

**Blackfeet Tribe
Integrated Solid Waste
Management Plan**

Adopted June 21st, 2023

Blackfeet Tribal Business Council

By Resolution No. 555-2023

Table of Contents		Page Numbers
1.0	Introduction, Authorization, Applicability, Required Contents and Periodic Review of Plan	4
1.1	Introduction	4
1.2	Authorization of Plan	4
1.3	Required Contents of Plan	5
1.4	Periodic Review of Plan	6
2.0	Community Service Area	7
2.1	Population and Demographics	7
2.2	Community Assets and Resources	7
2.3	Households and Housing	7
2.4	Population Projections	8
2.5	Economy	8
2.6	Climate	8
2.7	Geography	8
2.8	Geology and Natural Resources	9
3.0	Solid Waste Program Structure and Administration	10
3.1	Administration and Management	10
3.2	Codes and Ordinances	10
3.3	Solid Waste Program Policies	11
4.0	History of Solid Waste Management and Waste Management Planning	12
4.1	History of Solid Waste Management	12
4.1.1	Browning Landfill	12
4.1.2	Solid Waste Transfer Station	13
4.1.3	Construction and Demolition Debris Landfill	13
4.2	History of Solid Waste Management Planning	13
5.0	Description of Current and Proposed Solid Waste Management Practices	15
5.1	Current Waste Generators	15
5.2	Amount and Composition of Waste	15
5.3	Estimated Future Waste Generation	16
5.4	Unmanaged Waste Sites	16
5.4.1	Open Dumps	16
5.4.2	Open Burning	17
5.5	Collection, Transfer and Disposal of Household, Special and Hazardous Waste	18
5.5.1	Tribal Collection Program	18
5.5.2	Other Waste Collection Agencies	18
5.5.3	Blackfeet Transfer Station	18
5.5.4	Disposal	19
5.5.4.1	Northern Montana Joint Refuse District	19

	Landfill	
	5.5.4.2 Construction and Demolition Debris Landfill	20
	5.5.4.3 Asbestos-containing Waste	20
5.6	Waste Reduction Practices	21
5.7	Description of Facilities, Regional Infrastructure and Current Partnerships	22
	5.7.1 Facilities	22
	5.7.2 Regional Infrastructure	22
	5.7.3 Current Partnerships	22
5.8	Proposed Waste Management Practices	23
	5.8.1 Improve Collection Equipment and Bins	23
	5.8.2 Improve Facility and Obtain Equipment and Training to Open the Construction and Demolition Debris Landfill	25
	5.8.3 Obtain Funding for Future Equipment Replacement	25
	5.8.4 Eliminate Open Dumping	25
	5.8.5 Continue to Improve Compliance and Enforcement	26
	5.8.6 Expand Resource Recovery and Waste Reduction Options	27
	5.8.7.1 Recycling	27
	5.8.7.2 Composting	27
	5.8.7.3 Source Reduction and Reuse	28
	5.8. Manage Household Hazardous Waste	28
6.0	Description of Funding, Sustainability and Long-term Goals of the Tribe's Solid Waste Management Program	30
6.1	Funding Sources	31
	6.1.1 Solid Waste Program Budget, Billing and Collections	31
	6.1.2 Other Revenue Sources	33
6.2	Sustainability	31
6.3	Evaluation of the Feasibility of a Tribally-Owned Municipal Landfill	32
6.4	Long-term Goals and Objectives	33
	6.4.1 Long-term Goals	33
	6.4.2 Objectives	34
6.5	Public Education and Involvement	34
7.0	Conclusion	36

Appendices

- A. Map
- B. Tribal Solid Waste Policies
- C. Fee Schedule
- D. Solid Waste Survey
- E. Landfill Cost Analysis

1.0 Introduction, Authorization, Applicability, Required Contents, and Periodic Review of Plan

1.1 INTRODUCTION

This integrated solid waste management plan will be used as a guidance document for improving solid waste management practices on the Blackfeet Reservation. The Plan will also be employed as a blueprint for future waste reduction, reuse, recycling, composting, collection, transportation, and disposal activities. This plan describes current solid waste management practices, identifies quantities and components of solid waste generated by the tribe, identifies the tribe's solid waste management goals and objectives, and proposes recommendations for improved solid waste management practices. This plan is an update of the Blackfeet Integrated Solid Waste Management Plan adopted in 2006.

The Blackfeet Solid Waste Management Program (BSWMP) has developed this Integrated Solid Waste Management Plan (ISWMP or "Plan") using guidelines from the U.S. Environmental Protection Agency (EPA) in order to meet EPA's Five Elements for a Tribal Integrated Waste Management Plan.¹ This document is intended to be dynamic and updated on a periodic basis to adapt to relevant changes in circumstances.

This ISWMP was produced in cooperation with the BSWMP, the tribe's General Assistance Program, and Brownfields Tribal Response Program; the U.S. Environmental Protection Agency Region 8 Solid and Hazardous Waste Program and Brownfields Program; the Indian Health Service (IHS), and IHS Circuit Riders assisting tribes in the Solid Waste and Brownfields Programs. A final draft was presented to the Blackfeet Tribal Business Council for review and adoption after soliciting input from other tribal programs and the community.

1.2 AUTHORIZATION OF PLAN

Blackfeet Solid Waste Ordinance No. 105, adopted in 2009, as amended and now codified at Chapter 21 of the Blackfeet Law and Order Code, approved by Resolution No. 293-2023 on March 2, 2023, requires the Blackfeet Environmental Office to develop a comprehensive integrated solid waste management plan (BISWMP) which shall be an appendix of the Code. Amendments to this Plan shall be approved by Resolution of the Blackfeet Tribal Business Council.

The Blackfeet Solid Waste Code at Part II, Section 2 requires that the BISWMP "express the policies for the Blackfeet Nation in regard to all solid and hazardous waste collection, transportation, handling, treatment, storage and disposal on or off the Blackfeet Reservation."

The Tribal policies in the ISWMP apply to all solid waste collection, storage and disposal facilities on the Blackfeet Reservation, including Municipal Solid Waste Landfills (MSWLFs), and transfer stations. MSWLFs are subject to the self-implementing regulations at 40 Code of Federal Regulations (CFR) Part 258, Criteria for Municipal Solid Waste Landfills, in addition to any

¹ "The Five Elements of a Tribal Integrated Waste Management Plan" USEPA Region VIII.

additional waste management operating criteria specified in Blackfeet Solid Waste Code, other applicable Blackfeet Tribal Laws, any and all conditions in a MSWLF facility operating permit, or in orders issued by the Solid Waste Program. All other solid waste disposal facilities are subject to the requirements of 40 CFR Part 257, Criteria for Classification of Solid Waste Disposal Facilities and Practices, and applicable Blackfeet tribal laws.

1.3 REQUIRED CONTENTS OF PLAN

Section 304 of Ordinance 105 requires that the ISWMP contain, at a minimum, the following:

- (A) A methodology for the identification of all open dumps and the closing of such dumps in accordance with the solid waste disposal act (SWDA)/RCRA and 40 CFR Part 258 and all other applicable federal laws, regulations and guidelines.
- (B) A resource recovery program for the recycling of solid wastes.
- (C) A policy to encourage the recycling of solid wastes generated on the Blackfeet Indian Reservation during the pendency of the development of regulations requiring the recycling of such wastes, if it is determined that recycling of such wastes is cost effective or economically feasible. Thereafter, the regulations regarding the recycling of solid wastes shall control.
- (D) A methodology for the disposal of household hazardous wastes other than household wastes which are disposed at the MSWLF or transfer station on the Blackfeet Reservation.
- (E) Identification of compliant landfills on the Blackfeet Reservation which includes, but is not limited to, a narrative of each landfill's location, design, operation and how the landfill satisfies Ordinance 105 and 40 CFR Part 258.
- (F) Identification of non-compliant landfills on the Blackfeet Reservation which includes, but is not limited to, a narrative of each landfill's location, design, operation, how the landfill fails to comply with this Code or applicable federal laws, and BEO's response to the noncompliance.
- (G) A methodology to estimate the volume and composition of all solid waste that is generated on the Blackfeet Reservation.
- (H) A methodology to estimate the volume and composition of solid waste from sources outside the Blackfeet Reservation that may be disposed of in any landfill on the Blackfeet Reservation pursuant to any inter-governmental agreement that the Council may authorize.
- (I) Identification of the responsibilities of other Tribal agencies and entities involved in the implementation of this Code, and the distribution of funds to such agencies.
- (J) A methodology for the review and modification, as necessary, of current tribal regulatory systems which implement the solid waste program and enforce this Code and other applicable laws, regulations, and policies.
- (K) A methodology for the review of contracts for the clean-up and closure of open dumps or the removal of solid waste disposed at open dumps to authorized facilities off the Reservation and the costs associated with such closure or removal.
- (L) Identification of preferred locations on the Blackfeet Reservation for the establishment of new landfill sites, including whether groundwater monitoring could be properly suspended pursuant to 40 CFR Part 258.

- (M) A methodology to determine how solid waste will be disposed on or off the Reservation and whether such disposal is compliant with the criteria contained at 40 CFR Parts 257 and 258. Such methodology shall contain information regarding the comparative costs of constructing and operating an on-reservation landfill or transfer station and against the costs of collection and transportation of solid waste off the reservation.
- (N) A recycling plan which includes a methodology for the safe and sanitary collection, handling, transport, storage and disposal of recycled materials, including composting.
- (O) The plan may also include any other matters relevant to the solid waste disposal.

Section 402 of Ordinance 105 also specifies that the ISWMP shall contain a recycling plan which will include, but is not limited to, systems for the collection, separation, containerization and marketing of recyclable solid wastes.

1.4 PERIODIC REVIEW OF PLAN

It is the policy of the Solid Waste Management Program that the ISWMP be re-evaluated every five years and revised as needed. The next review of this plan will be conducted in 2028.

2.0 Community Service Area

2.1 POPULATION AND DEMOGRAPHICS

The Blackfeet Tribe has approximately 17,200 enrolled members, including those who do not live on the reservation. A total population on the reservation according to the 2010 census was, 10,500. According to the 2020 U.S. Census the total population on the reservation is 10,664 a 1.25% increase from the 2010 Census.

From the 2020 Census the unemployment rate for December of 2020 was reported at 9.5% with a Median Household Income (MHI) as low as \$34,731. It also must be noted that the former Town of Browning, which was located at the center of the Blackfeet Reservation was disincorporated in 2016.

The reservation consists of seven communities including; Babb, St. Mary, East Glacier, Blackfoot, Heart Butte, Seville, and Starr School. The Blackfeet Tribal Office is located Mid-center of the reservation. A map of the Blackfeet Reservation is provided in Appendix A.

The reservation economy is very poor and unemployment approaches 70%. A primary goal of the Blackfeet Tribal Business Council is economic development, especially in developing the tribe's abundant natural resources.

2.2 COMMUNITY ASSETS AND RESOURCES

A number of community assets and resources can be used to help implement the solid waste program. The tribal government provides regularly funding in years when solid waste expenses exceed revenue. The Blackfeet Tribal Business Council also provides policy direction to the program. The IHS provides engineering assistance and project funding and maintains an inventory of open dumps. The BIA has provided funding in the past for landfill closure activities. USDA-Rural Development has helped fund construction of a construction and demolition debris landfill and can also fund equipment requests. The tribal Housing Authority picks up white goods and bulky items from the homes it manages and brings them to the tribal transfer station. In the past, Glacier County has provided equipment for earth moving. Enforcement of the Solid Waste Code has been improved by providing more authority to commissioned officers to issue citations and a more comprehensive administrative procedural process to ensure compliance by the community. EPA provides assistance to tribal environmental programs.

2.3 HOUSEHOLDS AND HOUSING

There are approximately 3,667 housing units on the reservation. The Blackfeet Housing Authority manages and provides maintenance to approximately 1,300 housing units on the Reservation. These homes include HUD low rent and Mutual Self-Help Homes and Tax Credit Homes. The Blackfeet Tribe manages solid waste from all of the Reservation communities, as well as rural scattered site housing.

2.4 POPULATION PROJECTIONS

For purposes of this document, Tribal and U.S. Census data was used to determine population estimates. The reservation population increased minimally from 2010 to 2020.

2.5 ECONOMY

The economy on the Blackfeet reservation is primarily agricultural farming and ranching, especially crops of wheat, barley and rye farming. Other major employers on the reservation are the Blackfeet Tribe, federal agencies, the tribal casino, the school districts, Blackfeet Community College, various commercial entities including those catering to tourists, and oil and gas development. Many of these entities contract with the Blackfeet Tribe through its delegated entity the Blackfeet Environmental Office. Demand for solid waste collection increases during pow wow and annual reservation clean-up days.

2.6 CLIMATE

In Browning the average annual maximum temperature is 52 degrees Fahrenheit, while the average minimum temperature is 27.7 degrees. Average annual total precipitation in Browning is 14.95 inches, with an average total snowfall of 59.5 inches per year. The rainiest months are in May, June and July. In the town of Babb, which lies near the Rocky Mountain front, temperature ranges are similar, however the total annual precipitation averages 18.04 inches. In the winter, Chinook winds can bring rapid temperature increases of 40 to 50 degrees Fahrenheit in a few minutes. The Blackfeet Climate Change Adaptation Plan, endorsed in 2015 provides a more comprehensive look into the current climate and what is expected in the future, in order for the Blackfeet Tribe to provide a path to address changing climate conditions.

2.7 GEOGRAPHY

The Blackfeet reservation occupies approximately 1.5 million acres in Glacier and Pondera Counties in northwestern Montana. On the northern boundary, the reservation shares a border with the Canadian Province of Alberta. On the western boundary, it shares a common perimeter with Glacier National Park. On the southwest boundary, the reservation fringes on the Badger-Two Medicine portion of the Lewis and Clark National Forest. Other natural reservation boundaries include Birch and Cut Bank Creeks.

The area is mostly rolling grasslands with rugged glaciated mountains and valleys on the western side. Elevations vary from 3,300 ft. on the east side of the reservation to over 9,000 ft. on Chief Mountain in the northwest section of the reservation. Many small streams and rivers flow from the

mountains through the Reservation and, with the exception of the northwestern part of the Reservation, all are within the Missouri River drainage. Lakes and wetlands are numerous in areas once occupied by glaciers or ice sheets.²

Because the Reservation is so large and rural, with low population density, solid waste hauling distances from customers to the tribal transfer station are long. In addition, it is 30 miles from the tribal transfer station to the nearest municipal landfill near Conrad, Montana.

2.8 GEOLOGY AND NATURAL RESOURCES

The Blackfeet Reservation rests primarily on glacial till that was left by mountain glaciers and the retreat of the continental ice sheet. Till deposited by piedmont glaciers typically has a gravelly to clayey matrix and is a poor aquifer due to permeability. However, in some areas, gravel deposits within the till, between till layers, and underneath the till constitute an important water source. In general, fine grained, low permeability bedrock aquifers are overlain in many areas by unconsolidated deposit aquifers of moderate to high permeability. Coarse grained unconsolidated aquifers comprise the most important aquifers in many areas. Alluvium, gravel beds within or beneath till, gravel in pediments and terraces and glacial outwash may all be used as water supplies. *(USGS 1996)*

The Blackfeet Reservation sits on the western edge of the Bakken Shale oil field. According to the Blackfeet Department of Commerce website, there are currently 11 oil and gas producers operating on the Reservation. There are 39 producing gas wells generating approximately 17,000,000 MCF of natural gas per month and 260 producing oil wells generating approximately 17,000 barrels of oil per month.

² USGS Water Resources, Geology and Ground-Water Resources of the Blackfeet Indian Reservation, Northwestern Montana, 1996, Author M.R. Cannon

3.0 SOLID WASTE PROGRAM STRUCTURE AND ADMINISTRATION

3.1 ADMINISTRATION AND MANAGEMENT

The nine member Blackfeet Tribal Business Council is the governing body within the exterior boundaries of the Blackfeet reservation. The Council members are elected from four districts on the reservation. The Blackfeet Nation, in its relationship with the federal government as a “domestic sovereign” Indian nation, is recognized as a nation within a nation through treaties, agreements, laws, and executive orders.

The Blackfeet Environmental Office operates as a department under the management of the Tribe’s Environmental Director who reports directly to the Tribal Business Council. The Blackfeet Environmental Office operates the drinking water and wastewater programs and burn permit Process. There are currently thirteen environmental staff positions and two drinking water and wastewater positions.

The Solid Waste Department operates as a department under the management of the Tribe’s Solid Director with seventeen employees which are funded by a Tribal Budget and revenues. The income falls short due to the high costs of maintenance of equipment. Revenues consist of services provided to the Indian Health Service, BIA-government Homes, Schools, Piegan Border Station, Landfill charges over the scale, solid waste 40-yard containers, tires that go over scale, recycling metal to be sold, outlying residential 96-gallon containers, 96-gallon containers for residential homes 4-yard containers for ranches.

3.2 CODES AND ORDINANCES

Blackfeet Solid Waste Ordinance 105 was adopted in 2009 by the Blackfeet Tribal Business Council; and, subsequently amended and codified at Chapter 21 of the Blackfeet Law and Order Code as the Solid Waste Code, to provide Tribal regulatory authority over all solid and hazardous waste issues and concerns on the Blackfeet reservation. The Solid Waste Code requires the Blackfeet Environmental Office to establish a permitting system and a permit fee schedule. Fines and penalties are legislated within the Solid Waste Code, by the Blackfeet Tribal Business Council.

Ordinance 105 was amended in 2012 to prohibit the disposal of oil and gas exploration wastes, except as authorized by the tribe, and to add special penalties for violations of this prohibition.

3.3 SOLID WASTE PROGRAM POLICIES

In addition to the requirements in the Solid Waste Code and the federal solid waste regulations at 40 CFR parts 257 and 258, the Blackfeet Tribe has established policies and procedures that apply to solid waste management on the reservation. These policies, which are contained in Appendix B, contain the following:

- Prohibitions on the management of certain types of wastes and on disposal in open dumps;
- Storage requirements;
- Requirements for Municipal Solid Waste Disposal Facilities and Landfills; and
- Permitting requirements for solid waste treatment, disposal, collection or transfer facilities and for the commercial collection and/or transportation of solid or hazardous waste.

4.0 History of Solid Waste Management and Solid Waste Management Planning

4.1 HISTORY OF SOLID WASTE MANAGEMENT

4.1.1. Browning Landfill

There are currently no operating landfills on the Blackfeet Reservation, however this has not always been the case. In 1975, the Town of Browning opened a municipal landfill. The site is located on approximately 70 acres of land owned by the Blackfeet Tribe approximately four miles northeast of the town of Browning. The only access to the landfill is a 2.6-mile gravel road that runs east off of Bureau of Indian Affairs (BIA) Road #6. The estimated site coordinates are 48 degrees 36' 15" N. latitude and 112 degrees 57' 30" W. longitude (USGS 1968).

The Town of Browning operated the landfill until 1987 when the State of Montana revoked the Town's license to operate this facility. Subsequently, the landfill remained open for several years under tribal ownership but with no supervision. In 1994, the tribe made a decision to take over operation of the Browning landfill because of the perceived expense of transporting waste off the reservation and on-going solid waste management issues.

In 1996, the IHS contracted the services of Red Hawk Lab to complete an engineering study of the Browning landfill and evaluate solid waste management alternatives for the Blackfeet Tribe³. The following options came out of this study.

- Continue to operate the old landfill with minimal improvements;
- Close the old landfill and construct a new landfill on the reservation that is in compliance with federal requirements;
- Close the old landfill, construct a transfer station and haul waste to a certified landfill off the reservation;

The report from Red Hawk noted that a daily cover was not being provided at the landfill, fences needed repairing, ground water monitoring should be initiated and other measures were needed in order to comply with federal regulations.

The Blackfeet Tribal Business Council subsequently made a decision to close the Browning landfill and to build a new landfill that would be in compliance with federal requirements on land adjacent to the existing site. The existing Browning landfill was closed in October of 1997 except for a "temporary cell". The "temporary cell" was to stay in operation until the new landfill was completed and operational. Because the temporary cell remained open, the landfill remained subject to all applicable requirements of the federal municipal solid waste regulations.

³ "Engineering Study of the Blackfeet Indian Reservation Landfill" prepared for the Indian Health Service by Red Hawk Laboratory, July 15, 1997.

In 1999, the Environmental Protection Agency (EPA) awarded the Blackfeet tribe a \$110,000 grant to develop closure/post-closure plans along with ground water and methane sampling plans for the old landfill.

In 2000, a newly elected Blackfeet Tribal Business Council decided to develop a transfer station instead of constructing a new landfill. The funds that were being held by the IHS and the Bureau of Indian Affairs to build a new landfill were then released for the construction of a transfer station. Waste would now be consolidated and transported off the reservation to a state-certified landfill.

In January of 2002, the Tribe was awarded an additional \$135,000 from the Environmental Protection Agency to conduct a site assessment at the old landfill in preparation for ground water and methane monitoring along with assessing the “temporary cell”.

In 2006, the Blackfeet Tribe closed the Browning landfill. A final dirt cover was placed on the exposed garbage and the first phase of closure went into effect. An engineered soil cap was designed and constructed to prevent rain and snowmelt from draining through the buried waste and carrying contaminants into underlying soils and ground water. The final phase of construction of the landfill cap was completed in fiscal year 2013.

4.1.2. Solid Waste Transfer Station

The Transfer Station facility was completed in 2003, but remained inactive until the Blackfeet Tribal Business Council moved to separate Solid Waste from the Blackfeet Utilities. The separation created a new program under the tribe called “Blackfeet Solid Waste Management Program”. The Blackfeet Transfer Station became operational on January 30, 2006 and the new solid waste program went into effect in October 2006.

4.1.3 Construction and Demolition Debris Landfill

In 2010, with assistance from the IHS and USDA-Rural Development, the Blackfeet tribe constructed a new landfill to be used for disposal of construction and demolition debris. The new landfill is on land owned by the Tribe adjacent to the closed Browning municipal landfill. The construction and demolition debris landfill are intended to reduce the cost of waste disposal by accepting bulky/heavy but inert material that is expensive to haul and dispose of at a municipal landfill. The construction and demolition debris landfill are not to be used for disposal of municipal solid waste, which will continue to be hauled to an off-reservation municipal solid waste landfill. The landfill is not yet operational.

4.2 HISTORY OF SOLID WASTE MANAGEMENT PLANNING

In 2006, the Blackfeet Tribal Business Council adopted the “Blackfeet Integrated Solid Waste Management Plan” which was intended to help inform decision-making about solid waste management on the Blackfeet reservation. The Integrated Solid Waste Management Plan identified the following objectives toward improving solid waste management on the Blackfeet reservation:

- Replace the four cubic yard containers with curbside service in the communities that are serviced through the tribe’s solid waste program. Many of these containers have now been replaced with curbside service and additional communities continue to be added.
- Establish, through the SOLID WASTE DEPARTMENT, recycling for glass, cardboard, paper and plastic. Cardboard is now accepted and recycled at the tribal transfer station, as is scrap metal.
- Promote through education, literature, and promotional slogans ways to decrease illegal dumping and increase best handling practices for solid waste.

Many other recommendations in the 2006 Solid Waste Management Plan have also been met, including the following:

- The Blackfeet Environmental Office is using Ordinance 105 to enforce against violators who illegally dump solid waste.
- The Browning municipal landfill is in the final phase of closure.
- The transfer station was built and is in operation.
- Solid waste fees have been restructured, allowing the SOLID WASTE DEPARTMENT to operate in the black financially in many years.
- A construction and demolition debris landfill was constructed.

The 2006 Solid Waste Management Plan has been updated to reflect changes in solid waste management practices and to identify new goals and recommendations for the program.

5.0 Description of Current and Proposed Solid Waste Management Practices

5.1 CURRENT WASTE GENERATORS

The major generators of solid waste managed by the BSWMP are in the communities of Babb, St. Mary's, Starr School, Heart Butte, Blackfoot, East Glacier, Browning and rural areas of the reservation. In addition, waste is generated by the various tribal and federal agencies, the school districts and community college, and various commercial generators on the reservation.

5.2 AMOUNT AND COMPOSITION OF WASTE

The amount of waste that is currently being disposed of by the Blackfeet Solid Waste Department is approximately 15 tons per day. Waste is collected in 96-gallon cans and 4 cu/yd³ receptacles. There are currently 650 of the 96-gallon cans and 500 4 yd³ bins scattered throughout the reservation. During the summer season, the tribe provides pick-up service twice a week to commercial areas and once a week to rest of the reservation. Also, the tribe responds to on-demand requests for collection service.

In 2010, EPA estimated that the U.S. population generated 250 million tons of trash which equates to an estimated per capita waste generation of 4.43 pounds. Nationally, approximately 85 million tons, approximately 34%, of this waste is recycled or composted. The following table is a breakdown of the composition of municipal waste generated in the U.S. according to EPA.

U.S. Generation and Recovery of Materials in Municipal Solid Waste in 2010:

Material	Percent of Total Generation	Recovery as Percent of Total Generation
Paper	28.5	62.5
Yard Trimmings	13.4	57.5
Food Scraps	13.9	2.8
Plastics	12.4	8.2
Metal	9.0	35.1
Rubber, Leather, Textiles	8.4	15.0
Glass	4.6	27.1
Wood	6.4	14.5
Other	3.4	28.0

In February of 2000, a waste audit was performed by the Blackfeet Environmental Office and EPA, and revealed that better than 60% of the waste stream consisted of paper and food waste. It was recommended that, while tires, furniture, white goods, and other bulky items can be taken to the landfill, the use of the 4 cu/yd containers to collect these items should be discouraged. A community survey revealed that many residents would support a recycling program on the Reservation but the amount of commitment varied. Some people would be willing to pay a fee to

recycle and would separate materials and even transport them to a collection center. Others would participate if it was convenient enough.

5.3 ESTIMATED FUTURE WASTE GENERATION

As discussed earlier, the populations of the Blackfeet reservation and the Town of Browning both declined between 2000 and 2010 by small percentages. This would imply that waste generation is likely to remain approximately the same in the future.

5.4 UNMANAGED WASTE SITES

5.4.1 Open Dumps

Open dumping has been a persistent problem on the Blackfeet Reservation. Open dumps are waste disposal sites that do not meet the requirements of 40 CFR Part 257 or 258; they are prohibited under the Blackfeet Solid Waste Code and the federal Resource Conservation and Recovery Act. Open dumps have the potential to create human health and environmental problems through leaching of contamination, attraction of disease vectors (carriers), air emissions from burning, and other impacts.

In 1988, a survey of open dumps was completed on the reservation. The purpose of the survey was to retrieve information from reservation residents on the geographic location of open dumps, the contents of each open dump, and to complete an assessment on the potential risk posed by each dump to public health and the environment. Fifty-one open dumps were identified in the survey. Photographic and visual observations were also completed.

As a consequence of the open dump survey; the Blackfeet Tribal Business Council realized the seriousness of open dumps on the reservation. On April 26th, 1988, the Business Council passed a resolution that adopted Ordinance No. 52 known as “The Blackfeet Solid Waste Management System Code (BSWMSC)”. The BSWMSC was put into effect in order to protect the public safety, health and welfare, and to enhance the environment for the residents of the Blackfeet reservation by regulating the collection, storage, transportation, and disposal of solid waste.

After Ordinance 52 was adopted, twenty-nine open dumps were documented through information gathering by the Blackfeet Tribal Response Program and others. Identification and strategies dealing with problems associated with open dumps involve ongoing efforts and coordination between the Tribal Response Program, the IHS and EPA. 25 U.S.C. §§3901-3908, Indian Lands Open Dump Cleanup Act of 1994, authorizes IHS to identify and assess open dumps on Indian lands). Ordinance 52 has since been incorporated into the Solid Waste Code.

Sufficient funding is not available to clean up all open dumps on the reservation, however, the IHS received \$90,000 funding to clean up five priority open dump sites on the Blackfeet reservation in fiscal years 2012-2013,

5.4.2 Open Burning

A common practice on the reservation is for families to burn garbage in a pile in their backyard or in a 55-gallon drum. Materials that are burned range from household trash, plastics, glass and metal to a more selective burning of strictly paper items. A high percentage of household waste is plastic and many paper products such as envelope windows, inserts in junk mail, and paper packaging have plastics linked to them. This makes it difficult to keep plastics out of today's waste stream.

Problems associated with the burning of waste are the high levels of toxic chemicals and particulate matter that are emitted into the atmosphere. The burning of plastics (vinyl) emits dioxins into the air because of the PVC (polyvinyl chloride) contained in them. The release of toxic particulate matter into the environment may induce acute respiratory and other health problems.

Building materials that may contain PVC include; cables, window frames, doors, walls, paneling, water and wastewater pipes along with home products (vinyl flooring, vinyl wallpaper, window blinds, and showers). PVC can also be found in consumer items such as credit cards, records, toys, furniture, garden furniture, binders, folders, and pens. It is also used as an under seal in automobiles, in medical disposables at hospitals, in cable and wire insulation, and in imitation leather.

Burning of solid wastes containing PVCs is also a source of dioxins. PVC releases acidic gas along with dioxins into the air when burned in open fires or incinerators. Additives in PVC type matter can leach into the soil and threaten groundwater. Because of its chlorine content, PVC is considered a major source of dioxins globally.

Dioxins are a very persistent problem in the environment and are labeled as a bioaccumulative toxin. A bioaccumulative toxin has the potential of being introduced into and accumulating in the food chain. Dioxin, which are released into the air from the burning of waste will eventually settle on nearby fields where it can be ingested by cows and accumulate in their fatty tissues and milk. As humans consume dairy and meat products, they ultimately end up with long-lived dioxins in their own bodies. The EPA considers the current level of dioxin intake from dairy products high enough to add to the cancer risk as well as other serious health risks. Also, EPA now regards burn barrel smoke as a major source of dioxin.

Due to the on-going problem of individuals burning waste on the reservation, the Blackfeet Tribe adopted an Open Burning Code which is integrated into the Solid Waste Code that restricts the types of materials that can be burned and establishes a permitting requirement for certain types of open burning. The Blackfeet Tribe Environmental Program administers and enforces this code.

5.5 COLLECTION, TRANSFER AND DISPOSAL OF HOUSEHOLD, SPECIAL AND HAZARDOUS WASTE

5.5.1 Tribal Collection Program

The Blackfeet Solid Waste department is the major manager of solid waste generated on the Blackfeet reservation. The Solid Waste Department collects solid waste from the communities of Babb, St. Mary's, Starr School, Heart Butte, Blackfoot, East Glacier, Browning and rural areas of the reservation and transports it to the tribe's transfer station just south of the Browning Depot. The waste is then consolidated and compacted into receiving containers and transported off the Blackfeet reservation to the Northern Montana Joint Refuse District landfill municipal landfill in Conrad, Montana.

The Solid Waste Department employs two side-loading garbage trucks and two roll-off trucks for collection of waste throughout the reservation. Two end dump trucks are used for collection of curbside waste throughout the reservation. All six vehicles suffer frequent breakdowns as a result of the many miles put on them each month. All of these trucks use diesel fuel.

On a monthly basis, the Tribe rents out 20 containers that are 40 cu/yd. These containers are predominantly for construction and debris disposal, but also for the collection of household, commercial, and institutional waste. The tribe also accepts all bulky wastes along with C & D debris at a set rate. Bulky waste is collected twice a month in each community, or individuals and businesses can call the solid waste office to request pick-up. However, the solid waste program needs better equipment for this type of collection. The program currently uses a pick-up truck but needs a ¾ ton flatbed truck with a hydraulic lift or winch.

A reservation cleanup is encouraged each year. Approximately 330 tons of waste is collected for disposal during this annual event.

5.5.2 Blackfeet Transfer Station

In 2003, the IHS designed a solid waste transfer station for the tribe using an existing building, situated about one mile south of Browning on B.I.A. Route #1.

A scale is used to weigh waste entering the transfer station site. Waste is tipped on the transfer station floor and pushed into a compactor. Waste that is accepted at the site includes construction and demolition debris, household, institutional, and commercial waste, tires, and appliances. Refrigeration units are accepted only if it can be documented that a certified Freon inspector has removed the Freon.

The transfer station operates with the following staff positions: Solid Waste Program Director, a solid waste administrative assistant, a solid waste technician, a transfer station site operator, a laborer, two roll-off truck drivers, two collection drivers and two end dump drivers and one part time driver.

- The Solid Waste Director is responsible for the day-to-day operation of the program, developing budgets, assessing equipment and supervising staffing needs and reporting to Tribal Council.
- The Administrative Assistant processes the accounts receivables and payables, and works with the Solid Waste Technician in weighing in loads, directing traffic, and screening for acceptable/unacceptable waste. Billing for the customers in the Town of Browning and East Glacier is handled by the Two Medicine Water Company for a 5% processing fee, and the rest of the billing for the rural communities is handled by the Blackfeet Solid Waste Department.
- The Solid Waste Technician operates the scale, screens for acceptable/unacceptable waste, directs traffic and billing process for the operations.
- The Site Operator maintains and operates the collection facilities and monitors waste for acceptable waste/unacceptable waste. The Site Operator is required to be a heavy equipment operator in order to aid in the operation of the Construction and Demolition Debris landfill.
- The Roll-Off Drivers work with the Site Operator and Solid Waste Technician in transporting waste for waste disposal.
- The Collection Driver maintains his/her collections routes.

The transfer station is solely own by the Blackfeet tribe. The Blackfeet Tribal Business Council is responsible for reviewing the status of the solid waste system and making policy decisions. The director of the Solid Waste Program is responsible for the proper operation and maintenance of the transfer site and associated solid waste facilities according to this plan and regulations implemented for the operation of the site.

The solid waste transfer station will accept most household and commercial waste with the exception of hazardous wastes and wastes containing free liquids, radioactive waste, and blood borne pathogen waste.

Other wastes that are accepted at transfer station but require special handling include biomedical waste, asbestos-containing waste, lead acid batteries, waste oil, sludges, ash, bulky wastes, tires, extremely heavy objects, animal carcasses, tanks, propane canisters, construction and demolition waste, and contaminated soils.

The handling of hazardous waste will be coordinated by an Environmental Solid Waste/Hazardous Waste Manager, however this position is not currently funded or filled.

5.5.3 Disposal

5.5.3.1 Northern Montana Joint Refuse District Municipal Landfill

Currently, the Blackfeet Tribe disposes of solid waste off the reservation at the Northern Montana Joint Refuse District landfill. The landfill is a state-licensed Class II “Subtitle D” municipal landfill in Conrad Montana. The landfill is approximately 60 miles from the transfer station. The disposal fee at the landfill is estimated at \$25.00 per ton. The Tribe does not have a long-term contract for disposal at the landfill.

5.5.3.2 Construction and Demolition Debris Landfill

A construction and demolition debris landfill developed by the Blackfeet tribe is expected to be an integral part of the tribe's Integrated Solid Waste Management Program. By volume, construction and demolition waste constitutes between 25 to 35 % of all the waste generated on the Blackfeet reservation. The lower end of this waste volume is generated during the winter months while the higher volume is produced during the spring and summer seasons. Due to the cost of transportation and the ever-rising cost of disposal, it is important that construction and demolition waste be treated and disposed of in the most economical and efficient manner possible.

The Blackfeet construction and demolition debris landfill has been designed and the initial cell has been constructed and the access road to the cell needs to be improved so it can be used in wet weather and the fencing at the landfill site needs to be improved to keep the public and animals out. Equipment to operate the landfill is also needed, including: Compactor and frontend loader. The landfill cannot receive waste until these needs are met.

The list of materials that will be accepted at the construction and demolition debris landfill needs to be finalized. It is expected that construction and demolition waste (i.e. waste or debris resulting from construction, remodeling and/or repair, demolition operations on pavement, buildings, or other structures) together with land clearing debris will be collected at the transfer site and then transported to the tribe's construction and demolition debris landfill. It is anticipated that materials accepted will include concrete, brick, uncontaminated soil, gravel and rock, and untreated and unpainted wood. Weathered treated wood and weathered asphalt and old roofing material may be accepted on a case-by-case basis. Other debris that is generated by land clearing activities such as stumps, trees, limbs, brush, grass, and other naturally occurring vegetative matter will also be accepted.

A screening program will be implemented at the transfer station to ensure that waste being transferred to the construction and demolition debris landfill will meet the requirements set forth for inert material (waste that does not cause environmental problems during decomposition). Transfer station staff will need training in order to screen waste so that only inert material is accepted for the construction and demolition debris landfill. The public will not be allowed access to the landfill. A lower fee will be charged for construction and demolition debris. Individuals who haul these materials to the transfer station will need to identify the content of the load, the location where load came from, who and how the waste was generated before it will be accepted at the landfill.

5.5.3.3 Asbestos-Containing Waste

Asbestos-containing materials are currently accepted for disposal at both the Northern Montana Joint Refuse District and Shelby Class II landfills.

Asbestos waste generated from building demolition or renovation may include the following: insulation materials, wall board, wall or ceiling spray coverings, pipe insulation (boiler wrap), sound-proofing materials, vinyl asbestos floor tile, asbestos brake linings, asbestos siding, shingles, and

potentially other materials. This list is in no way all-inclusive of materials that contain asbestos but demonstrates the presence of asbestos in construction and demolition debris. Asbestos may be friable (defined as any material containing more than one percent (1%) asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure) or non-friable. In Montana, friable asbestos waste may only be disposed of at a licensed Class II municipal landfill. Friable asbestos-containing materials will not be accepted at the Blackfeet transfer station or the construction and demolition debris landfill but must instead be hauled by the generator or contractor to an off-reservation landfill that is licensed to receive it.

In Montana, non-friable asbestos waste may be disposed of at a Class IV, construction and demolition debris landfill or a Class II landfill and is accepted at the Blackfeet transfer station. Until the tribal construction and demolition debris landfill is open, these materials will continue to be hauled off-reservation to a state-licensed landfill. Asbestos-containing materials must be wetted, doubled bagged, and labeled before it is accepted at the transfer station.

Once the tribal construction and demolition debris landfill is opened, non-friable asbestos-containing materials must be placed in a trench at the base or side of the active face of the landfill. The location, depth and area, and the volume of the asbestos containing material will be noted on a site map or diagram. Asbestos containing material will be immediately covered with dirt in such a manner as to eliminate contact with all equipment.

5.6 WASTE REDUCTION PRACTICES

Two types of materials are currently segregated at the tribal transfer station for recycling. White good are stockpiled at the transfer station pending pickup by a scrap metal dealer who pays approximately \$80 per ton for these materials (2012 value). The Solid Waste Department also separates cardboard from the waste stream at the transfer station where it is baled and shipped off-reservation to Great Falls or Missoula for recycling. Generally, the tribe prefers to arrange for a recycler to come and get the cardboard. The Department received \$10,450 in revenue for used tires and recycled metal in F.Y.2013.

In 2002 the tribe received an EPA grant to assess the feasibility of developing a food waste composting program on the reservation. It became apparent that composting was a natural fit for the type of waste stream being generated since organic material made up more than 60% of the waste stream. A pilot study of vermi-composting was undertaken in coordination with Head Start, the Blackfeet Community College Greenhouse and the tribal environmental program. This pilot program collected food waste, which was transported to the college greenhouse where it was incorporated into vermi-compost bins. Worms can compost garbage faster than any other type of composting method and are very efficient in digesting kitchen food wastes. Each day a worm eats half its weight in food. The care and feeding of worms take far less effort than maintaining an outdoor compost pile. The plan was for the greenhouse to market the castings, worm tea and the excess worms as valuable products. If this pilot program was successful, it was to be expanded to other entities on the reservation, which generate large quantities of this waste stream, however this has not occurred.

5.7 DESCRIPTION OF FACILITIES, REGIONAL INFRASTRUCTURE AND CURRENT PARTNERSHIPS

5.7.1 Facilities

As discussed in previous sections of this plan, the Blackfeet Tribe owns and operates a solid waste transfer station and owns a construction and demolition debris landfill that is not yet operational.

5.7.2 Regional Infrastructure

There are two state-licensed municipal landfills within approximately 60 miles of the Blackfeet transfer station. One is the City of Shelby landfill and the other is the Northern Montana Joint Refuse Disposal District landfill in Conrad. There is a business in Cut Bank that will take scrap metal. The Browning transfer station also accepts minimal off reservation solid waste that is processed and hauled off-reservation for disposal.

5.7.3 Current Partnerships

The following tribal entities have roles and responsibilities related to protection of health and the environment and may be able to assist with management and improvement of the tribe's solid waste practices and issues:

Blackfeet Tribal Business Council and Administration – is responsible for approving and directing implementation of tribal programs, ordinances, policies and procedures. Provide funding transfers to the Solid Waste Department in some years if needed to fill funding shortfalls.

Tribal Response Program – the Blackfeet Tribal Response Program, funded under a grant from EPA, has inventoried open dump sites as part of its ongoing effort to inventory brownfields sites on the reservation. The Tribal Response Program has also helped amend and enforce Ordinance 105 and provides oversight of environmental assessments and cleanups of open dump sites.

Indian Health Service – provides engineering assistance for solid waste facility designs and has provided grant funding to close the former Browning municipal landfill and to address open dumps. IHS has also assisted the Solid Waste Department in developing operation and maintenance plans for the transfer station and construction and demolition debris landfill. IHS also maintains an open dump inventory.

Bureau of Indian Affairs – has provided grant funding to close the former Browning municipal landfill.

U.S.D.A. Rural Development – has provided grant funding to develop the construction and demolition debris landfill and can provide funding for the purchase of solid waste management equipment.

EPA – has providing funding assists with updating the solid waste management plan, provided funding for a plan for closure of the for closure of the former Browning municipal landfill, provide funding for the Environmental Director, and penitential complete grant funds will assists with waste reduction efforts such as recycling and composting.

EPA/IHS tribal circuit riders – have assisted the tribe in revising the solid waste management plan and preparing an application for funding for solid waste equipment.

Glacier County – the County has included fees for solid waste services in its property tax bills and reimbursed the Solid Waste Department approximately \$125,000 a year for providing these services until 2010. The County voted to stop putting solid waste collection fees on the county tax bill. The tribe now does direct billing to all county non trust tax customers. The Tribal Council will work with the County Commissioners to reinstate this fee which was a more efficient way of collecting county revenues.

5.8 PROPOSED WASTE MANAGEMENT PRACTICES

The Solid Waste Program has identified a number of areas where additional resources or changes are needed to address ongoing solid waste management problems. These problem areas include:

- Old and unreliable equipment for waste collection and difficult to maintain collection bins
- Lack of facilities and equipment and training to open the construction and demolition debris landfill
- Inability to set aside funding for future equipment replacement
- Open dumping
- Need for an environmental compliance officer and broader authorities in Ordinance 105 to address open dumping violation and future landfill proposals
- Limited resource recovery and waste reduction options
- Lack of funding to collect and separately manage household hazardous waste

Options for addressing each of these problems areas are described below.

5.8.1 Improve Collection Equipment and Bins

Old and unreliable garbage trucks, which frequently break down, have made it difficult for the BSWMP to maintain good service at times. This, in turn, has led to unsanitary conditions that can pose a threat to public health and the environment. The reliance on community collection sites using large dumpsters has also led to open dumping and the sites are attractive to wildlife, including bears, which presents another hazard to the community. The Solid Waste Department needs to acquire new trucks and related equipment and containers to provide reliable service and to increase the ability to provide curb side pick-up to more communities. These changes will result in improved services, improvements in sanitation, reduced wildlife problems and reduced open dumping, all of which will reduce threats to public health and the environment.

The following equipment needs have been identified by the Solid Waste Department to allow the program to provide improved and reliable collection service:

Solid Waste Trucks & Trailers

- Side Loader Collection Trucks for 4 yd. containers (2) - Diesel
- End Loader/Dump for 96 gal. containers - Diesel
- Roll-off Truck for 40 yd.- Diesel
- Roll-off Trailer
- ¾ ton 4X4 Pickup- Gas rigged for trailer (goose-neck or 5th wheel)
- Heavy Duty Flat Utility trailer- Dual axle/brakes (goose-neck or 5th wheel)
- Bob Cat/Diesel- with cab, A/C & solid rubber tires

Operations and Maintenance Equipment

- Air Compressor (100 gal./220V)
- MIG Wire Feed Welder (180-240V)
- Air Jack for Trucks
- Pneumatic Tire changer
- Engine Oil extractor/changer pump
- Chains for Trucks
- Cooking oil processor & Heater
- Digital Monitoring Cameras w/transmitters
- Large storage locker for equipment & chemicals

Containers

- 40 yd. roll-off containers (10)
- 4 yd. Bear-proof containers (50)
- 4 yd. regular containers (50)
- 96 gal. Bear-proof containers (300)
- 96 gal. regular containers (300)

The 4 cy bins that are used by many customers have created problems when no one feels individually responsible for keeping the area around the bins clean. Customers also tend to value the the solid waste collection service less when the bin is shared with others and they may be less likely to pay for service. The solid waste program is in the process of placing 96 gallon cans and instituting curbside collection in all residential communities on the reservation to alleviate this problem.

The tribe will continue to apply for grants to USDA-Rural Development to fund the purchase of this equipment. However, if this application is not funded, another source of funding will need to be found.

For the solid waste program to operate successfully it must have rates to make it sustainable. These rates must not only cover operation and maintenance but reserve accounts should be fully funded. The tribe needs to contract for a professionally done asset management plan and rate analysis. Equipment breakdowns and unsanitary community collection sites also reduce the willingness of the served community to pay fees commensurate with the cost of providing services. In some cases, members of the community have refused to pay for the services provided. Improved customer satisfaction associated with improvements in the collection systems is expected to increase the percentage of billing the Solid Waste Department actually collects. These improvements should also allow the program to adjust its fees in the future, when needed to parallel the costs of providing service.

5.8.2 Improve Facilities and Obtain Equipment and Training to Open the Construction and Demolition Debris Landfill

The construction and demolition debris landfill has been built, however the road accessing the landfill is prone to mud during the wet season which will make it difficult for trucks to haul waste to the unit. The road needs work to create a surface that can be driven on when wet. In addition, the fencing around the site has fallen down in areas and appears that 4-wheelers are accessing the site by bypassing the locked gate.

The Solid Waste Department will need to look for assistance in improving the road and fence at the site, perhaps in partnership with IHS, USDA and Glacier County.

When the construction and demolition debris landfill is ready to open, transfer station operators will need training in how to recognize materials that cannot be accepted at the landfill and the flow through the transfer station will need to be evaluated in order to set up a location where construction and demolition debris waste can be temporarily accumulated prior to being hauled to the landfill.

5.8.3 Obtain Funding for Future Equipment Replacement

With the purchase of reliable equipment, the solid waste program fee schedule is expected to be adequate to sustain day to day operations of the program. However, the fees collected are not sufficient to create an operating reserve of funding that can be used for unexpected repairs or future replacement when vehicles and facilities reach the end of their serviceable life. The Solid Waste Department budget should build in the cost of a reserve account and either raise fees to cover this expense, or the Blackfeet Tribal Council could commit to funding a reserve account over time. If such an account is not funded, the Solid Waste Department will continue to depend on grant funding for equipment replacement; however, grant funding is not a guaranteed resource.

5.8.4 Eliminate Open Dumping

The IHS is responsible for maintaining an inventory of open dumps on the reservation and for placing open dumps of concern on the Sanitary Deficiency System list so they can be considered for future cleanup funding. In addition, the tribe has an EPA-funded Tribal Response Program which maintains an inventory of brownfields sites (sites where expansion, redevelopment, or reuse may be

complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant).

The tribe should also endeavor to clean-up existing dump sites. Trash attracts other trash. One of the key steps in maintaining a successful solid waste enforcement program is making sure that there is an effective policy with regard to the cleanup of existing illegal dumpsites. The cost of cleaning up illegal dumpsites can be very expensive. Funding proposals should be submitted to both the BIA and IHS which has a trust responsibility in such matters. The EPA Brownfields and Tribal Response programs are another potential source of assistance in assessing and cleaning up open dumps if they are also determined to be brownfields.

Once these sites are cleaned up it is important the tribe keep these sites free of illegal dumping activities. Signs stating “No Dumping Allowed” should be posted. The signs should also state the amount of the fine associated with illegal dumping and the sign should state where waste may be taken to be disposed of properly. In addition, an effort should be made to determine why the illegal dumping is occurring. If it is because there are no convenient places to dispose of waste nearby, changes in the collection system might help prevent future dumping.

It is important to emphasize the importance of education in reducing illegal dumping. By educating the general public as to the importance of reporting any observed illegal dumping activities, tribal members can help in keeping chronic dumping sites cleaned. The use of elders can be especially helpful because of the respect that they are accorded and the understanding of the environment their age has bestowed upon them.

Once the tribe gets the reputation for taking illegal dumping seriously and even fining or requiring public service for such activities, illegal dumping activity should decrease significantly. If the actions taken against illegal dumpers are well publicized, dumping will decrease after the few convictions.

If any waste is illegally dumped near an area where signs have been posted, the tribe needs to ensure that the waste is picked up as soon as it is identified. If the waste is left, it sends the message that the tribe is not serious about proper solid waste management and that people do not care about their community.

5.8.5 Continue to Improve Compliance and Enforcement

If the tribe is to have a successful solid waste management program, enforcement of the Solid Waste Code is a necessary component. In order to develop an effective enforcement program, it is essential the Blackfeet Tribal Business Council and senior level management be committed to the program. It is also important that residents and tribal employees understand the Blackfeet Tribal Business Council and senior management support the program. Support should be manifested in the following manner:

- Enforcement actions should be fair and not be influenced by personal relationships
- Enforcement actions should not be overturned by political officials

- Sufficient resources, both monetary and human, must be made available to the program for enforcement.

Other reservations and communities have created an Environmental Compliance Officer (ECO) position to ensure resources are available to enforce their solid waste ordinance. The duties of such a position could include educating the public with regard to the hazards of illegal dumping and open burning. They could also include educating other tribal personnel such as conservation officers on what to look for and who to report to if they come upon illegal dumping activity. The ECO could also respond to illegal dumping complaints, investigate illegal dumping sites, patrol areas known for illegal dumping, conduct surveillance of suspected illegal dumping activity and initiate enforcement actions.

Some tribes have been able to get grant funding for a compliance officer through their EPA Tribal Response Grant, however this funding is much in demand and it appears unlikely that the Blackfeet tribe's grant funding could be expanded to support a new position. Most federal grant funds cannot be used for operation and maintenance activities, so it is likely that funding for this position would either need to come from an increase in fees or funding assistance from the tribe. If this is not possible, the Solid Waste Department has an established relationship with tribal law enforcement under the Solid Waste Code, through the administrative procedures administered by the Blackfeet Environmental Office.

The Solid Waste Code supports policy provisions contained in this solid waste management plan. For example, solid waste storage requirements, prohibited materials, and requirements for municipal solid waste disposal facilities and landfills for compliance and management purposes.

5.8.6 Expand Resource Recovery and Waste Reduction Options

5.8.6.1 Recycling

Tribal policy is that solid wastes which are reusable shall be recycled if economically feasible. White goods, tires and cardboard are currently separated out and recycled at the transfer station however there is currently no program to recycle other materials such as paper, plastic or glass. It is a goal of the Solid Waste Department to increase the amount of waste reduction and recycling of solid wastes on the Blackfeet reservation. A recycling and resource reduction committee with participation from various tribal departments and the casino would be useful in identifying ways to increase recycling and source reduction in tribal government.

An objective of this solid waste management plan is to identify additional commodities that can be cost-effectively recycled and a community or group in which to pilot a recycling collection effort. The pilot should include an analysis of technological and economically feasible systems for the collection, separation, containerization and market development of solid wastes that are recyclable. The pilot should identify potential markets for these recyclable solid wastes. If additional recycling is feasible, it is the goal of this solid waste plan to develop guidance for further expanding this effort.

The reservation's waste characterization revealed a large proportion of paper being disposed. Paper is one of the most easily collected and one of the materials that can provide the biggest bang for the buck if it is diverted from disposal. There is strong support as demonstrated in the community and business surveys for recycling. The tribe now needs to assess market development strategies for this waste stream. Enterprises such as cellulose insulation, paper art, or greeting cards which could be marketed as a recycled product from a tribal community are opportunities that could be explored.

5.8.6.2 Composting

In addition to recycling, the tribe has evaluated the feasibility of doing large-scale food waste composting on the reservation. A study conducted in conjunction with the Blackfeet Community College in 2002-2005 focused on indoor vermicomposting of food waste. The study concluded that outdoor vermicomposting in the climate on the Blackfeet reservation would be problematic, that there would be a limited market for the compost unless it could be mass-produced, and that funding to establish an effective program would be difficult to obtain. If a program were to be attempted, it was suggested that the tribal Forestry Department might be able to assist.

5.8.6.3 Source Reduction and Reuse

The goal of source reduction is to reduce the amount and/or toxicity of waste that is generated. Source reduction reduces waste either by redesigning products or by changing consumers' patterns of consumption, use and waste generation. An advantage of source reduction is that it reduces the amount of waste that must be collected, transported and disposed. Fewer collections from households, businesses, and trips from the transfer station are required, thus reducing the costs of operating a waste management program. It also reduces the amount of disposal fees paid to an entity off the reservation. Every dollar spent on disposal is a dollar that can't be spent on nurturing the young, taking care of elders, or any other goal that is deemed important. Finally fewer resources are used because less material is needed to make products.

While major source reduction programs were decidedly beyond the budgets and authority of the tribe there are some aspects which would be feasible, considering resources and potential costs. Things such as using ceramic mugs, buying products with recycled content, producing double sided copies whenever possible and initiating a unit-based pricing fee for solid waste services should be and could be instituted.

Reuse implies using materials over and over again for the same purpose, an example of this type of reuse, would be clothes that are donated to organizations for redistribution or furniture and appliances that are rejuvenated. Reuse programs in coordination with Catholic Charities, St. Vincent DePaul or other such organizations operating on the reservation should be developed. Additionally, materials that could be used for crafts should be salvaged and distributed. Craft businesses using these materials should be encouraged.

5.8.7 Manage Household Hazardous Waste

Household hazardous waste can legally be disposed of and handled as municipal solid waste under the federal solid and hazardous waste regulations. The 2006 Blackfeet Solid Waste Management Plan directed a study of the disposal of household hazardous waste on the Blackfeet Reservation, as

part of the tribe's Solid Waste Management Plan. Such study was to include an analysis of the economic feasibility of the separate collection of household hazardous waste, and disposal of household hazardous wastes at duly authorized facilities other than at an MSWLF on the Blackfeet reservation.

If economically feasible, the SOLID WASTE DEPARTMENT might then issue rules and regulations for the collection and lawful disposal of household hazardous wastes generated on the Blackfeet reservation. The tribe needs to reapply for Hazardous Waste Program grant funds to do outreach and education for the reservation school districts and residents. The possibility of a Hazardous Waste program can be explored.

Household hazardous waste collection events are expensive, potentially costing \$12,000 to \$20,000 or more per event depending on the amounts collected. If the tribe decides to organize such an event, funding to hire a contractor to manage the event, plus the cost of disposal would need to be obtained. Some tribes have used funding from an EPA hazardous waste grant or a General Assistance Program grant for such an event. The tribe might also look into the feasibility of partnering with one of the federal agencies or with a county to support a household hazardous waste collection event. Educating the public on non-hazardous substitutes for currently-used hazardous materials would help in reducing the volumes that are disposed of.

6.0 Description of the Funding, Sustainability and Long-term Goals of the Tribe's Solid Waste Management Program

6.1 FUNDING SOURCES

6.1.1 Solid Waste Program Budget, Billing and Collections

If the future of the Blackfeet Solid Waste Department is to operate sustainably, and successfully, then education, good planning, consistent billing, enforcement, and the delivery of quality services must be the final product. Residential and commercial customers of the Blackfeet Solid Waste Department are billed consistently on a monthly basis. In 2013, residential customers were paying \$13.00 per month for solid waste per household, while users of 4 cy containers were paying \$39.00. Commercial users were paying \$32.00 per dump. As of 2023 the billing for rural communities residents is \$15 a month, but the residents in Browning and East Glacier are paying \$10 a month. 4cu/yd customers are 40 a month and Commercial users pay 128 a month. These fees are subject to change based on changes in the cost of fuel, labor and equipment, as well as changes in the tipping fee at the landfill and other program needs. (See Appendix C for current fee schedule). After researching, the revenue received is not meeting the cost of the solid waste services provided. This is due to nonpayment of bills as well as the increased cost of providing the solid waste services i.e., gas, tipping fee increases at the landfill and equipment replacement. A rate analysis which will determine a sustainable fee schedule should be undertaken. Another avenue will be to consider shut offs for non-payment to increase collections rates. (See Appendix C for current fee schedule). Solid waste fees are now included in the utility bills for water and sewer. Collection of utility fees could be improved if the Blackfeet Tribal Business Council authorized mandatory payroll deductions for unpaid utility bills. The utilities could also shut off to encourage payment of delinquent bills.

The annual operating costs for the solid waste program are approximately \$1,200,000, not including depreciation. Current revenue received from billing is \$650,000 and the tribe transfers in \$230,000 the difference is expenses that is covered by the tribe as unexpected costs (\$320,000). The program covers its expenses with revenue from billing in most years, however in years when revenue has not met expenses, the tribe has made up the difference. In some years the department has been able to collect additional revenue above the amount needed to cover program costs, however the tribal administration has directed those additional revenues to address other, non-solid waste, needs. The Solid Waste Department budget does not factor in depreciation but the tribal finance office adds this cost to the expense column on the program's statement of revenue and expenses. With this additional expense, the statement shows that revenues have not met expenses over the last few years but there has been no tribal funding transfer.

Even in years when a tribal transfer is made, revenues are not enough to allow the program to build a reserve for equipment replacement and repairs, to pay the salary of a solid waste program manager, to bring the salaries of truck drivers into line with drivers employed by non-tribal parties, or to expand services. Solid waste services have suffered due to frequent breakdowns of older trucks and because the program has lost drivers due to the inability to offer competitive salaries. It is estimated that an annual budget of \$1,200,000 would be more realistic to allow the program to operate sustainably.

6.1.2 Other Revenue Sources

Because the Tribe does not have the ability to levy taxes or charge higher user fees in an economically depressed area. It is difficult for the solid waste department to accumulate funds to build or expand facilities or replace equipment. Many tribes rely on grant funding for these major expenses and the Blackfoot tribe is no exception. In past years, IHS, BIA, USDA-Rural Development and EPA grants have funded projects managed by the solid waste department. It is anticipated that grant funding will continue to be an essential part of funding significant projects.

6.2 SUSTAINABILITY

The Solid Waste Department had been able to collect sufficient revenue to support ongoing operations in approximately four of the last 15 years. In other years the program requires some financial assistance from the tribe in order to make ends meet. The program would be better able to demonstrate that it has a sustainable funding source for ongoing operations if the Tribal Business Council were to commit to an annual transfer of funds or allow the actual operating cost of solid waste services to be covered by increase in service fee i.e., pass the cost of service to the customer. This would help the Solid Waste Department demonstrate that program operations are sustainable when applying for grant funding. The program relies on grant funding to help with major equipment replacement and to construct new facilities and this is expected to continue to be the case. Grants are awarded on an annual basis and are competitive and cannot be relied on to sustain a solid waste program from year to year. Beyond that grants cannot be used for daily operations and maintenance.

Other options for improving the financial picture of the program include reinstating a solid waste fee for customers who paid a tax bill to the county and the county in turn would pay that fee to the solid waste program or the solid waste program would have to do a direct billing to the county tax paying customers. There have been two solid waste rate increases only one of which had been passed on to the county tax payers the director of the solid waste department needs to work with the county commissioners on getting the second-rate increase applied to the tax bill. Improving the billing collection rate, which is currently at about 47%, would also help. Finally, the Solid Waste Department could look for ways to reduce the costs of operation. Two options for reducing costs are currently being considered, including opening the construction and demolition debris landfill, which would reduce hauling and landfilling costs. Secondly get all customers paying the rate of the last solid waste fee increase. The idea of the tribe opening a new municipal solid waste landfill has also been raised and this possibility is evaluated below in Section 6.3.

6.3 EVALUATION OF THE FEASIBILITY OF A TRIBALLY-OWNED MUNICIPAL LANDFILL

It is believed that these figures and amounts were estimated in 2013. The landfill cost analysis in Appendix E reflects present-day costs.

Although the Blackfeet Tribe does not currently own a municipal solid waste landfill, the potential costs of developing a tribally-owned landfill were evaluated for comparison with the current solid waste management system on the reservation. Two scenarios were evaluated:

- Scenario 1 – assumes the tribe is able to obtain grants of \$3,574,875 and a loan for \$1,191,625 for the construction and equipment costs to run a landfill.
- Scenario 2 - assumes the tribe is able to obtain 100% grant funding in the amount of \$4,766,500 for the construction and equipment costs;

The detailed analysis of these costs is provided in Appendix E.

Under Scenario 1 (75% grant/25% loan) it is estimated that the construction and operation of a tribal landfill would cost the tribe approximately \$168,100 more per year than the current system of off-reservation disposal. On a per ton basis, this would be an increase of \$37.00 per ton of waste disposed.

Under Scenario 2 (100% grant) the construction and operation of a tribal landfill would cost the tribe approximately \$95,200 more per year than the current system. On a per ton basis, this would be an increase of \$21.00 per ton of waste disposed.

Potential benefits of a tribally-owned and run landfill would include:

- a reduction in the miles and associated cost of hauling waste if a tribal landfill were located closer to the transfer station than the off-reservation landfill currently used. However, the potential reduction in hauling costs is far offset by the additional costs of operating a landfill, as noted in the estimated costs for the two scenarios.
- the possible addition of 2 ½ jobs to operate the landfill.

Potential negatives involved in establishing and running a tribal landfill include:

- The tribe would likely need to obtain significant grant and potentially loan funding to cover the \$4,766,500 cost of constructing and equipping a new landfill.
- In addition, as noted above, it would cost the tribe significantly more each year to run the solid waste system. The additional costs would either need to be passed along to the consumer or absorbed by the tribe.
- Liability expanding into perpetuity for potential ground water contamination.
- Finally, while the current disposal system meets federal requirements, the tribe was not able to operate the old Browning landfill in compliance with federal regulations. The tribe would be responsible for meeting the environmental requirements of running a new landfill and could potentially be liable for human health or environmental impacts.

6.4 LONG-TERM GOALS AND OBJECTIVES

6.4.1 Long-term Goals

Specific goals were developed to ensure that the solid waste management plan meets the needs of the Blackfeet Nation. These goals were based on current solid management practices, problems and needs as well as Federal and tribal regulations, mandates, and resources. All the solid waste management recommendations in the plan had to meet the following goals.

- Protection of human health and the environment
- Compliance with tribal and Federal requirements
- Reduction of the overall costs of solid waste management
- Support for economic development

6.4.2 Objectives

Within the broad goals for solid waste management are a number of specific objectives. These include:

- Improve efficiency and keep the costs of solid waste management as low as practicable.
- Ensure tribal solid waste codes and ordinances are effective, protective and enforced;
- Maintain a funding structure that allows the BSWMP to continue to operate efficiently and effectively.
- Reduce the amounts generated for disposal by increasing the amount of source reduction, reuse, recycling and composting.
- Minimize illegal dumping
- Ensure authorized solid waste transportation and disposal activities on the reservation do not adversely affect public health or the environment.
- Increase public awareness of proper solid waste management

6.5 PUBLIC EDUCATION AND INVOLVEMENT

To a large extent the success of the Blackfeet solid waste management system will be dependent on the ability to develop public support and understanding of such a program. With public support all things are possible. Without public support nothing is possible. Longstanding behavior and attitudes towards paying for services will need to be changed. Waste management needs and concepts will have to be explained clearly. How the public is to participate and the type of waste management behaviors that they are going to be asked to adopt must be communicated in a palatable way. A positive message should always be delivered.

The solid waste management program will get information out to public using low-cost methods such as the following:

- Newspaper articles
- Social media ie. Facebook
- Public service announcements
- Poster contests
- Participation in public events
- Presentations at district meetings
- Flyers
- Posters
- Fact sheets

Some of the issues that may require particular outreach efforts include procedures for managing construction and demolition debris waste when the construction and demolition debris landfill opens and ongoing education about the hazards of open dumping and open burning of solid waste. Improvements to the solid waste collection and hauling system should also be publicized so the community is aware of improvements supported with their fees.

7.0 CONCLUSION

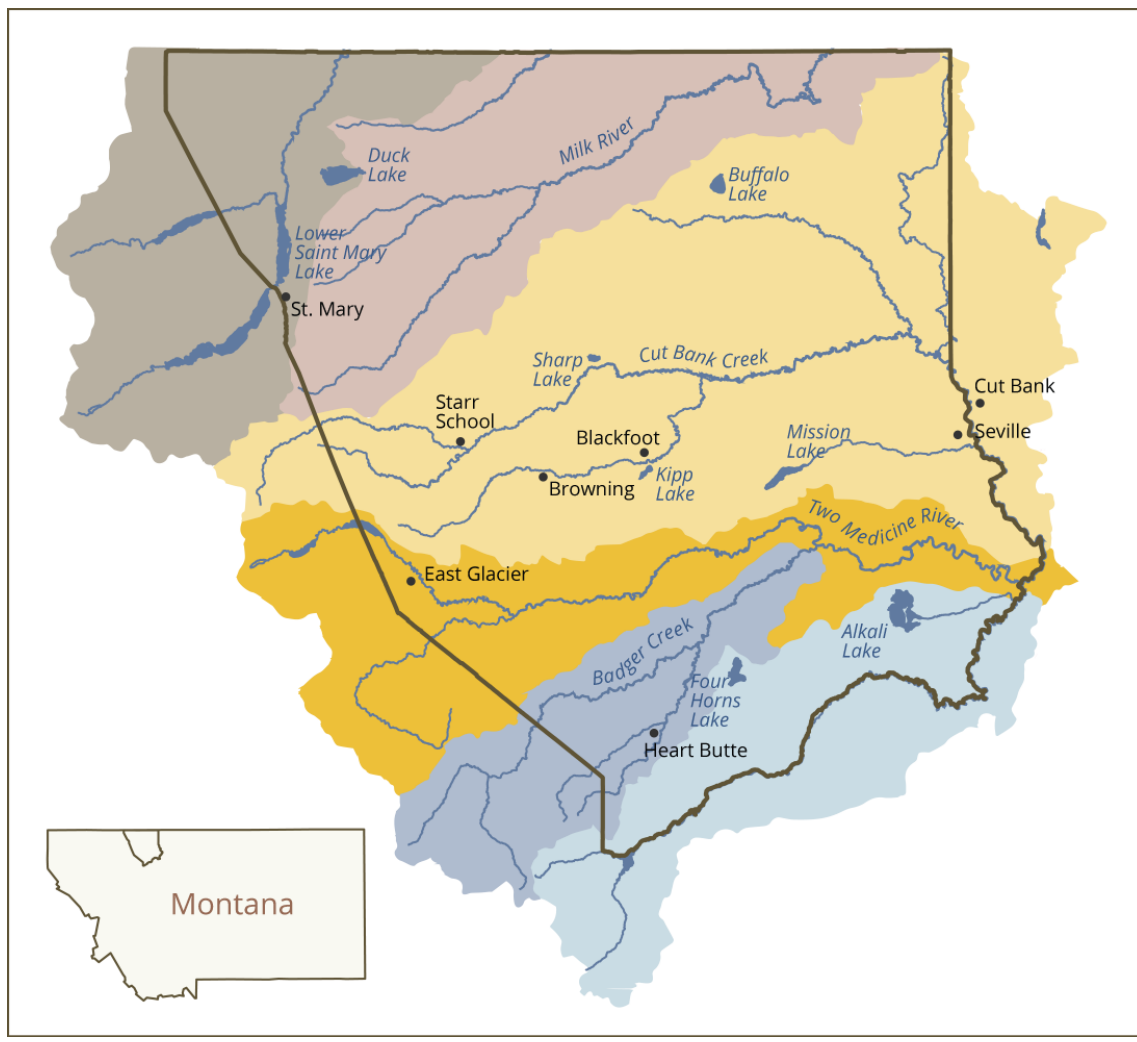
Much has been accomplished since the initial Blackfeet Solid Waste Management Plan was adopted in 2006. Much more needs to be done. This solid waste management plan should serve as a guide to continuing improvements of the system. The following recommendations should be implemented before the next ISWMP plan update:

- Tribal Council is the governing body for reaching out to the Montana house and senate delegation (Susan Webber, Tyson Running Wolf, Marvin Weatherwax) to request funding in federal budgets for funds to cleanup existing open dumps.
- Develop a Waste Reduction and Recycling Committee.
- Reapply for Hazardous Waste Cleanup resources.
- Reinstate a Solid Waste fee for county tax payers.
- Lift the Moratorium on no shut offs of utility services for delinquent and non-paying customers.
- Contract to have a professional rates study conducted so that sustainable rates can be achieved.
- A Solid Waste Survey needs to be updated along with a Solid Waste Characterization needs to be updated also.

APPENDICES

APPENDIX A

MAP OF THE BLACKFEET RESERVATION



APPENDIX B

TRIBAL SOLID WASTE CODES

Available upon request.

APPENDIX C

SOLID WASTE PROGRAM FEE SCHEDULE

Residential homes	\$ 10-20 a month
Residential 4 cu/yd	\$ 39-45 a month
Commercial 4 cu/yd	\$128 a month
40 cu/yd/tonnage is charge separately	\$125 a week

APPENDIX D

SOLID WASTE SURVEY

Original Survey was filed in unknown location and A New Solid Waste Survey is in planning stage.

APPENDIX E

LANDFILL COST ANALYSIS

This Landfill cost estimate is based on a 10 acre landfill with a life of ten years.

NOTE: The estimate here is mainly comprised of costs associated with earthwork and granular media for the leachate collection system. It should thus be considered as a **low estimate** to construct a new landfill. Therefore, it does not include future ongoing costs associated with operating, maintaining, repairing, closing, and providing post-closure care.

Mobilization	1	LS	\$325,000.00	\$325,000.00
Stripping & Grubbing	22	ACRE	\$1,500.00	\$33,000.00
Excavation	245,000	CY	\$7.50	\$1,837,500.00
Granular Drainage Layer	10.5	ACRE	\$70,000.00	\$735,000.00
Gravel Pipe Bedding & Backfill	3,600	LF	\$20.00	\$72,000.00
6" PVC Drainage Pipe	5,000	LF	\$40.00	\$200,000.00
Cleanout/Airvent	12	EA	\$2,000.00	\$24,000.00
Connection to Existing Leachate Piping	1	LS	\$5,000.00	\$5,000.00
Soil Preparation & Seeding	6	ACRE	\$2,200.00	\$13,200.00
Gravel Service Road	2,500	SY	\$20.00	\$50,000.00
Construction Total				\$3,294,700.00

APPENDIX F

CONSIDERATIONS

- Assessing the benefits of building a landfill should begin with a full understanding of the existing waste streams generated on the reservation, including the amount of recyclables (and markets for these materials) and compostables that could be handled separately, thereby reducing the volume of waste disposed and overall solid waste disposal costs
- Landfills continually generate leachate through their operating lifetime and into post-closure. It may be the leachate cannot be accepted by a conventional waste water treatment system/plant. Routine testing of the leachate will be required.
- MSW landfills require continuous maintenance and care, from compacting incoming loads, to applying daily cover, to screening incoming loads to ensure that only MSW is going into the landfill, to name a few ongoing requirements.
- The construction of the landfill is a very large undertaking, requiring room to stockpile excavation spoils (to be used for daily cover if acceptable), consideration of local, regional, and sites factors, availability of earthen materials...
- Should not be looked at as a money-making undertaking
- Required to keep out regulated haz waste, but also should have a program to keep household hazardous waste out of the solid waste streams going in to landfill to minimize issues with the leachate management

U.S. EPA REGION 5 DRAFT GUIDANCE (2023) FOR C&D LANDFILLS (considerations applicable to Tribal MSW landfills):

- Has the facility been constructed, operated, and maintained in a manner consistent with the tribe's values for environmental stewardship and protecting human health?
- The advantages of material reuse, recycling, and composting include:
 - o Conservation of land
 - o Extension of landfill lifespans
 - o Cost reduction on recycled materials
 - o Reduction of pollution (minimization of resource consumption)
 - o Creation of jobs

BACKGROUND:

These requirements below will dictate whether or not a site-specific flexibility request for approval through EPA will be necessary, and this can be a time-consuming process and require engineering and hydrogeology technical support.

FEDERAL REGULATORY REQUIREMENTS

Although Tribes are not required to obtain a permit from a state or from U.S. EPA, any MSW landfill - on Tribal lands and non-Tribal lands - must at a minimum, meet the following federal requirements for MSW Landfills at 40 CFR Part 258:

Subpart A - General

40 CFR 258.1 Purpose, scope, and applicability

(a) The purpose of this part is to establish minimum national criteria under the Resource Conservation and Recovery Act (RCRA or the Act), as amended, for all municipal solid waste landfill (MSWLF) units and under the Clean Water Act, as amended, for municipal solid waste landfills that are used to dispose of sewage sludge. These minimum national criteria ensure the protection of human health and the environment.

(g) Municipal solid waste landfill units failing to satisfy these criteria are considered open dumps for purposes of State solid waste management planning under RCRA.

(h) Municipal solid waste landfill units failing to satisfy these criteria constitute open dumps, which are prohibited under section 4005 of RCRA.

Subpart B - Location Restrictions

258.10 Airport Safety

258.11 Floodplains

(a) Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in 100-year floodplains must demonstrate that the unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment. The owner or operator must place the demonstration in the operating record and notify the State Director that it has been placed in the operating record.

258.12 Wetlands

(a) New MSWLF units and lateral expansions shall not be located in wetlands, unless the owner or operator can make the following demonstrations to the Director of an approved State:

258.13 Fault areas

(a) New MSWLF units and lateral expansions shall not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time unless...

258.14 Seismic impact zones

258.15 Unstable areas

Subpart C - Operating Criteria

258.20 Procedures for excluding the receipt of hazardous waste

(a) Owners or operators of all MSWLF units must implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in part 261 of this chapter and polychlorinated biphenyls (PCB) wastes as defined in part 761 of this chapter. This program must include, at a minimum:

- (1) Random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes;
- (2) Records of any inspections;
- (3) Training of facility personnel to recognize regulated hazardous waste and PCB wastes; and...

258.21 Cover material requirements

(a) Except as provided in paragraph (b) of this section, the owners or operators of all MSWLF units must cover disposed solid waste with six inches of earthen material at the end of each operating day, or at more frequent intervals, if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

258.22 Disease vector control

(a) Owners or operators of all MSWLF units must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.

(b) For purposes of this section, disease vectors mean any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

258.23 Explosive gases control

(a) Owners or operators of all MSWLF units must ensure that:

(1) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and

(2) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.

(b) Owners or operators of all MSWLF units must implement a routine methane monitoring program to ensure that the standards of paragraph (a) of this section are met.

258.24 Air criteria

(a) Owners or operators of all MSWLFs must ensure that the units not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the Administrator pursuant to section 110 of the Clean Air Act, as amended.

(b) Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, land clearing debris, diseased trees, or debris from emergency cleanup operations, is prohibited at all MSWLF units.

258.25 Access requirements

Owners or operators of all MSWLF units must control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment.

258.26 Run-on/run-off control systems

(a) Owners or operators of all MSWLF units must design, construct, and maintain:

(1) A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 25-year storm;

(2) A run-off control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(b) Run-off from the active portion of the landfill unit must be handled in accordance with § 258.27(a) of this part.

258.7 Surface water requirements

MSWLF units shall not:

(a) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to section 402.

(b) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or State-wide water quality management plan that has been approved under section 208 or 319 of the Clean Water Act, as amended.

258.28 Liquids restrictions

(a) Bulk or noncontainerized liquid waste may not be placed in MSWLF units unless:

(1) The waste is household waste other than septic waste...

258.29 Recordkeeping requirements

(a) The owner or operator of a MSWLF unit must record and retain near the facility in an operating record or in an alternative location approved by the Director of an approved State the following information as it becomes available:

Subpart D - Design Criteria

258.40 Design criteria

- (a) New MSWLF units and lateral expansions shall be constructed:
- (1) In accordance with a design approved by the Director of an approved State or as specified in § 258.40(e) for unapproved States. The design must ensure that the concentration values listed in Table 1 of this section will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Director of an approved State under paragraph (d) of this section, or
- (2) With a composite liner, as defined in paragraph (b) of this section and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner.
- (b) For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high-density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.
- (c) When approving a design that complies with paragraph (a)(1) of this section, the Director of an approved State shall consider at least the following factors:
- (1) The hydrogeologic characteristics of the facility and surrounding land;
- (2) The climatic factors of the area; and
- (3) The volume and physical and chemical characteristics of the leachate.
- (d) The relevant point of compliance specified by the Director of an approved State shall be no more than 150 meters from the waste management unit boundary and shall be located on land owned by the owner of the MSWLF unit. In determining the relevant point of compliance State Director shall consider at least the following factors....

258.42 Approval of site-specific flexibility requests in Indian country

Subpart E - Ground-Water Monitoring and Corrective Action

258.50 Applicability

The requirements in this part apply to MSWLF units, except as provided in paragraph (b) of this section.

258.51 Ground-water monitoring systems

258.53 Ground-water sampling and analysis requirements

258.54 Detection monitoring program

258.55 Assessment monitoring program

258.56 Assessment of corrective measures

258.57 Selection of remedy

258.58 Implementation of the corrective action program

Subpart F - Closure and Post-Closure Care

258.60 Closure criteria

(a) Owners or operators of all MSWLF units must install a final cover system that is designed to minimize infiltration and erosion. The final cover system must be designed and constructed to:

(1) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less, and

(2) Minimize infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum 18-inches of earthen material, and

(3) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum 6-inches of earthen material that is capable of sustaining native plant growth...

c) The owner or operator must prepare a written closure plan that describes the steps necessary to close all MSWLF units at any point during their active life in accordance with the cover design requirements in § 258.60(a) or (b), as applicable. The closure plan, at a minimum, must include the following information....

258.61 post-closure care requirements

(a) Following closure of each MSWLF unit, the owner or operator must conduct post-closure care. Post-closure care must be conducted for 30 years, except as provided under paragraph (b) of this section, and consist of at least the following:

(1) Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

(2) Maintaining and operating the leachate collection system in accordance with the requirements in § 258.40, if applicable. The Director of an approved State may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment;

(3) Monitoring the ground water in accordance with the requirements of subpart E of this part and maintaining the ground-water monitoring system, if applicable; and

(4) Maintaining and operating the gas monitoring system in accordance with the requirements of § 258.23.

258.62 Approval of site-specific flexibility requests in Indian country

Subpart G - Financial Assurance Criteria

258.70 Applicability and effective date

(a) The requirements of this section apply to owners and operators of all MSWLF units, except owners or operators who are State or Federal government entities whose debts and liabilities are the debts and liabilities of a State or the United States.

258.71 Financial assurance for closure

258.72 Financial assurance for post-closure

258.73 financial assurance for corrective action