



A. General Project Information

1. **Organization / Project Sponsor Name:**
Big Lagoon Community Services District

2. **Project Name:**
Big Lagoon CSD Water Storage Improvements

3. **Has the organization implemented similar projects in the past?** ☒ yes ☐ no

4. **If the project sponsor has worked with NCRP in the past, describe the project and outcome.**
Big Lagoon CSD has applied and been awarded for project development technical assistance with the NCRP. The District has not worked with NCRP on any other projects.

5. **Please describe the qualifications, experience, and capacity of the project team that will be overseeing project implementation.**
GHD Inc. has previously worked with NCRP and has completed and monitored multiple water storage tank projects and leveraged that understanding in this application. The north coast has many qualified engineering firms with whom the District can contract and who have experience working with the NCRP. As a result, the District can successfully meet project funding constraints, goals, and objectives through project delivery.

6. **Is this project part of a larger project or program? If so, what effectiveness monitoring is being conducted and what are the results?**
The District has been working towards understanding community concerns about the water system. Lack of adequate storage is of high concern. In addition, the local school is looking into options for increased water resilience separate from this project. Groundwater well production records and are used to monitor community risk.

7. **Project Abstract** [500 characters max.]
The proposed water storage improvements project will replace the two 5,000-gallon HDPE water tanks with a new steel 60,000-gallon water tank to improve water self-reliance and community health by ensuring the District has enough water to cover the maximum daily water usage, extended water outages due to a short-term or extended well failure, natural disasters, and/or other emergencies.

8. **Project Description** [3,000 characters max.]
The Big Lagoon Community Services District (District) is supplied water from a single groundwater extraction well near the Big Lagoon Elementary School, and two 5,000-gallon HDPE storage tanks supplying 42 customers and the elementary school. The District has little backup resiliency should the well fail and need repair or require that a new well be drilled. In addition,



the system severely lacks enough storage to combat wildfires, and the existing tanks are vulnerable to damage from fires.

The District completed an evaluation of the system configuration, demands, and options for storage in coordination with GHD Inc. in the "ADD TITLE HERE" in November 2022. The results of the evaluation showed that there are many factors affecting the progression of improvements, including, age of water in the tank, existing distribution system size, coordination with neighboring property owners, and well capacity. The "ADD TITLE HERE" recommended replacing the two existing HDPE 5,000 gallon tanks with a new steel 60,000 gallon tank. This initial project will provide long term lasting benefits, and can be leveraged for future improvements. The new 60,000 gallon tank will be able to provide the maximum daily usage of 15,000 gallons and increase the District's fire supply by 50,000 gallons. This project will support current water usage, water resiliency in emergency situations, and will increase fire flow storage.

9. Specific Project Goals/Objectives

Goal 1: Improve water self-reliance and community health [100 characters max.]

Goal 1 Objective: Increase the amount of water available for the maximum daily water demand, fire protection, and emergencies. [200 characters max.]

Goal 1 Objective: Meet the maximum daily water usage of 15,000 gallons per day without having to pump.

Goal 1 Objective: Increase storage to cover extended water outages due to short-term or extended well failure, natural disaster, or other emergencies.

Goal 1 Objective:

Goal 2: Improve structure fire and wildfire protection

Goal 2 Objective: Increase water storage to help fight structure fires and wildfires

Goal 2 Objective: Plan for additional fire storage or booster systems in the future

Goal 2 Objective:

Goal 2 Objective:

Goal 3: Address climate change impacts

Goal 3 Objective: Increase water storage to help prepare for longer droughts and increased wildfires.

Goal 3 Objective:

Goal 3 Objective:

Goal 3 Objective:

Additional Goals & Objectives (List)

10. Describe how the project addresses the NCRP Goals and Objectives selected. [1,000 characters max.]



Obj 1: All components of this project are proposed by the BLCSD, specifically the Board Chair and the Water Operator who have lived and worked in Big Lagoon for decades and know the area, the watersheds and needs of the community.

Obj 2: Project further enhances progress requested in an awarded technical assistance grant.

Obj 4: Project benefits the Community of Big Lagoon, a SDAC

Obj 8&9: The project will improve water self-reliance and community health by helping provide sufficient water to cover extended water outages due to a short-term or extended well failure, natural disaster, or other emergency.

Obj 11: The project will improve wildfire resilience and wildfire protection due to having more water available for extinguishing structural fires and minor brushland fires. It will also provide more water storage as the drought period prolongs due to climate change.

11. Describe the physical, biological and/or community need for the project. [1,000 characters max.]

The project addresses a major unmet need for 45 residences and the Big Lagoon School. The District's average daily water usage is 5,000-gallons with a maximum daily usage of 15,000 gallons. This is insufficient to provide the resilience this remote area needs to protect against emergencies such as system leaks, well outages, small fires, and other unexpected damages. The District has no backup in the event of an emergency. Increasing storage improves resilience.

12. Describe the financial need for the project. [1,000 characters max.]

The District is unable to increase rates any more than they already have, given the severely economically depressed population which is served. With only 42 existing customers it is difficult for the District to fund large necessary infrastructure projects. In support, according to the NCRP interactive map the District is also a severely disadvantaged community.

13. Describe potential adverse impacts from project implementation and how they will be mitigated.

The District will complete necessary environmental studies to avoid impacts and support permit applications and project bid requirements. The proposed project size is intended to fit within the District's existing fenced tank site area, reducing impacts on nearby properties. No potential adverse impacts are anticipated to environmental resources. All work will be completed on previously disturbed area. The project increases system performance on an annual basis.

14. Will this project mitigate an existing or potential Cease and Desist Order or other regulatory compliance enforcement action? ☐ yes ☒ no

If yes, please describe. [500 characters max.]

15. Does the project address a contaminant listed in AB 1249 (nitrate, arsenic, perchlorate, or hexavalent chromium)?



☐ yes ☒ no

If yes, provide a description of how the project helps address the contamination. [500 characters max.]

16. Describe how the project contributes to regional water self-reliance and addresses climate change. [1,000 characters max.]

Climate change is forecast to result in more wildfires and prolonged droughts affecting the water storage used to put the fires out. The District will need to be prepared for changes in water demands. Implementation of this project will improve wildfire resilience and wildfire protection with more storage for extinguishing structural fires, and minor brushland fires. Were the community threatened by embers or sparks from a nearby wildfire, residents can be expected to wet down their roofs further depleting the water storage.

17. Does the project increase public safety with regards to flood protection, wildfire hazard risk reduction, increasing firefighting capacity, or in other ways contribute to regional emergency resiliency?

☒ yes ☐ no

Please explain. [500 characters max.]

Increasing water storage will improve water self-reliance and community health by ensuring there is enough water to cover extended water outages due to a short-term or extended well failure, drought, natural disaster, or other emergencies. The project will improve wildfire resilience and wildfire protection due to having more water available for extinguishing structural fires, and minor brushland fires.

18. 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. [500 characters max.]

This Project provides basic traditional methods to initiate improvements t

19. Describe the population served by this project, including any economically disadvantaged communities or Tribes that will directly benefit.

Big Lagoon CSD is within a Severely Disadvantaged Community, with a majority year round residents. The Median Household Income (MHI) for the Big Lagoon Community Census Designated Place is \$45,735, which is less than 60% of the state MHI. In addition the water system serves the only local school.

20. Describe local and/or political support for this project. [500 characters max.]



This project is supported by the District Board as well as the community. This project was discussed during a Board meeting on April 2021. The need for an increase in water storage is also mentioned in the Big Lagoon Community Services District Municipal Services which was adopted in March 17, 2021.

21. List all collaborating partners and agencies and nature of collaboration. [750 characters max.]

SWRCB Division of Drinking Water will approve final improvements. The District will initiate early coordination with the prelim design to ensure final approval.

22. Is this project part or a phase of a larger project?

☐ yes ☒ no

Are there similar efforts being made by other groups?

☐ yes ☒ no

If yes to either, please describe. [500 characters max.]

B. Project Location

1. Describe the latitude and longitude of the project site.

Latitude: 41.731418

Longitude: 122.512509

2. Site Address (if relevant):

NA

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

☒ yes

If yes, please describe below

☐ no

If no, please provide a concise narrative below with a schedule, to obtain necessary access

☐ NA

If NA, please describe below why physical access to a property is not needed

Explanation. [500 characters max.]

Easements are currently owned by the District as of 1960 and boundaries to be confirmed as part of this project. Proposed project will fit within existing fenced areas.

4. Project Location Notes:

NA

C. Benefits To Disadvantaged Communities and/or Tribes



1. Does the project provide direct water-related benefits to a project area comprised of Disadvantaged Communities or Economically Distressed Communities? If partially, please estimate percentage of project that benefits disadvantaged communities and list the communities.

☒ Entirely

☐ Partially; estimate the percentage of benefits provided directly to DAC:

☐ No

List the Disadvantaged Community(s)

Big Lagoon Community Service District

2. Does the project provide direct water-related benefits to a project area comprised of Severely Disadvantaged Communities (SDAC)? If partially, please estimate percentage of project that benefits disadvantaged communities and list the SDACs.

☒ Entirely

☐ Partially; estimate percentage of benefits provided directly to SDAC:

☐ No

List the Severely Disadvantaged Community(s)

Big Lagoon Community Service District

3. Does the project provide direct water-related benefits to a Tribe or Tribes? If partially, please estimate percentage of project that benefits Tribe(s) and list the Tribes.

☐ Entirely

☐ Partially; estimate percentage of benefits provided directly to Tribe(s):

☒ No

List the Tribal Community(s)

If yes, please provide a letter of support from each Tribe listed as receiving these benefits.

4. If the project provides benefits to a DAC, EDA or Tribe, explain the water-related need of the DAC, EDA or Tribe and how the project will address the described need. [750 characters max.]

Big Lagoon CSD water system does not meet the current maximum daily demand or fire flow requirements. Increasing the water storage will ensure water during their maximum daily usage and increase water available during maintenance, repair, and/or a fire event.

5. Describe the kind of notification, outreach and collaboration that has been completed with the county(ies) and/or Tribes within the proposed project impact area, including the source and receiving watersheds, if applicable. [500 characters max.]

This project was discussed during a board meeting on April 2021, as well as several other recent Board meetings.



D. Project Benefits & Justification

- For each of the Potential Benefits that the project claims, complete the following table to describe an estimate of the benefits expected to result from the proposed project. Provide quantitative benefit amounts for at least the primary and secondary benefits. Provide a qualitative narrative description of expected benefits that cannot be quantified. *See the NCRP Project Application Instructions for more information and a listing of potential benefits.*

PROJECT BENEFITS TABLE

Benefit Description	Units	Quantitative Amount	Qualitative Description
Water Supply			
Water Storage Tank	Gallons	60,000	Max Day & Emergenc
Water Quality			
Climate Change			
Wild Fire Resiliency	Gallons		
Drought Resiliency	Gallons		
Other Ecosystem Service Benefits			
Jobs Created or Maintained			
Tanks Construction			Construction jobs
Other Benefits			
Public Health and Safety	Gallons	60,000	Prevent wild fire



2. Does the proposed project provide physical benefits outside of the North Coast Region?

☐ yes ☒ no

If yes, describe the impacts to areas outside the North Coast Region. [500 characters max.]

3. List the impaired water bodies (303d listing) that the project benefits:

NA

4. Describe how the project benefits salmonids, endangered/threatened species and sensitive habitats.

The project would protect endangered/threatened species and sensitive habitats by increasgin stored water to potentially prevent wildfire from spreading to a wider area.

5. Have alternative methods been considered to achieve the same types and amounts of physical benefits as the proposed project?

☒ yes ☐ no

Please explain. [500 characters max.]

The District needed to find a balance between enough storage to meet fire requirements and the District's daily and max day needs. A 25,0000 gallon tank would only provide minimal fire storage. While a 585,000 gallon tank to meet full CalFire standards is not cost effective and overshoots the District's water usage by ten times. A 60,000 gal tank provides water for daily use and post storage chlorination will address water age. Fire storage is increased and can be expanded more in the future.

6. Is the proposed project the lowest cost alternative to achieve the physical benefits?

☒ yes ☐ no

Please explain. [500 characters max.]

Due to the existing water storage it was determined that a 60,000 gallon tank provided the needed capacity for daily use and increased fire storage and resulted in lowest life cycle costs.

7. How will the project be monitored to determine whether it is producing the desired benefits?

The implementation of the Project will also include connection to the Supervisory Control and Data Acquisition (SCADA) system to monitor the system and provide for automatic control of filling the tanks. In general, level transducers at the tanks will measure water level, and this data will be telemetered to a level controller at the associated pump stations which will turn pumps on and off according to user-configurable setpoints to maintain water level in the tanks between desired high and low levels.



8. Provide a narrative for project technical justification. Include any other information that supports the justification for this project, including how the project can achieve the claimed level of benefits listed below. [3,000 characters max.]
 - The expected benefits resulting from the proposed project would culminate in a larger water tank that improves water self-reliance, covers well failures whether short- or long-term, increases the amount of water for fighting a structural fire, and aids in wildfire resilience. In the supporting attachments, the tank size analysis is identified in Exhibit A: Water Storage Tank Size Analysis. The Cal Fire support letter for upgrading the water system is included in Exhibit B.
9. List and include any studies, plans, designs or engineering reports completed for the project as a “Technical & Reference Supporting Materials” into one document that includes a Table of Contents and is limited to approximately 50 pages. *Please see the instructions for more information about submitting these documents with the final application.*
10. Project Justification & Technical Basis Notes: Please provide any additional information *not included above* that you think is important.

In the supporting attachments, the tank size analysis is identified in Exhibit A: Water Storage Tank Size Analysis. The Cal Fire support letter for upgrading the water system is included in Exhibit B.

E. Project Tasks, Budget, And Schedule

1. Projected Project Start Date: 11/1/23
Anticipated Project End Date: 11/1/27
2. Describe the basis for the costs used to derive the project budget in each budget category. [500 characters max.]

Direct Project Administration and Planning/Design/Engineering/Environmental Documentation costs are based on similar projects. No Land Purchase/Easement costs are anticipated. Construction/Implementation costs are based on the compilation of quotes and previous projects.
3. Provide a narrative on cost considerations including alternative project costs. [500 characters max.]

The District considered increasing the water storage tank to 100,000 gallons. However the tank is substantial more expensive and would require more maintenance costs due to water stagnation.
4. List the sources of non-state matching funds, amounts and indicate their status. Proposition 1 requires a minimum cost share of 50% of the total project costs, though a waiver may apply (see Question 6 below).



NA

5. List the sources and amount of State matching funds.

The project is anticipated to receive no State matching funds for this project.

6. Cost Share Waiver Requested (DAC or EDA)? ☒ yes ☐ no

Describe what percentage of the proposed project area encompasses a DAC/EDA, how the community meets the definition of a DAC/EDA, and the water-related 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 **directly** provide benefits that address a water-related need of a DAC/EDA.

100%. Big Lagoon Community Services is DAC and SDAC as shown on the NCRP interactive map. The District water supply is currently insufficient for maximum daily water needs and is threatened by extended water outages due to a short-term or extended well failure, natural disaster, or other emergency drought. The implementation of this project would directly benefit the community by providing more water resiliency against drought and wild fire.

7. Is the project budget scalable? ☒ yes ☐ no

8. Describe how a scaled budget would impact the overall project, its expected benefits and state the minimum budget amount that would be viable (see Instructions E.7 for scaled budget examples). [500 characters max.]

The District could look at smaller tanks to fit a scaled down budget. However, this would not provide the same long term benefits.

9. Major Tasks, Schedule and Budget for Project Solicitation

Please complete MS Excel table available at <https://northcoastresourcepartnership.org/ncrp-proposition-1-irwm-round-2-solicitation/> see instructions for the information to be included in this document and for how to submit the required excel document with the application materials.

10. Project Tasks, Budget and Schedule Notes:

11. Project Information Notes. Please provide any information that that has not been specifically requested that you feel is important for the NCRP to know about your project.

Project Name:	Big Lagoon Community Services District Water Storage Improvement Project
Organization Name:	Big Lagoon Community Services District

Task #	Major Tasks	Task Description	Major Deliverables	IRWM Task Budget	Non-State Match	Other Match	Total Task Budget	25% Scaled IRWM Budget	50% Scaled IRWM Budget	Current Stage of Completion (%)	Start Date	Completion Date
A	Category (a): Direct Project Administration											
1	Project Management	In cooperation with the County of Humboldt sign a sub-grantee agreement for work to be completed on this project. Develop invoices with support documentation. Provide audited financial statements and other deliverables as required	Invoices, audited financial statements and other deliverables as required	\$22,800.00	\$0.00	\$0.00	\$22,800.00	\$17,100.00	\$0.00	0%	11/1/23	11/1/26
2	Reporting	Develop monthly reports describing work completed, challenges, and strategies for reaching remaining project objectives. Develop Final Report	Quarterly and Final Reports	\$15,000.00	\$0.00	\$0.00	\$15,000.00	\$11,250.00	\$0.00	0%	11/1/23	11/1/26
B	Category (b): Land Purchase/Easement											
1				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%		
C	Category (c): Planning/Design/Engineering/Environmental Documentation											
1	Final Design /Plans	The Final Design task consists of all work necessary to develop construction implementation documents including the final design plans, technical specifications, and opinion of probable construction cost. Topographic survey information at the tank sites will be collected for design as well as a geotechnical reports. The drawings will be updated based on comments received on the 60% drawings.	Topographic Survey, Geotechnical Report, 60% design plans, 60% technical specifications, Final design plans, final technical specifications, opinion of probable costs	\$123,750.00	\$0.00	\$0.00	\$123,750.00	\$92,812.50	\$0.00	0%	11/1/23	12/1/24
2	Project Performance Monitoring Plan	Develop Monitoring Plan to include goals and measurable objectives	Final Monitoring Plan	\$2,100.00	\$0.00	\$0.00	\$2,100.00	\$1,575.00	\$0.00	0%	11/1/23	12/1/23
2	Environmental Documentation: CEQA	Complete environmental review pursuant to CEQA. Prepare all necessary environmental documentation. Since constrution is taking place on previously disturbed land, it is anticipated to be a NOE.	Environmental Information Form approved by DWR	\$17,500.00	\$0.00	\$0.00	\$17,500.00	\$13,125.00	\$0.00	0%	12/1/23	5/1/24
3	Environmental Documentation: NEPA (if required)	N/A		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%		
4	Permit Development	Geotechnical Permit fees for borings.	Permit	\$1,200.00	\$0.00	\$0.00	\$1,200.00	\$900.00	\$0.00	0%	4/1/24	5/1/24
D	Category (d): Construction/Implementation											
1	Contract Services	The project will be publicly let out for bid, and a construction contractor will be selected per a bid process in conformance with State and Federal requirements. Bid period services include advertising bids, responding to contractor questions and comments, conducting site visits, conducting the bid opening, reviewing contractor bids, and preparing the letter of recommendation for award, once all the Contractor certifications and licenses have been checked.	Bid Documents; Proof of Advertisement; Award of Contract; Notice to Proceed	\$14,000.00	\$0.00	\$0.00	\$14,000.00	\$10,500.00	\$0.00	0%	12/1/24	3/1/25
2	Construction Administration	The Construction Management Services task includes all support services necessary to manage the implementation of the project. Construction will be overseen by the selected engineering firm, and they will be responsible for ensuring compliance with contract documents, measuring quantities, approving pay requests, responding to requests for information, processing contract change orders, and documenting the construction for the final reports.	Construction Management Logs; Completed construction administration tasks documented in monthly progress reports; DWR Certificate of Project Completion	\$122,500.00	\$0.00	\$0.00	\$122,500.00	\$91,875.00	\$0.00	0%	6/1/25	9/1/26
3	Mobilization and Site Preparation	The water storage tank construction includes contractor mobilization to the site including set up of temporary signage, aquiring equipment, and traffic control planning.	Contractor Invoice(s)	\$60,000.00	\$0.00	\$0.00	\$60,000.00	\$45,000.00	\$0.00	0%	6/1/25	9/1/25
4	Project Construction/Implementation:	This task is for construction of the project by a licensed contractor. The proposed project features the construction and installation of a 60,000-gallon tank. The proposed project will also include the installation of water storage tank level monitoring and control equipment, pump station monitoring and control equipment, telemetry equipment, system alarms, and associated central control equipment.	Contractor Invoice(s)	\$555,000.00	\$0.00	\$0.00	\$555,000.00	\$416,250.00	\$0.00	0%	6/1/25	9/1/26
5	Project Signage	Creation of a sign for tank site	Photo of sign	\$2,000.00	\$0.00	\$0.00	\$2,000.00	\$1,500.00	\$0.00	0%	8/1/26	9/1/26
6	Project Close Out, Inspection & Demobilization	Inspect project components and establish that work is complete. Verify that all project components have been installed and are functioning as specified will be conducted as part of construction inspection and project closeout. Conduct project completion photo monitoring. Prepare record drawings.	As-Built and Record Drawings; Project completion site photos	\$10,000.00	\$0.00	\$0.00	\$10,000.00	\$7,500.00	\$0.00	0%	9/1/26	11/1/26
7	Project Performance Monitoring	The performance of the project will be monitored in accordance to the Monitoring Plan using the following measurement tools and methods: Design plans will be reviewed 4 times at 30%, 60% 90% and final design stages. The target will be to ensure reliable water storage protected agains possible high magnitude earthquakes, lighting strikes, electrical failure, wildfire, and unlawfule intrusion to serve the City's residents.		\$2,100.00	\$0.00	\$0.00	\$2,100.00	\$1,575.00	\$0.00	0%	11/1/26	11/1/27
	Total North Coast Resource Partnership IRWM Grant Request			\$947,950.00	\$0.00	\$0.00	\$947,950.00	\$710,962.50	\$0.00			
	Percentage of Total Project Cost			100%	0%	0%	100%	75%	0%			

BUDGET DETAIL

Row (a) Direct Project Administration Costs					
Project Management Type	Personnel by Discipline	Number of Hours	Hourly Wage	% of Cost *	Total Admin Cost
Labor	Engineer	120	\$190		\$22,800
Labor	Engineer	50	\$190		\$15,000
Labor					
Materials					
Equipment					
Total					\$37,800
* What is the percentage based on (including total amounts)?		n/a			
* How was the percentage of cost determined?		n/a			

\$39,900

Row (b) Land Purchase/Easement

Row (c) Planning/Design/Engineering & Environmental Documentation					
Personnel (Discipline)	Major Task Name	Number of Hours	Hourly Wage	Total Cost	
Engineering Consultant	Final Design Plans (30% Design)	150	\$ 175	\$26,250	
Engineering Consultant	Final Design Plans (60% Design)	150	\$ 175	\$26,250	
Engineering Consultant	Final Design Plans (100% Design)	150	\$ 175	\$26,250	
Sub-Consultant (2 Person Team)	Final Design Plans (Geotechnical Report)	60	\$ 500	\$30,000	
Sub-Consultant	Final Design Plans (Topographic Survey)	75	\$ 200	\$15,000	
Engineering Consultant	Project Performance Monitoring Plan	12	\$ 175	\$2,100	
Engineering Consultant	Environmental Documentation: CEQA	100	\$ 175	\$17,500	
Sub-Consultant	Permit Development (Geotechnical Permit Fees)	1	\$ 1,200	\$1,200	
Total				\$144,550	

Row (d) Construction/Implementation				
Personnel (Discipline)	Work Task and Sub-Task (from Work Task Table)	Number of Hours	Hourly Wage	Total Cost
Engineering Consultant	Contract Services	80	\$ 175	\$14,000
Engineering Consultant	Construction Administration	700	\$175	\$122,500
Contractor and Engineering Consultant	Project Close Out, Inspection & Demobilization	50	\$ 200	\$10,000
Engineering Consultant	Project Performance Monitoring	12	\$ 175	\$2,100
Materials and Equipment	Work Task and Sub-Task (from Work Task Table)	Number of Units	Unit Cost	
Contractor Mobilization and Demobilization	Mobilization and Site Preparation	30	\$ 2,000	\$60,000
Existing Tank Demolition ((2) 5,000 tanks and foundation)	Project Construction/Implementation	1	\$ 25,000	\$25,000
Erosion and Sediment Control	Project Construction/Implementation	1	\$ 40,000	\$40,000
Site piping and appurtenances	Project Construction/Implementation	1	\$ 150,000	\$150,000
Foundation Installation for 60,000 gallon Tank	Project Construction/Implementation	1	\$ 80,000	\$80,000
60,000 Gallon Tank Erection, including cathodic protection system	Project Construction/Implementation:	1	\$ 135,000	\$135,000
60,000 Gallon Tank Disinfection and system pressure testing	Project Construction/Implementation:	1	\$ 25,000	\$25,000
SCADA Installation	Project Construction/Implementation:	1	\$ 100,000	\$100,000
Project Signage	Project Signage	1	\$ 2,000	\$2,000
Total				\$617,000



ORGANIZATION INFORMATION

1. **Project Name:**
Big Lagoon CSD Water Storage Improvements
2. **Applicant Organization Name:**
Big Lagoon Community Services District
3. **Contact Name/Title**
Name: William Wenger
Title: Chair
Email: bill@biglagooncsd.com
Phone Number (include area code): 707-496-9688
4. **Organization Address (City, County, State, Zip Code):**
PO Box 847, Trinidad, Humboldt, CA 95570
5. **Organization Type**
☒ Public agency
☐ 501(c)(3) Non-profit organization
☐ Public utility
☐ Federally recognized Indian Tribe
☐ California State Indian Tribe listed on the Native American Heritage Commission's California Tribal Consultation List
☐ Mutual water company
☐ Other:
6. **Authorized Representative** (if different from the contact's name)
Name:
Title:
Email:
Phone Number (include area code):
7. **List all projects the organization is submitting to the NCRP for this Solicitation in order of priority.**
Big Lagoon CSD Water Storage Improvements
8. **Organization Information Notes:**



ELIGIBILITY

1. North Coast Resource Partnership Goals and Objectives

GOAL 1: INTRAREGIONAL COOPERATION & ADAPTIVE MANAGEMENT

- ☒ Objective 1 - Respect local autonomy and local knowledge in Plan and project development and implementation
- ☒ Objective 2 - Provide an ongoing framework for inclusive, efficient intraregional cooperation and effective, accountable NCRP project implementation
- ☐ Objective 3 - Integrate Traditional Ecological Knowledge in collaboration with Tribes to incorporate these practices into North Coast Projects and Plans

GOAL 2: ECONOMIC VITALITY

- ☒ Objective 4 - Ensure that economically disadvantaged communities are supported and that project implementation enhances the economic vitality of disadvantaged communities by improving built and natural infrastructure systems and promoting adequate housing
- ☐ Objective 5 - Conserve and improve the economic benefits of North Coast Region working landscapes and natural areas

GOAL 3: ECOSYSTEM CONSERVATION AND ENHANCEMENT

- ☐ Objective 6 – Conserve, enhance, and restore watersheds and aquatic ecosystems, including functions, habitats, and elements that support biological diversity
- ☐ Objective 7 - Enhance salmonid populations by conserving, enhancing, and restoring required habitats and watershed processes

GOAL 4: BENEFICIAL USES OF WATER

- ☒ Objective 8 - Ensure water supply reliability and quality for municipal, domestic, agricultural, Tribal, and recreational uses while minimizing impacts to sensitive resources
- ☒ Objective 9 - Improve drinking water quality and water related infrastructure to protect public health, with a focus on economically disadvantaged communities
- ☐ Objective 10 - Protect groundwater resources from over-drafting and contamination

GOAL 5: CLIMATE ADAPTATION & ENERGY INDEPENDENCE

- ☒ Objective 11 - Address climate change effects, impacts, vulnerabilities, including droughts, fires, floods, and sea level rise. Develop adaptation strategies for local and regional sectors to improve air and water quality and promote public health
- ☐ Objective 12 - Promote local energy independence, water/ energy use efficiency, GHG emission reduction, and jobs creation

GOAL 6: PUBLIC SAFETY

- ☐ Objective 13 - Improve flood protection, forest and community resiliency to reduce the public safety impacts associated with floods and wildfires



2. Does the project have a minimum 15-year useful life?

- a) ☒ yes ☐ no
- b) If yes, will the organization be able to provide compliance documentation outlined in the instructions should the project be selected as a Priority Project?
- ☒ yes ☐ no

3. Other Eligibility Requirements and Documentation

CALIFORNIA GROUNDWATER MANAGEMENT SUSTAINABILITY COMPLIANCE

- a) Does the project directly affect groundwater levels or quality?
- ☐ yes ☒ no
- b) If yes, will the organization be able to provide compliance documentation outlined in the instructions including a Groundwater Sustainability Agency letter of support, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?
- ☐ yes ☐ no

CASGEM COMPLIANCE

- a) Does the project overlie a medium or high groundwater basin as prioritized by DWR?
- ☐ yes ☒ no
- b) If yes, list the groundwater basin and CASGEM priority:
- c) If yes, please specify the name of the organization that is the designated monitoring entity:
- d) If yes, please specify whether the local Groundwater Sustainability Agency has endorsed the project:

URBAN WATER MANAGEMENT PLAN

- a) Is the organization required to file an Urban Water Management Plan (UWMP)?
- ☐ yes ☒ no
- b) If yes, has DWR verified the current 2020 UWMP?
- ☐ yes ☐ no
- c) If the 2020 UWMP has not been verified by DWR, explain and provide anticipated date for verification:
- d) Has DWR verified a water loss audit report in accordance with SB 555 as submitted by the urban water supplier?
- ☐ yes ☐ no
- e) Does the urban water supplier meet the water meter requirements of CWC 525?
- ☐ yes ☐ no
- f) Does the urban water supplier meet the State Water Resources Control Board's Water Conservation and Production Reporting requirement?
- ☐ yes ☐ no



- g) If yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?

☐ yes ☐ no

AGRICULTURAL WATER MANAGEMENT PLAN

- a) Is the organization – or any organization that will receive funding from the project – required to file an Agricultural Water Management Plan (AWMP)?
- ☐ yes ☒ no
- b) If yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?

☐ yes ☐ no

SURFACE WATER DIVERSION REPORTS

- a) Is the organization required to file State Water Resources Control Board (SWRCB) annual surface water diversion reports per the requirements in CWC Part 5.1?
- ☐ yes ☒ no
- b) If yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?

☐ yes ☐ no

STORM WATER MANAGEMENT PLAN

- a) Is the project a stormwater and/or dry weather runoff capture project?
- ☐ yes ☒ no
- b) If yes, does the project benefit a Disadvantaged Community with a population of 20,000 or less?
- ☐ yes ☐ no
- c) If this is a stormwater/dry weather runoff project but does not benefit a small DAC population, please provide documentation that the project has been included in a Stormwater Resource Plan that has been incorporated into the NCRP IRWM Plan:
- d) If no, will the organization be able to provide documentation that the project is included in a Stormwater Resource Plan that has been incorporated into the NCRP IRWM Plan, should the project be selected as a Priority Project?

☐ yes ☐ no



4. Eligible Project Type under 2022 IRWM Grant Solicitation

- ☐ Water reuse and recycling for non-potable reuse and direct and indirect potable reuse
- ☐ Water-use efficiency and water conservation
- ☒ Local and regional surface and underground water storage, including groundwater aquifer cleanup or recharge projects
- ☐ Regional water conveyance facilities that improve integration of separate water systems
- ☒ Watershed protection, restoration, and management projects, including projects that reduce the risk of wildfire or improve water supply reliability
- ☐ Stormwater resource management projects to reduce, manage, treat, or capture rainwater or stormwater
- ☐ Stormwater resource management projects that provide multiple benefits such as water quality, water supply, flood control, or open space
- ☐ Decision support tools that evaluate the benefits and costs of multi-benefit stormwater projects
- ☐ Stormwater resource management projects to implement a stormwater resource plan
- ☐ Conjunctive use of surface and groundwater storage facilities
- ☒ Decision support tools to model regional water management strategies to account for climate change and other changes in regional demand and supply projections
- ☐ Improvement of water quality, including drinking water treatment and distribution, groundwater and aquifer remediation, matching water quality to water use, wastewater treatment, water pollution prevention, and management of urban and agricultural runoff
- ☐ Regional projects or programs as defined by the IRWM Planning Act (Water Code §10537)
- ☐ Other:

5. Describe how the project provides a benefit that meets at least one of the Statewide Priorities as defined in DWR's [Final 2022 Guidelines](#) (see page 7) and Tribal priorities as defined by the NCRP?

The project will meet the Climate Resilience priority by advancing and expanding conjunctive management of water supply storage. The increase in storage will supply the area with additional water to fight drought-driven wildfires in the area. The Drought Preparedness priority will be met by creating a more sustainable and resilient water supply in the event of droughts. The project will meet priority 5 demonstrating the involvement of a disadvantaged community



CERTIFICATION OF AUTHORITY

By signing below, the Authorized Representative executing the certificate on behalf of the Project Sponsor affirmatively represents that s/he has the requisite legal authority to do so on behalf of the Project Sponsor. The Authorized Representative executing this proposal on behalf of the project sponsor understands that the NCRP is relying on this representation in receiving and considering this proposal. The person signing below hereby acknowledges that s/he has read the entire NCRP 2022 Project Review and Selection Process Guidelines and the NCRP 2022 Proposition 1 IRWM Round 2 Project Application & Instructions documents and has complied with all requirements listed therein.

Official Authorized to Sign for Proposal

A handwritten signature in black ink, consisting of the letters "WKW" followed by a long, horizontal, wavy line.

Signature

11/4/2022

Date

Big Lagoon CSD Water Storage Improvements Project

Big Lagoon Community Services District

North Coast Resource Partnership Proposition 1 Round 2

Technical Attachments

Table of Contents

1. Exhibit A: Technical Memorandum
2. Exhibit B: Letter of Support

1. Exhibit A: Technical Memorandum

Exhibit A includes the technical memorandum for the Big Lagoon CSD Water Storage Improvements Project. This memorandum provides project background, project improvement recommendations, an opinion on conceptual cost analysis, and the project status and next steps.

Technical Memorandum

October 25, 2022

To	Big Lagoon Community Services District	Contact No.	707-267-2244
Copy to	Hannah Gidanian, GHD	Email	Rebecca.crow@ghd.com
From	Rebecca Crow, PE	Project No.	12590356
Project Name	Big Lagoon CSD Water Storage Improvements		
Subject	Water Storage Tank Size Analysis		

1. Introduction

The Big Lagoon Community Services District (District) Humboldt County, CA is supplied water from a single groundwater extraction well near the Big Lagoon Elementary School that fills two 5,000-gallon storage tanks. The District has little backup resiliency should the well fail and need repair or require that a new well be drilled and severely lacks enough storage for any type of fire fighting.

Big Lagoon Community Services District is applying for the North Coast Resources Partnership Prop 1 Round 2 grant to increase their storage, provide redundancy and increase fire storage, and has requested technical assistance in completing the grant. The purpose of this memo is to investigate storage volume options for community resiliency, consider water quality management needs and make recommendations on new water storage tank size and develop a cost estimate.

2. Big Lagoon Community Services District Background

The Big Lagoon CSD manages a water system that was installed for the Big Lagoon subdivision in 1962; the Big Lagoon CSD acquired the water system from a private owner in 1999. The water system's original storage capacity was 23,000 gallons and consisted of a 20,000-gallon redwood tank and a 3,000-gallon pressurized tank. Over time the redwood tank deteriorated, and in 2010 the two tanks were replaced with two 5,000-gallon plastic tanks. The reason given for downsizing storage capacity was cost. It was what the District could afford at the time.

These 5,000-gallon tanks supply water to the distribution system that is connected to 42 customers, one of which is Big Lagoon Elementary School. Chlorine is added continuously as the water enters the tanks through a positive displacement diaphragm feeder. The District's distribution system consists of approximately 1.6 miles of six-inch asbestos cement pipe. The water distribution system has several fire hydrants, but the amount of water in storage is insufficient for fighting any type of fire of extended duration. The relatively small amount of storage for the Big Lagoon CSD system provides very little backup storage resiliency should the well fail and need repair or require that a new well be drilled.

Well production is estimated at up to a maximum of 70,000 gpd (approximately 50 gallons per minute if continuous) based on available records. However, it is important to note that well production can be variable based on seasonal rainfall that affects groundwater elevation and supply to the well. The condition of the well can also affect production. The historical production values may represent the maximum capacity of the well and should not be relied on as the potential sustainable yield under all conditions. Recent successive dry years have reduced groundwater elevations and many wells in the region have been

affected. According to the 2007 Department of Health Services (DHS) annual inspection report, the District produced approximately 1.7 million gallons of drinking water in 2005, which is roughly 5,000 gpd, which is 3.5 gallons per minute if continuous. The existing maximum daily demand is estimated at 15,000 gpd. Given the expected maximum well production and the relatively low demands, the well appears to be adequate to meet demand.

The Office of the State Fire Marshal strongly supports and recommends that the Big Lagoon Community Services District (CSD) seek any opportunities and funds available to bring the fire suppression water distribution system up to current code requirements. California Title 24 has specific minimum requirements for fire suppression water supply for schools, which are quite substantial and that is not being met for the Big Lagoon elementary school site. The existing 10,000 gallon storage volume is far below the minimum requirements for fire flow and provides insufficient storage during normal operations and emergency conditions as further discussed in the sections below:

3. Water Supply During Modes of Operation

Ideally, a tank for a community system should supply water during normal operations. When the source of supply is under emergency conditions such as when the source of supply is off line for a period of time, a system leak, or for fire fighting additional storage is needed. These operational conditions and how they affect storage are reviewed in the following sections:

3.1 Water Supply During Normal Operations

During normal operations, water is used at a variable rate throughout the day. The rate can increase significantly due to seasonal changes due to irrigation and during times of peak occupation such as holiday weekends. These variable demands are met through production from the well, plus water from storage. Within any day there is typically less use during the night-time hours than the daytime hours. For a system dominated by domestic uses, water use typically peaks in the morning when people are taking showers and preparing for work. Usage peaks again in the evening when people get home from work and wash dishes, wash laundry, and take showers. The working storage provides water needed to equalize the typical daily variations in water demand. The District does not have hourly demand data, but the peak hour demand during the day is typically 1.5 to 2 times the average demand during the day. If the source of supply is constant at the demand rate for a day, storage equal to about half of the daily demand is needed to equalize supply and demand. This varies based on the nature of the demand on any particular day, but this is a reasonable rule of thumb for planning.

Based on current District data the average daily demand is 5,000 gallons (about 3.5 gpm), with a maximum daily demand of 15,000 gallons (about 10.5 gpm). As a minimum, the storage tank sizing should be capable of meeting Maximum Day Demand (MDD) based on § 64554 of Title 17 of the California Code of Regulations. If the well were producing water at the maximum demand rate of 10.5 gpm to provide 15,000 gallons in a day, then a minimum of roughly 7,500 gallons of storage would be needed to equalize the supply and the demand. This assumes that supply is constant throughout the entire day.

This 7,500 is relatively small and given that the District currently has 10,000 gallons of storage and has not reported issues with meeting demands throughout the year, this estimate appears to be reasonable as a minimum amount of working storage. However, the sizing of a water tank for a community must not only consider working storage, but must consider supplying water during emergency conditions and water for fire fighting.

3.2 Water Supply During Emergency Conditions

Emergency conditions can occur when the supply of water from the wells goes offline for a period of time for maintenance, if there are line breaks, or if there are other circumstances that affect the supply of water available to the District. The water storage tank should be sized to provide a reasonable amount of water during likely emergency conditions. During an emergency condition when there is a loss of supply from the wells, it is anticipated the District will implement water rationing to reduce demand so that any water in storage can be available for essential uses for as long as possible.

There are many approaches that can be taken to consider emergency water storage. One is to consider a number of days of average or maximum day demands. For example, two days at maximum day demand would be 30,000 gallons which would also meet the average day demand for six days. Another approach is to consider the number of people in the district and their minimum water needs. Based on typical planning for emergency conditions, 50 gallons/person/day represents a water use that foregoes showers, laundry, toilet flushing, and all outdoor watering. With 42 customers with an average 2.6 people per household at the reduced rate, five days of emergency rationed storage would be approximately 27,300 gallons given current estimated population. This does not include potential demands at the school, however. How long water would last during emergency conditions depends on how much water was in the tank at the time of the onset of the emergency and the rate that the water was being consumed.

3.3 Water Supply During Fire Fighting

Water can also be stored for fighting fires. Like emergency storage, there are many approaches to considering how much water to provide for fire storage. It depends on the type and duration of a potential fire and the rate water may be needed for that fire, interpretation of codes and standards, types and sizes of structures, potential fire risks, cost, management of stored water, and other factors. Water for fire storage is meant to be in reserve and so a system can have a relatively large amount of storage, but little demand.

Most community systems have a single storage and distribution system for both potable uses and for fire fighting. This requires that all water in storage and in the distribution system be potable. The District recently considered a number of options for increasing fire storage capacity including having a tank containing non-potable firewater to be discharged into the distribution system during a fire emergency. This option would require that the system be disinfected before being brought back into service. This approach introduces multiple safety hazards and systems that use non potable water for fire fighting typically have storage and distribution systems that are separate from the potable system. This concept is most appropriate for certain industrial applications and not for a small community system. It is most logical for the District to maintain a combined potable and fire system containing only potable water.

The amount of water designated for fire storage can be very significant depending on the interpretation and application of codes and standards. In the case of the District, the school represents the greatest potential fire storage requirement based on codes. Based on strict interpretation of the California Fire Code Appendix BB, that a minimum fire flow for elementary school building is 3,250 gallons per minute for 3 hours. This results in 585,000 gallons of storage based on the structure type. This is a very large tank with a very high cost and managing the water quality in the tank would be challenging given the relatively small consumptive demands in the District. This amount of storage for the District is unreasonable given the circumstances of the District and the State Fire Marshall could allow a smaller amount of storage that would be much more reasonable to build and manage.

4. Recommended Project Improvements

The objective of the new tank is to increase the storage capacity to provide a reasonable amount of water to meet regular consumptive demands, provide the ability to have the well supply system off line for maintenance or repairs, and to provide a logical amount of fire storage, while properly maintaining water quality in the tank.

If the District were to equalize the maximum day demand, provide several days of maximum day emergency storage, and meet a strict interpretation of the fire code, the resulting tank would be well over 600,000 gallons. This is prohibitively expensive for a small community and the District should consider phasing storage improvements over time. It is recommended that the District start with a modest storage project and work with the State Fire Marshall to consider how to make other improvements over time to meet the fire protection intent of the state.

For a small system like Big Lagoon, a reasonable amount of storage that is both economical and manageable in terms of water quality would be 60,000-gallons. A tank of this size if full would meet typical maximum day demand for four days without well supply, average day demand for 12 days without well supply, or could provide 1,000 gpm for an hour for a fire. While this is only a first potential phase of system

improvements, it does provide six times more storage than the District currently has. It should be noted that the overall storage and distribution system should be evaluated to consider other needed system improvements for distribution and fire service and that the District should work closely with the State Fire Marshall on long term planning.

The quality of the water in a 60,000 gallon tank will be more challenging to manage than in the existing 10,000 gallon tanks and so it is recommended that a chlorine booster system be included on the outlet of the tank so that the residual can be appropriately adjusted as the water enters the distribution system. Careful management of this stored water would allow the District to adapt to longer term emergencies.

4.1 Opinion on Conceptual Cost

The Opinion of Conceptual Costs is presented in Table 1 below. The Opinion of Conceptual Costs will be updated with each design submittal. Big Lagoon CSD will apply for grant funding to complete implementation of this project.

Table 1: Opinion of Probable Cost for a 60,000-gallon Water Storage Tank

Item Name	Unit Quantity	Unit of Measure	Unit Cost	Cost Estimate Total
Task 1 - Project Management	232	HR	\$ 190	\$ 44,080
Task 2 - Final Survey and Engineering Design				
Sub-Task 2.1: Topographic Survey	75	HR	\$ 200	\$ 15,000
Sub-Task 2.2: Geotechnical Evaluation (Four Person Team)	50	HR	\$ 600	\$ 30,000
Sub-Task 2.2: Geotechnical Permit Fees (County Boring Permit)	1	EA	\$ 1,200	\$ 1,200
Sub-Task 2.3: 30% Engineering Design	150	HR	\$ 175	\$ 26,250
Sub-Task 2.4: 60% Engineering Design	150	HR	\$ 175	\$ 26,250
Task 3: NEPA Support and CEQA Categorical Exemption	100	HR	\$ 175	\$ 17,500
Task 4 Final Engineering Design	150	HR	\$ 175	\$ 26,250
Task 5: Bid Period Services	80	HR	\$ 175	\$ 14,000
Task 6: Construction Inspection and Management	700	HR	\$ 175	122,500
Task 7- Construction				
Sub-Task 7.1 - Contractor Mobilization and Demobilization	30	DAY	\$ 2,000	\$ 60,000
Sub-Task 7.2 - Erosion and Sediment Control	1	EA	\$ 40,000	\$ 40,000
Sub-Task 7.3 - Site piping and appurtenances	1	EA	\$ 150,000	\$ 150,000
Sub-Task 7.4 - Existing Tank Deconstruction (2 existing 5,000-gallon tanks)	2	EA	\$ 12,500	\$ 25,000
Sub-Task 7.5 - Foundation Installation for 60,000-gallon Tank	1	EA	\$ 80,000	\$ 80,000
Sub-Task 7.6 - 60,000-gallon Tank Erection, including cathodic protection system	1	EA	\$ 135,000	\$ 135,000
Sub-Task 7.7 - Tank Disinfection and system pressure testing	1	EA	\$ 25,000	\$ 25,000
Sub-Task 7.20 - SCADA Installation	1	EA	\$ 100,000	\$ 100,000
Task 8: Construction Project Closeout	50	HR	\$ 200	\$ 10,000
Total Project Cost				\$ 948,030

4.2 Permitting Requirements

In order to complete the recommended system improvements, the following permits would be required:

- CEQA – Project is expected to be eligible for a CEQA Initial Study/ Mitigated Negative Declaration (IS/MND). Under this task, the IS/MND would be prepared and filed with Humboldt County and the state clearinghouse. Compliance with AB 52 would also be conducted under this task.
- Humboldt County Building and Electrical Permits – Would be required for installing the new water storage tank, and building the new operation and maintenance structure.
- Humboldt County Grading Permit – Would be required for installing the new water storage tank.

5. Project Status and Next Steps

Securing funding for infrastructure projects is an important step for most utilities. First, eligible funding programs need to be identified based on factors such as governance structure and project type. Big Lagoon operates as a Community Services District, which is public, independent type of governance structure. As such, the following agencies are identified as potential project funders:

- State Water Resources Control Board (SWRCB)
- Department of Water Resources
- California Infrastructure and Economic Development Bank (I-Bank)
- United States Department of Agriculture
- North Coast Resource Partnership
- Rural Community Assistance Corporation

The District is currently in the process of applying for a North Coast Resource Partnership Prop 1 Round 2 Grant for a new water storage tank. The new tank will meet the new water usage demands of the District and increase the fire storage.

According to the Department of Forestry and Fire Protection Office of The State Fire Marshal, to bring the District's water system up to fire code additional projects will need to be implemented and are listed below:

- An additional 525,000 gallons of water storage
- A minimum of 3 hydrants with a maximum spacing of 400' between hydrants or 225' from any point of the elementary school building.
- A minimum of a 6" main for systems connected to hydrants. The size may be bigger depending on flow requirements. The District currently has a SWRCB application for a 6" main to be connected to the school.

Regards



Rebecca Crow, PE
Technical Director

2. Exhibit B: Letter of Support

Exhibit B contains a letter of support from CAL FIRE Humboldt Del Norte Unit for the Big Lagoon Community Services District (CSD) Water Storage Improvements Project.

**DEPARTMENT OF FORESTRY AND FIRE PROTECTION**

P.O. Box 944246
SACRAMENTO, CA 94244-2460
(916) 653-7772
Website: www.fire.ca.gov



April 23rd, 2021

Mr. William Wenger, Chair
Big Lagoon Community Services District

CAL FIRE Humboldt Del Norte Unit strongly supports and recommends that the Big Lagoon Community Services District (CSD) seek any opportunities and funds available to bring the fire suppression water distribution system up to current code requirements. The residential neighborhood and Big Lagoon School do not currently have an adequate water supply for sustainable fire suppression in the event of a significant fire. These existing conditions are a tremendous concern for the safety of our firefighters and the public they serve and protect. I am more than happy to assist however possible as this project moves forward.

Respectfully

Joshua Bennett

Joshua Bennett
Battalion Chief Trinidad

Cal Fire

Cell 707-599-4704

Humboldt Del Norte

josh.bennett@fire.ca.gov