Blackfeet Indian Tribe - Priority Climate Action Plan

Prepared for:
U.S. Environmental Protection Agency,
Region VIII, Climate Pollution Reduction
Grant Program

Prepared By:
Blackfeet Indian Tribe – Environmental
Program
Blackfeet Tribe
62 Hospital Drive
P.O. Box 2029
Browning, Montana 59417

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Table of Contents

1.0 Introduction

The Blackfeet Indian Tribe has developed this Priority Climate Action Plan (PCAP) to support investment in policies, practices, and technologies that reduce pollutant emissions, create high-quality jobs, spur economic growth, and enhance the quality of life for all Blackfeet Reservation residents. Developed through the Climate Pollution Reduction Grant (CPRG) Planning Grant, this Priority Climate Action Plan intends to tackle damaging climate pollution, accelerate work to address environmental injustice, and empower community-driven solutions in Blackfeet Reservation communities.

The CPRG program supports the development of strategic plans for reducing Greenhouse Gas (GHG) emissions and implementation of projects that reduce GHGs and associated co-pollutants. The initial planning phase includes the development of a PCAP and Comprehensive Climate Action Plan (CCAP). This document serves as the Blackfeet Tribal Climate Pollution Reduction Project PCAP and contains the required elements including GHG emissions inventories, quantified emissions reduction measures, benefits analysis, and review of authority to implement.

1.1 Tribal history and Environmental Background

The Blackfeet Reservation is located in northwestern Montana and is bordered on the north by the Canadian province of Alberta and to the west by Glacier National Park. The reservation covers an area of 1,525,712 acres and is home to approximately 10,100 people. Of the 16,040 enrolled tribal members, approximately 8,500 live on the reservation. The majority of the land is high rolling plains and to a lesser degree Front Range mountains and foothills with much of the grassland being uncultivated short grass prairie. Grazing and timber harvest are dominant in the western part of the reservation, with grain production more important eastward.

The Blackfeet Reservation is dotted by numerous prairie pothole lakes, ponds and wetlands which are associated with the retreat of continental and mountain glaciers. Blackfeet lakes have a total surface area of approximately 11,102 acres with streams covering approximately 1,226 cold water acres of area.

The main environmental concerns vary from erosion and pollutants associated with agricultural activities, dewatering of streams, and habitat alteration to midnight dumping, illegal dumps polluting streams, impacts from oil and gas development, highway projects, leaking underground storage tanks, lead and asbestos exposure and black mold.

The mission and goals of the Blackfeet Environmental Office are to "Protect, preserve, and enhance the environment of the Blackfeet Reservation and carry out environmental stewardship through development and implementation of environmental policies and regulations." (Blackfeet Environmental Office website). These policies and regulations were and are being developed to protect the health and welfare of the people, and the reservations' natural and ecological resources.

The Amskapi Pikuni (Blackfeet) are the southernmost members of an independent confederation of four Blackfoot warrior tribes of the Northern Plains. The four member-nations of the Blackfoot Confederacy, sovereign from north to south, are the Northern Piikani or AapatohsiPiikani, the Siksika (Siksikawa), the Kainai (all Chiefs or Blood) and the Amskapi Pikuni or Southern Pikuni. Of the four tribes of the Blackfoot Confederacy, the Amskapi Pikuni is the only tribe that was divided to the south by the foreign governments' decisions to create the United States border. Disparagingly, this isolated the Amskapi Pikuni from their relations to the north, straining or severing familial and community ties in the past in multi-variant ways.

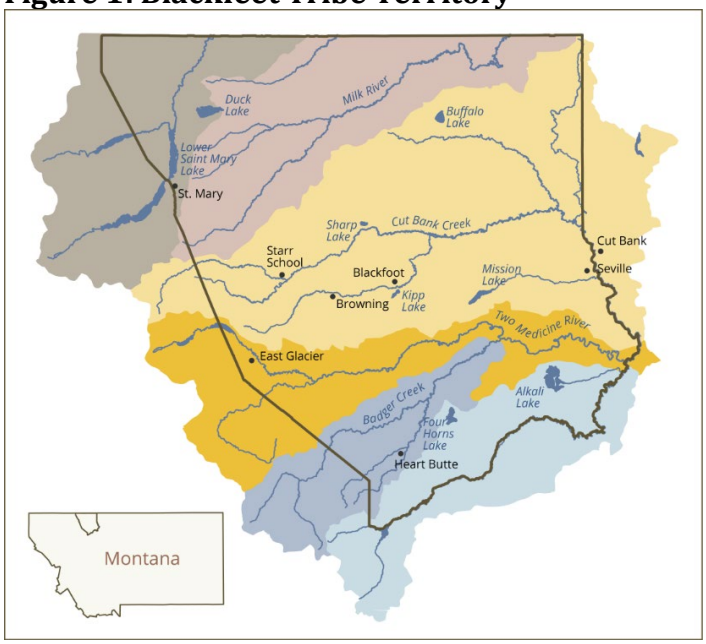
For thousands of generations the Amskapi Pikuni fiercely defended and enjoyed a vast region of territory with three other member tribes. The present boundaries of the Blackfeet Reservation, which encompasses over 1.5 million acres, are Alberta Canada to the north, The Rocky Mountains and Glacier Park to the west, The Bob Marshall Wilderness and Birch Creek to the South and Cut Bank Creek and the Marias River to the east. Traditionally The Blackfeet lands reached as far North as the Saskatchewan River, West to encompass the Rocky Mountains, South to the Missoula Hellgate Valley and east to the border of the Dakota, Lakota and Nakota tribal lands.

The Blackfeet (Amskapi Piikani) have long believed that we are the caretakers of the land and resources where we have resided for many thousands of years. To this day, we use this land for spiritual and cultural purposes. The Blackfeet Nation Strives hard to retain its culture in this modern era where impacts tour world are changing, and that we recognize we must adapt, and this plan will help guide us in that endeavor.

The Blackfeet Nation has an abundance of natural resources i.e. forestland, oil and gas reserves, wildlife, fish, water and vegetation and plants that serve our economic, social, cultural and spiritual needs. Our connection to the land and its resources is the basis from which we draw on for our cultural and spiritual needs. We hold many of our ceremonies out in the environment following the path laid down by our ancestors over thousands of years. We must hold on to these spiritual ties to the land and pass them on to our youth who are destined to become our future leaders and caretakers of the land.

We live in harmony with the land and environment and the sustenance that is provided by our lands, and with the gifts of life sustainability comes the responsibility to protect the land, water, and environment from which we maintain our livelihood. In this document, we hope to use the traditional ecological knowledge of our elders who have lived long lives and have seen the changes over time and can share their experiences of survival overtime to assist in the Priority Climate Action Plan. Shown below in Figure 1 is a map of the Blackfeet Tribe reservation in Montana.

Figure 1: Blackfeet Tribe Territory



At this eastern boundary of the Blackfoot Confederacy homelands, going due north past the Sweet Grass and Cypress Hills, and the Medicine Line or Kaayih kimi koyii (United States-Alberta-Saskatchewan borders), our territories rose up past what is now Hobbema, Alberta to the northernmost boundary set by the North Saskatchewan River.

The Blackfeet Nation has approximately sixteen thousand enrolled members, and it is one of the 10 largest tribes in the United States. According to the 2011-2015 American Community Survey, approximately 11,000 people live within the Blackfeet Nation, though this estimate is disputed by some Tribal members. Almost 80% of people living in the Blackfeet Nation are American Indian, and the median age is 29.5. Covering over one million acres, the Blackfeet Nation is the third largest sovereign Tribal nation in the State by area, and tenth nation-wide. It has seven large communities: Browning, Heart Butte, East Glacier, Starr School, Babb, Blackfoot, and Seville.

1.2 PCAP Overview

The Blackfeet Tribe believes that it is in the best interests of the Blackfeet Reservation, its people, and its natural resources to develop a PCAP for GHG reduction to maintain the Blackfeet Nations most vulnerable ecosystems. Climate change and/or the rising heat is detrimental to Blackfeet lifeways.

The Blackfeet Tribal Business Council endorses and supports the development of the Blackfeet PCAP for submission to the EPA to compete for funding to reduce harmful GHG's on the Blackfeet Reservation.

The Climate Pollution Reduction Grants (CPRG) program provides $5 billion in grants to states, local governments, tribes, and territories to develop and implement ambitious plans for reducing greenhouse gas emissions and other harmful air pollution. Authorized under Section 60114 of the Inflation Reduction Act, this two-phase program provides $250 million for noncompetitive planning grants, and approximately $4.6 billion for competitive implementation grants. The purpose of this PCAP is to evaluate GHG emissions and identify reduction measures and recommendations to submit to EPA to compete for Climate Pollution Reduction funds.

Moving forward, the Tribe will strive to create an Intersection with Other Funding Availability and Workforce Planning Analysis. Doing so will maximize the possibility of developing in-house capacity on climate and GHG issues, both while developing the CCAP under this grant and hopefully in implementing other grants such as Phase 2 CPRG implementation grants. The Tribe's PCAP will include a greenhouse gas inventory, quantified greenhouse gas priority reduction measures, a benefits analysis, and a review of the authority to implement the Plan.

1.3 PCAP Approach

Due to the short timeframe available to complete this PCAP, the BEO did a limited amount of intergovernmental coordination and outreach in the development of this PCAP. Blackfeet Environmental Office (BEO) engaged the following tribal agencies in the development of this plan:

- The Blackfeet Tribal Business Council
- Bison Engineering, Inc.

• Blackfeet Climate Change Program

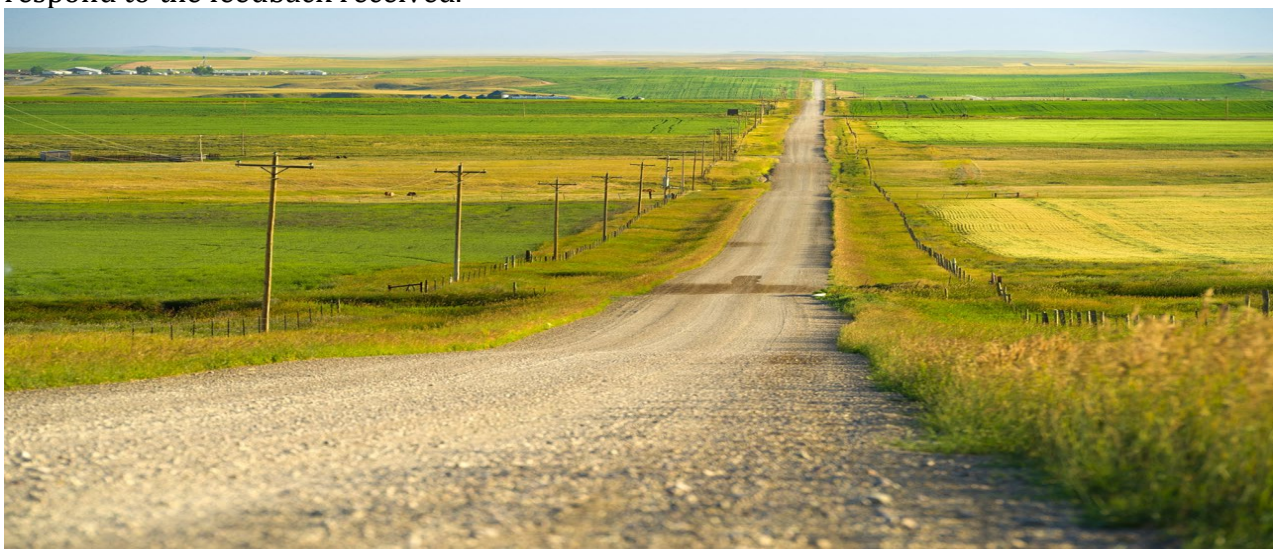
BEO also plans to solicit input from Tribe members and stakeholders including the NTAA (National Tribal Air Association Workgroup).

Stakeholders include:
• Environmental advocates
• Utilities
• Local elected officials
• Community-based organizations
• Other interested organizations; and
• Reservation residents.

The Blackfeet Environmental Office (BEO) worked with tribal consultant Bison Engineering to prepare the GHG Inventory and the subsequent selection and analysis of GHG reduction measures.

The BEO and Bison Engineering coordinated data collection from the Tribal agencies and suppliers most closely tied to the bulk of the Tribe's GHG emissions.
BEOsought voluntary disclosure of relevant data from non-governmental entities with relevant information.

Moving into the Comprehensive Climate Action Plan (CCAP) CPRG phases of the project the BEO Project Manager will utilize the support of the consultant as needed. It is the Tribe's goal to ensure the Tribal community is fully engaged and consulted throughout this process. The Tribe will engage the broader public (emphasizing Tribal members, on and off reservation, and non-member residents on the Reservation) through public meetings (in person and virtual) and opportunities for comment. The CCAP will summarize and, where appropriate, incorporate and respond to the feedback received.



2.0 Tribal Organization and Considerations

The Blackfeet Environmental Office (BEO) was created and located in Browning, Montana on the Blackfeet Reservation and serves as the governmental agency that regulates the environment on the Reservation for the benefit of the Tribe. The BEO includes several core program arms that actively manage and monitor air quality, surface and ground water, wetlands, non-point source pollution, environmental compliance, habitats, youth programs, brownfield assessments and mitigation, climate change adaptation, and reservation community education and advancement with the built and natural environment on the Blackfeet Reservation.

In 2016, the Blackfeet Nation commenced a climate change adaptation planning process, facilitated by the Blackfeet Environmental Office and the Center for Large Landscape Conservation. The planning process was guided by the Institute for Tribal Environmental Professionals' (ITEP's) Adaptation Planning Toolkit, and by the National Wildlife Federation's paper "Climate Smart Conservation: Putting Adaptation Principles into Practice". The planning process began with a review of climate change trends and predictions by Molly Cross, the Climate Change Coordinator for the North America Program of the Wildlife Conservation Society. Cross created a summary table of the predicted climate change impacts specific to the northwest Montana region. The project team presented the climate predictions summary table at a series of three information and planning meetings with resource management sectors: agriculture, culture, forestry, fish, wildlife, land and range, water, and human health; then the planning team facilitated discussions with managers and other experts to identify sector-specific impacts within the Blackfeet Nation. Participants in each sector were then guided through a process of identifying sector-specific vulnerabilities, using ITEP's Vulnerability and Risk Matrices and ITEP's Identifying Priority Planning Areas tool. From the identified impacts, the project team then worked with managers in each sector, often with in-person follow-up meetings, to create goals, strategies, and actions for climate change adaptation.

In addition to the planning work being carried out by sectors within the Blackfeet Nation, planning participants attended a variety of regional and national conferences addressing climate adaptation. Gerald Wagner (Blackfeet Environmental Office) and Melly Reuling (Center for Large Landscape Conservation) were invited to present on holistic climate adaptation planning on a plenary panel at the National Adaptation Forum in Minneapolis, Minnesota in April 2017. They also presented at the Roundtable on the Crown of the Continent Annual Conference and at other regional Climate Adaptation Planning meetings supported by ITEP. The Blackfeet Environmental Office, in collaboration with the Center for Large Landscape Conservation, received a Climate Impacts and Health grant from the National Indian Health Board to look at health-related impacts of climate change in January of 2017. This allowed attendance at the National Climate and Health Conference in Atlanta, Georgia in March of 2017.

Through these internal and external activities, the Blackfeet Nation is deliberately planning for the increasing impacts of climate change. With our leadership actively seeking to protect our communities and diverse ecosystems, we are leading the way for others looking to integrate climate adaptation planning.

This climate plan has been a timely effort in that it is informing the Blackfeet Agricultural Resource Management Plan, which is being developed concurrently. Both plans will then inform the Integrated Resource Management Plan which will be carried out over the next two years. The Blackfeet are successfully engaged in a holistic planning process that includes all parts of tribal government, while respectfully considering traditional values and a collective community vision for "our" future.

2.1 Tribal PCAP Management and Development Team

Blackfeet Tribal Environmental Program
- Gerald Wagner, Director
- Tony Sinclair, Air Quality Program Manager
- Mary Clare Weatherwax

Bison Engineering, Inc.
- Kellen Sullivan, Consulting Director

The BEO was created and located in Browning, MT on the Blackfeet Reservation and serves as the governmental agency that regulates the environment on the Reservation for the benefit of the Tribe. The BEO includes several core program arms that actively manage and monitor air quality, surface water, wetlands, and non-point source pollution. In addition, BEO does environmental compliance, brownfields assessments and mitigation, climate change adaptation, and reservation community education and advancement with the built and natural environment on the Blackfeet Reservation.

The Blackfeet Tribe has taken some steps toward securing green energy. One project is at the Heart Butte High School which has built a solar array to offset electrical costs. Another project is at Blackfeet Community College where the Math and Science building was constructed to be energy self-sufficient and is LEED certified.

2.2 Collaborations/Acknowledgements

We would like to acknowledge the assistance of the Blackfeet Air Quality Program, Bison Engineering and the EPA CPR Help Team in developing this document.

3.0 PCAP Elements

3.1 GHG Inventory

Bison Engineering aggregated various data points provided by the BEO and entered that data into the Tribal Greenhouse Gas Inventory Tool (TGIT) provided by the EPA. The generated data focuses on the reporting year of 2023 if data was available. The data and subsequent calculations are divided into three scopes.

Scope 1: all the direct emissions made on-site and controlled by the reservation.
Scope 2: all indirect emissions purchased from external sources by the reservation.
Scope 3: all other emissions associated with the reservation.

This section provides a narrative of methods used for the calculation of emissions and sinks on the Reservation in Browning, MT. The emissions inventory is organized by the following sources, where applicable: electricity use, point sources, non-point sources, on-road mobile sources, non-road mobile sources, agriculture and land management, solid waste generation, water imports, urban forestry, and wastewater processing. These sources may be made up of two sectors, for example, electricity consumption is broken down into Tribe and Private for residential sectors. The specific calculation methodology for each of these sectors can be found provided upon request, which displays calculations with the TGIT.

The quantified emissions are also categorized by the following sectors: Tribe and Private. The residential sector is comprised of only emissions related to the people living within the boundaries of the respective reservation. The electricity generation sector only includes emissions pertaining to the generation of electricity within the reservation boundaries. The Private/residential sector emissions are those which could not be easily separated into any of the above-mentioned sectors.

It is important to note that, due to the absence of some Reservation-specific data, numerous estimations were based on state, county or national averages across different sources and sectors. Although these estimates offer a provisional overview of emissions on the Reservation, it is advisable to enhance their accuracy by integrating more specific data as it becomes available for the CCAP.

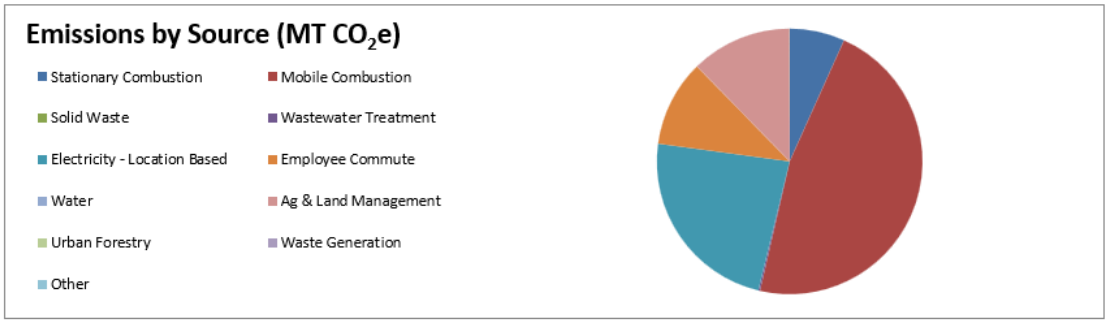
The results of the study show that collectively the Blackfeet Reservation is estimated to have emitted 103,810 metric tons of carbon dioxide equivalent (CO_2e) in the calendar year of 2023. See Figure 2 for emissions by source for the Blackfeet Reservation.

For context, 103,840 metric tons of CO_2e is equivalent to 24,714 gasoline-powered passenger vehicles driven for one year, 240,412 barrels of oil consumed, 571 railcars' worth of coal burned, or 114,439,638 pounds of coal burned.

Figure 2: Emissions by Source (MT CO_2e) for the Blackfeet Reservation

Total Emissions (MT CO_2e)								
	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total MT CO_2e	Percent of Total
Scope 1	55,646.90	224.47	4.05	-	-	-	55,875.42	54%
Scope 2 - Location Based	24,110.98	61.70	80.55	-	-	-	24,253.22	23%
Scope 2 - Market Based (for informational purposes only)	24,110.98	61.70	80.55				24,253.22	
Scope 3	10,944.35	-	12,737.59	-	-	-	23,681.94	23%
Total Gross Emissions	**90,731.66**	**286.17**	**12,822.19**	-	-	-	**103,840.03**	**100%**
Total Net Emissions	**90,702.23**	**286.17**	**12,822.19**	-	-	-	**103,810.59**	**100%**

Emissions by Source (MT CO_2e)								
Source	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total	Total
Stationary Combustion	6,958.03	17.30	3.48	-	-	-	6,978.82	7%
Mobile Combustion	48,688.86	0.07	0.57	-	-	-	48,689.50	47%
Solid Waste	-	-	-	-	-	-	-	0%
Wastewater Treatment	-	207.10	-	-	-	-	207.10	0%
Electricity - Location Based	24,110.98	61.70	80.55	-	-	-	24,253.22	23%
Electricity - Market Based (for informational purposes only)	24,110.98	61.70	80.55				24,253.22	
Employee Commute	10,973.79	-	-	-	-	-	10,973.79	11%
Water	-	-	-	-	-	-	-	0%
Ag & Land Management	-	-	12,737.59				12,737.59	12%
Urban Forestry	(29.44)	-	-				(29.44)	0%
Waste Generation	-	-	-				-	0%
Total (Gross Emissions)	**90,731.66**	**286.17**	**12,822.19**	-	-	-	**103,840.03**	**100%**
Total (Net Emissions)	**90,702.23**	**286.17**	**12,822.19**	-	-	-	**103,810.59**	**100%**



The majority of the CO_2e emissions were from three main sources: mobile combustion 47%, electricity consumption 23%, and agriculture and land management 12%. Stationary combustion, employee commute, and wastewater treatment combined account for 18% of total CO_2e.

Scope 1 Emissions

Stationary Combustion Emissions:

The Blackfeet Reservation has one stationary combustion source that has permitted natural gas consumption in order to service natural gas to Montana residents for heating and residential use. The 2023 natural gas consumption for the natural gas compressor station is measured in thousand cubic feet (MCF). The total natural gas usage for 2023 was 126,920 MCF, which produced 6,979 MT CO_2e in 2023.

Mobile Combustion Emissions:

Accounting for the total annual miles driven by the Blackfeet Reservation residents in an

official capacity within the reservation boundary for the year 2022 or 2023 is unattainable. Several factors prevent an accurate accounting including:

- Data is not accessible for the annual mileage for each vehicle so an average for Montana residents was utilized in calculating fuel type consumption on the Reservation. The average fuel consumption by fuel type incorporated gasoline by vehicle type and diesel for agricultural equipment.
- Vehicles are driven outside the reservation boundaries.
- Browning, MT and the Reservation is a tourist highway for Glacier National Park visitors.
- A list of approximately 500 "official use" Tribal vehicles was compiled.

The fuel type for each vehicle is estimated using the following methodology.

- All heavy-duty vehicles were assumed to be using diesel, and all passenger cars, light trucks, vans, and SUVs were assumed to be gasoline to complete the vehicle emissions calculations a statistical analysis was made to estimate the total fuel consumption on the Reservation. Approximately 3,500 registered vehicles registered in Glacier County, MT for 2023 were used to calculate mobile combustion greenhouse gas emissions.

The total annual estimated miles driven for the year 2022 was 287,965 miles which produced emissions of 152.2 MT CO_2e. The 2023 Census data was not available to capture the miles driven for emissions inventory purposes.

It is recommended that the Tribal government keeps track of the annual mileage for each vehicle. This will reduce some of the potential errors in the statistical estimation in the future.

<u>Wastewater Emissions:</u>

The TGIT wastewater CO_2e calculation is based on the number of people using the single wastewater system type. The single system type was calculated as a septic tank system for all wastewater sent to the Blackfeet Wastewater Treatment Plant. The Blackfeet Wastewater Treatment Plant was calculated as an aerobic system in the TGIT system as the system is constructed with primary, secondary, tertiary lagoons before flowing into a small building with UV treatment before discharge. The Blackfeet Wastewater Treatment Plant serves the Browning, MT population while the rest of the population is assumed to use septic systems. Therefore, septic system emission factors were applied. The following calculation is used for the total reservation population listed in the Control Sheet of the TGIT to the number of people served that would be equivalent to using the wastewater system continuously.

Figure 3: Wastewater Emissions for the Blackfeet Reservation

GHG Emissions Summary	
	MT CO_2e
CO_2	-
CH_4	207.10
N_2O	-
Total Emissions from Wastewater Treatment	**207.10**

LGOP Equation 10.6 - Fugitive CH_4 Emissions from Septic Systems (default BOD_5 load)								
Population Served by Septic Systems	× Default BOD_5 Load (kg BOD_5/day)	× Maximum CH_4 Production Capacity (kg CH_4/kg BOD_5)	× Septic CH_4 Correction Factor	× day/yr	× MT/kg =	**MT CH_4**	× GWP =	**MT CO_2e**
750	0.09	0.6	0.5	365.25	0.001	7	28	**207**

The majority of approximately 11,213 people are assumed to be served by the Blackfeet Wastewater Treatment Plant, which generates negligible amounts of CO_2e in 2023. The remaining population on the Reservation utilizes septic systems (approximately 750 people), which produced 207.10 MT CO_2e in 2023. The wastewater emissions produce exclusively methane emissions.

Scope 2 Emissions

Electrical Consumption Emissions:

The Blackfeet Reservation has approximately 3,385 residential homes with an average of 4.08 individuals per household that have electrical connections all served by Glacier Electric Cooperative. The total electrical usage for 2023 was approximately 83,762,504 kilowatts per hour (kWh) which produced 24,253 MT CO_2e.

The NWPP eGRID Subregion utilizes 638.34 CO_2e per megawatt per hour for a total emissions factor in the TGIT. This emission factor is provided by the EPA and is built into the TGIT calculator.

Scope 3 Emissions

Solid Waste Emissions:
The solid waste for the Blackfeet Reservation for 2023 is reported as 0.0 MT CO_2e as the Blackfeet solid waste landfill was closed in 2005. All solid waste from the Reservation is sent to a landfill in Valier, MT. The solid waste is transported outside of the reservation

boundaries.

Agriculture and Land Management Emissions:
The Blackfeet Reservation has approximately 322,000 harvested cropland acres per the 2017 Census of Agriculture. The emissions for agricultural equipment are captured in the mobile consumption emissions. The TGIT requires input for fertilizer consumption data for the Reservation for synthetic, organic, and manure fertilizer. Since fertilizer use is not a requirement to report, accurate data was impossible to gather. However, fertilizer consumption data was assumed 100 pounds fertilizer consumed per harvested cropland acre. The consumption rate was converted to short tons per fertilizer estimate. The majority of fertilizer used on the Reservation is synthetic, which when applied volatilizes into the atmosphere in the form of nitrous oxide.

The Reservation Scope 1, 2, and 3 GHG emissions are displayed in Figure 2 above.

3.2 GHG Reduction Measures and Benefits Analysis

The preceding inventory shows a not-unexpected distribution of GHG emissions. The following Priority Actions are targeted to address these same GHG emission sources.

Priority Action 1: Reduction of Large-Scale Transportation Emissions by Replacing Tribally Owned Fleet Vehicles with Hybrid and Electric Vehicles and Installation of EV Charging Stations

Description: The Blackfeet Reservation is located on the eastern border of Glacier National Park and experiences a large increase in summer vehicle traffic from the three million annual Park visitors. Based on the current GHG inventory 48,690 MT CO2e of the Tribe's total emissions are due to vehicle emissions. The Blackfeet Indian reservation is a remote, low-density area requiring significant travel times.

The Tribal government is interested in phasing in electric, hybrid, biodiesel, and potentially compressed-natural gas/methane fleet vehicles. Large trucks may not be available as electric/hybrids, but propane, compressed natural gas, or biodiesel may be feasible. The Tribe will add electrical charging infrastructure at public buildings, supporting further private adoption of electrical vehicles.

The Tribe buys fleet vehicles regularly, as needed, but cannot afford to replace their 500+ vehicle fleet more rapidly without assistance.

Impact/Metrics: Directly quantifiable GHG reduction in replacement of gasoline fleet vehicles with established and emerging alternative fuel technologies.

Time Frame: Ongoing as fleet vehicles require replacement.

Priority: Top Priority. Nine out of ten.

Priority Action 1 Benefits Analysis:

Direct benefits:

- Reduce GHG emissions due to gasoline use.

Co-benefits:

- Provide more diverse skillset/training for fleet vehicle mechanics and maintenance staff.
- Provide public infrastructure for alternative fuel vehicles.
- Encourage EV use by demonstrating their viability.

Priority Action 2: Community-Scale Renewable Energy with Pilot Project Micro-Grid Distribution

Description:

Working in partnership with solar for All put in a micro-grid in Heart Butte or another one of the smaller Reservation communities.

Currently the Blackfeet Tribe depends on electricity provided by Glacier Electric Cooperative. The Tribe is interested in community scale photovoltaic arrays to minimize their GHG impact and provide affordable, reliable power for their needs.

A microgrid is a local energy network that can operate independently or in parallel with the main power grid. The system will consist of a group of interconnected distributed energy resources (DERs), including solar panels, battery storage, and backup generators, that can generate, store, and distribute electricity within a defined geographic area.

This microgrid and renewable energy generation resources will offer some measure of energy independence, increasing resiliency, and reducing periods without basic utility needs. This is a direct public health issue. Power outages on the reservation quickly become dangerous due to the below average quality housing and the demanding Montana climate. The Blackfeet live in an Environmental Justice Disadvantaged Community, as identified by the EPA.

There are a range of regulatory and coordination issues the Blackfeet and their consultant team will navigate to build, own and operate microgrids. These include:

- Environmental permitting to assess the existing conditions and suitability of a given site to house energy facilities.
- Archaeological and historic preservation studies and approvals will be undertaken to ensure cultural sites are avoided and respected.
- Electric utility interconnection studies to ensure the new energy generation does not have a negative impact on existing grid services.

Impact/Metrics: Directly quantifiable reduction in high GHG grid supplied electricity by replacement with established renewable energy technology. Every watt produced by the PV array will replace a watt of power from grid sources.

Time Frame: Immediate. Begin project implementation process leading to design immediately

following the award of federal funding, ideally the CPRG Implementation Grant and construction as soon as possible thereafter.

Priority: First Priority. Ten out of ten.

Priority Action 2 Benefits Analysis:

Direct GHG benefits:

- Create renewable energy sources.
- Reduce GHG impacts of electricity use.

Co-benefits:

- Reduce public health risks from power outages.
- Provide resilient, local, affordable power systems.
- Create construction jobs.
- Workforce training in the emerging green energy tech sector.
- Reduce utility bills of impoverished community.

Priority Action 3: Weatherize All Reservation Homes

Description: Many of the Blackfeet buildings on the Reservation do not adequately protect their occupants from the long, harsh Montana winters, potential major storm events, or internal pollution sources (woodburning, cooking and other appliances, finish materials, mold, etc.). This is both an energy use issue and a critical public health issue. The Blackfeet Tribe, and its members, are identified by the EPA as an Environmental Justice Disadvantaged Community.

Based on the current GHG inventory almost one-fourth of the Tribe's $C0_2e$ emissions are from home building electricity and heating needs. Reducing building energy use is one of the Tribe's highest priorities.

The Tribe owns and administers approximately 600 low-income housing units, and there are over a thousand privately owned residences on the Reservation. Every single Blackfeet family would benefit from a home inspection focused on improving the buildings insulation, air sealing, and water proofing systems. The Tribe will manage follow-up action on priority issues, assuring completion and quality.

Following inspection and weatherization the Tribe will promote adoption of air source heat pump heating systems and high efficiency electrical appliances for homes in need. This Action item is symbiotic with the electrical service improvements suggested in Priority Action 2.

The Tribe has proposed developing new, highly insulated, high-performance, affordable renovations for community members. The home renovations would respond to the specific needs of the Blackfeet Tribe in several ways, including but not limited to:

- Unique tribal needs would be considered to create housing types that allow for multi-generational families to share a safe, warm home. Aging-in-place and universal

accessibility guidelines will be considered.

- Climate-specific, high performance easily built building envelopes will be designed to provide the most economically feasible response to the demands of the Northwestern Montana climate.
- High efficiency, non-fossil-fuel heating and ventilation systems will be used to minimize energy use. The design will follow Passive House (PHIUS) strategies and recommendations, reducing energy use by up to 85 percent (https://www.phius.org/passive-building/what-passive-building/passive-building-principles). (One of the main benefits of Passive House design is that the highly insulated, low energy use buildings can more easily "ride out" power failures during inclement weather by minimizing heat energy losses to the exterior. This is a major public health issue on the reservation throughout the long winter season).
- Partner with the Tribe, the Blackfeet Indian Housing Authority, and the Planning Department to develop community amenity buildings that support families and aging populations such as daycare and community buildings. Locate these buildings to promote local development density and minimize driving.
- Construction methods for combining the advantages of prefabrication with site specificity will be explored. Creating long-term, skilled, on-reservation jobs is a priority. This project may provide a toehold in the burgeoning pre-fabricated building industry.

Impact/Metrics: Benchmark data for residential energy use is difficult to quantify for many reasons, including individual privacy rights. During the design phase the team will use advanced building science calculations to estimate (1) both the energy use of the proposed design, and (2) that of a typical existing home, quantifying the annual electrical and fossil fuel savings of the proposed design, and its GHG reduction.

Time Frame: Immediate. Begin design as soon as is possible following award of federal funding, ideally the CPRG Implementation grant. Begin construction as early as possible thereafter.

Priority: High priority. Ten out of ten.

Priority Action 3 Benefits Analysis:

Direct GHG benefits:

- Reduce inefficient electrical usage, deploy high efficiency electrical HVAC systems and appliances
- Eliminate propane/natural gas usage for new homes
- Reduce inefficient electrical usage, deploy high efficiency electrical HVAC systems and appliances

Co-benefits:

- Increase community health through improved resiliency, and less dependence on existing grid power
- Increase community health through improved indoor air quality
- Create construction jobs
- Workforce training in emerging technologies

- Provide non-traditional, multi-generational housing opportunities
- Provide new, desirable housing within the community
- Lower utility bills of impoverished community

Priority Action 4: Exchange Uncertified Wood Burning Stoves for EPA Certified Wood Stoves

Description: The GHG inventory does not account for CO_{2e} generated from the wood fired stoves. As discussed in the description of Priority Action 3; adequate, safe, warm homes are a major public health issue on the Reservation. Inadequate and faulty wood-burning stoves are part of this health threat.

The Tribe owns and administers approximately 600 low-income housing units, and there are over a thousand privately owned residences on the Reservation. Many of the homes on the Reservation are heated by wood-burning stoves. Many of these stoves are old and inefficient, and can contribute to respiratory illnesses in Reservation residents, mainly our elders and children. In addition, they emit particulate matter that is also hazardous to human health. Because of the rural nature of the Reservation and the fact that burning wood is the cheapest source of heat, it is often the choice of Reservation residents. Installing new certified wood burning stoves will dramatically reduce the indoor and outdoor air pollution that comes from burning wood.

Impact/Metrics: The metric used by the Tribe to measure the success of this action will be the total number of residential units that have been inspected for faulty wood stoves and replaced or renovated with an EPA-certified stove or standards. All homeowners who consent to an inspection should have one.

Time Frame: Immediate. Begin stove inspections as soon as possible following award of federal funding, ideally the CPRG Implementation Grant. Begin replacements/renovations as quickly as possible thereafter.

Priority: High priority. Ten out of ten.

Priority Action 4 Benefits Analysis:

Direct GHG benefits:
- Reduce GHG emissions by increasing the efficiency of wood combustion
- Reduce propane/natural gas usage
- Reduce electricity consumption for home heating

Co-benefits:
- Increase residential health through improved interior temperature regulation
- Increase residential and community health through improved indoor air quality
- Create installation jobs

- Workforce training in emerging technologies
- Reduce utility bills of impoverished community

3.3. Review of Authority to Implement

The BEO has reviewed existing statutory and regulatory authority to implement each priority measure continued in this PCAP. For any priority measure where authority must still be obtained, this section contains a schedule of milestones for actions needed by key entities for obtaining any authority needed to implement such measure(s).

The Blackfeet Tribe, as a sovereign, federally recognized Indian nation has the authority, to enact GHG reduction measures on the Blackfeet Reservation for the benefit of the Tribe's members. The BEO and Tribal Council was included in the development of the PCAP and helped to develop the GHG reduction measures through key stakeholders' meetings, so it is reasonable to assume that the Council would pass resolutions to carry out these measures as many of the measures were identified at the Council's direction. However, unless the Tribe chooses to enact changes to Reservation-wide housing policies, the Tribe must work with on-Reservation homeowners to encourage participation with implementing building retrofits and energy conservation measures, likely involving incentives to encourage participation in implementation. For all reduction measures covered under the goal of reducing energy consumption from buildings, progress will be tracked by quantifying emissions savings from the implementation of building efficiency measures. The implementation schedule of such measures will be identified and directed by individual Tribal CPRG Implementation Grant applicants.

In furtherance of this authority, the Blackfeet Tribe Code affords many governmental departments the authority to carry out the specific GHG reduction measures identified in this PCAP. Where a project occurs within the Blackfeet Reservation for the benefit of the Tribe's members the Tribe, its Council, and its governmental departments have broad authority to carry out these measures.

For all reduction measures covered under the goal of reducing emissions from vehicles, progress will be tracked by quantifying emissions savings from the implementation of mode-shifting and vehicle electrification. The implementation schedule of such measures will be identified and directed by individual Tribal CPRG Implementation Grant applicants.