (NSRA) began collecting county-by-county recycling information to inventory and classify all types of recycling programs in 1993. This database of recycling information was updated in 1994 and 1995 and is scheduled for annual updates. The long term objective of this exercise has been the creation of an information management system for residential and commercial waste reduction and recycling programs. The challenge is to create a data gathering system which can be used by a broad range of user categories working toward this common goal.

Residential and commercial waste generators, product manufacturers using postconsumer feedstock, service providers and governmental officials wishing to measure recycling and disposal trends and patterns will find this type of data useful in assisting generators to track costs of disposal and recycling and help to reduce the use of rare or non-renewable resources.

When or if solid waste agencies or local jurisdictions wish to conduct a comparative analysis of recycling rates with other agencies or jurisdictions, it is important to make sure the data is

comparable. For example, one jurisdiction may include organic composting or sludge application in their recycling rate while others may not. Similarly, a jurisdiction that does not have access to truck scales may use different conversion factors than your jurisdiction.

As in all data-collection exercises, effectiveness must be measured by how well the process serves user needs. The general categories of users identified as the most likely to benefit from standardized data-collection include:

1. Public Decision Makers, Planners, and Organizers
2. Recycling Processors and Collectors
3. Mills and Manufacturers
4. Consumers/Rate-payers
5. Educators/Researchers

This guidance document will assist all recycling programs to report the same things in the same ways. This consistent measurement will help to ensure the validity of the statewide data. The database's value for planning, economic development or market development applications is only as good as the data collected.

Method For Recording Basic Data

Several categories have been identified as being the most likely products to be recycled. Each of these categories have sub- categories to assist in tracking the materials which will most likely be recycled under each category.

To establish uniform and standard data for recycled products in the State, the same recording procedures should be followed by recycling facilities. Conversion factors are provided in [Appendix A](#) to assist users in converting the amount of a recyclable commodity to weight. The weight measurement is utilized as the reporting method since weight is most often used by the markets for recyclable commodity.

The following flow chart indicates the method identified in this Guidance Document for recording basic data on recyclables and organics. Level 1 of the flow chart describes the recyclable categories. These are glass, metals, paper, plastics, organics, and other recyclables. Level 2 further defines the recyclable categories into sub-categories; conversion factors are provided for the sub-categories in [Appendix A](#). Level 3, the final level of the flow chart, describes the process for reporting the recyclables collected at your facility, the process is:

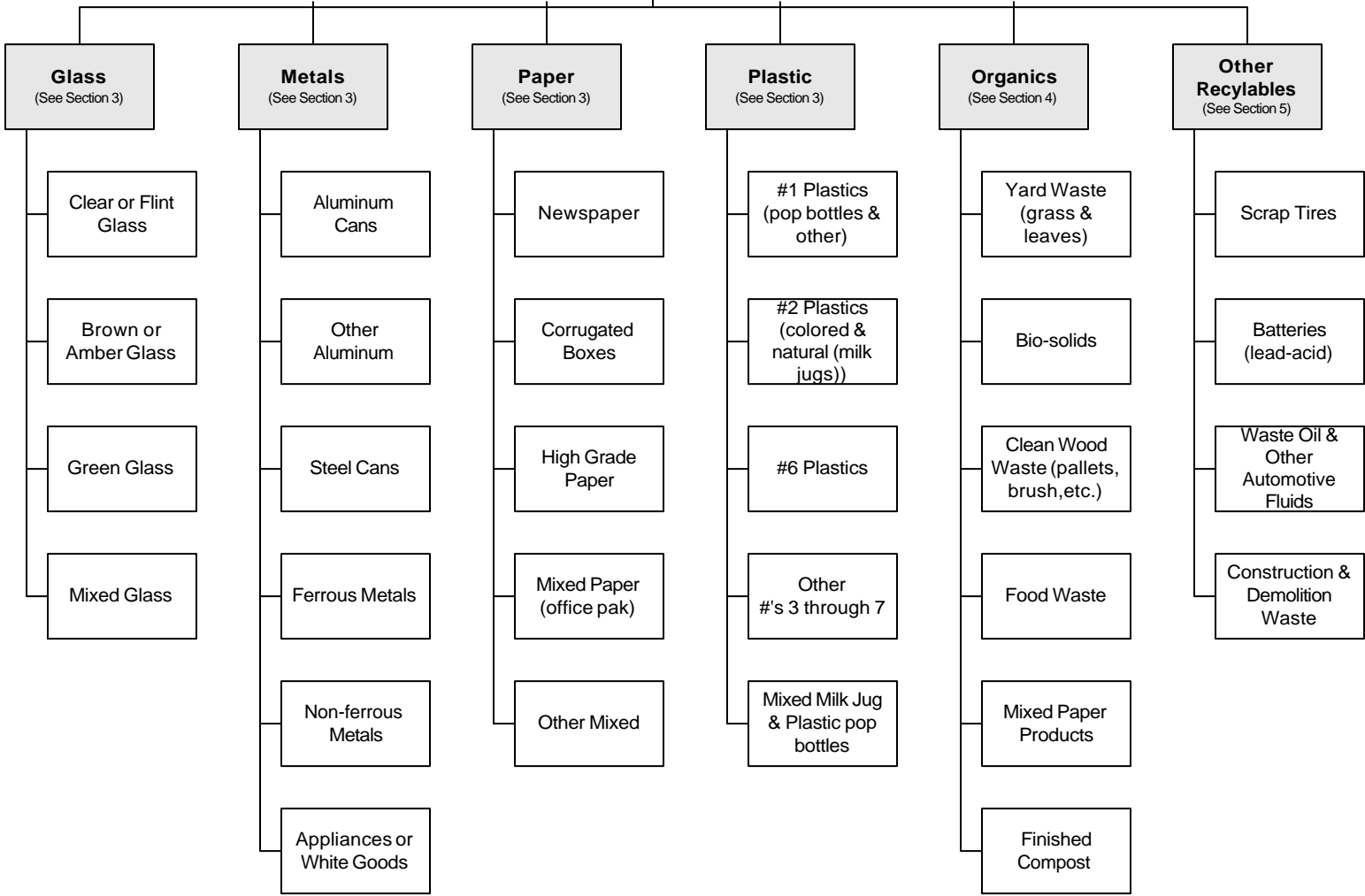
1. Use the conversion factors if your recyclable commodities are not measured by weight
2. Record the information for a specific period of time, i.e. daily, weekly, monthly
- 3 .Provide quarterly reports (or annual reports at a minimum) on the amount collected to the Nebraska State Recycling Association.

Tracking and summary reporting forms are made available for you to copy and use at your discretion in page 17 & 19.

Collect Recyclables

Level 1 Recyclable Category

Level 2 Recyclable Sub-Category

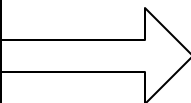
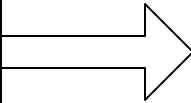


Level 3 Volume for Weight Conversion and Recording

First, Use Conversion Factors (Appendix A)

Second, Record Information (Section 6)

Third, Provide Annual Notification to NSRA



Common Recyclables

Glass

Glass is defined as containers such as bottles and jars in three colors: green, amber (brown), and clear (flint) glass. Glass containers constitute a small percentage of the waste stream. Glass containers are highly recyclable and can be made back into glass containers with little loss of material. Conversion factors for glass are provided in [Appendix A](#).

- **Clear or "Flint" Glass** - This sub-category generally represents food and beverage containers. Clear bottles generally have the highest recycling value of glass containers.
- **Brown or "Amber" Glass** - This sub-category generally represents beer bottles. Brown bottles generally have a lesser recycling value than clear bottles but a higher recycling value than green bottles.
- **Green Glass** - Green containers generally represent wine bottles, some pop bottles, and imported beer bottles. Imported beer and wine bottles represent approximately 9 percent of glass production. Green containers have the least recycling value of glass containers.
- **Mixed Glass** - Mixed containers include any combination of brown, green, or clear glass containers. Mixed containers provide the material for aggregate on road and building construction bases. These containers typically are not separated by color.

Other types of glass i.e industrial glasses such as windows, mirrors, light bulbs, ceramic cups or plates, crystal, drinking glasses, glass tiles, medical laboratory glass and heat resistant cook or ovenware, are not commonly recycled. Markets for other types of glass may include aggregate in building and road construction.

Some recyclers will accept blue beverage containers. Check with your market to see if these can be mixed with either clear or green, or if they are to be kept separate by color also.

Metals

Metals are either ferrous or non-ferrous metals. Ferrous metals are described as magnetic metals which are predominantly composed of iron. Non-ferrous metals are non-magnetic and contain no iron. Metals are in several categories in order to be consistent with the collection activities of recyclers in the State. Conversion factors for metals are provided in [Appendix A](#).

- **Aluminum Cans** - Aluminum accounts for more than 95 percent of all beverage cans. Aluminum beverage containers are one of the higher valued recyclables.
- **Other Aluminum** - Other aluminum includes wrapping foils, semi-rigid packaging such as pie plates and frozen food trays, flexible packaging such as cigarette foil and candy wrappers, lawn furniture (aluminum tubing) and automobile parts such as bumpers.
- **Steel Cans** - The majority of bi-metal cans are used for food products and, to a lesser extent, general packaging such as paint and aerosol cans. Bi-metal cans also account for approximately 5 percent of all beverage cans. The recycling of bi-metal cans is easy due to their magnetic properties and the limited number of potential contaminants in the remanufacturing process.
- **Ferrous Metals** - Ferrous metals include scrap iron and steel items, and stainless steel scrap. The market for ferrous metals has traditionally been strong and steel mills have improved their processes to incorporate more industrial and obsolete scrap material from the waste stream.

- **Non-ferrous Metals** - Non-ferrous metals, which contain no iron, include aluminum, copper, brass and bronze. The majority of these recycled commodities, excluding aluminum, are salvaged from such items as electric motors, plumbing parts, automobiles and appliances.
- **Appliances or "White Goods"** - For the purpose of the land disposal ban in Nebraska, white goods are defined as clothes washers and dryers, water heaters, heat pumps, air conditioners, refrigerators, freezers, trash compactors, dishwashers, conventional ovens, dehumidifiers, ranges, stoves, and wood stoves. Appliances can be scrapped for parts before being shredded.

Paper

Paper is defined as a thin sheet material made of cellulose pulp, derived mainly from wood, rags, and certain grasses. Paperstock is general waste papers which can be sorted or segregated at the source into various grades. Paper is classified in several grades in order to encourage recyclers to get the highest value from their product. Conversion factors for paper are provided in [Appendix A](#).

- **Newspaper** - Newspapers are printed on newsprint, which is an uncoated groundwood paper. Recycling programs have focused on newspaper collection because of the ease of separation and collection and the steady flow of material. It is estimated that 55 to 60 percent of the newspapers in the U.S. are recycled.
- **Corrugated Boxes** - Corrugated boxes (also known as old corrugated containers, or OCC) come primarily from shipping containers. Corrugated boxes have a fluted, corrugated medium layer sandwiched between layers of linerboard. Corrugated boxes are sometimes mistakenly referred to as "cardboard boxes." By tonnage, OCC is the most recycled product in the municipal waste stream.
- **High Grade Paper** - High Grade Paper includes computer print-out paper with white and green lines and white ledger paper. White ledger paper can include white copy paper, letterhead, typing paper, and file stock. These types of paper tend to have a high return for material so they should be separated from other paper products.
- **Mixed Paper or "Office Pak."** - Mixed paper consists of mixed colors and types of paper such as pastel paper, note-pad paper, junk mail, index cards, and adding machine tapes. Mixed paper has fewer markets and a lesser value than high grade paper. In some cases mixed paper may include computer paper and white ledger paper. Recyclers are encouraged to separate computer and white ledger paper to receive a greater return rather than including them with mixed paper pak.
- **Other Mixed** - Other mix may include magazines, printer waste, telephone books, paper board (shoe and cereal boxes), poly-coated fiber (aseptic or drink boxes and milk cartons), junk mail, and any other paper based product. The value of this mix would be minimal and would increase with further separation.

Plastic

Plastic is defined as any of the various complex organic compounds produced by polymerization. They can be molded, extruded or cast into various shapes and films or drawn into filaments used as textile fibers. The Society of the Plastics Industry has developed a system for coding plastic containers for resin type. The SPI code is imprinted on the bottom or side of a plastic container and is indicated by a number inside the recycling logo. Plastics have been divided into five categories in order to be consistent with recycling practices in the State. Conversion factors for plastics are provided in [Appendix A](#).

- **#1 Plastics** - PET-1 - Polyethylene terephthalate is clear or colored transparent plastic with high gloss such as plastic pop bottles, processed meat packages, and some household cleanser containers. Soft drinks are the primary product packaged in PET. Salad dressing, peanut butter and other household and consumer products use PET.
- **#2 Plastics** - HDPE-2 - High density polyethylene is plastic with a translucent or opaque matte finish such as milk and water jugs, some bag films, and laundry detergent bottles. Natural colored HDPE resin is used for milk and water bottles. Colorants are added to the resin for bottles used for detergents, shampoos, margarine tubs and other products.
- **#6 Polystyrene** - PS-6 - Polystyrene; examples include egg cartons and some plastic flatware. Expanded polystyrene (EPS) also carries the #6 recycling symbol. Examples of this material include packing peanuts, insulation sheeting, packaging, aspirin bottles, cottage cheese tubs, foam cups or fast food clam shells.
- **Other #'s 3 through 7** - Polyvinyl chloride (PVC) or #3 plastic is plastic with a tough, smooth surface that forms an opaque white line when bent. Mouth wash, salad dressing, and vegetable oil bottles, food wraps and blister packaging are V-3.

Low Density Polyethylene or #4 LDPE is a plastic film that can be nearly transparent, opaque or colored. Dry cleaning bags, bread, trash, and some bag films, flexible bottle caps, mustard bottles and some food storage containers are LDPE #4.

Polypropylene or PP #5 includes margarine and yogurt containers, ketchup bottles, screw-on caps and lids and syrup bottles.

Other plastics sometimes referred to as #7, denote all plastic such as multi-resin containers not included in the other six categories.

- **Mixed Milk Jugs and Plastic Pop Bottles** - This sub-category was created to benefit those recyclers who may co-mingle these two materials which are most frequently recycled and to provide them a conversion factor for the measurement of the mix.

Organics

Organic wastes are materials which contain carbon. Organic waste can include manure, urban refuse, logging and wood manufacturing residues, agricultural crops and food waste, industrial waste, and municipal sewage solids. This section provides a brief description of organic material which is recycled in the State. Conversion factors are provided in [Appendix A](#).

- **Yard Waste** - Yard waste is defined as grass and leaves but also included in this category would be non-woody garden debris. Yard waste can account for an estimated 20 percent of the municipal waste stream, this will vary depending on the area of the United States and the type of yard care which occurs.
- **Bio-solids** - Bio-solids is the residue of materials removed from wastewater, sometimes called sewage sludge, during the process of wastewater treatment. Because of its origin and the immense quantities in which it is produced, it represents a major handling problem for many communities. On the other hand, because it is composed of humus, nitrogen and smaller amounts of phosphorous, potassium and other trace metals, it also represents an opportunity for use as an effective soil conditioner/fertilizer.
- **Clean Wood Waste** - Clean wood waste would include pallets, brush or small tree branches, sawmill waste and wood-processing plant waste and other wood which has not been treated.
- **Food Waste** - Food waste is defined as all animal and vegetable solid wastes arising from food facilities, that result from storage, preparation, cooking or handling of food.

- **Mixed Paper Products** - Non-recyclable paper could be utilized in a composting process. This may include self stick labels, slick paper, carbon forms or carbon paper, sticky notes, bright colored paper, waxy paper, manila file folders, and plastic windowed envelopes.
- **Finished Compost** - This sub-category refers to the "mature" compost from any biological process for converting organic solid wastes into stable, humus-like product whose chief use is as a soil conditioner. This could include grass and leaves composting, municipal solid waste composting etc.

Other Recyclables

This section discusses four additional categories in the waste stream that are recyclable. The products in these categories have not been traditionally collected by recycling centers but have been collected at the retail sites where the product is sold or used for other beneficial use. Conversion factors for these categories are in [Appendix A](#).

- **Scrap Tires** - A scrap tire is a tire that is no longer suitable for its intended purpose because of wear, damage or defect. Auto and truck tires are the primary sources of rubber in the waste stream. Whole scrap tires have been banned from land disposal since September 1, 1995.
- **Batteries (Lead-acid)** - A lead-acid battery is the type of electrical storage battery commonly used in motor vehicles. They are generally deposited at local battery service centers where they are recycled. Lead-acid batteries have been banned from land disposal since September 1, 1994.
- **Waste Oil and Other Automotive Fluids** - Waste oil is defined as any oil, that has been refined from crude oil, used, and as a result of such use, is contaminated by physical or chemical impurities. Waste oil has been banned from land disposal since September 1, 1994. Anti-freeze is another automotive fluid which is recycled.
- **Construction and Demolition Waste** - Clean concrete, asphalt and other types of construction rubble is used as fill material and aggregate. Construction and demolition waste is defined as waste which results from land clearing, the demolition of buildings, roads or other structures, including, but not limited to, beneficial fill materials, wood (including painted and treated wood), land clearing debris other than yard waste, wall coverings (including wall paper, paneling and tile), drywall, plaster, non-asbestos insulation, roofing shingles and other roof coverings, plumbing fixtures, glass, plastic, carpeting, electrical wiring, pipe and metals. Such waste shall also include the above listed types of waste that result from construction projects.

Reporting Process

Reporting the amounts of recyclables and organics collected is strictly voluntary. A [Periodic Reporting Form](#) and a [Summary Form](#) have been developed to assist in the recording of information. (a copy of the tracking forms are included in this document along with a description of how to fill out the forms) Once the information is recorded you can report the total amounts of recyclables and organics collected over a period of time to the Nebraska State Recycling Association (NSRA). Data chosen to be reported can be submitted by a sole entity or by a region consisting of an accumulation of data from more than one entity to NSRA on a quarterly or annual basis.

Recycling quantities submitted to NSRA will be summarized by county and included in the annual report of recycling collection data. The summary does not identify the sources of the information; the source and the amounts provided to NSRA are kept confidential. The annual report will be provided to contributors.

The reporting dates are based upon a calendar year. The quarterly and annual due dates for information to be submitted to NSRA are:

First Quarter - January, February, and March reports due **April 30**

Second Quarter - April, May, and June reports due **July 31**

Third Quarter - July, August, and September reports due **October 31**

Fourth Quarter - October, November, and December reports due **January 31**
Annual Reports due by **January 31** of the following year

All information should be sent to:
**The Nebraska State Recycling
Association 1941 S. 42nd Street,
Suite 512
Omaha, Nebraska 68105**

Periodic Reporting Form

The Periodic Reporting Form is designed to record amounts on a more frequent basis, such as daily, weekly, or monthly depending on your operation needs. The information accumulated on the Periodic Reporting Form(s) can be transferred to the Summary Form for submittal to NSRA. This form can be kept with your files for future reference. Additional copies of this form should be made for your continued use. Information and instructions related to using this form are below.

Commodity - The commodities column provides a list of the type of commodities described in this document. Each commodity has a line to record the amount sold, given away, or end used at the facility during the reporting period.

Reporting Period - The reporting period, located at the top of the columns, is used to show the period covered by each set of entries. Three reporting periods are included on each side of the form. You may use these sections to record daily, weekly, monthly etc. activity, depending on the specific needs of your operation.

NOTE: In order to keep from duplicating commodity amounts, we are requesting that all amounts be recorded as they are delivered out of the facility or used for an end-use in the facility. Therefore, do not record amounts as commodities are received or inventory amounts.

Sold - Indicate the amount, in pounds or tons, which you sold to another recycling facility or processor during the reporting period. This column does not include the amount which you purchased or is in inventory.

Given Away - Indicate the amount, in pounds or tons, which you gave away at no cost or paid to give away to another recycling facility or processor during the reporting period. This column is not for the amount which you collected at no cost or is inventory.

End Used - If you used a particular commodity to develop or manufacture a new product at your facility, indicate the amount of the commodity used for the new product, in pounds or tons, in this column.

Total Amount - Indicate the total amount, in pounds or tons, which was sold, given away, and end used at your facility by adding up all amounts in the three reporting periods. The amount indicated in this column will be used for calculating the total amount reported on the Summary Form.

Summary Form

The Summary Form reports the accumulation of all total amounts indicated on the Periodic Reporting Form(s). The Summary Form should be filled out quarterly or annually at a minimum. Fold and staple or tape the form and mail the pre-addressed form to The Nebraska State Recycling Association. (see address above) A description of and instructions for using this form are as follows:

Reporting Period - The reporting period is located at the top of the Form. Write in the period which corresponds to the amounts reported.

County - Write in the name of the County in which your facility is located.

Commodity - The commodities column provides a list of the type of commodities described in this document. Each commodity has a line to record the amount sold, given away, or end used at the facility during the reporting period.

Total Amount - Indicate the total amount, in pounds or tons, which was sold, given away and end used at your facility for this reporting period. This total amount should be the accumulation of the total amount columns from the Periodic Reporting Form(s).

Note: The next five entries are important to eliminate the possibility of double counting commodity amounts. Please check the ones that apply to your operation for each commodity.

Processor - Place a check here if you process the commodity at this facility.

End Market - Place a check here if your facility is the end market for the commodity.

In State - Place a check here if the commodity is sent from your facility to another facility or processor within the State of Nebraska.

Out of State - Place a check here if the commodity is sent from your facility to another facility or processor not located in Nebraska

Name and Address of Company Receiving Commodity - To further assist NSRA in eliminating double counting of a recyclable commodity, you are encouraged to include the name of the receiving Company.

SUMMARY FORM

Reporting Period: _____

County: _____

Commodity	Total Amount (in pounds or tons)	Check all that apply				Name and Address of Company receiving commodity
		Type of Activity		Commodity is Sent		
		Processor	End Market	In State	Out of State	
Glass:						
Flint/Clear						
Amber/Brown						
Green						
Mixed Glass						
Metals:						
Aluminum Cans						
Other Aluminum						
Steel Cans						
Other Ferrous						
Other Non-ferrous						
White Goods						
Paper:						
Newspaper (ONP)						
Corrugated Boxes (OCC)						
High Grade Paper						
Mixed Paper (office pak)						
Other Mixed						
Plastics :						
#1 Plastics (pop bottles)						
#1 Plastics (other)						
#2 Plastics (natural, milk)						
#2 Plastics (colored)						
#6 Polystyrene						
Other #'s 3 thru 7						
Mixed Plastics						
Organics :						
Yard Waste						
Bio-solids						
Clean Wood Waste						
Food Waste						
Mixed Paper						
Finished Compost						
Other:						
Scrap Tires						
Batteries (lead-acid)						
Waste Oil/Auto. Fluids						
Oil Filters						
C & D Waste						

ALL INFORMATION WILL BE KEPT CONFIDENTIAL

Appendix A

Conversion Factors

These conversion factors are based on the final measurements being presented in weight. Weight was chosen as the reporting method since this is the way recyclables are measured for the market. The conversion to weight is determined by using measurements equal to one cubic yard. Recyclables are collected in various ways, the intent is that the conversion factors presented here will enable the recycler to convert the amount of recyclables to a one cubic yard measurement and then to weight. In many cases, recyclers already weigh their recyclables and will not utilize these conversion factors.

Conversion of Measurements to One Cubic Yard

Gallons

201.97 or 202 gallons = One Cubic Yard

55 Gallon Drum

Full 55 Gallon Drum = .27 Cubic Yard

One-half of a 55 Gallon Drum

= .135 Cubic Yard One Cubic

Yard = 3.7 55 Gallon Drums

Gaylord Box (40" x 48" x 37")

Full Gaylord Box = 307 Gallons

Full Gaylord Box = 1.52 or 1.5 Cubic Yards

One Cubic Foot

One Cubic Foot =

.037 Cubic Yards One

Cubic Yard = 27 Cubic

Feet

Once the amount of cubic yards is determined for a particular recyclable commodity the weight can be determined. Each commodity has a different density so there is not one standard conversion to weight. Every effort has been made to find final weight conversions which do not have a broad range for the commodity. In some cases the median of a given range was utilized. A number of sources were utilized to arrive at the conversion rate, these are included at the end of the document. You will notice the conversion factors are not given for baled or processed commodity as the weight is already determined. The conversion factors from one cubic yard to weight for each recycling category identified are as follows:

Glass

Glass Container

(Reminder: 55 Gallon Drum = .27 Cubic Yards)

One Cubic Yard of Whole Containers = 600 Pounds

One Cubic Yard of Crushed Containers or Mixed Glass = 1,800 Pounds

Metals

Aluminum Cans

One Cubic Yard of Whole Aluminum Cans = 50 Pounds

One Cubic Yard of Flattened Aluminum Cans = 250 Pounds

Other Aluminum

(Reminder: One Cubic Foot = .037 Cubic Yards or 27 Cubic Feet = One Cubic Yard)

Aluminum Foil

One Cubic Yard = 45 Pounds

Aluminum Scrap

One Cubic Foot = 168 Pounds One Cubic Yard = 4,540 Pounds

Steel Cans

One Cubic Yard of Whole Cans = 150 pounds

One Cubic Yard of Flattened Cans = 850 Pounds

Ferrous Metals

One Cubic Yard of Metal, Steel = 1,090 Pounds

Non-ferrous Metals

One Cubic Yard of Metal, Non-ferrous = 906 Pounds

White Goods or Appliances (average steel content in pounds)

Dryer = 125 lbs.(35) Washer = 150 lbs.(45) Stove = 150 lbs.

Refrigerator = 250 lbs.(76) Dishwasher = 125 lbs.(22)

Paper

Newspaper

One Cubic Yard of Loose Newspaper = 475 Pounds

Corrugated Boxes

One Cubic Yard of Flattened and Unbaled Corrugated Boxes = 350 Pounds

One Cubic Yard of Loose Corrugated Boxes = 45 Pounds

High Grade Paper

White Office Paper:

One Cubic Yard, Stacked = 380 Pounds

One Cubic Yard, Bulk Container = 500 Pounds

Computer Print Out Paper:

One Cubic Yard, Stacked = 655 Pounds

Mixed Paper (office pak)

One Cubic Yard of Office Pak, Unbaled = 200 Pounds

Other Residential Mixed

One Cubic Yard of Magazines and Catalogs = 800 Pounds

One Cubic Yard of Telephone Books = 1,100 Pounds

One Cubic Yard of Aseptic (drink boxes)/Milk Cartons = 80 Pounds

Plastics

#1 Plastics (pop bottles & other)

One Cubic Yard of PET Pop Bottles, Whole = 30 Pounds

One Cubic Yard of PET Pop Bottles, Flattened = 40 Pounds

#2 Plastics (colored and natural (milk jugs))

One Cubic Yard of HDPE (milk/water jugs), Whole, Loose = 24 Pounds

One Cubic Yard of HDPE (milk/water jugs), Flattened = 65 Pounds

One Cubic Yard of HDPE Colored Bottles, Loose = 45 Pounds

#6 Polystyrene

One Cubic Yard of Polystyrene, Baled = 230 Pounds

One Cubic Yard of Polystyrene, Loose = 61 Pounds

Other #3 through #5 Plastics

One Cubic Yard of Mixed Rigid, no Film or Dairy, Whole, Loose = 49 Pounds

Mixed Milk Jugs and Plastic Pop Bottles

One Cubic Yard of Mixed PET and Dairy, and Other Rigid, Whole, Loose = 27.5 Pounds

Organics

Yard Waste (grass and leaves)

One Cubic Yard of Grass Clippings, Loose = 404 Pounds

One Cubic Yard of Leaves, Uncompacted = 250 Pounds

One Cubic Yard of Leaves, Compacted = 450 Pounds

One Cubic Yard of Leaves, Vacuumed = 350 Pounds

One Cubic Yard of Yard Debris, Loose = 250 Pounds

One Cubic Yard of Yard Debris, Compacted = 640 Pounds

Bio-solids

One Cubic Yard of Bulk, Wet Bio-solids = 1620 Pounds

Clean Wood Waste (pallets, brush, etc.)

One Cubic Yard of Wood Chips, Loose, Green = 500 Pounds

One Cubic Yard of Wood Chips, Loose, Dry = 250 Pounds

One Cubic Yard of Wood = 400 Pounds

Food Waste

Food Waste, Solid and Liquid Fats:

(Reminder: 55 Gallon Drum = .27 Cubic Yard)

5 Gallons = 37.5 Pounds

55 Gallons = 412 Pounds

One Cubic Yard of Food Waste = 1526 Pounds

Non-recyclable Paper Products

One Cubic Yard of Bulk Container = 500 Pounds

Finished Compost

One Cubic Yard of Finished Compost from Yard Waste, Screened = 1500 Pounds

Note: Finished compost weight will vary depending upon the moisture content.

Other Recyclables

Scrap Tires

One Passenger Car Tire = 20 Pounds

One Light Truck Tire = 35 Pounds

One Semi-truck Tire = 100 Pounds

One Tractor Tire = 147 Pounds

Batteries (lead-acid)

One Lead-acid Battery = 35 Pounds

Waste Oil and Other Automotive Fluids

One Gallon of Used Motor Oil = 7 Pounds

One Gallon of Used Antifreeze = 8.5 Pounds

Construction and Demolition Waste

One Cubic Yard of Concrete Pavement = 4000 Pounds

One Cubic Yard of Concrete Aggregate = 3000 Pounds

One Cubic Yard of Demolished Concrete(voids of 50%, rigid and random stacked) = 2000 Pounds

One Cubic Yard of Asphaltic Pavement = 4030 Pounds

One Cubic Yard of Asphalt Aggregate = 3300 Pounds

One Cubic Yard of Demolished Asphalt(voids of 40% yielding and random stacked) = 2420 Pounds

One Cubic Yard of Whole Bricks = 2100 Pounds

One Cubic Yard of Metal, Non-ferrous = 906 Pounds

One Cubic Yard of Metal, Steel = 1090 Pounds

One Cubic Yard of Wood = 400 Pounds

Appendix B

Recycling Rate

The recycling rate can be determined at various intervals. It is most practical to determine the recycling rate on an annual basis to measure a program's progress from year to year. This rate can be combined with source reduction, reuse, and vegetative waste composting activities to determine the total waste reduction amount. A method for calculating the recycling rate is:

$$\frac{\text{annual amount recycled (tons)}}{\text{(annual amount recycled + annual amount landfilled (tons))}} = \text{annual recycling rate}$$

Example:

Huskerville, Nebraska has a small recycling center which is open every Saturday morning for residents to use. According to the weight receipts from the Huskerville grain scale the local hauler delivered 176 tons of solid waste to the regional landfill in 1995. The recycling center volunteers sold and gave away 18 tons of recyclables to recycling processors and converted 4 tons of newspapers into animal bedding for the local hog producer in 1995. Huskerville diverted a total of 22 tons from the landfill in 1995. The total amount of waste generated in Huskerville in 1995 was 198 tons or 176 tons landfilled and 22 tons recycled.

The Huskerville Village Board wanted to let local residents know the recycling efforts were paying off so they determined their recycling rate for 1995. The recycling rate was calculated as follows:

$$\begin{aligned} 22 \text{ tons recycled} / 198 \text{ tons of waste generated} &= .111 \\ \text{Recycling Rate for Huskerville in 1995} &= .111 \times 100 = 11.1 \text{ percent} \end{aligned}$$

In addition, it was reported the recycling center received \$1,600 for the aluminum cans sold and saved \$550 in landfill tipping fees (\$25 ton) by diverting 22 tons from the landfill.

The recycling rate, combined with source reduction, reuse and vegetative waste composting, can be used to determine a solid waste agency or local jurisdiction's progress toward the Nebraska waste reduction goals. The goals are 25 percent as of July 1, 1996, and 50 percent as of July 1, 2002. For the purpose of determining the progress toward the waste reduction goals the following steps should be followed:

1. Determine the annual amount of waste land disposed in a base year (1994 preferably).
2. Identify the amount of on-going source reduction, recycling, reuse and vegetative waste composting which occurred during the base year.
3. Add #1 and #2, this is the base year waste generation.
4. Indicate the percentage of material reduced or recycled by the on-going programs compared to the amount of waste generated in the base year.
5. Indicate for subsequent years any amount of material reduced or recycled that exceeds the previous year's total and add this additional amount to the previous year's figure.
6. Calculate the percentage of material reduced or recycled each year, as indicated in #4, compared to the amount of waste generated in the base year and relate this percentage with the reduction goal for a particular year.

The following is an example of calculating progress towards reaching the waste reduction goals:

Huskerville, Nebraska disposed of 176 tons of waste in the local landfill during 1994 (base year). Huskerville began a recycling program in 1994. They recycled 15 tons in 1994 and 22 tons in 1995. Huskerville also began a composting site in 1995, composting 10 tons of yard waste which was land applied on a local farm. The local bank began an office reuse and reduction effort in 1995. By the reuse of office paper products, the bank reduced the annual amount of paper disposed in 1994 by 1 ton in 1995. Huskerville calculated their progress toward the 1996 waste reduction of 25 percent.

1994

Base year waste generation = 176 tons landfilled + 15 tons recycled = 191 tons

Waste reduction = 15 tons recycled/191 tons generated = .0785 or 7.85%

1995

Base year waste generation = 191 tons

Amount recycled = 15 tons in 1994 + exceeded by 7 more in 1995 = 22 tons

Amount of source reduction/reuse = 1 ton from the local bank

Amount composted = 10 tons of yard waste land applied

Total amount of waste reduction = 22 tons recycled + 1 ton reused/reduced + 10 tons composted = 33 tons

Waste reduction for 1995 = 33 tons/191 tons generated in base year = .1727 or 17.27%

The Nebraska Waste Reduction Goal on July 1, 1996 is 25%. Huskerville will need to recycle, reduce, reuse and compost an additional 13 tons in 1996 to reach the 25% goal.

Definitions:

Baler - A machine in which materials are compacted to reduce volume and transportation cost.

Biodegradable Material - Waste which is capable of being broken down by microorganisms into simple, stable compounds such as carbon dioxide and water.

Building Materials - Reusable materials resulting from demolition or construction, including doors, windows, beams and bathtubs.

Cellulose Insulation - Insulation manufactured primarily from waste newsprint. Chemicals are added to act as retardants against fibre breakdown and fire.

Commercial Waste - Waste material which originates in wholesale, retail or service establishments.

Compactor - Any power-driven mechanical equipment designed to compress waste materials, usually attached to an enclosed container.

Compost - A humus-like material resulting from the biological decomposition of organic materials.

Composting - The controlled aerobic, thermophilic, microbial degradation of solid organic material such as raw or treated sewage sludge, animal manure, paunch manure, plant or food residue or their mixtures, to a stabilized, humus-like material.

Construction and Demolition Waste - Waste which results from land clearing, the demolition of buildings, roads or other structures, including, but not limited to, beneficial fill materials, wood (including painted and treated wood), land clearing debris other than yard waste, wall coverings (including wall paper, paneling and tile), drywall, plaster, non-asbestos insulation, roofing shingles and other roof coverings, plumbing fixtures, glass, plastic, carpeting, electrical wiring, pipe and metals. Such waste shall also include the above listed types of waste that result from construction projects.

Contaminant - Any material that has an undesirable effect on a product or the usability of a waste material. Many contaminants can be removed manually or through special processing techniques, but some cannot and will render volumes of material useless for recycling.

Cooperative Marketing - The joining together of organizations/firms for the purpose of selling an increased volume of recyclable materials.

County - Any county in the State of Nebraska.

Curbside Collection - A method of collecting recyclable material at individual homes or places of business by municipal or private parties for transfer to a designated collection site or recycling facility.

Deinking - A process in which most of the ink, filler and other extraneous materials are removed from printed wastepaper. The pulp produced is used in the manufacturing of new paper.

Densification - Processing of materials to make them more dense, such as compacting trash, crushing glass and baling paper.

Disposal - The discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste or hazardous waste into or on any land or water so that such waste or any constituent thereof may enter the environment or be emitted into the air, land or water of the State.

Drop-off Center - A designated collection site where individuals can deliver recyclable materials.

End-user - A facility where secondary recovered (recycled) materials are converted into new materials/products.

Energy Recovery - A form of resource recovery in which the organic fraction of waste is converted to some form of usable energy.

Garbage - Rejected food wastes, including waste accumulation of animal, fruit or vegetable matter used or intended for food or that attend the preparation, use, cooking, dealing in or storing of meat, fish, fowl, fruit or vegetable.

Gaylord Container - The trade name for a large reuseable corrugated container used for shipping materials (dimensions approximately 40" by 48" by 37" inches).

Generator - Source of a waste or recycled material; the individual or business generating the waste.

Glasphalt - A trade name for highway paving material in which recovered ground glass replaces some of the gravel normally used in asphalt.

Glass - An inorganic product resulting from fusion that has cooled to a rigid condition without crystallizing. The term "glass" should not be used alone, as there are numerous glass products, such as glass containers like bottles and jars, flat glass and glass tableware. Cullet is glass that has been processed for reuse by crushing into small pieces and removing paper and/or metal contamination.

Grade - A ranking of recyclable material based on its use, appearance, quality, manufacturing history, raw materials, performance, or a combination of these factors used in the specification of products. Many grades of paper, metals and plastic are officially identified and described.

Hazardous Waste - Any solid, liquid or contained gaseous material that is no longer of use which, if improperly stored, transported or disposed of, can cause injury or death to humans, or damage or pollute land, air or water.

Household Appliances - Clothes washers and dryers, water heaters, heat pumps, air conditioners, dehumidifiers, refrigerators, freezers, trash compactors, dishwashers, conventional ovens, ranges, stoves and wood stoves.

Household Hazardous Waste - Hazardous waste that is generated from consumer products used in the home such as cleaning supplies, batteries, automotive products, pesticides, paints and photography chemicals.

Humus - The organic portion of soil created by the partial decomposition of organic matter. Yard waste composting can create humus.

Incineration - A process of reducing the volume of solid waste by use of an enclosed device using controlled flame combustion. Incinerators must operate under federal and state environmental laws and regulations.

Industrial Scrap - Waste which is generated during the manufacturing process but cannot be fed back into the operation.

Inorganic Refuse - Waste material not composed of once-living material.

Integrated Solid Waste Management - Solid waste management which is focused on planned development of programs and facilities that reduce waste toxicity and volume, recycle marketable materials and provide for safe disposal of residuals. **Landfill** - A discrete area of land which has been developed and constructed with containment features according to an operational plan and designed for disposal of solid waste.

Lead-acid Batteries - Electrical storage batteries with cells that contain electrodes and an acidic electrolyte, such as those commonly used in motor vehicles.

Mandatory Recycling - Programs requiring by ordinance or statute that residents or businesses keep specific secondary materials from their solid wastes and prepare the materials for recycling.

Marketing - The return of recyclables to productive use. Marketing may include sale of materials, a donation without pay, or in some instances marketing may involve payment to a user.

Markets - Businesses or firms that accept recycled materials for reuse, either by their own consumption or for resale.

Materials Recovery - One of the concepts of resource recovery where the emphasis is on separating and processing waste materials to be sold for various purposes.

Materials Recovery Facility - Any facility at which solid waste is processed for the purpose of resource recovery.

Metals - All ferrous, non-ferrous and alloy materials.

- Aluminum - a light metal made from bauxite ore that can be easily bent or crushed
- Bi-metal can - a can with parts made of different metals, usually steel, tin or aluminum
- Ferrous metals - magnetic metals which are predominantly composed of iron, included are scrap iron and steel items, bi- metal cans, and stainless steel scrap
- Heavy metals - elements regulated because of their potential for human, plant or animal toxicity, including cadmium(Cd), Copper(Cu), chromium(Cr), mercury(Hg), nickel(Ni), lead(Pb), zinc(Zn)
- Non-ferrous metals - metals which contain no iron such as aluminum, copper, brass and bronze
- Steel - any of the various hard, strong, durable, malleable alloys of iron and carbon, often with other constituents such as copper and nickel
- Tin can - essentially a steel can with a thin coating of tin, used for food packaging

Mixed Recyclables - Items that are separated from household or commercial trash for recycling, but are not separated from each other until a later time and at a different location.

Molded Pulp Products - Contoured fiber products molded from pulp for such uses as egg packing and fresh meat trays.

Mulch - A protective covering of various substances, especially organic, placed around plants to prevent/control erosion, compaction, moisture loss, freezing and weeds.

Municipal Solid Waste - Household waste and/or the combination of household waste with industrial or commercial solid wastes.

Municipality - A city of the metropolitan, primary, first or second class or village.

NIMBY - Stands for "Not In My Back Yard".

Organic - Living or once-living material.

Packaging - Materials such as plastic, foam, corrugated boxes, molded pulp and paper that are used to contain, protect and transport products.

Pallet - A platform used in connection with a fork-lift for moving shipments, bales or other large items. Usually made from wood (also known as a "skid").

Paper - A thin sheet material made of cellulose pulp, derived mainly from wood, rags and certain grasses.

- Cardboard - kraft liner paper cartons with corrugated paper inner layers, typically used to ship materials
- Corrugated boxes - paper products made from stiff pasteboard formed into fluted ridges and grooves, including kraft paper with ruffled inner liners, this does not include paperboard or boxboard such as cereal boxes
- High grade paper - relatively valuable types of paper such as computer printout and white ledger
- Kraft paper - a comparatively coarse paper particularly noted for its strength and made primarily from wood pulp, such as grocery bags, corrugated boxes and milk cartons
- Ledger paper - higher quality office papers such as letterhead and copy paper
- Mixed paper - waste paper of various kinds and qualities usually collected from stores, offices and schools
- Newsprint - inexpensive paper made from wood pulp or recycled paper, used chiefly for newspapers
- Office pak - a broad category consisting of various grades of office waste paper
- Office paper - white bond, colored ledger, windowless envelopes and computer paper
- Paperboard - Heavier in weight, thicker, and more rigid than paper. Some examples are: container board, boxboard and special types of building board
- Paperstock - General waste papers which have been sorted or segregated at the source into various grades

Plastic - Any of various complex organic compounds produced by polymerization. They can be molded, extruded or cast into various shapes and films or drawn into filaments used as textile fibers. The following codes identify the appropriate resin type used to produce the structure of the container.

- **1 and PET** - Polyethylene terephthalate. Clear or colored transparent plastic with high gloss such as plastic pop bottles and some household cleanser containers.
- **2 and HDPE** - High density polyethylene. Plastic with a translucent or opaque matte finish such as milk jugs and laundry detergent bottles.
- **3 and V** - Polyvinyl chloride (PVC). Plastic with a tough smooth surface that forms opaque white line when bent. Mouth wash and vegetable oil bottles are V-3.
- **4 and LDPE** - Low density polyethylene. Plastic film that can be nearly transparent, opaque or colored. Dry cleaning bags, bread bags and some food storage containers are LDPE-4.
- **5 and PP** - Polypropylene; examples include margarine and yogurt containers.
- **6 and PS** - Polystyrene; an example is fast food trays.
- **7 and other** - Denotes all plastics not included in the other six categories, such as multi-resin containers.

Plastic Bottle - A plastic container intended for a single use that has a neck smaller than the body of the container, is designed for a screw-top, snap cap or other closure.

Postconsumer Material - Those products or other materials generated by a business or consumer that have served their intended end uses, and that have been recovered from or otherwise diverted from the solid waste stream for the purpose of recycling. Post-consumer material does not include manufacturing or converting scrap or by-products generated from, and commonly reused within, an original manufacturing process.

Preconsumer Material - Materials which have been recovered or diverted from the solid waste stream which have not fulfilled their useful life. Pre-consumer waste does not include discards from industrial and manufacturing processes.

Precycling - The decision-making process consumers use to judge a purchase based on its waste implications. Criteria include whether a product is reusable, durable and repairable; made from renewable or

nonrenewable resources; over packaged; or in a reusable container.

Processing - An operation to convert a solid waste into a useful product or to prepare it for disposal.

Reclamation - The restoration to usefulness or productivity of materials found in the waste stream.

Recovered Material - Material that has been diverted from solid waste, but not including material generated from and commonly reused within an original manufacturing process.

Recyclable - Products or materials that can be collected, separated and processed to be used as raw materials in the manufacture of new products.

Recycled - The use of recovered waste materials, such as post-consumer material, in the manufacture or production of new items.

Recycled Commodity - A product of recycling which has economic good.

Recycled Content - The percentage of recycled material used in the manufacture of a product. Federal Trade Commission guidelines only allow recycled content claims that include material recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (preconsumer) or after consumer use (postconsumer).

Recycling - Separating, collecting, processing, marketing, and ultimately using a material that would have been thrown away.

Recycling Center - Any facility which is maintained and operated for the purpose of receiving, collecting and processing source-separated recyclable materials for resale or transfer. For the purposes of this definition, "processing" shall mean the modification of materials by baling, crushing, grinding, chipping or other means to prepare the materials for market.

Recycling Collection Site - A premises which is maintained and operated for the purposes of receiving and collecting source separated recyclable materials and shall not include on site activities for significantly processing or modifying the collected materials.

Recycling Processor - A recycling operation where secondary materials are sorted, graded, cleaned, densified or packaged.

Refuse - Decomposed and non-decomposed organic solid wastes, except body wastes, and includes garbage, rubbish, ashes, incinerator ash, incinerator residue, street cleanings, industrial wastes and other such wastes.

Refuse-Derived Fuel (RDF) - The combustible or organic fraction of municipal solid waste which has been prepared for use as a fuel by any of several mechanical processing methods.

Residential Waste - Waste materials generated in houses and apartments, such as paper, cardboard, beverage containers and food cans.

Residual Resource - Materials remaining after processing, incineration, composting or recycling have been completed.

Resource Conservation - Reduction of the amounts of solid wastes that are generated, reduction of overall resource consumption and utilization of recovered resources.

Resource Recovery - A term describing the extraction and utilization of materials and values from the waste stream. Most often used when referring to energy production from waste incineration.

Resource Recovery System - A solid waste management system which provides for collection, separation, recycling and recovery of solid wastes, including disposal of nonrecoverable waste residues.

Reuse - The use of a product more than once in its same form for the same purpose or for different purposes, such as reusing a soft-drink bottle when it is returned to the bottling company for refilling or reusing a coffee can as a container for nuts and bolts.

Rigid Plastic Container - Any formed or molded container intended for a single use, composed predominately of plastic resin, that has a relatively inflexible finite shape or form. Rigid plastic container shall not include a plastic bottle.

Rubbish - Non-putrescible solid wastes, excluding ashes, consisting of both combustible and noncombustible wastes, such as paper, cardboard, tin cans, yard clippings, wood, glass, bedding, crockery or litter of any kind that will be a detriment to the public health and safety.

Salvage Operation - The controlled and safe removal and collection of valuable or useful waste materials at any point in the solid waste stream.

Scrap - The portion of solid waste which can be economically recycled, such as appliances, cars, construction materials, ships and post-consumer steel cans.

Scrap Tire - A tire that is no longer suitable for its original intended purpose because of wear, damage, or defect.

Secondary Materials - Recyclable materials, such as recovered paper and scrap metals.

Sludge - Any solid, semisolid or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

Solid Waste - Any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial and mining operations, and from community activities.

Solid Waste Compost Site - A tract of land, location, area or premises used for composting solid waste.

Solid Waste Disposal Area - A discrete area of land or excavation which receives solid waste and includes all contiguous land and structures, other appurtenances and improvements on the land used for the disposal of solid wastes or improvements necessary to carry out the disposal of solid wastes.

Solid Waste Management Plan - A plan adopted by a municipality or county, including a joint plan adopted by an agency, for integrated solid waste management.

Solid Waste Processing - The process by which solid wastes are physically or chemically changed, temporarily stored or salvaged prior to being transferred to a solid waste disposal area or to a secondary materials recovery facility.

Solid Waste Transfer Station - Any site, location, tract of land, installation or building that is used or intended to be used primarily for the purpose of transferring solid wastes that are the generated off of the premises of the facility from vehicles or containers, into other vehicles or containers for transportation to

a solid waste disposal area or solid waste processing facility.

Source Reduction - Any action that prevents waste from occurring in the first place, such as the purchase or production of items in just the quantity needed, and items that use less material, have a longer life or can be reused.

Source Separated Materials - The waste products, for which a market exists, that have not been commingled with solid waste but have been kept separate from other waste from the point of generation to final disposition.

Textiles - Used clothing and scraps of clean cloth.

Tipping Fee - The charge to waste transporters to dispose of solid waste at landfills or other solid waste facilities.

Tire Derived Fuel - A form of fuel consisting of scrap tires shredded into chips. The acronym is TDF.

Toxic - Ability of a substance to produce harmful or lethal effects on humans and/or the environment.

Virgin Materials - Any basic material used in industrial processing or manufacturing which has not previously been used, such as trees, iron ore, sand and crude oil.

Voluntary Separation - Participation in waste recycling willingly, as opposed to mandatory recycling.

Waste Oil - Any oil that has been refined from crude oil, used and as a result of such use, is contaminated by physical or chemical impurities.

Waste Stream - General term used to denote the waste material output of an area, location or facility.

White Goods - Clothes washers and dryers, water heaters, heat pumps, air conditioners, dehumidifiers, refrigerators, freezers, trash compactors, dishwashers, conventional ovens, ranges, stoves and wood stoves.

Wood Pulp - The primary material from which most paper is made.

Yard Waste - Grass and leaves. For the purposes of composting, yard waste shall mean grass and leaves in combination with chipped trees and branches and other organic material collected as the result of the care of ornamental plants, lawns, shrubbery, vines and gardens.

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