

1. Overall Project Summary and Approach

The Windsor Water District (District) owns and operates the Windsor Water Reclamation Facility (WWRF or Facility) located in Windsor, California. The WWRF currently receives and treats wastewater in and around the Town of Windsor (Windsor). Through the wastewater treatment process at the WWRF solids are produced that must then be treated and reused or disposed of offsite (biosolids). These biosolids which are produced through wastewater treatment processes are usually applied on land to condition soils and return nutrients. Beneficial use of biosolids when land applied at appropriate agronomic rate include nutrient addition, improved soil structure, and water reuse.¹ Windsor's current disposal method is not sustainable from a cost and land application perspective and results in significant release of methane gas. Windsor recently embarked on feasibility study related to a Biosolids Handling Facility to address these major issues with the current biosolids treatment and disposal process. The Greenhouse Gas (GHG) Measure that will have the highest impact to Sonoma County is the proposed Biosolids Handling Facility. This new facility will not only be able to manage the biosolids for Windsor, but it will also be a resource for all of the unincorporated part of Sonoma County and its incorporated cities.

Windsor plans to use biosolids generated by Windsor to eliminate the need for external disposal contractors. This strategy will significantly decrease associated carbon footprint from truck traffic by reducing waste volume. Additionally, the project aims to create a facility capable of processing and treating sludge for other interested neighboring communities, with the aim to potentially expand in the future. The project will increase beneficial use of biosolids within the jurisdictional area of Windsor and surrounding Sonoma County communities which will support soils conditions and return nutrients and metals to soils for agricultural, horticultural, or other vegetative processes.

a) Description of GHG Reduction Measures

The Windsor Water District (District) in California owns and operates a 2.2 million gallon per day (MGD) Water Reclamation Facility (WRF) that currently uses sludge ponds for storage and stabilization of the Waste Activated Sludge (WAS) and sludge generated by the Advanced Wastewater Treatment (AWT) clarifiers. The District established specific goals for their future solids management, including eliminating current reliance on outside contractors for biosolids disposal, increasing beneficial use of biosolids, reducing cost and carbon footprint associated with sludge disposal. To achieve these goals, the District completed a Feasibility Study (2021) and a Preliminary design (2022) that established the recommended project. The District selected thickening and dewatering, followed by bio dryers and pyrolysis, as the recommended project.

¹ U.S. Environmental Protection Agency. (2023, December 15). Basic information about biosolids. EPA. Retrieved from <https://www.epa.gov/biosolids/basic-information-about-biosolids>

GHG Reduction Measure	Feature #	Features	Task #	Tasks	Milestone #	Milestones	Start Date	End Date	Risks
1	1	Grant Administration	1a	Coordinate all aspects of the grant, including accounting, quarterly progress reports to EPA and procurement	N/A	Progress reports	Oct-24	Mar-25	Unanticipated labor shortage of qualified personnel; Contractor invoices are not submitted on time, delaying quarterly report submittal; and unanticipated scope changes which require substantial budget amendments
			1b	Submit scope of work or budget changes to EPA, if any		As applicable			
			1c	Comply with all federal audit requirements		Annual audit			
			1d	Document compliance with federal cross-cutters		Quarterly compliance audit			
			1e	Grant closeout report (60 days for grant close-out report)		Final Grant Report			
	2	Project Management	2a	Project workplan finalized and implemented	N/A	Final workplan consistent with grant workplan	Oct-24	Nov-24	Project workplan not aligned with grant workplan due to natural disaster
			2b	Contractor/consultant schedule, scope and budget		Schedule, scope and budget tracked	Nov-24	Aug-30	Significant scope, schedule or budget issues
			2c	Coordinate all consultant/contractor deliverables for submittal to EPA		Deliverables submitted	Nov-24	Aug-30	Deliverables not submitted by consultant and/or contractor
			2d	Contract compliance		Contract compliance documented	Nov-24	Aug-30	Contract noncompliance
	3	Engineering/Design	3a	Revised 30% Design for expanded capacity (Chris Portner to make will make adjustments for coalition)	3a	Revised 30% Design complete	Oct-24	Mar-25	Design and reviews take longer than expected.
			3b	60% Design	3b	60% Design Complete	Mar-25	Nov-25	Design and reviews take longer than expected.
			3c	90% Design	3c	90% Design Complete	Nov-25	Apr-26	Design and reviews take longer than expected.
			3d	Final Design 100% Design with Specifications	3d	Final Design Complete	Apr-26	May-26	Design and reviews take longer than expected.
			3e	Development of Bid Documents consistent with 2CFR200	3e	Bid Documents Complete	May-26	Jun-26	Bid documents delayed to comply with 2CFR200.
	4	Meetings & Outreach	4a	Public outreach video on nexus between local climate adaptation and biosolids handling facility	4a	Video complete and broadcast	Oct-24	Oct-26	Final video does not convey the right message; Videographer quits mid-filming
			4b	Grant Kick-off meeting	4b	Kick-off meeting scheduled w/ a majority of invitees attending	Oct-24	Nov-24	Lack of participation
			4c	Bi-annual stakeholder meetings & data sharing	4c	Meetings scheduled & calendered	Nov-24	Aug-30	Lack of participation
			4d	Traditional press and social media posts on grant funding awarded, project benefits and city/jurisdiction specific community facility utilization days	4d	Media post at the start of the grant, prior to construction and at grant closeout	Nov-24	Aug-30	Social media posts are not effective; community does not utilize the facility; or the demand for the facility outweighs the capacity
			4e	Development of opportunities for undergraduate or graduate researach and/or fellowships	4e	Work with Sonoma State University, or other educational institution to identify and launch research project	Aug-25	Aug-29	An appropriate research project is not identified; there is lack of college or highschool interest
	5	CEQA/NEPA/ Permitting	5a	Amend current Initial Study (IS) and Mitigated Negative Declartion(MND) , Submit& Adopt revised CEQA	5a	Amended IS/MND	Nov-24	Jan-25	Unanticipated delays in amending IS/MND
			5b	Finalize amended IS/MND and submit to State Clearinghouse (SCH)	5b	Draft IS/MND complete & subitted to SCH	Jan-25	Feb-25	IS/MND is not finalized due to unanticipated mitgation requirements or pubilc comment
			5c	Adopt Final IS/MND	5c	Town adoption of Final IS/MND	Apr-25	Jun-25	IS/MND not adopted
			5d	Comply with Section 106 and consult with SHPO	5d	Consultation with SHPO complete	Nov-24	Jan-25	Consulation takes longer than expected
			5e	Secure required permits	5e	Required permits complete and in-hand	Nov-24	Jun-25	Permits cannot be secured in a timely manner
	6	Contractor Procurement	6a	Advertise bid documents	6a	Request for Proposals Advertised per 2CFR200	Jun-26	Oct-26	Bid documents not complete
			6b	Pre-proposal Meeting	6b	Meeting scheduled and held			

		Procurement	6c	Bid Opening	6c	Bid opening			
			6d	Award/Notice to Proceed	6d	Contractor selected	Oct-26	Dec-26	Qualified contractors do not bid on project; bids are not aligned with budget
	7	Construction	7a	Mobilization	N/A	Start and Completion of Construction	Dec-26	Jun-29	Labor shortage; supply chain issues; unanticipated delays after start of construction
			7b	Site Work					
			7c	Sludge Storage					
			7d	Dewatering and Thickening Building					
			7e	Dewatering, Thickening, Drying, Odor Control, Yard Piping,					
			7f	Demobilization -ask Chris					
	8	Construction Management	8a	Documentation of all grant requirements as specified in the grant award	N/A	Documentation provided to EPA	Dec-26	Aug-30	Unreliable construction manager; weekly site visits not held; specifications are not followed requiring a change in contractor
				Respond to requests for information from construction contractor		RFI's responded to			
			8b	Weekly site visits to observe progress		Weekly site visits scheduled and attended			
			8c	Prepare and Operations and Maintenance Manual		O &M Manual developed			
			8d	Construction start-up services		Construction starts			
			8e	Prepare final record drawings that include all changes made to the design as part of construction		Final drawings			
			8f	Inspection services to verify compliance with all specifications' quality and functional requirements		Inspection documented and provided to EPA			
			8g	Design Change Memos (DCM)		DCM's developed and provided to EPA			
	9	Commissioning	9a	Testing of mechanical equipment		Mechanical equipment testing complete	Jun-29	Aug-29	Testing delayed due to incomplete work.
			9b	Testing of electrical equipment		Electrical equipment testing complete	Jun-29	Aug-29	Testing delayed due to incomplete work.
			9c	Functional testing		Functional testing complete	Aug-29	Sep-29	Testing delayed due to incomplete work.
			9d	Operational Testing		Operational testing complete	Sep-29	Oct-29	Testing delayed due to incomplete work.
			9e	Commission Testing		Commission testing complete	Oct-29	Dec-29	Testing delayed due to incomplete work.
			9f	Substantial completion		Close Out Report Complete	Dec-29	Jan-30	Substantial completion delayed to to testing
	10	Decomissioning of Current Facility	10a	Dredging of storage ponds		Dredging and Material Disposal Completed	Jan-30	Apr-30	Dredging takes longer due to larger than expected dredge material volumes
			10b	Equipment decomissioning		Equipment is safely de-energized, cleaned, and prepared for dismantling.	Apr-30	Jun-30	Equipment demolition and removal takes longer due to utlity complications.
			10c	Sludge storage pond decomissioning		Start the process of sludge removal and ensure final transportation to processing	Jun-30	Aug-30	Pond decommissioning takes longer due to utility complications.
	11	Monitoring	11a	Develop semi-annual monitoring plan for GHG emissions		GHG monitoring plan developed and approved by EPA	Dec-24	Mar-25	Lack of consensus on monitoring design protocol
			11b	Implement monitoring plan and submit annual ghg		GHG reports submitted to EPA			Monitoring plan not effectively implemented
			11c	Regulatory compliance monitoring <i>(no federal funding</i>		Per regulatory requirement	N/A	N/A	Permit noncompliance

The facility will support Windsor and its residents. Project design and implementation will be undertaken by Windsor. Windsor is the applicant and will be fully responsible for the scope, budget, schedule, and audit requirements.

- The GHG reduction measures included in this application which relates to the GHG reduction measures discussed within the **Sonoma County Regional Climate Action Plan 2020** (RCPA, 2016):
 - **Goal 13: Increase water and wastewater infrastructure efficiency (Page 5-14).**
 - **Measure 13-R1 – Infrastructure and Water Supply Improvements: Reduce energy demand from water supply infrastructure, investigate new water supply improvements and increase local water supply.**
 - The GHG reduction measure of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility would establish a facility that can process and handle biosolids which would be a major contributor to supporting water supply improvements within the County that would support destroying PFAS through the pyrolysis process which would mitigate the risk of contaminating groundwater.
 - **Measure 13-R2 – Wastewater Treatment Equipment Efficiency: Reduce energy demand from wastewater treatment operations.**
 - While there is no onsite electricity that is being produced by the Facility, there will be energy savings by recovering thermal heat from the pyrolysis process that will be used to offset natural gas demand in the bio drying process.
 - **Goal 19: Carbon Farming (Page 3-21).**
 - **Measure 19-R1 – Increase carbon sequestration on croplands and working rangelands by adding soil organic material and other measures. Support increasing availability of local compost.**
 - The GHG reduction measure of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility will support nutrient management. Windsor and surrounding participating Sonoma County communities will distribute the biochar which is a charcoal-like product from the pyrolysis process that will occur at the Facility. Biochar is an activated carbon material that can be used to improve soil fertility and can support reducing the usage of chemical fertilizers. As a soil amendment, biochar promotes carbon sequestration and soil quality, serves as a source, sink for nutrients, and improves soil nutrient retention, provides repository for soil organisms, and can immobilize hazardous materials.
 - **Measure 19-R2 – Work with local partners to establish short- and long-term targets for increasing carbon sequestration throughout the County.**
 - The GHG reduction measure of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility will support The Town of Windsor and surrounding participating Sonoma County communities. The Facility would be an example of a scalable project that can be established in other counties within the state of California.
 - **Goal 20: Reduce Emissions from Consumption of Goods and Services (Page 3-21).**

- **Measure 20-R1: Measure and track consumption-based emissions: Develop metrics and tools to analyze carbon intensity of the transportation of goods and services.**
 - Part of the GHG reduction measure of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility is to develop a semi-annual monitoring plan for GHG emissions.
 - Incorporating bio drying and pyrolysis technologies at the Facility will significantly decrease the transportation distances for biosolids from various participating communities to their final disposal sites. For example, Windsor is currently hauling its biosolids to an offsite landfill located approximately 135 miles away. Having access to the Facility would dramatically reduce this distance, requiring the end product to be hauled within the Windsor limits.
- **Measure 20-R2: Educate Consumers: Provide information to residents and businesses about the carbon content of goods and services with an emphasis on options that will reduce GHG emissions.**
 - Part of the GHG reduction measure of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility is to hire a community outreach specialist that will develop an educational video about the Facility and the benefits it will have to the public. This video will be distributed to the residents of Windsor.

The GHG reduction measures included in this application which relates to the GHG reduction measures discussed within **the State of California's Draft Priority Climate Action Plan** (US EPA, 2024) include reducing GHG in the following sectors:

- **Energy**

- **Energy Measure 6: Implement Bioenergy Projects (Page 46)**

- As discussed in the Plan, this measure includes emerging opportunities elevated by local jurisdictions to create renewable energy, including renewable hydrogen from various organic waste sources such as landfill methane; woody biomass, yard and agricultural waste; and biosolids.
 - The GHG reduction measure of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility would support the processing of biosolids that would support processing organic waste and create thermal energy.

- **Agriculture**

- **Agricultural Measure 1: Expand California's Healthy Soils Practices (Page 52)**

- The GHG reduction measure of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility would support nutrient management. Windsor will distribute the biochar which is a charcoal-like end product from the pyrolysis process that will occur at the facility.

Biochar is an activated carbon material that can be used to improve soil fertility and can support reducing the usage of chemical fertilizers.

After construction of the proposed project, it is anticipated the WWRF would operate as follows:

- Wastewater treatment would continue as currently operated.
- The existing process for generating Class B biosolids would be decommissioned.
- Thickening and dewatering would take place in the new dewatering building.
- The sludge storage tanks would allow bio drying to operate continuously as a batch process.
- Dewatered sludge would be converted to biochar, a Class A EQ biosolids product, via bio drying and pyrolysis on the concrete slab with canopy structure.
- Filling and emptying the bio dryers would be coordinated with the dewatering process.
- Biochar would be temporarily stored on-site prior to distribution to beneficial use applications within the region.
- The new pump station and wet well would receive the excess water waste from the Class A EQ biosolids process as well as sheet flow stormwater from the newly paved area and direct this water back to the treatment headworks.

b) Demonstration of Funding Need

The Town of Windsor (Windsor) has investigated multiple funding sources, including submitting a loan application for EPA's Water Infrastructure and Innovation Act (WIFIA) funding and a Clean Water State Revolving Fund (CWSRF) loan. Windsor has investigated tax incentives that may be available through Sonoma County's Clean Power (SCP) program and there are currently no policies for the incentivization of a regional biosolids facility. Windsor applied for a will utilize a US Bureau of Reclamation (Reclamation) WaterSmart grant for their recycled water program, but the unique capital infrastructure components of this projects do not qualify for other Reclamation grant programs. The EPA CPRG programs allows for the prefect blend of being a reliable funding sources that can support the large undertaking of a regional program and this federal funding is well structured to provide the assurance the County needs in order to undertake such a large effort. Windsor will continue to seek other sources of funding that reduce reliance on impacts to rates. The County of Sonoma writ large is still experiencing economic hardship as a result of the 2017 Sonoma Complex Fire (DR-4344), which coupled with an increase in water rates make it unfeasible to increase other water and sewer rates which are rising faster than inflation and have increased for consecutive years (Sonoma County Economic Development Board, 2023).

Biosolids and their reuse are regulated at the federal level by the United States Environmental Protection Agency (EPA) pursuant to CFR 40 Part 503, which divides biosolids into Class A and Class B according to pollutant limits, pathogen and vector reduction, and biosolids production technologies. Class A biosolids must meet more stringent requirements than Class B and are therefore able to be integrated into a broader diversity of reuse operations. Funding from EPA's CPRG is absolutely critical to allow Windsor to produce a Class A biosolids instead of its existing production of Class B biosolids for beneficial reuse.

c) Transformative Impact

The proposed project will lead to GHG reduction measures that include the potential transformative impacts:

- The Project will serve as a replicable example of cross sector collaboration to reduce GHG emissions within Sonoma County and the state of California.
- The facility is designed to be scalable to other incorporated cities in Sonoma County, provided a replicable design for use and to expand if additional incorporated cities or federally recognized Indian tribes would like to participate.
- This project has support from the Sonoma County Board of Supervisors and will be used inform future climate adaptation policy decisions in the County General Plans, local General Plans, the next update of the Sonoma County Regional Climate Plan and the County's Multi-Jurisdictional Hazard Mitigation Plan.
- This project utilizes an innovative approach of utilizing the end waste product (e.g., biochar) and offering it as a free product to residents and small agricultural operators for use as a soil amendment.

2. Impact of GHG Reduction Measures

a) Magnitude of GHG Reductions from 2025 through 2030

The magnitude of GHG reductions from 2025 to 2030 is 2,674 mtCO₂e. The entirety of this value is estimated to take place in 2030 because the new facility will not yet be online in 2025 to 2029. This is discussed in detail in the attached Technical Appendices and calculations spreadsheet.

See Attachment(s): Techappx_WindsorCollab.pdf and GHGCals_WindsorCol.xls

b) Magnitude of GHG Reductions from 2025 through 2050

The magnitude of GHG reductions from 2025 through 2050 is 62,142 mtCO₂e. These GHG reductions in the alternative scenario are a result of eliminating onsite anaerobic storage ponds and long offsite biosolids hauling distances from the reference scenario. This is discussed in detail in the attached Technical Appendices and calculations spreadsheet.

See Attachment(s): Techappx_WindsorCollab.pdf and GHGCals_WindsorCol.xls

c) Cost Effectiveness of GHG Reductions

The requested grant dollars (\$49,910,334) was divided by 2,674 mtCO₂e to determine the cost effectiveness from 2025 to 2030; the requested grant dollars can be divided by 62,142 mtCO₂e to determine the cost effectiveness from 2025 to 2050. The cost effectiveness of these reductions is much improved for 2025 to 2050 because the facility is not assumed to come online until 2030.

$\$49,910,334 / 2,674 \text{ mtCO}_2\text{e} = \$18,665.05 / \text{mtCO}_2\text{e}$

d) Documentation of GHG Reduction Assumptions

See Technical Appendix Attachment: Techappx_WindsorCollab.pdf

See GHG Emissions Reductions Calculations: GHGCalc_WindsorCollab.xls

3. Environmental Results – Outputs, Outcomes, and Performance Measures

a) Expected Outputs and Outcomes

- 1. 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 from the implementation of this project and the associated GHG reduction measure funded include, but are not limited to:

- Construction of Regional Biosolids Handling Facility by 2030
- Climate Change Adaptation - GHG policy measure introduced to the Windsor Town Council and the County of Sonoma for inclusion in their next General Plan Update(s). This data from this project will be publicly available on the Windsor’s website and will inform the next update of the Sonoma County Climate Action Plan (2025) by 2026
- 25% of workers hired to implement this project will be from low-income or disadvantaged communities throughout Sonoma County. Windsor will provide apprenticeship and training opportunities to promote workforce development in underserved communities. GHG reduction measure, associated low-income and disadvantaged community provisions, and associated trainings for workforce development by 2027.

Progress reports and a final report will be included showing progress to expected output.

2. Outcomes:

GHG reduction measures proposed for this project include:

- Reduction in cumulative metric tons of GHG emissions: The magnitude of GHG reductions from 2025 to 2030 is 2,674 mtCO₂e. The magnitude of GHG reductions from 2025 through 2050 is 62,142 mtCO₂e.

Other outcomes may include, but are not limited to:

- Reduced energy and wastewater rates for residents in low-income and disadvantaged communities, and throughout the applicant’s authority by 2030
- Increased staff capacity to implement GHG reduction measures by 2026.
- Enhanced level of community engagement, as measured by an increased number of ongoing actions to engage with organizations and residents of disadvantaged communities, and other interested parties by 2030.
- Number of high-quality jobs created throughout the applicant’s authority and in low-income and disadvantaged communities by 2026.
- Increased resilience to climate change impacts as measured by the number of buildings or Census tracts that meet certain resiliency standards by 2030.

b) Authorities, Implementation Timeline, and Milestones

SCOPE OF WORK

This Scope of Work is provided in support of the Windsor Water Reclamation Solids Handling and Biosolids Resource Recovery Facility project grant application for the 2024 Climate Pollution Reduction Grants Program: Implementation Grants General Competition

APPROACH

Windsor intends to enter multiple subcontracts to support the project scope, contractor and/or consultant selection will follow 2CFR200 guidelines. Windsor will provide staff members towards ensuring the successful completion of the project. The project will be implemented as described below and will include construction sequencing and equipment utilized as described in the attached Preliminary Design Report (PDR) and further refined in the 60% Design Report. Construction duration and scheduling is described on Table 1 – Features, Milestones and Dates. The combined Windsor and a consultant project team will design and administer the project and manage the grant.

The following Windsor staff are dedicated to this project and its grant administration:

Name	Title	Role	Salary	Fringe (%FTE)	%FTE dedicated to this project
Dave Ernst	Wastewater Treatment Superintendent	Project Manager	\$136,091.16	40%	35%
Garrett Broughton	Senior Civil Engineer	Project Engineer	\$139,483.32	40%	35%
Veronica Siwy	Deputy Director of Water & Environmental Management	Environmental Project Manager, Assistant Project Manager, Communications Manager	\$142,811.28	40%	35%
Jim O'Brien	Project Manager	Construction Manager	\$139,483.68	40%	25%
Danielle Salinger	Administrative Assistant	Administrative Support	\$75,774.40	40%	5%
Jeneen Peterson	Administrative Services Director	Finance Director & Contract Manager	\$186,926.28	40%	5%
Danny Castillo	Finance Manager	Accountant	\$120,351.84	40%	5%

The combined Windsor and a consultant project team will design and administer the project and manage the grant. Roles and responsibilities of Windsor staff are described as follows. The rates for Windsor staff include salary + fringe only. All contractors will be procured following the guidance in 2CFR200.

- **Project Manager.** The PM is the overall leader and manager of all project efforts with responsibility for the project scope of work, schedule, budget, successful project delivery, and overall coordination with the project team members and other various project stakeholders.
- **Environmental Project Manager.** The EPM provides specialized environmental competency to assist the PM in obtaining CEQA/NEPA and resource agency project compliance as coordinated by Windsor as the lead agency. The EPM reports to the PM for the project. The EPM reviews project-specific information needs with the Project Manager and Project Engineer, coordinates with EP and manages the environmental consultant contract. The EPM consults and informs the PM on CEQA/NEPA strategy, budget, schedule, and status of deliverables. Additionally, the EPM will contract for environmental services during construction and will be responsible for management of the environmental consultant for additional environmental review, permitting and mitigation monitoring.
- **Project Engineer.** The PE is the overall technical leader and manager of technical engineering activities for the project and is responsible for managing the design consultant firm, other design engineering staff, engineering quality assurance, production of design documents and estimates, construction contract documents and providing design support of construction facilities. PE will deliver the final plans, specification, and estimates.
- **Communications Manager.** The communication manager oversees strategic communications with the public and various stakeholders.
- **Contract Manager.** The contract manager is responsible for overseeing the bid and award process and administration for all contracts.
- **Construction Manager.** The Construction Manager is the lead Windsor representative with the construction contractor during the project. The construction manager provides leadership, direction, management, and overall construction management oversight for Windsor at the work site. The construction manager is the primary point of contact for the construction contractor and is responsible for the constructability review of engineering deliverables, coordination of site access, management, and quality assurance of construction work.
- **Finance Director.** will lead grant administration efforts in compliance with the grant agreement, including but not limited to, grant agreement approval and execution, development and submission of progress and cost reports, inclusion of grant requirements in contract specifications, and management of grant support consultant.
- **Accountant.** is responsible for overseeing payments for the project and will support submission of documentation for project expenditures for the grant. The project accountant will also lead audit requirements.

TASK DESCRIPTIONS

Task 1: Grant Administration

Windsor, with support from a consultant, will manage the grant implementation process. Windsor intends to contract with a Grant Manager following the procurement guidelines found in 2CFR200. Project monitoring will improve the efficiency of project implementation and fulfillment of the obligations associated with the funding process. As a condition of receiving this grant, Windsor is obligated to monitor and evaluate the progress of the mitigation activity in accordance with the following:

1. The approved statement of work and budget
2. Administrative requirements of 2 CFR Part 200
3. Applicable state requirements
4. Federal crosscutter compliance (i.e., Davis Bacon Prevailing Wage Requirements, American Iron and Steel, Build America, Buy American Act and NEPA)

The Grant Manager will manage and coordinate all aspects of the grant, with Quality Assurance/Quality Control conducted by Windsor. This work includes, but is not limited to, the following:

1. Accounting
2. Quarterly progress reporting to the Environmental Protection Agency (EPA), or as specified in the grant agreement.
3. Program compliance monitoring.
4. Support of Windsor's reimbursement request process
5. Scope of work changes if any
6. Budget changes, if any
7. Period of Performance monitoring
8. Site-specific grant monitoring report
9. Overall record keeping

Task 2: Project Management.

Utilizing infrastructure procedures for all capital projects and programs developed from the internationally recognized Project Management Institute (PMI) global standards and Body of Knowledge Guide. Windsor's Project Manager will ensure the project is consistently managed on time and within budget throughout the duration of the project. This includes oversight of all the direct cost components of the project, including managing all contract awards and sub-awards and quality assurance and quality control of those documents throughout the various project phases. This task includes communicating, collaborating, and coordinating with all parties involved in the project, including the Collaborative participants, engineers, construction managers and other stakeholders. This task also includes managing all schedules and work timetables.

Task 3: Engineering & Design.

The project is currently at the 30% design phase. Work on this task includes the development of amended Conceptual Engineering Report (CER), 30% designs, 60% designs and finally 100% Plans and Specifications (P &S), identified as 100% P&S. The 60% design milestone will be utilized for all permits and to confirm

estimated budget costs, and the 100% P&S will be utilized to finalize the costs and further utilized in the construction procurement process.

Task 4: Meetings and Outreach

The meetings and outreach task have two primary sub-tasks 1. Public Outreach; and 2. Agency Coordination/Research. Each sub-task is described below.

- I. **Public Outreach** Windsor is developing a video to show how the project will move forward the climate adaptation goals outlined in the Sonoma County Regional Climate Action Plan 2020 how this facility will reduce regional greenhouse gas (GHG) emissions and dashboard to graphically demonstrate GHG reductions. A public facing webpage will be created by Windsor, but link to other Sonoma County City websites. The webpage will be designed to share information about the facility, resident utilization days for access to biochar, and a dashboard to graphically demonstrate GHG reduction over-time. All materials will be created in both English, including the biosolids video. Meetings will be held at a time and place that is convenient for the broadest community participation. Participation data and timing will take into consideration the schedule of full-time working attendees and an online poll will be developed to identify the best time, location and whether or not an interpreter will be needed to reach minority or underserved community members.
- II. **Agency Coordination/Research Project** The goal of this task is for Windsor to coordinate with EPA and permitting agencies, as applicable, to establish roles and responsibilities of each agency with a stake in the project and to develop the parameters of a student research project. Windsor will lead two meetings that will include all applicable state and federal agencies to provide a forum to discuss project outcomes and environmental requirements. This task will ensure clear communication and coordination between the multiple agency partners that have a role in this project's outcome. Windsor will coordinate with Sonoma State University, and/or UC Berkeley and/or the Sonoma Junior College to design a relevant student research focus with an emphasis on biosolids handling and climate adaptation, using Windsor's Regional Biosolids Handling Facility as the test case. The research project parameters will be developed in close coordination with EPA and one of the colleges.

Task 5: CEQA/NEPA & Permitting

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed project constitutes a project as defined by CEQA (California Public Resources Code, Section 21065). Windsor, as a municipal utility, would implement and operate the proposed project and will therefore act as the CEQA lead agency. Windsor would also fund the proposed project but may also seek funding from available sources. Windsor will be utilizing federal sources of funding, which may include funding from EPA's Water Infrastructure and Innovation Act (WIFIA), as a result, and in addition to the CEQA review process, federal crosscutting requirements are a required part of the environmental review. Therefore, applications for funding must include proof of CEQA compliance and of compliance with federal requirements. Collectively, the process is termed "CEQA+" due to the addition of federal crosscutting studies to CEQA requirements.

In 2022 Windsor completed an Initial Study (IS)/Mitigated Negative Declaration (MND) (Attachment: ISMND_Windsor.pdf) for a new biosolids handling facility. CEQA+ documentation will be approved and

finalized prior to the start of construction. This task will include all work, as determined by EPA to provide any necessary document and consultations to comply with the National Policy Act (NEPA). NEPA compliance will be initiated upon successful obligation of funding. This task will include any additional alternatives analysis, consultation with the State Historic Preservation Officer (SHPO) and compliance with Section 106, working with EPA to identify historic properties, assess the Biosolids Handling Facilities potential effects to historic properties to avoid, minimize or mitigate any adverse effects and document their resolution. Work on this task will also include securing all applicable permits.

See Attachment: ISMND_Windsor.pdf, page 26.

Task 6: Contractor Procurement

Windsor will confirm that all procurement and contract documents comply with federal law, including the federal procurement standards in 2CFR200 to enter a construction contract with a contractor that can demonstrate experience and expertise in construction tasks as required by the EPA grant. The scope of work assumes that a General Contractor will secure support from subcontractors with the appropriate expertise and experience to complete all duties as assigned under the terms and conditions defined under a contract with Windsor. Procurement duties include:

1. Posting of bid advertisement
2. Managing solicitation, outreach, and responses to questions on bid documents (QBDs)
3. Overseeing receipt of bid/proposals, review, selection and award.

All contracts will contain the federal provisions in 2CFR200.327 and any recommended EPA contract clauses, as applicable to the specific contract. All contracts will contain, at a minimum, the following required provisions: 1. Legal or contractual or administrative remedies for contract breach, 2. Termination for clause and convenience, 3. Equal Opportunity Employment, 4. Davis-Bacon Act, 5. Copeland "Anti-Kickback" Act, 6. Contract Work Hours and Safety Standards, 7. Rights to Inventions made Under a Contract or Agreement, 8. Clean Air and Federal Water Pollution Control Act, 9. Debarment and Suspension, and 10. Byrd Anti-Lobbying Amendment 11., Procurement of Recovered Materials, 12. Prohibition on Contracting for Covered Telecommunications Equipment or Services, 13. Domestic Preferences for Procurement and, as applicable, the recommended EPA contract clauses 14. Access to Records, 15. Contract Modifications or Changes, 16. Compliance with Federal Law. 17. No Obligation by Federal Government, 18. Program Fraud or False Statements Related Acts, 19. Affirmative Action Steps and 20. Copyright. will be used for this task.

The duties and responsibilities of the general contractor under this task will include, but not be limited to, the following:

1. Agree to terms and conditions as specified by Windsor.
2. Coordinate with the grant manager and stakeholders identified by Windsor.
3. Identify and contract with appropriate subcontractors as needed.
4. Secure and maintain all licenses, certifications and credentials needed to comply with construction contract.
5. Secure appropriate insurance coverage for all potential liabilities associated with this scope of work.

Task 7: CONSTRUCTION

Construction will be performed by the selected Contractor in accordance with the conformed construction documents (specifications and drawings) and managed by the Construction Manager. The main steps under construction will include the following activities:

1. Mobilization
2. Site Work
3. Sludge Storage
4. Dewatering and Thickening Building
5. Dewatering, Thickening, Drying and Pyrolysis, Odor Control, Yard Piping, Electrical and Controls

Once construction is completed, the Contractor will proceed with commissioning of the facility as outlined below.

Task 8: Construction Management

Windsor will manage project construction with support from the construction contractor, and environmental and design consultants, this includes oversight of the following:

1. Implementation of project components within the timelines specified.
2. Documentation of work performed as specified by the grant manager to comply with the grant agreement.
3. Submission of timely and well-documented invoices to Windsor
4. Review of submittals to ensure they conform to the design intent.
5. Respond to Requests for Information (RFI) from the contractor which means providing more information about a specific question or element of the project,
6. Design change memos (DCM) which are typically a written document that includes sketches and specifications where a change may be required to the original design.
7. Potential change order (PCO) reviews where the engineer will review a change to the design that usually involves additional time and/or money to the contractor.
8. Weekly Site visits to observe the construction progress.
9. Weekly progress meetings led by Construction Manager
10. Prepare a draft and final punch list and participate in one or more site visits to prepare and discuss the punch list.
11. Prepare final record drawings that include all the changes made to the design as part of the construction.
12. Prepare an Operations and Maintenance (O&M) Manual.
13. Inspection services to verify compliance with the specifications' quality and functional requirements including general, warranty, and special inspections. Contractor construction management support during construction includes but is not limited to:
 - a. Report to the Windsor Construction Manager and conduct tasks as directed.
 - b. Conduct periodic surveillance and inspection of the work, monitor the Contractor's quality processes, and coordinate field sampling and testing for verification of quality results as needed.
 - c. Prepare Inspection Reports, quality records, including deficiency and non-conformance notices (NCNs), and field testing and verification reports, as needed.

Task 9: Commissioning: Commissioning of the thickening, dewatering, and bio drying/pyrolysis process would include testing each process to ensure all components are installed and connected, functional and operating as intended as a complete system. Each process, mechanical, and electrical system would be installed and undergo a series of tests to ensure that equipment was functioning properly and installed correctly. Process and system startup would include functional testing and defined period of process testing to ensure that the plant is operating as intended under careful monitoring to ensure that all performance metrics are met prior to bringing the process online for full-time operation.

Task 10: Decommissioning of Current Facility

The decommissioning of the current sludge ponds at the Windsor of Windsor will involve draining the lagoons, dredging the ponds to remove the biosolids, and removing any equipment and/or piping. The site will then be constructed and utilized to provide additional reclaimed water storage for beneficial reuse.

4. Low-Income and Disadvantaged Communities

a) Community Benefits

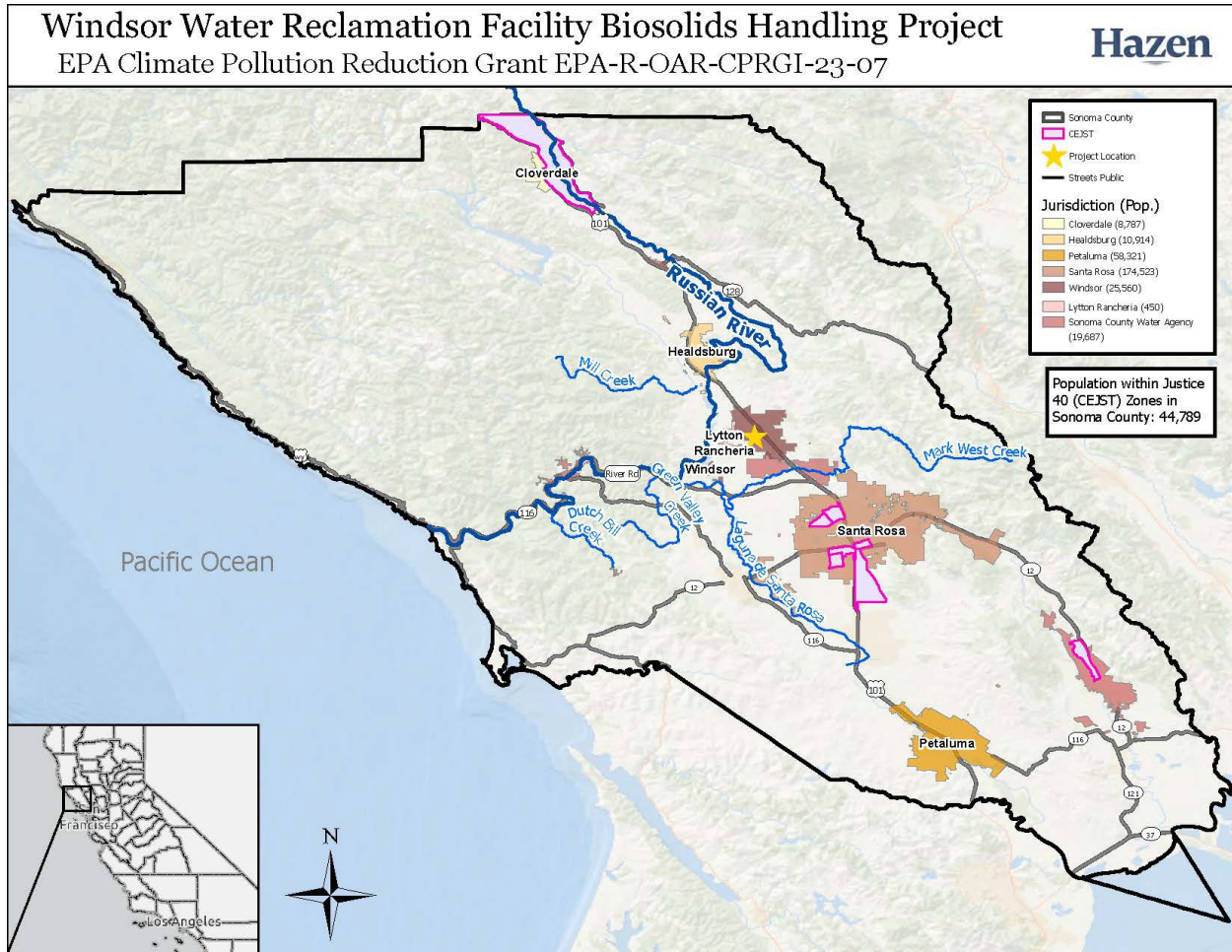
The Project will directly and indirectly support both low-income and disadvantaged communities by mitigating climate impacts such as supporting carbon sequestration increasing soil fertility and nutrient recycling by reducing the need for chemical fertilizers which would reduce greenhouse gas emissions. This Project will also increase resiliency to climate change for Sonoma County by providing a scalable project that could be used as a framework for other counties within the State of California. Currently, according to the Climate and Economic Justice Screening Tool (CEJST), a population of 44,789 are located within Justice 40 zones in Sonoma County. The following census tracts as part of the Justice 40 zones along with what jurisdiction they are located in, are indicated in the table (Table 4-1) below. Windsor will be providing biochar for residential use throughout Sonoma County. Each incorporated city and the unincorporated County will advertise “resident use days,” where communities can obtain biochar for small agricultural properties and also be given an opportunity to learn how Windsor, and the County writ large, is pioneering the way toward a zero-waste paradigm. The regional facility will also support rate stabilization through an agency-owned facility which will allow for greater rate control as opposed to contracting the disposal of solids.

During the commissioning period of the facility an annual monitoring report will be prepared to assess, quantify the amount of final mass, electricity usage, and chemical usage.

Table 4-1: Climate and Economic Justice Screening Tool Census ID Tracts

Climate and Economic Justice Screening Tool Census ID Tracts	
Jurisdiction	Census Tract ID
Santa Rosa	6097151402
Santa Rosa	6097152903
Santa Rosa	6097151900
Santa Rosa	6097152802
Santa Rosa	6097150305
Sonoma County Water Agency	6097153103
Santa Rosa	6097153104
Cloverdale	6097154201

Map 1: Windsor Water Reclamation Facility Biosolids Handling Project Justice40 zones



b) Community Engagement

Windsor will hold annual public workshops on the project to engage all residents including low income and disadvantaged community members. In addition to public meetings, Windsor has hired a community engagement consultant to conduct an informational video for the public to demonstrate the steps they are taking to reduce greenhouse gas emissions and move toward a zero-waste goal. The consultant will create marketing materials marketing materials such as pamphlets and handouts.

Outreach materials will be developed in both Spanish and English and all public meetings will be held at the most convenient times to allow for maximum participation from residents that work full-time or multiple jobs. All public meetings will be record and put on the website for the community to view and then will provide an easily accessible way for community engagement using multiple methods (i.e., social media, polls and a dedicated email comment form that will be responded to within 2 working days).

5. Job Quality

Windsor will abide by all provisions of the Labor Code Labor Compliance Program (LCP) regarding prevailing wages. This project will also be covered by the Windsor's Labor Agreement with relevant Unions and include Sonoma County local hire provisions. Windsor is in the process of developing local hiring policies for construction, which when passed, will require that 30% of all project work hours within each trade be performed by local residents with at least 15% of those hours performed by disadvantaged workers, and that 50% of work hours performed by apprentices be performed by local residents with at least 25% of those hours performed by disadvantaged workers. Additionally, Windsor is working with the US EPA to execute a WIFIA loan agreement that if funded provides partial financing for this project and is preparing to include all applicable federal requirements in the construction contract. Windsor has executed many federal grant agreements and has extensive experience complying with Davis-Bacon Act and Disadvantaged Business Enterprise requirements, as well as other federal crosscutters. Any labor requirements included in an EPA CPRG funding agreement will be included in the contract specifications and procurement process, as needed. Windsor has extensive experience developing and delivering multi-million-dollar capital improvement programs. Utilizing infrastructure procedures for all capital projects and programs developed from the internationally recognized Project Management Institute (PMI) global standards and Body of Knowledge Guide, Windsor consistently manages and delivers successful projects and programs on time and within budget across all its capital departments. These procedures provide guidelines on the detailed development of planning and design documents, construction management, and quality assurance and quality control of those documents throughout the various project phases.

6. Programmatic Capability and Past Performance

a) Past Performance

Past Performance		
1	Project Title	Department of Energy's FY23 Waste to Energy Technical Assistance for Local Governments
	Assistance Agreement Number	N/A
	Funding Agency	U.S. Department of Energy Bioenergy Technologies Office (BETO)
	Assistance Listing Number/CDFA Number	Not Applicable
	Description of Agreement	The U.S. Department of Energy Bioenergy Technologies Office (BETO) to provide technical assistance in the form of a summary report evaluating Windsor's biosolids handling facility proposal for pyrolysis as it relates to GHG emissions, PFAS, air quality impacts and end use applications for biochar. Windsor is to provide data and background information necessary to compile the summary report.
	Contact from Organization	Anelia Milbrandt, Sr. Research Analyst, National Renewable Energy Laboratory Phone: 303-275-4633, Email: anelia.milbrandt@nrel.gov
2	Project Title	Reclaimed Water Expanded Use Feasibility Study, under United States Department of the Interior Bureau of Reclamation WaterSMART Water Recycling and Desalination Planning Funding Opportunity
	Assistance Agreement Number	Not Applicable
	Funding Agency	Bureau of Reclamation
	Assistance Listing Number/CDFA Number	Not Applicable
	Description of Agreement	Feasibility study to evaluate the cost, system assessment and feasibility of 1) consolidating with Sonoma Water's Airport-Larkfield-Wikiup Sanitation Zone (ALWSZ) Treatment Plant with Windsor's Water Reclamation Facility 2) expand Windsor's recycling water system to the Sonoma County Regional Airport irrigation area and 3) aeration basin upgrades to manage increasing flows from ALWSZ.
	Contact from Organization	Owen Welch, Interdisciplinary Project Manager, BOR Phone: 916-978-5204, Email: owelch@usbr.gov
3	Project Title	Downtown Bike/Ped US 101 Crossing Underpass Widening
	Assistance Agreement Number	04-2960
	Funding Agency	California Department of Transportation (Caltrans)

	Assistance Listing Number/CDFA Number	Not Applicable
	Description of Agreement	Funding agreement for Caltrans to provide quality management assessment services, environmental document quality control and owner/operator approvals of the project design.
	Contact from Organization	Alex Lim, Caltrans Phone: 510-418-3851, Email: alexander.lim@dot.ca.gov
4	Project Title	Old Redwood Highway Corridor Enhancement Plan
	Assistance Agreement Number	74A1134
	Funding Agency	California Department of Transportation (Caltrans)
	Assistance Listing Number/CDFA Number	Not Applicable
	Description of Agreement	A planning grant to revitalize a 3.6-mile corridor of Old Redwood Highway through Windsor.
	Contact from Organization	Emmanuel Mekwunye, Caltrans Email: Emmanuel.mekwunye@dot.ca.gov
5	Project Title	Windsor River Road/Windsor Road Intersection Improvements
	Assistance Agreement Number	04-5472F15-F019-ISTEA
	Funding Agency	California Department of Transportation (Caltrans)
	Assistance Listing Number/CDFA Number	Not Applicable
	Description of Agreement	Improve the intersection of Windsor Road/Windsor River Road for motorists, pedestrians and bicyclists by converting the intersection from an all-way signalized intersection to a complete roundabout including a railway through the middle of the roundabout.
	Contact from Organization	Ken Nguyen, Caltrans Phone: 510-522-5916, Email: ken.nguyen@dot.ca.gov

b) Reporting Requirements

Reporting Requirements		
1	Project Title	Department of Energy's FY23 Waste to Energy Technical Assistance for Local Governments

	Submission of Acceptable Interim and/or Final Reports	Reports were not required; however, the Windsor submitted responses to data and information requests.
	Extent of Timely Reporting	All requests were met within a satisfactory timeframe.
	Unmet Progress Reporting	Not Applicable
2	Project Title	Reclaimed Water Expanded Use Feasibility Study, under United States Department of the Interior Bureau of Reclamation WaterSMART Water Recycling and Desalination Planning Funding Opportunity
	Submission of Acceptable Interim and/or Final Reports	We have been awarded the Feasibility Study but have not finalized the agreement. Not Applicable.
	Extent of Timely Reporting	Not Applicable
	Unmet Progress Reporting	Not Applicable
3	Project Title	Downtown Bike/Ped US 101 Crossing Underpass Widening
	Submission of Acceptable Interim and/or Final Reports	Project has just commenced. No reports have been submitted yet. Not Applicable
	Extent of Timely Reporting	Project has just commenced. Not Applicable.
	Unmet Progress Reporting	Project has just commenced. Not Applicable.
4	Project Title	Old Redwood Highway Corridor Enhancement Plan
	Submission of Acceptable Interim and/or Final Reports	Regular reports were required during the course of the project with a final report and plan at the end of the project
	Extent of Timely Reporting	All reports were provided on schedule
	Unmet Progress Reporting	Not Applicable
5	Project Title	Windsor River Road/Windsor Road Intersection Improvements
	Submission of Acceptable Interim and/or Final Reports	Quarterly reports were submitted to Caltrans
	Extent of Timely Reporting	All reports and invoices were provided on schedule
	Unmet Progress Reporting	Not Applicable

c) Staff Expertise

Staff Resumes are attached in the Optional Attachment Section.

7. Budget

See Attachment: Budgetcalc_Windsor.xls

a) Budget Detail

See Attachment: Budget_Windsor.pdf

b) Expenditure of Awarded Funds

See Attachment: BudgetNarrative_WindsorCollab.pdf

c) Reasonableness of Costs

The cost is considered to be reasonable for this size project and was based on the following assumptions for Windsor's Biosolids Facility:

1. Construction NTP is assumed to be second quarter 2025.
2. Construction Duration is assumed to be 24 months for the regional option.
3. The project is assumed to be procured as a single prime contract through a traditional design/bid/build process.
4. Wage rates utilized are based on prevailing wages published for Sonoma County current to June 30, 2023.
5. A 40-hour work week is assumed, no shift, weekend or other premium time is provided.
6. Wherever possible, equipment rates are based on current published rental rates as listed in the AED Blue Book, supplemented by RS Mean's data, the AED Green Book and local rental suppliers.
6. Crews, equipment and productivity used for work items are based mostly on standards specific to each trade. Some information was supplemented by RS Mean's data modified where necessary by estimator judgment.
7. The major equipment costs were based upon vendor quotes.

Project factors used were in-line with recent estimated similar type projects in this location and of this size and conform to the AACE Class of each scope.