



DRAFT

Narragansett Indian Tribe

Priority Climate Action Plan

PREPARED FOR



Narragansett Indian Tribe
4533 South County Trail
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Acronyms

BEV	Battery Electric Vehicle
CCAP	Comprehensive Climate Action Plan
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CPNRD	Community Planning and Natural Resources Department
EEM	Energy Efficiency Measure
GHG	Greenhouse Gas(es)
IRA	Inflation Reduction Act
kW	kilowatt
kWh	kilowatt-hour
LGOP	Local Government Operations Protocol
MMBtu	One million British thermal units
MT	Metric Ton
MW	Megawatt
MWh	Megawatt-hour
NIT	Narragansett Indian Tribe
N ₂ O	Nitrous Oxide
NO _x	Nitrogen Oxides
PCAP	Priority Climate Action Plan
PM _{2.5}	Particulate Matter (with diameters that are generally 2.5 micrometers and smaller)
PM ₁₀	Particulate Matter (with diameters that are generally 10 micrometers and smaller)
PV	[Solar] Photovoltaic
SO ₂	Sulfur Dioxide
TGIT	U.S. EPA's Tribal Greenhouse Gas Inventory Tool
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WARM	U.S. EPA's Waste Reduction Model

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Introduction

The Climate Pollution Reduction Grants (CPRG) program, created through the Inflation Reduction Act of 2022 (IRA), administers funding to U.S. states, municipalities, tribes, and territories to develop and implement strategic measures to reduce greenhouse gas (GHG) emissions and other harmful air pollutants. The Narragansett Indian Tribe (Tribe), acting through its Community Planning and Natural Resources Department (CPNRD), has applied for and has been awarded a CPRG grant to complete a Priority Climate Action Plan, the first phase of the CPRG process. This PCAP provides an overview of and quantifies the significant sources of GHG emissions associated with Tribal government operations, as well as evaluates near-term and high-impact measures that increase the Tribe’s energy and resource efficiency and use of renewable energy in place of fossil fuels. It will be followed by a Comprehensive Climate Action Plan (CCAP) that will provide a more comprehensive analysis of Tribal government emissions, project those emissions over the long term, set both near- and long-term emissions reduction targets, and close the gap with respect to additional emissions reduction opportunities.

1.1 Background on the Narragansett Indian Tribe

The Narragansett Indian Tribe (Tribe) is the modern successor of the Narragansett and Niantic Tribes, the indigenous people of the area now known as the State of Rhode Island. Currently, the Tribe has approximately 3,400 members and owns approximately 2,480 acres of land (Trust and fee) much of which is environmentally protected wetlands in and around the Towns of Charlestown and Westerly in Rhode Island’s southern region. **The Tribe recognizes the impact of climate change to its natural resources as seeks to resiliency to be better prepared for future**

climate impacts, storm events, and biological events. The Tribe understand the need to reduce its impact on greenhouse gas emissions Tribal members live off tribal lands, primarily in Washington County, Kent County and Providence County, Rhode Island.

The geographic boundaries of the PCAP are the Narragansett Indian Tribal lands in southern Rhode Island within the Town of Charlestown (Washington County) (**Figure 1**). These lands house the 10 tribal-owned and operated buildings listed in **Table 1**.

Figure 1. Narragansett Indian Tribal Lands Topographic Map

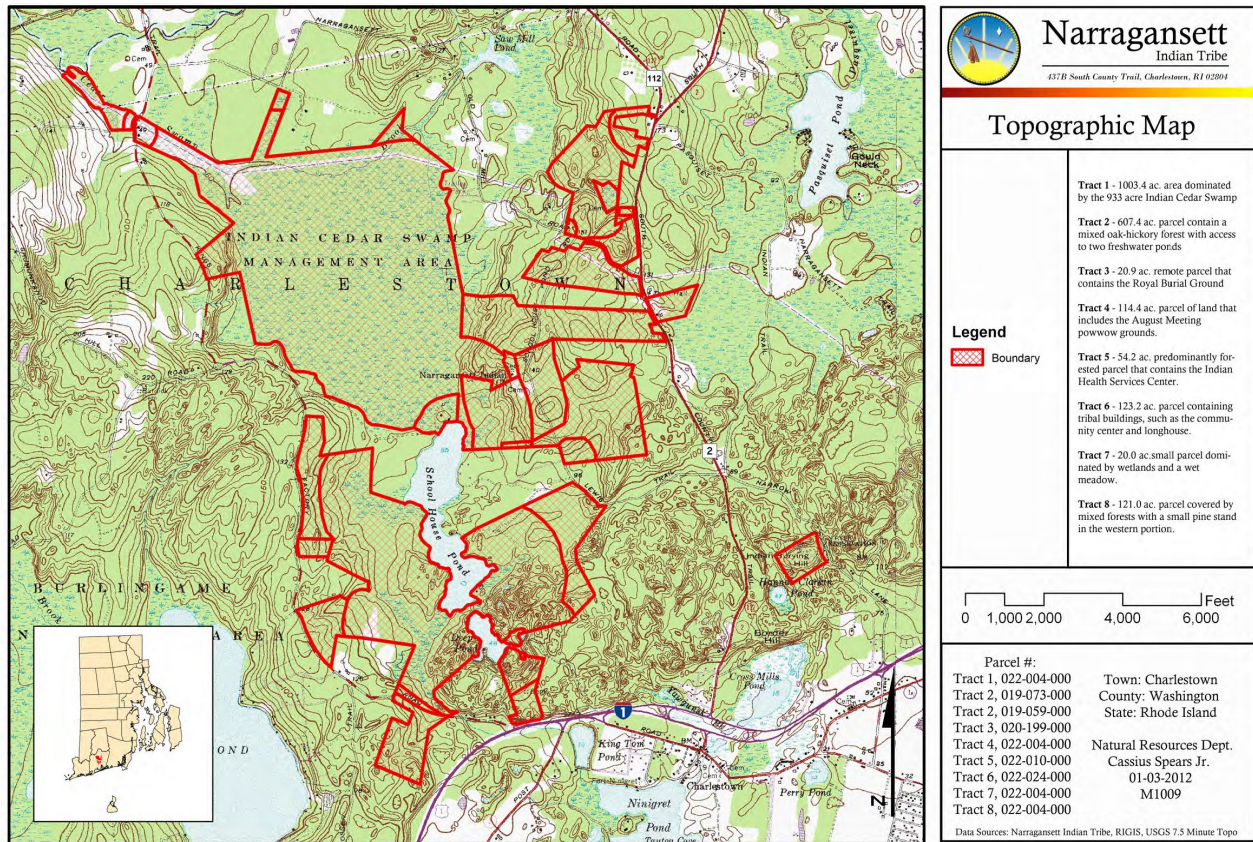


Table 1. Narragansett Indian Tribe – Owned and Operated Buildings

Tribal Building/Facility	Address	Town
<i>4 Winds Community Center</i>		
North Wind/Meal Site	4 Winds Community Access Road	Charlestown
Silver Clouds Senior Center	4 Winds Community Access Road	Charlestown
Hand-In-Hand Day Care	4 Winds Community Access Road	Charlestown
Tribal Police Station	4375 S County Trail	Charlestown
Community Planning & Natural Resources	4375 S County Trail	Charlestown
Health Center	51 Old Mill Road	Charlestown
Narragansett Indian Church/Campground	Indian Church Road	Charlestown
Administration Building	4533 S County Trail	Charlestown
Long House	4425 S County Trail	Charlestown

Tribal Building/Facility	Address	Town
NIT Farm (Gate House and Morton Building)	105 Pound Road	Westerly

1.2 Overview of the CPRG Program

Communities across the United States are increasingly impacted by anthropogenic climate change-induced hazards such as extreme heat, flood, and storm surge, in addition to shifts in average climate conditions. These impacts are projected to increase in frequency and intensity, harming infrastructure, ecosystems, and social systems that provide services essential to community vitality. If not adequately addressed, climate change threatens various aspects of daily life and exacerbates existing community challenges arising from decaying aging infrastructure, strained ecosystems, and deep-seated inequalities. Inversely, climate change also presents an invaluable opportunity to revitalize communities through investing in a cleaner economy, reducing environmental burden, and promoting socioeconomic equities and resilience.

Through the CPRG program, the U.S. EPA aims to achieve the following:

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

The CPRG program is comprised of two main planning phases. Phase I is the development of this PCAP, while Phase II is the development of a CCAP, due by March 31, 2025. The CCAP will build and expand upon the foundation laid forth in the PCAP to comprehensively prepare a GHG emission inventory and corresponding GHG emission reduction measures for implementation. The CPRG program also consists of competitive implementation grants that will provide funding for state, territorial, local, and tribal implementation priorities.

1.3 Approach to Plan Development

The development of the PCAP began with an effort to identify and collect activity data associated with Tribal government operations to serve as inputs to the GHG emissions inventory. The CPNRD collected data internal to the Tribe across its departments, buildings and facilities, vehicle and equipment fleet, and waste streams, as well as data owned by third-party partners consisting of utilities, fuel vendors, and waste disposal services. The CPNRD also provided valuable information on the Tribe’s organization, policies, and previous plans – such as its *2024-2030 Comprehensive Plan & Economic Plan*.

The NIT’s vendor, VHB, established a baseline understanding of Tribal government operations pertinent to the GHG emissions inventory by conducting interviews (both in-person and virtual) with Tribal leaders and department representatives – including Chief Sanchem. Individuals who were not available for interviews were provided and submitted a project questionnaire. To develop a more comprehensive understanding of existing conditions, VHB conducted a site visit to tour and explore NIT-owned and -operated assets and to discuss facility operations with the persons responsible for them. Each form of engagement provided an opportunity to solicit Tribal

input on opportunities to reduce GHG emissions and harmful air pollutants (criteria air pollution and toxic air pollutants) to ensure the PCAP reflected the Tribe’s needs, challenges, and vision.

The results of the GHG inventory (see **Chapter 2**) and organizational engagement informed the identification of four priority GHG reduction measures – those that are high-impact and can be implemented by the NIT in the near term, as well as supporting measures. They represent best and innovative practices and reflect the priorities of project-aligned grant opportunities and initiatives of other Tribal and non-tribal government authorities. The NIT and VHB screened the measures for feasibility and practicality before including them in this PCAP, which included an assessment of the Tribe’s implementation authority.

VHB provided technical assistance by quantifying the emissions reduction potentials of each high-impact measure, along with identifying their order of magnitude costs and co-benefits. Implementation details were then defined for each measure including its implementing agency, schedule, milestones, tracking metrics, and funding opportunities.

Community input was deliberately incorporated throughout the PCAP development process to capture the wants and needs of the Tribe. During the development of the CCAP, additional stakeholder engagement will be conducted to solicit further feedback on existing conditions, the priority GHG reduction measures, additional reduction measures, and GHG reduction targets.

1.3.1 Additional Collaborations

Development of the PCAP involved collaboration within the PCAP Project Team – inclusive of the CPNRD and VHB – and with external entities, namely the U.S. EPA and other Tribes pursuing funding under the CPRG program.

Within the PCAP Project Team, regular collaboration consisted of recurring meetings to ensure ongoing coordination of PCAP development efforts, especially concerning data collection and validation, and the timely submission of deliverables. In particular, these meetings provided a basis for planning engagement activities, including departmental interviews, the development and distribution of the project questionnaire to Tribal departments, and a site visit that fostered in-person, open-ended discussions with key Tribal leaders and staff.

Internal Project Team collaborations also included VHB leading NIT representatives in an ideation session, at which existing conditions were presented and emission reduction opportunities were identified and evaluated for their implementation potential.

The CPNRD led coordination and discussions with the U.S. EPA and other Tribal governments. This included...

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GHG Emissions Inventory

This PCAP includes the NIT's first-ever GHG emissions inventory, covering Tribal government operations in calendar year (CY) 2023 (the base or reporting year). CY2023 is the most recent year for which activity data was widely available across the sources of emissions included in the inventory (see **Section 2.2**).

The following sections detail the approach applied in the development of the GHG emissions inventory, along with its findings.

2.1 Organizational Boundary

The GHG emissions inventory applied the operational control approach. This means that its organizational boundary accounts for operations where the Tribe has full authority to introduce and implement operating policies. This includes GHG emissions-generating activities at the buildings and facilities listed in **Table 1**.

Note that this inventory excludes facilities where the NIT holds an operating lease but does not have operational control. This includes office space leased for the Housing Department at 4080 South County Trail in Charlestown.

2.2 Sources of Emissions

The GHG emissions inventory reports on the NIT's Scope 1 (direct emissions, except for direct CO₂ emissions from biogenic sources) and Scope 2 (indirect emissions associated with the consumption of purchased electricity) emissions. Coverage of Scope 3 (all other indirect sources of emissions) is limited to waste disposal.

Table 2 lists the sources for which emission estimates have been quantified, along with justifications for their inclusion in the inventory.¹ Also noted are data that could not be collected at this time. As these outstanding data become available, they will be incorporated into the GHG emissions inventory included in the CCAP.

Table 2. GHG Emissions Inventory – Included Scopes and Sources

Tribal Building/Facility	Description	Justification for Inclusion	Outstanding Data¹
<i>Scope 1</i>			
Stationary Combustion	Emissions generated from the on-site use of fossil fuels in building systems to produce heat and to power backup power generators	NIT-owned building systems (HVAC and domestic hot water) use either propane or fuel oil and their backup power generators run on either propane or diesel	Fuel oil consumption data at the North Wind Building/Meal Site, Hand-In-Hand Day Care, and Community Planning and Natural Resource Building
Mobile Combustion	Emissions generated from the use of fossil fuels in vehicles and equipment	NIT-owned fleets contain vehicles and equipment powered by gasoline or diesel	Fuel consumption associated with the vehicles operated by the NIT's Police and Administration Departments.
<i>Scope 2</i>			
Purchased Electricity	Emissions associated with the consumption of purchased electricity	NIT-owned buildings and facilities are connected to the regional electric grid and consume electricity to satisfy loads associated with HVAC systems; water pumping, treatment, and heating; lighting; and plugs (e.g., computers and appliances). NIT owns two battery electric passenger cars and two electric vehicle charging stations	N/A
<i>Scope 3</i>			
Waste Disposal	Emissions associated with waste disposal	NIT operations generate municipal solid waste that is sent for processing at a regional landfill with landfill gas recovery	N/A

¹ As data are available, additional sources of emissions shall be included in the CCAP, including CH₄ and N₂O emissions generated as part of agriculture and land management and created by septic systems, carbon stocks of NIT-owned lands, and employee commuting.

2.3 Approach and Methodology

The inventory was prepared using the U.S. EPA’s Tribal GHG Inventory Tool (TGIT), specifically the Government Operations Module,² which is consistent with the Local Government Operations Protocol (LGOP), version 1.1. The use of the TGIT was supplemented by the U.S. EPA’s Waste Reduction Model (WARM),³ which is recommended by the TGIT to estimate emissions associated with solid waste disposal/management. Default emission factors included within each of these tools were applied in the analysis. eGrid emission factors associated with the NEWE eGrid subregion (NPCC New England) were applied to estimate location-based emissions associated with the Tribe’s grid-purchased electricity.

GHG emission estimates for each of the sources of emissions listed in **Table 2** included carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). These estimates are presented throughout this inventory as carbon dioxide equivalents (CO₂e) by applying 100-year global warming potential values derived from the IPCC’s Fifth Assessment Report (AR5).

2.3.1 Data Collection and Summary

Data collection, including the acquisition of asset inventories, was coordinated by the CPNRD. Activity data for stationary source combustion was obtained from fuel suppliers including Suburban Propane, Casey’s Oil & Propane, Superior Plus Propane, and Diesel Direct, while data for mobile source combustion was obtained from Sunoco (Sunoco Business Fleet). Purchased electricity consumption was obtained from the Tribe’s electric utility provider, Rhode Island Electric. Solid waste generation was obtained from the Tribe’s waste hauler, RPE Waste Services. **Table 3** presents a summary of the activity data by source.

Table 3 Summary of Activity Data

Emissions Source and Data Provider	Quantity	Unit
<i>Stationary Combustion</i>		
Suburban Propane	8,321.2	gallons
Casey’s Oil & Propane	2,201.9	gallons
Superior Plus Propane	6,702.9	gallons
Diesel Direct	88.6	gallons
<i>Mobile Combustion</i>		
Sunoco Business - Gasoline	17,143	gallons
Sunoco Business - Diesel	3,310	gallons
<i>Purchased Electricity</i>		
Rhode Island Electric	432,382	kWh
<i>Waste Production</i>		
RPE Waste Services - MSW	30.27	tons

² The Tribal Greenhouse Gas Inventory Tool is available at <https://www.epa.gov/statelocalenergy/tribal-greenhouse-gas-inventory-tool>.

³ The WARM Model is available at <https://www.epa.gov/warm>.

2.4 Summary of Findings

Tables 4 and 5 present the results of the NIT’s GHG emissions inventory covering its government operations. Total emissions generated in 2023 amounted to 395.99 MT CO₂e. Among these emissions, Scope 1 (direct emissions) comprised the majority at 72 percent, which itself is comprised of stationary combustion emissions (25 percent of total emissions) and mobile combustion emissions (47 percent of total emissions). Scope 2 (indirect emissions from purchased electricity) comprised 27 percent of the NIT’s total emissions. Waste generated by NIT operations, which falls under Scope 3, contributed a negligible 1 percent.

Table 4 GHG Emissions Inventory Summary – Total Emissions by Scope (MT CO₂e)

Scope	CO ₂	CH ₄	N ₂ O	Total MT CO ₂ e	Percent of Total
Scope 1	283.77	0.14	0.27	284.17	72%
Scope 2 - Location Based	105.78	0.40	0.47	106.65	27%
Scope 3	-	5.17	-	5.17	1%
Total Emissions	389.55	5.71	0.73	395.99	100%

Table 5 GHG Emissions Inventory Summary – Total Emissions by Source (MT CO₂e)

Source	CO ₂	CH ₄	N ₂ O	Total MT CO ₂ e	Percent of Total
Stationary Combustion	99.46	0.13	0.25	99.84	25%
Mobile Combustion	184.31	0.00	0.01	184.33	47%
Electricity - Location Based	105.78	0.40	0.47	106.65	27%
Waste Generation	-	5.17	-	5.17	1%
Total Emissions	389.55	5.71	0.73	395.99	100%

3

GHG Reduction Measures

The following GHG reduction measures were identified as those that are high-impact and can be implemented by the NIT in the near term. Each of these priority measures is described below, along with a quantified estimate of their potential GHG and harmful air pollutant emissions reductions; note that such reduction benefits were assessed on an individual, not cumulative, basis. Also listed are their key implementing agency or agencies, implementation schedule and milestones, expected geographic location, order of magnitude cost estimates, intersection with other available third-party funding, and metrics for tracking progress. This section also identifies measures that have preliminarily been identified to enable or otherwise support the NIT in achieving its climate mitigation ambitions.

The process of identifying additional GHG reduction measures will continue in the development of the CCAP. These additional measures may require longer planning and/or implementation timelines, have implementation authorities other than the Tribe, and demonstrate lower cost-benefit values.

3.1 Priority Measure #1 – Solar PV + Battery Storage

The NIT does not currently generate any electric power, from renewable sources or otherwise, apart from the propane and diesel backup generators servicing its buildings. The installation of solar photovoltaic (PV) systems can mitigate emissions associated with the Tribe's consumption of grid-purchased electricity, which comprised 27 percent of its total emissions in 2023. As part of this PCAP, each building owned by the Tribal government was assessed for its solar PV potential. **Table 6** summarizes the preliminary results of this assessment by project site, while **Table 7** provides implementation details of this measure.

Table 6 Solar PV Installations – Summary of Solar PV Assessments

Building	Address	Electricity Consumption (kWh/yr.)	PV Generation (kWh/yr.)	Proposed Installation Type
4 Winds Community Center ¹	4 Winds Community Access Rd, Charlestown, RI 02813	12,813	33,561	Rooftop
Tribal Police Station	4375 S County Trail, Charlestown, RI 02813	41,917 ²	108,620	Rooftop and Carport
NIT Farm	105 Pound Road, Westerly, RI, 02891	2,953	166,811 ³	Rooftop ³
Narragansett Indian Church/Campground	Indian Church Rd. Charlestown, RI 02813	25,801	– ⁴	– ⁴
Administration Building	4533 S County Trail, Charlestown, RI 02813	84,560	188,937	Rooftop and Carport
Long House	4425 S County Trail, Charlestown, RI 02813	51,698	23,940	Rooftop
NIT Health Center	51 Old Mill Rd, Charlestown, RI 02813	212,640	517,202	Rooftop and Carport
Total	--	432,382	1,039,071	--

Source: VHB, 2024.

- 1 The 4 Winds Community Center consists of three buildings: Hand-In-Hand Daycare, North Wind/Meal Site, and Silver Clouds Senior Center. A greenhouse is also located at this site.
- 2 Electricity consumption at the Tribal Police Station includes end uses at the Tribal Police Station, Tribal Police Trailer, Community Planning and Natural Resource Building, Community Planning and Natural Resource Trailer, and Outdoor Lighting.
- 3 At the NIT Farm, solar PV installations were evaluated for the Gatehouse and Morton Building.
- 4 The Narragansett Indian Church/Campground was not evaluated due to its remote location and archaeological and historical sensitivities.

As shown in **Table 6**, given the parameters of VHB’s solar PV assessment, over 1,000 MWh of renewable electricity can potentially be produced on NIT property on an annual basis. This currently exceeds the Tribe’s annual electricity consumption of roughly 430 MWh; however, not every project should be pursued as some sites offer advantages over others. Any excess production can afford the Tribe financial incentives beyond energy cost savings through the Rhode Island Net Metering program.

Table 7 Solar PV Installations – Implementation Details

Implementation Agency	Narragansett Indian Tribe
Implementation Schedule	1 to 3 Years
Implementation Milestones	Obtain Town of Charlestown Approvals and Permits; Start Construction; End Construction; Interconnection
Geographic Location(s)	See Table 7
Intersection of Other Funding Sources	Inflation Reduction Act U.S. Department of Energy: <ul style="list-style-type: none"> • Clean Energy Technology Deployment on Tribal Lands • Energy Efficiency and Conservation Block Grant Program • Local Government Energy Program • Tribal Energy Loan Guarantee Program

Metrics Tracking	kW of Installed Solar PV Capacity; Annual kWh of Generated Solar Power
Estimated Cost ¹	\$4,800,000 (Total Across Projects)
Annual Estimates GHG Emission Reductions	106.5 MT CO ₂ e/yr.
Annual Estimates Criteria Air Pollution Emission Reductions	NO _x : 135.08 lbs./yr. SO ₂ : 10.39 lbs./yr.
Implementation Authority	Town of Charlestown Permitting

¹ Does not account for the acquisition of potential funding sources or potential savings.

Additionally, the above solar PV projects can be paired with battery systems to displace the use of the Tribe’s propane and diesel generators and to increase its energy resilience. Most of the Tribe’s buildings are backed up by generators since power outages are not infrequent. Battery systems can be used to provide this backup power instead of fossil fuel generators, displacing fuel use and avoiding on-site emissions. **Table 8** provides a summary of each site’s backup power needs, while **Table 9** provides implementation details of this supplemental measure. It is anticipated that battery storage will be installed in tandem with the solar PV systems listed in **Table 6**.

Table 8 Battery Backup – Summary of Need

Building	Existing Generator Capacity (kW)	Fuel Source
<i>4 Winds Community Center</i>		
Hand-In-Hand Day Care	?	Propane
Silver Clouds Senior Center	20	Propane
North Wind Building/Meal Site	24	Propane
Tribal Police Station	12	Propane
CPNRD Building	16	Propane
Administration Building	?	Propane
Long House	?	Propane
NIT Health Center	124	Diesel

Table 9 Battery Backup – Implementation Details

Implementation Agency	Narragansett Indian Tribe
Implementation Schedule	See Table 7 – Same as Solar PV Systems
Implementation Milestones	See Table 7 – Same as Solar PV Systems
Geographic Location(s)	See Table 8
Intersection of Other Funding Sources	See Table 7 – Same as Solar PV Systems
Metrics Tracking	Nameplate Capacity; Hours of Use
Estimated Cost ¹	\$96,000 (Total Across Projects)
Annual Estimates GHG Emission Reductions	X MT CO ₂ e/yr.
Annual Estimates Criteria Air Pollution Emission Reductions	NO _x : ? lbs./yr. SO ₂ : ? lbs./yr.
Implementation Authority	See Table 7 – Same as Solar PV Systems

¹ Does not account for the acquisition of potential funding sources or potential savings.

One additional solar PV opportunity that has not yet been evaluated is agriSolar or agrivoltaics at the NIT Farm. With an abundance of land available at this property, and the opportunity for co-location with agricultural production, the NIT Farm represents a significant opportunity for the Tribe to play a critical role in increasing renewable energy supplies in Rhode Island, aligned with the State’s Renewable Energy Standard (RI RES). This opportunity will be further explored in the development of the CCAP.

3.2 Priority Measure #2 – Energy Audits

The NIT has not yet commissioned energy audits for its owned and operated buildings. Through an assessment of each building’s energy consumption and energy-consuming systems (e.g., HVAC and Lighting Systems), energy auditing would identify energy efficiency measures (EEMs) that would reduce energy consumption and associated costs. EEMs generally capture energy savings associated with building air infiltration, lighting retrofits, building automation controls, mechanical modifications, plug-load power management, and water conservation. A walkthrough of NIT’s buildings preliminarily identified the following potential EEMs, which include a mix of low- and high-cost recommendations:

- › Completion of LED retrofits/replacements for inefficient indoor and outdoor lighting fixtures, potentially with lower-wattage lamps where LEDs are already present;
- › Installation of lighting controls, such as occupancy sensors and daylight sensors;
- › Reducing normal operating temperatures;
- › Establishing time of day scheduling for HVAC systems;
- › Performing building infiltration sealing (e.g., caulking, weatherstripping, flashing, etc.);
- › Installing ceiling, floor, and wall insulation;
- › Adopting IT equipment management software;
- › Installing WaterSense flow and flush fixtures; and
- › Completing installation of building-level meters and end-use sub-metering to gain a greater understanding of energy use.

Table 10 provides implementation details of this measure.

Table 10 Energy Audits – Implementation Details

Implementation Agency	Narragansett Indian Tribe
Implementation Schedule	First Year
Implementation Milestones	Research and Hire Energy Audit Contractor; Conduct Energy Audits; Obtain Town of Charlestown Approvals and Permits, as necessary; Implement EEMs; Monitor Energy Savings
Geographic Location(s)	See Table 4
Intersection of Other Funding Sources	U.S. Department of Energy <ul style="list-style-type: none"> • Clean Energy Technology Deployment on Tribal Lands • Energy Efficiency and Conservation Block Grant Program
Metrics Tracking	Number of EEMs Identified/Implemented; Energy Savings (MMBtus)
Estimated Cost ¹	\$4,800 (Total Across Projects; Not Including Implementation of EEMs)

Annual Estimates GHG Emission Reductions ²	35.4 MT CO ₂ e/yr.
Annual Estimates Criteria Air Pollution Emission Reductions ²	NO _x : 49.0 lbs./yr. SO ₂ : 3.8 lbs./yr. CO: 22.6 lbs./yr. PM _{2.5} : 2.1 lbs./yr. PM ₁₀ : 2.1 lbs./yr.
Implementation Authority	Town of Charlestown Permitting – <i>Depends on EEMs Identified</i>
1	Does not account for the acquisition of potential funding sources or potential savings.
2	Assumes a 17.5 percent energy savings potential, which is the median value of the range presented by the U.S. Department of Energy at https://www.energy.gov/energysaver/articles/energy-saver-101-infographic-home-energy-audits .

3.3 Priority Measure #3 – Heat Pump Retrofits

With one exception (the Gate House at the NIT Farm), all NIT-owned buildings have HVAC and water heating equipment powered by fossil fuels - either propane or fuel oil. Electrifying these systems through heat pump technologies, such as cold climate air source heat pumps or ground source heat pumps, would significantly reduce the Tribe’s stationary combustion emissions under Scope 1. By generating power on-site (see Priority Measure #1) or otherwise sourcing renewable electricity, the annual emissions could be further reduced. **Table 11** provides implementation details of this measure.

Table 11 Heat Pump Retrofits – Implementation Details

Implementation Agency	Narragansett Indian Tribe
Implementation Schedule	2 to 3 Years
Implementation Milestones	Research and Hire HVAC Contractor; Start Construction; End Construction; Track Energy Consumption
Geographic Location(s)	See Table 1 (Excluding the NIT Farm)
Intersection of Other Funding Sources	Inflation Reduction Act U.S. Department of Energy: <ul style="list-style-type: none"> • Clean Energy Technology Deployment on Tribal Lands • Energy Efficiency and Conservation Block Grant Program • Local Government Energy Program
Metrics Tracking	Energy Consumption (MMBtus)
Estimated Cost ¹	\$4,800 (Total Across Projects)
Annual Estimates GHG Emission Reductions ²	35.4 MT CO ₂ e/yr.
Annual Estimates Criteria Air Pollution Emission Reductions ²	NO _x : 49.0 lbs./yr. SO ₂ : 3.8 lbs./yr. CO: 22.6 lbs./yr. PM _{2.5} : 2.1 lbs./yr. PM ₁₀ : 2.1 lbs./yr.
Implementation Authority	The NIT Has Full Implementation Authority
1	Does not account for the acquisition of potential funding sources or potential savings.

3.4 Priority Measure #4 – Fleet Electrification

The CPNRD owns 20 on-road vehicles and many off-road vehicles, landscaping, and other support equipment. In 2023, this fleet consumed approximately 17,100 gallons of gasoline and 3,300 gallons of diesel fuel. This consumption emitted approximately 185 MT of CO_{2e}, representing 47 percent of the Tribe’s total estimated emissions. Electrification of this equipment would substantially reduce these GHG emissions. As under Priority Measure #3, by generating power on-site (see Priority Measure #1) or otherwise sourcing renewable electricity, the annual emissions could be further reduced.

While the availability of fully electric off-road equipment is limited in many categories, most of the existing on-road fleet has multiple options available on the open market for battery electric replacements. By replacing vehicles as they age past their useful life, the Tribe can reduce the use of fossil fuels as part of their operations. Of note, the NIT Health and Human Services Department currently owns three electric vehicles, one Chevrolet Bolt and two Chevrolet Bolt EUVs. These vehicles are primarily charged at two, dual port Level 2 charging stations sited at the Health Center.

Table 12 provides implementation details of replacing the CPNRD’s on-road vehicle fleet with battery electric vehicles (BEV). Note that this measure includes the procurement and installation of electric vehicle charging stations. Based on the size and use cases of the Tribe’s on-road fleet, it is estimated that four additional charging Level 2 charging stations and one Level 3 charging station would be required.

Table 12 Fleet Electrification – Implementation Details

Implementation Agency	Narragansett Indian Tribe
Implementation Schedule	1 to 10 years
Implementation Milestones	Rolling Vehicle Replacement with Electric Alternatives; Coordination with Rhode Island Electric, Procurement of Charging Equipment, Installation of Charging Equipment
Geographic Location(s)	CPNRD Building (4375 S County Trail, Charlestown, RI 02813) and Admin Building (4533 S County Trail, Charlestown, RI 02813)
Intersection of Other Funding Sources	Inflation Reduction Act Qualified Commercial Clean Vehicle Tax Credit Alternative Fuel Vehicle Refueling Property Tax Credit U.S. Department of Energy: <ul style="list-style-type: none"> • Clean Energy Technology Deployment on Tribal Lands • Energy Efficiency and Conservation Block Grant Program • Local Government Energy Program • Tribal Energy Loan Guarantee Program
Metrics Tracking	Annual gasoline and diesel consumption; Annual electricity consumption
Estimated Cost ¹	\$1,110,000 (Vehicle Replacements); \$105,000 (Charging Station Procurement and Installation)
Annual Estimates GHG Emission Reductions	88.2 MT CO _{2e} /yr.

Annual Estimates Criteria Air Pollution Emission Reductions	CO: 812 kg/yr. NO _x : 18.9 kg/yr. PM _{2.5} : 1.3 lbs./yr. PM ₁₀ : 1.5 lbs./yr. VOC: 32.6 lbs./yr.
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Implementation Authority	Town of Charlestown Permitting, Rhode Island Electric
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1 Does not account for the acquisition of potential funding sources or potential savings.

In addition to transitioning its on-road vehicles, the CPNRD should also replace its gasoline- and diesel-based landscaping and other support equipment with electric alternatives. Doing so would mitigate its remaining mobile combustion emissions.

3.5 Supporting Measures

The following actions represent measures that would enable the priority actions above or where the direct GHG and criteria pollutant emissions reduction potential would be limited in comparison. Measures going beyond the scope of the Tribal government’s emissions, namely measures that involve the broader Tribal Membership, are also included. Each supporting measure is defined by a potential implementation schedule.

- › Enact formal processes for the collection and management of activity data pertinent to the Tribe’s GHG Emissions Inventory. This can involve the use of free-to-use software, such as EnergyStar Portfolio Manager, to track metrics relating to building energy use, water consumption, and waste generation.

Potential Implementation Schedule: 1 to 2 years

- › Conduct an employee commute survey to understand how Tribal Government staff commute to work and how emissions associated with commute trips could be reduced.

Potential Implementation Schedule: 0 to 1 year

- › Update the GHG Emissions Inventory at least every 5 years to measure and report on the Tribal Government’s progress towards climate mitigation and, if necessary, to inform program adjustments that would allow for emissions reductions to align with expectations.

Potential Implementation Schedule: Ongoing

- › Assign staff or acquire contractor services to conduct ongoing data collection and emissions reporting, as well as to oversee the implementation of the priority and supporting measures included in this plan.

Potential Implementation Schedule: 1 to 2 years

- › Create a facilities department and develop a facilities management plan that ensures the Tribal Government’s buildings and facilities are well-maintained and energy- and water-efficient.

Potential Implementation Schedule: 2 to 3 years

- › Adopt a set of policies that guide the Tribal Government’s procurement practices. These policies should be tailored to each procurement category with respect to their intersection with energy efficiency, alternative energy sources, water conservation, waste reduction, and community support. Ensure such policies are properly understood by all staff responsible for capital and non-capital purchases. Concurrent with this measure, all other Tribal Government policies should be reviewed for consistency.

Potential Implementation Schedule: 2 to 3 Years

- › Adopt sustainable and resiliency design standards for new construction and major renovations that incorporate USGBC’s Leadership in Energy and Environmental Design (LEED) – minimum LEED Gold certification – and strive for net-zero construction (energy and emissions). Ensure such standards are shared with and understood by all departments responsible for capital investments as well as the architecture and engineering firms and contractors responsible for design and construction.

Potential Implementation Schedule: 2 to 3 Years

- › Develop an educational program to build awareness within the Tribal Government and amongst the broader Tribal Membership on issues of climate change, i.e., the generation of GHG emissions causing climate change and the resulting hazards, vulnerabilities, and risks. This program should focus on how personal contributions can support broader climate action goals and can have organizational as well as personal co-benefits.

Potential Implementation Schedule: 3 to 5 Years

- › Prepare a repository of resources for Tribal Membership, such as information on available incentives, to support climate action within their own homes and businesses. Alongside this effort, explore the possibility of providing direct technical assistance and/or financial incentives.

Potential Implementation Schedule: 3 to 5 Years

- › Prepare a repository of resources for Tribal Membership, such as information on available incentives, to support climate action within their own homes and businesses. Alongside this effort, explore the possibility of providing direct technical assistance and/or financial incentives.

Potential Implementation Schedule: 3 to 5 Years