Call for Projects
Project Information Form (PIF)

A. PROJECT INFORMATION

1. Project Title: Heritage Ranch Disinfection Byproducts Reduction Project
2. Project Sponsor(s): Heritage Ranch Community Services District
3. Eligible Applicant Type: Public Agency
4. IRWM Project Region(s): San Luis Obispo County
5. Does the project provide benefits directly to a Disadvantaged Communities (DAC) and/or Economically Distressed Areas (EDA) (minimum 75% by population or geography)?
   ☐ Yes ☑ No If yes, please complete D.8 and/or D.9. Show on map if applicable.
6. Is the Project Sponsor a Tribe, or does the project provide benefits to a Tribe (minimum 75% by population or geography) as defined by Proposition 1?
   ☐ Yes ☑ No If yes, please complete D.10. Show on map if applicable.
7. Provide project map. Include location of project, project benefit and/or service area, and other applicable information.
8. Funding Category:
   ☐ DAC Implementation Project
   ☑ General Implementation Project
9. Project Type: Water quality Other:
   Select most applicable project type. See Section II.C. of the 2019 Guidelines for full description of eligible project types. If "Other" is selected, please write in the space provided the proposed project type.

B. SELECTED ELIGIBILITY REQUIREMENTS

1. Will the project be included in the IRWM Plan, that will be adopted prior to anticipated Agreement Execution?
   ☑ Yes ☐ No
2. Does the project address a critical need(s) and/or priority(ies) of the IRWM Region as identified in the IRWM Plan?
   ☑ Yes ☐ No If yes, complete part a:
   a. What IRWM Plan goal(s)/objective(s) does the project address? Identify and explain.

Complete additional worksheet, titled "Objectives and Climate Change Worksheet"

3. Does the project have an expected useful life consistent with Government Code §16727 (generally 15 years)? If not, explain why this requirement is not applicable.

Yes. The project expected useful life is fifty years.

4. Does the project address and/or adapt to the effects of climate change? Does the project address the climate change vulnerabilities assessed in the IRWM Plan?

☑ Yes ☐ No If yes, please explain below.

Complete additional worksheet, titled "Objectives and Climate Change Worksheet"

5. Does the project contribute to regional water self-reliance?

☑ Yes ☐ No If yes, please explain below.

The project contributes to regional self reliance by:

Improving the water treatment system to improve consistency in meeting current regulatory standards (and potentially future more stringent standards) despite potential inconsistencies in the source water (potentially higher organics due to wildfires, lower lake levels and the makeup of the lake's watershed (e.g. ag/wildlife-generated organics, highly wooded area, etc.); and

Improving self-reliance of individual systems which in and of itself contributes to regional self-reliance.

6. Does the project provide a benefit that meets at least one of the Statewide Priorities as defined in the 2019 IRWM Grant Program Guidelines?

☑ Yes ☐ No If yes, please identify below.

7. Provide Safe Water for All Communities

7. Will CEQA be completed within 12 months of Final Award?

- ☐ Yes
- ☐ NA, project is exempt under CEQA
- ☑ NA, not a project under CEQA
- ☐ NA, project benefits DAC/EDA/Tribe (minimum 75%), or a Tribe is a local project sponsor
- ☐ No

8. Will all permits necessary to begin construction be acquired within 12 months of Final Award?

- ☑ Yes
- ☐ NA, project benefits DAC/EDA/Tribe (minimum 75%), or a Tribe is a local project sponsor
- ☐ No

C. WORK PLAN, BUDGET, and SCHEDULE SUMMARY

1. Project Description: Provide a brief project description summarizing major components, objectives, goals, and intended outcomes/benefits (quantitative and qualitative).

Pilot study - Temporary piping, pump, and portable granular activated carbon (GAC) vessels (rentals) to accommodate approximately 120 GPM. Goals, objectives, and outcomes were to determine the efficacy of GAC in reducing Total Organic Carbon (TOC) in post-treatment water, thereby (presumedly) reducing the amount of Disinfection Byproducts (DBPs) in the distribution system. Additionally, different GAC types were tested (coconut-based and coal-based) to determine their effectiveness. The pilot study resulted in a reduction in TOC and DBPs, with the coal-based GAC providing effective removal over a longer duration than the coconut-based GAC. Pilot study is completed and cost approximately $240,000. Pilot study costs include project administration, piping system modifications (Contractor and District staff), equipment procurement (pump, piping, manifold, valving, TOC analyzer, GAC vessels, GAC replacement).

Project - Piping, pumps, granular activated carbon pressure vessels, and associated equipment, electrical, instrumentation, and controls to accommodate flows of up to 800 gpm (current full flow for the water treatment plant). Goals,objectives, and intended outcomes are to reduce the TOC and DBPs in treated water post-filtration to ensure clean, compliant and optimal quality water for the residents. With the pilot study flow rate of 120 GPM (15-20% of full flow) and an average TOC removal rate of 40%, HRCSD saw a notable reduction in DBPs (both TTHM and HAA5s). TTHM reduction averaged 32% and HAA5 reduction averaged 35% when comparing DBP levels before and after the installation of the GAC Pilot Study. Reducing DBPs by this amount while treating only 20% of the flow gives us confidence that, with the full flow being treated via GAC, we should see even higher reductions in DBPs. Additionally, GAC treatment of full flow will help to reduce biofilm in our system components (tanks, piping) which will increase the quality of the water from a compliance, taste/odor, and reliability standpoint. Additionally, reduction in organics prior to disinfection will reduce the amount of chlorine required for disinfection.

2. Budget: Provide cost estimates for each Budget Category listed in the table below. (Required for Pre-Application Material Submittal; not required for Final Application Submittal)

Table 1 - Project Budget

Category		(a) Cost Share: Non-State Fund Source	(b) Requested Grant Amount	(c) Other Cost Share (including other State Sources)	(d) Total Cost
(a)	Project Administration	2,900	0	0	2,900
(b)	Land Purchase/ Easement	0	0	0	0
(c)	Planning/Design /Engineering /Environmental Documentation	401,000	0	0	401,000
(d)	Construction/ Implementation	602,470	492,930	0	1,095,400
(e)	Grand Total (Sum rows (a) through (d) for each	1,006,370	492,930	0	1,499,300

Note: Provide information or other documentation to support the cost estimate in a separate attachment. Identify the source of all cost share and other funds. If other funds are not used, describe efforts to obtain other funding and/or why other funding sources were not used.

Cost share is by HRCSD.

3. Cost Share Waiver Requested (DAC or EDA)? ☐ Yes ☑ No If yes, continue below:
   Cost Share Waiver Justification: Describe what percentage of the proposed project area encompasses a DAC/EDA, how the community meets the definition of a DAC/EDA, and the need of the DAC/EDA that the project addresses. In order to receive a cost share waiver, the applicant must demonstrate that the project will provide benefits (minimum 25% by population or geography) that address a need of a DAC and/or EDA.

NA

4. Schedule: Include reasonable estimates of the start and end dates for each Budget Category listed in Table 1 - Project Budget. (Required for Pre-Application Material Submittal; not required for Final Application Submittal)

Table 2 - Project Schedule

Category		(a) Start Date	(b) End Date
(a)	Direct Project Administration	September, 2022	December, 2026
(b)	Land Purchase/Easement	NA	NA
(c)	Planning/Design/Engineering/Environmental Documentation	September, 2022	May, 2026
(d)	Construction/Implementation	July, 2026	September, 2026

D. OTHER PROJECT INFORMATION

1. Provide a narrative for project justification. If applicable, include references to supporting documentation such as models, studies, engineering reports, etc. Include any other information that supports the justification for this project, including how the project can achieve the claimed level of benefits.

The HRCSD is classified as a community public water system with a population of about 3,428 persons served through approximately 1,965 service connections. The HRCSD operates under Domestic Water Supply Permit No. 04-06-15P-004 issued by the State Water Board on February 4, 2015. The HRCSD is using a groundwater source under the influence of surface water to supply potable water to the distribution system, Nacimiento Reservoir lakeside user.

CHSC, Section 116555 requires all public water systems to comply with primary drinking water standards as defined in CHSC, Section 116275(c). Primary drinking water standards include maximum levels of contaminants, specific treatment standards, and monitoring and reporting requirements as specified in regulations adopted by the State Water Board.

CCR, Title 22, Section 64533 states that public water systems shall comply with the primary MCLs established in Table 64533-A. The MCLs for Total Trihalomethanes ("TTHM") and Haloacetic Acids Five ("HAA5") are 0.080 and 0.060 milligrams per liter (hereinafter "mg/L"), respectively. HRCSD has failed to comply with the MCLs in the past but they have increased, we believe in part due to the effects of the 2016 Chimney Fire on the watershed. The system was failing for HAA5 from 2019 Q4 to 2024 Q1.

HRCSD has actively made efforts to reduce the amount of organic material in raw water to minimize the level of disinfection byproducts (DBPs) observed in the distribution system. In March 2020, HRCSD shared with DDW a technical memorandum by MKN Associates for a treatment optimization pilot study to improve organic materials removal. DDW did not like making the treatment operations more complicated by adding more chemicals and recommended HRCSD pursue reduction of DBP through optimization of its distribution operations. Since 2020, HRCSD has enhanced our flushing program and adjustments to the distribution pressure zones, installed a mixer at the 2 MG Reservoir, completed the Vertical Intake No. 1 project, completed the WTP filters renovation project, completed a SCADA upgrade project, and performed a Granular Activated Carbon pilot study.

Implementation of the GAC project will provide immediate results but also assist to protect the water system from water quality changes in the future due to the effects of climate change including, but not limited to, increased risk of wildfire occurring in the watershed, drought, seasonal water demand, insufficient instream flows, declining seasonal water quality and low flows, and water bodies impacted by eutrophication and rain events.

The initial pilot study for the proposed project (treating 120 gpm vs. up to 800 gpm for the final project) resulted in quantifiable reduction in TOC (approximately 40% removal over the 4-6 month life cycle for a given batch of GAC) and DBPs. HRCSD has engineering reports, data for each batch used during the pilot study and a final report detailing the findings of the pilot study and making recommendations for the final project. These reports are available upon request but omitted from here due to limitations on the number of characters allowed.

2. Project Benefits Table:

Table 3 - Project Benefits			
Anticipated Useful Life of Project (years):	**50**		
Primary (Required)			
Type of Benefit Claimed:	Water Quality	**Benefit Units*:**	mg/L
Secondary (Optional)			
Type of Benefit Claimed:	Operational Efficiency	**Benefit Units*:**	Other
Physical Benefits (At project completion or lifetime, as appropriate)			
(a)	**(b)**	**(c)**	
Benefit	**Added Physical Benefit Description**	**Quantitative Benefit**	
Primary	Reduces TOC thereby reducing DBPs	Reduction in TOC mg/L by 40% (Average over the 4-6 month life of a given batch of GAC). Maintaining DBPs under MCLs	
Secondary	Improving the efficiency and lifespan of treatment processes and infrastructure	Reduction of chemical demand, reduction of biofilm growth, reduced pipe corrosion	
Qualitative Benefits (For Decision Support Tools, please describe non-physical benefits.)			
Increased public trust and confidence in the safety of their tap water. This is a qualitative benefit because, unlike a quantitative benefit such as a reduction in cancer rates, it cannot be easily measured in numerical terms. Instead, it describes an improved public perception and a decrease in public anxiety surrounding potential health risks associated with drinking water. Reducing DBPs can improve the taste, odor, and color of tap water, which can be affected by the chemical reactions that form these byproducts. Reduced public concern over long-term health risks. While the risks of DBPs are generally low compared to the dangers of un-disinfected water, ongoing public concern exists over the potential for long-term exposure to certain DBPs to cause health problems like cancer. Reducing these byproducts helps to alleviate this public worry. Enhanced sustainability. Advanced treatment methods used to reduce DBP precursors, such as granular activated carbon (GAC), can also be effective at removing other contaminants. This can improve overall water quality and lead to a more resilient, sustainable water system.			
Comments: [Include narrative on additional benefits, as warranted.]			
Beyond limiting the formation of harmful disinfection byproducts (DBPs), reducing total organic carbon (TOC) in drinking water provides additional benefits, including improved aesthetic quality and enhanced water treatment efficiency. Lowering TOC also helps prevent bacterial regrowth within the distribution system, ensuring safer drinking water. Reduced taste and odor issues: Organic compounds in the source water can contribute to unpleasant tastes and odors in finished drinking water. Effective TOC removal eliminates these compounds, resulting in a cleaner-tasting product. Elimination of discoloration: Some naturally occurring organic matter can cause water to have an undesirable color. Removing this matter makes the water clearer and more visually appealing. Reduced chemical usage: A lower TOC load in the source water means that less disinfectant is needed to properly treat the water. This reduces costs for chemical purchases and minimizes the amount of chemical residue in the finished water. Reduced bacterial regrowth: Organic matter serves as a food source for microorganisms. By removing TOC, water utilities can better control the growth of bacteria and biofilms within pipes and other parts of the distribution system, reducing the risk of waterborne illnesses.			

* DWR may require applicant to convert or modify Benefit Claimed and/or Benefit Units. Where applicable, select one of the following units that corresponds to the benefit claimed:

- For water supply produced, saved, or recycled, enter acre-feet per year (AFY)
- For water quality, enter constituent concentration reduced in mg/L
- For flood damage reduction, enter inundated acres reduced in acres
- For habitat improved, restored or protected, enter habitat restored in acres
- For fishery benefits, enter increased fishery flow rate in cubic feet per second (cfs)
- For species protection, enter number of species benefited

3. Does the proposed project provide benefits to multiple IRWM regions [or funding areas]? If the project is located in another funding area, please provide the information requested in the 2019 Guidelines, Section 1.A.

☐ Yes ☑ No If yes, provide a description of the benefits to the various regions.

NA

4. Provide a narrative on cost considerations. For example, were other alternatives to achieve the same types and amounts of physical benefits as the proposed project evaluated? Provide a justification as to why the project was selected (e.g., if the proposed project is not the lowest cost alternative, why is it the preferred alternative? Are there any other advantages that the proposed project provides from a cost perspective?)

Other alternative methods of treatment such as Ion Exchange (MiEX), Ozone, Ballasted Flocculation and UV disinfection were considered in addition to GAC. GAC was selected due to its relatively low cost (compared to the other options at the time of analysis), relatively lower power consumption and lack of a discharge stream (such as the brine backwash required for Ion Exchange backwashing). The preliminary design includes piping and valving modifications that will route all post-filter water to the GAC located in an adjacent area within the water treatment plant. These piping and valving modifications will be made in such a way that, should additional treatment methods arise that could provide additional levels of treatment, that additional equipment could also be installed in the same area as the GAC. As our source water is inconsistent, the proposed project will allow us to adjust our treatment protocols to meet the additional treatment requirements associated with higher organics and provide us with more flexibility in the future.

5. a. Does the project address a contaminant listed in AB 1249?

☐ Yes ☑ No If yes, complete parts b and c:

b. Describe how the project helps address the contamination.

<Nitrate, Arsenic, Perchlorate, or Hexvalent Chromium>

c. Does the project provide safe drinking water to a small disadvantaged community?

☐ Yes ☑ No If yes, provide an explanation on how the project benefits a small disadvantaged community as defined in the 2019 IRWM Guidelines.

<DAC with population less than 10,000 persons>

6. Does the project provide safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes (consistent with AB 685) to meet a specific need(s) of a community?

☑ Yes ☐ No If yes, please describe.

Granular Activated Carbon has been shown to remove precursors (Total Organic Carbon or Natural Organic Matter) that will reduce DBP. TOC and NOM negatively impact water quality and treatment processes by causing undesirable color, taste, and odor, fostering bacterial growth and biofilms, and acting as a precursor for harmful disinfection by-products (DBPs) like THMs and HAA5s. Effective removal of TOC and NOM requires a combination of treatment steps, and potentially more advanced methods like activated carbon filtration or membrane filtration. Under the Safe Drinking Water Act, the USEPA created the Disinfection Byproducts Rule Stages 1 and 2. This rule regulates acceptable levels of the DBPs mentioned below. In HRCSD's case we have Trihalomethanes (THM), and more commonly Haloacetic acids (HAA5). The EPA regulates THMs at a maximum annual average of 80 parts per billion, and HAA5 at a maximum annual average of 60 parts per billion. The proposed GAC project is more cost effective than other treatment options explored.

7. Does the project employ new or innovative technologies or practices, including decision support tools that support the integration of multiple jurisdictions, including, but not limited to, water supply, flood control, land use, and sanitation?

☐ Yes ☑ No If yes, please describe.

NA

8. If the project provides benefits (75% by population or geography) to a DAC, explain the need of the DAC and how the project will address the described need. Explain how the area/community meets the definition of a DAC.

NA

9. If the project provides benefits (75% by population or geography) to an EDA, explain the need of the EDA and how the project will address the described need. Explain how the area/community meets the definition of an EDA.

NA

10. If the project provides benefits (75% by population or geography) to a Tribe or a Tribe is the sponsor of the project, explain the need of the Tribe and how the project will address the described need.

NA

11. Does the project sponsor have legal access rights, easements, or other access capabilities to the property to implement the project?

- ☐ Yes — If yes, please describe.
- ☑ NA — If NA, please describe why physical access to a property is not needed.
- ☐ No — If no, please provide a clear and concise narrative with a schedule to obtain necessary access.

The project is located at the existing WTP on property owned by HRCSD with existing access easements over adjacent property.

E. ENVIRONMENTAL

1. Please fill out the CEQA Timeline Table below, if applicable:

Table 4 - CEQA Timeline		
CEQA STEP	**COMPLETE? (y/n)**	**ESTIMATED DATE TO COMPLETE**
Initial Study	NA	NA
Notice of Preparation	NA	NA
Draft EIR/MND/ND	NA	NA
Public Review	NA	NA
Final EIR/MND/ND	NA	NA
Adoption of Final EIR/MND/ND	NA	NA
Notice of Determination	NA	NA

a. If additional explanation or justification of the timeline is needed, please describe below (optional).

NA

2. Permit Acquisition Plan:

List all permits needed to complete the project. If the project does not provide benefits to a DAC, EDA, or Tribe (min 75%), all permits needed to begin construction must be acquired within 12 months of Final Award.

No.	Type of Permit	Permitting Agency	Date Acquired or Anticipated
1.	NA	NA	NA
2.			
3.			
4.			
5.			
6.			
n.			

For each permit not yet acquired, describe the following:

No.	a. Actions taken to date (include dates of any key meetings, consultations, submittals, etc.)	b. Any issues or obstacles that may delay acquisition of permit
1.	NA	NA
2.		
3.		
4.		
5.		
n.		

3. Permitting Checklist: This checklist is provided as a courtesy for documentation purposes. Not all permits which may apply are listed. (Required for Pre-Application Material Submittal; not required for Final Application Submittal)

a. Does the project involve any activities that may affect federally or state listed threatened or endangered species or their critical habitat that are known, or have a potential, to occur on-site, in the surrounding area, or in the service area? (i.e. Federal Endangered Species Act Section 7 Consultation and Incidental Take Authorization and Section 10 Incidental Take Permit, California Endangered Species Act Permit, and/or ESA & CESA Consistency Determination)

☐ Yes ☑ No If yes, please explain:

NA

b. Would the proposed project work in, over, or under navigable waters of the US or discharge dredged or fill material in waters of the US? (i.e. Rivers & Harbors Act Section 10 Permit and/or Clean Water Act Section 404 Permit)

☐ Yes ☑ No If yes, please explain:

NA

c. Will the proposed project have the potential to affect historical, archaeological, or cultural resources? (i.e. National Historic Preservation Act and/or State Historic Preservation Officer Consultation)

☐ Yes ☑ No If yes, please explain:

NA

d. Will the proposed project discharge into a water of the US? (i.e. Clean Water Act Section 401 and/or 404 Permit)

☐ Yes ☑ No If yes, please explain:

NA

e. Will the proposed project divert the natural flow of a river, stream, or lake? (i.e. Lake or Streambed Alteration Agreement)

☐ Yes ☑ No If yes, please explain:

NA

f. Will the proposed project change the bed, channel, or bank of a river, stream, or lake? (i.e. Lake or Streambed Alteration Agreement)

☐ Yes ☑ No If yes, please explain:

NA

g. Will the proposed project use any material from the bed, channel, or bank of a river, stream, or lake? (i.e. Lake or Streambed Alteration Agreement)

☐ Yes ☑ No If yes, please explain:

NA

h. Will the proposed project deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake? (i.e. Lake or Streambed Alteration

☐ Yes ☑ No If yes, please explain:

NA

i. For water supply projects, do you need to obtain a water right? (Water Rights Permit)

☐ Yes ☑ No If yes, please explain:

NA

j. Is the proposed project within the defined coastal zone? (Coastal Development Permit)

☐ Yes ☑ No If yes, please explain:

NA