Priority Climate Action Plan

Ėjë-Gbmadzemen É Dnakwnayék
“Where We Plan to Live”

Gun Lake Tribe
Shelbyville, Michigan

Project No. 231883
March 26, 2024

fishbeck
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List of Abbreviations/Acronyms

CAP	Climate Change Adaption Plan
CCAP	Comprehensive Climate Action Plan
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPRG	Climate Pollution Reduction Grants
GHG	greenhouse gas
HVAC	heating, ventilating, and air conditioning
kW	kilowatt
MT CO2e	metric tons of carbon dioxide equivalent
N_2O	Nitrous Oxide
PCAP	Priority Climate Action Plan
SEP	Strategic Energy Plan
SQ FT	Square Feet
TGIT	Tribal GHG Inventory Tool
USEPA	U.S. Environmental Protection Agency

1.0 Executive Summary

Fishbeck has been retained by The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, also known as Gun Lake Tribe (Tribe), to prepare a Priority Climate Action Plan (PCAP). The 2015 Climate Change Adaption Plan (CAP), a guiding document for the PCAP, states,

> Gun Lake Tribe believes that our land, resources and people are the basis for our spiritual life. Since the birth story of our people our resources and land have been our only way to live.
>
> All of our cultural resources, including our food and traditional medicines are non-renewable. With this in mind, climate change can have astronomical effects on our traditions and everyday lives.

Since the development of the CAP, Gun Lake Tribe has assembled more information concerning energy use, greenhouse gas (GHG) emissions and other environmental impacts. Gun Lake Tribe is interested in opportunities to reduce environmental impacts while expanding casino and other business ventures. Gun Lake Tribe has recently adopted a Strategic Energy Plan (SEP) to provide structure and purpose for achieving the Tribe's long-term energy vision.

An updated GHG emissions inventory was prepared for the Tribe; this inventory is estimated at 18,314.1 MT CO2e. Using information collected during the SEP process, meetings with youth and elders and the GHG inventory development, Gun Lake Tribe has developed priority measures and projects for implementation to support goals in achieving carbon neutrality and energy independence.

2.0 Introduction

Through the Inflation Reduction Act of 2022, Congress provided many tools to pursue GHG pollution reductions, including the Climate Pollution Reduction Grants (CPRG) program. In line with this strategy, the U.S. Environmental Protection Agency's (USEPA) is committed to supporting the development and expansion of state, territorial, Tribal and local climate action plans and the expeditious implementation of investment-ready policies, programs and projects to reduce GHG pollution in the near term. Through the CPRG program, the USEPA will support state, territorial, Tribal and local actions to reduce GHGs and associated criteria and toxic air pollution through deployment of new technologies, operational efficiencies and solutions that will transition America equitably to a low-carbon economy that benefits all Americans. Gun Lake Tribe is a recipient of the USEPA's CPRG. One of the requirements of obtaining this grant is for Gun Lake Tribe to produce specific deliverables in the specified amount of time.

The deliverables include a PCAP, a Comprehensive Climate Action Plan (CCAP) and a USEPA approved Quality Assurance Project Plan.

3.0 Gun Lake Tribe Overview

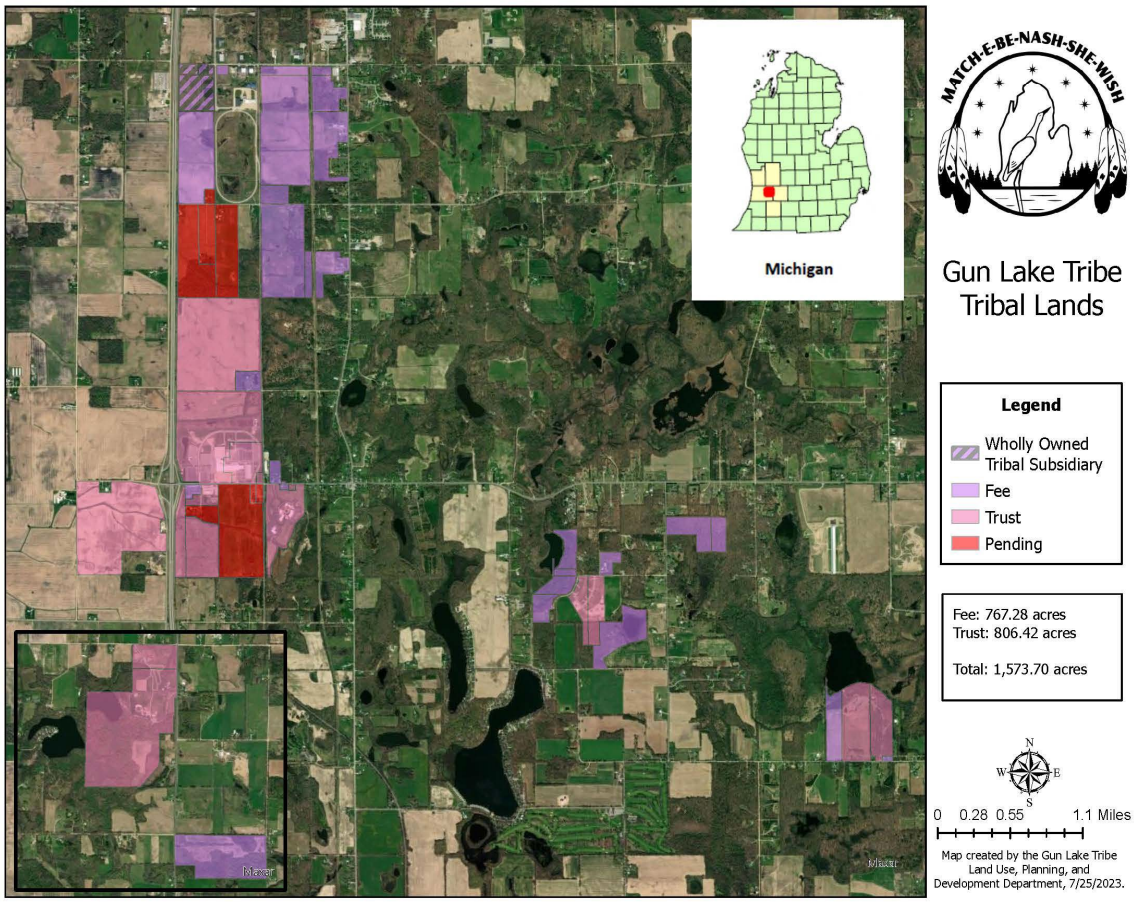
Gun Lake Tribe is a federally recognized Indian Tribe located in southwest Michigan. In 1992, the Tribal community initiated their pursuit of federal acknowledgment. Gun Lake Tribe used their well-documented history and petitioned the Branch of Acknowledgment and Research and the Bureau of Indian Affairs. In August of 1999, the Tribe was re-affirmed in their government-to-government relationship with the United States of America through this process. Currently, Gun Lake Tribe has an enrolled Citizenship of 615 individuals as of March 2024. The Reservation is composed of 895 acres held in trust by the United States government for the community; however, Gun Lake Tribe does not have a recognized "exterior reservation boundary". The Tribe holds an additional 1,573 acres in agricultural, residential, and industrial lands not held in trust as of February 2024. The seven-member Tribal Council is an elected body, which has been empowered by the community through the election process to act on behalf of Gun Lake Tribal Citizens. Gun Lake Tribe built the 83,000 sq ft Gun Lake Casino in 2011. In 2014, Gun Lake Tribe established a permanent government campus in Shelbyville, MI. Gun Lake Tribe has plans for expansion in the next several years. New water treatment and wastewater treatment plants and

infrastructure are expected to be online by early 2025. In addition, the casino is expanding and constructing a new hotel.

Gun Lake Tribe demographics as of March 2024 are as follows:

- Total Tribal population: 615
- Tribal population living in the five-county service area: 393
- Total percentage of Tribal population living in the five-county service area: 64%
- Tribal population living outside the five-county service area: 222
- Total percentage of Tribal population living outside the five-county service area: 36%
- Total number of Tribal Youth: 236
- Total percentage of Tribal Youth: 38%
- Total number of Tribal Youth living in five-county service area: 140
- Total number of Tribal Elders: 105
- Total percentage of Tribal Elders: 17%
- Total number of Tribal Elders living in the five-county service area: 77

The geographic territory considered for this PCAP is inAllegan County, Michigan.



4.0 Priority Climate Action Plan Background

Through the Inflation Reduction Act, USEPA provided funds through the CPRG program to create the PCAP and CCAP these documents are intended to guide renewable= investments in a cleaner economy that can spur innovation and economic growth while building more equitable and resilient communities. In implementing this and many other programs under the Inflation Reduction Act, the USEPA seeks to achieve three broad objectives:

- Tackle damaging climate pollution while supporting the creation of good jobs and lowering energy costs for families.
- Accelerate work to address environmental injustice and empower community-driven solutions in overburdened neighborhoods.
- Deliver cleaner air by reducing harmful air pollution in places where people live, work, play and go to school.

4.1 Priority Climate Action Plan Overview

The PCAP is a narrative report that includes a focused list of near-term, high-priority, implementation-ready measures to reduce GHG pollution and includes an analysis of GHG emissions reductions that would be achieved through implementation. The goal of this PCAP is to prioritize measures that will reduce GHG emissions and enhance natural areas that capture climate pollution. Extensive stakeholder outreach and community engagement are integral to this goal and to ensure that these priority actions will benefit Gun Lake Tribe and the region, with a focus on equity and environmental justice. As required by the USEPA for CPRG, these measures have been identified to address stationary combustion sources, electricity consumption, transportation, buildings, natural and working lands and waste management. In addition, these measures are also intended to:

- Minimize air and water pollution.
- Reduce long-term energy costs.
- Support the creation of good jobs.
- Improve the health impacts, resilience and comfort of housing and other buildings.
- Increase accessibility to and quality of healthy, safe and affordable transportation for all ages.
- Increase and maintain healthy urban vegetation that will sequester GHG emissions and other air pollutants, absorb and divert rainfall during storm events and provide cooling and habitats that are conducive to local biodiversity.
- Increase and maintain Gun Lake Tribe's forested areas to sequester GHG emissions and other air pollutants, absorb and divert rainfall during storm events and provide cooling and habitats that are conducive to local biodiversity.

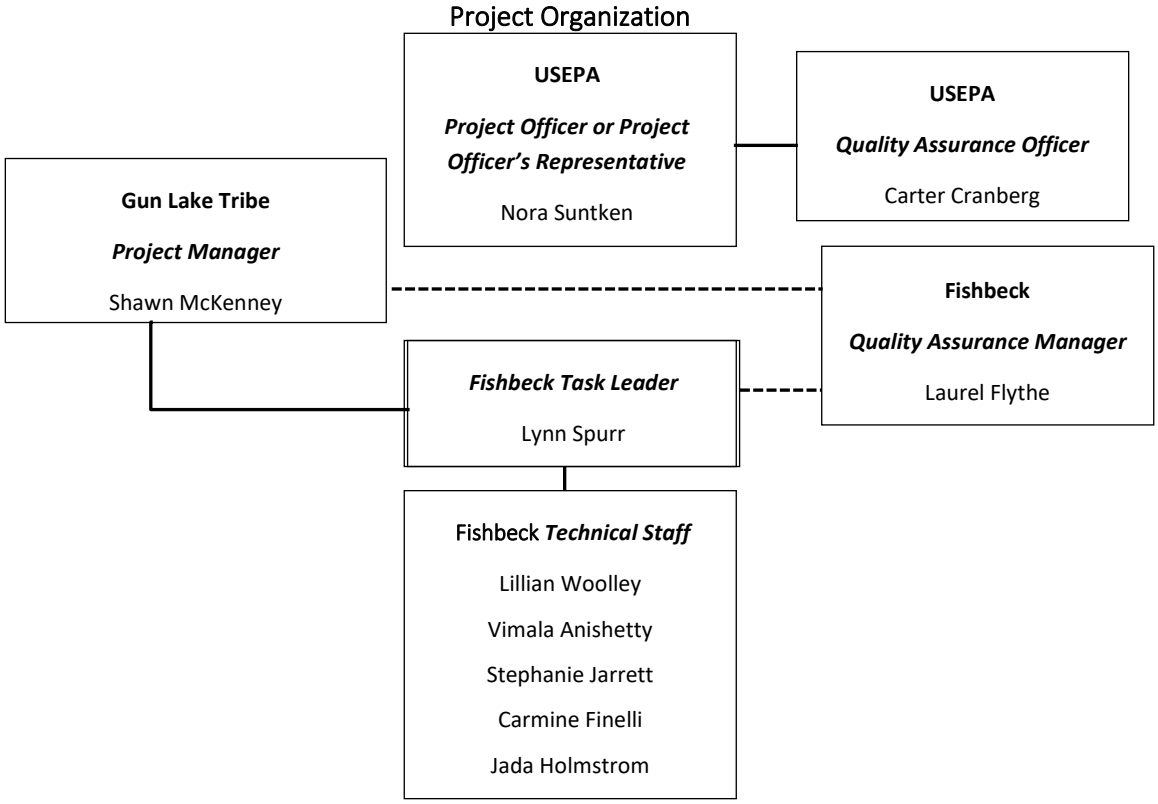
This PCAP contains the following elements:

- GHG inventory - A calculation of Gun Lake Tribe's total GHG emissions, by source and sector for one calendar year.
- Quantified GHG reduction measures (priority measures) - A list of policies, projects, programs or other measures that will reduce GHG emissions, with a focus on Gun Lake Tribe's highest priority sectors. In addition to GHG emission reductions, the rationale for selecting a measure for the plan may also include other factors, such as reduction of co-pollutants (including criteria pollutant/precursors and air toxics), cost effectiveness or other economic or community-related factors.
- A benefits analysis - A benefits analysis to assess the benefits of GHG reduction measures contained in each plan. It should include both base year estimates of co-pollutants (including criteria pollutants/precursors and air toxics) and anticipated co-pollutant emission reductions as plan measures are implemented and GHG reduction goals are met.
- A review of authority to implement – Identification of entities with authority to implement proposed GHG reduction measures.

4.2 Developing the Priority Climate Action Plan

The foundation for this PCAP is the existing Gun Lake Tribe CAP (2015). The Gun Lake Tribe SEP has also been an important component. Extensive efforts were made to engage stakeholders in developing the SEP. These efforts included listening sessions, Climate Resiliency Workgroup meetings and surveys. Outreach and communication was conducted to ensure effective input from all stakeholders, including Tribal Council and citiznes of Gun Lake Tribe.

The following organization chart illustrates the project team which consists of individuals from three entities, namely Gun Lake Tribe, USEPA and Fishbeck. Further, the organization chart shows the roles and responsibilities of the team members.



Gun Lake Tribe developed a Climate Resiliency Workgroup that represented a wide range of Departments in the Tribe. This group took on the role of CPRG grant projects. The members and their affiliation are listed below.

Shawn McKenney, Environmental Specialist, Gun Lake Tribe	Melissa Brown, Senior Director of Operations, Gun Lake Tribe
Catherine Adsitt, Director of Land Use Planning and Development, Gun Lake Tribe	Monica King, CEO, Gun Lake Investments
Jeff Burnes, Facilities Director/ Utility Authority Manager, Gun Lake Casino	Carter Pavey, Vice President of Marketing, Gun Lake Casino
Gun Lake Tribal Council	Angie Pigeon, Development Associate, Gun Lake Investments
Elizabeth Binoniemi-Smith, Environmental Director, Gun Lake Tribe	Gun Lake Tribal Citizens

The following sub-tasks are associated with developing and implementing the PCAP: Develop a comprehensive GHG inventory for the largest sources within each sector,

- Develop options for reducing emissions within each sector,
- Develop estimates or ranges of estimates for reductions achievable under each option,
- Develop uncertainty analyses for each option's emissions reduction estimate, and
- Present these analyses and options in technical reports consistent with the deliverables required under the CPRG planning grants.

Using information included in the SEP and other Tribal documents, priority measures for the PCAP were identified and include:

- Measures that will significantly reduce greenhouse gas emissions from one or more of the following key sectors highlighted by the USEPA: stationary combustion, transportation, electricity usage, buildings, agricultural and natural lands or waste management on Tribal properties and land.
- Projects that were suggested or supported by the Tribal Council and Citizens of the Tribe.
- Actions that align with the CAP and SEP that aim to improve waste management, sustainability, economic development, transportation, reduce long-term energy costs, reduce dependency on outside partners for energy, resilience to climate change and creation of good jobs.

Gun Lake Tribal leadership has the authority to implement any or all of the suggestions offered by the SEP and this PCAP.

5.0 Greenhouse Gas Inventory

A GHG inventory was developed using existing data resources associated with the major sources within Tribal properties. As recommended by USEPA, the Tribal Greenhouse Gas Inventory Tool (TGIT) was used to document sources of GHG and organize the emissions data.

The following source categories and gases were included in the inventory.

TGIT Source Categories	Greenhouse Gases (across all sectors)
1. Mobile combustion 2. Electricity consumption 3. Urban forestry 4. Agriculture & land management 5. Stationary combustion 6. Solid waste & waste generation 7. Wastewater treatment 8. Water use	carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and fluorinated gases (F-gases) including hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6)

Scope 1 emissions were calculated using natural gas usage in each of the buildings. This information was lifted from the monthly utility bills for 2022. Additional Scope 1 emissions included the Tribe's vehicle fleet. Scope 2 emissions estimates from use of electricity were estimated using monthly electricity bills. As recommendedby the TGIT, emissions from managing farmland, solid waste generation water and wastewater treatment were estimated.

Fishbeck completed a preliminary emissions inventory using the TGIT as recommended by USEPA. TGIT allows for Scope 1, Scope 2 and some Scope 3 emissions associated with decomposition of solid waste, application of fertilizer to agricultural lands and carbon sequestration associated with forest on Tribal lands. The summary tool from the TGIT is included in Appendix 1 and support spread sheets are included as Appendix 2.

5.1 Organizational Boundaries

The Greenhouse Gas Inventory focused on Gun Lake Tribe operations, vehicle fleet, equipment and some Gun Lake Investment properties, which Gun Lake Tribe has financial, but not operational control over. Operations in the GHG inventory included the Government Campus, Gun Lake Casino, Water Treatment Plant and Wastewater Treatment Plant, Luella Collins Community Center, Jijak, Noonday Market, 1300 Front Avenue (Gun Lake Investment Property in Grand Rapids) and Settlement homes. It was assumed that the water treatment and wastewater treatment plants were operating at full capacity.

The following activities were not included in the analysis due to the challenges in collecting the necessary data, or a lack of available data to support robust emissions calculations:

- Air travel
- Travel for Gun Lake Tribe business in vehicles not owned by the Tribe
- Loss from heating, ventilating and air conditioning (HVAC) equipment in Gun Lake Tribe-owned or operated buildings.

If additional data is collected, GHG emissions from the above activities will be included in future inventories.

5.2 Protocol Selection

The TGIT tool is pre-programmed with default emission factors and system assumptions needed to calculate emissions or users may enter community-specific information. The tool is scalable to accommodate different levels of activity data to meet the needs and constraints of different tribal governments.

Gun Lake Tribal activities result predominately in emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which are released by the direct combustion of fossil fuels (Scope 1) or in the use of purchased electricity (Scope 2). The remaining gases in the Kyoto Protocol are man-made and are generally released through specific refrigeration and building cooling equipment as well as energy transmission activities. Losses

from refrigeration and building cooling equipment in Gun Lake Tribal buildings were not evaluated as part of this GHG inventory.

A verification process is part of the GHG Protocol, developed to ensure that the data, assumptions and procedures used to develop the inventory are reliable and defensible. Gun Lake Tribe has developed this inventory with the intent that it could be verified by a third-party auditor.

5.2.1 Emission Sources

Scope 1 and 2 emissions from Gun Lake Tribe operations are direct and indirect GHG emissions, respectively.

Scope 1 Emissions (Direct GHG Emissions) are a result of the following Gun Lake Tribal activities:

- Combustion of fuel or natural gas in facility boilers, furnaces and generators
- Consumption of fuel oil or gasoline in Gun Lake Tribe-owned vehicles

Scope 2 Emissions (Indirect GHG Emissions) are a result of the following Gun Lake Tribe activities:

- Purchased electricity for properties/facility use

Scope 3 Emissions are other indirect emissions. Scope 3 is an optional reporting category, but the TGIT allows for estimating emissions from water treatment activities, fertilizer application and carbon sequestration of trees located on Tribal lands.

5.2.2 Data Sources

The data used to calculate Scope 1, Scope 2 and Scope 3 GHG emissions derived from sources and matrices already recorded and maintained by Gun Lake Tribe facilities personnel or by contacting utility companies. This data includes:

- Electricity consumption
- Natural gas consumption
- Vehicle fuel consumption

5.2.3 Reporting Year

A primary aspect of the GHG emissions inventory process is the requirement to select an appropriate baseline year with which to compare emissions among time periods. 2022 was selected and used in most cases because it was the latest year with an entire year of data available.

5.2.4 Emission Factors

Emission factors for the most common emission sources at Gun Lake Tribe facilities are from the *USEPA Center for Corporate Climate Leadership GHG Emission Factors Hub* (modified September 2023). Emission factors included in the hub are:

- Stationary combustion sources
- Mobile combustion sources for on-road vehicles (1973 to 2020)
- Mobile combustion sources for non-road vehicles
- Emissions & Generation Resource Integrated Database (eGRID 2021)

All GHGs are calculated separately and converted to CO_2e on the basis of their global warming potential provided in The Intergovernmental Panel on Climate Change, Fourth Assessment Report, 2007. For instance, the global warming potential for N_2O is 25 times that of CO_2, and the global warming potential of CH_4 is 298 times that of CO_2. All GHGs in this analysis are presented as their CO_2e value. A summary of the Gun Lake Tribe's GHG emissions is provided in Appendix 1.

Emission factors used in the calculations are summarized in the facility workbooks developed for Gun Lake Tribe and are presented in Appendix 2.

5.2.5 Emission Calculations

Emissions were calculated in an Excel-based workbook, which was populated with Gun Lake Tribe's raw consumption data and applicable emission and conversion factors.

5.2.6 Renewable Energy Credits and Biofuels

Renewable energy and biofuels were not evaluated as part of the GHG inventory. Gun Lake Tribe purchases energy through Consumers Energy and DTE Energy, and both have programs that allow purchase of renewable energy exclusively. At this time, Gun Lake Tribe does not participate in these programs. In the future, should Gun Lake Tribe elect to participate in these programs or purchase other renewable energy credits, then GHG emissions from energy usage may be off-set.

Biofuels, such as biodiesel and gasoline ethanol blends, have historically been considered *biogenic emissions*, and therefore carbon neutral. However, according to the Climate Disclosure Project Biofuels Technical Note,[1] *It is challenging to draw overarching conclusions about the environmental impacts of biofuels*. The Climate Disclosure Project suggests that sources should mitigate negative impacts by purchasing sustainably produced (and certified) biofuels. For Gun Lake Tribe's inventory, biofuels were not included in fuel purchase records; however, should Gun Lake Tribe determine that purchasing biofuel in lieu of non-biofuels to mitigate Gun Lake Tribe's future carbon impact, the source of the biofuels should be carefully evaluated.

6.0 Assumptions and Uncertainty Assessment

Generally, emissions are based on the purchase records and the assumption that all materials were processed, consumed, wasted or emitted. However, for certain activities, site-specific knowledge of the activity and/or emission factors are used to determine actual emissions. For this inventory, the assumption is that the information provided by Gun Lake Tribe is accurate and verifiable through an audit process. The quality of this GHG inventory is reliant on this assumption. The GHG inventory evaluated for the PCAP is a preliminary inventory and some updates may be made before establishing the final CCAP.

The most reliable data available was used and this inventory fairly represents Gun Lake Tribe's GHG emissions; however, there are uncertainties associated with the emission estimates. Select estimates, such as those for CO_2 emissions from energy-related activities, are considered to have low levels of uncertainty. For other categories of emissions, such as the emissions from vehicle use, increases the uncertainty level associated with the estimates presented (e.g., lack of data or details regarding the vehicle make/model, driving habits, surface roads/highway, etc.). As part of this evaluation, Gun Lake Tribe provided vehicle fuel usage and/or mileage based on data reported to Gun Lake Tribe's fuel supplier. CO_2 emission factors from vehicles are determined based on fuel usage, while CH_4 and N_2O emission factors are based on mileage. Fuel usage records are considered accurate, as they are recorded using Gun Lake Tribe's fuel pump meters. For vehicle mileage, the records rely on data entry by employees. In some instances, vehicle mileage data entry appeared to have typographical errors. Gun Lake Tribe has a number of vehicles, and it was not possible to manually assess each vehicle's odometer readings; therefore, Gun Lake Tribe elected to calculate emissions of CH_4 and N_2O based on gallons of fuel multiplied by the emission factors in gram per mile converted to gram per gallon, based on the USEPA Community GHG Inventory Tool (referenced in the TGIT), which provides an average mile per gallon for different vehicle types. Additionally, emission factors for vehicles were currently only available through model year 2020. For vehicles with model years 2021 to 2023, the emission factors for model year 2020 were used. In addition, for vehicles where the model year was not readily available, Gun Lake Tribe elected to use model year 2015 emission factors.

7.0 Greenhouse Gas Emission Sinks

To counteract GHG emissions, carbon sinks are features that naturally remove carbon from the atmosphere for temporary storage, such as trees, prairies and wetlands. Across Gun Lake Tribe, thousands of trees form a canopy that serves as a carbon sink encompassing 300.5 acres. In addition to this canopy, Gun Lake Tribal lands include 145.35 acres of wetlands and 49.17 acres of prairies. In total, Gun Lake Tribe utilizes 495.02 acres of carbon sinks either on fee or on trust to help offset GHG emissions.

Natural features of Gun Lake Tribal properties are featured in the CAP. Going forward, preserving forested areas will be an important part of future development as well as the CCAP.

8.0 Benefits Analysis

Part of developing the PCAP and selecting energy projects to be implemented was conducting a benefits analysis. Prior to determining the benefits from any proposed projects, Gun Lake Tribe formed a Workgroup that ultimately developed the SEP. The workgroup identified projects and programs that would benefit the community and decrease emissions by the Tribe. All projects listed within the PCAP will improve overall air quality and increase renewable energy jobs in southwest Michigan. MTCO2e reduction is listed for each renewable project. Further, per the State of Michigan PCAP, the Tribe will be addressing the commercial emitting sector, listed as the third highest in Michigan, by reducing emissions in this sector through renewable energy sources.

8.1 Strategic Energy Plan Workgroup Suggestions

Over the course of developing the SEP, participants focused on six specific stages of the SEP planning process: identifying stakeholders, assembling a leadership team., developing an energy vision, assessing energy needs and resources, developing specific goals and prioritizing projects and programs. Tribal Citizens expressed a desire for Gun Lake Tribe to generate clean, renewable energy to offset the use of electricity in high energy use buildings, such as the casino and future hotel. Significant efforts have already been made to increase energy efficiency in Tribal buildings including the retrofit all lights to LED, improvements to the building management system and the proposed installation of radiant heat-reducing films on windows. Based on the success of these efforts, Gun Lake Tribe citizens would like to identify additional opportunities for energy use reduction.

Gun Lake Tribe citizens recommended the addition of electric vehicle (EV) chargers at the Government Campus. The Tribe plans for installing EV chargers at the casino garage and at the Noonday Gas Station. The Tribe is interested in transitioning the Tribal fleet to EV vehicles. It was also strongly recommended that additional solar energy projects be installed at all Tribal properties.

Further recommendations included:

- *The Workgroup indicated a desire to attract environmentally friendly businesses as part of Gun Lake Tribe's economic development and provide support for current businesses to become more energy efficient.*
- *Gun Lake Tribe has already established a Tribal Utility Authority and is installing water infrastructure. The Workgroup is interested in potentially expanding this to include energy infrastructure.*
- *The Workgroup identified the need to find a more environmentally friendly source for battery storage, which is required for operations and maintenance of the critical facilities. Additionally, there is interest in reducing dependence on outside partners for energy resilience.*
- *The strategic energy planning process also identified other opportunities to reduce emissions such as conversation of food waste, recycling and better waste management.*
- *Balancing potential renewable energy activities with the protection of cultural and natural resources that are important to the Tribe; incorporating larger conservation efforts that complement the SEP.*

8.2 Benefit of Selected Projects

The majority of Gun Lake Tribe's GHG emissions are from the purchase of electricity in the commercial sector. Switching to renewable sources of electricity would be the first choice to reduce GHG emissions. Based upon SEP meetings and the Tribal Climate Resilience Workgroup the Tribe prefers projects that lead to energy independence. Gun Lake Tribe has selected the following projects for implementation provided that funding is available.

Solar Array to Generate Energy at the Government Campus: 962.98 MT CO2e per year

Per the Greenhouse Inventory and the PCAP the Tribe will pursue funding to install solar arrays be installed at the Government Campus to replace electricity currently purchased from the local utility. A 1,061.4 kW DC PV Solar Array has been recommended and preliminary cost information has been made available.

Solar Array to Generate Energy at the Luella Collins Community Center: 139.3 MT CO2e per year

Per the Greenhouse Inventory and the PCAP the Tribe will pursue funding to install a solar array at the Luella Collins Community to replace electricity currently purchased from the local utility. A 100kW PV Solar Array has been recommended and preliminary cost information has been made available.

Solar Array to Generate Energy at the (being-constructed) wastewater plant: 574.5 MT CO2e per year

Per the Greenhouse Inventory and the PCAP the Tribe will pursue funding to install a solar array at the being-constructed wastewater plant to replace electricity currently purchased from the local utility. A 700kW PV Solar Array has been recommended and preliminary cost information has been made available.

Purchase Two EV Shuttle Buses for Gun Lake Casino Use: 1 MT CO2e per year

There are public chargers currently available at the Casino and it was suggested that two EV shuttle buses be purchased for use. This would eliminate approximately 1 MT CO2e per year in GHG emissions.

Install Solar Arrays at the Jijak property: 48 MT CO2e per year

Gun Lake Tribe has plans to install a 69 kW of solar panels at Jijak (through a Department of Energy grant) to allow generation of its own electricity. Emissions would be reduced by 48 MT CO2e after this project is installed in the fall of 2024.

Energy Efficiency Projects at Residents and Government Buildings: Various

It was recommended that additional energy efficiency measures be implemented. Gun Lake Tribe has retrofitted LED lights at the Casino and at all government buildings, but there are additional energy efficiency options that can be implemented. Gun Lake Tribe leadership is pursuing the establishment a program to improve energy efficiency at all Government Buildings and to assist the Tribe's citizens to improve energy efficiency.

Install EV Chargers and Purchase EV Vehicles for Fleet: 130.70 MT CO2e per year

If the vehicles owned by Gun Lake Tribe were replaced with EV vehicles, emissions would be reduced by 130.70 MT CO2e per year. Per the Climate Resiliency Workgroup, the Tribe will pursue electrifying the fleet through grant applications.

Energy Efficiency Projects at Residents and Government Buildings: 196 MT CO2e

The workgroup recommended that additional energy efficiency measures be implemented. In particular, emissions associated with burning natural gas can be reduced by replacing furnaces and heaters with electric ones. For example, emissions are reduced by 44% per year, while costs of operating are reduced by 39% after whole home electrification[2]. Rebates are available from utility providers to make these projects more cost-effective.

Most natural gas utilities will convert to renewable natural gas by 2040 or natural gas will no longer be available. As a result, electrification of buildings is also recommended as a way to reduce GHG emissions, save money and prepare for

the future.

2
https://public.tableau.com/app/profile/nrel.buildingstock/viz/StateLevelResidentialBuildingStockandEnergyEfficiencyElectrific ationPackagesAnalysis/Introduction

These measures will significantly reduce greenhouse gas emissions from one or more of the following key sectors highlighted by the EPA: stationary combustion, transportation, electricity usage, buildings, agricultural and natural lands or waste management on Tribal properties and land. These measures were all suggested or supported by the Tribal Council and Citizens and align with the existing CAP, SEP and aim to improve waste management, sustainability, economic development, transportation, reduce long-term energy costs, reduce dependency on outside partners for energy, resilience to climate change and creation of good jobs.

8.3 Air Quality and Other Benefits from Greenhouse Gas Reductions

Additional air quality and health benefits will occur as stationary combustion sources providing heat located within the Tribe are replaced. Area emissions will be reduced as fossil fuel-fired electric generators are replaced with renewable sources of energy. Tribal Citizens will see these direct benefits:

- Elimination of carbon monoxide poisoning in homes from natural gas-fired heating equipment.
- Reduction in tail pipe emissions in and around Tribal buildings.
- Installation of solar arrays on residential or commercial buildings will reduce operating costs.

In addition to the direct benefit of emissions reductions, the Priority Measures have the added benefit of getting closer to achieving Gun Lake Tribe's Energy Vision Statement and the core values of Gun Lake Tribe.

Gun Lake Tribe's Energy Vision Statement (2024 Strategic Energy Plan) states:

"Gun Lake Tribe will honor those who walked before us and the next seven generations by strengthening our sovereignty through self-sufficiency with thoughtful, responsible energy and conservation practices."

9.0 Priority Measures

Priority GHG reduction measures selected were based on GHG emission information and focused on achieving the most significant GHG reductions possible, while considering other relevant planning goals and Gun Lake Tribal Citizen input. GHG reduction measures may include both measures that reduce GHG emissions and/or measures that enhance carbon sinks and provide other benefits as identified in Section 8.0. Government grants will be applied for to fund project implementation affecting which projects are executed.

After reviewing recommendations from the SEP and opportunities for GHG reduction, the following priority measures have been identified:

1. Improve Energy Efficiency at all Government buildings and the Casino
2. Expand the Availability of Renewable Energy and Improving Energy Independence
3. Improve Access to EV Vehicles and Chargers
4. Implement Recycling Programs and Reduce Food Waste
5. Manage Tribal Lands to Enhance their Use as a Carbon Sink

APPENDIX 1

Inventory Emissions Summary

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Please use the drop-down menu in the Scope 2 Emissions Selection box to determine which scope 2 emissions methodology is used in the summary

Scope 2 Emissions Selection: Market Based

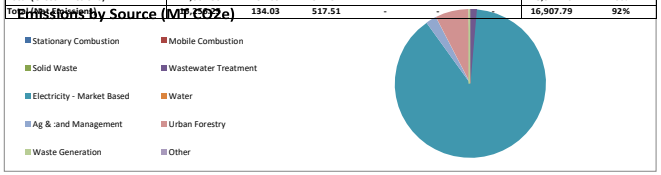
- Per capita Emissions for Gun Lake Tribe (MT CO2e/person)

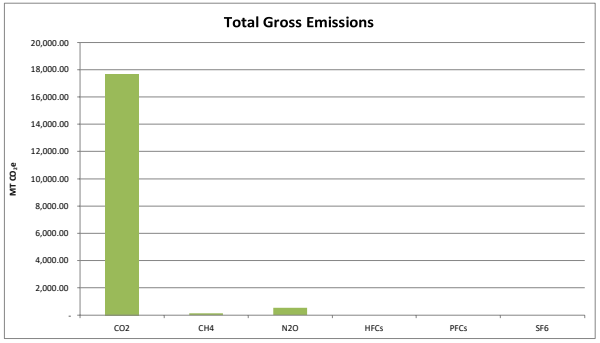
Total Gun Lake Tribe Emissions (MT CO2e)

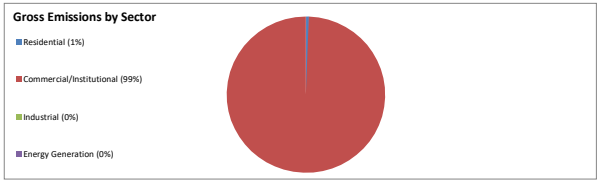
	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total MT CO_2e	Percent of Total
Scope 1	254.55	14.02	0.10	-	-	-	268.66	1%
Scope 2 - Location Based	17,408.01	46.17	60.80	-	-	-	17,514.97	
Scope 2 - Market Based (for informational purposes only)	17,408.01	46.17	60.80				17,514.97	96%
Scope 3	-	-	-	-	-	-	-	0%
Total Gross Emissions	**17,662.56**	**134.03**	**517.51**	**-**	**-**	**-**	**18,314.10**	**97%**
Total Net Emissions	**16,256.25**	**134.03**	**517.51**	**-**	**-**	**-**	**16,907.79**	**97%**

Emissions by Source (MT CO_2e)

Source	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total	Percent of Total
Stationary Combustion	195.11	0.49	0.10	-	-	-	195.70	1%
Mobile Combustion	59.44	-	-	-	-	-	59.44	0%
Solid Waste	-	-	-	-	-	-	-	0%
Wastewater Treatment	-	13.53	-	-	-	-	13.53	0%
Electricity - Location Based	17,408.01	46.17	60.80	-	-	-	17,514.97	
Electricity - Market Based (for informational purposes only)	17,408.01	46.17	60.80				17,514.97	96%
Water	-	-	-	-	-	-	-	0%
Ag & Land Management	-	-	456.62				456.62	2%
Urban Forestry	(1,406.30)	-	-				(1,406.30)	-8%
Waste Generation	-	73.84	-				73.84	0%
Total (Gross Emissions)	**17,662.56**	**134.03**	**517.51**	**-**	**-**	**-**	**18,314.10**	**100%**
Total (Net Emissions)	**16,256.25**	**134.03**	**517.51**	**-**	**-**	**-**	**16,907.79**	**92%**

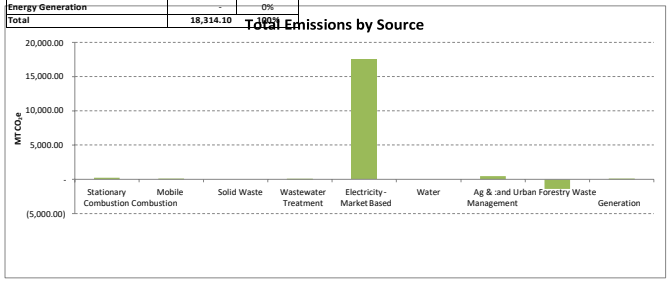


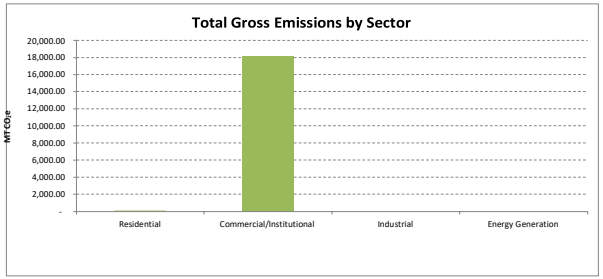




Gross Emissions by Sector

Sector	Total (MT CO_2e)	Percent of Total
Residential	100.56	1%
Commercial/Institutional	18,213.54	99%
Industrial	-	0%
Energy Generation	-	0%
Total	**18,314.10**	100%





Total Emissions by Sector and Source (MT CO_2e)

Sector	Stationary	Electricity	Mobile	Solid Waste	Waste water	Water	Agriculture & Land Management	Urban Forestry	Other	TOTAL GROSS	TOTAL NET
Residential	-	96.87	-	3.69	-	-	-	(70.65)	-	100.56	29.91
Commercial/Institutional	195.70	17,418.11	59.44	70.15	13.53	-	456.62	(1,335.66)	-	18,213.54	16,877.88
Industrial	-	-	-	-	-	-	-	-	-	-	-
Energy Generation	-	-	-	-	-	-	-	-	-	-	-
Total	195.70	17,514.97	59.44	73.84	13.53	-	456.62	(1,406.30)	-	**18,314.10**	**16,907.79**

APPENDIX 2

GHG Emission Summary

Gun Lake Tribe Greenhouse Gas Emission Inventory

Gun Lake Tribe

	Electric Emissions (Consumers)				Natural Gas Emissions (DTE)				Vehicle & Equipment Emissions				Total Emissions			
Building/Source	CO2 (MT)	CH4 (MT)	N2O (MT)	CO2e (MT)	CO2 (MT)	CH4 (MT)	N2O (MT)	CO2e (MT)	CO2 (MT)	CH4 (MT)	N2O (MT)	CO2e (MT)	CO2 (MT)	CH4 (MT)	N2O (MT)	CO2e (MT)
GLI 1300 Front Ave Building	11.5	1.1E-03	1.5E-04	11.61	50.2	9.5E-04	9.5E-05	50.2	-	-	-	-	61.7	2.04E-03	2.47E-04	61.8
GLI 1150 129th Ave - Noonday Market	179.9	1.7E-02	2.4E-03	181.02	9.3	1.7E-04	1.7E-05	9.3	-	-	-	-	189.2	1.72E-02	2.39E-03	190.3
Health & Human Services - Government Campus Building A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	0.00E+00	-
Administration - Government Campus Building B	-	-	-	-	34.1	6.4E-04	6.4E-05	34.1	-	-	-	-	34.1	6.43E-04	6.43E-05	34.1
Public Safety - Government Campus Building C	-	-	-	-	20.8	3.9E-04	3.9E-05	20.8	-	-	-	-	20.8	3.92E-04	3.92E-05	20.8
Tribal Court- Government Campus Building D	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00E+00	0.00E+00	-
Public Works - Government Campus Building E	957.0	9.1E-02	1.3E-02	962.98	35.6	6.7E-04	6.7E-05	35.6	-	-	-	-	992.5	9.13E-02	1.27E-02	998.6
Luella Collins Community Center 419 126th Avenue	-	-	-	-	46.3	8.7E-04	8.7E-05	46.4	-	-	-	-	46.3	8.73E-04	8.73E-05	46.4
Luella Collins Community Center	92.4	8.7E-03	1.2E-03	92.93	-	-	-	-	-	-	-	-	92.4	8.75E-03	1.22E-03	92.9
Waste Water Facility (under-construction)	574.5	5.4E-02	7.6E-03													
Casino Sign	63.5	6.0E-03	8.4E-04	63.89	-	-	-	-	-	-	-	-	63.5	6.01E-03	8.37E-04	63.9
Gun Lake Casino	14,952.5	1.4E+00	2.0E-01	15,046.65	-	-	-	-	-	-	-	-	14,952.5	1.42E+00	1.97E-01	15,046.7
Streetlights	1.4	1.3E-04	1.8E-05	1.36	-	-	-	-	-	-	-	-	1.4	1.28E-04	1.78E-05	1.4
701 127th Avenue	6.6	6.2E-04	8.7E-05	6.63	-	-	-	-	-	-	-	-	6.6	6.24E-04	8.68E-05	6.6
2801 Odawa Trail	0.9	8.6E-05	1.2E-05	0.91	-	-	-	-	-	-	-	-	0.9	8.60E-05	1.20E-05	0.9
All Settlement Homes	93.3	8.8E-03	1.2E-03	93.86	-	-	-	-	-	-	-	-	93.3	8.83E-03	1.23E-03	93.9
1180 129th Avenue	1.0	9.1E-05	1.3E-05	0.96	-	-	-	-	-	-	-	-	1.0	9.08E-05	1.26E-05	1.0
2040 126th Avenue	0.1	1.4E-05	1.9E-06	0.14	-	-	-	-	-	-	-	-	0.1	1.35E-05	1.88E-06	0.1
2044 126th Avenue	3.9	3.7E-04	5.1E-05	3.90	-	-	-	-	-	-	-	-	3.9	3.67E-04	5.11E-05	3.9
2558 20th Street	1.6	1.6E-04	2.2E-05	1.65	-	-	-	-	-	-	-	-	1.6	1.55E-04	2.16E-05	1.7
2558 20th Street B	41.4	3.9E-03	5.5E-04	41.67	-	-	-	-	-	-	-	-	41.4	3.92E-03	5.46E-04	41.7
2562 20th Street	0.7	6.8E-05	9.4E-06	0.72	-	-	-	-	-	-	-	-	0.7	6.77E-05	9.42E-06	0.7
3138 10th Street	3.0	2.8E-04	4.0E-05	3.03	-	-	-	-	-	-	-	-	3.0	2.85E-04	3.96E-05	3.0
1123 129th Avenue (Temp)	121.3	1.1E-02	1.6E-03	122.08	-	-	-	-	-	-	-	-	121.3	1.15E-02	1.60E-03	122.1
Vehicles & Equipment (All)	-	-	-	-	-	-	-	-	126.6	0.00	0.00	0.13	126.6	2.19E-05	1.21E-05	0.1
Total Emissions	17,106.4	1.62	0.23	16,636.00	196.3	0.004	0.000	196.5	126.6	0.00	0.13	0.13	16,854.7	1.6	0.2	16,832.6