

US EPA ARCHIVE DOCUMENT

# Chapter 1. Introduction

## The Solid Waste Dilemma

What is the best way to manage solid waste? This is a question that many Native American tribes and Alaskan Native villages face today. Tribes in rural areas face illegal dumping issues. Alaskan Native villages struggle to find cost-effective and safe alternatives to open dumps. Tires, appliances, furniture, car batteries, and abandoned cars litter many reservations. Backyard burning of household waste pollutes the air and poisons fish and wildlife. This guide is designed to help tribes and villages to find solutions to these problems, improve existing systems, and develop effective solid waste management programs.

The types of solid waste management programs being run by tribes and Native villages are varied and diverse, ranging from simple, one-step disposal programs to complex management programs intertwining recycling, composting, and disposal. Some tribes have sophisticated recyclables collection and marketing programs, others run landfills or transfer stations on the reservation, while still others are struggling to clean up and close open dumps or determine the best way to dispose of bulky items and other trash littering the reservation.

In the past, tribal members and Alaskan Native villagers have disposed of their waste in open pits or by burning it, with few environmental or health impacts. Due to changes in the types and volumes of waste generated today, however, these practices are no longer safe or effective ways to manage waste. The increase in plastics and other synthetic materials in our waste stream, in addition to the growth in sheer volume of waste, makes backyard burning and open dumping dangerous to human health and the environment. Public health and environmental concerns include an increased incidence of disease, food and drinking water contamination, and air pollution.

Open dumps can attract young children and pets. Children playing in or rummaging through open dumps can be hurt by sharp objects. They also can come in contact with toxic materials or contagious pathogens, which can lead to gastroenteritis; skin rashes and infections; or eye, nose, and ear infections. Open dumps also attract pests such as insects, rats, dogs, bears, birds, and raccoons that can spread disease or physically injure people. Chemicals and bacteria from these dumps can run off into rivers and lakes, contaminating drinking water sources and fish and game. Native Americans and Alaskan

Native villagers dependent upon fish and game for subsistence living are especially vulnerable to illness resulting from open dump contamination.

Burning waste in barrels, boxes, or open pits releases dangerous chemicals into the atmosphere that are inhaled immediately or settle on plants and bodies of water, entering the food chain. Air pollutants released by backyard burning include dioxins, fine particulate matter, carbon monoxide, nitrogen oxides, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and hydrogen chloride. The ash residue from burning also can contain dangerous levels of toxic heavy metals, such as mercury, lead, chromium, and arsenic, which can contaminate water or enter the food chain.

The impacts of improper solid waste management go beyond these health and environmental problems. Open dumps degrade the land by destroying fish and wildlife habitats. Many tribes and villages depend on these natural resources for economic and cultural survival. In the Pacific Northwest, for example, salmon are central to many tribes' social, spiritual, and economic livelihoods.

Open dumping and burning can further threaten these species. Open dumping also degrades natural resources, such as timber, agriculture land, and recreational areas. In some cases, open dumping even infringes upon or threatens culturally or spiritually significant lands.

### **Making Solid Waste Management a Priority**

Solid waste management touches all aspects of tribal and village life—public health, environmental quality, economic development and prosperity, community pride and identity, tribal culture, and land stewardship. But tribes often have limited resources. Equally important competing interests, such as education, physical and mental health, employment, and economic development, often take precedence over solid waste and exhaust tribal funds.

Even when tribal environmental and natural resource divisions obtain funds, solid waste management concerns often are seen as secondary to drinking water and water quality concerns. Many tribal solid waste managers



An illegal dump site on the Seminole Nation of Oklahoma's reservation.

have to make the case to their tribal councils and communities that solid waste management is an issue that warrants attention and adequate funding. The managers who are successful are those who are able to demonstrate the extent of the problem and show how it is integrally connected to the community's other concerns. In some cases, making solid waste a tribal priority reaps financial benefits, too. In order to obtain Indian Health Service (IHS) Sanitation Deficiency System funding for a solid waste related project, for example, a tribe often must designate solid waste management as its number-one priority.

### Goals of This Guide

Each tribe is unique, with its own history, culture, financial situation, and geographic location. But even though tribes have their own separate identities, they share common problems. The primary objective of the *Tribal Decision-Makers' Guide to Solid Waste Management* is to provide a variety of options and technical assistance solutions to help tribes and Alaskan Native villages protect their environment and the health of their

members. To achieve this goal, the guide recommends developing and implementing an integrated solid waste management (ISWM) program.

No two ISWM programs will be exactly alike due to the differing geography, demographics, financial situation, and culture of each tribe and Alaskan Native village. While the specifics of each program will likely vary, every successful integrated solid waste management program will possess five fundamental components. These five components form the core of any integrated solid waste management program:

**Solid Waste Management Plan** — A solid waste management plan is the foundation of any ISWM program.

**Solid Waste Codes, Ordinances, or Regulations** — Codes, ordinances, and regulations provide the legal justification for your ISWM and the authority to ensure compliance.

**Enforcement Mechanisms** — Solid waste codes, ordinances, and regulations are only effective if they are consistently and equitably enforced.



The same site after cleanup.

### **Viable Solid Waste Disposal Options** —

Proper solid waste management and disposal mechanisms ensure that your tribe or village's waste ends up in a licensed, certified, or permitted landfill or municipal solid waste incinerator and not an open dump.

### **Community Outreach and Education**

— Community outreach and education promote understanding, support, and participation in your ISWM program.

While reuse, recycling, composting, and waste prevention/source reduction are other important components of an ISWM program, they are not sufficient to ensure proper solid waste management in the absence of the core components. Incorporating these other components into a well planned and implemented core program can only increase the effectiveness of your ISWM program, but you must have the core program to ensure success.

To help tribal leaders and decision-makers clarify their solid waste goals and objectives and assess management options, the guide is divided into six sections, each focusing on a different component of an ISWM program. These sections include:

- **Developing Solid Waste Management Plans:** Describes why a tribe or village would want to develop a solid waste management plan, what the plan should include, and where to get help in developing the plan. The chapter also includes links to solid waste management plans drafted and used by individual tribes.
- **Developing, Implementing, and Enforcing Solid Waste Codes, Laws, and Regulations:** Describes and provides examples of how to develop, implement, and enforce solid waste codes. Provides examples of actual regulatory language used by other tribes and villages, numer-

ous examples of effective enforcement strategies and practices, and information on working within the federal regulatory framework.

- **Solid Waste Collection and Disposal Programs:** Outlines and describes several waste collection and disposal options. Also discusses strategies to control illegal dumping and close open dumps.
- **Waste Reduction, Buying Recycled, and Manufacturing with Recovered Materials:** Discusses reasons for developing source reduction, recycling, composting and buy-recycled programs and how to start these programs, as well as information on manufacturing with recovered materials. Provides numerous examples of tribes and Alaskan Native villages with successful programs.
- **Public Education and Community Outreach:** Discusses approaches to developing and instituting an effective community outreach and education program. Provides different examples of initiatives aimed at children, adults, and tribal and village leaders.
- **Funding Your Solid Waste Management Program:** Provides tips for identifying grants and loans and ways to improve your grant applications. Also discusses different internal sources for funding your program.

Incorporated throughout the guide are examples of tribes and villages finding solutions to solid waste problems through creativity, flexibility, and perseverance. The case studies and examples also demonstrate the benefits of forming partnerships and collaborating with other tribes, villages, neighboring counties, and state and federal agencies. These stories illustrate that while creating an effective solid waste management program is often a challenging endeavor, success is possible.