



# National Park Service Solid Waste Management *Quick Reference Guide*



DAK Consulting, Inc. Photo

The above photo shows animal resistant recycling and trash containers at a campground in Devils Postpile National Monument. The recycling container (left) has a distinct shape, color, and size, a restricted access opening sized for the items to be recycled, and a secured lid to reduce improper use as a trash receptacle.

# National Park Service Solid Waste Management *Quick Reference Guide*

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## Chapter 1 - Introduction

Solid waste, commonly known as litter, trash, garbage, or refuse, is defined as durable goods, non-durable goods, containers and packaging, food wastes, yard wastes, and miscellaneous inorganic wastes from residential areas, commercial and institutional operations, and public areas. Generally, the term “solid waste” is used to describe an entire waste stream including all the materials that will eventually be disposed in landfills or other facilities, as well as all of the materials which will be separated and recovered for reuse, recycling, or composting. The materials in solid waste which are disposed are referred to as trash, or garbage, and the recovered materials are described by the method of recovery, such as recyclable or compostable materials. Domestic sewage sludge and waste water are *not* considered solid waste.

### Purpose, Scope, and Content

This document is meant to serve as an easy-to-use reference guide for solid waste management at national parks. It provides an overview of topics covered in greater detail in the *National Park Service Solid Waste Management Handbook* (Handbook). The Handbook provides additional information on regulations, tools, links, and outside resources, as well as resources applicable to NPS partners (i.e., concessioners, contractors, and cooperating associations) and is available on the National Park Service (NPS) Intranet at:

[http://classicinside.nps.gov/documents/Solid\\_Waste\\_Management\\_Handbook\\_intropage.pdf](http://classicinside.nps.gov/documents/Solid_Waste_Management_Handbook_intropage.pdf)

The target audience of this guide includes NPS employees involved in all aspects of solid waste management. While this reference guide should be useful to all parks, it will be particularly useful to small parks since solid waste management is typically more complex at larger parks.

Chapters 1–6 cover solid waste management, solid waste management planning and analysis, and solid waste program development.

Chapters 7–13 provide more detailed information, examples, and steps for developing a successful solid waste management program including: source reduction, recycling, composting, universal waste, trash collection and disposal, education and outreach, and disposal contracts.

Links to applicable sections of the Handbook and other resources are included at the end of each chapter in the “For More Information” boxes.

Please note that this reference guide and the associated Handbook cover only **non-hazardous solid waste** generated at NPS facilities. Also note that the recommendations for waste management practices contained in the reference guide and Handbook do not replace federal, state, or local solid waste management regulations and requirements.



## Chapter 2 - Solid Waste Management

Solid waste management includes collection and disposal of garbage, as well as practices that reduce the amount of garbage disposed, such as source reduction, reuse, recycling, and composting. Safe and sanitary solid waste management is required by federal laws, regulations, and policies, and is encouraged by NPS policies and best management practices (BMPs).

### Solid Waste Management as Part of the NPS Mission

Solid waste management is an integral part of NPS services and facilities that support public visitation and NPS staff. NPS solid waste management policy demonstrates the NPS mission to preserve and protect park lands and natural resources. This policy emphasizes reduction, reuse, and recycling to lessen resource consumption, minimize environmental impacts, and provide an environmentally appropriate level of services and facilities to support public use and enjoyment.

### Applicable Laws, Regulations, and Policies

There is a large body of federal laws, regulations, and policies covering the proper management of non-hazardous solid waste within parks. Most of these federal laws, regulations, and policies have existed for many years and have laid the groundwork for current practices.

Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, is the most current and relevant policy for solid waste management program development and environmental planning at federal facilities. As a result of this EO, the Office of the Federal Environmental Executive (OFEE), Department of the Interior (DOI), and NPS have all developed and issued policies on solid waste management.

The federal statute governing solid waste management is the Resource Conservation and Recovery Act (RCRA). Under Subtitle D of RCRA, states are encouraged to develop comprehensive plans for the management of non-hazardous industrial solid waste and municipal solid waste (MSW). Subtitle D also sets criteria for MSW landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste. The RCRA solid waste management regulations have been promulgated under 40 CFR Parts 239-258

#### FOR MORE INFORMATION:

- Handbook, Section 1:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec1.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec1.htm)
- NPS Environmental Audit Guide, Appendix 14, EnviroCheck Sheet - *Solid Waste Management*: [http://classicinside.nps.gov/documents/Final EAP Guide 2006.zip](http://classicinside.nps.gov/documents/Final_EAP_Guide_2006.zip)
- EO 13423: [http://ofee.gov/eo/EO\\_13423.pdf](http://ofee.gov/eo/EO_13423.pdf)
- RCRA Subtitle D regulations at 40 CFR 239-258:  
[http://www.access.gpo.gov/nara/cfr/waisidx\\_06/40cfrv24\\_06.html](http://www.access.gpo.gov/nara/cfr/waisidx_06/40cfrv24_06.html)



## Chapter 3 - Integrated Solid Waste Alternatives Program (ISWAP)

Integrated solid waste management means that all of the work and programs in solid waste management are considered a unique system. To formalize this system, parks should develop an Integrated Solid Waste Alternatives Program (ISWAP) to provide coordination and guidance on integrated solid waste management practices. An ISWAP is recommended for parks as an initial planning tool for solid waste management, for developing improvements and new programs to manage solid waste, and as a first step to meeting solid waste management goals. Implementing an ISWAP or updating an ISWAP can be selected as a goal, objective, or target in the park's Environmental Management System (EMS).

A solid waste management plan developed according to the recommendations of an established ISWAP (ISWAP Plan) represents the culmination of an analysis to determine how the park can efficiently manage its entire solid waste stream. As such, an ISWAP Plan documents the park's efforts in ISWAP planning and design.

### FOR MORE INFORMATION:

- Handbook, Section 2: [http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec2.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec2.htm)
- Example ISWAP Plan: [http://classicinside.nps.gov/documents/Generic\\_ISWAP.pdf](http://classicinside.nps.gov/documents/Generic_ISWAP.pdf)



## Chapter 4 - Solid Waste Tracking

Tracking the amount of solid waste generated and the associated disposal/recycling costs can provide valuable information for effective management and improvement of trash and recycling programs. Solid waste tracking provides the data needed to determine diversion rates and allows parks to report and monitor progress towards NPS diversion goals. In addition, these data can be used to meet the annual RCRA reporting requirements for solid waste management and recycling, and are recorded as part of NPS environmental condition assessments. Tracking of solid waste management is also encouraged as a BMP under the NPS Environmental Audit Program (EAP).

Table 1 provides a brief overview of some of the methods used to estimate waste generation amounts with their pros and cons.

**Table 1 - Methods for Estimating Waste Generation**

<b>Method</b>	<b>Pros</b>	<b>Cons</b>
Rely on contractor estimates. Recommended if accurate contractor estimates are available.	Easiest method for the park.	Accuracy depends on whether or not estimates are based on weight tickets or volume estimates; and if the contractor picks up only park-generated waste before dumping at the disposal facility.
Rely on weight tickets from disposal. Recommended if available.	A very accurate measure if park employees handle all trash collection.	Many parks contract out collection, and park-generated material may be only a portion of the load weighed on the scale.
Calculate how full each dumpster or can is, and apply average weight/container estimates to these calculations. Recommended if first two methods are not available.	Reasonably accurate, fairly easy parks to develop these calculations.  Can be used regardless of whether or not NPS crews empty the container.	Seasonal variations in "fullness" may skew estimates.  Location or seasonal variations in material types may skew estimates.
Use average pounds per visitor estimates.  Not recommended.	Very simple approach.	Not accurate. Parks often have different visitation patterns, operating circumstances, and trash generation rates.

Parks should evaluate the type of data available and use the most accurate tracking and estimating method for that type of information. The biggest step forward in accuracy is to move beyond a once-per-year guess or estimate of quantities generated. In all cases, parks should adopt a tracking procedure to record actual quantities or quantity estimates continuously throughout the year.



## Tracking Diversion Goals

By tracking solid waste generation, the park can determine its diversion rate and report and monitor its progress towards meeting NPS goals. The diversion rate is the weight of all solid waste diverted to recycling/composting divided by the weight of all solid waste materials generated expressed as a percentage ( $[\text{total materials diverted in tons} / (\text{total trash disposed of in tons} + \text{total materials diverted in tons}) * 100]$ ).

DOI has set the current diversion rate goal at 50% per year by 2010 (Note: This goal likely to be revised by DOI in the near future; states may have higher recycling goals). This means that 50% of all of the solid waste materials generated by parks should be diverted from disposal at a landfill through reuse, recycling, composting, or energy recovery programs.

NPS includes the following activities and materials in the diversion rate calculation numerator (all of which are measured in tons):

- Reused materials;
- Recycled materials;
- Backyard compost;
- Compost;
- Universal waste (i.e., fluorescent lamps, batteries, mercury-containing devices, and pesticides);
- Waste-to-energy combustion of trash - Energy recovery is required to count as diversion; use the facility weight reduction percentage (accounts for trash residuals and ash which is not diverted) applied to total tons of trash sent to the facility; and
- Mixed waste composting of trash - Compost product production is required to count as diversion; use the facility weight reduction percentage (accounts for trash residuals which are not diverted) applied to total tons of trash sent to the facility).

NPS has developed a solid waste tracking tool that can be used to record volume estimates of trash disposed and materials recycled/composted throughout the year and convert the volumes to weight estimates. This tool includes background calculations that will determine an annual diversion rate (if it is filled out with a full year's data on trash and recycling/composting amounts). The tracking tool is available for downloading at:

[http://classicinside.nps.gov/documents/SW\\_tracking\\_Tool.xls](http://classicinside.nps.gov/documents/SW_tracking_Tool.xls)

### FOR MORE INFORMATION:

- Handbook, Section 3:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec3.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec3.htm)



## Chapter 5 - Solid Waste Analysis

Solid waste management analysis answers three important questions about trash generated in the park:

1. **Who** generates solid waste?
2. **Where** is the solid waste being generated?
3. **What** types of solid waste are being generated?

This analysis can be very detailed or very general depending on the size of the park, the complexity of park operations, and the level of accuracy needed. It is important to get information that provides enough detail to identify the best opportunities for new solid waste management programs and to make good decisions on program changes and improvements.

### Who and Where: Waste Generators Analysis

This analysis identifies the individual areas and facility types where solid waste is generated in the park. For a typical park, common solid waste generators include:

- Visitors in day use areas and campgrounds;
- Park administration staff and other office staff;
- Park maintenance operations;
- Park staff and families in residential areas; and
- Visitors in partner operated areas.

Determining the amounts of solid waste generated in each area can help identify the largest solid waste generation areas in the park, focus solid waste management resources, and establish improvements or new programs, such as recycling or composting.

### What: Waste Composition Analysis

A waste composition analysis is an approximation of the materials and proportions of materials in the solid waste generated at the park. Typical categories of materials include paper, plastic, metals, glass, wood, food waste, and miscellaneous wastes. A waste composition analysis can be done for just one part of the park (i.e., park operations, visitor areas, park partner operations) or for the entire park. Knowing the composition of the solid waste will help to identify materials that could be diverted to recycling and composting. In addition, knowing the composition of waste generated in a part of the park will allow the park to design a recycling and composting program for a specific part of the park.

For smaller parks, or parks with less complex operations, generators and composition of waste are more predictable. The following table shows a typical waste stream composition for different generator types, noting the main recyclable and compostable components.



**Table 2- Table of Typical Waste Stream Composition**

<b>Who</b>	<b>Where</b>	<b>What</b>	<b>What to Do With It</b>
Visitors	Day use	Aluminum cans	Recycle
		Plastic bottles	Recycle
		Glass bottles	Recycle
		Mixed packaging	Trash
Visitors	Campground	Paper	Recycle or compost
		Mixed paper	Recycle or compost
		Cardboard	Recycle
		Aluminum cans	Recycle
		Plastic bottles	Recycle
		Glass bottles	Recycle
		Food waste	Trash or compost
		Mixed packaging	Trash
Staff	Offices	Paper	Recycle or compost
		Mixed paper	Recycle or compost
		Cardboard	Recycle
		Aluminum cans	Recycle
		Plastic bottles	Recycle
		Glass bottles	Recycle
Staff	Maintenance	Paper	Recycle or compost
		Mixed paper	Recycle or compost
		Cardboard	Recycle
		Aluminum cans	Recycle
		Plastic bottles	Recycle
		Glass bottles	Recycle
Staff	Housing	Paper	Recycle or compost
		Mixed paper	Recycle or compost
		Cardboard	Recycle
		Aluminum cans	Recycle
		Plastic bottles	Recycle
		Glass bottles	Recycle
		Food waste	Compost
		Mixed packaging	Trash

Other ways to estimate waste composition include:

- Visual checks;
- Weighted average estimates; and
- Waste composition studies (i.e., field sorting or “dumpster diving”).

**FOR MORE INFORMATION:**

- Handbook, Section 4:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec4.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec4.htm)



## Chapter 6 - Solid Waste Management Program Analysis

An analysis of the park's solid waste management program can provide a review of the current program costs, main functions, and effectiveness. This analysis can also provide the starting point for developing program improvements, changes, or new program needs.

A solid waste program analysis can be conducted using the following steps:

- Use the tracking and reporting waste stream analysis to identify the park's solid waste and recycling quantities, waste composition, and answer the "who, where, and what" questions for waste generators in the park;
- Review current solid waste management programs, including the current program costs, main functions, and effectiveness;
- Set goals for program improvements, cost reduction, and increasing diversion through reuse, recycling, and composting (think of EMS or Government Performance and Results Act (GPRA) format for impacts, goals, actions, etc.);
- Develop recommended steps, programs, staffing, equipment, and material needs; and
- Develop a five-year implementation plan.

### Reporting Requirements

There are currently several existing reporting requirements that include solid waste management information, including the annual RCRA report on environmental purchasing, waste management, and recycling; the NPS environmental condition assessments; and the NPS environmental compliance audits.

#### FOR MORE INFORMATION:

- Handbook, Section 5:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec5.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec5.htm)



## Chapter 7 - Source Reduction and Reuse

Generally, source reduction falls into the following categories:

- Product reuse;
- Reduced material volume;
- Reduced toxicity;
- Increased product lifetime; and
- Decreased consumption.

The design of each source reduction program will differ for each type of solid waste generator and material.

### Identifying Source Reduction and Reuse Opportunities

One way to identify the many opportunities for source reduction and reuse is to determine the number of new materials and new products being used in the park. Alternately, source reduction opportunities can be identified by focusing on the waste generated in the park. Using the “who, where, and what” questions can help identify the largest waste generators and their activities, and the specific materials in the solid waste stream that could be reduced or replaced.

### Source Reduction Strategies

Parks with limited resources should determine which sources generate the most waste and prioritize waste prevention efforts accordingly. Specific strategies for achieving source reduction include:

- **Environmental (“green”) purchasing (EP)** – EP can achieve a reduction in solid waste through the purchase of environmentally-friendly products and packaging.
- **Reduction and Reuse of Visitor Waste** – A first step toward reducing visitor generated waste is to reach out to visitors before they ever get to the park. Another way to limit visitor-generated waste is to physically limit visitor opportunities to use materials and/or generate waste once in the park.
- **Reduction and Reuse of Waste from NPS Operations** – Park personnel conduct activities that involve the use of a variety of equipment, as well as construction, maintenance, and packaging materials. These activities provide many opportunities for source reduction and reuse which can benefit park operations.
- **Reduction and Reuse of Waste Generated in Employee Housing** – Parks developing source reduction plans or practices should not overlook the waste generated in employee housing areas.
- **Reduction and Reuse of Waste Generated by Partners** – Since they will be instrumental in helping parks manage visitor waste, it is important to ensure that all park partners are engaged in park planning and implementation of solid waste programs. Most concession contracts are now contain language that encourages environmental purchasing and reuse.
- **Reduction and Reuse of Waste from Construction and Rehabilitation** – The 2006 NPS Management Policies require that all construction projects incorporate Leadership in Energy and Environmental Design (LEED) standards; some projects must incorporate LEED standards to achieve a LEED “silver” rating.



## **FOR MORE INFORMATION:**

- Handbook, Section 6:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec6.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec6.htm)
- *NPS Environmental Purchasing Handbook*:  
[http://classicinside.nps.gov/documents/EP\\_Handbook.pdf](http://classicinside.nps.gov/documents/EP_Handbook.pdf)
- NPS Environmental Audit Guide, Appendix 14, EnviroCheck Sheet - *Environmental Purchasing*: <http://classicinside.nps.gov/documents/Final EAP Guide 2006.zip>
- The NPS Integrated Pest Management Program website:  
<http://inside.nps.gov/waso/waso.cfm?prg=706&lv=4>
- The Harpers Ferry Sign Management Program website - provides detailed information on the service wide Environmental Sign Contract:  
<http://www.nps.gov/hfc/acquisition/signs.htm>
- Pacific West Region green purchase guide on construction waste management:  
[http://pfmd2.nps.gov/EMP/hazmat/EMP\\_LIB/Documents/envrion\\_purchase/ConstDe mWasteMngmtFeb03.doc](http://pfmd2.nps.gov/EMP/hazmat/EMP_LIB/Documents/envrion_purchase/ConstDe mWasteMngmtFeb03.doc)
- EPA Comprehensive Procurement Guideline website: [www.epa.gov/cpg](http://www.epa.gov/cpg)
- Whole Building Design Guide's Federal Green Construction Guide:  
<http://www.wbdg.org/design/greenspec.php>

## **For additional information specific to concessions operations:**

- Concession Environmental Management Program (CoEMP) EnviroCheck Sheet - *Environmental Purchasing*:  
<http://www.concessions.nps.gov/document/EnviroCheckSheet-GreenProcurement.pdf>



## Chapter 8 - Recycling

The U.S. Environmental Protection Agency (EPA) describes recycling as a series of activities that includes:

- Collecting recyclable materials that would otherwise be considered waste;
- Sorting and processing recyclables into raw materials such as fibers; and
- Manufacturing raw materials into new products.

Recycling is the most common waste diversion practice at NPS facilities. Effective recycling programs require planning and preparation and an ongoing commitment to service, training, and education.

### Identifying Recycling Opportunities (Sources of Recyclable Materials)

Generally, the best opportunities for recycling can be found at the park's major solid waste generators. Major solid waste generators include, but are not limited to, visitors, park operations, park staff, and NPS partners.

### Key Design and Operating Considerations

The steps for designing and operating a recycling program include identifying markets; determining which materials to include in the recycling program; selecting collection containers; operating a collection service for the containers; potentially performing storage, separation, and processing functions for the materials; and transporting materials to a recycling market for donation or sale. When designing and operating a recycling program, some key considerations are:

- Recycled materials markets are the foundation of a recycling program.
- Parks can continue to receive and use funds resulting from the sale of materials recovered through recycling or waste prevention programs.
- Recycling containers are required for any new or expanded recycling program.
- The collection vehicles and approach used should be designed to work with the type of recycling containers used and could be manual or semi-automated collection.
- In-park processing includes sorting to separate materials and remove contaminants and baling or compacting recyclable materials to reduce volume (for storage or transport), processing to meet end-market specifications, or processing for in-park use.

### Other Recycling Program Considerations

The following should also be taken into consideration in order to develop a sound recycling program:

- Recycling programs for visitor-generated materials should focus on recycling at visitor centers, public areas, parking areas, day use areas, and campgrounds.
- Recycling programs covering park operations can include recycling for maintenance operations and recycling at administrative and office areas.
- Recycling at employee housing can be accomplished with drop-off or curbside collection.



- Concession contracts specifically state that concessioners are to maximize solid waste reduction activities, in part through recycling. See Appendix B for sample concession contract language.
- Recyclable materials can be transported directly to a market or a recyclables processor, or temporarily stored in an interim location in the park to allow transportation of larger quantities on a less frequent basis.

#### **FOR MORE INFORMATION:**

- Handbook, Section 7:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec7.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec7.htm)
- NPS Environmental Audit Guide, Appendix 14, EnviroCheck Sheets - *Solid Waste Management and Universal Waste Management*:  
[http://classicinside.nps.gov/documents/Final EAP Guide 2006.zip](http://classicinside.nps.gov/documents/Final_EAP_Guide_2006.zip)

#### **For additional information specific to concessions operations:**

- CoEMP EnviroCheck Sheet - *Solid Waste Management*:  
<http://www.concessions.nps.gov/document/EnviroCheckSheet-SolidWasteManagement.pdf>
- CoEMP EnviroCheck Sheet - *Universal Waste*:  
<http://www.concessions.nps.gov/document/EnviroCheckSheet-universalwasteManagement.pdf>



## Chapter 9 - Composting

One of the best ways of reducing the volume of solid waste is by composting organic materials. Composting is a process of accelerated biodegradation and stabilization of organic material under controlled conditions. Common composting programs include backyard composting of residential food waste, green waste composting programs (yard waste, brush, and wood chips), larger-scale in-vessel food waste composting, and municipal solid waste composting.

Composting toilets are a technology addressing septic waste, which is not included in the definition of solid waste.

### Composting Regulations

Federal and state regulations may apply to park composting operations, depending on how much material they process every year and what they compost. The NPS does not have any composting regulations.

### Identifying Composting Opportunities

The best way to identify composting opportunities is to train park staff to identify and separate materials for composting from the various types of “green” waste generated at the park.

Alternately, use the “who, where, and what” questions to identify the largest waste generators and materials that can be removed from their waste streams for composting.

### Key Design and Operating Considerations

Find a composting technology which best suits both the materials to be composted and the park. In addition to the selection of a composting technique, parks must make several other operating decisions which are described in detail in Section 8 of the Handbook (see “For More Information” at the end of this chapter). When designing and operating a composting program, some key considerations are:

- A composting program may use separate containers for collection and provide a collection service or just use a composting container in which participants transport compostable materials to the composting container.
- Composting programs require little in the way of special collection equipment.
- Composting technologies range from low to high technology, with the cost of composting facilities and equipment increasing with the level of technology.

### Other Composting Program Considerations

The following should also be taken into consideration in order to develop a sound composting program:

- The most effective composting technology for visitor-generated materials is a municipal or commercially-operated mixed waste or MSW composting technology designed to receive, process, and compost the entire waste stream from a park or municipality.
- NPS operations generate compostable materials such as grass clippings, leaves, brush, and wood materials from grounds maintenance, brush clearing, tree removal, or clearing operations.



- Park staff and families in employee housing mainly generate compostable food waste and low-grade paper waste which can be composted.

Concession contracts specifically state that concessioners are to maximize solid waste reduction activities, in part through composting. See Appendix B for sample concession contract language.

**FOR MORE INFORMATION:**

- Handbook, Section 8:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec8.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec8.htm)
- NPS Environmental Audit Guide, Appendix 14, EnviroCheck Sheets - *Solid Waste Management*: <http://classicinside.nps.gov/documents/Final EAP Guide 2006.zip>

**For additional information specific to concessions operations:**

- CoEMP EnviroCheck Sheet - *Solid Waste Management*:  
<http://www.concessions.nps.gov/document/EnviroCheckSheet-SolidWasteManagement.pdf>



## Chapter 10 - Universal Waste and Special Waste Materials

Universal waste is a type of hazardous waste that can be recycled. NPS facilities generate many potentially hazardous wastes, much of which can now be treated as universal wastes. Universal waste includes batteries, pesticides, mercury-containing equipment, and lamps. Universal waste must be recycled to avoid hazardous waste management requirements.

Special wastes are not exclusive to either the solid waste or hazardous waste categories. The following materials are considered special wastes:

- Electronic products;
- Waste tires;
- Waste oil;
- Wooden pallets;
- Waste batteries (lead acid type used in large trucks and heavy equipment);
- Scrap metal;
- Spent solvents
- Used antifreeze;
- Firing range waste; and
- Used oil filters;

### Managing Universal and Special Wastes

The NPS BMP for universal and special wastes is to recycle it through local permitted recycling programs (if available), local contractors (if available), or commercial mail-back recycling services.

#### FOR MORE INFORMATION:

- Handbook, Section 9:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec9.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec9.htm)
- NPS Environmental Audit Guide, Appendix 14, EnviroCheck Sheets - *Universal Waste Management*: [http://classicinside.nps.gov/documents/Final EAP Guide 2006.zip](http://classicinside.nps.gov/documents/Final_EAP_Guide_2006.zip)

#### For additional information specific to concessions operations:

- CoEMP EnviroCheck Sheet - *Managing Universal Waste*:  
<http://www.concessions.nps.gov/document/EnviroCheckSheet-UniversalWasteManagement.pdf>



# Chapter 11 - Trash Collection and Disposal

The largest solid waste management expense incurred in most national parks is trash collection. Depending on the park, these expenses can include labor, vehicle and equipment operating costs, contracts with private haulers, capital equipment, and disposal charges.

## Key Operating Considerations

The trash collection program must emphasize the availability of recycling services and the recycling containers in the park. Regardless of whether the park uses trash cans or dumpsters, the trash collection system must emphasize the availability of recycling services and the recycling containers in the park.

Trash collection programs should be periodically evaluated for opportunities to improve service, cost-effectiveness and the appropriate level of service.

## Collection Systems

A range of trash collection systems are used throughout the NPS. The system can be a function of the park's available equipment or a function of the park's geography. Typical trash collection systems include:

- Can-based systems;
- Dumpster (containerized) systems;
- Mixed systems;
- Roll-off containers; and
- Compacting roll-off containers.

## Disposal Options

Trash can be landfilled offsite or converted to electricity through waste-to-energy combustion. In addition, MSW can be sent to facilities that separate out and compost the organic materials from the MSW; the remaining material is disposed of as trash.

Parks that have onsite trash disposal sites must adhere to the requirements under 36 CFR Part 6 Sec. 6.5. These regulations are designed to ensure that NPS solid waste disposal sites in continuous operation since September 1, 1984 meet minimum operating standards and do not degrade park resources and values.

### FOR MORE INFORMATION:

- Handbook, Section 10:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec10.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec10.htm)



## Chapter 12 - Education and Outreach

Efforts to inform and educate park visitors about the parks' recycling program are key to increasing participation in, and effectiveness of, the program. An educational program should be implemented to inform visitors about waste reduction and recycling opportunities at the park. This educational message should be provided to visitors clearly and consistently – both before and during visits to the park. Education strategies include:

- Use outreach tools to educate and inform visitors before they enter the park;
- Develop brochures, displays, and/or signs and place them at entrance stations, visitor centers, and campground fee stations to inform visitors (and park staff) of the park's recycling program and how to participate;
- Provide visible recycling containers in public places. Place signs on recycling containers; the type of recycling container should be clear, consistent, and readily identifiable;
- Conduct training for interpretation staff so that they can provide information on recycling and waste reduction in the park in presentations and programs for visitors;
- Provide orientation sessions for new employees that include information on waste prevention and recycling;
- Place trained volunteers or staff at the entrance stations and elsewhere to discuss the recycling program and provide basic information on how visitors can participate; and
- Provide partners with information about the parks recycling program.

### FOR MORE INFORMATION:

- Handbook, Section 11:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec11.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec11.htm)



# Chapter 13 - Contracting for Solid Waste Disposal

## Trash Collection Contracts

Parks typically use contract language provided by the selected trash contractor. It is important to review for terms of the contract, identify the types of collection containers that will be used, review the collection schedule, determine how tracking and reporting of quantities will be accomplished, verify that proper licenses are in place, and ensure that trash will be sent to an approved and permitted disposal facility.

## Concession Contracts

Concession contracts contain language that requires the concessioner to develop, implement, and manage an integrated solid waste management program. Each concession contract is tailored to the specific park solid waste/recycling needs and required operations under the contract. See Appendix B for sample concession contract language.

### **FOR MORE INFORMATION:**

- Handbook, Section 12:  
[http://pfmd.nps.gov/EMP/hazmat/EMP\\_LIB/swhandbook/SWHandbook\\_Sec12.htm](http://pfmd.nps.gov/EMP/hazmat/EMP_LIB/swhandbook/SWHandbook_Sec12.htm)



## Appendix A - Glossary of Acronyms

<b>BMP</b>	Best Management Practice
<b>DOI</b>	Department of the Interior
<b>EAP</b>	Environmental Audit Program
<b>EMP</b>	Environmental Management Program
<b>EMS</b>	Environmental Management System
<b>EO</b>	Executive Order
<b>EP</b>	Environmental Purchasing
<b>EPA</b>	Environmental Protection Agency
<b>FY</b>	Fiscal Year
<b>GPRA</b>	Government Performance and Results Act
<b>ISWAP</b>	Integrated Solid Waste Alternatives Program
<b>LEED</b>	Leadership in Energy and Environmental Design
<b>NPS</b>	National Park Service
<b>OFEE</b>	Office of the Environmental Executive
<b>RCRA</b>	Resource Conservation and Recovery Act



## Appendix B - Sample Concession Contract Language

Note: **Yellow highlighting** indicates text that is should be customized.

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### (1) *Solid Waste Management*

(a) General. The Concessioner will manage manage solid waste in accordance with Applicable Laws, which includes without limitation 40 CFR 243 and 36 CFR 6. The Concessioner will maximize solid waste reduction activities – including but not limited to reuse, recycling, and composting – where economically and technically feasible and appropriate.

(b) Solid Waste Collection and Disposal.

- The Concessioner will collect and dispose of all solid waste generated within assigned land areas and real property improvements. This includes solid waste generated by operations and maintenance activities under this CONTRACT as well as solid waste generated by visitors within assigned land areas and real property improvements.
- The Concessioner will provide adequate numbers of Park-approved solid waste containers that will be conveniently located in Park-approved areas and able to handle the needs within the Concessioner’s assigned land area and real property improvements. The solid waste containers, at a minimum, will be waterproof, vermin-proof, covered with working lids, and well-labeled to indicate to park visitors what should be deposited in the container.
- The Concessioner will empty all solid waste containers promptly when they are full or may attract insects and wildlife.
- The Concessioner will keep assigned land areas and real property improvements free and clear at all times of litter, debris, broken glass, sharp objects, abandoned equipment, abandoned vehicles, and other solid waste so that they do not pose a safety hazard or attract insects or wildlife.
- The Concessioner will inspect and clean cigarette receptacles daily.
- The Concessioner will restrict solid waste collection activities to take place **between 8:00 a.m. and 5:00 p.m.** to minimize the disturbance of guests by the noise.

(c) Recycling.

- The Concessioner will develop and implement a recycling program that, at a minimum, has visitors and employees recycling the same materials recycled by the Park and as required by the state, region, or locality in which the Concessioner operates. These materials currently include **white and colored paper, newsprint, corrugated cardboard, bimetals, plastic, aluminum, and glass.**
- The Concessioner will collect and recycle all recyclables included in its recycling program within assigned land areas and real property improvements. This includes recyclables generated by operations and maintenance activities under this CONTRACT as well as recyclables generated by visitors within assigned land areas and real property improvements.
- The Concessioner will provide adequate numbers of Park-approved recycling containers that will be conveniently located in Park-approved areas and able to handle the needs within the Concessioner’s assigned land area and real property improvements. The recycling containers, at a minimum, will be waterproof, vermin-



proof, covered with working lids, and well-labeled to indicate what should be deposited in the container.

- The Concessioner will empty all recycling containers promptly when they are full or may attract insects and wildlife.
  - The Concessioner will restrict recyclable collection activities to take place **between 8:00 a.m. and 5:00 p.m.** to minimize the disturbance of guests by the noise.
- (d) Kitchen Grease. The Concessioner will collect and recycle kitchen grease. The kitchen grease will be collected in containers that are waterproof, vermin-proof, covered with working lids, and well-labeled to indicate what should be deposited in the container. The containers will be kept closed except when being used and provided with other vector controls, as necessary.
- (e) Electronic Equipment. Electronic equipment – such as computers, computer monitors, and televisions – will be donated and/or recycled when economically and technically feasible and appropriate. At a minimum, electronic equipment will be disposed of in accordance with Applicable Laws.
- (f) Other Equipment.
- The Concessioner will drain equipment containing hazardous substances – such as oil and fuel – prior to disposal, and manage the equipment and hazardous substances in accordance with Applicable Laws.

