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OPERATIONS & MAINTENANCE PLAN FOR RECYCLING WASTE

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SECTION A SUMMARY

The economic and environmental benefits of reusing and recycling waste are undeniable. Businesses generate approximately 45% of all waste in the U.S. Commercial operations are increasingly improving their bottom line for waste hauling by maximum recycling efforts. There are an ever-increasing number of programs and resources to help improve or set-up recycling efforts. Most businesses can implement a recycling program with very little initial time and money invested. Benefits to recycling include: reduced supply and material expenses, reduced waste collection and disposal costs, improved image within the community, increased employee pride in their workplace, and a positive impact on the environment.

This waste recycling plan provides information on how to maximize waste reduction and recycling efforts. This plan includes provisions for educating staff on what materials can be recycled and how to appropriately dispose of recyclables. Implementation of this plan will provide environmental benefits (by reducing solid waste burdens on landfills) as well as economic benefits (by reducing solid waste disposal costs).

SECTION B STATEMENT OF PURPOSE

The goal for recycling at this business is to divert a minimum of 50% of the overall waste stream for recycling or reuse. This goal can be achieved by focusing on high-volume waste with high market value. In an office, for example, waste paper is by far the largest component of the waste stream, representing an average of 70% of the total waste stream (sum of 29% white paper, 23% mixed paper, 10% newspaper, and 8% cardboard). The remaining 30% waste typically includes glass, metal, plastics, food, and miscellaneous trash. Most of the waste generated is recyclable, offering ample measures for diverting material from landfills. The key to implementing an effective recycling program in this facility will involve occupant education, collection staff education, and an efficient, simple-to-use collection system.

Details on how to implement this plan are provided in Section C below, Recommended Procedures, which includes a checklist of targeted recyclables and a "how to" description for setting up collection and training. Supporting information is provided in Section D (Resources), Section E (Definitions), and Section F (Programs that assist recycling efforts).

SECTION C RECOMMENDED PROCEDURES

1. CHECKLIST OF HIGHEST VOLUME RECYCLABLES

Following is a list of potential items to be separated for recycling. Target categories should be selected based on their probable occurrence as well as the availability of local recycling facilities and haulers. Among targeted items, the most valuable for payback is white office paper. Focusing efforts on maximizing white office paper recycling offers the potential to greatly offset costs of waste pick-up, while diverting the largest component of office waste. Additional categories for waste stream separation are outlined below. Haulers will be chosen based on their ability to cost-effectively recycle these items.

Paper	*White Paper*	$$	
	Mixed Paper		
	Newspaper		
	Corrugated Cardboard	$	
Metals	*Aluminum Cans*	$	Mixed metal, glass, and plastic containers can typically be commingles into a single recycling receptacle.
	Tin/Steel Cans		
Glass	*Mixed Glass*		
Plastic	*#1 PET(E) and #2 HDPE*		
Other	*Fluorescent Bulbs*		
	Business-specific items		

In addition to those items listed above, consider on-site composting for grass clippings and landscaping biodegradable waste.

2. THE "HOW TO" – STEPS TO IMPLEMENTING A RECYCLING PLAN

a. Identify a Recycling Coordinator

An effective recycling program needs leadership: identify a staff recycling coordinator. The most important qualifications for the job are enthusiasm for recycling, organizational experience, and good communication skills. The coordinator should take responsibility for:

- selecting a recycling service company
- organizing the collection system
- getting employees involved
- tracking the progress of the program
- keeping files (contracts and weight receipts provided by recycling companies)
- making sure recycling containers are relatively free from non-recyclable trash
- encouraging employees to participate in the program

The coordinator is likely to spend a day or two getting a recycling program off the ground, and then a few additional hours each month to oversee the program.

b. Conduct a Waste Assessment

The first step to creating a recycling program is analyzing the current waste generated and quantifying the categories and quantities of materials in the existing waste stream. The quantities determine the size of collection containers, for waste and recycling materials. Assess the current waste stream, taking note of the volume and types of waste. At a minimum, note each recycling category listed in "Targeted Recyclables" above.

c. Implement Waste Prevention Strategies

Reducing the overall waste that is generated directly reduces resource use and operating costs. Consider the following strategies for reducing waste, and include in staff education program:

- Print on both sides of paper (provide printing and copying machines with 2-sided options)
- Use ink cartridges until they actually run out
- Save packaging materials for reuse, including envelopes and cardboard
- Turn Tyvek envelopes inside-out and reuse
- Avoid over-packaged items; purchase items in bulk when possible
- Sell or donate usable items when upgrading (furnishings, office equipment, appliances)

d. Follow a Recycling Collection Plan

There is little difference between tossing a piece of paper into a trashcan and tossing it into a recycling container. However, recycling will effect every employee and require changing several procedures. Having a clear and simple-to-follow collection plan is essential to achieving staff involvement. *(This plan provides the basis for the staff training program described below.)* Stress the goal of creating a system that makes recycling at least as convenient as throwing materials away.

Accommodations for collecting recyclable materials is easily incorporated into a typical waste collection program. A central collection for waste and recycling remains, where space is provided to accommodate waste and recycling removal, containers for storing recyclables and garbage, and potentially a cardboard bailer. Smaller recycling collection containers should be provided at each location where high volumes of recyclable waste are likely to be generated. Containers container should be clearly and neatly marked with a description and a picture of designated materials. Suggested locations to provide recycling containers:

white paper	small container at each work station and reception area
	container at each copy, printing, fax, and mailroom location
mixed paper	container at each copy, printing, fax, and mailroom location
	container at each workstation and reception area
newspaper	minimum of one container
	container at main entrance or near elevators
cardboard	minimum of one container or designated area
	container at central receiving and/or mailroom area
beverage containers (mixed aluminum, plastic, glass)	container in vicinity of all vending machines (possibility to utilize vending machine racks from manufacturer; refill with empty containers, and ship back postage paid)
	container in all kitchens and lunch room areas; containers adjacent to waste disposal receptacles and clearly marked
	container at main entrance or near elevators
	exterior waste receptacles to include separation for recycling
grass clippings & landscaping waste	designate an area or container on-site for composting biodegradable landscape waste

Additional containers should be provided as deemed necessary or helpful.

Recyclables can be emptied into a central location either by business staff or by maintenance staff currently in charge of collecting trash. In either case, each recycling container should be emptied regularly and brought to the designated central recycling area for hauler pick-up. If recyclables are picked up by maintenance staff, ensure they can easily keep recyclables separated from trash during collection. Provide staff training as recommended below.

Renegotiate the waste disposal contract to ensure that waste collection containers and pick-up frequency is adjusted for the reduced trash volume.

e. Implement a Training Program

The success of a recycling program is directly related to the existence of an effective training and education program. The goal is to motivate the maximum number of employees to participate in separating recyclable waste and minimizing contamination of recyclables. Contamination results from confusion about what to recycle where, either by the person throwing an item away or during collection. An effective training program will motivate individuals to participate and will result in high-quality recyclables.

- Consider participation in a recycling program that includes training guidelines, such as EPA's Waste Wi$e
- Decide how workstation recyclables will be collected…either taken to a central bin by the employee or emptied by maintenance staff
- Educating Building Occupants:
  - Establish an official "kick-off" for the recycling program; highlight the benefits and explain all separation and collection procedures
  - Ensure that each existing employee is trained in the recycling program; have a procedure in place for new employees to educate them on the recycling efforts
  - Stress that little effort is involved in recycling
  - Positively reinforce employee efforts by reporting benchmarks over time (including quantities recycled, value of recycling efforts in "dollars saved" or "trees saved")
  - Congratulate employees for a job well done
  - Ensure that all containers and clearly and simply marked; consider posters near primary recycling areas
  - Inform employees when recyclables are being consistently contaminated and remind them of the procedures
  - Provide a way for employees to direct additional questions and suggestions
  - Ask staff for feedback on what works well and what could be improved
- Training Maintenance Staff *(if involved in recycling collection)*:
  - Explain that the total volume of materials handled remains constant; the only difference is separation of recyclables
  - Describe each category of waste to be recycled and how it is to be collected
  - Show where each container is located in the building and where the designated central collection container is for each type of recyclable
  - Consult regularly with maintenance staff to get input on how to improve the program

SECTION D RESOURCES

1. **Additional Information:**
   - California Waste Management Board, www.ciwmb.ca.gov
   - Earth 911, www.earth911.org
   - Environmental Protection Agency (EPA), www.epa.gov
   - Grass Roots Recycling Network, Zero Waste, www.grrn.org
   - Inform, www.informinc.org/wasteatwork.php
   - Institute for Local Self-Reliance, Waste to Wealth, www.ilsr.org/recycling
   - Lamp Recycle.org, www.nema.org/lamprecycle
   - Pennsylvania DEP homepage for recycling, www.dep.state.pa.us/dep/deputate/airwaste/wm/Recycle/Recycle.htm
   - RecycleBank, www.recyclebank.com
   - Recycling in Montgomery County PA, www.wsaemc.org/Recycling/
   - US Green Building Council, www.usgbc.org

2. **Publications:**
   - **Guide to Commercial and Institutional Recycling**. $10. Explains how to establish a waste reduction and recycling program, including conducting a waste audit, employing an eight-step approach to office recycling, and buying recycled products. Published by the Northeast Maryland Waste Disposal Authority, www.nmwda.org
   - **National Office Paper Recycling Project; information/enrollment package.** Free. Published by the U.S. Conference of Mayors, www.usmayors.org
   - **Business Guide for Reducing Solid Waste (EPA530-K-92-004).** Free. A comprehensive guide on assessing your facility's solid waste and choosing cost-effective waste reduction actions. Published by the US EPA, www.epa.gov
   - **Waste Prevention Pays Off (EPA530-K-92-005).** Free. A collection of brief case studies describing how companies have cut costs substantially through a variety of waste prevention actions. Published by the US EPA, www.epa.gov

SECTION E DEFINITIONS

A	**Aluminum Containers**	Aluminum beverage cans, aluminum food containers, and aluminum foil.
B	**Biodegradable**	material that can be broken down by microorganisms into simpler, more stable compounds
C	**Coated Paper**	White or colored paper with a glossy finish.
	Colored Paper	Colored paper, file folders, glossy paper, magazines, books, facsimile paper.
	Corrugated Cardboard	Unwaxed kraft paper corrugated containers (e.g., boxes), unless laminated with other paper such as glossy stock. Also includes brown kraft paper bags.
G	**Glass Bottles & Jars**	All green, clear, and/or brown glass used for beverage and food containers.
M	**Mixed Paper**	Any combination including but not limited to: white paper, colored paper, computer printouts, enveloped without windows, carbonless paper, glossy paper, newspaper, and cardboard.
N	**Newprint**	Printed newsprint/newspaper, including inserts.
P	**Plastic Bottles – PET(E), HDPE**	All plastic bottles with a recycling symbol #1-PETE or #2-HDPE on the bottom. Includes polyethylene terephthalate (PETE) 2-liter pop bottles, with or without base, PETE liquor bottles, high-density polyethylene milk and juice containers, and other #1 or #2 containers and bottles.
	Plastic Film (Bags)	Includes plastic shopping bags, food wrap, dry-cleaning bags, pastic liners and tarps. May display recycling symbol #4-LDPE, low-density polyethylene.
	Polystyrene Foam (Styrofoam)	Includes packaging and products made of expanded polystyrene. May display recycling symbol #6-PS.
	Post-Consumer	Waste material that has served an intended use.
	Post-Industrial	Waste material from manufacturing processes.
	Primary Packaging	The material physically containing and coming into contact with the product, no including the cap or lid of a bottle.
R	**Recyclable Packaging**	Any packaging that can be diverted from the waste stream through available processes and programs, and can be collected, processed, and returned to use in the form of raw materials or products.
S	**Scrap Metals – Ferrous**	Ferrous and alloyed ferrous scrap metals, to which a magnet adheres, which are not significantly contaminated with other metals or materials. Includes white goods (large appliances) such as refrigerators and stoves.
	Scrap Metals – Non-Ferrous	Metals not derived from iron, to which a magnet will not adhere, which are not significantly contaminated with other metals or materials. Include scrap aluminum, copper, chrome.
	Steel/Tin Containers	Tin coated steel cans/containers, aluminum cans with steel ends.
W	**Waste Reduction**	refers to programs and techniques that reduce the amount of landfill waste generated. Waste reduction measures include using less product, using supplies and equipment more efficiently, using products that are more durable and easily repaired, and maximizing recycling efforts.
	White Office Paper – High Grade	Continuous-feed computer printouts, including blue-bar and green-bar paper; white bond and copy papers that are plain, laser printed or printed with colored inks; white note and tablet papers.
Y	**Yard Waste or Trimmings**	Grass clippings, leaves and weeds, small prunings, brush (less than 4 inches in diameter).

SECTION F PROGRAMS

WASTE WI$E – Environmental Protection Agency
Office of Solid Waste and Energy Response

Program Overview

Many United States companies have demonstrated that by reducing and recycling materials that would otherwise become trash, they can reap substantial savings, sometimes millions of dollars per year. The EPA developed the Waste Wi$e program to assist businesses in taking cost-effective actions to reduce solid waste. Waste Wi$e is a voluntary program that targets three areas of commitment:

Waste prevention. The cornerstone of Waste Wi$e, waste prevention, means using less material to do the same job, cutting waste before recycling. Waste Wi$e partners commit to three significant waste prevention activities of their choice.
Recycling collection. Waste Wi$e partners commit to initiating, expanding, or improving internal programs to collect recyclables. In some cases, partners add new materials to an existing program, or they increase effectiveness through activities such as employee education or community outreach.
Buying or manufacturing recycled products. Waste Wi$e partners commit to increasing the overall recycled content in the products they purchase. Waste Wi$e partners that are manufacturers may increase the percentage of post-consumer content in their products or increase the recycled content in the products they purchase.

Each of the three waste reduction activities offers distinct benefits, both for the environment and your bottom line. **Waste prevention** can save money through lower purchasing and disposal costs. **Collecting recyclables** reduces the amount of material that is placed in the dumpster, which can reduce the waste disposal bill while potentially generating revenue from sale of some of the materials. **Buying recycled products** helps ensure that recycling will continue to advance, and will eventually help lower the cost of recycled products. Recycled products are of high quality and can be competitively priced compared to virgin products. These three steps help reduce the burden on disposal facilities, help conserve natural resources, and often reduce pollution.

In addition to the benefits of waste reduction outlined above, participation in Waste Wi$e offers several advantages.

- The EPA will provide technical assistance via a hotline and electronic bulletin board, "how to" publications, lessons from other companies, and regular program updates.
- Successful waste reduction efforts will be highlighted in EPA documents, business magazines, environmental journals, and trade publications.
- Participating companies also may use the Waste Wi$e logo in their advertising.
- Waste Wi$e provides an opportunity for your firm to be viewed by peers and customers as a leader in environmental initiatives.

For more information or to enroll in the Waste Wi$e Program, please contact:

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