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**MATCH-E-BE-NASH-SHE-WISH
BAND OF POTTAWATOMI INDIANS
GUN LAKE TRIBE**

**REQUEST FOR PROPOSAL
GUN LAKE TRIBE CLIMATE PROJECT**

ALL BIDS DUE BY FRIDAY OCTOBER 6, 2023 BY 4:00 PM



Request for Proposals Gun Lake Tribe Climate Project

I. Introduction

Gun Lake Tribe is seeking proposals to update and expand the existing Gun Lake Tribal Climate Change Adaptation Plan (GLTCCAP) to include a Priority Climate Action Plan (PCAP) and a Comprehensive Climate Action Plan (CCAP) that meet the U.S. Environmental Protection Agency's (EPA) criteria (Appendix A). These projects must also include an Environmental Protection Agency (EPA) approved Quality Assurance Project Plan (QAPP) for data collection (Appendix B). The update to the GLTCCAP will also include the update of the Tribe's demographics, expansion of strategies and incorporation of implementation projects including solar energy plans for existing and planned facilities. All contractors submitting a proposal are encouraged to meet with Environmental Department staff before submitting a proposal to make sure all proposals meet the needed data for all five sections in the Scope of Work. Please contact Shawn McKenney at 269-397-1780 or by email shawn.mckenney@glt-nsn.gov concerning EPA requirements for all projects.

II. Scope of Work

Project 1.

QAPP and Data Collection – Completed within 2 months after contract is signed. The Contractor will use the EPA template provided (Appendix B) and draft a QAPP for the emission data collection required for the PCAP and CCAP. The contractor must follow the EPA template and utilize EPA tools to complete the QAPP and the inventory. EPA must approve the QAPP before completing the inventory.

Project 2.

PCAP: Completed by March 1, 2024. This plan must include a focused list of near-term, high-priority, implementation-ready measures to reduce greenhouse gas (GHG) pollution and an analysis of GHG emission reductions that would be achieved through implementation of the PCAP. This PCAP must focus on specific sectors and will include sources of GHG emissions and sinks through an inventory. The PCAP must include a GHG inventory, quantified GHG reduction measures, a benefits analysis and a review of authority to be implemented by the Tribe.

The PCAP must include the following:

- a. Narrative report with GHG inventory with reduction measures that can be achieved by the Tribe.
- b. Meet EPA's criteria (Appendix A).

Project 3.



CCAP: Completed by December 1, 2025. This plan must include an overview of the Tribe's significant GHG sources/sinks and sectors, establish near-term and long-term GHG emission reduction goals and define a strategy to address the highest priority sectors to help the Tribe to achieve those goals. The plan must also include the PCAP GHG inventory, GHG emission projections, GHG reduction targets, quantified GHG reduction measures, a benefits analysis and a plan to leverage other federal funding and a workforce planning analysis. The CCAP must meet the EPA's criteria (Appendix A).

The CCAP must also include the following:

- a. Interagency and intergovernmental coordination for the plan to be implemented. A description of how interagency coordination would be conducted, such as through a combination of in-person and virtual meetings with reasonable opportunities to provide input on preliminary and/or draft products; and,
- b. A process and schedule for the Tribe to identify existing and new measures that would lead to GHG reductions and meet other related goals.
- c. Public and stakeholder engagement.
- d. Development plan must involve stakeholder groups and the public in the process for developing the CCAP.

*Contractors should submit one proposal with a detailed budget. The Tribe will choose one contractor to complete the project.

Project 4.

Update the GLTCCAP to completion by end of contract. Final GLTCCAP to the Tribe 4/1/2026.

Project 5.

GLTCCAP: Completed by end of contract, 4/1/2026. Solar feasibility studies for Gun Lake Tribe Government Campus, Water Treatment Plant and Wastewater Plant. These feasibility studies will be based upon average annual electrical needs for the facilities. Studies must include 25%, 50% and 100% build-out costs for direct grid solar connections. Further, studies must include possible layouts and financial analyses. Upon request, the Tribe can provide previous feasibility studies to assist for bid calculations.

III. Project Description

The Gun Lake Tribe Environmental Department is seeking competitive proposals from contractors who have experience completing similar projects that can meet the core objectives in a timely fashion.

IV. Request for Proposal Documents

Applicants should carefully examine the "Gun Lake Tribe Climate Project RFP" to familiarize themselves with applicable requirements prior to submitting a proposal. All questions during the proposal period should be made in writing or email to, Elizabeth Binoniemi-Smith, the Tribe's Environmental Director, at Elizabeth.Binoniemi-Smith@glt-nsn.gov. Prior to submitting a proposal, each applicant should familiarize themselves with all applicable laws, codes, ordinances, rules, and regulations affecting the type of work described within Section II.

V. Pre-Qualification



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To submit a proposal, the applicant and key staff assigned to the project must be licensed and insured, if applicable, under all applicable laws in the State of Michigan.

Applicants must have demonstrated prior experience in work of a similar scope.

The applicant must possess and maintain insurance coverage with the minimum amounts stated below:

- \$1,000,000 Professional Liability Insurance
- \$1,000,000 General Liability Insurance
- \$1,000,000 Error and Omissions Liability Insurance

VI. Proposal Attachment

All proposals must include the following information about your company:

1. Brief history of company.
2. Resumes of key personnel assigned to project.
3. Identification of subcontractors (if applicable).
4. Project Experience: List up to five (5) projects completed with similar scope of work to this project.
5. Legal Processing: Identify any ongoing legal proceeding or pending legal proceeding, *i.e.*, arbitration, compliant or court action, filed against your company or any individual related to the work of your company for any project within the last five (5) years.
6. Work Plan and Schedule: State the methodology and schedule for performance of the scope of work, including a proposed schedule with key milestones for completion of the work in a timely fashion. **We will select a contractor by Friday, October 13, 2023.**
7. Pricing: Please provide a lump sum fixed fee breakdown for each project, including all reimbursable expenses for the completion of the scope of work set forth in your proposal. When preparing the bid, the following items should be taken into account: the Tribe is exempt from State of Michigan sales tax; therefore, all materials purchased within Michigan for the project will not be subject to sales tax.
8. Please contact Shawn McKenney at 269-397-1780 or by email shawn.mckenney@glt-nsn.gov concerning EPA requirements for all projects.

VII. Proposal Standards

Applicants are required to submit an original proposal clearly marked “**Gun Lake Tribe Climate Project.**” Each page of the proposal must clearly identify what company the proposal is from. **Proposals will be accepted until Friday October 6, 2023 in person, by email or first class mail:**

Mail or In-Person Delivery:

Gun Lake Tribe Environmental Department (Climate Project RFP)

2872 Mission Dr.

Shelbyville, MI 49344

Email: Elizabeth.Binoniemi-Smith@glt-nsn.gov

Phone: 269-397-1780



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NOTE: Companies submitting proposals by First Class Mail should allow sufficient time for delivery to ensure receipt by the date/time as specified above.

Faxed proposals will not be accepted. Proposals received after the deadline will be returned to the applicant unopened and will not be accepted. All proposal pricing must remain fixed for a period of ninety (90) days following the bid closure and contain a signed statement to this effect. Gun Lake Tribe will enter into a contract with the chosen contractor upon final selection.

VIII. Terms of Contract

Reasonable preference shall be given to Certified Native American Owned Businesses. Any bidder seeking Indian Preference, must be at least 51% Indian-owned and must contact the Chairperson of the Indian Preference Committee, Amanda Sprague Amanda.Sprague@glt-nsn.gov or 269.397.1630 to receive a prequalification packet.

Gun Lake Tribe reserves the right, in its own discretion, to accept or reject any and all responses, to waive any irregularity and/or informality in any response and to request and receive additional information from any contractor when such acceptance, rejection, waiver or request is in the best interest of the Tribe.

Gun Lake Tribe will enter into a contract with the contractor that preserves the sovereign immunity of the Tribe.

Gun Lake Tribe reserves the right, despite the application of Indian Preference as noted above, to select the contractor with the proposal that the Tribe believes, in its sole and absolute discretion, provides the greater benefit in light of the estimated cost.

Gun Lake Tribe reserves the right to decline to select a contractor for this project.

The contract will not create an employment relationship. The contractor performing work under the contract will not be employees of the Environmental Department or the Tribe.

IX. Documentation

Failure to provide sufficient information for the evaluation criteria will result in the loss of points or being deemed unresponsive. The Environmental Department reserves the right to verify the validity of all information provided.

X. Ranking Criteria

Award of the contract resulting from this RFP will be based upon the most responsive and responsible company whose offer will be the most advantageous to the Tribe in terms of cost, functionality and other factors as specified below. This evaluation will be calculated in accordance with the following evaluation criteria and the respective point values assigned with 1 being low and 100 being high. Consideration of the award will be determined based on the accumulation of points.



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Evaluation Criteria	Points
1. Cost	25
2. Similar Project Experience	10
3. Staff Qualifications	20
4. Work Plan and Procedures	20
5. Proposal Conforms with RFP	15
6. Indian preference	10
Total	100

Appendix A
Gun Lake Tribe Climate Project



Climate Pollution Reduction Grant Program:
Formula Grants for Planning

Program Guidance for Federally Recognized Tribes, Tribal
Consortia, and U.S. Territories

United States Environmental Protection Agency
Office of Air and Radiation

March 1, 2023

CLIMATE POLLUTION REDUCTION GRANTS PROGRAM:
FORMULA GRANTS FOR PLANNING

PROGRAM GUIDANCE FOR FEDERALLY RECOGNIZED TRIBES,
TRIBAL CONSORTIA, AND U.S. TERRITORIES

TABLE OF CONTENTS

1. Overview	4
2. Statutory Authority.....	7
3. Justice40 Initiative and Advancing Environmental Justice	7
4. Eligible Entities	8
5. Allocation of Planning Grant Funds	9
6. Summary – Schedule and Process	9
7. Grant Application Package and Submission Requirements.....	11
7.1. Deadline for Submitting Application Package	11
7.2. Contents of Application Package.....	11
7.3. Grants.gov Application Instructions	11
7.4. Workplan Requirements.....	12
8. Eligible Activities.....	15
9. Strategic Plan Linkages, Outputs, Outcomes, Performance Measures	16
9.1. Linkage to EPA Strategic Plan.....	16
9.2. Outputs	16
9.3. Outcomes.....	17
9.4. Performance Measures.....	17
10. Use of Funds Requirements	18
10.1. Federal Matching Funds	18
10.2. Expenses Incurred Prior to the Project Period	18
11. Award Administration.....	19
11.1. Applicable Requirements.....	19
11.2. Terms and Conditions	19
11.3. Quality Assurance Project Plan (QAPP)	19
11.4. Procurements	19
11.5. Performance Partnership Grants	19
11.6. Report Requirements	20
12. EPA Contacts.....	20

13. Technical Assistance and Tools 21
 13.1. Technical Assistance Overview 21
 13.2. Climate Innovation Teams 21
14. APPENDICES..... 23
 14.1. Statutory Text: Section 60114 of the Inflation Reduction Act 23
 14.2. Deliverable Requirements 25

1. Overview

EPA takes seriously its responsibility to protect human health and the environment as we face increasingly more harmful impacts of climate change. Across our country, communities are experiencing more deadly wildfires and storm surges, more extreme drought and water scarcity, and dangerous levels of flooding, among other impacts. The [Fourth National Climate Assessment](#) found that intense extreme weather and climate-related events, as well as changes in average climate conditions, are expected to continue to damage infrastructure, ecosystems, and social systems that provide essential benefits to communities. If unchecked, future climate change is expected to further disrupt many areas of life and exacerbate existing challenges to prosperity posed by aging and deteriorating infrastructure, stressed ecosystems, and long-standing inequalities. However, with this challenge comes an opportunity to invest in a cleaner economy that can spur innovation and economic growth while building more equitable, resilient communities.

Through the Inflation Reduction Act of 2022 (IRA), Congress provided many tools to pursue greenhouse gas (GHG) pollution reductions, including the Climate Pollution Reduction Grants (CPRG) program. In implementing this and many other programs under the Inflation Reduction Act, 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.

This strategy will allow the country to make the inevitable changes needed to address climate change and make them opportunities—to revitalize the U.S. energy and manufacturing sectors, create millions of good-paying jobs throughout the country, and address historic environmental injustices and inequities. The CPRG program will seek those opportunities in partnership with states, territories, local governments, and tribes, which are in touch with the needs of their communities and familiar with the horizons of GHG reduction opportunities for their economies.

In line with this strategy, EPA is committed to supporting the development and expansion of state, territorial, tribal, and local climate action plans and the expeditious implementation of investment-ready policies, programs, and projects to reduce GHG pollution in the near term. Through the CPRG program, EPA will support state, territorial, tribal, and local actions to reduce GHGs and associated criteria and toxic air pollution through deployment of new technologies, operational efficiencies, and solutions that will transition America equitably to a low-carbon economy that benefits all Americans.

Section 60114 of the Inflation Reduction Act appropriates \$5 billion to EPA to support efforts by states, U.S. territories, municipalities, air pollution control agencies, tribes, and groups thereof

to develop and implement plans to reduce GHGs. This program has two distinct but related phases:

- Planning grants: The Inflation Reduction Act provides \$250 million for eligible entities to develop plans to reduce GHGs.
- Implementation grants: The Inflation Reduction Act provides \$4.6075 billion for grants to implement measures from the GHG reduction plans developed with planning grant funding.¹

This guidance is focused specifically on the \$25 million set-aside for tribes and tribal consortia, and the \$2 million set-aside for U.S. territories, under the \$250 million program for planning grants, which EPA will award as cooperative agreements through a noncompetitive process. Cooperative agreements are similar to grants but entail substantial programmatic involvement between EPA and the recipient.² The term “grant” used throughout this document includes both “grants” and “cooperative agreements” as defined by 2 CFR 200.1.

At a later date, EPA will issue a separate notice of funding opportunity (NOFO) regarding the implementation grants, which EPA plans to award under a competitive process. In that notice, EPA will indicate the funding priorities for the implementation grants.

Overall, this dual-phased CPRG program enables EPA to work in partnership with state, territorial, local, and tribal officials to advance important goals by providing substantial funding for climate action planning and implementation, while maintaining recipients’ flexibility to pursue activities tailored to their unique resources, delivery capacity, and mix of key sectors responsible for emitting and absorbing GHGs (e.g., industry, electricity generation, transportation, commercial and residential buildings, agriculture, natural and working lands, and waste and materials management).

EPA will be awarding the \$250 million available for planning grants (cooperative agreements) to states, municipalities, air pollution control agencies, territories and tribes via a formula as follows:

- \$25 million to tribes and tribal consortia
- \$500 thousand to each of the U.S. territories (Insular Areas), for a total of \$2 million
- \$3 million to all 50 states, District of Columbia (DC), and Puerto Rico, for a total of \$156 million, and \$1 million to each of the 67 most populous metropolitan areas, for a total of \$67 million.

The CPRG program is designed to provide flexible support to tribes and territories, many of whom have never undertaken climate mitigation planning activities. Under this program for planning grants, federally recognized tribes may be eligible for grants of up to \$500,000 for individual tribes or up to \$1 million for groups of 2 or more tribes (tribal consortium or tribal

¹ Three percent of the \$4.75 billion in implementation funds are reserved for EPA administrative costs.

² See [EPA’s Funding Instruments and Authorities](#) for additional details.

partnership), to be awarded by EPA Regional Offices as described in Section 5 “Allocation of Funds.” The U.S. territories of Guam, American Samoa, U.S. Virgin Islands, and the Northern Mariana Islands are eligible for grants of up to \$500,000 each.

States, municipalities, and air pollution control agencies are also eligible entities; their application process is detailed in a [separate document](#).

Under the grants addressed by this guidance for tribes, tribal consortia, and territories, funding recipients will need to produce and submit two key deliverables (in addition to meeting standard grant reporting requirements) over the course of the program period, which may extend up to 4 years from the date of award:

1. A Priority Climate Action Plan (PCAP), due March 1, 2024;³ and,
2. A Comprehensive Climate Action Plan (CCAP), due at the end of the grant period, which can be up to 4 years.

These deliverables are described in detail in Appendix 14.2.

EPA encourages eligible entities to develop (or, if applicable, revise their existing) climate plans consistent with the following programmatic priorities:

- Improve understanding of current and future GHG emissions so that tribal and territorial governments can prioritize actions that reduce such emissions and harmful air pollution (criteria air pollution and toxic air pollutants) where citizens live, work, play, and go to school, particularly in nonattainment areas for the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants.
- Adopt and implement ambitious policies and programs to reduce GHG emissions and accelerate decarbonization across multiple important sectors (e.g., industry, electricity generation, transportation, commercial and residential buildings, agriculture/natural and working lands, and waste and materials management).
- Collaborate closely with other entities (states, municipalities, air districts, other tribes) as appropriate to develop coordinated plans based on best practices.
- Explore opportunities to leverage sources of funding and financing from the Inflation Reduction Act of 2022, Bipartisan Infrastructure Law of 2021, American Rescue Plan Act of 2021, and Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022.
- Stimulate innovative technologies and practices to reduce GHG emissions and associated co-pollutants in hard-to-abate sectors.
- Prioritize actions and policies that will be durable, replicable, and provide certainty in pollution reductions.
- Reduce climate pollution while building the clean energy economy in a way that benefits all Americans, provides new workforce training opportunities, and effectively addresses

³ Applicants for implementation grant funding under the CPRG program will be required to submit a PCAP along with their application.

environmental injustices in disadvantaged communities.

- Adopt robust metrics and reporting programs to track emission reductions and important co-benefits throughout Indian Country and territories.

This document describes how the Agency intends to award and manage CPRG planning grants for tribes, tribal consortia, and territories. This document also describes the programmatic requirements applicable to all cooperative agreements awarded through this program to tribes, tribal consortia, and territories. (A separate program guidance is available for states, municipalities, and air pollution control agencies.)

This guidance document explains the key deadlines, framework for preparing applications and workplans, and submission instructions. Grant recipients shall follow the framework for grants management, requirements, and reporting using the Uniform Grants Guidance (UGG) under 2 CFR Part 200 and EPA regulations under 2 CFR Part 1500. Some of the statutory provisions described in this document contain legally binding requirements. However, this document does not substitute for those provisions or regulations, nor is it a regulation itself. Thus, the document cannot impose legally binding requirements on EPA, tribes, territories, or the regulated community, and it may not apply to all situations.

2. Statutory Authority

Section 60114 of the Inflation Reduction Act, Climate Pollution Reduction Grants (Public Law 117–169, title VI, Aug. 16, 2022, 136 Stat. 2076) amended the Clean Air Act (CAA) by creating section 137, 42 U.S. Code § 7437, for Greenhouse Gas Air Pollution Plans and Implementation Grants. Section 137 of the CAA authorizes the EPA to fund climate pollution planning grants and climate pollution implementation grants to states, air pollution control agencies, municipalities, tribes, or a group of one or more of these entities.

See the statutory text for this provision in Appendix 14.1.

3. Justice40 Initiative and Advancing Environmental Justice

The Inflation Reduction Act can improve the lives of millions of Americans by reducing pollution in neighborhoods where people live, work, play, and go to school. Inflation Reduction Act programs can accelerate environmental justice efforts in communities overburdened by pollution for far too long and can help states, territories, cities, and tribes tackle the country's biggest environmental challenges while creating jobs and delivering energy security.

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. Meaningful involvement means people have an opportunity to

participate in decisions about activities that may affect their environment and/or health; the public's contribution can influence the regulatory agency's decision; community concerns will be considered in the decision-making process; and decision makers will seek out and facilitate the involvement of those potentially affected.

The CPRG program will advance the goals of the Justice40 Initiative set forth in Executive Order 14008, which aims to deliver 40 percent of the overall benefits of relevant federal investments to disadvantaged communities.⁴ More information on Justice40 at the EPA can also be found at: <https://www.epa.gov/environmentaljustice/justice40-epa>.

4. Eligible Entities

Section 137(d)(1) of the Clean Air Act defines “eligible entities” under the CPRG program as states, air pollution control agencies, municipalities, tribes, and groups of one or more of these entities.

Section 302 of the Clean Air Act defines “Indian tribe” as any Indian tribe, band, nation, or other organized group of community, including any Alaska Native village, which is Federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians. Consistent with new section 137(d)(1) of the Clean Air Act, groups of tribes, including tribal consortia and tribal partnerships, may be considered an eligible entity under this program. Tribes, tribal partnerships, and tribal consortia can also participate as collaborating partners in planning efforts managed by lead organizations for states or metropolitan areas.

Section 302 of the Clean Air Act defines “states” as including the 50 states, DC, Puerto Rico, U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. The territories’ funding allocation approach described in this document includes funding for U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. Funding for the 50 states, DC, Puerto Rico, municipalities, and air pollution control agencies is addressed in a [separate program guidance](#).

While groups of two or more eligible entities may choose to form a partnership and submit a single grant application, one eligible entity must be responsible for the planning grant. A tribal partnership must identify which eligible organization will be the recipient of the grant; they must also identify if any eligible organization(s) will be subrecipients (i.e., “pass-through entity”). Any subawards must be consistent with the definition of that term in 2 CFR 200.1 and comply with [EPA’s Subaward Policy](#). The pass-through entity that administers the planning grant and subawards will be accountable to EPA for proper expenditure of the funds and

⁴ Executive Order 14008 uses the phrase “disadvantaged communities,” and this term has been used in existing Federal and state programs to prioritize funding for environmental justice. Some Tribes and community members and advocates prefer alternative terminology, and specifically the use of “overburdened and underserved communities.” Until subsequent guidance can address the question of the most appropriate terminology, this guidance relies on the language used in Executive Order 14008.

reporting and will be the point of contact for the partnership. As provided in 2 CFR 200.332, subrecipients are accountable to the pass-through entity for proper use of EPA funding.

5. Allocation of Planning Grant Funds

Under this grant program, total funding of \$25 million will be provided to federally-recognized tribes, and \$2 million will be available to territories, to develop or enhance climate plans. Interested tribes and territories should work directly with their regional points of contact listed in Section 12 “EPA Contacts” to understand any region-specific procedures or requirements that they should follow to pursue this opportunity.

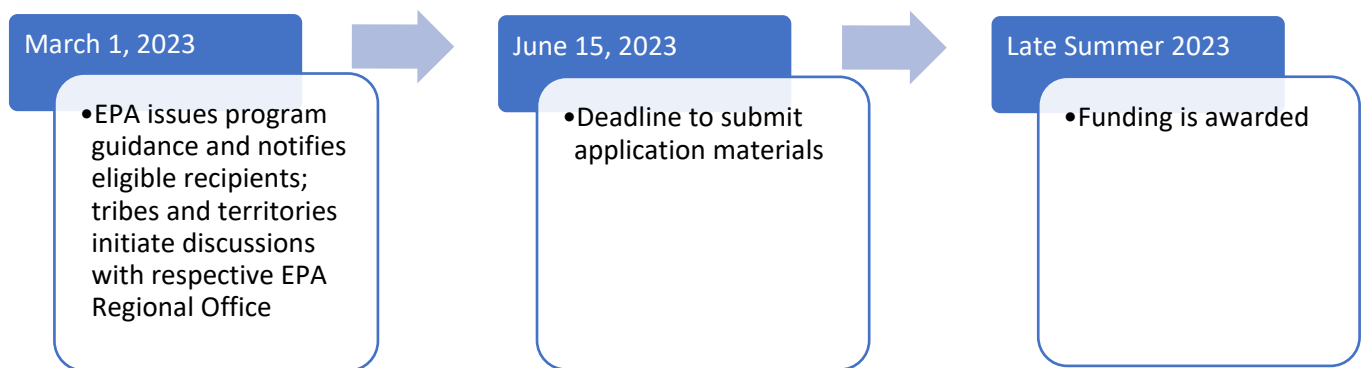
6. Summary – Schedule and Process

While CPRG planning grants will be funded under a non-competitive process, to receive federal funding, eligible entities are nonetheless subject to certain minimum application requirements that must be fulfilled by the deadlines described below.

Key Dates

- **By June 15, 2023**, the lead organization must submit a complete application, which includes a workplan and budget for the planning grant, through Grants.gov. These materials must contain all of the information listed in Section 7 “Grant Application Package and Submission Requirements.” Interested applicants are strongly encouraged to communicate frequently with their EPA point of contact when preparing their application.
- **By late summer/early fall 2023**, EPA Regional Offices expect to award and administer the planning grants. The EPA will perform a merit review of each application and process the awards. Once the awards are processed, recipients will be awarded their funding and can begin work.

The general schedule and process is illustrated below:



If you plan to submit an application for this program, please note the following:

- To apply for a planning grant, the lead organization must have an active registration in the System for Award Management (SAM.gov), an official website for doing business with the U.S. government. While this registration includes a Unique Entity Identifier (UEI), please note that SAM.gov registration is different than obtaining a UEI only. Obtaining a UEI only validates your organization's legal business name and address. Please review the [Frequently Asked Question](#) on the FSD.gov website for additional details. All eligible entities should register in SAM.gov now to ensure they are able to submit an application through Grants.gov. Organizations should ensure that their SAM.gov registration includes a current e-Business (EBiz) point of contact name and email address. The EBiz point of contact is critical for Grants.gov Registration and system functionality. Contact the [Federal Service Desk](#) for help with your SAM.gov account, to resolve technical issues, or to chat with a help desk agent: (866) 606-8220. The Federal Service Desk hours of operation are Monday - Friday 8am - 8pm ET. As of April 2022, the federal government has stopped using the DUNS number to uniquely identify entities. For more information, please visit www.sam.gov/content/duns-uei.
- Once their SAM.gov account is active, the lead organization must register in Grants.gov. Grants.gov will electronically receive your organization information, such as an e-Business (EBiz) point of contact email address and UEI. Organizations applying to this funding opportunity must have an active Grants.gov registration. Grants.gov registration is FREE. If you have never applied for a federal grant before, please review the Grants.gov applicant registration instructions. As part of the Grants.gov registration process, the EBiz point of contact is the only person that can affiliate and assign applicant roles to members of an organization. In addition, at least one person must be assigned as an Authorized Organization Representative (AOR). Only person(s) with the AOR role can submit applications in Grants.gov. Please review the [training videos](#) “Intro to Grants.gov-Understanding User Roles” and “Learning Workspace - User Roles and Workspace Actions” for details on this important process.

Please note that this process can take a month or more for new registrants. Applicants must ensure that all registration requirements are met in order to apply for this opportunity through Grants.gov and should ensure that all such requirements have been met well in advance of the application submission deadline.

Contact Grants.gov for assistance at 1-800-518-4726 or support@Grants.gov to resolve technical issues with Grants.gov. Applicants who are outside the U.S. at the time of submittal and are not able to access the toll-free number may reach a Grants.gov representative by calling +1-606-545-5035. The Grants.gov Support Center is available 24 hours a day, 7 days a week, excluding federal holidays.

7. Grant Application Package and Submission Requirements

Although planning grants are being awarded through a non-competitive process, each lead organization must submit an application package through Grants.gov consisting of a workplan, budget, and required federal forms in order for EPA to disburse funds.

7.1. Deadline for Submitting Application Package

By June 15, 2023, all applicants must submit a complete application package through Grants.gov. These materials must contain all of the information listed in Sections 7.2 and 7.4. Interested applicants are strongly encouraged to contact EPA as early as possible as they develop their funding request and workplan prior to submitting their application.

EPA will review submitted application packages and will contact applicants to discuss any needed corrections or address any questions.

7.2. Contents of Application Package

The application package must include all the following materials in Grants.gov:

- Project Narrative Attachment Form (Narrative Workplan)
 - Narrative
 - Budget Detail. See [EPA's How to Develop a Budget](#) website.
- Standard Form (SF) 424, Application for Federal Assistance
- Standard Form (SF) 424A, Budget Information
- EPA Form 5700-54, Key Contacts Form
- Grants.gov Lobbying Form, Certification Regarding Lobbying
- EPA Form 4700-4, Pre-award Compliance Review, [See EPA's Applicant Tips for Completing Form 4700-4](#)
- Other Attachments Form – Optional Supporting Materials
 - Letters of commitment
 - Resumes

7.3. Grants.gov Application Instructions

The lead organization's authorized official representative (AOR) must submit the complete application package electronically to EPA by following the instruction available on Grants.gov. The application package must contain the required forms and documents (workplan and budget) listed above. Contact the EPA regional contact listed in Section 12 "EPA Contacts" for additional instructions specific to the application process for tribes, tribal consortia, and territories.

7.4. Workplan Requirements

7.4.1. Overview

The application package must include a high-quality, narrative workplan for executing the planning grant. The workplan is a critical component of the application package, as it describes the applicant's proposed approach for developing the two deliverables identified in Section 1 and described more fully below. The workplan also must include a discussion of planned interagency coordination and stakeholder engagement, outputs, outcomes, and performance measures. EPA recommends workplans not exceed 10 pages.

7.4.2. Planning Grant Deliverables

As noted in Section 1, under the CPRG planning grants, tribal and territorial funding recipients will produce and submit two deliverables (in addition to meeting standard grant reporting requirements) over the course of the program period, which may extend up to 4 years from the date of award:

1. A Priority Climate Action Plan (PCAP), due March 1, 2024;⁵ and,
2. A Comprehensive Climate Action Plan (CCAP), due at the end of the grant period, which can be up to 4 years.

Therefore, for each deliverable, the applicant's workplan must describe:

- the applicant's general approach to developing all required elements of the deliverable;
- the entities responsible for completing each element;
- a schedule with milestones for developing the deliverable.

For more detail on the elements of each deliverable, please review Appendix 14.2.

- **Key Deliverable #1: Priority Climate Action Plan (PCAP)**

The initial deliverable is a Priority Climate Action Plan (PCAP), a narrative report due on March 1, 2024, that includes a focused list of near-term, high-priority, implementation-ready measures to reduce GHG pollution and an analysis of GHG emissions reductions that would be achieved through implementation. These initial plans can focus on a specific sector or sectors and do not need to comprehensively address all of the tribe's/tribes' or territory's sources of GHG emissions and sinks.⁶

⁵ Applicants for implementation grant funding under the CPRG program will be required to submit a PCAP along with their application. This is a required deliverable under the CPRG planning grants, regardless of whether a funding recipient plans on applying for CPRG implementation grants in the future.

⁶ Carbon "sinks" are resources that absorb or sequester carbon dioxide from the atmosphere. In the U.S. greenhouse gas emissions inventory, these sinks are referred to as the Land Use, Land-Use Change, and Forestry (LULUCF) sector. These resources include forests, coastal wetlands, agricultural soils, trees in urban areas, and landfilled yard trimmings and food scraps.

The PCAP must include:

- A GHG inventory;
- Quantified GHG reduction measures;
- A benefits analysis; and,
- A review of authority to implement.

A PCAP may draw from or reference an existing climate action, energy, or sustainability plan.

Preparing the PCAP to Be Positioned to Compete for Implementation Grants

The PCAP is a pre-requisite for competing in the second phase of the CPRG program in the future, which will competitively award \$4.6 billion for implementation. Any future application for an implementation award under the CPRG will need to include a PCAP that describes the programs, policies, measures, and projects the entity will carry out with the implementation grant funding. A PCAP also may include additional measures that will not be part of an implementation grant application. In the NOFO for the implementation grants, EPA will indicate the funding priorities for those implementation grants.

Note that an entity that did not directly receive a planning grant may apply for an implementation grant provided that the measures they propose for funding are covered by a PCAP. Collaborating partners who developed joint plans or regionally based plans would retain eligibility for implementation funds, regardless of who administered the planning grant. Municipalities and air pollution control agencies will also be eligible for funding for measures identified in their state's or metropolitan area's plan for implementation at their level. **Tribes can also partner with a neighboring state or metropolitan area.** EPA anticipates providing implementation grants with a wide range of funding levels, with the largest grant awards potentially exceeding \$100 million depending on the quality of the application and its adherence to the grants competition criteria.

States must coordinate with municipalities and air pollution control agencies within their state to include priority measures that are implementable by those entities. **States are further encouraged to similarly coordinate with tribes.** In all cases, the lead organization for a state or metropolitan area PCAP funded through the CPRG program must make the PCAP available to other entities for their use in developing an implementation grant application.

Key Deliverable #2: Comprehensive Climate Action Plan (CCAP)

The second deliverable is a Comprehensive Climate Action Plan (CCAP) due at the end of the grant period. A CCAP should provide an overview of the tribe's/tribes' or territory's significant GHG sources/sinks and sectors, establish near-term and long-term GHG emission

reduction goals, and provide strategies and identify measures addressing the highest priority sectors to help the tribe(s) or territory achieve those goals. Each CCAP must include:

- A GHG inventory;
- GHG emissions projections;
- GHG reduction targets;
- Quantified GHG reduction measures;
- A benefits analysis;
- A review of authority to implement;
- A plan to leverage other federal funding; and,
- A workforce planning analysis.

7.4.3. Coordination and Engagement

The workplan should describe the applicant’s proposed approach to interagency and intergovernmental coordination and their plan for public and stakeholder engagement in the development of deliverables.

- **Interagency and Intergovernmental Coordination**

Lead organizations should coordinate with other appropriate agencies and offices within their own government in the development and adoption of the planning deliverables. For example, climate planning efforts should involve agencies with responsibilities in different program areas, including environmental protection, energy, utilities, transportation, housing, waste management, and land use planning.

Each workplan should include:

- A description of how interagency coordination would be conducted, such as through a combination of in-person and virtual meetings with reasonable opportunities to provide input on preliminary and/or draft products; and,
- A process and schedule for agencies/offices to identify existing and new measures that would lead to GHG reductions and meet other related goals.

In addition, climate plans for tribes represented by a tribal partnership or tribal consortium should be developed in close coordination with the member tribes, and workplans should describe the existing or planned roles and relationships of the partnering tribes and the process for developing work products. Sub-awards to partners are allowed under this funding award, subject to terms and conditions. Letters of support/commitment from partners are encouraged.

- **Public and Stakeholder Engagement**

The lead organization for a tribe, tribal consortium, or territory must involve stakeholder groups and the public in the process for developing the PCAP and CCAP. Potential

stakeholders include the tribal community itself as well as other nearby community groups, governmental entities, Port Authorities, labor organizations, private sector and industry representatives as applicable.

The workplan should:

- Describe how public and stakeholder engagement would be conducted (such as through a combination of in-person and/or virtual meetings with reasonable opportunities to provide input on preliminary products); and,
- Discuss how information on the PCAP and CCAP development processes will be made available to the public in a transparent manner, such as through in-person and virtual meetings, public websites, listservs, and social media.

7.4.4. Additional Workplan Requirements

The workplan must include a discussion of:

- The environmental outputs and outcomes to be achieved under planning grants as well as performance measures for tracking them. More detail about outputs, outcomes, and performance measures is available in Section 9.
- The applicant's interest in participating in any Climate Innovation Teams (participation is optional and more fully described in Section 13.2). Applicants interested in participating in one or more Climate Innovation Teams should include in the workplan a brief description of their expected participation, including identifying personnel who may participate, identifying topics of interest, and should include any anticipated costs in their budget narrative.
- An annual narrative budget for each year of the grant award that adheres to federal budget categories and guidelines.

Additional guidance and resources are available in the program guidance Appendices and on EPA's CPRG website to assist in workplan development. Technical assistance as described in Section 13 will also be available to recipients throughout the cooperative agreement period.

Sample workplans, timelines, and budgets are available on the [CPRG website](#).

8. Eligible Activities

CPRG planning grant funds are restricted to projects that are directly related to the development, updating, or evaluation of tribal or territorial plans to reduce climate pollution (i.e., to reduce GHG emissions and/or enhance carbon sinks). In general, funds may be used for:

- Staffing and contractual costs necessary to develop the deliverables identified in this document;

- Planning and implementing meetings, workshops, and convenings to foster collaboration among and between levels of government, the public, and key stakeholders;
- Outreach and education for stakeholders and members of the public;
- Subawards to non-governmental organizations (NGOs), academic institutions, etc.;
- Modeling and analytical costs, including purchase or licensing of software, data, or tools;
- Studies, assessments, data collection, etc., needed to develop the required deliverables;
- Evaluation and metrics-tracking activities;
- Training and staff capacity-building costs;
- Supplies (e.g., office supplies, software, printing, etc.);
- Incidental costs related to the above activities, including but not limited to travel, membership fees, and indirect costs; and/or,
- Other allowable activities as necessary to complete the required deliverables.

9. Strategic Plan Linkages, Outputs, Outcomes, Performance Measures

Pursuant to Section 6.a. of EPA Order 5700.7A1, “Environmental Results under EPA Assistance Agreements,” EPA must link proposed grants with the Agency’s Strategic Plan.

In their narrative workplan, applicants must adequately describe environmental outputs and outcomes to be achieved under the planning grants ([EPA Order 5700.7A1, Environmental Results under Assistance Agreements](#)). Applicants should include specific statements describing the environmental results of the proposed project in terms of well-defined outputs and, to the maximum extent practicable, well-defined outcomes that will demonstrate how the project will contribute to the EPA Strategic Plan priorities described in Section 9.1.

9.1. Linkage to EPA Strategic Plan

The activities to be funded under this announcement support EPA’s Fiscal Year (FY) 2022-2026 Strategic Plan. Awards made under this announcement will support Goal 1, “Tackle the Climate Crisis” Objective 1.1, “Reduce Emissions that Cause Climate Change,” of EPA’s Strategic Plan. Applications must be for projects that support this goal and objective. For more information see [EPA's FY 2022-2026 Strategic Plan](#).

9.2. Outputs

The term “output” means an environmental activity, effort and/or associated work product related to an environmental goal and objective that will be produced or provided over a period of time or by a specified date. Outputs may be quantitative or qualitative but should be measurable during the planning grant funding period. Expected outputs from the CPRG Planning grants include, but are not limited to, development of the following:

- Priority Climate Action Plan (PCAP), and
- Comprehensive Climate Action Plan (CCAP).

Other potential outputs may include, but are not limited to:

- Number of community members participating in plan development;
- Meetings, events, stakeholder sessions, etc.; and/or,
- Dissemination of project/technology information via list serves, websites, journals and outreach events.

Progress reports and a final report will also be required outputs, as specified in Section 11.6 of this document.

9.3. Outcomes

The term “outcome” means the result, effect or consequence that will occur from carrying out an environmental program or activity that is related to an environmental or programmatic goal or objective. Outcomes may be environmental, behavioral, health-related or programmatic in nature, but should also be quantitative. They may not necessarily be achievable within a grant funding period.

Expected outcomes from the projects to be funded under this announcement include, but are not limited to:

- Tons of pollution (GHGs and co-pollutants) reduced over the lifetime of the measures identified in the PCAP and the CCAP, and
- Tons of pollution (GHGs and co-pollutants) reduced annually.

Other potential outcomes may include, but are not limited to:

- Improved staff capacity to implement policies to address climate change;
- Enhanced community engagement;
- Improved ambient air quality;
- Health benefits achieved;
- Increased public awareness of project and results; and/or,
- Creation of high-quality jobs with an emphasis on workers from underserved populations.

9.4. Performance Measures

The applicant should develop performance measures and metrics they expect to use to track progress of proposed activities. These measures and metrics must be described in their application. Such performance measures will help gather insights and will be the mechanism to track progress concerning successful processes and output and outcome strategies. The description of the performance measures should directly relate to the project’s outcomes and outputs, including but not limited to:

- Overseeing sub-recipients, and/or contractors and vendors;
- Tracking and reporting project progress on expenditures and purchases; and,
- Tracking, measuring, and reporting accomplishments and proposed timelines/milestones.

The following are questions to consider when developing output and outcome measures of quantitative and qualitative results:

- What are the measurable short term and long term results the project will achieve?
- How does the grant recipient measure progress in achieving the expected results (including outputs and outcomes) and how will the approach use resources effectively and efficiently?

10. Use of Funds Requirements

For guidance on developing budget narratives, please see:

- <https://www.epa.gov/sites/default/files/2019-05/documents/applicant-budget-development-guidance.pdf>
- https://www.epa.gov/sites/default/files/2018-05/documents/recipient_guidance_selected_items_of_cost_final.pdf

The budget narrative must detail funding expenditures that demonstrate adherence to applicable requirements related to federal matching funds and expenses incurred prior to the grant period, as described below.

10.1. Federal Matching Funds

Applicants are **not** required to provide a cost-share or matching funds for the CPRG funding.

No funds awarded under the Program shall be used for matching funds for other federal grants. Leveraging is encouraged, as noted in Section 7.4. “Workplan Requirements.”

10.2. Expenses Incurred Prior to the Project Period

The allowability of pre-award costs are governed by 2 CFR §200.458 and 2 CFR §1500.8. Pre-award costs are those incurred prior to the effective date of the Federal award directly pursuant to the negotiation and in anticipation of the Federal award, where such costs are necessary for efficient and timely performance of the scope of work. Such costs are allowable only to the extent that they would have been allowable if incurred after the date of the Federal award and only with the written approval of the Federal awarding agency. EPA defines pre-award costs as costs incurred prior to the award date, but on or after the start date of the project/budget period. Under EPA’s interpretation of 2 CFR 200.309, all eligible costs must be incurred during the budget/project period as defined by the start and end date shown on the cooperative agreement award to receive EPA approval. This policy is implemented in a grant-

specific Term and Condition entitled “Pre-award Costs.” No funds awarded under the Program shall be used for reimbursement of previous efforts prior to the project/budget period. All costs incurred before EPA makes the award are at the recipient's risk. EPA is under no obligation to reimburse such costs if for any reason the recipient does not receive a Federal award or if the Federal award is less than anticipated and inadequate to cover such costs.

11. Award Administration

11.1. Applicable Requirements

The requirements of 2 CFR part 200 (OMB Uniform Grant Guidance) and 2 CFR part 1500 (EPA Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards) apply to this cooperative agreement funding.

11.2. Terms and Conditions

General administrative and programmatic terms and conditions applicable to EPA cooperative agreements under the CPRG planning grants program may be viewed at:

<https://www.epa.gov/grants/grant-terms-and-conditions>. EPA Headquarters will provide EPA Regional Offices with a list of terms and conditions that will also be applicable to the program. EPA Regional Office teams will ensure that all applicable terms and conditions are included.

11.3. Quality Assurance Project Plan (QAPP)

Awards funded under the CPRG planning grants program may include the collection of environmental data and may require the development of a Quality Assurance Project Plan (QAPP). EPA Regional Offices will determine if a QAPP is required based on the workplan submitted. The structure of the QAPP is intended to step through the thought process of planning a project, as well as to provide a framework for documenting the plan. A QAPP is prepared as part of the project planning process and should be completed and approved before data collection is started. For more information, visit: www.epa.gov/quality/quality-assurance-project-plan-development-tool.

11.4. Procurements

When procuring property and services under a Federal award, a recipient must follow requirements as described in 2 CFR Part 200 and here: <https://www.epa.gov/grants/best-practice-guide-procuring-services-supplies-and-equipment-under-epa-assistance>.

11.5. Performance Partnership Grants

Funds awarded under this program are not eligible for inclusion with a Performance Partnership Grant.

11.6. Report Requirements

The following reports are required in addition to the two deliverables due under the CPRG planning grants. These reports are required to be submitted by all CPRG planning funds recipients:

- Quarterly performance progress reports are required, including grant fund reporting elements and summaries of the project activity and status of outputs during the reporting period. Quarterly reports are due 30 days after the end of the reporting period.
- The final report must include a high-level summary of activities completed during the grant project period, copies of all deliverables, a synopsis of outputs and outcomes achieved, and a financial summary of expenditures during the grant period. The final report shall be submitted to EPA within 120 calendar days of the project/budget period end date.

12. EPA Contacts

Please direct questions regarding this planning grant opportunity to the EPA Regional Office tribal and territorial contact(s) listed below or submit questions to CPRG@epa.gov. A list of [“Frequently Asked Questions”](#) is also available on the CPRG Program website.

EPA Regional Office	Contact Name	Contact Email
Region 1	Jeffrey Butensky	butensky.jeff@epa.gov
Region 2	Valerie Askinazi (territories) Gavin Lau (tribes)	askinazi.valerie@epa.gov lau.gavin@epa.gov
Region 3	Yongtian (Tom) He	he.yongtian@epa.gov
Region 4	Kristine Johnson	johnson.kristine@epa.gov
Region 5	Melanie Nowin Abigail Teener	nowin.melanie@epa.gov teener.abigail@epa.gov
Region 6	Aunjane Gautreaux	gautreaux.aunjane@epa.gov
Region 7	Jessica Raley	raley.jessica@epa.gov
Region 8	Emily Bertram Kyle Olson	bertram.emily@epa.gov olson.kyle@epa.gov
Region 9	Kathryn Harper (tribes) Trina Martynowicz (territories)	harper.kathryn@epa.gov martynowicz.trina@epa.gov
Region 10	Rebecca (Becki) Derr	derr.rebecca@epa.gov

13. Technical Assistance and Tools

13.1. Technical Assistance Overview

EPA is committed to providing ongoing technical assistance to cooperative agreement recipients under the CPRG program. EPA has established a webpage for this program that includes a technical assistance section including links to many resources that can be helpful to eligible entities in developing planning cooperative agreement applications and deliverables. These resources include EPA's GHG emissions inventory tools; tools for estimating air quality changes and health benefits associated with criteria and toxic air pollutant emission reductions resulting from GHG reduction strategies; and other resources. EPA will explore additional opportunities for providing ongoing technical assistance through webinars, training workshops, and the Climate Innovation Teams described in the next section. For more information, please visit <https://www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants#CPRG-ToolsandTechnicalResources>.

13.2. Climate Innovation Teams

EPA intends to organize a set of Climate Innovation Teams (CITs) that focus on key topics of interest to grant recipients. Through these CITs, EPA can provide training and technical assistance to funding recipients as well as create opportunities for peer-to-peer technical assistance, peer collaboration and mentoring, and sharing of case studies, best practices, and lessons learned. Through participation in one or more teams, planning grant recipients will have the opportunity to:

- Coordinate efforts on one or more topic area(s) of their choice;
- Receive technical assistance and subject matter expertise on a range of topics;
- Participate in multi-jurisdictional convenings with national and local experts and stakeholders; and,
- Leverage other support to help jurisdictions increase the impact of their other Inflation Reduction Act or Bipartisan Infrastructure Law-funded work.

The initial group of CITs will include one dedicated to tribes; additional teams, in which tribal recipients may also choose to participate, may address topics such as:

- Climate planning process and approach
- Leveraging funding from other federal, state, and private sector sources
- Estimating emission reductions and program benefits in disadvantaged communities
- Stakeholder engagement
- Sector-based strategies
- Workforce development.

EPA will finalize the initial set of CITs and consider forming additional teams based on the interests and needs of grant recipients. EPA anticipates most CIT meetings will take place virtually (i.e., webinars, trainings, peer collaboration, etc.) and occur every 1-3 months. An

optional, in-person annual meeting of grant recipients may also be organized depending on available resources and participant interest.

14. APPENDICES

14.1. Statutory Text: Section 60114 of the Inflation Reduction Act

SEC. 60114. CLIMATE POLLUTION REDUCTION GRANTS.

The Clean Air Act is amended by inserting after section 136 of such Act, as added by section 60113 of this Act, the following:

SEC. 137. GREENHOUSE GAS AIR POLLUTION PLANS AND IMPLEMENTATION GRANTS.

(a) Appropriations.

(1) **Greenhouse gas air pollution planning grants.** In addition to amounts otherwise available, there is appropriated to the [Administrator](#) for fiscal year 2022, out of any amounts in the Treasury not otherwise appropriated, \$250,000,000, to remain available until September 30, 2031, to carry out subsection (b).

(2) **Greenhouse gas air pollution implementation grants.** In addition to amounts otherwise available, there is appropriated to the [Administrator](#) for fiscal year 2022, out of any amounts in the Treasury not otherwise appropriated, \$4,750,000,000, to remain available until September 30, 2026, to carry out subsection (c).

(3) **Administrative costs.** Of the funds made available under paragraph (2), the [Administrator](#) shall reserve 3 percent for administrative costs necessary to carry out this section, to provide technical assistance to eligible entities, to develop a plan that could be used as a model by grantees in developing a plan under subsection (b), and to model the effects of plans described in this section.

(b) **Greenhouse gas air pollution planning grants.** The [Administrator](#) shall make a grant to at least one [eligible entity](#) in each [State](#) for the costs of developing a plan for the reduction of [greenhouse gas](#) air pollution to be submitted with an application for a grant under subsection (c). Each such plan shall include programs, policies, measures, and projects that will achieve or facilitate the reduction of [greenhouse gas](#) air pollution. Not later than 270 days after the date of enactment of this section [August 16, 2022], the [Administrator](#) shall publish a funding opportunity announcement for grants under this subsection.

(c) Greenhouse gas air pollution reduction implementation grants.

(1) **In general.** The [Administrator](#) shall competitively award grants to eligible entities to implement plans developed under subsection (b).

(2) **Application.** To apply for a grant under this subsection, an [eligible entity](#) shall submit to the [Administrator](#) an application at such time, in such manner, and containing such information as the [Administrator](#) shall require, which such application shall include

information regarding the degree to which [greenhouse gas](#) air pollution is projected to be reduced in total and with respect to low-income and disadvantaged communities.

(3) Terms and conditions. The [Administrator](#) shall make funds available to a grantee under this subsection in such amounts, upon such a schedule, and subject to such conditions based on its performance in implementing its plan submitted under this section and in achieving projected [greenhouse gas](#) air pollution reduction, as determined by the [Administrator](#).

(d) Definitions. In this section:

(1) Eligible entity. The term “[eligible entity](#)” means—

(A) a [State](#);

(B) an [air pollution control agency](#);

(C) a [municipality](#);

(D) an [Indian tribe](#); and

(E) group of one or more entities listed in subparagraphs (A) through (D).

(2) Greenhouse gas. The term “[greenhouse gas](#)” means the [air pollutants](#) carbon dioxide, hydrofluorocarbons, methane, nitrous oxide, perfluorocarbons, and sulfur hexafluoride.

14.2. Deliverable Requirements

This appendix further details the required and/or recommended elements of the two main deliverables:

- Priority Climate Action Plan (PCAP) – due March 1, 2024; and,
- Comprehensive Climate Action Plan (CCAP) – due at the end of the grant period.

Applicants should factor these elements into their workplans and budgets, giving particular consideration to their proposed schedule and approach for each deliverable.

Plan Element	Priority Climate Action Plan (due March 1, 2024)	Comprehensive Climate Action Plan (due at the end of cooperative agreement period)
GHG Inventory	Required	Required
GHG Emissions Projections	Not Required	Required
GHG Reduction Targets	Not Required	Required
Quantified GHG Reduction Measures	Required (priority measures only)	Required (comprehensive)
Benefits Analysis	Required	Required
Review of Authority to Implement	Required	Required
Intersection with Other Funding Availability	Encouraged	Required
Workforce Planning Analysis	Encouraged	Required

GHG Inventory

PCAP	CCAP
<ul style="list-style-type: none">• Simplified inventory is required	<ul style="list-style-type: none">• Comprehensive inventory is required

For this required element, lead organizations for tribes, tribal consortia, and territory planning grants may choose to begin with a simplified GHG inventory for the PCAP, and then complete additional analysis and data collection necessary to provide a comprehensive GHG inventory in the CCAP. EPA is not requiring a specific baseline year; inventory years should be chosen based on availability of underlying data and to support development of GHG targets.

PCAP: Use of existing data, including EPA’s [US GHG Reporting Program data](#), particularly for supporting development of the PCAP, is acceptable. Other potential data sources include [Inventory of U.S. Greenhouse Gas Emissions and Sinks by State](#) and [National Emissions Inventory](#).

CCAP: A comprehensive inventory must include all GHG⁷ emissions and sinks⁸ by emission source and sink category following commonly accepted protocols for the following sectors, if applicable: industry, electricity generation and/or use, transportation, commercial and residential buildings, agriculture, natural and working lands, and waste and materials management.

For more information on GHG Inventory development and available tools, data, and technical assistance, see <https://www.epa.gov/inflation-reduction-act/cprg-tools-and-technical-assistance-greenhouse-gas-inventory>.

⁷ As defined by the statute, the term “greenhouse gas” means the [air pollutants](#) carbon dioxide, hydrofluorocarbons, methane, nitrous oxide, perfluorocarbons, and sulfur hexafluoride.

⁸ Emissions in GHG inventories should be expressed both in metric tons of each GHG and in metric tons of carbon dioxide equivalent (CO₂e). Expressing emissions in CO₂e allows the emissions of each GHG to be compared to emissions of CO₂ and other GHGs. To calculate emissions in CO₂e, each GHG’s emissions in metric tons are multiplied by that GHG’s global warming potential (GWP), as shown in Equation A-1 in [40 CFR Part 98](#) (the Greenhouse Gas Reporting Program or GHGRP). The GWP of a GHG is a measure of how much heat is trapped in earth’s atmosphere over a certain period by emissions of one metric ton of that GHG compared to emissions of one metric ton of CO₂.

GHG Emissions Projections

PCAP	CCAP
<ul style="list-style-type: none">• Not required	<ul style="list-style-type: none">• Near term and long term projections are required

PCAP: Comprehensive GHG future year emissions projections are not required for the PCAP.

CCAP: Near-term (e.g., 2030-2035) and long-term (e.g., 2050) projections of GHG emissions are required to be included in the CCAP. This element includes projections of GHG emissions (and sinks, if feasible) in the absence of plan measures (e.g., a “business-as-usual” projection), and a projection of GHG emissions under a scenario where the plan is fully implemented.

For more information on developing GHG emissions projections, see <https://www.epa.gov/inflation-reduction-act/cprg-tools-and-technical-assistance-ghg-emission-projections-and-ghg>.

Near-Term and Long-Term GHG Reduction Targets

PCAP	CCAP
<ul style="list-style-type: none">• Not required	<ul style="list-style-type: none">• Near term and long term targets are required

PCAP: Comprehensive, economy-wide GHG reduction targets are not required for the PCAP.

CCAP: A CCAP must include near-term (e.g., 2030-2035) and long-term (e.g., 2050) GHG emission reduction targets (on a gross or net GHG emission basis). Although EPA is not requiring a specific reduction target, plans should not be inconsistent with the United States’ [formal commitments](#) to reduce emissions 50-52% relative to 2005 levels by 2030 and to reach net-zero emissions by 2050.

For more information on developing GHG reduction targets, see <https://www.epa.gov/inflation-reduction-act/cprg-tools-and-technical-assistance-ghg-emission-projections-and-ghg>.

Quantified GHG Reduction Measures

PCAP	CCAP
<ul style="list-style-type: none">• Required for priority measures	<ul style="list-style-type: none">• Required for all measures

The selection of GHG reduction measures should be based on GHG emissions information and focus on achieving the most significant GHG reductions possible, while considering other relevant planning goals. GHG reduction measures may include both measures that reduce GHG emissions and/or measures that enhance carbon sinks. In addition to GHG emission reductions, the rationale for selecting a measure for the plan may also include other factors, such as reduction of co-pollutants (including criteria pollutant/ precursors and air toxics), cost-effectiveness, or other economic or community-related factors. Projected emissions reductions from identified measures should be quantified to the extent possible.

PCAP: A PCAP must include a focused list of near-term, high-priority, implementation-ready measures that have been identified for implementation by the lead organization and any other collaborating entities. For each measure, the PCAP must provide an estimate of the quantifiable GHG emissions reductions, key implementing agency or agencies, implementation schedule and milestones, expected geographic location if applicable, milestones for obtaining implementing authority as appropriate, identification of funding sources if relevant, and metrics for tracking progress. As cost information will be required for measures included in an implementation grant application, grant recipients are encouraged to plan ahead to include quantitative cost estimates in their PCAP; such estimates are required in the CCAP.

CCAP: A CCAP must include a full suite of implementation measures that have been identified to meet the GHG reduction targets specified elsewhere in the CCAP. The plan must include measures addressing the main GHG emission sectors as appropriate: industry, electricity generation and/or use, transportation, commercial and residential buildings, agriculture, natural and working lands, and waste and materials management. For each measure, the CCAP must identify the quantifiable GHG emissions reductions (or enhancement of carbon sinks), key implementing agency or agencies, implementation schedule and milestones, expected geographic location if applicable, milestones for obtaining implementation authority as appropriate, identification of funding sources if relevant, and metrics for tracking progress. It must also include cost information for each measure.

For more information on potential GHG emission reduction measures, see <https://www.epa.gov/inflation-reduction-act/cprg-tools-and-technical-assistance-quantifying-ghg-reduction-measures>.

Benefits Analysis

PCAP	CCAP
<ul style="list-style-type: none">• Required	<ul style="list-style-type: none">• Required

A benefits analysis should assess benefits of GHG reduction measures contained in each plan. It should include both base year estimates of co-pollutants (including criteria pollutants/precursors and air toxics) and anticipated co-pollutant emission reductions as plan measures are implemented and GHG reduction goals are met. EPA produces several data sources that may be suitable for this type of co-pollutant impact assessment, including the **National Emissions Inventory (NEI)**.

Grant recipients are further encouraged (but not required) to include in their PCAP and CCAP a broader assessment of benefits associated with their GHG reduction measures, including but not limited to analysis of air quality improvements (e.g., criteria air pollution and air toxics), improved public health outcomes, economic benefits, increased climate resilience, or other environmental benefits.

PCAP: Quantified estimates of co-pollutant reductions (e.g., PM2.5, NOx, SO2, VOCs, air toxics, etc.) associated with GHG reduction measures are required for the suite of measures included in the PCAP. Grant recipients are also encouraged to track, minimize, and mitigate, to the extent possible, any potential disbenefits resulting from implementation of GHG reduction measures included in their PCAP. Assessment of additional benefits is encouraged.

CCAP: Quantified estimates of co-pollutant reductions (e.g., PM2.5, NOx, SO2, VOCs, air toxics, etc.) associated with GHG reduction measures are required for the suite of measures included in the CCAP. Grant recipients are also required to track, minimize, and mitigate, to the extent possible, any potential disbenefits resulting from implementation of GHG reduction measures included in their CCAP. Assessment of additional benefits is encouraged.

For more information on how to conduct this analysis, see <https://www.epa.gov/inflation-reduction-act/cprg-tools-and-technical-assistance-benefits-analysis>.

Review of Authority to Implement GHG Reduction Measures

PCAP	CCAP
<ul style="list-style-type: none">• Required	<ul style="list-style-type: none">• Required

The PCAP and CCAP will include a range of proposed GHG reduction measures, and these plans will need to identify for each measure whether the grant recipient already has existing authority to implement the measure, or whether such authority still must be obtained (in the case of tribes and territories) or whether such authority requires treatment in a manner similar to a state (TAS) under the Clean Air Act or other means (in the case of tribes).

PCAP: For each measure included in the PCAP, the grant recipient must indicate whether they have existing authority to implement the measure, or whether such authority still must be obtained. The PCAP must include a schedule of milestones for actions needed by key entities (e.g., administrative agency, tribal council, etc.) for obtaining any authority needed to implement each listed program or measure.

CCAP: For each measure included in the CCAP, the grant recipient must indicate whether they have existing authority to implement the measure, or whether such authority still must be obtained. The CCAP must include a schedule of milestones for actions needed by key entities (e.g., administrative agency, tribal council, etc.) for obtaining any authority needed to implement each listed program or measure.

Intersection with Other Funding Availability

PCAP	CCAP
<ul style="list-style-type: none">• Encouraged	<ul style="list-style-type: none">• Required

EPA encourages cooperative agreement recipients to assess funding availability broadly and align public investment in particular with the PCAP and CCAP. Recipients should consider the wide array of public investment available as a result of the passage of the Bipartisan Infrastructure Law and Inflation Reduction Act, much of which is catalogued in the White House Guidebooks to the [Bipartisan Infrastructure Law](#) and the [Inflation Reduction Act](#).

PCAP: An analysis of additional funding opportunities beyond the CPRG program to support GHG emission reduction measures and strategies identified in the PCAP is encouraged but not required.

CCAP: The CCAP must identify what other funding programs are available to the recipient or have been secured by the recipient from federal or other public or private sources that could be leveraged to pursue the objectives of the CCAP.

Workforce Planning Analysis

PCAP	CCAP
<ul style="list-style-type: none">• Encouraged	<ul style="list-style-type: none">• Required

Workforce related challenges and opportunities can be a critical element of assessing the feasibility of GHG reduction measures. These may include skilled labor shortages, impacts on existing jobs and industries, opportunities for the creation of high-quality jobs, and expanding economic opportunity to underserved workers through activities in the plan. Wherever grant recipients discuss workforce development priorities in these deliverables, they are strongly encouraged to describe how activities or policies will lead to the creation of high-quality jobs in alignment with the U.S. Department of Labor’s [Good Jobs Principles](#).

PCAP: Grant recipients are encouraged to conduct an analysis of workforce development activities, if any, that are needed to implement the priority measures included in the PCAP.

CCAP: Grant recipients must conduct an analysis of anticipated workforce shortages that could prevent them from achieving the goals described in the CCAP and identify potential solutions and, as appropriate, tribal, state, regional, and/or local level that are equipped to help address those challenges. Plans may note existing funding or programs that can help support the workforce needs of the plan.

Appendix B
Gun Lake Tribe Climate Project



Climate Pollution Reduction Grants Program:
Optional Template for Tribal Quality Assurance
Project Plans

Commented [T11]: For instructions on using this template, please see the accompanying *instructions for Using the Optional Template for CPRG Tribal QA Project Plans*.

Guidance for Tribal Programs

United States Environmental Protection Agency

Office of Air and Radiation

July 31, 2023

QAPP Short Title: <add short title>
 Section: Title / Approval Page
 Revision No: <0> Date: MM/DD/YYYY
 Page: 2 of 49

1. Project Management (Group A)
1.1. Title and Approval Page

Quality Assurance Project Plan for
 <add long title of project here line 1>
 <add long title of project here line 2>

Prepared by:
 <add name of grant applicant, line 1>
 <add name of grant applicant, line 2>
 <add street address, line 1>
 <add street address, line 2>
 <add city, county, state, zip code>

Prepared for:
 US EPA Region <add EPA Region Number>
 <add EPA regional office street address, line 1>
 <add EPA regional office street address, line 2>
 <add EPA RO city, state, and zip code>
 <add date of submission>

Commented [T12]: On the Title and Approval Sheet, include the title of the plan, the name of the organization(s) implementing the project, the effective date of the plan, and the names, titles, signatures, and approval dates of appropriate approving officials. Approving officials may include Organization's Project Manager; Organization's QA Manager; EPA Project Manager; EPA QA Manager; Others, as needed (e.g., field operations manager, laboratory managers, State and Federal agency officials).

An example title for tribes to consider is "Quality Assurance Project Plan for Environmental Information Submitted to Tribal Leaders for Tribal Approval in the GHG Inventory and Options Identification Phase of the CPRG Program."

Note: This lengthy example title is attempting to clarify that technical, tribal air quality officials may need to provide the most senior tribal leaders with a list of options and an associated emissions inventory so that the most senior tribal officials may make an informed selection of the tribal project(s) to include in the tribe's Priority Climate Action Plan (PCAP), the Comprehensive Climate Action Plan (CCAP), and Status Report required by the EPA under the Climate Pollution Reduction Grant Program.

APPROVALS:

<add title of Project Manager for grant applicant>: Date: <add date of approval>

<add signature of Project Manager for grant applicant>

<add title of QA Manager for grant applicant>: Date: <add date of approval>

<add signature of QA Manager for grant applicant>

USEPA Region <add region no.> Grants Project Officer: Date: <add date of approval>

USEPA Region <add region no.> Quality Assurance Manager: Date: <add date of approval>

QAPP Revision History

Revision No.	Description	Author	Date
0	Original Version	<primary author>	<MM/DD/YYYY>

1.2. Table of Contents¹

1. Project Management (Group A) 2

1.1. Title and Approval Page 2

1.2. Table of Contents 3

1.3. Distribution List 6

1.4. Project/Task Organization 7

1.5. Problem Definition / Background 10

1.5.1. Rationale for Selection of Sectors 11

1.5.2. Decisions to be Made 12

1.5.3. Actions to be Taken, Action Limits, and Expected Outcomes 12

1.5.4. Reason for Project 13

1.5.5. Relevant Clean Air Act Mandates and Authorizations 13

1.5.6. Information Provided by the EPA under § 7403(b)(1) 14

1.6. Project / Task Description 15

1.7. Quality Objectives / Criteria 23

1.7.1. Data Quality Objectives 23

1.7.2. Data Quality, Management, and Analyses 23

1.7.3. Document Preparation 24

1.8. Special Training / Certifications 25

1.9. Documents and Records 26

2. Existing Data Acquisition and Management Protocols (Group B) 27

2.1. Sampling Process Design 27

2.1.1. Need and Intended Use of Data Used 27

2.1.2. Identification of Data Sources and Acquisition 27

2.2. Quality Control 28

2.3. Non-direct Measurements 29

2.3.1. Criteria for Accepting Existing Data for Intended Use 31

2.3.2. Criteria for Options Identification 31

2.4. Data Management 32

3. Assessment and Oversight (Group C) 33

3.1. Assessments and Response Actions 33

3.2. Reports to Management 34

4. Data Validation and Usability (Group D) 35

Commented [T13]: Provide a table of contents for the document, including sections, figures, tables, references, and appendices. Apply a document control format on each page [similar to the document control format on the header of this sheet] following the Title and Approval Sheet when required by the EPA Project Manager and QA Manager.

Note: the Table of Contents must be updated after all text modifications are complete; it will not update automatically. To update, right click within the ToC and select “Update Field” from the menu.

¹ For grantees who are not familiar with using MS Word’s TOC functions, please review the video at <https://www.youtube.com/watch?v=0cN-JX6HP7c>. Accessed on 6/23/2023.

4.1. Data Review, Verification, Validation 35
 4.2. Verification and Validation Methods 36
 4.3. Reconciliation with User Requirements 37
 5. References 38
 Appendix A: Check Lists of Quality Control Activities for Deliverables 39
 Appendix B: Example QC Documentation Form 43
 Appendix C: Compliance with Requirements Under the Privacy Act of 1974 44
 Attachment 1: Example Tribal Electric Power Consumption Data 46
 Attachment 2: Example Table of Tribal GHG Emitting Activities 48

List of Tables

Table 1.1 QAPP Distribution List (*Example*) 6
Table 2.1 Technical Task Descriptions for Task 1 15
Table 2.2 Technical Task Descriptions for Task 2 17
Table 2.3 Technical Task Descriptions for Task 3 19
Table 2.4 Technical Task Descriptions for Task 4 21
Table 3.1 Existing Data Quality Ranking Hierarchy 30

List of Exhibits

Exhibit 1.1. Project Organization 8

QAPP Short Title: <add short title>
Section: Table of Contents
Revision No: <0> Date: <MM/DD/YYYY>
Page: 5 of 49

Abbreviations

CAA	Clean Air Act
CFR	Code of Federal Regulations
CPRG	Climate Pollution Reduction Grant
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse Gas
GHGRP	Greenhouse Gas Reporting Program (40 CFR Part 98)
ICR	Information Collection Request
OAR	EPA Office of Air and Radiation
PM	Project Manager
PO	EPA Project Officer for Grant
POP	Period of Performance
POR	EPA Project Officer's Representative
PWP	Project Work Plan
QA	Quality Assurance
QAM	Quality Assurance Manager
QAMD	Quality Assurance Manager Delegate
QAPP	Quality Assurance Project Plan
QC	Quality Control
TGIT	Tribal - GHG Inventory Tool (provided by the EPA)
TL	Task Leader
<XYZABC>	<Grantee Organization's Name>

Commented [T14]: Please review your QAPP submission and ensure this listing includes the definitions of all acronyms used.

1.3. Distribution List

This section presents the primary staff who will be working on the project. These staff will be identifying existing² data resources for evaluation and potential use under the project or serving in project-specific roles for implementing the Quality Assurance Project Plan (QAPP). The listing in **Table 1.1** includes staff responsible for implementing independent internal quality management steps and staff serving in external oversight roles.

This QAPP and, as applicable, all major deliverables relying on existing data will be distributed to the staff presented in **Table 1.1**. Additionally, this QAPP will be provided to any unlisted staff who are assigned to perform work under this project. A secured copy of this QAPP will be maintained in the project files under the </server/project_root_dir/Quality_Management/QAPP directory>.

Commented [T15]: List the individuals and their organizations who need copies of the approved Quality Assurance Project Plan (QAPP) and any subsequent revisions, including all persons responsible for implementation (e.g., project managers), the Quality Assurance Manager (QAM), and representatives of all groups involved. Paper copies need not be provided to individuals if equivalent electronic information systems can be used.

Users may modify the provided sample text or replace with their own text.

Table 1.1 QAPP Distribution List (Example)

Name	Organization	Role
<EPA PO or POR name>	US EPA, Region <X>	EPA Project Officer (PO) or PO Representative
<EPA QAM/QAMD>	US EPA, Region <X>	EPA Quality Assurance Manager or Delegate
<Grantee Sr. Approver>	<Grantee Org>	Grantee Sr. Approver, <Org. Position Title>
<Grantee Project Manager>	<Grantee Org>	Grantee Task 1 Leader, <Org. Position Title>
<Task 1 Leader>	<Grantee Org>	Grantee Task 1 Leader, <Org. Position Title>
<Task 2 Leader>	<Grantee Org>	Grantee Task 2 Leader, <Org. Position Title>
<Task 3 Leader>	<Grantee Org>	Grantee Task 3 Leader, <Org. Position Title>
<Task 4 Leader>	<Grantee Org>	Grantee Task 4 Leader, <Org. Position Title>
<Grantee QA Manager>	<Grantee Org>	Grantee Quality Assurance Manager
<Grantee QC Coordinator>	<Grantee Org>	Grantee Quality Control Coordinator
<Grantee Tech. Staff 1>	<Grantee Org>	<Grantee Technical Staff 1 Title>
<Grantee Tech. Staff 2>	<Grantee Org>	<Grantee Technical Staff 2 Title>
<Grantee Tech. Staff 3>	<Grantee Org>	<Grantee Technical Staff 3 Title>

Commented [T16]: The template assumes Tasks 1 - 4 are strictly technical tasks that will be completed by tribal air quality technical staff. These tasks include completing a baseline GHG inventory for each sector or group of sectors (i.e., segments) defined under each task and developing a list of options for reducing emissions from the sector(s). The technical tasks also include developing uncertainty estimates for each emission reduction option listed under each task.

Subsequently, tribal leaders with the authority to make tribal commitments would review the inventory, the list of options, and the uncertainty estimates for the options (prepared by the tribe's technical staff) and select the option(s) on behalf of the tribe.

Finally, the tribal air quality officials would include the options selected by the most senior tribal officials in the grant application under the Climate Pollution Reduction Program along with the inventory and other information on the options selected by the most senior tribal leaders.

Commented [T17]: Grantees are not required to have a QC Coordinator. If no QC Coordinator is assigned, please delete the associated row from the table and the subsequent references to the QC Coordinator in this template.

² The term "existing data" is defined by the EPA's *Environmental Information Quality Policy* (C10 2105.3) as "... data that have been collected, derived, stored, or reported in the past or by other parties (for a different purpose and/or using different methods and quality criteria). Sometimes referred to as data from other sources." The term "secondary data" may also be used to describe "existing data" in historical EPA quality-related documents.

1.4. Project/Task Organization

The primary personnel responsible for implementation of this project are the <grantee org. name> Project Manager (PM), Quality Assurance Manager (QAM), and Task Leaders (TLs). Their duties are outlined briefly in this section. The project QAM is independent of the unit generating the data.

<PM name> is the <grantee org. name> PM and will provide senior-level oversight. The PM is responsible for <grantee org. name>'s technical and financial performance as well as maintaining communications with the EPA to ensure mutual understanding of grant requirements, EPA expectations, and conformity with EPA quality procedures; managing oversight and conduct of project activities including allocation of resources to specific tasks; ensuring that quality procedures are incorporated into all aspects of the project; developing, conducting, and/or overseeing QA plans as necessary; ensuring that any corrective actions are implemented; operating project activities within the documented and approved QAPP; and ensuring all products delivered to the EPA are of specified type, quantity, and quality.

The <grantee org. name> PM will assign a TL for each technical task with instructions to complete a baseline emissions inventory for the sector(s) under the task, to develop options for potential emissions reductions with estimated reductions per option, and to develop uncertainty estimates for each option's reduction estimate. **Table 1.1** presents the TLs for each technical task. Each TL is responsible for the day-to-day technical activities under their assigned task, including planning, reporting, and controlling of technical and financial resources allocated to the task by the PM. Accordingly, each TL is primarily responsible for implementing the Quality Program and this QAPP on task-level assignments.

Task-level management system. For each task's major deliverables, the assigned TL will review all QA-related plans and reports and is responsible for transmitting them to the QA Manager (or delegate) for review and approval. Each TL is responsible for ensuring quality procedures are implemented at the task level and for maintaining the official, approved, task-level QAPP content. Each TL will discuss any concerns about quality or any proposed revisions to task-level QAPP content with the PM, QAM, or delegate to identify, resolve, or preclude problems or to amend task-level plans, if necessary. In addition, each TL will work with the PM and the QAM to identify and implement quality improvements. The PM is responsible for ensuring the consistency of similar or related QA measures across tasks, and the TLs are responsible for overseeing task-level work performed by technical staff and providing assurance that all required QA/QC procedures are being implemented.

Project-level management system. Tasks are expected to proceed concurrently, in parallel. The PM will maintain close communications with each TL and ensure any difficulties encountered or proposed changes at the task level are reviewed for implications on other similar or related tasks. The PM is also responsible for communicating progress or difficulties encountered (across all tasks) to the EPA PO or POR, who provides the EPA's primary oversight function for this project at EPA OAR/ <EPA region or office> and is responsible for review and approval of this QAPP and any future revisions. The PM (with support from TLs and assigned <grantee org. name> technical staff) will be responsible for consulting with the EPA PO or POR, on planning, scheduling, and implementing the QA/QC for all project deliverables and obtaining required EPA approvals.

The QA Manager, <grantee QAM name>, is responsible for overseeing the quality system, monitoring and facilitating QA activities on tasks, and generally helping the <grantee org. name> PM and TLs understand and comply with EPA QA requirements. <Pronoun of QAM> will not be involved in data collection or analyses, which is in a separate <division or section> from <grantee org. name>'s <name of grantee org. section identifying and using existing data>. At the request of the <grantee org. name> PM, <Mr./Ms. grantee QAM name> is responsible for conducting periodic independent audits of this project's QA program, <Mr./Ms. grantee QAM name> will produce written documentation of the audit results and recommendations.

Commented [T18]: Identify the individuals or organizations participating in the project and discuss their specific roles and responsibilities. Include the principal data users, the decision makers, the project QA manager, and all persons responsible for implementation. The project quality assurance manager must be independent of the unit generating the data. (This does not include being independent of senior officials, such as corporate managers or agency administrators, who are nominally, but not functionally, involved in data generation, data use, or decision making.) Identify the individual responsible for maintaining the official, approved QA Project Plan. Provide a concise organization chart showing the relationships and the lines of communication among all project participants. Include other data users who are outside of the organization generating the data, but for whom the data are nevertheless intended. The organization chart must also identify any subcontractor relationships relevant to environmental data operations, including laboratories providing analytical services.

Users may modify the provided sample text or replace with their own text.

Commented [T19]: The template assumes the same staff members developing the baseline emissions inventory will also be the staff assigned to develop the options listing (of emissions reduction opportunities) for review by the management team and policy makers. This assumption is not a requirement and grantees are free to organize tasks and technical assignments in the manner that best fits available resources and the needs of the organization.

Commented [KR10]: For smaller orgs (e.g. Tribes, some MSAs, separate divisions or sections may not be realistic. In the past, for Tribal EI QAPP, for example, we have accepted defining the QA manager as a separate entity, not involved in data collection/analysis, regardless of org structure

Commented [BS11R10]: We will adjust accordingly in the version for Tribes and MSAs.

[Start of optional section for tribes deploying QC Coordinators]

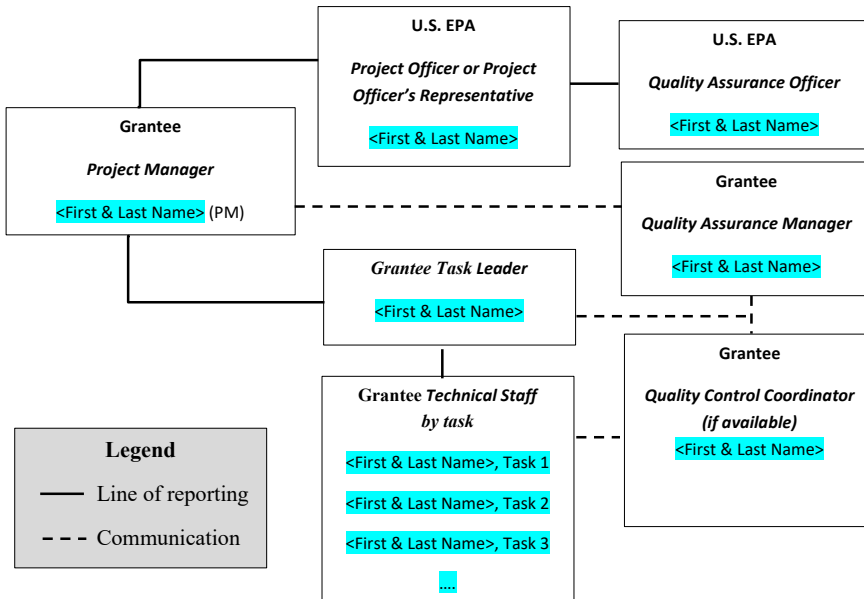
For each task under this project, the QAM is supported by the QC Coordinator, <Mr./Ms. grantee QCC name>, who will assist in the implementation of the quality system. The QC Coordinator will work closely with the PM and QAM to improve any deficiencies noted during audits. The QC Coordinator is responsible for assisting the PM and TLs in planning, documenting, and implementing the QA requirements for this project. Working with the PM, and in consultation with the QAM, <pronoun of QCC> will ensure that process- and project-specific QA documents are developed; that required or recommended protocols are followed; that data are reduced, validated, and reported according to specific criteria; and that QC assessments are performed. The QC Coordinator will communicate with the PM and the QAM, as needed, on quality issues. If there is no QC Coordinator on the project, the QAM will assume the responsibilities of the QC Coordinator.

[End of optional section for tribes deploying QC Coordinators]

In addition, QC functions will be carried out by other technical staff and will be carefully monitored by the PM, who will work with the QA Manager to oversee this plan and implement quality improvements. For work done under this project, technical staff may include persons with expertise in the tribe's residential, commercial, and industrial activities. Technical staff may also include persons with expertise in air pollution engineering, technical reviewers, database specialists, quality auditors, and technical editors. The PM will ensure that technical staff do not review work in a QA capacity for which they were a primary or contributing author. **Exhibit 1** presents the organizational chart for the project.

Commented [T112]: Grantees are not required to name a QC coordinator. If the grantee does not have a QC coordinator the associated references in this QAPP template should be deleted.

Exhibit 1. Project Organization³



³ Under CIO 2105-S-02.0, section 3, the organization chart must also identify any contractor relationships relevant to environmental information operations.

QAPP Short Title: <add short title>
Section: Project Organization
Revision No: <0> Date: MM/DD/YYYY
Page: 9 of 49

1.5. Problem Definition / Background

Under this project, <Grantee Org.> will identify, evaluate, and utilize existing data resources⁴ to develop a tribal inventory of the major sources of greenhouse gas (GHG) emissions within <Tribal Lands> or from <Tribal Operations> and use that inventory data to develop a climate action plan. This QAPP focuses on the handling of environmental information under sector-specific tasks by technical staff charged with completing the following subtasks in a future planning project implemented in accordance with this QAPP:

1. Develop a comprehensive GHG inventory for the largest sources within each sector,
2. Develop options for reducing emissions within each sector,
3. Develop estimates or ranges of estimates for reductions achievable under each option,
4. Develop uncertainty analyses for each option’s emissions reduction estimate, and
5. Present these analyses and options in technical reports consistent with the deliverables required under the CPRG planning grants.

The GHG inventory may utilize the EPA’s Tribal – GHG Inventory Tool (TGIT),⁵ facility-specific GHG data published by the EPA in the Facility Level Information on Greenhouse gases Tool (FLIGHT),⁶ data reported to the EPA’s Greenhouse Gas Reporting Program (GHGRP),⁷ EPA’s National Emissions Inventory (NEI),⁸ DOE’s State and Local Planning for Energy (SLOPE) Platform,⁹ the Global Protocol for Community-Scale (GPC) Greenhouse Gas Inventories,¹⁰ government operations protocols,¹¹ and/or 3rd party data or tools, together with any independent, sector-specific estimates prepared by <Grantee Org.>. Any independent tribal estimates will be compared to corresponding federal, state, and/or local estimates for validation, as available. Significant differences between tribal and federal, state, or local estimates will be evaluated and discussed in the inventory report with the underlying data and methodology used for the independent tribal estimates. The tribal inventory will include the following source categories and gases:

TGIT Source Categories

1. Mobile combustion
2. Stationary combustion
3. Electricity consumption
4. Solid waste
5. Urban forestry
6. Agriculture & land management
7. Water use
8. Waste generation
9. Wastewater treatment

Greenhouse Gases (across all sectors)

carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), fluorinated gases (F-gases) including hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)

Commented [T113]: State the specific problem to be solved, decisions to be made, or outcome to be achieved. Include sufficient background information to provide a historical, scientific, and regulatory perspective for this particular project.

Users may modify the provided sample text or replace with their own text.

Under the Inflation Reduction Act, Congress provided many tools to pursue GHG reductions including the CPRG program. Under these Congressional authorities, the EPA seeks* to achieve three broad objectives:

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

*CPRG Program Guidance.

While this template references use of the TGIT, grantees may use other tools or approaches to develop their inventory and should adapt the sample text accordingly.

⁴ EPA, *Environmental Information Quality Policy*, CIO 2105.3, 03/07/2023 (p. 8) provides common examples of environmental information used to support the EPA’s mission at https://www.epa.gov/system/files/documents/2023-04/environmental_information_quality_policy.pdf.

⁵ <https://www.epa.gov/statelocalenergy/tribal-greenhouse-gas-inventory-tool>

⁶ Facility Level Information on Greenhouse gases Tool (FLIGHT) at <https://ghgdata.epa.gov/>

⁷ <https://www.epa.gov/ghgreporting/data-sets>

⁸ <https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-ne>

⁹ <https://www.energy.gov/scep/sisc/state-and-local-planning-energy-slope-platform>

¹⁰ <https://ghgprotocol.org/ghg-protocol-cities>

¹¹ https://ww2.arb.ca.gov/sites/default/files/classic/cc/protocols/lgo_protocol_v1_1_2010-05-03.pdf

1.5.1. Rationale for Selection of Sectors

For each sector included in the tribal inventory, **Table 1.2** briefly describes why the sector was included in the inventory and the relative significance of the sector in terms of the magnitude of air emissions from existing inventories, the associated geographic distribution of the sources, and recent trends in readily available activity data for the source category.

Table 1.2 Rationale for Sector Selection

Sectors Included in Inventory	Rationale for Including in GHG Inventory
Mobile combustion	Transportation activities were the largest source (29 percent) of total U.S. greenhouse gas emissions in 2021. From 1990 to 2021, transportation CO ₂ emissions from fossil fuel combustion increased by 19 percent. Transportation activities occur on all tribal lands.
Electricity consumption	The electric power sector accounted for 25 percent of total U.S. greenhouse gas emissions in 2021. Power generation and/or consumption occurs among all tribes.
Urban forestry ¹²	This sector includes fluxes of carbon from activities such as converting forests to agricultural use and practices that remove CO ₂ from the atmosphere and store it in long-term carbon sinks like forests. In 2021, the net CO ₂ removed from the atmosphere by natural and working lands was 12% of total U.S. greenhouse gas emissions. Between 1990 and 2021, total carbon sequestration in this sector decreased by 14%, primarily due to a decrease in the rate of net carbon accumulation in forests, as well as an increase in CO ₂ emissions from urbanization.
Agriculture & land management	Agriculture accounted for about 10 percent of U.S. greenhouse gas emissions in 2021, and agricultural soil management was the largest source of N ₂ O emissions. Enteric fermentation was the largest source of CH ₄ emissions.
Stationary combustion (including for commercial and residential heating)	In 2021, the commercial and residential sectors accounted for 7 and 6 percent of total U.S. greenhouse gas emissions, respectively. Emissions from the commercial and residential sectors have increased since 1990. Total residential and commercial greenhouse gas emissions, including direct and indirect emissions, in 2021 have increased by 2% since 1990. In 2021, an increase in heating degree days (0.5 percent) increased energy demand for heating in the residential and commercial sectors, however, a 1.8 percent decrease in cooling degree days compared to 2020 reduced demand for air conditioning in the residential and commercial sectors.
Solid waste and waste generation	This sector includes landfills, composting, and anaerobic digestion. Landfills were the third largest source of anthropogenic methane emissions in 2021, and landfills accounted for 1.9 percent of total U.S. greenhouse gas emissions.
Wastewater treatment	Wastewater treatment, both domestic and industrial, was the third largest anthropogenic source of N ₂ O emissions in 2021, accounting for 5.2 percent of national N ₂ O emissions and 0.3 percent of total U.S. greenhouse gas emissions. Emissions from wastewater treatment increased by 6.1 MMT CO ₂ e (41.6 percent) since 1990 as a result of growing U.S. population and protein consumption.

Commented [T114]: Describe approaches for organizing emissions data into sectors and/or the rationale for the sectors included in the inventory.

The grantee's approach may vary from the illustrative examples provided.

¹² Under international GHG inventory protocols this category is called "Land use, land-use change, and forestry."

Table 1.2 Rationale for Sector Selection

Sectors Included in Inventory	Rationale for Including in GHG Inventory
Water	This sector includes indirect emissions associated with the electricity used to deliver water to tribal lands.

Commented [T114]: Describe approaches for organizing emissions data into sectors and/or the rationale for the sectors included in the inventory.

The grantee's approach may vary from the illustrative examples provided.

Commented [de15]: We typically call it the Tribal GHG Inventory Tool, acronyms could be TGIT or TrGIT

1.5.2. Decisions to be Made

The EPA’s recommended tool for tribal GHG inventories (the TGIT) covers categories of GHG emissions by source category (mobile combustion, stationary combustion, electricity consumption, solid waste, etc.). The TGIT provides many default values to facilitate developing tribal estimates using methods consistent with the Global Protocol for Community-Scale GHG Emissions.¹³ The primary decisions to be made on this project will determine (for each source category) if the TGIT estimate or a non-federal estimate should be used for the tribal GHG inventory. For some source categories, alternatives to the TGIT estimates may include existing data resources from the EPA, tribal inventories, and GHGRP data publications. There are four primary decisions to be made under each task of this project for each source category. Each Task Leader will be charged with the following decisions:

1. Determine (for each major activity) if the TGIT estimate, a different federal estimate or tool, or a non-federal estimate should be used for the tribal GHG baseline estimate.
2. Determining the best options for reducing emissions of air pollution and achieving the following congressional objectives under the Inflation Reduction Act:
 - a. Reduce climate pollution while supporting creation of good jobs and lowering energy costs for families.
 - b. Accelerate work addressing environmental justice and empowering community driven solutions in overburdened neighborhoods.
 - c. Deliver cleaner air by reducing harmful air pollution in places where people live, work, play, and go to school.
3. Develop an estimate or a range of estimates for reductions achievable under each option.
4. Estimate the uncertainty of the emissions reduction estimate(s) or ranges under each option.

1.5.3. Actions to be Taken, Action Limits, and Expected Outcomes

Initially, tribal estimates will be derived using the TGIT tool for each source category. Subsequently, the tribe may elect to supplement estimates derived with the TGIT with estimates for each source category from existing tribal inventories, existing tribal activity data, or from other EPA or state resources. Calculated estimates derived from local activity data will be compared to federal datasets and/or downscaled state estimates for validation. The rationale for including any emissions estimates that show significant discrepancies from state or federal estimates will be documented in the tribe’s GHG inventory report along with the underlying data and calculation methodology.

When identifying the best options for reducing air pollution, each Task Leader will consider the activities affecting the largest numbers of families, business establishments, recreation areas, and schools. Options will include potential reductions in task-level activities impacting nonattainment areas and impacting residential, commercial, and school districts in close proximity to the largest sources of air pollution. <Grantee Org.> expects that each task will produce up to <#> options for sector-specific emissions reduction projects for further consideration by management and policymakers.

Commented [T116]: This example text includes references to nonattainment areas. Tribes without nonattainment areas should delete this reference. Tribes with nonattainment areas should consider including specific actions that will ensure task leaders identify options that will improve conditions in nonattainment areas.

¹³ https://ghgprotocol.org/sites/default/files/standards/GPC_Full_MASTER_RW_v7.pdf

1.5.4. Reason for Project

The baseline GHG inventory and options analyses developed under this tribal community project will be utilized by <Grantee Org.> and <Tribal Air Program Oversight Authority> for planning purposes to support <Tribe>'s development of the following CPRG planning deliverables:

- <Tribe>'s **Priority Climate Action Plan (PCAP)**, which is due on April 1, 2024. This plan will include near-term, implementation-ready, priority GHG reduction measures and is a prerequisite for any implementation grant.
- <Tribe>'s **Comprehensive Climate Action Plan (CCAP)** is due at the end of the grant period which can be up to 4 years.¹⁴ This plan will review all sectors that are significant GHG sources or sinks and include both near- and long-term GHG emission reduction goals and strategies.

This QAPP describes in detail the necessary QA and QC requirements and technical activities that will be implemented to ensure the baseline GHG inventory and the sector-specific emissions reduction options are reliable for the PCAP and CCAP.

1.5.5. Relevant Clean Air Act Mandates and Authorizations

The inventory produced under this project will support a grant application authorized under 42 U.S.C.A. § 7437 for *Greenhouse Gas Air Pollution Plans and Implementation Grants*. The inventory will be used to evaluate opportunities for reducing GHG emissions from all major-emitting sources including both mobile source categories and stationary source categories. This project will include the fundamental research necessary to evaluate and plan new programs (and amendments to existing Clean Air Act [CAA] programs) for reducing emissions from fossil fuel combustion activities. Many activities in the GHG inventory (and subsequent emissions reductions options analyses) include major sources of criteria and toxic pollutants. Accordingly, the purpose of this project (to evaluate and plan for reductions in GHG emissions, including reductions from usage or production of fossil fuels) is also consistent with the following statutory mandates and authorizations under Clean Air Act Title I:

- **§ 7403. Research, investigation, training, and other activities**
 - (a) *Research and development program for prevention and control of air pollution*
The Administrator shall establish a national research and development program for the prevention and control of air pollution
 - (1) *conduct, and promote the coordination and acceleration of, research, investigations ... and studies related to the causes ... extent, prevention, and control of air pollution;*
 - (2) *encourage, cooperate with, and render technical services and provide financial assistance to air pollution control agencies and other appropriate public or private agencies, institutions, and organizations, and individuals in the conduct of such activities*
 - (b) *Authorized activities of Administrator in establishing research and development program*
In carrying out the provisions of [paragraph (a)] the Administrator is authorized to–
 - (1) *collect and make available, through publications and other appropriate means, the results of and other information, including appropriate recommendations by him in connection therewith, pertaining to such research and other activities;*
 - (2) *make grants to air pollution control agencies ... for purposes ... in subsection (a)(1)*

¹⁴ US Environmental Protection Agency. *CPRG Program: Formula Grants for Planning – Program Guidance for Federally Recognized Tribes, Tribal Consortia, and U.S. Territories* available via <https://www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants#CPRGProgramGuidance>. Accessed 7/23/2023.

• **§ 7404. Research related to fuels and vehicles**

(a) Research programs; grants;

The Administrator shall give special emphasis to research and development into new and improved methods, having industry-wide application, for the prevention and control of air pollution and control of air pollution resulting from the combustion of fuels... he shall–

(1) *conduct and accelerate research programs directed toward development of improved , cost-effective techniques for–*

(A) *control of combustion byproducts of fuels,*

(B) *improving efficiency of fuels combustion so as to decrease atmospheric emissions*

• **§ 7405. Grants for support of air pollution planning and control programs**

(a) Amounts; limitations; assurances of plan development capability.

(1)(A) *The Administrator may make grants to air pollution control agencies ... in an amount up to three-fifths of the cost of implementing programs for the prevention and control of air pollution For the purpose of this section, “implementing” means any activity related to the planning, developing, establishing, carrying-out, improving, or maintaining of such programs....*

(C) *With respect to any air quality control region or portion thereof for which there is an applicable implementation plan under section 7410 ... grants under subparagraph (A) may be made only to air pollution control agencies which have substantial responsibilities for carrying out such applicable implementation plan.*

1.5.6. Information Provided by the EPA under § 7403(b)(1)

Under authority of CAA § 7403(b)(1) the EPA has provided the following resources to tribes to ensure reliable air emissions inventories are produced to support plans for reducing emissions:

- [Agency-wide Quality Program Documents](#)
- Quality Assurance-specific Directives
 - [CIO 2105.3 – Environmental Information Quality Policy](#), April 10, 2023
 - [CIO 2105-P-01.3 – Environmental Information Quality Procedure](#), March 7, 2023
 - [CIO 2105-S-02.0 – EPA’s Environmental Information QA Project Plan Standard](#)
 - EPA Regional Sites for Quality Management Plans and Guidance:
 - [Region 1](#)
 - [Region 2](#)
 - [Region 3](#)
 - [Region 4](#)
 - [Region 5](#)
 - [Region 6](#)
 - [Region 7](#)
 - [Region 8](#)
 - [Region 9](#)
 - [Region 10](#)
- QA Guidance
 - [EPA QA/G-4 – Guidance on Systematic Planning Using Data Quality Objectives Process](#)
 - [EPA QA/G-5 – Guidance for Quality Assurance Project Plans](#)

<Grantee Org.> will utilize these resources, as applicable, to ensure evaluation of existing data and utilization of those data are consistent with the EPA’s relevant directives and guidance.

1.6. Project / Task Description

An example schedule of deliverables for the technical tasks (Tasks 1-4) for GHG inventory QAPPs is presented in **Tables 2.1** through **2.4**. The work to be performed under this project involves preparing a tribal GHG emissions inventory for <Tribe>. The organization of the work is based on the use of the EPA’s Tribal – GHG Inventory Tool (TGIT)¹⁵ under the following sector-specific tasks:

- Task 1: Tribal inventory of mobile combustion GHG emissions.
- Task 2: Tribal inventory of electric power consumption (indirect) GHG emissions.
- Task 3: Tribal inventory of GHG emissions and sinks from urban forestry.
- Task 4: Tribal inventory of GHG emissions from other sectors.
 - 4.1 Stationary combustion
 - 4.2 Agriculture and land management
 - 4.3 Waste generation
 - 4.4 Solid waste
 - 4.5 Water
 - 4.6 Wastewater treatment

For each sector-specific task, **Tables 2.1–2.4** provide planned activities and a schedule of deliverables for use by tribes preparing GHG inventories. The EPA’s TGIT is available on EPA’s [Tribal GHG Inventory Tool webpage](#). Other resources, are located on the State and Tribal Greenhouse Gas Data and Resources webpage.¹⁶

Table 2.1 Technical Task Descriptions for Task 1.

Tasks and Deliverables	Schedule
Task 1. Mobile Combustion (Transportation)	
1. The PM or TL will assign staff to download the EPA’s Tribal – GHG Inventory Tool (TGIT) from https://www.epa.gov/statelocalenergy/tribal-greenhouse-gas-inventory-tool and use that tool to estimate emissions from mobile combustion sources. <i>[Note to template users: There are two modules within the downloaded zip file: one for tribal communities (TGIT: Community Module) and a separate module for tribal government operations. This example approach is based on the TGIT: Community Module.]</i> 2. Staff will read the [Introduction] worksheet and the [Read Me] worksheet to become familiar with the organization of the tool and the tool’s terminology. Staff will become familiar with Rows 42 through 59 of the [Read Me] sheet that reflect a brief summary of the steps necessary to complete the calculations for each sector. Additionally, staff can reference the TGIT User’s Guide for the Community Module that is included within the downloaded zip file.	Within <X> days of QAPP approval by EPA.

Commented [T117]: Provide a summary of all work to be performed, products to be produced, and the schedule for implementation. Provide maps or tables that show or state the geographic locations of field tasks. This discussion need not be lengthy or overly detailed but should give an overall picture of how the project will resolve the problem or question described in Section 1.5.

Users may modify the provided sample text or replace with their own text.

Please note, tribal approaches to organizing their data into sectors and/or the sectors included in their inventory may vary from the illustrative examples provided.

¹⁵ <https://www.epa.gov/statelocalenergy/tribal-greenhouse-gas-inventory-tool> .

¹⁶ <https://www.epa.gov/ghgemissions/state-and-tribal-greenhouse-gas-data-and-resources>.

Table 2.1 Technical Task Descriptions for Task 1.

Tasks and Deliverables	Schedule
<p>Task 1. Mobile Combustion (Transportation)</p> <ol style="list-style-type: none"> 3. Staff will complete the four initial setup steps on the [Control Sheet]. 4. Staff will review chapter 7 on transportation in the Global Protocol for Community-Scale GHG Emissions [available at Protocol for Community-Scale Inventories]. 5. Staff will obtain from a state or tribal motor vehicle agency, the most recent listing of vehicles registered at addresses located on tribal lands including (as available) year-manufactured, make, model, body style, fuel, and description. 6. In the TGIT: Community Module [tribal_community_ghg_inventorytool.xlsx], staff will use the [Mobile-Entry] sheet to load the tribe’s population of fossil-fueled motor vehicles. Staff will prepare an aggregated listing (i.e., listing of sets of vehicles with counts by vehicle type, model, year, and fuel) for all of the tribe’s vehicles and an estimate of the average fuel consumed for each set of similar vehicles. 7. After the primary TGIT calculations are complete, the PM, TL, or QAM will assign a QC staff member to complete the following steps: <ol style="list-style-type: none"> a. Review the original source(s) of data for all inputs to the TGIT tool. b. Validate that the values from the original source(s) were correctly entered into the primary TGIT tool. c. Populate a blank version of the TGIT tool with the inputs in a QC version. d. Compare the outputs of the primary version of the TGIT versus the QC version of the TGIT. e. Compare the listing of sources on the TGIT’s [Summary-Emissions] sheet to previous inventories published by the tribe or by neighboring or similar tribes to determine if any major sources of GHGs were omitted from the inventory. f. Document findings and submit to the PM, TL, and QAM for resolution. g. Document steps taken to resolve any findings. 8. In the GHG inventory report or in a separate report based on the GHG inventory, include a listing of options for emissions reductions from this sector that includes the following components: <ol style="list-style-type: none"> a. The specific source categories and activities affected by the proposed option. b. The quantity of GHG emissions reduced by the options with an associated uncertainty estimate. c. The quantity of criteria emissions reduced by the options with an associated uncertainty estimate. d. The quantity of toxic air pollutant emissions (as defined under applicable local, state, or federal rules for air toxics) reduced by the option with an associated uncertainty estimate. 	

Table 2.1 Technical Task Descriptions for Task 1.

Tasks and Deliverables	Schedule
Task 1. Mobile Combustion (Transportation)	
e. Number of people living in any nonattainment areas where option would reduce emissions (regardless of pollutant triggering nonattainment). f. A description of any benefits that the option will impart to communities with known environmental injustice issues such as close proximity of the community to an affected source under the option that emits toxic air pollutants.	

Table 2.2 Technical Task Descriptions for Task 2.

Tasks and Deliverables	Schedule																
Task 2. Electric Power Consumption																	
1. The PM or TL will assign a staff member to use the EPA’s TGIT tool [tribal_community_ghg_inventorytool.xlsx] and to verify that the four initial steps required on the [Control Sheet] have been completed. 2. Staff will use the [Electricity-Entry] sheet of the EPA’s TGIT tool. Staff will read the explanation of the <i>Data Entry & Calculations</i> starting in cell A3. Staff will enter the data such that each entry represents either a single, large tribal facility (e.g., a commercial or institutional facility) or a set of similar facilities (e.g., a group of similar residential units). For groups of similar units, when entering the <i>Unit Description</i> in cell C10 of the [Electricity-Entry] sheet, staff will include in the description the number of units that were included when the <i>electricity purchased (kWh)</i> value was summed or otherwise calculated for entry into cell C16. Staff will document each calculation with units of measure for each record added on the [Electricity-Entry] sheet in a manner similar to the following example, including the source ¹⁷ of the MW-hr usage per unit (i.e., per customer) entered in column C: <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> <tr> <th>Count of Units in Set</th> <th>Set Description</th> <th>Avg. Annual kWh Used (per Unit)</th> <th>Annual Usage (All Units)</th> </tr> </thead> <tbody> <tr> <td>1000</td> <td>Single-family home</td> <td>750 kWh</td> <td>750,000 kWh</td> </tr> <tr> <td></td> <td></td> <td>(Single-family home) (1 Year)</td> <td>Year</td> </tr> </tbody> </table> 3. After the primary TGIT calculations are complete, the PM, TL or QAM will assign a QC staff member to complete the following steps: <ol style="list-style-type: none"> Review the original source(s) of data for all inputs to the TGIT tool. 	A	B	C	D	Count of Units in Set	Set Description	Avg. Annual kWh Used (per Unit)	Annual Usage (All Units)	1000	Single-family home	750 kWh	750,000 kWh			(Single-family home) (1 Year)	Year	Within <X> days of QAPP approval by EPA.
A	B	C	D														
Count of Units in Set	Set Description	Avg. Annual kWh Used (per Unit)	Annual Usage (All Units)														
1000	Single-family home	750 kWh	750,000 kWh														
		(Single-family home) (1 Year)	Year														

¹⁷ **Attachment 1** to this template presents an excerpt from the EIA Form 861 file entitled [Sales_Ult_Cust_2020.xlsx] showing the number of customers and usage (MW-hrs) for some tribes that report to EIA Form 861. Tribes may elect to compare their usage per customer to other tribes in the QC step.

Table 2.2 Technical Task Descriptions for Task 2.

Tasks and Deliverables	Schedule
Task 2. Electric Power Consumption	
<ul style="list-style-type: none"> b. Validate that the values from the original source(s) were correctly entered into the primary TGIT tool. c. Populate a blank version of the TGIT tool with the inputs in a QC version. d. Compare the outputs of the primary version of the TGIT versus the QC version of the TGIT. e. Compare the listing of sources on the TGIT’s [Summary-Emissions] sheet to previous inventories published by the tribe or by neighboring or similar tribes to determine if any major sources of GHGs were omitted from the inventory. f. Document findings and submit findings to the PM, TL, and QAM for resolution. g. Document steps taken to resolve any findings. <p>4. In the GHG inventory report or in a separate report based on the GHG inventory, include a listing of options for emissions reductions from this sector that includes the following components:</p> <ul style="list-style-type: none"> a. The specific source categories and activities affected by the proposed option. b. The quantity of GHG emissions reduced by the options with an associated uncertainty estimate. c. The quantity of criteria emissions reduced by the options with an associated uncertainty estimate. d. The quantity of toxic air pollutant emissions (as defined under applicable local, state, or federal rules for air toxics) reduced by the option with an associated uncertainty estimate. e. The number of people living in any nonattainment areas where the option would reduce emissions (regardless of the specific pollutant triggering nonattainment). f. A description of any benefits that the option will impart to communities with known environmental injustice issues such as close proximity of the community to an affected source under the option that emits toxic air pollutants. 	

Table 2.3 Technical Task Descriptions for Task 3.

Tasks and Deliverables	Schedule								
Task 3. Urban Forestry (Natural Working Lands and Forestry)									
<p>1. The PM or TL will assign technical staff to develop estimates for this sector using the TGIT's [Urban_Forestry] worksheet.</p> <p>2. In order to estimate the areas of land with similar percentages of tree cover, staff will use a web-based mapping application to develop a listing of tree-covered tracts of land (i.e., polygons) with the following attributes:</p> <ol style="list-style-type: none"> Identifier describing area (e.g., Area 1 between Crooked Creek and boundary). Sector (residential, commercial/institutional, industrial, energy generation). Total area in square kilometers (km²). Percentage of area with tree cover based on tribal estimate. <p>3. For each sector, staff will calculate weighted percentage tree cover using Equation 1.</p> <p style="text-align: center;">Equation 1 for weighted percentage of tree cover for a sector:</p> $\frac{\sum_{i=1}^{i=30} (km^2 \text{ of area } i)(\% \text{ tree cover of area } i)}{\sum_{i=1}^{i=30} (km^2 \text{ } i)}$ <p>Where:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">$i = 1 \text{ to } 30$</td> <td style="padding: 2px;">Designates 30 tree-covered areas in a sector on tribal lands.</td> </tr> <tr> <td style="padding: 2px;">$km^2 \text{ of area } i$</td> <td style="padding: 2px;">The measured area (in square kilometers) of area i.</td> </tr> <tr> <td style="padding: 2px;">$\% \text{ tree cover of area } i$</td> <td style="padding: 2px;">The estimated percentage of tree cover for area i.</td> </tr> <tr> <td style="padding: 2px;">$\sum_{i=1}^{i=30} (km^2 \text{ } i)$</td> <td style="padding: 2px;">The denominator is the total combined area of all 30 areas within the sector.</td> </tr> </table> <p>4. For each sector on the TGIT's [Urban Forestry] worksheet staff will enter total area for the sector in column C rows 11 through 14 and enter weighted % tree cover in Column D.</p> <p>5. For the two sectors with the largest areas of tree cover, the QAM will assign a QC staff member who did not support steps 1 through 4, to develop independent estimates and to complete the following QC steps:</p> <ol style="list-style-type: none"> Review the original source(s) of data for all inputs to the primary TGIT tool. Validate correct entry of values from original source(s) into the primary TGIT. Populate a blank version of the TGIT tool with the inputs in a QC version. Compare the primary outputs of the TGIT versus the QC version of the TGIT. Compare the listing of resources on the TGIT's [Summary-Emissions] sheet to previous inventories published by the tribe or by neighboring or similar tribes to identify any major discrepancies. Document findings and submit findings to the PM, TL, and QAM for resolution. Document steps taken to resolve any findings. 	$i = 1 \text{ to } 30$	Designates 30 tree-covered areas in a sector on tribal lands.	$km^2 \text{ of area } i$	The measured area (in square kilometers) of area i .	$\% \text{ tree cover of area } i$	The estimated percentage of tree cover for area i .	$\sum_{i=1}^{i=30} (km^2 \text{ } i)$	The denominator is the total combined area of all 30 areas within the sector.	<p>Within <X> days of QAPP approval by EPA.</p>
$i = 1 \text{ to } 30$	Designates 30 tree-covered areas in a sector on tribal lands.								
$km^2 \text{ of area } i$	The measured area (in square kilometers) of area i .								
$\% \text{ tree cover of area } i$	The estimated percentage of tree cover for area i .								
$\sum_{i=1}^{i=30} (km^2 \text{ } i)$	The denominator is the total combined area of all 30 areas within the sector.								

Table 2.3 Technical Task Descriptions for Task 3.

Tasks and Deliverables	Schedule
Task 3. Urban Forestry (Natural Working Lands and Forestry)	
<p>6. In the inventory report or in a separate report based on the inventory, include a listing of options for emissions reductions from this sector that includes the following components:</p> <ul style="list-style-type: none"> a. Specific source categories and activities affected by the proposed option. b. Quantity of GHG emissions reduced by option with uncertainty estimate. c. Quantity of criteria emissions reduced or mitigated (such as by adsorption of PM2.5 on leaf surfaces) by the option with an associated uncertainty estimate. d. The number of people living in any nonattainment areas where the option would reduce emissions or improve air quality conditions by providing shade to urban heat islands (regardless of the specific pollutant triggering nonattainment). e. A description of any benefits that the option will impart to communities with known environmental injustice issues such as providing windbreaks to communities in close proximity to sources of nuisance dust (e.g., dirt roads used for mining operations). f. The number of schools, miles of roadways, or public traffic counts at major commuting destinations that would be positively affected by options that include planting of trees or other vegetation. 	

Table 2.4 Technical Task Descriptions for Task 4.

Tasks and Deliverables	Schedule														
Task 4. Tribal Inventory of GHG Emissions for Other Sources															
<p>1. The PM or TL will assign the primary technical staff member(s) to use the EPA’s TGIT tool and the following worksheets to develop the primary estimates for other sectors.</p> <table border="1" data-bbox="180 646 810 1026"> <thead> <tr> <th style="background-color: #cccccc;">Other Sources</th> <th style="background-color: #cccccc;">TGIT Worksheet(s)</th> </tr> </thead> <tbody> <tr> <td>Stationary combustion</td> <td>[Stationary-Entry] [Stationary-Data] [Stationary-Calcs]</td> </tr> <tr> <td>Agriculture & land management</td> <td>[Agriculture & Land Management]</td> </tr> <tr> <td>Solid waste (disposal within tribe’s geopolitical boundary)</td> <td>[Solid Waste-Control] [Solid Waste-Entry]</td> </tr> <tr> <td>Water</td> <td>[Water]</td> </tr> <tr> <td>Wastewater treatment</td> <td>[Wastewater-Control] [Wastewater-Entry] [Wastewater-Calcs]</td> </tr> <tr> <td>Waste generation (disposal external to tribe’s geopolitical boundary)</td> <td>[Waste Production]</td> </tr> </tbody> </table> <p>[Note to users of this template: Attachment 2 to this template presents an excerpt from the EPA’s Greenhouse Gas Reporting Program (GHGRP) reflecting emissions reported by some tribes with large stationary sources of GHGs. The list in Attachment 2 is not a complete listing of the data but is provided to indicate the types of data that are available for the largest stationary sources of GHGs. Tribes may elect to download the most recent set of GHGRP data summary spreadsheets for each reporting year published as a zip file at https://www.epa.gov/ghgreporting/data-sets to utilize any previously reported data in tribal inventories.]</p>	Other Sources	TGIT Worksheet(s)	Stationary combustion	[Stationary-Entry] [Stationary-Data] [Stationary-Calcs]	Agriculture & land management	[Agriculture & Land Management]	Solid waste (disposal within tribe’s geopolitical boundary)	[Solid Waste-Control] [Solid Waste-Entry]	Water	[Water]	Wastewater treatment	[Wastewater-Control] [Wastewater-Entry] [Wastewater-Calcs]	Waste generation (disposal external to tribe’s geopolitical boundary)	[Waste Production]	<p>Within <X> days of QAPP approval by EPA.</p>
Other Sources	TGIT Worksheet(s)														
Stationary combustion	[Stationary-Entry] [Stationary-Data] [Stationary-Calcs]														
Agriculture & land management	[Agriculture & Land Management]														
Solid waste (disposal within tribe’s geopolitical boundary)	[Solid Waste-Control] [Solid Waste-Entry]														
Water	[Water]														
Wastewater treatment	[Wastewater-Control] [Wastewater-Entry] [Wastewater-Calcs]														
Waste generation (disposal external to tribe’s geopolitical boundary)	[Waste Production]														
<p>2. After the primary TGIT calculations are complete, the PM, TL or QAM will assign a QC staff member to complete the following steps:</p> <ol style="list-style-type: none"> a. Review the original source(s) of data for all inputs to the TGIT tool. b. Validate that the values from the original source(s) were correctly entered into the primary TGIT tool. c. Populate a blank version of the TGIT tool with the inputs in a QC version. d. Compare the outputs of the primary version of the TGIT versus the QC version of the TGIT. e. Compare the listing of sources on the TGIT’s [Summary-Emissions] sheet to previous inventories published by the tribe or by neighboring or similar tribes to determine if any major sources of GHGs were omitted from the inventory. f. Document findings and submit findings to the PM, TL and QAM for resolution. g. Document steps taken to resolve any findings. 															
<p>3. In the GHG inventory report or in a separate report based on the GHG inventory, include</p>															

Table 2.4 Technical Task Descriptions for Task 4.

Tasks and Deliverables	Schedule
Task 4. Tribal Inventory of GHG Emissions for Other Sources	
<p>a listing of options for emissions reductions from this sector that includes the following components:</p> <ol style="list-style-type: none"> a. The specific source categories and activities affected by the proposed option. b. The quantity of GHG emissions reduced by the options with an associated uncertainty estimate. c. The quantity of criteria emissions reduced by the options with an associated uncertainty estimate. d. The quantity of toxic air pollutant emissions (as defined under applicable local, state, or federal rules for air toxics) reduced by the option with an associated uncertainty estimate. e. The number of people living in any nonattainment areas where the option would reduce emissions (regardless of the specific pollutant triggering nonattainment). f. A description of any benefits that the option will impart to communities with known environmental injustice issues such as close proximity of the community to an affected source under the option that emits toxic air pollutants. 	

1.7. Quality Objectives / Criteria

1.7.1. Data Quality Objectives

The primary objectives for this project are to develop reliable inventories for each of the GHG-emitting sectors in <Tribe> and to identify options for reducing emissions from those sectors. Accordingly, all quality objectives and criteria are aligned with these objectives. The quality system used for this project is the joint responsibility of the <Grantee Org.> PM, Task Leaders, and QA Manager. An organizationally independent QA Manager will maintain oversight of all required measures in this QAPP. QC functions will be carried out by technical staff and will be carefully monitored by the responsible Task Leaders, who will work with the QA Manager to identify and implement quality improvements. All activities performed under this project will conform to this QAPP.

1.7.2. Data Quality, Management, and Analyses

For this project, <Grantee Org.> will use a variety of QC techniques and criteria to ensure the quality of data and analyses. Data of known and documented quality are essential components for the success of the project, as these data will be used to inform the decision-making process for the PCAP and CCAP as discussed in Section 1.5.4. The table in **Appendix A** lists by task the specific QC techniques and criteria that are part of this QAPP.

The data quality objectives and criteria for this project are accuracy, precision, bias, completeness, representativeness, and comparability. *Accuracy* is a measure of the overall agreement of a measurement to a known value. It includes a combination of random error (precision) and systematic error (bias). *Precision* is a measure of how reproducible a measurement is or how close a calculated estimate is to the actual value. *Bias* is a systematic error in the method of measurement or calculation. If the calculated value is consistently high or consistently low, the value is said to be biased. Our goal is to ensure that information and data generated and collected are as accurate, precise, and unbiased as possible within project constraints. It is not anticipated that this project will include primary data collection. Generally, existing data and tools provided by the EPA and other qualified sources will be used for project tasks. A subject matter specialist familiar with technical reporting standards (such as a permit writer or compliance engineer with knowledge of the tribe's facilities operating in the sector) will be used to QA all data utilized for developing the tribal GHG inventory. <Grantee Org.> will verify the accuracy of all data by checking for logical consistency among datasets. All existing environmental data shall meet the applicable criteria defined in CFR and associated guidance, such as the validation templates provided in the [EPA QA Handbook Volume II](#).

Uncertainty can be evaluated using a few different approaches. The most useful uncertainty analysis is quantitative and is based on statistical characteristics of the data such as the variance and bias of estimates. In a sensitivity analysis, the effect of a single variable on the resulting emissions estimate generated by a model (or calculation) is evaluated by varying its value while holding all other variables constant. Sensitivity analyses will help focus on the data that have the greatest impact on the output data. Additional statistical tests may be utilized depending on the need for more or less rigorous tools and on the specific project activity being evaluated.

When available, data originally gathered using published methods whose applicability, sensitivity, accuracy, and precision have been fully assessed, such as EPA reference methods, will be preferred and considered to be of acceptable quality. Project decisions may be adversely impacted if, for example, existing data were used in a manner inconsistent with the originator's purpose. Metadata can be described as the amount and quality of information known about one or more facets of the data or a dataset. It can be used to summarize basic information about the data (e.g., how, why, and when the existing data were collected), which can make working with specific data or datasets easier and provides

Commented [T118]: Discuss the quality objectives for the project and the performance criteria to achieve those objectives. EPA requires the use of a systematic planning process to define these quality objectives and performance criteria.

Users may modify the provided sample text or replace with their own text.

the user with more confidence. Metadata are valuable when evaluating existing data, as well as when planning for collection primary data that may be required in the future. However, the effort needed to locate and obtain original source materials can be costly. Accordingly, a graded approach to planning will be applied and ongoing discussions with the EPA will be held to determine what magnitude and rigor of QA effort are appropriate and affordable for the project.

For the data analysis completed under this project, analytical methods will be reviewed to ensure the approach is appropriate and calculations are accurate. Spreadsheets will be used to store data and complete necessary analyses. Design of spreadsheets will be configured for the intended use. All data and methodologies specific to each analysis will be defined and documented. Tables and fields will be clearly and unambiguously named. Spreadsheets will be checked to ensure algorithms call data correctly and units of measure are internally consistent. Hand-entered or electronically transferred data will be checked to ensure the data are accurately transcribed and transferred.

The draft inventory will be evaluated for GHG-emitting-sector and geographic completeness. <Grantee Org.> will utilize the framework of sectors in the EPA's TGIT tool, previous inventories completed by the tribe, or previous inventories completed by similar tribes to ensure that the inventory prepared under this project includes all major GHG-emitting sectors. To ensure the inventory is geographically complete, the draft inventory will also be submitted for review by <Grantee Org.> staff within the tribe or are familiar with all tribal activities subject to tribal or federal standards issued under Title I of the CAA to ensure that all major-emitting activities on tribal lands are included in the inventory.

Representativeness is a qualitative term that expresses the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. <Grantee Org.> will use the most complete and accurate information available to compile representative data for the tribe's GHG-emitting activities.

Data *comparability* is a qualitative term that expresses the measure of confidence that one dataset can be compared to another and can be combined for the decision(s) to be made. <Grantee Org.> will compare datasets when available from different sources to check for the quality of the data. This QA step will also ensure that any highly correlated datasets or indicators are identified. Supporting data, such as information on reference methods used and complete test reports, are important to ensure the comparability of emissions data.

1.7.3. Document Preparation

All documents produced under this project will undergo internal QC review, as well as technical review and an editorial review, prior to submission to the EPA PO. QC will be performed by an engineer, scientist, or economist, as appropriate, with sufficient knowledge. The technical reviewer will review the document for accuracy and integrity of the technical methodologies, analyses, and conclusions.

An editorial review of all final documents will be performed. Editors will verify clarity, spelling, and grammatical correctness, and ensure documents are free of typographical errors. Editors will verify that references are cited correctly. This will include a comparison against the original documents.

The *QC Documentation Form (Appendix B)* will be used to track the approval process. The form must be completed and signed for all document deliverables. The signatures required include those of the Task Leader and technical and editorial reviewers. Completion of this form certifies that technical review, editorial review, and all required QC procedures have been completed to the satisfaction of the TL and QA Manager. Copies of these signed forms will be maintained in the project files.

QAPP Short Title: <add short title>
Section: Special Training
Revision No: <0> Date: MM/DD/YYYY
Page: 25 of 49

1.8. Special Training / Certifications

All <Grantee Org.> staff assigned to work on this project shall have appropriate technical and QA training to properly perform their assignments. <Grantee Org.> staff serving in the QAM role under this project will have completed a training course on QA/QC activities similar to the course available at <https://www.epa.gov/quality/training-courses-quality-assurance-and-quality-control-activities>. The PM and all TLs under this project will have completed an online training course on air emissions inventories on the Air Knowledge website at <https://airknowledge.gov/EMIS-SI.html>.

No additional technical training is required unless otherwise specified in this section for the following tasks:

- Task 1 – <specify any required certifications>
- Task 2 – <specify any required certifications>
- Task 3 – <specify any required certifications>
- Task 4 – <specify any required certifications>

If training is required for new staff or for particular segments of the GHG inventory, the PM in coordination with the associated TL will identify available training resources for the inventory segment and incorporate the required training into the project schedule.

Commented [T119]: Identify and describe any specialized training or certifications needed by personnel in order to successfully complete the project or task. Discuss how such training will be provided and how the necessary skills will be assured and documented.

Users may modify the provided sample text or replace with their own text.

1.9. Documents and Records

<Grantee Org.> will document in electronic form (and/or hard copy) QC activities for this project. The TL is responsible for ensuring that copies of all completed QC forms, along with other QA records (including this QAPP), will be maintained in the project files. Project files will be retained by <Grantee Org.> for <X> years after <enter description of initial milestone for record retention period>. The types of documentation that will be prepared for this project include:

- Planning documentation (e.g., QAPP)
- Implementation documentation (i.e., Review/Approval Forms and QC records)
- Assessment documentation (i.e., audit reports and independent calculations).

Detailed documentation of QC activities for a specific task or subtask will be maintained using the *QC Documentation Form* shown in **Appendix B**. This form will document the completion of the QC techniques planned for use on this project as listed in the table in **Appendix A**. One or more completed versions of these forms, as necessary, will be maintained in the project files. The types of documents and activities for which QC will be conducted and documented may include raw data, data from other sources such as data bases or literature, data entry into the TGIT tool, calculations necessary to transform raw data into forms required for TGIT entry, and comparisons of primary estimates with QC estimates.

Technical reviews will be used along with other technical assessments (i.e., QC checks) and QA audits to corroborate the scientific defensibility of any data analyses. A technical review (i.e., internal senior review) is a documented critical review of a specific technical work product. It is conducted by subject matter experts who are collectively equivalent (or senior) in technical expertise to those who performed the work. Given the nature of the deliverables under this project, a technical review is an in-depth assessment of the assumptions, calculations, extrapolations, alternative interpretations, and conclusions in technical work products. Technical review of proposed methods and associated data will be documented in the *QC Documentation Form* shown in **Appendix B**. The form will include the reviewer's charge, comments, and corrective actions taken.

Additionally, <Grantee Org.> has developed and instituted document control mechanisms for the review, revision, and distribution of QAPPs. Each QAPP has a signed approval form, title page, table of contents, and an EPA-approved document control format (see header at top of the page). The distribution list for this QAPP was presented in **Table 1.1**. During the course of the project, any revision to the QAPP will be circulated to everyone on the distribution list, as well as to any additional staff supporting this project. Any revision to the QAPP will be documented in a QAPP addendum, approved by the same signatories to this QAPP, and circulated to everyone on the distribution list by the <Grantee Org.> PM.

At this time, <Grantee Org.> does not know if the project will collect or handle personally identifiable information (PII) subject to the Privacy Act of 1974. However, if during the course of this project technical staff determine that PII is required to support project objectives, <Grantee Org.> will meet all requirements of the Privacy Act of 1974. **Appendix C** indicates the status of the tribe's determination regarding applicability of the Privacy Act of 1974 under this project.

Commented [T120]: Describe process and responsibilities for ensuring appropriate project personnel have most current approved version of QAPP, including version control, updates, distribution, and disposition. Itemize information and records which must be included in data report package and specify reporting format for hard copy and any electronic forms. Records can include raw data, data from other sources such as data bases or literature, field logs, sample preparation and analysis logs, instrument printouts, model input and output files, and results of calibration and QC checks. Identify any other records and documents applicable to the project that will be produced, such as audit reports, interim progress reports, and final reports. Specify level of detail of field sampling, laboratory analysis, literature or data base data collection, or modeling documents or records needed to provide a complete description of any difficulties encountered. Specify or reference all applicable requirements for the final disposition of records and documents.

Users may modify the provided sample text or replace with their own text.

2. Existing Data Acquisition and Management Protocols (Group B)

2.1. Sampling Process Design

2.1.1. Need and Intended Use of Data Used

As indicated in **Tables 2.1–2.4**, a wide range of data for a diverse set of GHG-emitting activity is necessary to prepare a tribal inventory. Existing data resource may include source-specific or facility-specific GHG emissions estimates, emissions factors, or activity data for use with emissions factors. The experimental design for this inventory project relies on the EPA’s TGIT tool together with independent estimates prepared by <Grantee Org.> assigned QC staff. Existing data resources (including but not limited to data from previously completed inventories) will be utilized to develop the primary GHG emissions estimates using the EPA’s TGIT tool.

Subsequently, QC staff will complete an independent assessment of proper use of the original data source and will validate that the original data was properly transformed for the primary entries into the TGIT tool. As directed by the PM or QA Manager for a portion of each primary analysis, the assigned QC staff will populate a QC version of the TGIT tool with the validated data and compare the estimates in the primary versions of the TGIT worksheets with the estimates in the QC version of the TGIT worksheets. Any discrepancies between the primary and QC estimates will be reviewed by the PM or QAM and documented including the steps taken to reconcile any significant differences.

2.1.2. Identification of Data Sources and Acquisition

The following data sources will be evaluated for use under each task to develop primary estimates for the major-emitting sectors in <Tribe> or for use in validation of the primary estimates:

- Task 1:
 - Vehicle registration data from the <enter state or local motor vehicle agency>.
 - State or federal averages for vehicle miles traveled and miles per gallon from the U.S. Department of Transportation.
 - National Emissions Inventory (NEI) county-level estimates for mobile sources.
- Task 2:
 - Electricity consumption by customer class obtained directly from <enter local utility provider>.
 - U.S. Department of Energy’s (DOE’s) EIA Form 861, which reports sub-county-level usage in MWh and customer counts as reported by the different distribution utilities operating within each county.
 - U.S. Department of Energy’s (DOE’s) SLOPE Platform which reports county-level electricity usage in million British thermal units.
- Task 3:
 - Area calculations from web-based map applications.
 - Tree cover estimates from tribal surveys or forestry databases.
- Task 4:
 - Data published by EPA under the Greenhouse Gas Reporting Program for fossil fuel consumption by customer class from <enter local utility providers>.
 - Wastewater management data from local water utility.

2.2. Quality Control

All data operations conducted for this project will involve existing, non-direct measurement data. All data received will be reviewed by a senior technical staff member to assess data quality and completeness before their use. In addition to reviewing and assessing the data collected, all data entered into spreadsheets and all calculations completed for analyses will be reviewed by a senior technical QC reviewer. The QC reviewer will evaluate the approach to ensure the methods are appropriate and have been applied correctly to the analysis. The QC reviewer will also confirm all data were entered correctly and that calculations are complete and accurate. Calculations will be checked by repeating each calculation, independently, and comparing the results of the two calculations. Any data entry and calculation errors will be identified and corrected. Data tables prepared for the draft and final reports will be checked against the spreadsheets used to store the data and complete the analysis.

Where calculations are required to assess the data/datasets, QC calculations will be performed using computer spreadsheets and calculators to reduce typographical or translation errors—mathematical/statistical calculations are performed using spreadsheets or software programs with predefined formulas and functions. <Grantee Org.> will ensure that any manipulations performed on the data/dataset were done correctly. Such calculations could involve statistical checks to look for data outliers. One approach, for example, that may be used to identify outliers or unusual data points is sorting a datasheet for one or more data variables. This approach is a simple but effective way to highlight unusually high or low values. Graphing data using boxplots, histograms, and scatterplots is another method that may be used to identify gaps in the data (missing data), outliers, or unusual data points. Another approach that may be used is the use of Z-scores, which can quantify the unusualness of an observation when data follow a normal distribution. A Z-score for a particular value indicates the number of standard deviations above and below the mean that the value falls. For example, a Z-score of 2 indicates that an observation is two standard deviations above the average while a Z-score of -2 indicates the value is two standard deviations below the mean. A Z-score of zero represents a value that equals the mean. As appropriate, we will also use hypothesis tests to find outliers, or an interquartile range (IQR) to calculate boundaries for what constitutes minor and major outliers. The methods used will be driven by the scale and type of data. <Grantee Org.> will determine outlier detection methods to be used based on the initial review of the data. Identified outliers will be highlighted to the PM, TL, QAM, or delegate with options for treatment.

Commented [T121]: Identify QC activities needed for each sampling, analysis, or measurement technique. For each required QC activity, list the associated method or procedure, acceptance criteria, and corrective action. Because standard methods are often vague or incomplete in specifying QC requirements, simply relying on the cited method to provide this information is usually insufficient. QC activities for the field and the laboratory include, but are not limited to, the use of blanks, duplicates, matrix spikes, laboratory control samples, surrogates, or second column confirmation. State the frequency of analysis for each type of QC activity, and the spike compounds sources and levels. State or reference the required control limits for each QC activity and corrective action required when control limits are exceeded and how the effectiveness of the corrective action shall be determined and documented. Describe or reference the procedures to be used to calculate applicable statistics (e.g., precision and bias). Copies of the formulas are acceptable as long as the accompanying narrative or explanation specifies clearly how the calculations will address potentially difficult situations such as missing data values, “less than” or “greater than” values, and other common data qualifiers.

Users may modify the provided sample text or replace with their own text.

2.3. Non-direct Measurements

All data operations conducted on this project will involve existing, non-direct measurement data. All existing data received will be reviewed by a senior technical staff member to assess data quality and completeness before their use.

Consistent with the EPA's QA requirements, this QAPP describes the procedures that will be used to ensure the selection of appropriate data and information to support the goals and objectives of this project. Specific elements addressed by this QAPP include:

- Identifying the sources of existing data,
- Presenting the hierarchy for data selection,
- Describing the review process and data quality criteria,
- Discussing quality checks and procedures should errors be identified, and
- Explaining how data will be managed, analyzed, and interpreted.

Data presented in the GHG inventory will be traced to its source (e.g., database input and output). Key resources include data collected by the EPA (e.g., GHGRP data), and data from EPA-approved data sources (e.g., EIA Form 861 data). These sources may include primary literature (i.e., peer-reviewed journal articles and reports) or databases. We may also use approved existing sources (e.g., handbooks, databases). Original sources for all information and data contained in the document will be included in a list of references with appropriate citations. When peer-reviewed literature or EPA-approved data sources cannot be used, we will document any significant limitations to the data sources used.

We will document information regarding each dataset and our rationale/selection criteria for selecting the data sources used in the inventory. The TL will be responsible for overseeing and confirming the selection of the data for the project tasks.

Table 3.1 provides a hierarchy for data quality when identifying and reviewing available sources of data and information. When evaluating data resources, efforts will be made to identify and select data sources that most closely conform to the highest ranked criteria. Data quality metrics and documentation may not be provided by each source, and as necessary, we may consult with subject matter experts from permitted facilities or trade associations operating in <Tribe> to qualify data for use to meet project objectives.

Any available data quality information will be reviewed by <Grantee Org.> and project advisors to ensure that the data represent full-scale designs and commercial processes, and that they are applicable to economic and regulatory conditions in the United States. <Grantee Org.> will document data sources used and any significant limitations of utilized data or information to ensure that the data are appropriate for their intended use. An internal technical reviewer will review the approach for selecting and compiling data; the review will include examination of the data sources and the intended use of the data. The specific QC techniques used will depend on the technical activity or analysis to which they are applied. The <Grantee Org.> TL is responsible for verifying the usability of data and related information.

Commented [T122]: Identify any types of data needed for project implementation or decision making that are obtained from non-measurement sources such as computer data bases, programs, literature files, and historical data bases. Describe the intended use of the data. Define the acceptance criteria for the use of such data in the project and specify any limitations on the use of the data.

Users may modify the provided sample text or replace with their own text.

Table 3.1 Existing Data Quality Ranking Hierarchy

Quality Rank	Source Type
Highest	Federal, state, and local government agencies
Second	Consultant reports for state and local government agencies
Third	NGO studies; peer-reviewed journal articles; trade journal articles; conference proceedings
Fourth	Conference proceedings and other trade literature: non-peer-reviewed
Fifth	Individual estimates (e.g., via personal communication with vendors)

<Grantee Org.> will work with EPA to ensure that all data used for the project are appropriate for their intended use. The main criteria that will be used in the selection of the data are the vintage and quality of the data (based on peer review). The quality of the data will consider the credibility of the source, and the QA documentation provided by the data source. Senior technical staff will also evaluate the availability of alternative datasets, suitability of the selected data for the intended purpose, and agreement with TGIT estimates.

<Grantee Org.> will use the Secondary Data Quality Ranking Hierarchy when identifying and reviewing available sources of data and information. The source types in **Table 3.1** appear in the order in which they are likely to meet the data quality criteria. For example, federal government data are more likely to be from a credible source, thoroughly reviewed, suitable, available, and representative, and any exceptions to these data criteria are likely to be noted in the government data, providing transparency. Data from individuals are expected to be less reliable, not peer reviewed, and may not be suitable or representative of tribal activities.

If it is determined that data meeting the fourth (i.e., conference proceedings and other trade literature: non peer-reviewed) or fifth (i.e., individual estimates such as personal communications with vendors) level compose the best or only available data source, the TL will include in the inventory a description of these data with associated limitations for review and approval by the PM and QAM.

These measures of data quality will be used to judge whether the data are acceptable for their intended use. In cases where available data do not or may not meet data quality acceptance criteria, the TL will include in the inventory a discussion for review and approval by the PM and QAM explaining how emissions estimates that relied on such data compare to TGIT estimates.

We will also consider, for example, the age (i.e., date of the source dataset) and the representativeness of the data and will include in the inventory report for review and approval by the PM and QAM any quality concerns or uncertainties introduced with use of these data, such as data gaps or inconsistencies with other sources. Any data source utilized that is older than 10 years will specifically be flagged in the inventory report.

Representativeness will be evaluated by determining that the emissions or activity data are descriptive of conditions in the United States, that the data are current, and that the data are descriptive of similar processes within <Tribe>. Any incomplete datasets will be identified, and deficiencies will be evaluated to determine whether data are missing or confusing and if they meet secondary-use quality objectives.

Key screening criteria will be used to screen the sources identified. The <Grantee Org.> TL will provide oversight to the screening process to ensure sources collected are the most relevant and meet quality requirements. Available data and information from the selected sources will be compiled and relevant summary information will be extracted out of the information sources to develop the required output for each of the project tasks.

2.3.1. Criteria for Accepting Existing Data for Intended Use

The criteria for determining whether the data are acceptable for use in developing the tribal inventory will be based on a comparison of the primary emissions estimates to independent emissions estimate produced using the EPA's TGIT or other reliable sources of activity data. While some differences between the tribe's primary calculations and independent calculations are expected, differences of more than <X> percent must be accompanied by an explanation subject to approval by the PM and QAM prior to using the estimate in the tribe's inventory.

2.3.2. Criteria for Options Identification

The criteria for reviewing all activities under each task and identifying the best options for future emissions reductions projects will be based on the following criteria:

1. Quantity of reductions in emissions of climate pollution under the option.
2. Number of jobs likely to be created by the option.
3. Environmental justice benefits of the project including the number of people living in overburdened neighborhoods that will benefit from the option.
4. Quantity of reductions in criteria and toxic air pollutants that can be achieved by option.
5. Number of people living, working, recreating, and going to school in the area(s) benefiting from the option.

2.4. Data Management

Data management procedures include file storage and file transfer. All project and data files will be stored on <Grantee Org.> project servers. Files will be organized and maintained by the TL in folders by project, task, and function, including a system of file labeling to ensure version control. Any files containing confidential business information will be stored on secure computers. The TL will make sure that staff are trained and adhere to the project file organization and version control labeling to ensure that files are placed in consistent locations. All files will be backed up each night to avoid loss of data. Data are stored in various formats that correspond to the software being used. As necessary, data will be transferred using various techniques, including email, File Transfer Protocol, or shared drives. Typically, records will be archived once the project is completed. Record retention times will be based on contractual and statutory requirements or will follow <Grantee Org.> practices for storing materials of up to <X> years after the end of the period of performance (POP). Multiple project staff are granted access rights to the archived file system for each project. Records may be retrieved from archived file system by the TL, PM, or other project staff with access during the records retention period. As soon as allowed by applicable regulations or the grant agreement, records will be destroyed according to <Grantee Org.> policies and procedures. For any sensitive information that is gathered under the project, <Grantee Org.>'s policy is consistent with EPA–recommended methods of destruction, which include degaussing, reformatting, or secure deletion of electronic records; physical destruction of electronic media; recycling; shredding; incineration; and pulping. Should the grant specify some other manner of disposition (e.g., transfer to the client), <Grantee Org.> will comply with that directive. As noted above, <Grantee Org.> has developed a file naming convention/nomenclature for electronic file tracking and record keeping. Foremost, all files must be given a short but descriptive name. For those records and files gathered or provided to <Grantee Org.>, the filename may include the identification of “original” in its filename.

Similarly, files that have undergone a review by an independent, qualified person will include, at the end of the filename, the initials of the reviewer or the suffix “rev” (in lieu of initials) if more than one reviewer reviewed the file, along with the date reviewed and version number, as a way to track which staff person(s) reviewed the file and when. Filenames of draft versions will follow an incremental, decimal numbering system. More specifically, each successive draft of a document is numbered sequentially from version 0.1, 0.2, 0.3... until a final version is complete. Final versions will be indicated by whole numbers (e.g., version 1.0). Final versions of documents that undergo revisions will be labeled version X.1 for the first set of revisions. While the document is under review, subsequent draft versions will increase incrementally (e.g., 1.2, 1.3, 1.4) until a revised final version is complete (e.g., version 2.0).

In the event data retrieval is requested and to prevent loss of data, all draft and final file versions will be retained electronically—that is, superseded versions will not be deleted.

Note that changes made to deliverables will be documented using the software's *track changes* feature, which allows a user to track and view all changes that are made to the document version. All deliverable reviews will be documented in a QC Documentation Form (see **Appendix B**) for the project. This form will be maintained in the project files.

For this project, it is not anticipated that any special hardware or software will be used. General software available through the Microsoft Suite including Excel, PowerPoint, Access, and Word will be sufficient to perform the work (described in **Tables 2.1–2.4**) for this project.

Commented [T123]: Describe the project data management process, tracing the path of the data from their generation to their final use or storage Describe or reference the standard record-keeping procedures, document control system, and the approach used for data storage and retrieval on electronic media. Discuss the control mechanism for detecting and correcting errors and for preventing loss of data during data reduction, data reporting, and data entry to forms, reports, and databases. Provide examples of any forms or checklists to be used. Identify and describe all data handling equipment and procedures to process, compile, and analyze the data. This includes procedures for addressing data generated as part of the project as well as data from other sources. Include any required computer hardware and software and address any specific performance requirements for the hardware/software configuration used. Describe the procedures that will be followed to demonstrate acceptability of the hardware/software configuration required. Describe the process for assuring that applicable information resource management requirements are satisfied.

Users may modify the provided sample text or replace with their own text.

3. Assessment and Oversight (Group C)

<Grantee Org.> is committed to preparing a comprehensive and reliable inventory of GHG emissions for <Tribe>. Under this project our senior management team has dedicated the necessary resources to ensure we deliver an inventory that can be relied upon for future policy decisions. Accordingly, under this project, we will concurrently implement existing quality management systems that <Grantee Org.> has previously utilized for submissions to the EPA under Title I of the Act where task-level deliverables will be subjected to required, regular reviews (e.g., quarterly) to ensure that technical, financial, and schedule requirements of this project are consistent with the EPA PO's and QAM's expectations for handling and producing deliverables that reflect high-quality environment data. This section discusses Elements C1 (assessments and response actions) and C2 (reporting) applicable to this project.

3.1. Assessments and Response Actions

The QA program includes periodic review of data files and draft deliverables. The essential steps in the QA program are as follows:

1. Identify and define the problem
2. Assign responsibility for investigating the problem
3. Investigate and determine the cause of the problem
4. Assign and accept responsibility for implementing appropriate corrective actions
5. Establish the effectiveness of and implement the corrective action
6. Verify that the corrective action has eliminated the problem.

The TL will provide day-to-day oversight of the quality system. Periodic project file reviews will be carried out by the QA Manager, at least once per year to verify that required records, documentation, and technical review information are maintained in the files. The QAM will ensure that problems found during the review are brought to the attention of the TL and are corrected immediately. All nonconforming data will be noted, and corrective measures to bring nonconforming data into conformance will be recorded.

The TLs and QA Manager are responsible for determining whether the quality system established for the project is appropriate and functioning in a manner that ensures the integrity of all work products. All technical staff have roles and will participate in the corrective action process. Corrective actions for errors found during QC checks will be determined by the TL and, if necessary, with direction from the QA Manager or PM, as appropriate. The originator of the work will make the corrections and will note on the QC form that the errors were corrected. A reviewer or TL, not involved in the creation of the work, will review the corrections to ensure the errors were corrected. Any problems noted during audits will be reviewed and corrected by the QA Manager and discussed with the TL as needed. Depending on the severity of the deficiency, the TL may consult the QA Manager and stop work until the cited deficiency is resolved. Deficiencies identified and their resolution will be documented in monthly project reports, as applicable. The QA Manager and TL will comply and respond to all internal and EPA audits on the project, as needed. The QA Manager will produce a report outlining any corrective actions taken.

Commented [T124]: Describe each assessment to be used in project including frequency and type. Assessments include, but are not limited to, surveillance, management systems reviews, readiness reviews, technical systems audits, performance evaluations, data quality audits and assessments. Discuss information expected and success criteria (i.e., goals, performance objectives, acceptance criteria specifications, etc.) for each assessment proposed. List the approximate schedule of assessment activities. For any planned self-assessments (utilizing personnel from within the project groups), identify potential participants and exact relationship within the project organization. For independent assessments, identify organization and person(s) that shall perform assessments if available. Describe how and to whom results of each assessment shall be reported. Define scope of authority of assessors, including stop work orders, and when assessors are authorized to act. Discuss how response actions to assessment findings, including corrective actions for deficiencies and other non-conforming conditions, are to be addressed and by whom. Include details on how corrective actions will be verified and documented.

Users may modify the provided sample text or replace with their own text.

3.2. Reports to Management

The periodic progress reports (to the EPA PO) required in the grant agreement will be reviewed by the PM and the PM's manager (<enter name and title of PM's manager>) to ensure the project is meeting milestones and that the resources committed to the project are sufficient to meet project objectives. These periodic progress reports will describe the status of the project, accomplishments during the reporting period, activities planned for the next period, and any special problems or events including any QA/QC issues. Reports to the EPA will be drafted by the TL or other project staff familiar with project activities during the reporting period.

Any QC issues impacting the quality of a deliverable, the project budget, or schedule will be identified and promptly discussed with the assigned TL and the PM or QAM as appropriate. All significant findings will be included in monthly reports with the methods used to resolve the specific QC issue or the recommendations for resolution for consideration by the EPA's PO or designee.

Based on the technical work completed during the reporting period, progress reports will be reviewed internally by an independent, qualified technical person (equivalent or senior to the TL), prior to submitting to the PM. The PM will conduct a final review of the report before transmitting the progress report to the EPA PO, and the PM's manager will be cc'd on all progress reports.

Commented [T125]: Identify the frequency and distribution of reports issued to inform management (EPA or otherwise) of the project status; for examples, reports on the results of performance evaluations and system audits; results of periodic data quality assessments; and significant quality assurance problems and recommended solutions. Identify the preparer and the recipients of the reports, and any specific actions recipients are expected to take as a result of the reports.

Users may modify the provided sample text or replace with their own text.

4. Data Validation and Usability (Group D)

4.1. Data Review, Verification, Validation

All work conducted under this project will be subject to technical and editorial review. When existing data for the same GHG-emitting activity are available from multiple sources, the background information documents will be reviewed for all sources to determine the dataset that is the most representative of tribal operations. Additionally, the inventory report will include the vintage of the existing data resource and preference will be given to the most recent dataset that is representative of similar GHG-emitting tribal activities. Reviews will be conducted by an independent, qualified person—or a person not directly involved in the production of the deliverable. The term “validation” refers to whether the data meet the QAPP-defined user requirements while the term “verification” refers to whether conclusions can be correctly drawn from the data. The quality of data used and generated for the project will be reviewed and verified at multiple levels by the project team. This review will be conducted by the <Grantee Org.> TL or a senior technical reviewer with specific, applicable expertise. All original and modified data files will be reviewed for input, handling, and calculation errors. Additionally, all units of measure will be checked for consistency. Any potential issues identified through this review process will be evaluated and, if necessary, data will be corrected, and analysis will be revised as necessary, using corrected data. These corrections will be documented in project records. These measures of data quality will be used to judge whether the data are acceptable for their intended use. In cases where available data do not or may not meet data quality acceptance criteria, the TL will document these findings in the inventory along with corrective actions or use of alternative data sources.

4.2. Verification and Validation Methods

As a standard operating procedure, all data (retrieved and generated) will be verified and validated through a review of data files by an independent, qualified technical staff member (i.e., someone other than the document originator), and ultimately, the <Grantee Org.> TL. A checklist of QC activities for deliverables under this project is provided as **Appendix A**. Forms for documenting QC activities and review of deliverables are included in **Appendix B**. Documentation of calculations will be included in spreadsheet work products and in supporting memoranda, as appropriate.

The TL is responsible for day-to-day technical activities of tasks, including planning, data gathering, documentation, reporting, and controlling technical and financial resources. The TL is the primary person responsible for quality of work on tasks under this project and will approve all-related plans and reports. These reports will be transmitted by the TL to the QAM for final review and approval.

Source data will be verified and validated through a review of data files by the technical staff, and ultimately the TL. Reviews of analyses will include a thorough evaluation of content and calculated values. All original and modified data files will be reviewed for input, handling, and calculation errors. Additionally, all measurement units will be checked for consistency. Any potential issues identified through this review process will be evaluated, errors corrected, and analysis repeated using the corrected data. All corrections will be documented in project records.

Source data will be verified and validated through a review of data files by the technical staff, and ultimately the TL. Typical data verification reviews can include checks of the following:

- Data sources are clearly documented,
- Calculations are appropriately documented,
- All relevant assumptions are clearly documented,
- Conclusions are relevant and supported by results, and
- Text is well-written and easy to understand.

The documented review process will be stored with deliverables for the project. For the narrative describing the methodologies used for the inventory, all comments on drafts will be clearly and concisely summarized including a description of how substantive issues raised by commenters were resolved.

As discussed in Section 1.7, QC objectives include verification that data in database tables are stored and transferred correctly, algorithms call data correctly, units are internally consistent, and reports pull the required data. These data management issues will be addressed as part of the QC checks of data acquisition and document preparation.

For this project, it is not anticipated that any special data validation software will be required. However, where calculations are required to assess the data/datasets, calculations will be performed using computer spreadsheets (like Excel spreadsheets with predefined functions, or formulas) and calculators to reduce typographical or translation errors. General software available through the Microsoft Suite including Excel, PowerPoint, Access, and Word will be sufficient to perform the work as described in Section 1.6 for this project.

Commented [T126]: Describe the process to be used for verifying and validating data, including the chain-of custody for data throughout the life of the project or task. Discuss how issues shall be resolved and the authorities for resolving such issues. Describe how the results are conveyed to data users. Precisely define and interpret how validation issues differ from verification issues for this project. Provide examples of any forms or checklists to be used. Identify any project-specific calculations required.

Users may modify the provided sample text or replace with their own text.

4.3. Reconciliation with User Requirements

All data (retrieved and generated) and deliverables in this project will be analyzed and reconciled with project data quality requirements. To ensure deliverables meet user requirements, the TL or senior technical lead will review all data and deliverables throughout the project to ensure that the data, methodologies, and tools used meet data quality objectives, are clearly conveyed, and represent sound and established science.

<Grantee Org.> will review each project with the EPA at the planning stage to ensure the approach is fundamentally sound and will meet the project objectives. The TL or senior technical lead will evaluate data continuously during the life term of the project to ensure they are of sufficient quality and quantity to meet the project goals. Prior to submission of draft and final products, the TL or senior technical lead will make a final assessment to determine whether the objectives have been fulfilled in a technically sound manner. Assumptions made in preparing project analyses will be clearly specified in the inventory.

As discussed in Section 1.7.1, uncertainty can be evaluated using a few different approaches. The most useful uncertainty analysis is quantitative and is based on statistical characteristics of the data such as the variance and bias of estimates. In a sensitivity analysis, the effect of a single variable on the resulting emissions estimate generated by a model (or calculation) is evaluated by varying its value while holding all other variables constant. Sensitivity analyses will help focus on the data that have the greatest impact on the output data. Additional statistical tests may be utilized depending on the need for more or less rigorous tools and on the specific inventory activity being evaluated.

Commented [T127]: Describe how the results obtained from the project or task will be reconciled with the requirements defined by the data user or decision maker. Outline the proposed methods to analyze the data and determine possible anomalies or departures from assumptions established in the planning phase of data collection. Describe how reconciliation with user requirements will be documented, issues will be resolved, and how limitations on the use of the data will be reported to decision makers.

Users may modify the provided sample text or replace with their own text.

5. References

- EPA, *Chief Information Officer's Policy Directive on Environmental Information Quality Policy* available at [EPA IT/IM Directive: Environmental Information Quality Policy, Directive # CIO 2105.3](#). Accessed on 7/26/2023.
- EPA, Chief Information Officer's Policy Directive on Information Technology / Information Management: Quality Assurance Project Plan (QAPP) Standard, Directive # CIO 2105-S-02.0. Available at <https://www.epa.gov/irmpoli8/quality-assurance-project-plan-qapp-standard>. Accessed on 7/24/2023.
- EPA, EPA-454/B-17-001, *Quality Assurance Handbook for Air Pollution Measurement Systems, Ambient Air Quality Monitoring Program, Volume II*. Available at <https://www3.epa.gov/ttnamti1/files/ambient/pm25/qa/Final%20Handbook%20Document%2017.pdf>. Accessed on 6/23/2023.
- EPA, Fact Sheet: Areas where differences between state GHG inventories and the EPA's Inventory of U.S. GHG Emissions and Sinks by State: 1990-2020 estimates may occur. Available at <https://www.epa.gov/system/files/documents/2022-03/fact-sheet-differences-epa-and-offical-state-ghgi.pdf>. Accessed on 7/31/2023.
- EPA, Greenhouse Gas Reporting Program (GHGRP) at <https://www.epa.gov/ghgreporting/data-sets>. Accessed on 7/26/2023.
- EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021* at <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021>. Accessed on 7/26/2023.
- EPA, *State and Tribal Greenhouse Gas Data and Resources* at <https://www.epa.gov/ghgemissions/state-and-tribal-greenhouse-gas-data-and-resources>. Accessed on 7/26/2023.
- EPA, Fuel heating values and CO2 emission factors at [eCFR :: 40 CFR Part 98 -- Mandatory Greenhouse Gas Reporting](#). Accessed on 7/26/2023.
- EPA, Global warming potentials at <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-98/subpart-A?toc=1>. Accessed on 7/26/2023.
- USDA Forest Service, *Greenhouse gas emissions and removals from forest land, woodlands, and urban trees in the United States, 1990-2019* at <https://www.fs.usda.gov/research/treearch/62418>. Accessed on 7/26/2023.
- US DOT, *Highway Statistics Series* at <https://www.fhwa.dot.gov/policyinformation/statistics/2021/vm1.cfm>. Accessed on 7/26/2023.

Appendix A: Check Lists of Quality Control Activities for Deliverables

Tasks/Deliverables	Quality Control Procedures
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Task 1. Mobile Combustion (Transportation)

<p>Tribal inventory of GHG emissions from mobile sources with documentation of the following QC activities:</p> <p>(1) narrative report describing data sources and QC measures for data acquisition steps,</p> <p>(2) description of methodology and QC measures for validated proper implementation of methodology, and</p> <p>(3) documentation of QAPP implementation.</p>	1. Comparison of tribal estimate of average miles traveled per year and average miles per gallon (by vehicle type) versus state and national averages.						
	Vehicle Type	Tribal Avg Miles/yr	State Avg ¹⁸ Miles/yr	MPY Statistics*	Tribal Avg Miles/gal	National Avg Miles/gal ¹⁹	MPG Statistics
	Passenger Car (Gasoline)			Signed Bias ±X.XX%		24.1	Signed Bias ±X.XX%
	Passenger Truck (Gasoline)			Variance Y.YY%		18.5	Variance Y.YY%
	Heavy-duty (Gasoline)					10.1	
	Motorcycle (Gasoline)					50	
	Passenger Car (Diesel)					32.4	
	Passenger Truck (Diesel)					22.1	
Heavy-duty (Diesel)					13.0		
<p>* Precision and bias calculations will be in accordance with the EPA's Data Assessment Statistical Calculator (DASC) Tool available at https://www.epa.gov/sites/default/files/2020-10/dasc_11_3_17.xls with the tribe's estimate taken as the measured value and the TGIT value taken as the audit value.</p>							
2. For any values used in tribal inventory that differ from the state average MPY or the national average MPG by more than <X>%, the tribe will provide an explanation of why tribal factors may differ from state or national averages.							
3. Review by TL or senior technical reviewer—analytical methods / results are explained clearly, technical terms are defined, conclusions are reasonable based on information presented, and level of technical detail is appropriate.							
4. Editor review—verify or remediate draft deliverables to ensure clear, error-free writing.							

Commented [T128]: The checklists in Appendix A are provided to support defining the quality objectives for the baseline GHG inventory under Section 1.7. The standard requires use of a systematic planning process to define the quality objectives and performance criteria for the environmental data used in the baseline inventory.

In these example checklists, the Tribe's estimates would be compared to independent QC estimates.

Significant differences between the Tribe's initial estimates and the QC estimates would require further explanation in the GHG inventory QC discussion.

The grantee should define performance criteria reflecting the magnitudes of differences that the Tribe will consider as "significant."

Checklists similar to the examples in Appendix A would be used to evaluate if the GHG estimates (for sets of related activities) meet the performance criteria defined under Section 1.7.

¹⁸ U.S. Department of Transportation, Federal Highway Administration. Highway Statistics 2020. Available at <https://www.fhwa.dot.gov/policyinformation/statistics/2020/>. Accessed on June 30, 2023.

¹⁹ National average miles per gallon from [tribal_community_ghg_inventorytool.xlsm] workbook and the [Mobile-Entry] worksheet.

Tasks/Deliverables | **Quality Control Procedures**

Task 2. Electric Power Consumption

Tribal inventory of GHG emissions from electric power consumption with documentation of the following QC activities:

- (1) narrative report describing data sources and QC measures for data acquisition steps,
- (2) description of methodology and QC measures for validated proper implementation of methodology, and
- (3) documentation of QAPP implementation.

1. Compare (a) the primary tribal estimate with the TGIT *versus* (b) the tribal QC estimate developed for the subset of power consuming sectors specified by the PM or QAM. Use a table similar to the table below to assess precision and bias of the primary estimates versus the QC estimates.

Power Consuming Sector	Primary Tribal TGIT Estimate (Metric Tons CO _{2e})	QC TGIT Estimate (Metric Tons CO _{2e})	Statistics*
Residential			Signed Bias ±X.XX%
Commercial			
Industrial			Variance Y.YY%
Transportation			
Other			

* Precision and bias calculations will be in accordance with the EPA's Data Assessment Statistical Calculator (DASC) Tool available at https://www.epa.gov/sites/default/files/2020-10/dasc_11_3_17.xls with the tribe's estimate taken as the measured value and the SIT value taken as the audit value.

Ensure the GWPs used for the primary TGIT estimate and the QC estimate are on the same basis. The TGIT tool uses AR5 GWP (e.g., CH₄ GWP = 28).

- 2. Technical review of methods, calculations, and underlying datasets—data are appropriate for intended use, data are complete and representative and current, data sources documented, analytical methods are appropriate, and calculations are accurate.
- 3. Review by TL or senior technical reviewer—analytical methods and results are explained clearly, technical terms are defined, conclusions are reasonable based on information presented, and level of technical detail is appropriate)
- 4. Editor review—writing is clear, free of grammatical and typographical errors.

Commented [T128]: The checklists in Appendix A are provided to support defining the quality objectives for the baseline GHG inventory under Section 1.7. The standard requires use of a systematic planning process to define the quality objectives and performance criteria for the environmental data used in the baseline inventory.

In these example checklists, the Tribe's estimates would be compared to independent QC estimates.

Significant differences between the Tribe's initial estimates and the QC estimates would require further explanation in the GHG inventory QC discussion.

The grantee should define performance criteria reflecting the magnitudes of differences that the Tribe will consider as "significant."

Checklists similar to the examples in Appendix A would be used to evaluate if the GHG estimates (for sets of related activities) meet the performance criteria defined under Section 1.7.

Tasks and Deliverables	Quality Control Procedures
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Task 3. Urban Forestry (Natural Working Lands and Forestry)

Tribal inventory of GHG emissions and sinks from natural and working lands and forestry with documentation of the following QC activities:

- (1) narrative report describing data sources and QC measures for data acquisition steps,
- (2) description of methodology and QC measures for validated proper implementation of methodology, and
- (3) documentation of QAPP implementation.

1. Compare (a) the tribal estimate for sector(s) with largest area of tree cover developed by assigned technical staff member under Task 3 *versus* (b) independent estimate for same sector(s) by assigned QC staff that did not support initial estimates. Use a table similar to the table below to assess precision and bias of the primary estimates versus QC estimates:

Sector	Primary Tribal Estimate Area (km ²)	Estimate by QC Staff Area (km ²)	Statistics* for Area Comparisons	Primary Tribal Estimate Tree Cover (%)	Estimate by QC Staff Tree Cover (%)	Statistics* for Tree Cover Comparisons
Residential Area 1			Signed Bias ±X.XX%			Signed Bias ±X.XX%
Residential Area 2			Variance Y.YY%			Variance Y.YY%
Residential Area 3						
Residential Area ...						
Comm. / Institutional Area 1			Signed Bias ±X.XX%			Signed Bias ±X.XX%
Comm. / Institutional Area 2			Variance Y.YY%			Variance Y.YY%
Comm. / Institutional Area 3						
Comm. / Institutional Area ...						

* Precision and bias calculations will be in accordance with the EPA's Data Assessment Statistical Calculator (DASC) Tool available at https://www.epa.gov/sites/default/files/2020-10/dasc_11_3_17.xls with the tribe's estimate taken as the measured value and the SIT value taken as the audit value.

- 2. Technical review of methods, calculations, and underlying datasets—data are appropriate for intended use, data are complete and representative and current, data sources documented, analytical methods are appropriate, and calculations are accurate. Include any QC findings and reconciliation.
- 3. Review by TL or senior technical reviewer—analytical methods and results are explained clearly, technical terms are defined, conclusions are reasonable based on information presented, and level of technical detail is appropriate)
- 4. Editor review—writing is clear, free of grammatical and typing errors.

Tasks and Deliverables	Quality Control Procedures
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Task 4. State Inventory of GHG Emissions for Other Sources

Tribal inventory of GHG emissions from the tribe’s other sources with documentation of the following QC activities:

- (1) narrative report describing data sources and QC measures for data acquisition steps,
- (2) description of methodology and QC measures for validated proper implementation of methodology, and
- (3) documentation of QAPP implementation.

1. Comparison of (a) primary tribal emissions estimates *versus* (b) tribal QC estimates, with both estimates developed using the EPA’s Tribal-GHG Inventory Tool (TGIT) for stationary combustion, solid waste, wastewater treatment, water, agriculture & land management, waste generation.
2. For any primary estimates that are inconsistent with QC estimates, the table below will be utilized to assess precision and bias of the primary estimates versus the QC estimates:

Other Sectors	Primary Estimate (Metric Tons CO2e)	QC Estimate (Metric Tons CO2e)	Statistics*
Stationary combustion			Signed Bias ±X.XX%
Agriculture & land management			
Waste generation			Variance Y.YY%
Solid waste			
Water			
Wastewater treatment			
Other			

* Precision and bias calculations will be in accordance with the EPA’s Data Assessment Statistical Calculator (DASC) Tool available at https://www.epa.gov/sites/default/files/2020-10/dasc_11_3_17.xls with the tribe’s estimate taken as the measured value and the SIT value taken as the audit value.

3. Technical review of methods, calculations, and underlying datasets—data are appropriate for intended use, data are complete and representative and current, data sources documented, analytical methods are appropriate, and calculations are accurate.
4. Review by TL or senior technical reviewer—analytical methods and results are explained clearly, technical terms are defined, conclusions are reasonable based on information presented, and level of detail appropriate.
5. Editor review: writing is clear, free of grammatical and typographical errors.

Appendix B: Example QC Documentation Form

<Grantee Org.>
Documentation of QA Review and Approval of Electronic Deliverables
Approvals on this form verify that all technical and editorial reviews have been completed and the deliverable meets the criteria for scientific defensibility, technical, and editorial accuracy, and presentation clarity as outlined in the Quality Assurance (QA) Project Plan, QA Narrative, Quality Management Plan, and/or according to direction from the EPA PO.

Client: EPA Region <X>
 Grant Number: <enter grant number>
 EPA Project Officer: <enter EPA PO>
 Project Number: <enter internal Project ID>
 Project Name: <enter internal project name>
 Grantee Org. Project Manager: <enter grantee's project manager>

QA Form Details

Item Number	File Name (Copy the name of the File Reviewed)	Deliverable Description	Date Sent to Client	Deliverable		Document Originator	QA Review Information				QA Review Information			
				(Draft)	(Final)		(Review Type)	(Reviewer Name)	(Date Review was Performed)	(Brief Summary of Review Findings and Other Notes)	(Have all Findings Been Resolved?)	(Originator Signature)	(Reviewer Signature)	(File Location) <i>Copy Long Folder Path Name</i>
01				<input type="checkbox"/>	<input type="checkbox"/>		Technical				<input type="checkbox"/> Yes			
				Technical					<input type="checkbox"/> Yes					
02				<input type="checkbox"/>	<input type="checkbox"/>		Technical				<input type="checkbox"/> Yes			
				Technical					<input type="checkbox"/> Yes					
03				<input type="checkbox"/>	<input type="checkbox"/>		Technical				<input type="checkbox"/> Yes			
				Technical					<input type="checkbox"/> Yes					
04				<input type="checkbox"/>	<input type="checkbox"/>		Technical				<input type="checkbox"/> Yes			
				Technical					<input type="checkbox"/> Yes					

Commented [T129]: Appendix B provides an example of a form for tracking completion of the QC steps planned under Section 1.7 for each task.

A form similar to the QC form in Appendix B is recommended to provide the Task Leaders and Project Manager a central location for reviewing the status of the planned QC activities under Section 1.7.

QAPP Short Title: <add short title>
Section: Appendix C
Revision No: <0> Date: MM/DD/YYYY
Page: 44 of 49

Appendix C: Compliance with Requirements Under the Privacy Act of 1974

Commented [T130]: Appendix C is included for tribes who determine that they may need to use personally identifiable (PII) information in inventories. If the tribe determines that they will not utilize PII, this appendix should be deleted.

Important Note about Personally Identifiable Information (PII)

The Privacy Act of 1974 (5 U.S.C. § 552a) mandates how federal agencies maintain records about individuals. Per OMB Circular A-130, Personally Identifiable Information (PII) is "information that can be used to distinguish or trace an individual's identity, either alone or when combined with other information that is linked or linkable to a specific individual."

EPA systems/applications that collect PII must comply with EPA's Privacy Policy and procedures to guard against unauthorized disclosure or misuse of PII in all forms. For more information click [here](#). If PII are collected, then the QAPP will describe how the PII are managed and controlled.

Personally identifiable information (PII):

Please verify one of the following two options by checking the corresponding box:

1. This project **will not** collect Personally Identifiable Information (PII):
2. This project **will** collect Personally Identifiable Information (PII):

This QAPP will comply with 5 U.S.C. § 552a and EPA's Privacy Policy.

Please delete the PII text below if there are no PII for this project.

Personally identifiable information (PII) and the requirements for safeguarding this information are described for EPA grantees within the EPA Privacy Policy (CIO 2151, current version). PII is defined as any information about an individual's identity, including personal information which is linked or linkable to an individual (e.g., name, date of birth, address). The Privacy Act of 1974 (5 U.S.C. § 552a) sets forth requirements for federal agencies when they collect, maintain, or disseminate Privacy Act information.

QAPP Short Title: <add short title>
Section: Attachment 1
Revision No: <0> Date: MM/DD/YYYY
Page: 46 of 49

**Attachment 1: Example Tribal Electric Power Consumption Data
Available from DOE / EIA Form 861**

Commented [T131]: Attachment 1 is for information purposes only and is strictly provided for Tribes who are not familiar with the electricity consumption data that is available under EIA Form 861.

This data source is referenced in Table 2.2 of this template under Task 2 for Electric Power Generation and Consumption.

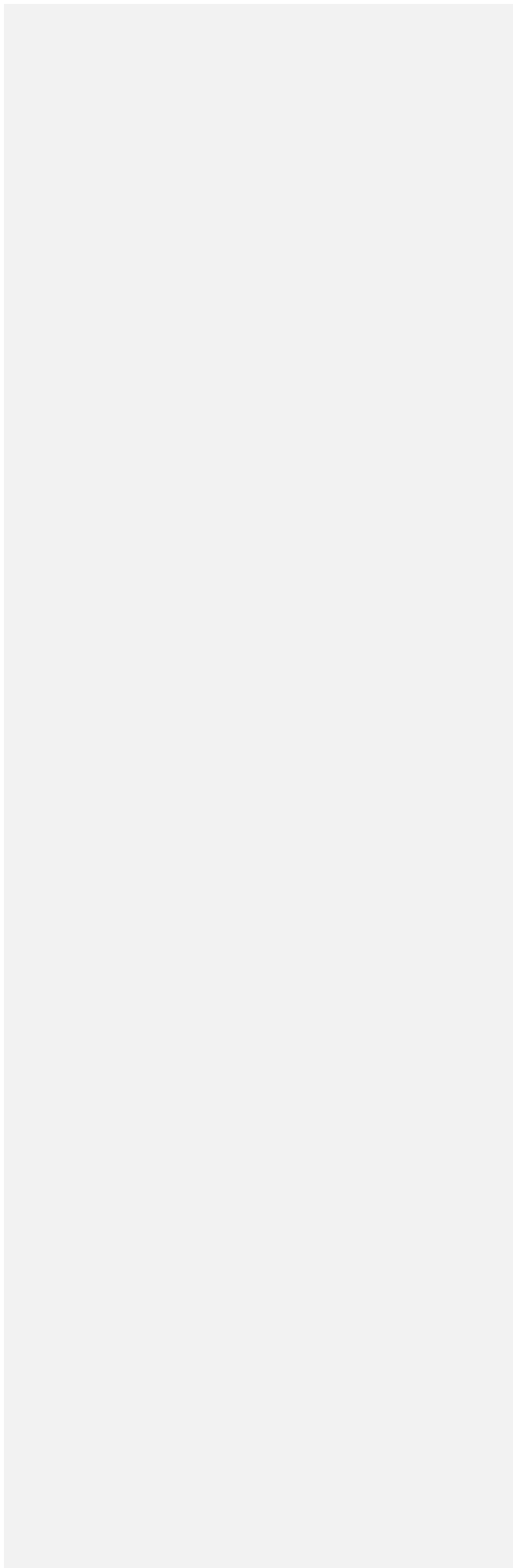
EIA 861 provides readily available data that can be quickly converted to indirect GHG emissions estimates.

QAPP Short Title: <add short title>
 Section: Attachment I
 Revision No: <0> Date: MM/DD/YYYY
 Page: 47 of 49

Tribal Utility Characteristics				RESIDENTIAL		COMMERCIAL		INDUSTRIAL		TRANSPORTATION		TOTAL	
Utility Number	Utility Name	State	BA Code	Sales	Customers	Sales	Customers	Sales	Customers	Sales	Customers	Sales	Customers
				MW-hrs	Count	MW-hrs	Count	MW-hrs	Count	MW-hrs	Count	MW-hrs	Count
221	Alaska Village Elec Coop, Inc	AK	NA	41,117	8,065	77,865	3,382	0	0	0	0	118,982	11,447
13314	Navajo Tribal Utility Authority	AZ	PACE	153,762	25,693	202,705	3,300	112,534	4	0	0	469,001	28,997
13314	Navajo Tribal Utility Authority	NM	PACE	59,963	9,614	72,101	897	1,924	142	0	0	133,988	10,653
13314	Navajo Tribal Utility Authority	UT	PACE	10,247	1,598	9,411	157	282,857	1	0	0	302,515	1,756
14543	Tohono O'Odham Utility Authority	AZ	AZPS	30,870	3,134	54,579	745	2,871	14	0	0	88,320	3,893
19603	USBIA-Mission Valley Power	MT	NWMT	247,690	14,969	131,559	5,447	17,417	1,061	0	0	396,666	21,477
19604	USBIA-San Carlos Project	AZ	WALC	111,207	10,727	105,823	1,790	15,936	3	.	.	232,966	12,520
25866	Ak-Chin Electric Utility Authority	AZ	AZPS	4,772	318	35,419	124	1,304	32	0	0	41,495	474
49826	Mohegan Tribal Utility Authority	CT	ISNE	.	.	132,638	76	132,638	76
58123	Aha Macav Power Service	AZ	WALC	4,544	404	8,877	150	5,527	38	.	.	18,948	592
58123	Aha Macav Power Service	CA	WALC	1,059	81	445	15	1,585	24	.	.	3,089	120
58123	Aha Macav Power Service	NV	WALC	2,427	209	20,094	70	520	5	.	.	23,041	284

Data from EIA Form 861, Annual Electric Power Industry Report. Available at <https://www.eia.gov/electricity/data/eia861/>

Attachment 2: Example Table of Tribal GHG Emitting Activities



GHG Emissions and Activities of Tribes Reporting to the EPA's GHG Reporting Program (GHGRP)

	A	B	C	D	E	F	G
	State	GHGRP ID	Facility Name	Owner	Subparts	Direct Emitter CO2e	North American Industrial Classification System Code
1							
2	AZ	1000142	Dilcon Gas District	Navajo Tribal Utility Authority		-	221210 (Natural Gas Distribution)
3	AZ	1002831	Salt River Landfill	Salt River Pima-Maricopa Indian Community	HH	55,091	562212 (Solid Waste Landfill)
4	AZ	1003046	North Center Street Landfill	Salt River Pima Maricopa Indian Community	HH	-	562212 (Solid Waste Landfill)
5	AZ	1003229	Tri Cities Landfill	Salt River Pima Maricopa Indian Community	HH	-	562212 (Solid Waste Landfill)
6	AZ	1003643	Phoenix Cement Company\S Clarkdale Facility	Salt River Pima-Maricopa Indian Community dba Phoenix Cement Company	H	774,064	327310 (Cement Manufacturing)
7	AZ	1003643	Phoenix Cement Company\S Clarkdale Facility	Salt River Pima-Maricopa Indian Community dba Phoenix Cement Company	C	600	327310 (Cement Manufacturing)
8	AZ	1005618	Chinle Gas District	Navajo Tribal Utility Authority		-	221210 (Natural Gas Distribution)
9	AZ	1005627	Fort Defiance Gas District	Navajo Tribal Utility Authority		-	221210 (Natural Gas Distribution)
10	AZ	1005664	Navajo Tribal Utility Authority - Arizona	Navajo Tribal Utility Authority	NN	-	221210 (Natural Gas Distribution)
11	AZ	1005670	Navajo Tribal Utility Authority - New Mexico	Navajo Tribal Utility Authority	NN	-	221210 (Natural Gas Distribution)
12	AZ	1006546	Tuba City Gas District	Navajo Tribal Utility Authority		-	221210 (Natural Gas Distribution)
13	AZ	1006723	Kayenta Gas District	Navajo Tribal Utility Authority		-	221210 (Natural Gas Distribution)
14	CA	1010424	Pechanga Resort And Casino	Pechanga Band of Luiseno Indians	C	23,811	721120 (Casino Hotels)
15	CO	1001759	Bondad Compressor Station	Kinder Morgan / Red Cedar Gathering Company / Southern Ute Indian Tribe	C (Abbr)	-	211111 (Crude Petroleum and Natural Gas Extraction)
16	CO	1001760	Arkansas Loop & Simpson Treating Plants	Kinder Morgan / Red Cedar Gathering Company / Southern Ute Indian Tribe	C	76,678	211111 (Crude Petroleum and Natural Gas Extraction)
17	CO	1001760	Arkansas Loop & Simpson Treating Plants	Kinder Morgan / Red Cedar Gathering Company / Southern Ute Indian Tribe	W	263,037	211111 (Crude Petroleum and Natural Gas Extraction)
18	CO	1001763	Sambrito Compressor Station	Kinder Morgan / Red Cedar Gathering Company / Southern Ute Indian Tribe	C (Abbr)	-	211111 (Crude Petroleum and Natural Gas Extraction)
19	CO	1001946	Coyote Gulch Treating Plant	Kinder Morgan / Red Cedar Gathering Company / Southern Ute Indian Tribe	C (Abbr)	-	211111 (Crude Petroleum and Natural Gas Extraction)
20	CO	1001947	Outlaw Compressor Station	Kinder Morgan / Red Cedar Gathering Company / Southern Ute Indian Tribe	C (Abbr)	-	211111 (Crude Petroleum and Natural Gas Extraction)
21	CO	1003896	Southern Ute Indian Tribe Utilities Division	Southern Ute Indian Tribe Utilities Division	NN	-	221210 (Natural Gas Distribution)
22	CT	1003597	Mohegan Tribe Of Indians Of Connecticut	Mohegan Tribal Gaming Authority	C	25,145	721120 (Casino Hotels) 921150 (American Indian and Alaska Native Tribal Governments)
23	ID	1000013	Fort Hall Landfill - Fort Hall	Shoshone Bannock Tribe		-	562212 (Solid Waste Landfill)
24	NM	1006547	Crownpoint Gas District	Navajo Tribal Utility Authority		-	221210 (Natural Gas Distribution)