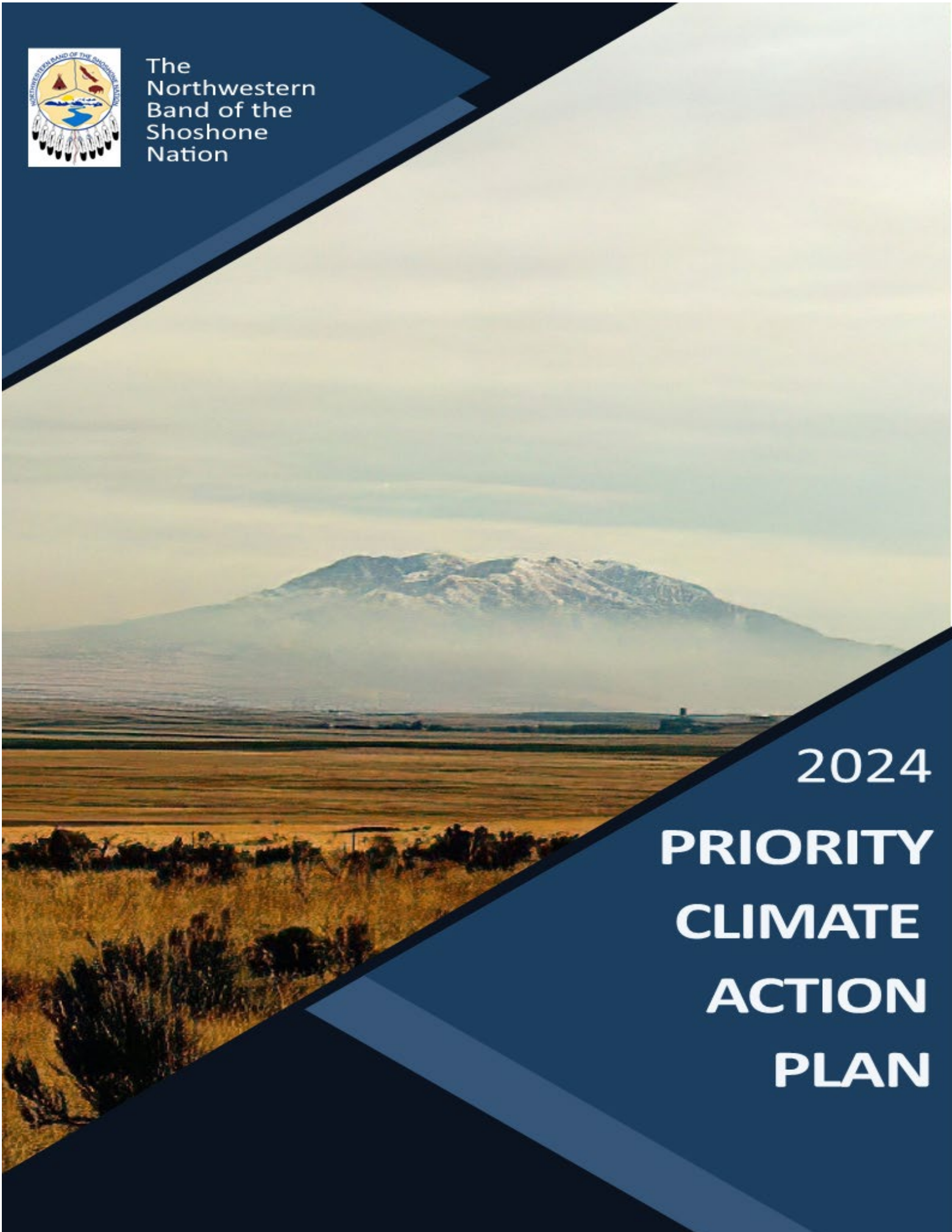




The
Northwestern
Band of the
Shoshone
Nation



2024
**PRIORITY
CLIMATE
ACTION
PLAN**

The Northwestern Band of the Shoshone Nation Draft Priority Climate Action Plan

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Abbreviations

AQP	Air Quality Program
CAPS	criteria air pollutants
CCAP	Comprehensive Climate Action Plan
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
Cottonwood	Cottonwood Consulting LLC
CPRG	Climate Pollution Reduction Grant
CY	calendar year
EI	emissions inventory
EPA	US Environmental Protection Agency
EV	electric vehicle
GHG	greenhouse gas
HAPS	hazardous air pollutants
IRA	Inflation Reduction Act
kWh	kilowatt hours
MOU	memorandum of understanding
MT	metric tons
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO ₂	nitrogen dioxide
NWBSN	Northwestern Band of the Shoshone Nation
O ₃	ozone
PCAP	Priority Climate Action Plan
PM _{2.5}	particulate matter 2.5 micrometers or less in diameter
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
TEPO	Tribal Environmental Protection Office
TGIT	Tribal – GHG Inventory Tool
US	United States
VOC	volatile organic compounds

1 Introduction

The Shoshone, Paiute, Bannock and Ute people are related, and call themselves Newe or Neme (the People). Prior to contact with Europeans, the Newe groups formed small extended-family groupings that traveled extensively as semi-nomadic hunter-gatherers to survive in the harsh environment of the Great Basin Desert. The group that became the Northwestern Band of Shoshone traveled largely on foot in a delicate balance of living off the land. The expression So-so-goi means “those who travel on foot.”

The Northwestern Shoshone traveled with the changing season. They looked upon the earth not just as a place to live; in fact, they called the earth their mother and she was the provider of all they needed for their livelihood. The mountains, streams, and plains stood forever and the seasons walked around annually. The So-so-goi believed all things came from Mother Earth.

On January 29, 1863, the militia of the United States (US) Army’s Third California Volunteers, under the command of Colonel Patrick Connor, massacred 350 Northwestern Shoshone Indians—the largest slaughter of Native Americans in the history of the US. It was a clash of two diverse cultures trying to share the same land and the Shoshone lost. The Bear River Massacre marked the ending of real conflict between white settlers and Shoshone in southern Idaho and northern Utah. The decimation of the Indian population allowed the settlers and farmers to encroach further into traditional Shoshone territory.

The Northwestern Band of the Shoshone Nation (NWBSN; Tribe) was federally recognized by the US government on April 29, 1987. The Washakie Reservation is located in a remote, sparsely-populated area in the Malad Valley in Box Elder County, Utah, north of the Great Salt Lake. In 2018, the NWBSN also purchased 550 acres of land in southern Idaho that was the location of the Bear River Massacre. The Reservation may be undergoing increased development in the residential sector. Off-Reservation sources of emissions may impact development of a residential community within the boundaries of the Reservation. The planned growth and development on the Reservation warrants research to determine the impact that air pollution may have on the local ambient air quality, in order to protect the general health and welfare of Tribal members and the public. The Tribe is committed to restoring its Tribal lands and sustainably managing all property and assets owned by the NWBSN. The NWBSN recognizes the importance of developing and managing property, assets, and operations with climate pollution prevention and reduction at the forefront of governance.

There are approximately 577 Tribal members, the majority of whom live in southern Idaho and northern Utah, with some members scattered throughout the US. Tribal headquarters are located in Ogden, Utah and a second office is located in Pocatello, Idaho.

Figure 1 is a map of the aboriginal NWBSN hunting area. Figure 2 depicts the location of Tribal headquarters in Ogden, Utah and Figure 3 depicts the location of the Pocatello, Idaho office.

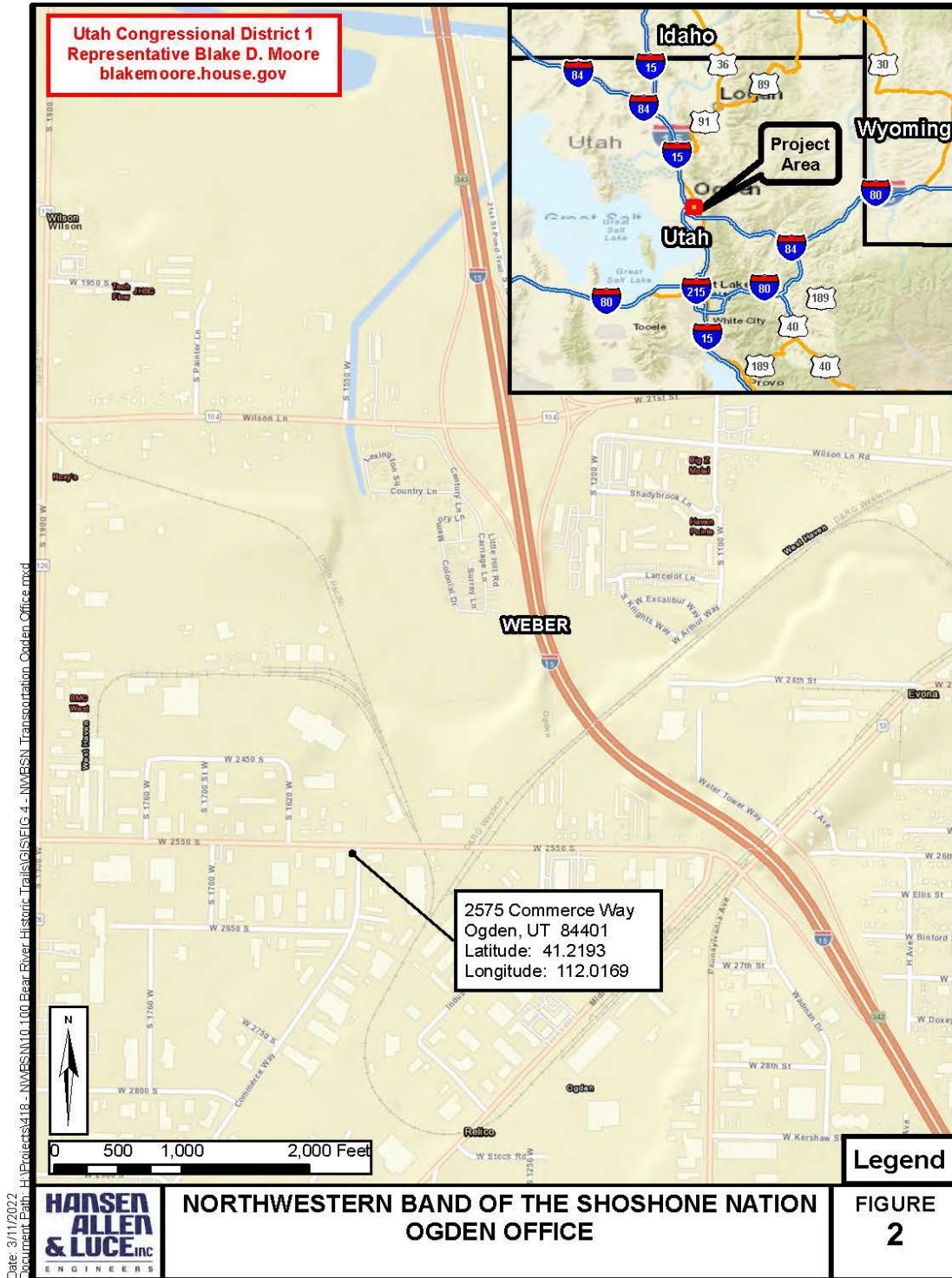


Figure 2. Location of Tribal Headquarters in Ogden, Utah

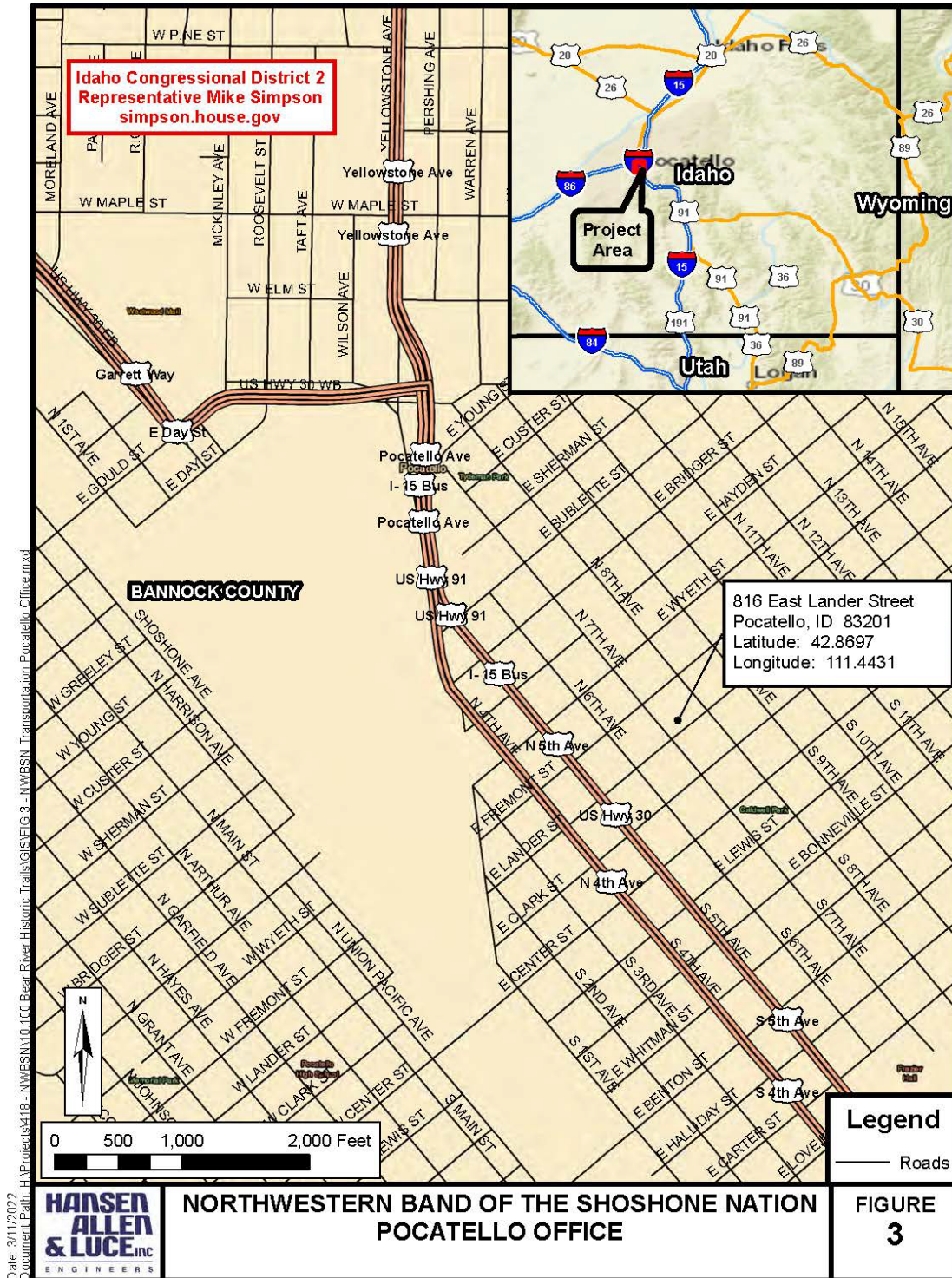


Figure 3. Location of Tribal Office in Pocatello, Idaho

The NWBSN is vulnerable to the effects of climate change and warmer temperatures. An increase in wildfires, droughts, and excessive heat waves are just a few of the harmful impacts experienced by Tribal members, local residents, and the environment. To help mitigate these effects, the NWBSN applied for and received a Climate Pollution Reduction Grant (CPRG) planning grant to quantify current greenhouse gas (GHG) emissions from Tribal sources and develop a long-term strategy to reduce the effects of climate change by decreasing GHG emissions from NWBSN activities.

The NWBSN has established a Tribal Environmental Protection Office (TEPO) to address environmental problems affecting their tribal lands and citizens. The Tribal Air Quality Program (AQP), established in 2001, is a division under TEPO that is dedicated to protecting the NWBSN air shed and NWBSN Tribal members from potential air pollutants. The AQP does this through training and education of Tribal environmental protection staff and ambient air monitoring, consistent with the TEPO goals and objectives. Development of the Priority Climate Action Plan (PCAP) and Comprehensive Climate Action Plan (CCAP) will assist the NWBSN in evaluating the harmful effects of climate change and developing strategies for improving air quality for Tribal members and the environment. In an effort to understand existing air quality in the region, the NWBSN AQP implemented an Ambient Air Quality Assessment Program and has been monitoring ozone (O₃) and meteorological data since 2004 and nitrogen dioxide (NO₂) since 2018.

The NWBSN has developed this PCAP to address near-term, high-priority, implementation-ready measures to reduce GHG emissions. The PCAP is focused on mobile combustion, which is the largest source of GHG emissions in the US, and electricity consumption, which accounts for approximately 25 percent (%) of US GHG emissions. This PCAP is focused on emissions from Tribal sources, including Tribal fleet vehicles, employee commutes, and electricity utilized in Tribal-owned offices and buildings.

The NWBSN proposes to reduce GHG emissions through implementation of the GHG reduction measures detailed in Section 3. Other proposed air quality measures are included in Section 3.2.5 of the PCAP. These and other projects may be discussed in detail in the CCAP.

1.1 Climate Pollution Reduction Grant Overview

Through the Inflation Reduction Act of 2022 (IRA), Congress provided many tools to pursue GHG pollution reductions, including the CPRG program. The US Environmental Protection Agency (EPA) is authorized to implement this work under Section 60114 of the IRA. EPA organized the program into two phases. Phase I provided \$250 million for noncompetitive planning grants and Phase II provides \$4.6 billion for competitive implementation grants for eligible entities to put their plans into action. In implementing this and many other programs under the IRA, the EPA 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.

In line with this strategy, EPA is committed to supporting the development and expansion of tribal, state, territorial, and local climate action plans and the implementation of investment-ready projects to reduce GHG pollution.

1.2 Priority Climate Action Plan Overview

The PCAP is a required deliverable under the CPRG planning grant phase. It is a narrative report that includes a focused list of near-term, high-impact, implementation-ready actions that will reduce GHG emissions. The PCAP is intended to lay the groundwork for the NWBSN application to access CRPG implementation funding grants. This PCAP highlights measures and actions that are suited for the competitive funding opportunity and demonstrates that the NWBSN is ready to utilize this federal funding to meet the Tribe's climate goals.

The PCAP will help the NWBSN to:

1. Improve their understanding of current and future GHG emissions,
2. Identify priority strategies to reduce these emissions and the potential other benefits of those strategies, and
3. Engage stakeholders in an emissions reduction planning process, including development of the CCAP.

Development of the PCAP will inform the CCAP, which is due at the close of the planning grant period.

The PCAP includes the elements listed below:

- GHG inventory.
- A list of implementation-ready measures to reduce GHG pollution.
- Benefits analysis.
- GHG emissions projections and reductions targets.
- A review of the NWBSN's authority to implement the proposed GHG reduction measures.

1.3 Approach to Developing the PCAP

Multiple approaches and methodologies have been used to develop this PCAP, including compilations of local knowledge and technical analyses of climate emissions and projections. These methodologies reflect the knowledge of the Tribal community that generated them and the level of expertise and technical capacities at the AQP's disposal.

1.4 Scope of the PCAP

The scope of the PCAP is limited to Tribal-owned resources, including vehicles, buildings, and offices. The geographic area in which the majority of Tribal members reside and the locations of the Tribal headquarters and office are in Utah and Idaho.

2 Tribal Organization and Considerations

The AQP is a division of the TEPO of the NWBSN Tribal Government. The Tribal Council is the governing body of the Tribal Government.

AQP staff includes a Climate Pollution Reduction Manager overseen by the Environmental Director.

2.1 PCAP Management and Development Team

The PCAP was prepared by NWBSN staff with assistance from a consultant, Cottonwood Consulting LLC (Cottonwood), who was contracted in March 2024 to assist with the development of planning grant deliverables, including a simplified emissions inventory and PCAP.

2.2 Special Considerations

The NWBSN is a relatively small Tribal nation with limited staff time and expertise. Upon receipt of the CPRG planning grant, the NWBSN hired a Climate Pollution Reduction Manager who has overseen development of the quality assurance project plan (QAPP), emissions inventory, and PCAP.

Tribal members reside primarily in two states, Idaho and Utah. Both Idaho and Utah received CPRG planning grants and are developing PCAPs and CCAPs that will benefit Tribal members residing in those states. The NWBSN PCAP is limited to priority sectors to which the NWBSN directly contributes.

2.3 Stakeholder Engagement and Collaborations

Collaborative planning efforts with Tribal members and leadership allowed the NWBSN to develop robust, community-driven approaches to responding to climate change. These measures address the most pressing challenges posed by the climate crisis and the anticipated impacts that these will have on the NWBSN. This formed an essential base on which to develop the PCAP.

Tribal Council is a seven-person elected body that represents the Tribal community. Tribal Council approved the CPRG planning grant application and has expressed support for the measures outlined in Section 3.2 of the PCAP.

The NWBSN plans to conduct extensive community outreach, including surveys and public meetings, during CCAP development to determine what emissions reductions projects are a high priority for Tribal members. A new web page with information about the PCAP and CCAP may be developed to provide information to Tribal and community members about the CRPG grant program and the NWBSN's air quality efforts.

The NWBSN did not work specifically with the states of Idaho or Utah; however, TEPO staff closely monitor climate action plans and GHG reduction measures occurring in the region, including those states.

3 PCAP Elements

Section 3 includes a GHG inventory, a list of implementation-ready measures to reduce GHG pollution, an analysis of GHG emissions reductions, GHG emissions projection and reduction

targets, a limited benefits analysis, and a review of the NWBSN's authority to implement the proposed GHG reduction measures.

3.1 GHG Inventory

The purpose of this simplified emissions inventory (EI) is to establish baseline emissions estimates for the 2023 calendar year (CY) for select air emission sources for the NWBSN. This simplified EI is limited to sectors the NWBSN believes contribute significantly to GHG emissions and to which the NWBSN directly contributes. This simplified EI was prepared to support the PCAP developed by the NWBSN as part of their CPRG planning grant.

3.1.1 Scope of Inventory

The scope of the PCAP is limited to Tribal-owned or Tribal-utilized resources, including vehicles, buildings, and offices. The geographic area in which the majority of Tribal members reside and the locations of the Tribal headquarters and office are in Utah and Idaho. Both Utah and Idaho regularly prepare emissions inventories that include the geographic area in which the majority of Tribal members reside. This simplified EI is limited to sectors to which the NWBSN directly contributes.

3.1.2 Climate

Southern Idaho and northern Utah are generally semi-arid throughout the year. Freezing temperatures and snow are common throughout the winter and summer months are typically hot and relatively dry.

3.1.3 Sources

The emissions data presented in this simplified EI has been organized by source category and pollutant. The simplified EI may be used for future air quality planning purposes, such as analyzing attainment with the National Ambient Air Quality Standards (NAAQS), emissions modeling, and analysis of potential emissions reductions measures.

The sources included in this emissions inventory are as follows:

- 1) Mobile Combustion
 - a) On-Road Mobile Sources
 - i) Tribal-owned vehicles
 - (1) Data obtained from Tribal inventory of existing fleet vehicles
 - b) Employee Commutes
 - i) Employee commutes by mileage and transportation type
 - (1) Data obtained from employee surveys regarding commuting habits
- 2) Electricity Consumption
 - a) Tribal-owned buildings and offices
 - i) Data obtained from monthly utility bills

The simplified emissions inventory included in the PCAP was developed for CY 2023. As part of their development of the CCAP, the NWBSN will develop a comprehensive emissions inventory that includes the following sectors, if applicable: mobile combustion, electricity consumption,

urban forestry, agricultural and land management, stationary combustion, solid waste and waste generation, wastewater treatment, and water. The NWBSN may choose to utilize different tools for emissions calculations in the CCAP.

3.1.4 Data Quality Objectives

Data quality objectives for this inventory are outlined in the QAPP developed by the NWBSN for this simplified EI. The QAPP also includes details about accuracy, precision, bias, completeness, representativeness, and comparability.

3.1.5 Quality Assurance Review

Per the QAPP, quality assurance (QA) and quality control (QC) review will be conducted to review the data collection methodology, data, assumptions, emission factors, calculation methodologies, and emission totals. Final QA/QC review will be conducted following finalization of the PCAP. QA/QC documentation is included in Appendix B of the QAPP.

3.1.6 Emissions Results

Results of the simplified emissions inventory indicated that mobile combustion from use of NWBSN fleet vehicles and from employee commutes are significant sources of carbon dioxide equivalent (CO_{2e}). CO_{2e} is the number of metric tons (MT) of carbon dioxide (CO₂) emissions with the same global warming potential as one metric ton of another greenhouse gas. Emissions results from those sources are summarized below.

3.1.6.1 On-Road Mobile Sources (Mobile Combustion)

On-road mobile source emissions are generated from on-road vehicles. This simplified EI only analyzed emissions from Tribal-owned fleet vehicles. Other on- and non-road mobile sources may be analyzed in a comprehensive GHG inventory.

3.1.6.1.1 Data Collection

AQP staff obtained a list of Tribal-owned fleet vehicles from the NWBSN that included the year of manufacture, make, model, and fuel type. Total vehicle mileage was obtained for some vehicles.

3.1.6.1.2 Emission Calculation Methodology

Cottonwood estimated emissions for on-road mobile sources using the EPA Tribal – GHG Inventory Tool (TGIT) to estimate mobile emissions from the Tribal vehicle fleet.

A technical task description of the calculation methodology for calculating mobile source emissions is included in Table 2.1 of the QAPP. Details regarding mobile source calculations are included in the sheet “Mobile-Detail Calcs” of the TGIT.

3.1.6.1.3 Assumptions

Cottonwood assumes that data provided by the NWBSN are accurate and complete.

Accounting for the total annual miles driven by the Tribal government was not feasible since annual mileage was not recorded for each vehicle. The Federal Highway Administration estimated that the average vehicle traveled 11,099 miles in 2021; however, utilizing that value to calculate average annual mileage for NWBSN fleet vehicles would result in a significant overestimate of

mileage and fuels consumed, since total vehicle mileage for many of the NWBSN vehicles was below the annual estimate.

The Tribal vehicle fleet includes four passenger vehicles and four trucks ranging from 1-4 years old. Five vehicles are gasoline powered and three are diesel powered. Because the vehicles are all relatively new and relatively low mileage, Cottonwood estimated 2023 vehicle miles traveled by assuming that the vehicles were driven similar miles per year and divided the total vehicle mileage by the age of the vehicle. Total vehicle mileage data was not provided for two vehicles, so Cottonwood assumed the total mileage for those vehicles was the same as the average of similarly aged vehicles in the NWBSN fleet.

3.1.6.1.4 Results

Emissions from on-road mobile sources from Tribal-owned fleet vehicles in 2023 are displayed below in Table 1.

Table 1: GHG Emissions from On-Road Mobile Sources (MT CO₂e)

Pollutant	CO ₂	CH ₄	N ₂ O	Total (MT CO ₂ e)
Emissions	21.39	0.03	0.16	21.58

Notes: CO₂ – carbon dioxide; CH₄ – methane; N₂O – nitrous oxide; MT CO₂e – metric tons of carbon dioxide equivalent

The total annual estimated miles driven for the year 2023 for all fossil fuel powered NWBSN fleet vehicles were approximately 51,582 miles, which produced emissions of 21.39 MT of CO₂, 0.03 MT of methane (CH₄), and 0.16 MT of nitrous oxide (N₂O), for a total of 21.58 MT CO₂e.

3.1.6.2 Employee Commutes (Mobile Combustion)

Emissions from employee commutes are indirect GHG emissions associated with the NWBSN. Emissions from employee commuting may arise from:

- Automobile travel,
- Bus travel,
- Rail travel,
- Air travel, and/or
- Other modes of transportation (e.g., subway, bicycling, walking).

Teleworking employees (i.e., employees working from home) are also included in this source.

3.1.6.2.1 Data Collection

The AQP provided a survey to Tribal employees to determine emissions related to employee commuting to offices in Ogden, Utah and Pocatello, Idaho.

3.1.6.2.2 Emissions Calculation Methodology

Cottonwood estimated emissions for employee commutes sources using the TGIT to estimate emissions from employee commuting.

A technical task description of the calculation methodology for calculating employee commute emissions is included in Table 2.1 of the QAPP. Details regarding employee commute calculations are included in the sheet “Employee Commute” of the TGIT.

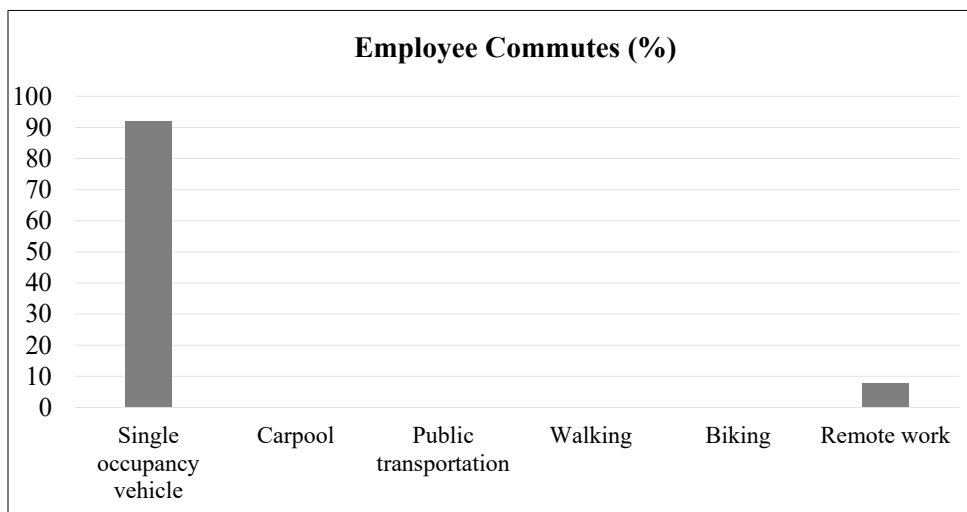
3.1.6.2.3 Assumptions

Cottonwood assumes that data provided by NWBSN employees are accurate and complete. Thirteen Tribal government employees completed the survey and Cottonwood assumes that those employees are representative of the employee population.

3.1.6.2.4 Results

With the exception of remote workers, who do not commute, NWBSN employees commute exclusively in single occupancy vehicles. Figure 4, below, shows the modes of transportation employees utilize in their commutes.

Figure 4. Employee Commute Transportation Type (%)



With the exception of remote workers, who do not commute, NWBSN employees commute an average of 19.6 miles one-way to their respective workplaces.

GHG emissions from NWBSN employee commutes in 2023 were approximately 55.20 MT CO_{2e}.

3.1.6.3 Electricity Consumption

The Tribe owns three Tribal office buildings, one dental office, and one air quality station; a summary of the commercial buildings owned by the NWBSN is included in Table 2. Solar panels were installed on the Tribal headquarters building in Ogden, Utah in late 2023/early 2024 to offset electricity usage at that building. Depending on available funding opportunities, solar projects are planned at other Tribal-owned buildings, including Bear River Family Dental in Layton, Utah.

Table 2: Tribal-Owned Commercial Buildings

Building	Building Address	Building Use
Tribal Headquarters	2575 Commerce Way Ogden, Utah 84401	Primary office location for the Tribe. Space is utilized for medical service and emergency storage, office space, library, and ancillary spaces such as gym, restrooms, and break rooms. Office space is utilized by 11 employees.
Secondary Office	816 East Lander Street Pocatello, Idaho 83201	Secondary office location for the Tribe. Space is utilized for medical service and emergency prep storage, office space, library space, and ancillary spaces such as gym, restrooms, break rooms etc. Building also includes an elevator and an emergency shelter room. Office space is utilized by one employee and two council members.
Housing Office	810 North Main Street, Suite(s) 103 & 104 Brigham City, Utah 84302	Storage space for emergency prep items as well as a part time office location. The property is used once or twice a year for special events, such as in September for parade prep for Peach Days Events.
Bear River Family Dental	525 N. Fairfield Road Layton, Utah 84041	Space is used as a dental clinic with one dentist, office manager, and other support staff. Building is owned by the Tribe, and clinic is run by the dentist.
Air Quality Station	8600 West 24000 North Portage, Utah 84331	Air quality monitoring station on the Washakie Reservation.

The Tribe also leases another building that is occupied by a second dental office and owns several residential buildings, although utilities at those buildings are paid by the tenants. The leased dental office and residential homes are not included in this simplified EI. Emissions from those buildings may be included in the comprehensive EI developed for the CCAP. Embodied GHG emissions (emissions attributed to materials and energy used in construction, maintenance, and deconstruction in existing buildings) are not included in this analysis.

3.1.6.3.1 Data Collection

Electricity consumption data from 2023 were collected from the monthly invoices provided by the relevant electric utilities that provide power to Tribal buildings and offices. Buildings in Brigham City are serviced by Brigham City Corporation. Other locations in Utah are serviced by Rocky Mountain Power and buildings in Idaho are serviced by Idaho Power.

3.1.6.3.2 Emission Calculation Methodology

Details regarding electricity consumption calculations are included in the sheet “ElectricityLocationBased-Calcs” of the TGIT.

3.1.6.3.3 Assumptions

Cottonwood assumes that monthly invoices provided by electricity utility providers are accurate and complete. Not all 2023 invoices were provided and Cottonwood estimated missing electricity usage data by calculating the per day kilowatt hours (kWh) for either the invoicing period prior to or following the missing period. Cottonwood used that per day usage rate to calculate electricity usage for the missing periods.

3.1.6.3.4 Results

GHG and criteria pollutant emissions from NWBSN electricity consumption in 2023 are displayed below in Table 3.

Table 3: GHG Emissions from Electricity Consumption (tons)

Pollutant	CO ₂	CH ₄	N ₂ O	Total (MT CO ₂ e)
Emissions	25.82	0.07	0.09	25.98

Notes: CO₂ – carbon dioxide; CH₄ – methane; N₂O – nitrous oxide; MT CO₂e – metric tons of carbon dioxide equivalent

The total electrical usage for 2023 was 89,712 kWh which produced 25.98 MT CO₂e.

3.1.7 Summary

While NWBSN fleet vehicles are utilized by Tribal government employees, those vehicles are also registered in Weber or Bannock county and are therefore likely also included in the emissions inventories developed by the states of Utah and Idaho. GHG emissions from mobile sources, including the NWBSN fleet vehicles and employee commutes, are a significant source of GHG emissions.

A summary of 2023 GHG emissions by source category is displayed below in Table 4.

Table 4. GHG Emissions Summary

Source Category	CO ₂	CH ₄	N ₂ O	Total (MT CO ₂ e)
Mobile Combustion				
On-Road Mobile Sources	21.39	0.03	0.16	21.58
Employee Commutes	-	-	-	55.20
Electricity Consumption	25.82	0.07	0.09	25.98
Total	47.21	0.10	0.25	102.76

Notes: CO₂ – carbon dioxide; CH₄ – methane; N₂O – nitrous oxide; MT CO₂e – metric tons of carbon dioxide equivalent ; "-" indicates no data

3.1.8 Other Sources

The TGIT provides tools to calculate emissions from numerous sources, including stationary combustion, mobile combustion, solid waste, wastewater, electricity use, employee commute, water use, agriculture and land management, urban forestry, and waste generation. These sources may be analyzed in the comprehensive EI developed for the CCAP.

3.2 GHG Reduction Measures

The NWBSN proposes that implementation of the proposed GHG reduction measures outlined below will affect lasting and significant reductions in GHG emissions for Tribal members and the environment.

More information about emission reductions measures is below. Other measures are included in Section 3.2.5.

3.2.1 Replace Fossil-Fuel Vehicles with EVs

Electric vehicles (EVs) are automobiles powered by electric motors that draw their energy from rechargeable batteries. Unlike traditional internal combustion engine vehicles that rely on gasoline or diesel, EVs use electricity as their primary source of energy.

The NWBSN Tribal headquarters office is located in Ogden, Utah and a second tribal office is located in Pocatello, Idaho. These locations are approximately 130 miles from each other and Tribal staff regularly utilize Tribal-owned, fossil-fuel powered fleet vehicles to make the trip between the two offices. The NWBSN initially plans to replace three fossil-fuel powered vehicles with electric vans for transportation between the Ogden and Pocatello offices. Where feasible, additional fleet vehicles will be replaced with EVs in following years. Former fleet vehicles would be sold or given to Tribal or community members. EV charging infrastructure would be installed at the Tribal headquarters and office and would be open to the public. Public access to charging infrastructure also supports private adoption of EVs. Additionally, utilization of EVs would allow for rideshare programs, perhaps to provide rides for Tribal members from one office location to another.

Replacing existing fleet vehicles with EVs would contribute to emissions reductions along the I-15 corridor. This is especially important in areas that the EPA has determined persistently exceed the NAAQS. Portions of Franklin County, Idaho and Cache County and Weber County, Utah have a history of nonattainment for particulate matter 2.5 micrometers or less in diameter (PM_{2.5}) and the Northern Wasatch Front, which includes the city of Ogden, Utah, is currently in nonattainment for ozone. Details about this proposed GHG reduction measure are included in Table 5.

Table 5. Replace Fossil-Fuel Vehicles with EVs

Replace Fossil-Fuel Vehicles with EVs	
<i>Implementing agency</i>	NWBSN
<i>Applicable sector</i>	Mobile combustion (transportation)
<i>Implementation milestones</i>	Tribal Council approval, EV purchase.
<i>Implementation schedule</i>	To be determined.
<i>Milestones for obtaining implementing authority</i>	Tribal Council approval.
<i>Funding source(s)</i>	CPRG Implementation Grant or other grant funding sources.
<i>Metrics for tracking progress</i>	Report one year following EV purchase detailing cost and emissions savings from EV usage.
<i>Cost estimate</i>	\$135,000
<i>Annual estimated GHG and criteria air pollutant emission reductions</i>	GHG: Approximately 8.10 MT CO _{2e} . Criteria Air Pollutants: To be determined.

The NWBSN has not determined which vehicles would be replaced by EVs, so a specific GHG reductions analysis is not possible. However, each NWBSN fleet vehicle emitted an average of approximately 2.70 MT CO_{2e} in 2023. Reducing the fleet by three fossil-fuel powered vehicles would reduce emissions by approximately 8.10 MT CO_{2e}, or 37.5%.

3.2.1.1 Benefits Analysis

In addition to GHGs, motor vehicles emit co-pollutants, including nitrogen, carbon monoxide (CO), particulate matter 10 micrometers or less in diameter (PM₁₀), PM_{2.5}, volatile organic compounds (VOC), and hazardous air pollutants (HAP) emissions. The NWBSN assumes that replacing three fossil-fuel powered vehicles with EVs would have a corresponding reduction of co-pollutants. The reduction of VOC, an ozone precursor, could also have the co-benefit of reducing ground level ozone formation.

In addition to a direct reduction of GHGs and co-pollutants, the proposed GHG reduction measure would also provide a more diverse skill set for fleet vehicle mechanics and vehicle maintenance staff, provide public EV charging infrastructure to support public adoption of EVs, provide safe and affordable used vehicles to community members from fleet vehicle sales, and encourage EV use in the area by demonstrating their viability. The reduction in fuel and maintenance costs (e.g., less frequent oil and air filter changes) will also provide an economic benefit to the NWBSN government. Former fleet vehicles would be sold to community members in need of safe, reliable transportation, which would provide additional economic and quality-of-life benefits to the community.

3.2.2 Encourage Alternative Forms of Transportation

The NWBSN encourages Tribal members to develop healthy habits. As part of that program and to reduce GHG emissions, the NWBSN plans to purchase two electric bicycles for use by Tribal members or employees and implement a program encouraging members and employees to utilize low-emissions transportation options, including walking, biking, hoverboarding, taking public transit, and carpooling. Implementation could include developing maps of safe biking and walking commuter routes for distribution to Tribal members, rewards for members and employees that utilize alternative transportation options, and/or development of an electric bike rebate program. Additionally, the NWBSN could provide incentives and infrastructure to support employees that commute by alternative means, including providing secure bike storage, hosting clean transportation workshops, implementation of a "Commuting Incentive Program", making work schedules more flexible, covering public transportation costs, and/or developing a bike-sharing program. Given the distance that the average employee commutes (19.6 miles), the majority of employees will likely not choose to bike or walk to work, so the NWBSN would also encourage and incentivize carpooling and the use of public transportation.

Purchased electric bicycles would be lent to NWBSN Tribal members or employees or utilized in a bike-sharing program. The NWBSN is determining how the electric bicycles would be utilized.

Following implementation of measures that encourage alternative transportation, the NWBSN would conduct follow-up employee surveys to determine if the measures have been effective and how much GHG emissions have been reduced from the baseline measured in 2023. Even small changes in employee habits have a large cumulative effect on GHG emissions. The NWBSN hopes that implementation of this measure would result in GHG reductions of approximately 3.25 MT CO_{2e}. This assumes that the two electric bicycles would be utilized by employees at least 50% of

the time or that five employees would choose an alternative form of transportation (including walking or biking) at least 20% of the time.

Details about this proposed GHG reduction measure are included in Table 6.

Table 6. Encourage Alternative Forms of Transportation

Encourage Alternative Forms of Transportation	
<i>Implementing agency</i>	NWBSN
<i>Applicable sector</i>	Mobile combustion (transportation)
<i>Implementation milestones</i>	Tribal Council approval, purchase electric bikes.
<i>Implementation schedule</i>	To be determined.
<i>Milestones for obtaining implementing authority</i>	Tribal Council approval.
<i>Funding source(s)</i>	CPRG Implementation Grant or other grant funding sources.
<i>Metrics for tracking progress</i>	Follow-up employee surveys, electric bike mileage report.
<i>Cost estimate</i>	\$9,748
<i>Annual estimated GHG and criteria air pollutant emission reductions</i>	GHG: Approximately 3.25 MT CO ₂ e. Criteria Air Pollutants: To be determined.

3.2.2.1 Benefits Analysis

Reducing GHG emissions from employees commuting by vehicles would have a corresponding decrease in co-pollutants. Because there are very few Tribal employees, even a small change in commuting habits would lead to a relatively large decrease in GHG and co-pollutant reductions.

The NWBSN also expects that encouraging the use of alternative transportation, including walking and biking, would encourage employees to be more active. Getting regular exercise is an important part of maintaining a healthy lifestyle, which the NWBSN encourages for all employees and Tribal members.

3.2.3 Install Motion Sensor Lights in Tribal-Owned Offices and Buildings

Lighting use constitutes approximately 10-20% of total electricity consumption in commercial buildings and installation of "occupancy sensor lighting" (motion sensor lighting) can significantly reduce energy usage and costs. Occupancy sensor lighting can reduce lighting energy usage by 10-90% depending on the use of the space in which the lighting is installed. The NWBSN plans to purchase motion sensor lights for Tribal-owned commercial buildings to reduce unnecessary electricity consumption and associated GHG emissions. Details about this proposed GHG reduction measure are included in Table 7.

Table 7. Install Motion Sensor Lights

Install Motion Sensor Lights	
<i>Implementing agency</i>	NWBSN
<i>Applicable sector</i>	Electricity consumption
<i>Implementation milestones</i>	Tribal Council approval, motion sensor lights purchase, motion sensor lights installation.

Install Motion Sensor Lights	
<i>Implementation schedule</i>	To be determined.
<i>Milestones for obtaining implementing authority</i>	Tribal Council approval.
<i>Funding source(s)</i>	CPRG Implementation Grant or other grant funding sources.
<i>Metrics for tracking progress</i>	Annual report detailing electricity usage, estimated cost savings, and emissions reduction.
<i>Cost estimate</i>	\$10,000
<i>Annual estimated GHG and criteria air pollutant emission reductions</i>	GHG: Approximately 3.90 MT CO ₂ e. Criteria Air Pollutants: To be determined.

3.2.3.1 Benefits Analysis

The NWBSN expects that installation of motion sensor lights in Tribal-owned offices and buildings would result in a decrease in electricity consumption and a corresponding decrease in GHG and co-pollutants.

A decrease in electricity consumption would also result in cost savings due to decreased electricity use. Those cost savings would benefit Tribal government, employees, and Tribal members.

3.2.4 Electric Tool Loan Program

Gasoline-powered lawn mowers and garden equipment are significant contributors of GHG emissions, including CO₂, CH₄, and N₂O, as well as air pollutant emissions, including VOC, CO, nitrogen oxide, airborne particulate matter, and sulfur oxides. Around 30 million tons of pollutants are emitted by such equipment every year in the US, accounting for more than a quarter of all non-road gasoline emissions. Approximately 50 million walk-behind lawn mowers plus 12.5 million riding lawn mowers are used in the US on an annual basis and approximately 229 million US households own lawn or garden equipment, including lawn mowers.

Use of gas-powered lawn mowers and other gas-powered household equipment, including leaf blowers, lawn mowers, weed whackers, etc., emit millions of tons of pollutants annually in the US. The NWBSN proposes to implement an electric tool loan program that would offer electric-powered tools for check-out by Tribal members. The program would be located at the tribal headquarters in Ogden, Utah. The loan program would piggyback off existing library infrastructure at that location for software and loan tracking. Existing library staff would manage the program and the loan program would use space that already exists in the library.

Tool loan programs exist all over the world and are a proven way to provide low-cost access to tools for their members. Tool loan programs supply members with access to a larger quantity of diverse tools, eliminating the need for members to buy tools for personal use and reducing GHG emissions from the production of tools. Additionally, providing electric, rather than gas-powered, tools would reduce GHG emissions from tool use. Details about this proposed GHG reduction measure are included in Table 8.

Table 8. Electric Tool Loan Program

Electric Tool Loan Program	
<i>Implementing agency</i>	NWBSN
<i>Applicable sector</i>	Mobile combustion (non-road sources)
<i>Implementation milestones</i>	Tribal Council approval, tool purchase, add to existing library loan infrastructure.
<i>Implementation schedule</i>	To be determined.
<i>Milestones for obtaining implementing authority</i>	Tribal Council approval.
<i>Funding source(s)</i>	CPRG Implementation Grant or other grant funding sources.
<i>Metrics for tracking progress</i>	Annual report detailing tool usage, estimated cost savings, and emissions reductions.
<i>Cost estimate</i>	\$10,000
<i>Annual estimated GHG and criteria air pollutant emission reductions</i>	To be determined.

3.2.4.1 Benefits Analysis

The Tribe was unable to collect data about current Tribal members use of gas-powered household equipment. Those data may be included in the CCAP. Despite being unable to calculate GHG emissions from gas-powered household equipment used by Tribal members, the Tribe expects that development of an electric tool loan program would result in a significant reduction in GHG emissions from Tribal households. A paper published in The International Journal of Life Cycle Assessment found that use of electric lawn mowers resulted in a 32.3-49.9% reduction in CO₂ emissions as compared to conventional gas-powered lawn mowers. The Tribe expects that replacing gas-powered lawnmowers would result in a decrease in GHG and co-pollutant emissions.

Additionally, tool loan programs save community members money, space in their homes, and help community members develop personal agency as they equip themselves to meet practical household needs.

3.2.5 Other Proposed Air Quality Measures

Other air quality measures proposed by the NWBSN that wouldn't result in a decrease in GHG emissions, but are related to air quality issues in the region, are detailed below.

3.2.5.1 Train Personnel to Install Solar Panels on Tribal Households

The electric power sector accounts for 25% of total US GHG emissions in 2021. NWBSN Tribal-owned buildings and offices and Tribal member-owned households contribute to electricity consumption. The NWBSN plans to begin training personnel on solar panel installation. Use of solar panels would reduce electricity use in those buildings and provide jobs to Tribal members. A solar installation company could be a Tribe-owned business/economic venture that prioritizes hiring Tribal members. While training personnel would not directly reduce GHG emissions, it is the first step in developing a long-term solar plan for the Tribe. The NWBSN anticipates that it would cost approximately \$75,000 to train personnel and develop a solar plan. More information about this measure may be included in the CCAP.

3.2.5.2 MOU with States of Idaho and Utah

Climate change has led to an increase in wildfire season length, wildfire frequency, and burned areas. The NWBSN does not have a fire management program and relies on municipal, state, and federal land and fire managers for fire management. This interconnectedness necessitates close communication on wildland fire management in order to protect Tribal communities, economies, sacred landscapes, and traditional uses of natural resources. The NWBSN plans to develop a wildfire smoke memorandum of understanding (MOU) with the states of Idaho and Utah that would outline a clear communication plan in the event of wildfire smoke that may impact Tribal members. The MOU would improve coordination between Tribe and state-administered wildland fire management programs. The NWBSN hopes to finalize the MOU before the 2024 wildfire season. While this measure does not directly affect GHG emissions, wildfire smoke directly impacts Tribal members and their health and an MOU would help the NWBSN better communicate health and safety information to Tribal members. The NWBSN anticipates that it would cost approximately \$4,000 to develop the MOU.

3.2.6 Other Air Quality Measures Occurring in the Air Shed

The NWBSN maintains an ambient air monitoring site on NWBSN property, with the goal of measuring O₃ and NO₂ concentrations at the site. The data are used for informational purposes to determine potential impacts on public health.

Other state and federal agencies in the airshed, including the states of Idaho and Utah and the US Government, are engaged in GHG emissions quantification efforts and potential GHG emission reduction projects in the air shed. If the NWBSN determines that those projects would directly affect the Tribe and Tribal members, the NWBSN may include information about those projects in the CCAP.

3.3 GHG Emissions Projections and Reduction Targets

For the purposes of the PCAP, the Tribe has established GHG emissions projections for mobile combustion and electricity. Emissions reductions are calculated based on the implementation of three GHG reductions measures outlined in Section 3.2: 1) Replace fossil-fuel vehicles with EVs, 2) Encourage alternative forms of transportation, and 3) Install motion sensor lights in tribal-owned offices and buildings. Emissions projections and reductions are provided through 2050.

3.3.1 Emissions Projections

To establish emission projections, Cottonwood determined the GHG emissions contributions from mobile sources, including the NWBSN fleet and employee commutes, and electricity consumption for the CY 2023. These data were used to project GHG emissions forward from base year 2023 by determining a current emissions rate and a growth rate.

3.3.1.1 Mobile Combustion

GHG emissions from mobile combustion includes emissions from NWBSN fleet vehicles and employee commutes. Emissions projects from those sources are detailed below.

3.3.1.1.1 Fleet Vehicles

Based on the simplified EI conducted for the PCAP, the Tribe has estimated that each fleet vehicle emits approximately 2.70 MT CO_{2e} per year. Actual annual emissions depend on the vehicle and number of miles driven. As the Tribal population and Tribal government needs expand, the NWBSN expects to gradually increase the number of vehicles in the fleet. The Tribe expects to add vehicles to the fleet at a rate of approximately one vehicle every two years. Older vehicles are expected to be sold or donated to community members at a rate of approximately one vehicle every three years. The Tribe determined an estimated rate of growth that is included in Table 9. These values are approximations based on the estimated growth and vehicle turnover. To project emissions forward from the currently calculated GHG emissions for 2023, the Tribe applied the expected growth rate and multiplied it by the per vehicle estimated GHG emissions of approximately 2.70 MT CO_{2e} per year.

Using this methodology, the Tribe estimated that, without implementation of measures to reduce emissions from fleet vehicles, GHG emissions will increase by 0.46 MT CO_{2e} per year. Total estimated GHG emissions from mobile sources for 2025-2030 are 141.86 MT CO_{2e} and 733.96 MT CO_{2e} for years 2025-2050; see Table 9.

Table 9. GHG Emissions Projections from Fleet Vehicles

Year	Number of Fossil Fuel Powered Vehicles	GHG Emissions Projections by Year (MT CO_{2e})
2023	8	21.58
2024	8.17	22.04
2025	8.34	22.50
2026	8.51	22.96
2027	8.68	23.41
2028	8.85	23.87
2029	9.02	24.33
2030	9.19	24.79
2031	9.36	25.25
2032	9.53	25.71
2033	9.7	26.17
2034	9.87	26.62
2035	10.04	27.08
2036	10.21	27.54
2037	10.38	28.00
2038	10.55	28.46
2039	10.72	28.92
2040	10.89	29.38
2041	11.06	29.83
2042	11.23	30.29

Year	Number of Fossil Fuel Powered Vehicles	GHG Emissions Projections by Year (MT CO _{2e})
2043	11.4	30.75
2044	11.57	31.21
2045	11.74	31.67
2046	11.91	32.13
2047	12.08	32.59
2048	12.25	33.04
2049	12.42	33.50
2050	12.59	33.96
Total Emissions Projections 2025-2030		141.86
Total Emissions Projections 2025-2050		733.96

Notes: MT CO_{2e} – metric tons of carbon dioxide equivalent

Emissions projections from NWBSN fleet vehicles are approximate and would vary based on actual vehicle type and miles driven.

3.3.1.1.2 Employee Commutes

Based on the simplified EI conducted for the PCAP, the Tribe has estimated that each Tribal employee emits approximately 3.25 MT CO_{2e} per year by commuting in single occupancy vehicles. Actual per employee emissions depend on the vehicle and number of miles driven. As the Tribal population and Tribal government needs expand, the NWBSN expects to increase the number of employees. The Tribe expects to add approximately one new employee every two or three years. The estimated growth rate is included in Table 10. To project emissions forward from the currently calculated GHG emissions for 2023, the Tribe applied the expected growth rate and multiplied it by the per employee estimated GHG emissions of approximately 3.25 MT CO_{2e} per year.

Using this methodology, the Tribe estimated that, without implementation of measures to reduce emissions from employee commutes, GHG emissions will increase by 3.25 MT CO_{2e} per year. Total estimated GHG emissions from employee commuting for 2025-2030 are 366.27 MT CO_{2e} and 1,924.86 MT CO_{2e} for years 2025-2050; see Table 10.

Table 10. GHG Emissions Projections from Employee Commutes

Year	Number of Employees	GHG Emissions Projections by Year (MT CO _{2e})
2023	17	55.20
2024	17.4	56.50
2025	17.8	57.80
2026	18.2	59.10
2027	18.6	60.40
2028	19	61.69
2029	19.4	62.99

Year	Number of Employees	GHG Emissions Projections by Year (MT CO _{2e})
2030	19.8	64.29
2031	20.2	65.59
2032	20.6	66.89
2033	21	68.19
2034	21.4	69.49
2035	21.8	70.79
2036	22.2	72.08
2037	22.6	73.38
2038	23	74.68
2039	23.4	75.98
2040	23.8	77.28
2041	24.2	78.58
2042	24.6	79.88
2043	25	81.18
2044	25.4	82.48
2045	25.8	83.77
2046	26.2	85.07
2047	26.6	86.37
2048	27	87.67
2049	27.4	88.97
2050	27.8	90.27
Total Emissions Projections 2025-2030		366.27
Total Emissions Projections 2025-2050		1,924.86

Notes: MT CO_{2e} – metric tons of carbon dioxide equivalent

Emissions projections from employee commuting are approximate and would vary based on the number of employees, the distance they commute, and the method of commuting.

3.3.1.2 Electricity Consumption

Based on the simplified EI conducted for the PCAP, the Tribe estimated total GHG emissions from electricity consumption from Tribal-owned commercial buildings for 2023 was 25.98 MT CO_{2e}. Two of those buildings, Tribal headquarters in Odgen, Utah and the Tribal office in Pocatello, Idaho, are the primary buildings utilized by Tribal government and Tribal employees.

Most energy use inside of commercial buildings is for space heating, ventilation, lighting, air conditioning, and running various other equipment. GHG emissions from electricity consumption at Tribal-owned buildings fluctuates primarily based on weather and use of appliances in those buildings. The Tribe does not expect that GHG emissions from electricity consumption at Tribal-owned commercial buildings would substantially increase on an annual basis.

The Tribe estimated that, without implementation of measures to reduce emissions from employee commutes, GHG emissions from electricity consumption at Tribal-owned commercial properties

would be similar to GHG emissions measured in CY 2023. Total estimated GHG emissions from electricity consumption for 2023-2027 are 129.90 MT CO_{2e} and 701.46 MT CO_{2e} for years 2023-2050; see Table 11.

Table 11. GHG Emissions Projections from Electricity Consumption

Year	GHG Emissions Projections by Year (MT CO _{2e})
All	25.98
Total Emissions Projections 2025-2030	129.90
Total Emissions Projections 2025-2050	701.46

Notes: MT CO_{2e} – metric tons of carbon dioxide equivalent

Because most energy use in commercial buildings is for operations of the building, the Tribe doesn't expect GHG emissions from electricity consumption at Tribal-owned commercial buildings to significantly increase in future years. However, a significant increase in the number of employees could result in a slight increase in electricity consumption, since additional employees might work additional hours or utilize more of the available space, requiring additional lighting, ventilation, heating, and cooling. The Tribe was unable to quantify this potential increase, so for the purposes of this PCAP, emissions projections are assumed to be generally equal to emissions quantified for CY 2023. Actual annual emissions will vary based on numerous factors.

3.3.2 Reduction Targets

To calculate GHG emissions reductions targets, the Tribe calculated GHG emissions from mobile sources, including the NWBSN fleet and employee commutes, and electricity consumption. The Tribe then applied GHG reductions based on implementation of three GHG reduction measures, including: 1) Replace fossil-fuel vehicles with EVs, 2) Encourage alternative forms of transportation, and 3) Install motion sensor lights in tribal-owned offices and buildings. Refined reductions targets may be included in the CCAP.

3.3.2.1 Mobile Combustion

The Tribe expects to reduce GHG emissions from fleet vehicles and employee commutes by purchasing EVs to replace fleet vehicles and encouraging alternative forms of transportation for employee commuting. Expected emissions reductions from implementation of those measures are detailed below.

3.3.2.1.1 NWBSN Fleet Vehicles

The NWBSN Tribal headquarters office is located in Ogden, Utah and a second tribal office is located in Pocatello, Idaho. Tribal staff regularly utilize Tribal-owned, fossil-fuel powered fleet vehicles to make the trip between the two offices. Pending receipt of grant funding, the NWBSN plans to initially replace three of the existing fossil-fuel powered fleet vehicles with EVs and, as additional fleet vehicles are required, all new vehicles added to the fleet would be electric. The Tribe does not expect to be able to replace all fleet vehicles with EVs, as some fossil fuel powered vehicles would be retained for snow removal. The Tribe would retain at least two fossil fuel powered vehicles for snow removal, so emissions from fossil fuel powered vehicles are not expected to reach zero. GHG emissions reductions from the replacement of fossil fuel powered

vehicles with EVs are shown in Table 12.

Table 12. GHG Emissions Reductions from Mobile Combustion

Year	Number of Fossil Fuel Powered Vehicles	Number of EVs	GHG Emissions Reductions Targets (MT CO _{2e})
2023	8	0	0.00
2024	5	3	8.55
2025	4.67	3.5	9.90
2026	4.34	4	11.25
2027	4.01	4.5	12.60
2028	3.68	5	13.95
2029	3.35	5.5	15.29
2030	3.02	6	16.64
2031	2.69	6.5	17.99
2032	2.36	7	19.34
2033	2.03	7.5	20.69
2034	2	8	21.23
2035	2	8.5	21.69
2036	2	9	22.15
2037	2	9.5	22.61
2038	2	10	23.06
2039	2	10.5	23.52
2040	2	11	23.98
2041	2	11.5	24.44
2042	2	12	24.90
2043	2	12.5	25.36
2044	2	13	25.82
2045	2	13.5	26.27
2046	2	14	26.73
2047	2	14.5	27.19
2048	2	15	27.65
2049	2	15.5	28.11
2050	2	16	28.57
Total Emissions Reductions Targets 2025-2030			79.63
Total Emissions Reductions Targets 2025-2050			560.92

Notes: EVs – electric vehicles; MT CO_{2e} – metric tons of carbon dioxide equivalent

Emissions reductions were calculated by subtracting expected emissions from remaining fossil fuel powered vehicles following replacement of part of the fleet with EVs from expected emissions calculated above. The result is the expected GHG emissions reductions from replacing the NWBSN fleet vehicles with EVs. Emissions reductions are an estimate and would vary based on

what fossil fuel powered vehicles remained in the fleet and how quickly fossil fuel powered vehicles were replaced by EVs.

3.3.2.1.2 Employee Commutes

As the Tribal population and Tribal government needs expand, the NWBSN expects to increase the number of employees. The Tribe expects to add approximately one new, non-remote employee every two to three years. Currently, with the exception of remote employees who do not commute, all of the NWBSN Tribal employees commute an average of 19.6 miles to their workplaces in single-occupancy vehicles.

To reduce GHG emissions, the NWBSN plans to purchase two electric bicycles for use by Tribal members or employees and implement a program encouraging members or employees to utilize low-emissions transportation options, including walking, biking, hoverboarding, taking public transit, and carpooling. Implementation could include developing maps of safe biking and walking commuter routes, rewards for members or employees that utilize alternative transportation options, and/or development of an electric bike rebate program. Additionally, the NWBSN could provide incentives and infrastructure to support employees that commute by alternative means, including providing secure bike storage, hosting clean transportation workshops, implementation of a "Commuting Incentive Program", making work schedules more flexible, covering public transportation costs, incentivizing carpooling or rideshares, and/or development of a bike-sharing program.

Following implementation of measures that encourage alternative transportation, the NWBSN would conduct follow-up employee surveys to determine if the measures have been effective and if GHG emissions have been reduced from the baseline measured in 2023. Even small changes in employee habits have a large cumulative effect on GHG emissions. The NWBSN hopes to create a culture of clean commuting. To that end, the NWBSN hopes that implementation of measures that encourage alternative transportation would result in the equivalent of approximately 12% of employees choosing to use alternative transportation at least 50% of the time. GHG emissions reductions from the implementation of measures that encourage alternative transportation are shown in Table 13.

Table 13. GHG Emissions Reductions from Employee Commutes

Year	Number of Employees	GHG Emission Reduction Targets (MT CO₂e)
2023	17	51.94
2024	17.4	53.16
2025	17.8	54.38
2026	18.2	55.60
2027	18.6	56.82
2028	19	58.05
2029	19.4	59.27
2030	19.8	60.49
2031	20.2	61.71

Year	Number of Employees	GHG Emission Reduction Targets (MT CO _{2e})
2032	20.6	62.93
2033	21	64.16
2034	21.4	65.38
2035	21.8	66.60
2036	22.2	67.82
2037	22.6	69.04
2038	23	70.26
2039	23.4	71.49
2040	23.8	72.71
2041	24.2	73.93
2042	24.6	75.15
2043	25	76.37
2044	25.4	77.60
2045	25.8	78.82
2046	26.2	80.04
2047	26.6	81.26
2048	27	82.48
2049	27.4	83.71
2050	27.8	84.93
Total Emissions Reductions Targets 2025-2030		344.60
Total Emissions Reductions Targets 2025-2050		1,811.00

Notes: MT CO_{2e} – metric tons of carbon dioxide equivalent

Emissions reductions are an estimate and would vary based on what alternative transportation options were chosen by employees; for instance, walking or biking would result in zero GHG emissions but carpooling or rideshares would result in some per employee GHG emissions, though those emissions would be significantly reduced from the current average per employee emissions.

3.3.2.2 Electricity Consumption

The Tribe owns three Tribal office buildings, one dental office, and one air quality station. Based on a fact sheet provided by the US Department of Energy, lighting use constitutes approximately 10-20% of total electricity consumption in commercial buildings. The NWBSN plans to purchase motion sensor lights for Tribal-owned commercial buildings to reduce emissions from unnecessary electricity consumption. Installation of motion sensor lighting can reduce lighting energy usage by 10-90% depending on the use of the space in which the lighting is installed. For this calculation, the Tribe assumes that 15% of electricity consumption in Tribal-owned commercial buildings is from lighting and that installation of motion sensor lighting would reduce lighting energy requirements by an average of 25%, based on lighting energy savings approximations provided by the US Department of Energy. A reduction in lighting energy at Tribal-owned commercial buildings would result in a corresponding reduction in GHG emissions associated with electricity

consumption at those buildings. Approximate GHG reduction targets from installation of motion sensor lights at Tribal-owned commercial buildings are shown in Table 14.

Table 14. GHG Emissions Reductions from Electricity Consumption

Year	GHG Emission Reduction Targets (MT CO _{2e})
All	3.90
Total Emissions Reductions Targets 2025-2030	23.40
Total Emissions Reductions Targets 2025-2050	101.40

Notes: MT CO_{2e} – metric tons of carbon dioxide equivalent

Emissions reductions are an estimate. Actual emissions reductions would vary based on the location and type of motion sensor lights installed in Tribal-owned commercial buildings. For example, motions sensor lights result in minimal energy savings when installed in high-traffic areas; however, they may result in significant saving when installed in low-traffic areas, such as stairwells, breakrooms, conference rooms, restrooms, storage areas, warehouses, garages, and parking areas.

3.4 Benefits Analysis

Analyzing the benefits of GHG reduction measures involves the evaluation of impacts on various aspects of the NWBSN, the environment, and the economy. A reduction in GHG emissions would improve air quality and mitigate climate change impacts. Lowering levels of air pollutants would reduce harmful emissions such as particulate matter, nitrogen oxides, and sulfur dioxide. A reduction in GHG emissions would also slow down global warming, reduce the frequency and intensity of extreme weather events, and preserve ecosystem biodiversity.

The NWBSN does not have access to specific tribal data for co-pollutants; however, based on EPA’s 2020 National Emissions Inventory data, approximately 38,336 tons of criteria air pollutants (CAPs) and HAPs were emitted from sources in Weber County, Utah and 13,696 tons of CAPs and HAPs were emitted from sources in Franklin County, Idaho.

A reduction in emissions would lead to improved air quality, reducing the risk of respiratory and cardiovascular illnesses.

Emissions reductions would also result in cost savings associated with energy efficiency improvements, renewable energy deployment, and reduced reliance on fossil fuels. Additionally, employment opportunities would be generated by investments in renewable energy, energy efficiency, and other green technologies identified in this PCAP.

The NWBSN has been historically disadvantaged by the lack of opportunities to reduce GHG emissions. Implementing the measures identified in this PCAP would enable the NWBSN to build a resilient community that is equipped to withstand and recover from climate-related disasters.

Investments in clean energy technologies spur innovation, enhance technological competitiveness, and stimulate economic growth. Further infrastructure improvements would allow the NWBSN to transition to a low-carbon economy.

3.5 Review of Authority to Implement

As a federally recognized Indian Tribe with broad, sovereign authorities, the NWBSN is authorized to carry out all GHG reduction measures included in Section 3.2. These measures would require Tribal Council approval prior to implementation. Tribal Council approved the CPRG planning grant application and has expressed support for the measures outlined in Section 3.2 of the PCAP.

3.6 Intersection with Other Funding

The NWBSN has been granted a Clean Air Act § 105 grant to collect and analyze ozone, nitrogen dioxide, and meteorological data in accordance with Title 40 of the Code of Federal Regulations, Parts 50 through 58 (40 CFR, 50-58). The purpose of this project is to assist the Tribe in its efforts to develop and maintain an effective AQP for the Reservation, in order to determine the profound impacts on public health and welfare. Grant funding has been provided for the monitoring of one meteorological station and one ozone monitoring site. The objective is to initiate air monitoring on the Reservation for background and attainment levels of ozone and nitrogen dioxide, and the project has been collecting ozone and meteorological data since 2004 and nitrogen dioxide data since 2018.

The NWBSN has also received an EPA-funded Indian General Assistance Program grant. This grant is awarded to the Tribe for environmental protection of all environmental related activities of the Tribe.

3.7 Workforce Planning Analysis

The NWBSN is dedicated to providing high-quality jobs to the region. The NWBSN offers competitive wages and an employee benefits package that includes paid holidays, health insurance, annual and sick leave accrual, health insurance, and retirement plans for full-time employees. Other benefits include paid training opportunities and coverage of supplies including technology, workwear, and certifications, as needed, for individuals to perform job duties.

The NWBSN understands that the need for sustainability, innovation, and efficient strategies to reduce GHG is an on-going effort that will result in new training opportunities, expansion of current environmental departments, and on-going education efforts for current and future employees. The NWBSN will continue to seek new training and work closely with State and Federal entities to ensure employees are receiving the latest available training and educational opportunities to enhance workforce development.

Receipt of the CPRG planning grant funded the hiring of a Climate Pollution Reduction Manager. This is a remote contract position. Implementation of the GHG reduction measures outlined in Section 3.2 would also enhance job security for librarians and provide a more diverse skill set for fleet vehicle mechanics and vehicle maintenance staff. Additionally, exploring opportunities for solar installation would provide technical training in a growing field for Tribal employees. Future implementation of a solar business would also provide high-quality jobs for Tribal and/or community members.

The EPA has identified the Washakie Reservation in Box Elder County, Utah as a community that is disadvantaged for the purposes of the implementing EPA programs under the IRA, including

CPRG. Implementation of CPRG programs and creation of high-quality jobs are a high priority of the EPA in disadvantaged communities.

4 Next Steps

The simplified emission inventory and PCAP will inform development of the CCAP and future GHG reduction projects. CCAP development includes a comprehensive emissions inventory that will assist the NWBSN in understanding what sectors are contributing to GHG emissions. The NWBSN may choose to utilize different emissions inventory tools or datasets than those that were utilized in the sectors analyzed in the PCAP. The NWBSN may also choose to use a different base year for the comprehensive emissions inventory included in the CCAP. Additional GHG reduction measures and projects may be identified and included in the CCAP.

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