The Navajo Nation Department of Fish and Wildlife

Priority Climate Action Plan

Climate Pollution Reduction Grant: Phase 1

The Climate Change Program
April 1, 2024

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Table of Acronyms and Abbreviations

AG	Agriculture
AZ	Arizona
AECLP	Agriculture Elected Community Leaders Priority
CAPNN	Climate Action Plan for the Navajo Nation
CCAP	Comprehensive Climate Action Plan
CCT	Climate Change Team
CH4	Methane
CPR	Climate Pollution Reduction
CPRG	Climate Pollution Reduction Grant
CO2	Carbon Dioxide
DOE	Department of Energy
EPNG	El Paso Natural Gas
GHG	Greenhouse Gas
GHGi	Greenhouse Gas Inventory
GHGe	Greenhouse Gas Emissions
GHGSat	Greenhouse Gas Satellite
ITEP	Institute for Tribal Environmental Professional (NAU)
NAU	Northern Arizona University
NM	New Mexico
NN	Navajo Nation
NNDFW	Navajo Nation Department of Fish and Wildlife
NNDFWCCP	Navajo Nation Department of Fish and Wildlife Climate Change Program
NNDNR	Navajo Nation Division of Natural Resources
N2O	Nitrous Oxide
MOU	Memo of Understanding
US	United States
UT	Utah
WAES	Winter Ag Expo Series

1 Introduction

In 2016, The Navajo Nation Department of Fish and Wildlife established a Climate Change Team. NNDFW focused efforts on understanding climate change and how it was impacting wildlife and the Navajo Nation's natural resources. After acknowledging climate change issues affecting the NN beyond NNDFW's initiatives, the Department began outreach measures to gain insight on what community members knew about climate change impacts on the NN.

In March of 2018, the NNDFW held two workshops with community elected officials who served on Land Boards, Farm Boards, and Grazing Committees. These participants contributed their time to bring up natural resource concerns which they observe within their own communities. These workshops focused on identifying climate change impacts at a community level. The community workshops were followed with a Navajo Nation Division of Natural Resources Professionals' Workshop, which was held in January of 2018. This workshop consisted of participants from NNDNR Departments who were knowledgeable of more specific climate change impacts to the NN's natural resources. The final product of these workshops was a detailed priority list for addressing climate change impacts to natural resources and the livelihood of the Navajo people.

Figure 1 displays a comparison of priority lists from the Division of Natural Resources Workshop and Department of Fish and Wildlife's Climate Change Workshop, with the elected officials from the Department of Agriculture. Although ranked and worded differently, the priority lists are comparable.

Figure 1: The Workshops Amalgamate Priority Lists

NNDNR Professionals Priority List:	**Agriculture Elected Community Leaders Priority List:**
1. Overgrazing (feral horses, livestock) 2. Water Security (quality, quantity) 3. Land Use Management and Planning 4. Interdepartmental Collaboration and Communication 5. Education, Information, and Outreach 6. Enforcement	1. Water 2. Feral Horses 3. Communication 4. Enforcement/ Compliance 5. Pollution, Air Quality, Illegal Dumping 6. Grazing Management

As a result of these workshops, the CCT created a Climate Adaptation Plan for the Navajo Nation which was adopted by the Resources and Development Committee of the Navajo Nation Council on September 11, 2019. This plan was created in collaboration with community members, Natural Resource experts, and Elected Community Leader's input. Within the Adaptation Plan there are six natural resource priority points listed using the Agriculture Community Leaders Priority list. This process established the foundation to begin the implementation of the adaptation strategies. Using the AECLP list, the CAPNN addresses pollution and air quality in Priority Point 5 by setting the NN's goals and adaptation strategies. Each particular objective serves as a focal point for

research and planning to development mitigation strategies for implementation. As an example in the CAPNN for addressing pollution, air quality, and illegal dumping it states the following:

Create re-usable energy to establish sources on the Navajo Nation. *Conduct studies to establish areas to build solar and wind turbine farms across the reservation.*

Establish landfill centers to reduce pollution on the Navajo Nation. *Build centers to the standards of the U.S. Environmental Protection Agency (EPA). Conduct studies on soil quality at potential locations. Design designated carcass disposal areas. Consent and withdraw the land.*

Establish recycling centers on the Navajo Nation to control illegal dumping. *Build a recycling center with designated personnel. Consent and withdraw the land. Educated communities, schools, divisions, departments, and businesses on the purpose and benefits of recycling. Build to the standards of the U.S. EPA and near landfill facility to maximize recycling potential. Establish relationships with reliable buyers for all recycled material. Contract green driven companies for Navajo Nation needs.*

To develop a policy to reduce and eliminate trash burning*. Keep educating people about this particular policy. Bring the information to schools and community events. Fine violators on violations.*

Establish education programs on the effects of pollution, air quality, and illegal dumping*. Distribute informational booklets to Homesite Lease applicants about policies and sign an acknowledgement of understanding. Although applicants will be informed, they are only responsible for one acre of land.*

To have land and water free of toxic wastes*. Continue the uranium waste clean-up and create toxic waste depositories to remove from the Navajo Nation. Comply with standards from the Navajo Nation Environmental Protection Agency. Also, report all operations to the Navajo Nation Environmental Protection Agency.*

For the Navajo Nation to comply with environmental standards*. Create positions for compliance officers and law enforcement programs under the U.S. Environmental Protection Agency.*

Implement a carbon tax on the Navajo Nation*. Invite professionals to community meetings and educate the public on carbon taxes.*

To control carbon emissions*. Implement an emission testing station.*

Mandate laws of transporting hazardous and toxic materials on the Navajo Nation. *Lobby against the transporting of toxic and hazardous wastes across the Navajo Nation. Build tolls for those transporting these types of wastes. Create laws and regulations for transporting toxic and hazardous wastes.*

To establish an airspace initiative and prevent contamination across large areas during air transport. *Consult with professionals whom are experience in the related issue. Educate the public on the topic of airspace initiatives and federal communications, which has control over all air space.*

To establish natural gas lines to minimize the usage of harmful emissions*. Take full advantage of partially implemented natural gas lines. Majority of towns taking advantage are border towns. Natural gas lines need to run across the entire reservation, since natural gas lines have a right-of-way and lines can be tapped into for easier access.*

Protect the Navajo Nation from fracking, and chemical injection, activities to prevent pollution to our land and water resources*. Conduct more studies, environmental impact study, on environmental dangers. Oppose "chemical injection" under the General Leasing Act. Enforce the No Drill Act of 1997. Educate schools on fracking and its dangers.*

Each of these priority points have implementation strategies, goals, and objectives. Priority five: Pollution, Air Quality and Illegal Dumping is where the Climate Pollution Reduction Grant will initiate Phase 1: Planning for climate pollution reduction to help mitigate greenhouse gas emissions currently impacting the Navajo Nation and pave the way for Phase 2 of the CPRG Implementation funding. Because of the NN's unique and rural development, it will be challenging to determine key emission sectors. However, the CCP is ready to study a finite NN greenhouse gas inventory to enhance and improve to help establish reduction measures to alleviate its emission impacts.

2 Greenhouse Gas Inventory

The Navajo Nation is located in the Four Corners area of the Colorado Plateau, which extends into the states of Arizona, Utah, and New Mexico, and covers over 27,000 square miles or roughly the size of the State of West Virginia (fig. 2). The Navajo Nation encompasses the largest area occupied by any Native American tribe in the United States and supports over 300,000 enrolled tribal members. Due to the size and variety of geological settings within the Navajo Nation, the climate can vary in different regions.

Figure 2: NN Map for Size Comparison

Fluctuating climate patterns across the reservation from south to north has caused both severe cold winds and hot summers. The entire southwest has been experiencing a long-term trend toward hotter and drier weather throughout the year. Many individuals within the Navajo Nation have noticed this temperature change. Many areas are being jeopardized by climate change, including natural resources. Navajo culture is centered around natural resources. Ceremonial herbs, sacred stones, wildlife, and more are important elements to the people. This is a big driver for why the Navajo Nation is planning for climate change. Planning for the oncoming change helps to reduce future risks for the Navajo Nation. The CAPNN priority 5: pollution, air quality, and illegal dumping serves as a need for a GHGi. A GHGi will be used as a tool for establishing climate pollution reduction initiatives.

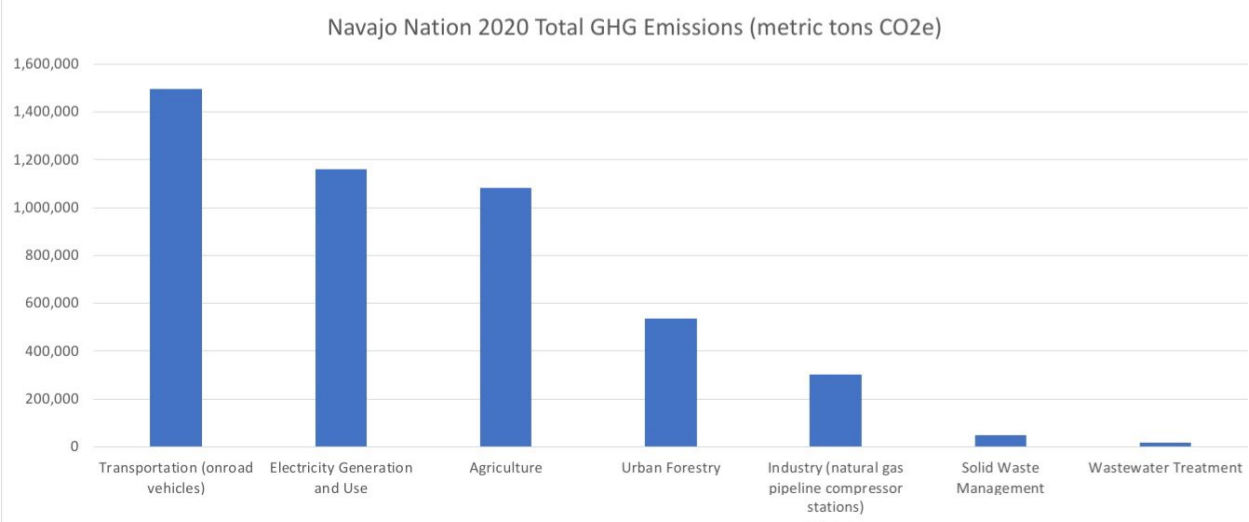
The NN's data resources on emissions is insufficient and GHG data is very limited, however, with technical consulting from Northern Arizona University's Institute for Tribal Environmental Professions program some GHGe data was collected (see fig. 3 & 4). This data focuses on the following emission sectors:

1. Transportation (Mobile Combustion)
2. Electricity Generations and Consumption
3. Agriculture
    - Crop and Soil
    - Livestock (enteric fermentation and manure)
4. Urban Forestry
5. Solid Waste Management (Solid waste & waste generation)
6. Wastewater Treatment

Figure 3: Navajo Nation 2020 Greenhouse Gas Emissions (metric tons CO2 equivalent)

Sector	Carbon Dioxide (CO2)	Nitrous Oxide (N2O)	Methane (CH4)	Fluorinated Gases	Total GHG
Transportation (onroad vehicles)	**1,488,106**	**5,021**	**2,701**		**1,495,827**
Electricity Generation and Use	**1,142,765**	**14,425**	**1,064**		**1,158,253**
Agriculture	**3,605**	**842,649**	**235,993**		**1,082,247**
Crops and Soil	*3,605*	*839,872*	*696*		*844,172*
Livestock (enteric fermentation and manure)		*2,778*	*235,298*		*238,075*
Urban Forestry	**476,192**	**23,342**	**35,255**		**534,789**
Industry (natural gas pipeline compressor stations)	**242,893**	**136**	**58,203**		**301,232**
Solid Waste Management		**183**	**49,560**		**49,743**
Wastewater Treatment		**10,547**	**8,267**		**18,814**
Totals	**3,353,560**	**896,302**	**391,043**	**0**	**4,640,905**

Figure 4: Bar Graph of 2020 Total GHG Emissions



To produce the NN GHGe data, ITEP gathered existing GHGe data from the states of AZ, NM, and UT and use a downscaling method formula. Because the NN reservation boundaries extend into these three states and majority of the reservation is in AZ, ITEP and the Climate Change Program agreed it would be best to use the state emission data to calculate GHGe for the NN. Using a scale down formula method, ITEP was able to calculate the numbers in the tables. When using the scaling down approach to estimate Navajo Nation emissions from state-level data, ITEP used either a population ratio or a land area ratio (ratio of Navajo Nation to state). Here are the population ratios ITEP calculated.

Ratio of Navajo Nation to AZ Population: 0.014
Ratio of Navajo Nation to NM Population: 0.032
Ratio of Navajo Nation to UT Population: 0.002

Here are the land area ratios we calculated.

Ratio of Navajo Nation to AZ Land Area: 0.139
Ratio of Navajo Nation to NM Land Area: 0.052
Ratio of Navajo Nation to UT Land Area: 0.024

ITEP multiplied the state level emissions data by these ratios to estimate the Navajo Nation emissions for those categories. ITEP used the population ratios for the electricity consumption, solid waste generation, and wastewater treatment categories, so the formula would be:

Population Ratio X State Level Emissions = Navajo Nation Emissions.

For the land management and urban forestry categories, ITEP used the land area ratios, so the formula would be

Land Area Ratio X State Level Emissions = Navajo Nation Emissions.

The first figure (fig. 5) will breakdown the data between states, population, and land. Thereafter, the following figures show state and NN emission comparisons (see fig. 6, 7, & 8).

Figure 5: Shows state populations to land ratios.

	Population			Land Area (m^2)		
	Navajo Nation Portion	Total	Population Ratio	Navajo Nation Portion	Total	Land Area Ratio
Arizona	100,591	7,174,064	0.014	41,129,727,349	295,234,544,137	0.139312042
Apache	53,152	71,714	0.741			
Coconino	23,929	142,254	0.168			
Navajo	23,510	110,271	0.213			
New Mexico	66,691	2,097,021	0.032	16,251,926,685	314,916,486,458	0.0516071
Bernalillo	1,725	679,037	0.003			
Cibola	1,867	26,763	0.070			
McKinley	31,369	71,956	0.436			
Rio Arriba	280	38,962	0.007			
San Juan	27,106	125,608	0.216			
Sandoval	3,031	144,954	0.021			
Socorro	1,313	16,723	0.079			
Utah	6,276	3,151,239	0.002	5,184,222,369	219,883,256,658	0.023577158
San Juan	6,276	15,295	0.410			

Figure 6: Arizona and NN emissions comparison in MMT CO2e.

Total Arizona GHG Emissions by Inventory Sector in Million Metric Tons CO2 Equivalent (MMT CO2e)

EI Sector		CO2	CH4	N2O	Fluorinated Gases	Totals
Electricity Consumption		**35.56**	**0.04**	**0.38**	**0.00**	**35.99**
	Electricity Generation	35.56	0.04	0.38	0.00	35.99
Agriculture and Land Management		**0.01**	**0.00**	**3.80**	**0.00**	**3.81**
	Soil Management	0.00	0.00	3.79	0.00	3.79
	CO2 emissions from liming, urea application and other carbon-containing fertili	0.01	0.00	0.00	0.00	0.01
	Field Burning of Agricultural Residues	0.00	0.00	0.00	0.00	0.01
Sold Waste and Waste Generation		**0.00**	**1.50**	**0.00**	**0.00**	**1.50**
	Composting	0.00	0.00	0.00	0.00	0.00
	MSW Landfills	0.00	1.50	0.00	0.00	1.50
Wastewater Treatment		**0.00**	**0.31**	**0.45**	**0.00**	**0.77**
	Industrial	0.00	0.03	0.00	0.00	0.03
	Domestic	0.00	0.28	0.45	0.00	0.73
Urban Forestry		**2.72**	**0.15**	**0.11**	**0.00**	**2.97**
	Cropland	0.10	0.00	0.00	0.00	0.10
	Forest land	2.05	0.14	0.10	0.00	2.29
	Grassland	1.28	0.01	0.01	0.00	1.29
	Settlements	-0.70	0.00	0.00	0.00	-0.70
Totals		**38.29**	**2.02**	**4.73**	**0.00**	**45.04**

Navajo Nation AZ GHG Emissions by Inventory Sector in Million Metric Tons CO2 Equivalent (MMT CO2e)

EI Sector		CO2	CH4	N2O	Fluorinated Gases	Totals
Electricity Consumption		**0.49864581**	**0.00061546**	**0.00533834**	**0**	**0.50459961**
	Electricity Generation	0.49864581	0.00061546	0.00533834	0	0.50459961
Agriculture and Land Management		**0.00131854**	**0.00055256**	**0.52884896**	**0**	**0.53072006**
	Soil Management	0	0	0.52864546	0	0.52864546
	CO2 emissions from liming, urea application and other carbon-containing fertili	0.00131854	0	0	0	0.00131854
	Field Burning of Agricultural Residues	0	0.00055256	0.00020351	0	0.00075607
Sold Waste and Waste Generation		**0**	**0.02108836**	**5.3849E-06**	**0**	**0.02109375**
	Composting	0	7.5863E-06	5.3849E-06	0	1.2971E-05
	MSW Landfills	0	0.02108078	0	0	0.02108078
Wastewater Treatment		**0**	**0.00440153**	**0.0063301**	**0**	**0.01073164**
	Industrial	0	0.00041564	1.134E-05	0	0.00042698
	Domestic	0	0.00398589	0.00631876	0	0.01030465
Urban Forestry		**0.37861533**	**0.02095286**	**0.01464212**	**0**	**0.41421031**
	Cropland	0.01340767	0	0	0	0.01340767
	Forest land	0.28558969	0.01981574	0.01365955	0	0.31906498
	Grassland	0.17777563	0.00113711	0.00098258	0	0.17989532
	Settlements	-0.0981577	0	0	0	-0.0981577
Totals		**0.87857968**	**0.04761077**	**0.55516492**	**0**	**1.48135537**

Figure 7: New Mexico and NN emissions comparison in MMT CO2e.

Total New Mexico GHG Emissions by Inventory Sector in Million Metric Tons CO2 Equivalent (MMT CO2e)

EI Sector	CO2	CH4	N2O	Fluorinated Gases	Totals
Electricity Consumption	**18.60**	**0.01**	**0.26**	**0.00**	**18.87**
Electricity Generation	18.60	0.01	0.26	0.00	18.87
Agriculture and Land Management	**0.04**	**0.00**	**5.09**	**0.00**	**5.13**
Residues	0.00	0.00	0.00	0.00	0.00
Soil Management	0.00	0.00	5.09		5.09
CO2 emissions from liming, urea application and other carbon-containing fertiliz	0.04	0.00	0.00	0.00	0.04
Solid Waste and Waste Generation	**0.00**	**0.84**	**0.00**	**0.00**	**0.84**
Composting	0.00	0.00	0.00	0.00	0.01
MSW Landfills	0.00	0.83	0.00	0.00	0.83
Wastewater Treatment	**0.00**	**0.11**	**0.12**	**0.00**	**0.23**
Industrial	0.00	0.01	0.00	0.00	0.01
Domestic	0.00	0.11	0.12	0.00	0.22
Urban Forestry	**1.39**	**0.14**	**0.09**	**0.00**	**1.62**
Cropland	0.27	0.00	0.00	0.00	0.27
Forest Land	4.05	0.13	0.09	0.00	4.27
Grassland	-2.77	0.00	0.00	0.00	-2.76
Settlements	-0.16	0.00	0.00	0.00	-0.16
Total	**20.03**	**1.10**	**5.56**	**0.00**	**26.69**

Navajo Nation NM GHG Emissions by Inventory Sector in Million Metric Tons CO2 Equivalent (MMT CO2e)

EI Sector	CO2	CH4	N2O	Fluorinated Gases	Totals
Electricity Consumption	**0.59**	**0.00**	**0.01**	**0.00**	**0.60**
Electricity Generation	0.59	0.00	0.01	0.00	0.60
Agriculture and Land Management	**0.00**	**0.00**	**0.26**	**0.00**	**0.26**
Soil Management	0.00	0.00	0.00	0.00	0.00
CO2 emissions from liming, urea application and other carbon-containing fertiliz	0.00	0.00	0.26	0.00	0.26
Field Burning of Agricultural Residues	0.00	0.00	0.00	0.00	0.00
Sold Waste and Waste Generation	**0.00**	**0.03**	**0.00**	**0.00**	**0.03**
Composting	0.00	0.00	0.00	0.00	0.00
MSW Landfills	0.00	0.03	0.00	0.00	0.03
Wastewater Treatment	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**
Industrial	0.00	0.00	0.00	0.00	0.00
Domestic	0.00	0.00	0.00	0.00	0.01
Urban Forestry	**0.07**	**0.01**	**0.00**	**0.00**	**0.08**
Cropland	0.01	0.00	0.00	0.00	0.01
Forest land	0.21	0.01	0.00	0.00	0.22
Grassland	-0.14	0.00	0.00	0.00	-0.14
Settlements	-0.01	0.00	0.00	0.00	-0.01
Totals	**0.67**	**0.04**	**0.28**	**0.00**	**0.98**

Figure 8: Utah and NN emissions comparison in MMT CO2e.

Total Utah GHG Emissions by Inventory Sector in Million Metric Tons CO2 Equivalent (MMT CO2e)

EI Sector		CO2	CH4	N2O	Fluorinated Gases	Totals
Electricity Consumption		**26.45**	**0.01**	**0.41**	**0.00**	**26.87**
	Electricity Generation	26.45	0.01	0.41	0.00	26.87
Agriculture and Land Management		**0.01**	**0.00**	**2.06**	**0.00**	**2.07**
	Soil Management	0.00	0.00	2.06	0.00	2.06
	CO2 emissions from liming, urea application and other carbon-containing fertiliz	0.01	0.00	0.00	0.00	0.01
	Field Burning of Agricultural Residues	0.00	0.00	0.00	0.00	0.00
Sold Waste and Waste Generation		**0.00**	**0.89**	**0.04**	**0.00**	**0.93**
	Composting	0.00	0.05	0.04	0.00	0.09
	MSW Landfills	0.00	0.84	0.00	0.00	0.84
Wastewater Treatment		**0.00**	**0.16**	**0.21**	**0.00**	**0.38**
	Industrial	0.00	0.04	0.00	0.00	0.04
	Domestic	0.00	0.12	0.21	0.00	0.33
Urban Forestry		**1.09**	**0.31**	**0.17**	**0.00**	**1.57**
	Cropland	0.18	0.00	0.00	0.00	0.18
	Forest land	2.79	0.30	0.16	0.00	3.24
	Grassland	-1.55	0.01	0.01	0.00	-1.53
	Settlements	-0.33	0.00	0.00	0.00	-0.33
Totals		27.54	1.38	2.89	0.00	31.81

Navajo Nation UT GHG Emissions by Inventory Sector in Million Metric Tons CO2 Equivalent (MMT CO2e)

EI Sector		CO2	CH4	N2O	Fluorinated Gases	Totals
Electricity Consumption		**0.05**	**0.00**	**0.00**	**0.00**	**0.05**
	Electricity Generation	0.05	0.00	0.00	0.00	0.05
Agriculture and Land Management		**0.00**	**0.00**	**0.05**	**0.00**	**0.05**
	Soil Management	0.00	0.00	0.05	0.00	0.05
	CO2 emissions from liming, urea application and other carbon-containing fertiliz	0.00	0.00	0.00	0.00	0.00
	Field Burning of Agricultural Residues	0.00	0.00	0.00	0.00	0.00
Sold Waste and Waste Generation		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Composting	0.00	0.00	0.00	0.00	0.00
	MSW Landfills	0.00	0.00	0.00	0.00	0.00
Wastewater Treatment		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Industrial	0.00	0.00	0.00	0.00	0.00
	Domestic	0.00	0.00	0.00	0.00	0.00
Urban Forestry		**0.03**	**0.01**	**0.00**	**0.00**	**0.04**
	Cropland	0.00	0.00	0.00	0.00	0.00
	Forest land	0.07	0.01	0.00	0.00	0.08
	Grassland	-0.04	0.00	0.00	0.00	-0.04
	Settlements	-0.01	0.00	0.00	0.00	-0.01
Totals		**0.08**	**0.01**	**0.05**	**0.00**	**0.14**

3 Greenhouse Gas Emissions Reduction Measures

The Navajo Nation is currently working on renewable energy initiatives such as solar farming and wind farming. The NN has signed a Memorandum of Understanding with the United States Department of Energy to begin the transition by setting goals. The objective is to alleviate dependency on fossil fuels and invest in alternative energy sources for a cleaner future and to improve the quality of life for the Navajo people. As for projections to achieve this monumental task, the MOU has a 4- to 5-year timeline. The planning process will be key by setting short-term goals that will lead to implementing long-term strategies that will target climate pollution reduction measures included in this PCAP in the benefit analysis section. Any additional measures needed will be proposed in the subsequent CCAP.

As the NN begins addressing climate pollution and developing implementation strategies for emission reduction measures, the NN first must carefully analyze, strategize, and prioritize key emission areas causing issues.

4 Benefit Analysis

100% of the NN qualifies as a disadvantage community when it comes to GHGe. The types of pollution and health risks GHGe introduces to its population and its communities is at the highest when not monitored and regulated. It is vital that we gain a control and implement regulation policy on certain emission sectors for the progression of quality of life and the preservation of natural resources for future generations.

The CCP conducted 4 Climate Pollution Reduction Workshops during the Navajo Nation Department of Agriculture Winter AG Expo Series (WAES) in key locations on the NN where it was convenient for individuals to travel and attend. The majority of attendees participating in the WAES consisted of elected officials from Navajo Land Board, Navajo Farm Board, and Navajo Grazing Committees from all 110 Chapters scatter across the NN. Other attendees included local community members and other NN personnel.

During the CPR workshops, we conducted several breakout sessions with the WAES attendees. In the breakout session questions were asked about CPR. The feedback about the topic from the participants was encouraging. At all venues where the WAES was held, a large number of guests understood the climatic changes occurring in their communities and on the landscape. Many were aware of climate pollution coming from direct and indirect sources on the NN. The 5 survey questions asked: 1. **What does climate pollution reduction mean to you?** *The average response can be summed up as the NN having a cleaner future for generations to come and improving the quality of life for those currently living.* 2. **How is climate pollution impacting the NN?** *To summarize the responses in one statement, it puts the people at risk with health issues and causes the land to become unproductive*. 3. **Do you think GHGe are a problem on the NN?** *The majority of the attendees said Yes.* 4. **Where do you think GHGe are the biggest problem?** *Many stated that GHGe are coming from urban areas both on and off the reservation were the biggest contributors (direct and indirect sources/sectors).* The final question, **How can we reduce climate pollution emissions on the NN?** *The bigger number of attendees pointed out the resources are needed, stricter policy and regulations needed to be developed, and each person doing better; living a cleaner sustainable life is key.*

After compiling the feedback data collected from the Expo events, it was evident that our Navajo people understood climate pollution was real and that solution needed to be acquired. At each location the participants came up with a lot of similarities and a few differences. They all understood that the problems needed to be mitigated, regulated, and monitored more than how it is currently being handled. Because of very limited resources and the vast terrain, the NN struggles to address climate pollution and other climatic events impacting the NN.

As part of our CPR initiative, the CCP needs to analyze its CPR priorities and focus on specific objectives using the CPRG funding. After careful consideration and reviewing what the Navajo people have stated in the four workshops and being a disadvantage community, the CCP will focus and invest on the following reduction measures. In the table, its broken down in three categories: Emission Sector, Pollution Reduction measures, and Goal/ Strategy. Under each heading describes the sector, then measure, and the goal.

Emission Sector	Pollution Reduction Measure	Goal/ Strategy
1. Electric Power (Generations/ Consumption)	1. Research and Development	To gain access to current data for policy writing or for current policy revisions to reduce GHGe
2. Mobile/ Stationary Combustion	1. Public Transit Policy (Increased public transit access + usefulness)	To analyze potential impact of increased public transit infrastructure on Navajo GHGe
3. Industry	1. GHGe Monitoring Policy (Satellite Monitoring)	Establish a database to track natural gas (CH4) for leaks and Pressure releases to influence stricter NN policy and regulations
	2. Digital Outreach Initiative	Collaborate/ Partner with the European Space Agency or other space agencies to monitor NN for GHGe for mapping and surveying etc.
4. Buildings (Commercial/ Residential)	1. Alternative Construction Policy	Plan for affordable alternative construction methods that are cleaner and environmentally friendly than traditional construction methods
	<u>Pilot Projects</u> - Rammed Earth - Bamboo	Invest in a pilot project that will demonstrate Rammed Earth techniques and Bamboo construction methods for GHGe reduction
	<u>Pilot Project</u> 2. Efficient Heating Policy (Heat Pump Implementation)	Administer Heat Pump technology in a volunteer home to: -Reduce direct reliance on CH4 for heating in new constructed homes. -Reduce reliance on burning fuels (wood/coal) for heating in traditional constructed homes.

	3. High Density Development Policy (vertical urbanization)	A campaign to promote building upward for less land disturbance, influencing the need for public transit systems and community trail/pathway developments. All boosting GHGe reduction initiatives.
5. Agriculture	1. Food Sovereignty Policy	To decrease the need for off-reservation commutes to border town markets. -Analyze potential impact of enhanced food sovereignty infrastructure on Navajo GHGe -Belief that greater food sovereignty will reduce long-distance commuting for goods. -Community gardening: for foods and traditional plant life uses; hydroponic farming and other innovative planting techniques etc. -On reservation commercial development for goods and services.
6. Land Use/ Forestry	1. Land Restoration Policy	-Analyze impact of land restoration on net Navajo GHGe
7. Water (Processing & Waste Water Treatment)	1. Research and Development	To gain access to current data for policy writing or for current policy revisions to reduce GHGe.

After careful consideration, the CCP will address its reduction measures using policy development for climate pollution reduction measures. The strategy for reducing GHG emission for the NN begins with guidelines and procedures. Planning is going to be the most effective way the CCP can tackle the objectives for each reduction measure pertaining to all sectors. For the next 4 years using the CPRG Phase 1: Planning award, the program will focus on initiating talks with all Navajo tribal entities who need to be part of the discussions to influence Navajo leadership to make climate pollution reduction a prime concern for the well-being of the Navajo people.

5 Review of Authority to Implement

The CCP will communicate with Navajo government leaders on all levels (NN President and Vice President's Office, NN Council, NN Chapter Leadership etc.) to seek correct course of action needed to implement GHG reduction measures. If any authority is needed from these governmental entities, a resolution will be drafted up containing a scope of work and timeline for completion for GHG reduction measures being implemented. However, if any other authority is required appropriate action will be taken as needed.

6 Stakeholder Engagement Activities

Outreach and educations will be a strategy implemented when acquiring stakeholders and stakeholder buy-in on all levels. The CCP's Programs and Projects Specialists will travel and meet with NN Chapters, organizations, colleges & universities etc. to educate and obtain support for the CPRG and our GHGe reduction measures. When engaging these entities, activities will include PowerPoint presentations, roundtable discussions, and/or workshops. Furthermore, seeking subsequent resources is essential to fulling all the obligations the Navajo Nation is required to do for a cleaner sustainable future for its Navajo people.

References Links

US Department of Energy
https://www.energy.gov/indianenergy/articles/memorandum-understanding-supports-navajo-nations-energy-transition

Population Data: US Census Bureau, Table B01003: Total Population, 2020 American Community Survey 5-Year Estimates (https://data.census.gov/cedsci/)

Land Area Data: US Census Bureau, Cartographic Boundary Files
(https://www.census.gov/geographies/mapping-files/time-series/geo/carto-boundary-file.html)

U.S. Inventory of Greenhouse Gas Emissions and Sinks by State: 1990-2021
(https://www.epa.gov/ghgemissions/state-ghg-emissions-and-removals)

U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2021, 2023 Annex 3-Part B
(https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Annexes.pdf)

U.S. Department of Agriculture (USDA) National Agricultural Statistics Service (NASS) 2017 Census of Agriculture American Indian Reservations, August 2019
(https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/American_Indian_Reservations/AMINDIAN.pdf)

EPA Facility Level Information on Greenhouse Gases Tool (FLIGHT) at
https://ghgdata.epa.gov/ghgp/main.do

EPA 2020 National Emissions Inventory (NEI) Data Retrieval Tool
(https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data)

Source of Population Data: US Census Bureau, Table B01003: Total Population, 2020 American Community Survey 5-Year Estimates (https://data.census.gov/cedsci/)

Source of Land Area Data: US Census Bureau, Cartographic Boundary Files
(https://www.census.gov/geographies/mapping-files/time-series/geo/carto-boundary-file.html)

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