

# GUN LAKE TRIBE

## INTEGRATED SOLID WASTE PLAN



GUN LAKE TRIBE



September 2025

Prepared by





# TABLE OF CONTENTS

- 1.0 Introduction ..... 3**
  - 1.1 Purpose of Integrated Solid Waste Management Plan ..... 3
  - 1.2 Tribal Population ..... 4
  - 1.3 Tribal Lands ..... 4
  - 1.4 Climate ..... 4
  - 1.5 Geology and Natural Resources ..... 4
  - 1.6 Tribal Waste Management Goals and Objectives ..... 4
- 2.0 Principles of Waste Diversion ..... Error! Bookmark not defined.**
  - 2.1 Source Reduction and Reuse ..... 7
  - 2.2 Recycling/Composting ..... 7
  - 2.3 Energy Recovery ..... 7
- 3.0 Tribal Waste Generation and Characterization ..... 8**
  - 3.1 Waste Generation ..... 8
  - 3.2 Existing Waste Streams ..... 8
- 4.0 Tribal Waste Diversion ..... 10**
  - 4.1 Gun Lake Casino Waste Diversion ..... 10
  - 4.2 Other Tribal Waste Diversion ..... 11
  - 4.3 Current County Programs ..... 11
    - 4.3.1 Allegan County ..... 11
    - 4.3.2 Barry County ..... 11
    - 4.3.3 Kalamazoo County ..... 12
    - 4.3.4 Kent County ..... 12
    - 4.3.5 Ottawa County ..... 12
- 5.0 Waste Reduction Education ..... 13**
  - 5.1 Outreach and Education ..... 13
- 6.0 WASTE AUDIT ..... 15**
- 7.0 Future Development ..... Error! Bookmark not defined.**
  - 7.1 Corridor Development ..... 18
- 8.0 Next Steps ..... Error! Bookmark not defined.**
  - 8.1 Opportunities for Improvement ..... 19
    - 8.1.1 Opportunity #1 – Develop HUB Center for collection and processing of solid waste materials. .... 19
    - 8.1.2 Opportunity #2 - Increase recycling through capture of additional material ..... 20
    - 8.1.3 Opportunity #3 – Increase organics and food waste diversion. .... 20
    - 8.1.4 Opportunity #4 – Implement Construction and Demolition (C&D) Diversion Program for Tribal construction projects. .... 21
    - 8.1.5 Opportunity #5 – Develop and enact Tribal Recycling Ordinances. .... 21
    - 8.1.6 Opportunity #6 – Increase education on Tribal recycling and waste diversion activities. .... 21
- 9.0 Summary ..... Error! Bookmark not defined.**





**ATTACHMENTS  
FIGURES**

Figure 1 Tribal Lands Map

**APPENDICES**

Appendix A	Gun Lake Casino Waste Audit Report
Appendix B	Proposed Tribal Solid Waste Rules
Appendix C	Gun Lake Tribe Mzennigenen Development Proposal
Appendix D	Recycling Center Development Options



## SECTION 1: INTRODUCTION

Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians (Gun Lake Tribe) is a federally recognized Indian Tribe located in southwest Michigan. In 1992, using well-documented Tribal history, the Gun Lake Tribal community initiated their pursuit of federal acknowledgment through petition to the Branch of Acknowledgement and Research, and the Bureau of Indian Affairs. In August 1999, through the petition process, the Tribe was re-affirmed in their government-to-government relationship with the United States of America.

A seven-member Tribal Council is the elected body that is empowered by the community through the election process to act on behalf of Tribal Citizens.

In 2011, Gun Lake Tribe constructed the 83,000 ft<sup>2</sup> Gun Lake Casino. The Tribe established a permanent Government Campus in Shelbyville, Michigan in 2015.

Gun Lake Tribe provides services for its Citizens within a five-county service area including Allegan, Barry, Kalamazoo, Kent and Ottawa.

### 1.1 Purpose of Integrated Solid Waste Management Plan

The Integrated Solid Waste Management Plan (Plan) has been prepared by Gun Lake Tribe as a guide to develop and implement an effective integrated waste management program specific to the Tribe's needs. The Plan will assist the Tribe with making decisions to improve the land, air, water and cultural resources in the Tribe's Ancestral Territory for future generations. The Plan includes the identification of existing waste systems, waste reduction strategies, implementation, monitoring and outreach methods and opportunities to increase waste diversion from landfilling.

Gun Lake Tribe is guided in decision making and planning by the Seven Grandfather Teachings of Truth (Debwewen), Love (Dbandewen), Respect (Mnadendemwen), Bravery (Wedasewen), Honesty (Gwekwadsewen) and Humility (Enbesendowen). The Tribe believes that solid waste management begins with waste reduction, reuse and recycling. Only after all reduction, reuse and recycling options have been

exhausted is landfilling of solid waste employed. The Tribe has adopted a plan for Bkéji Wébnan, meaning to throw less away.

## 1.2 Tribal Population

As of March 2024, Gun Lake Tribe consists of 615 Citizens. This population lives both inside and outside of the five-county service area. Table 1 shows the breakdown of the current population and residential areas represented.

**Table 1. Tribal Demographics**

Demographic	Total Population	Population Living in Five-County Service Area
Tribal Population	615	393
Tribal Youth (<18 years)	236	140
Tribal Elders	105	77

No specific numbers related to growth projection for the Tribal community have been completed at the writing of this document. Gun Lake Tribe performed a Housing Needs Assessment in 2007 and noted that 46% of the Tribal Citizens surveyed would consider living on Tribally owned land if housing assistance were provided.

## 1.3 Tribal Lands

Gun Lake Tribal lands include 1,007.04 acres held in trust by the United States government for the community, and an additional 668.84 acres in agricultural, residential and industrial lands not held in trust, as shown in Figure 1 (attached). Gun Lake Tribe does not have a recognized exterior reservation boundary.

**Table 2. Developed Land use land (Figure 1)**

Land Use	Acreage
Casino Complex (Casino, Administrative offices)	150
Government Campus	43
Noonday Gas Station	10
Residential	34

## 1.4 Climate

The climate of the five county Gun Lake Tribal service area is dominated by its proximity to Lake Michigan. The lake forms the western border of Allegan and Ottawa Counties, and is within 50 miles of Kent, Barry and Kalamazoo Counties. Lake Michigan regulates temperatures and generates precipitation. According to the National Weather Service, in 2023 Kalamazoo County climate data recorded 39.41 inches of precipitation, 34.8 inches of snowfall and temperatures between 7 degrees Fahrenheit on January 31<sup>st</sup> and 93 degrees Fahrenheit on August 23. In 2023, there were 12 days below freezing and 17 days above 90 degrees Fahrenheit.

## 1.5 Geology and Natural Resources

The geology of Tribal lands are typical of the area. The bedrock in Allegan County consists of Mississippian sandstone and shale, which are part of the Michigan Basin. The upper bedrock layers in the northeastern part of the county are sandstone of the Marshall Formation. Overlaying these bedrock formations is a mass of glacial drift about 50 to 400 feet thick. The drift was deposited during the Wisconsin Glaciations. The present surface features generally are the result of this glacial deposition, which occurred when the glacial ice receded about 10,000 years ago (Soil Survey of Allegan County, Michigan, NRCS).

## 1.6 Tribal Waste Management Goals and Objectives

The Integrated Waste Management Plan has been developed to provide Gun Lake Tribe with a set of goals and policies to implement, monitor and evaluate waste management activities. Based on the mission of the

Tribe and the United States Environmental Protective Agency (U.S. EPA), the Plan includes the following goals:

1. Protect the health and safety of Tribal Citizens and all people within Gun Lake Tribe's territory.
2. Protect the cultural, social and economic stability of residential, agricultural, commercial, industrial and environmentally sensitive lands within Gun Lake Tribe's territory.
3. Protect historical and cultural values and traditions of Gun Lake Tribe and protect their lands as a permanent Tribal homeland.
4. Prevent solid waste pollution, as well as contamination of the Tribe's groundwater, surface water, drinking water and all other natural resources.
5. Establish policies to protect the environment within the Gun Lake Tribe's lands.
6. Provide and promote Tribal waste management efficiency and services within Gun Lake Tribe's land.
7. Research laws and regulations related to solid waste planning and management.
8. Seek best management practices for sanitary storage, collection, transportation and disposal of solid waste.

The following objectives have been identified to ensure the Tribe meets the adopted goals:

1. Complete and implement a Tribal Integrated Solid Waste Management Plan that outlines an appropriate balance of waste prevention, reuse, recycling and disposal utilizing the U.S. EPA hierarchy of waste reduction.
2. Reduce the amount of waste going to landfill from Tribal properties through increased recycling, waste diversion and food waste processing.
3. Increase Tribal, employee and public awareness of proper solid waste management and waste diversion principles through education and training opportunities.
4. Develop previously drafted Tribal Rules & Regulations for Solid Waste to enforce the Integrated Solid Waste Management Plan.
5. Increase Tribal participation in solid waste management.



## SECTION 2: PRINCIPLES OF WASTE DIVERSION

The U.S. EPA waste hierarchy prioritizes actions that prevent and divert waste materials from being landfilled. Diversion of waste from landfills help to protect the environment and preserve natural resources. The U.S. EPA waste hierarchy is precisely what Gun Lake Tribe is promoting with its plan for Bkéji Wébnan, to throw less away. Gun Lake Tribe has implemented recycling and composting for Tribal properties, and the Tribe and its citizens continue to seek methods to improve solid waste management practices to benefit the environment.

The highest tiers on the Waste Management Hierarchy provide the greatest benefits for the environment and society, while landfill treatment and disposal are represented at the bottom of the Waste Management Hierarchy as the least preferred ([www.epa.gov](http://www.epa.gov)).



## 2.1 Source Reduction and Reuse

Source reduction and reuse represents the best alternative for waste diversion from landfilling. This may be implemented in many forms, including:

- Donation or reuse of items (furniture, household goods, clothing)
- Buying in bulk and avoiding single use packaged items
- Reducing disposable packaging
- Using reuseable service goods (dishes, towels, etc.)

## 2.2 Recycling/Composting

Recycling includes the collection and reuse of discarded materials. Recycling programs have been well-established in the region for more than 25 years, providing numerous outlets for transport, handling and recycling of materials. Industries use recycled materials in manufacturing, providing new life to recycled materials.

Recycling requires that materials be sorted for best processing. Source separated materials are sorted by the waste generator and can be hauled in bulk. Recyclable materials can also be collected as “single stream” for transport to a recycling center where they are sorted before moving to their next use. Single stream recycling allows for collection in a smaller space and takes less effort by the waste generator. Single stream recycling for households makes it convenient for residents to put all recycling into one cart for pickup by a waste hauler.

Typical materials collected for recycling in single stream systems include:

- Cardboard (corrugated)
- Paper board (cereal boxes)
- Paper (office paper, newspaper)
- Glass (clear or colored)
- Metal (aluminum cans, tin cans)
- Plastics (#1, #2, #5 and sometimes #3-#4 and #6--#7)

Source separated recycling allows for the collection and recycling of a wider array of materials than single stream recycling. In addition to the materials listed above, source separated recycling allows for the collection of special wastes and materials that require special handling including:

- Household Hazardous Waste (HHW) (cleaners, automotive products, oil-based paint and stain)
- Batteries (Rechargeable Ni-Metal, Lithium, automotive and others)
- Tires
- Electronics (e-waste)
- Mattresses
- Propane Tanks
- Medications
- Styrofoam

Composting similar to recycling in the waste hierarchy. Composting of organic material reduces organics going to the landfill. The presence of organic material in landfills leads directly to the creation of landfill methane (CH<sub>4</sub>), which is a potent greenhouse gas, 36 times the potency of CO<sub>2</sub>. Additionally, keeping organics out of landfills preserves valuable landfill space for materials that cannot be recycled or composted.

## 2.3 Energy Recovery

Energy recovery from waste is typically implemented in large-scale projects that turn waste into fuel through combustion, gasification, pyrolyzation, anaerobic digestion or landfill gas recovery. Waste is considered a renewable energy source. Local energy recovery projects include the Kent County Waste to Energy facility in Grand Rapids that produces electricity and landfill gas collection systems that produce electricity or compressed natural gas from landfill gas and methane. Many large-scale dairy farms use anaerobic diesters to process manure, producing biogas and fertilizers.



## SECTION 3: TRIBAL WASTE GENERATION AND CHARACTERIZATION

### 3.1 Waste Generation

Gun Lake Tribe is unique in that waste currently generated on Tribal properties is primarily through service enterprises and government offices rather than residences. This creates more food waste and packaging than a standard residential waste stream. The Tribe has proactively taken steps to divert much of this waste.

### 3.2 Existing Waste Streams

Gun Lake Tribal properties that generate solid waste include the Gun Lake Tribe Government Campus, the Gun Lake Casino/ Gun Lake Casino Administrative building, the Noonday Gas Station, the Luella Collins Community Center (LCCC), Jijak Camp and The Settlement (seventeen homes occupied by Tribal Citizens). Each of the Tribal properties listed in Table 3 manages waste differently as they serve differing functions and many operate as separate entities. Waste is often generated by visitors to the properties and services are for those visitors rather than Tribal members. Table 3 outlines Tribally owned properties and current generated waste streams.



**Table 3. Tribal Properties and Generated Waste Streams**

	<b>Waste Stream</b>	<b>Hauler</b>	<b>Tonnage/Volume</b>	<b>Destination</b>
<b>Gun Lake Casino and Gun Lake Casino Administration Building</b>	Municipal Solid Waste (MSW)	GFL	Onsite compactors, approx. 60 tons/month	Landfill (varies)
	Cardboard	Pratt Recycling	Compacted onsite, approx. 8.6 tons/month	Pratt Recycling, Indiana
	Metal	Padnos Recycling	Approx 3.5 tons/month	Padnos Recycling, Grand Rapids
	Glass	Pratt Recycling	Approx 2.25 tons/month	Pratt Recycling, Indiana
	Food Waste	Onsite Treatment	Up to 400 pounds/day to biodigester, remainder feeds chickens or traditional compost	Onsite Biodigester/ chicken feed/traditional compost
	Wood Pallets	Pratt Recycling	NA	Pratt Recycling, Indiana
	E-waste	Padnos Recycling	Approx 815 pounds/month	Padnos Recycling, Grand Rapids
<b>Gun Lake Tribe Government Campus</b>	MSW	CDR	6-yard container, monthly	South Kent Landfill, Byron Center
	Food Waste/Paper Waste	Self-Managed	10 yards/year	Onsite Traditional Compost
<b>Noonday Gas Station</b>	MSW	Arrowaste Inc.	8-yard container 2x/week	Landfill (various)
	Cardboard	Arrowaste Inc.	8-yard container 1x/week	Recycled Locally
<b>The Settlement (Residential Housing)</b>	MSW	Republic Services	Weekly Curbside	Landfill (various, local)
	Single Stream Recycling	Republic Services	Bi-weekly Curbside	Kent County REC, Grand Rapids
<b>LCCC</b>	MSW	CDR	4-yard container monthly	South Kent Landfill, Byron Center
	Cardboard	CDR	4-yard container monthly	Kent County REC, Grand Rapids
<b>Jijak Camp (1 week/year)</b>	MSW	CDR & Republic Services	6-yard and 8-yard containers once/year	South Kent Landfill, Byron Center
	Single Stream Recycling	CDR	2 6-yard containers/year	Kent County REC, Grand Rapids





## SECTION 4: TRIBAL WASTE DIVERSION

As shown on Table 3, Gun Lake Tribe has implemented waste diversion programs for Tribal properties.

### 4.1 Gun Lake Casino Waste Diversion

The Gun Lake Casino, currently the largest generator of solid waste on Tribal land, has implemented numerous waste diversion programs, most notably food waste diversion. As of July 2024, Gun Lake Casino was processing approximately 4,000 pounds per month of food waste in its biodigester. In August 2024, with the addition of staff, biodigester use increased to approximately 10,000 pounds per month. However, food waste generation continues to exceed the capacity of the current biodigester. Currently, excess food waste is used to feed chickens (approximately 400 pounds per day) and traditionally composted. In late 2024, a larger biodigester is scheduled to be installed with five times the capacity of the existing biodigester.

Cardboard is collected from the Gun Lake Casino and the Gun Lake Casino Administration Building, compacted and recycled by Pratt Recycling at an average rate of approximately 8.6 tons per month. Pratt Recycling also manages recycled glass from the Gun Lake Casino at an average rate of approximately 2.25 tons per month.

E-waste and metal are collected at the Gun Lake Casino and Gun Lake Casino Administration Building for recycling at Padnos Recycling of Grand Rapids. The 2023 average recycling rate for e-waste was 815 pounds per month. Metal is also collected by the Gun Lake Casino and recycled by Padnos at an average rate of 3.5 tons per month.

Additionally, wood pallets are collected by the Gun Lake Casino and Gun Lake Casino Administration Building for recycling by Pratt Recycling of Indiana, however, average tonnage per month is not currently available.

Gun Lake Casino recycling programs collected the following materials in 2023:

- 103.47 tons cardboard
- 26.96 tons glass
- 4.89 tons e-waste
- 38.33 tons of metal

## 4.2 Other Tribal Waste Diversion

The Environmental Department, working from the Government Campus, manages additional Tribal waste streams through the collection of HHW, e-waste, tires and supporting the collection of discarded medications. The following table describes these additional waste streams.

**Table 4. Environmental Department Special Waste Collection**

	Scheduling	Frequency	Disposal
<b>HHW</b>	Schedule with Environmental Department	Drop off Monday-Friday by appointment	Drug & Lab Disposal
<b>E-waste</b>	Drop off 5 days/week for Tribal Citizens and staff, plus 2 public collection events/year		Valley City (recycling)
<b>Tires</b>	Drop off 5 days/week for Tribal Citizens and staff, plus 1 public collection event/year		Cobalt Rubber (recycling)
<b>Used Paper Recovery</b>	Daily		CSM
<b>Medications</b>	Drop off at Public Safety or Health & Human Services Department Monday-Friday 9:00 a.m.- 5:00 p.m. for Tribal Citizens and staff.		Licensed Disposal

Tribal properties including LCCC and Jihak Camp collect single stream recycling for transport to the Kent County Recycling Center. The LCCC sends one four-yard container of recycling per month, and Jihak Camp, operating on a limited summer schedule, sends one six-yard container of recycling per year.

The Settlement, a community of seventeen Tribal homes, utilizes Waste Management (WM) for solid waste pickup. Tribal Citizens living in the Settlement are encouraged to participate in the curbside recycling program offered by WM.

The Noonday Gas Station utilizes Arrowaste Inc. for hauling both MSW and cardboard. An eight-yard container of cardboard is hauled by Arrowaste Inc. weekly from the gas station.

## 4.3 Current County Programs

Tribal Citizens living within the five-county service area have access to programs in their local county that typically operate at low or no cost for county residents. It may be more convenient for Tribal Citizens to utilize their local county recycling program for recycling or special waste disposal. The following programs exist in the five-county service area.

### 4.3.1 Allegan County

- Allegan County offers curbside pickup or recycling drop-off for county residents depending on their township. Additional collection of recyclables takes place at some township recycling drop-off centers and in the City of Allegan.
- Special waste materials collected include HHW, appliances, tires and e-waste. Unwanted prescription medications may be dropped off at the Allegan County Sheriff complex.
- The Allegan County Recycling page at the following link provides options for recycling and HHW drop-off based on location.
- <https://www.allegancounty.org/health/resource-recovery-and-recycling-program/find-your-recycling-information>

### 4.3.2 Barry County

- Barry County offers curbside pickup for more than half of the County. There are also drop-off centers and transfer stations situated throughout the county.

- The Barry County Recycling webpage linked below provides information on where and what can be recycled. HHW and e-waste drop-off events are held at the Barry County Expo Center in Hastings.
- <https://www.barrycounty.org/barrycountyrecycles/>

#### **4.3.3 Kalamazoo County**

- Kalamazoo County and those living within the City of Kalamazoo and surrounding communities have curbside recycling available through private waste haulers.
- Kalamazoo County residents may utilize the Kalamazoo County HHW Drop Off Center. Location and materials accepted are described on the following County website.
- <https://www.kalcounty.com/hcs/eh/hhw/>

#### **4.3.4 Kent County**

- Kent County offers curbside recycling in most communities, including the greater Grand Rapids area. Recycling drop-off centers are located in Grand Rapids, Rockford and Byron Center.
- Kent County residents may utilize County facilities to dispose of HHW, e-waste, tires, appliances and many other items. The Kent County SafeChem (HHW) Program has numerous drop-off locations in the County. E-waste, tires and appliances may be recycled at North Kent Recycling & Waste Center in Rockford and the South Kent Recycling and Waste Center between Byron Center and Dorr.
- The Kent County website provides instructions on how to dispose of many materials and locations of drop-off centers.
- [www.reimaginetrash.org/recycle/recycle-guide/](http://www.reimaginetrash.org/recycle/recycle-guide/)

#### **4.3.5 Ottawa County**

- Ottawa County residents may contract with private waste haulers for curbside recycling. Municipalities also offer curbside recycling with contracted haulers.
- Environmental Sustainability Centers are available in Grand Haven, Coopersville, Holland and Georgetown for drop-off of recyclables and special wastes including HHW and e-waste.
- A Sustainability Center schedule is available on the Ottawa County website. Scrap tires may be dropped off for a \$2 fee at HHW drop-off centers listed on the Ottawa County website.
- [www.miottawa.org/Health/OCHD/ES/hours-locations.htm](http://www.miottawa.org/Health/OCHD/ES/hours-locations.htm).



## **SECTION 5: WASTE REDUCTION EDUCATION**

### **5.1 Outreach and Education**

The Gun Lake Tribe Environmental Department actively engages citizens through education and outreach. There are several community-wide events held each year which provide the Environmental Department with the opportunity to update and educate citizens on environmental programs and practices that include recycling, composting and waste diversion. Table 5 provides a summary of environmental programs and services offered through the Environmental Department.



Table 5. Environmental Events and Programs

Program Name	Frequency	Description	Average Tribal Member Participation
Earth Day Celebration	Annual	A Tribal community event that includes participation in an environmental activity followed by a dinner and brief discussion related to environmental projects.	100+ Annually
Environmental Speakers Series	Twice a year	Speaker Series brings local environmental issues to Gun Lake Tribe	60+ Annually
Household Hazardous Waste Collection Program	Weekdays by Appointment	Tribal Citizens and employees may drop off HHW (paint, pesticides, batteries, cleaners, fluorescent bulbs, auto liquids, etc.) for proper disposal.	30+ Annually
Electronic Waste Recycling Program	Weekdays by Appointment	Tribal Citizens and employees may drop off old electronics for proper disposal.	200+ Annually
Public Electronic Waste Recycling Collection	Once per Year	Community members are encouraged to drop off e-waste at a public collection for proper disposal.	Public 100 +
Tire Recycling Program	Weekdays by Appointment	Tribal Citizens and employees may drop off used tires for proper disposal.	15 + Annually
Public Tire Recycling Collection	Once per Year	Community members are encouraged to drop off used tires at a public collection for proper disposal.	Public 200 +
Medication Collection Program	Year Round	Tribal members may drop off expired prescription and over-the-counter medications for safe disposal.	50lbs Average Annually
Battery Recycling Services	Year Round	Tribal Citizens and employees are encouraged to drop off used batteries at the Government Campus for recycling.	Ongoing Service
Conservation Incentives Program (CIP)	Offered Year Round	A Tribal incentive program that provides rebates to Tribal Citizens for conservation-based purchases, such as new Energy Star appliances, home energy retrofits and new hybrid vehicles.	39 Applications processed in 2023

Educational pamphlets are made available to Gun Lake Tribal Citizens. Three pamphlets, *Alternative Household Cleaners*, *Get the Lead out of Your Home* and the *Environmental Department*, have been provided at Tribal events. These pamphlets and more educational outreach material are available for Gun Lake Tribe Citizens and visitors at the Environmental Department.

In July 2024, a Sustainability Specialist was hired by the Gun Lake Casino to manage and improve waste diversion and sustainability programs at the Gun Lake Casino. The addition of this trained Sustainability professional will increase waste diversion and education for visitors to the Gun Lake Casino and Tribal Citizens.

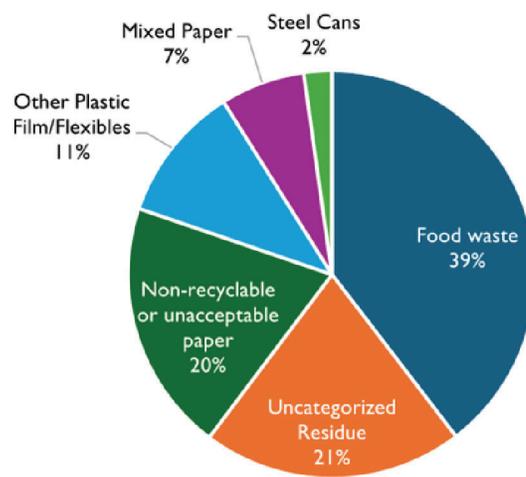




## SECTION 6: WASTE AUDIT

An audit of the Gun Lake Casino waste was conducted by Iris Waste Diversion Specialists, Inc. in August 2024 to determine the composition of Gun Lake Casino waste, and to determine if additional materials may be diverted. The waste audit report is included in Appendix A. During the audit, a sorting team processed 400 pounds of material from the Gun Lake Casino, and 100 pounds of waste from the CBK Restaurant. Waste was placed into 31 categories, including materials currently captured for recycling or biodigestion, materials that could be diverted or recycled, materials that are hazardous and materials that should be landfilled.

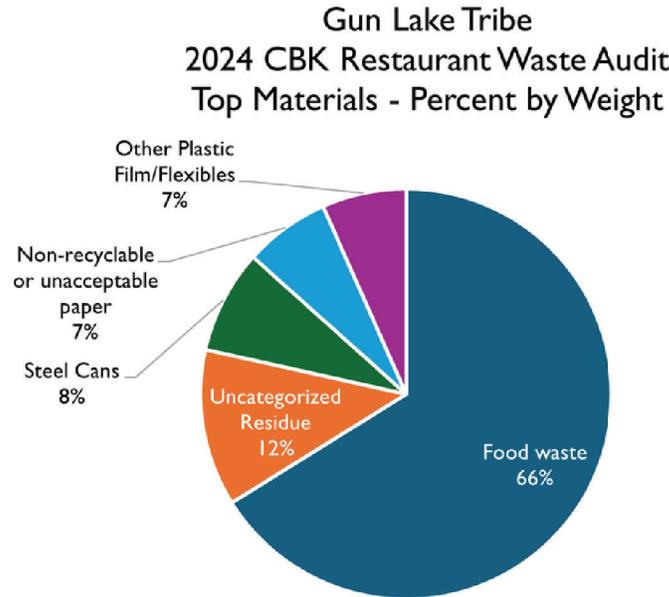
**Gun Lake Tribe  
2024 Casino Guest Area Waste Audit  
Top Materials - Percent of Total**



*Iris Waste Diversion Specialists, Inc. 2024*

As shown on the above pie chart, food waste makes up a substantial portion of the Gun Lake Casino waste stream, indicating that food waste diversion should remain a priority for the Casino. Advanced organics processing would also allow for non-recyclable paper to be diverted, which could be addressed in the future.

The CBK Restaurant waste stream, shown below, reveals an expected higher percentage of food waste, indicating that food waste diversion is the highest priority for Tribal restaurant properties.



*Iris Waste Diversion Specialists, Inc. 2024*

The results of the August 2024 Casino waste audit, and a review of other Tribal waste diversion programs reveal that the Tribe is doing well to divert a significant amount of waste from the landfill. However, movement toward additional diversion will further reduce waste going to landfill and will move the Tribe closer to the goal of Bkéji Wébnan, to throw away less.



## SECTION 7: FUTURE DEVELOPMENT

As the Tribe looks toward future development and waste management activities, it is important to recognize the facilities capable of receiving both MSW and diverted materials from the Tribe (shown in Table 6). Also important to note is that Michigan Counties are currently undergoing materials management planning and additional options will likely become available in the next 10 years.

**Table 6. Local Waste Facilities**

Facility	Distance From Tribal Land	Material Accepted	Future Availability
<b>LANDFILLS</b>			
<b>Kent County South Kent Landfill, Byron Center</b>	13 miles	MSW, HHW, Special Waste Dropoff	10 years landfill capacity. Will then become a transfer station.
<b>Waste Management Autumn Hills Landfill, Ottawa Co.</b>	25 miles	MSW, Waste Diversion, Organics, C&D, Waste Transfer, Source Separated Recycling	50+ years available landfill capacity
<b>Republic Central Sanitary Landfill, Pierson</b>	53 miles	MSW, C&D, Source Separated Drop Off	35+ years available landfill capacity
<b>Kent County Recycling and Education Center, Grand Rapids</b>	27 miles	Single Stream Recycling	Ample capacity for Tribal waste



<b>Republic Services, Holland</b>	38 miles	Single Stream Recycling, Wood, Glass, Organics	
<b>Granger Recycling, Lansing</b>	68 miles	Single Stream Recycling, Glass	
<b>LRS Niles Materials Recovery Facility</b>	81 miles	Single Stream Recycling, Glass	

**BROKERS/SOURCE RECYCLERS**

<b>Padnos Recycling</b>			
<b>Schupan Recycling</b>			
<b>Grand Rapids Iron &amp; Metal</b>			
<b>Pratt Recycling</b>			

**CONSTRUCTION/BUILDING MATERIALS RECYCLING (C&D)**

<b>Republic Services, Holland</b>	38 miles	Wood Waste	
<b>Padnos, Grand Rapids</b>	27 Miles	Mixed Plastic, Metal, Wire	
<b>Cocoa Corp, Holland</b>	36 Miles	Gypsum, Drywall	
<b>Multiple Locations</b>	Varies	Concrete, Asphalt	

**7.1 Corridor Development**

Gun Lake Tribe has envisioned the development of Trust land through the creation of a preliminary plan for residential, commercial and light industrial use. The proposed Tribal Master Plan for development is included as Appendix C.

Through corridor development, the addition of residential, commercial and light industrial properties will lead to a significant increase in waste generation and a need for additional waste diversion. The Tribe has proposed the addition of a dedicated Tribal HUB Center to manage diverted waste. Supplemental information detailing options for HUB Center development are included in Appendix D.

As corridor development planning continues and construction begins, the Tribe will pursue its vision of Bkéji Wébnan, to throw less away.





## SECTION 8: NEXT STEPS

Gun Lake Tribe has already demonstrated the initiative to manage solid waste using methods that promote recycling and organics diversion. Tribal properties are continually changing with the 2024 opening of the Casino Hotel, re-visioning and addition of new Casino restaurants, and anticipated corridor construction. As development progresses, bringing more people and activity to Tribal land, it is important for the Tribe to have a framework in place for managing additional waste. The following recommendations are provided as a path forward to Tribal planners.

### 8.1 Opportunities for Improvement

As Gun Lake Tribe continues to grow, it is the goal of the Tribal Council and the Environmental Department to provide the best possible refuse collection, recycling, and services to Tribal Citizens.

The Gun Lake Tribe Environmental Department will continue partnering with Tribal properties to increase patron recycling, office recycling, food waste recycling and general waste reduction as the properties and facilities continue to expand. Evaluation of new waste diversion opportunities is an ongoing process. To adhere to Tribal priorities, the Tribe should strive to divert as much material from landfill as possible.

The Tribe should regularly revisit this Integrated Solid Waste Plan and actively seek improvements to the system. Quarterly or semi-annual waste diversion evaluations, and an annual review of solid waste programs will provide the Tribe with opportunities to improve current practices, and to implement new programs.

The following opportunities will provide the Tribe with options to pursue that are consistent with industry practice, and in line with Tribal goals for waste recycling and diversion. These actions can also further empower Tribal Citizens, employees and visitors to be active participants in diversion and recycling of waste.

#### 8.1.1 Opportunity #1 – Develop HUB Center for collection and processing of solid waste materials.

- Gun Lake Tribe would like to create a HUB Center as part of Tribal lands development to allow for Tribal processing of materials for recycling or reuse. The design of the HUB Center should consider the possibility of serving as a transfer station, recycle center or reuse center.

The size and capabilities needed for the HUB Center will be better understood as development proceeds and specific diversion needs are further identified.

- Use the HUB to increase the volume and types of material diverted, adding additional hard to recycle items such as mattresses, batteries, Styrofoam and other challenging waste streams, and look toward reuse of certain materials when possible.
- Develop a reuse center, either at HUB Center or another Tribal property, to offer items to Tribal members for reuse, including cleaners and other HHW materials, household goods or furniture.

#### **8.1.2 Opportunity #2 - Increase recycling through capture of additional material.**

- The Tribe is successfully capturing some cardboard, electronics, glass, pallets, HHW, tires and medications, but there is more work to be done. Each of these diversion programs could be expanded to include additional Tribal properties, and to collect more material. The addition of the Gun Lake Casino Hotel and future Tribal corridor development will further expand opportunities for waste diversion.
- At properties currently collecting only solid waste and cardboard, expand recycling to single-stream materials, including cardboard, paper board, cartons, plastics, glass and metal. This could be accomplished utilizing existing waste haulers.
- Increase HHW, e-waste, tire, and prescription medication collection through increased marketing of current programs, promotion of the benefits of recycling, and increased visibility.
- Add additional hard-to recycle materials to the recycling program, including items such as mattresses, batteries, empty propane tanks, construction and demolition waste, plastic film, Styrofoam, appliances, furniture and household goods. Additional diversion may be more easily adopted through development of the HUB Center.
- Regularly review recycling and diversion volumes to assess progress.
- Annually review recycling and diversion practices to determine if additional programs are needed, and to evaluate budget requirements for program expansion.

#### **8.1.3 Opportunity #3 – Increase organics and food waste diversion.**

- The Tribe is already successfully processing food waste from the Casino. The Tribal knowledge of food waste diversion can be translated into a larger program that impacts additional facilities and people.
- Increase the food waste diversion program to serve all current properties, including the Gun Lake Casino and restaurants, Gun Lake Casino Hotel, Noonday Gas Station, LCCC and Jijak Camp. Food waste may be processed through additional biodigestion, composting or anaerobic biodigestion.
- Consider advanced organics processing through anaerobic digestion, so that food waste and paper waste may be processed, and valuable biogas may be created.
- Consider organics collection for new Tribal corridor development, including organics cart pickup for residences. This may be completed through an outside subscription service that hauls organics offsite, or through an expanded Tribal compost or organics collection and processing program.

- 8.1.4 Opportunity #4 – Implement Construction and Demolition (C&D) Diversion Program for Tribal construction projects.**
- Construction and demolition waste is filled with valuable material that can be recycled and reused. With the anticipation of significant construction activity on Tribal land, the Tribe may wish to look at construction and demolition waste as an opportunity for diversion.
  - Develop a recycling program to ensure C&D materials are recycled whenever possible during construction.
  - Consider a deposit system or ordinance to require participation.
  - Add C&D recycling requirements to Requests for Proposals (RFPs) for construction projects to ensure recycling or diversion of construction materials.
- 8.1.5 Opportunity #5 – Develop and enact Tribal Recycling Ordinances.**
- Ordinances can provide the Tribe with the framework needed to enact wide sweeping programs for recycling or diversion.
  - Consider adoption of Draft Tribal Solid Waste Rules, included in Appendix B.
  - Consider an ordinance requiring curbside recycling services to be provided for all residents.
  - As the HUB Center concept is developed, consider an ordinance to require all Tribal waste to be processed through the HUB.
- 8.1.6 Opportunity #6 – Increase education on Tribal recycling and waste diversion activities.**
- The best way to increase recycling and waste diversion among residents and citizens is through education. The more these individuals know about the available programs, and principles of recycling and waste diversion, the more they will want to participate.
  - Prepare a quarterly newsletter for Tribal Citizens to highlight recycling and diversion efforts and inform the Tribe of waste diversion activities and developments. This will also allow the tribe to update citizens on changes and developments within the programs.
  - Provide County-based recycling information to Tribal Citizens living in five-county service area and encourage local participation. Include updates to County program information in quarterly newsletter.



## SECTION 9: SUMMARY

---

As the Tribe looks forward to increased recycling and diversion of waste from landfilling, there are many roads that can lead to success. As it relates to investment, certain activities may or may not make sense depending on the workforce and social development. However, Gun Lake Tribe, through its deep knowledge of the ecosystems they steward, bring unique tools and resources to sustainability efforts.

With this Integrated Solid Waste Plan, Gun Lake Tribe is continuing on its path toward recycling, waste diversion, and environmental stewardship. With the current and projected development of Tribal land, the Tribe has a tremendous opportunity to continue to provide tribal residents and visitors with responsible and earth-friendly waste management programs, and to set a positive example for all.

With this plan, the Tribe continues to pursue its vision of Bkéjí Wébnan, to throw less away.