Brown AND Caldwell

STATEMENT OF QUALIFICATIONS prepared for the County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

Fiscal Year 2025-2026

OS.1) Ecology

June 30, 2025 // RFQ# HRS 103D-304

Planning + Design + Construction

Water + Water Reuse

Wastewater

Water Resources

Program Management

65-1230 Mamalahoa Hwy., Ste. D-20A
Kamuela, HI 96743
T: 808.442.3306
www.brownandcaldwell.com

June 30, 2025

Ms. Laura Acasio
Administrator
County of Hawaii
Office of Sustainability, Climate, Equity and Resilience
25 Aupuni Street, Suite 1301
Hilo, Hawaii 96720

Subject: Statement of Qualifications and Expression of Interest for Professional Services for Fiscal Year 2025-2026

Dear Ms. Acasio,

Brown and Caldwell (BC) is pleased to submit our expression of interest and Statement of Qualifications (SOQ) presented in the Standard Form 330 format to the County of Hawaii, Office of Sustainability, Climate, Equity and Resilience (County). We are interested in providing professional services for category **OS.1) Ecology.**

We are also submitting separate SOQs for the following categories:

OS.3) Forestry (Watershed Management)

OS.5) General Natural Resources Management and Biological Sciences Series

BC has been dedicated to serving clients in Hawaii since the 1970s, establishing our Honolulu and Maui offices in 1989 and our Kamuela office in 2020. Over the years, BC has built long-term partnerships across Hawaii through local project delivery and effective engagement of our national experts. Our unique perspective comes from working with all eight Hawaii water and wastewater municipal agencies, various public works departments, and key State agencies, helping our staff develop appropriate water resources solutions for our Hawaii clients.

We appreciate the continued opportunity to work with the County and look forward to assisting you as you work to sustain the health of our aina and island community. Please feel free to contact me at 808.442.3306 or MSorensen@brwncald.com if you require any additional information. We look forward to further discussing how we may be of service to you.

Very truly yours,

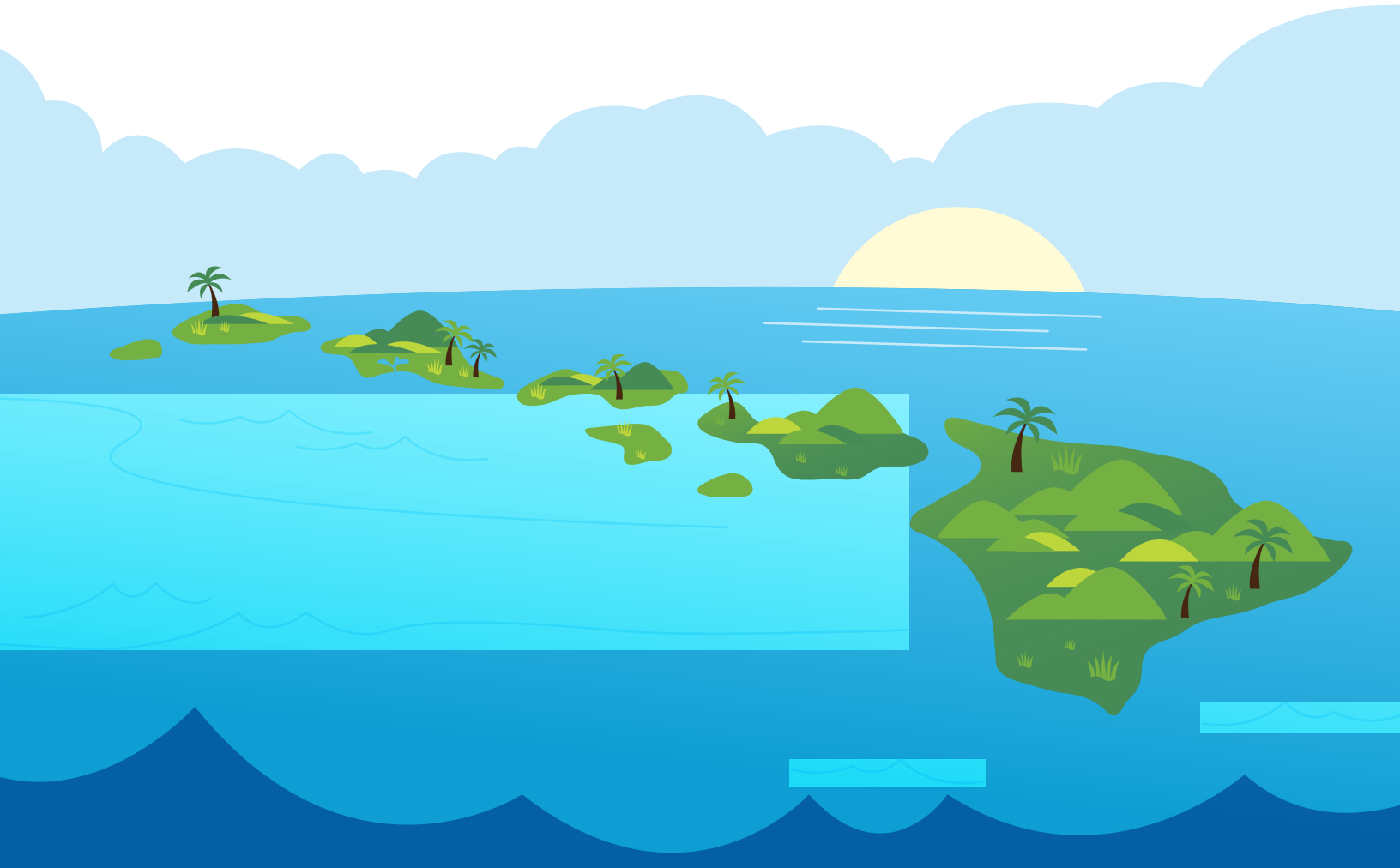
Brown and Caldwell

Michelle Sorensen, PE
Hawaii Island Director

Tom Myers, PE
Vice President/Pacific Area Director

Contract Specific Qualifications

PART I



Brown AND Caldwell

Contract Information, Point of Contact, Proposed Team, and Organizational Chart

SECTIONS A-D

Brown AND Caldwell

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience
Architect-Engineer Qualifications

PART I – CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. TITLE AND LOCATION *(City and State)*

Professional Services for Fiscal Year 2025-2026 // Hilo, Hawaii

2. PUBLIC NOTICE DATE	3. SOLICITATION OR PROJECT NUMBER
June 1, 2025	HRS 103D-304, OS.1) Ecology

B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE

Michelle Sorensen, PE, Hawaii Island Director

5. NAME OF FIRM

Brown and Caldwell

6. TELEPHONE NUMBER	7. FAX NUMBER	8. E-MAIL ADDRESS
808.442.3306	N/A	MSorensen@brwncald.com

C. PROPOSED TEAM *(Complete this section for the prime contractor and all key subcontractors.)*

	(Check)			9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
	PRIME	JV PARTNER	SUB-CONTRACTOR			
a.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	737 Bishop Street, Suite 3000, Pacific Guardian Center - Mauka Tower, Honolulu, HI 96813-4020	Professional Planning/ Engineering/Construction Services
b.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	1527 Cole Boulevard, Suite 300, Lakewood, CO 80401	Professional Planning/ Engineering/Construction Services
c.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	10777 Westheimer Road, Suite 975, Houston, TX 77042	Professional Planning/ Engineering/Construction Services
d.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	2 North Central Avenue, Suite 1600, Phoenix, AZ 85004	Professional Planning/ Engineering/Construction Services
e.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	11020 White Rock Road, Suite 200, Rancho Cordova, CA 95670	Professional Planning/ Engineering/Construction Services
f.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	701 Pike Street, Suite 1300, Seattle, WA 98101	Professional Planning/ Engineering/Construction Services
g.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	3454 West Clay Street, Richmond, VA 23452	Professional Planning/ Engineering/Construction Services
h.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	111 W St. John Street, Suite 1040, San Jose, CA 95113	Professional Planning/ Engineering/Construction Services
i.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	8144 Walnut Hill Lane, Suite 1075, Dallas, TX 75231	Professional Planning/ Engineering/Construction Services

j.	☒	☐	☐	Brown and Caldwell ☒ Check if Branch Office	1000 Wilshire Boulevard, Suite 1690 Los Angeles, CA 90017	Professional Planning/ Engineering/Construction Services
k.	☐	☐	☒	Birchline Planning LLC ☒ Check if Branch Office	3522 Udall Street San Diego, CA 92106	Urban Planning
l.	☐	☐	☒	INTERA ☒ Check if Branch Office	74 Kihapai Street Kailua, HI 96734	Hydrogeology and Geology

D. ORGANIZATIONAL CHART OF PROPOSED TEAM ☒ *(Attached)*

PRINCIPAL-IN-CHARGE
Tom Myers, PE

PROJECT OVERSIGHT
Dean Nakano

PROJECT MANAGER
Michelle Sorensen, PE
Audrey Cabrera, PE
Lauren Armstrong, AICP

QA/QC
Irina Constantinescu, PE, LEED AP

Specialists

WASTEWATER AND NATURAL SYSTEMS
Craig Lekven, PE

ONE WATER
Susan Mukai, PE, LEED AP BD+C
Lenise Marrero, PE*

WATER RESOURCES
Aylin Lewallen

WATER QUALITY
Clifton Bell, PE*, PG*

URBAN PLANNING
Juli Beth Hinds, AICP

STRATEGIC PLANNING
Damon Diessner

CLIMATE CHANGE AND RESILIENCE
Tess Sprague, PhD

FUNDING
Seema Chavan, PE*

GIS AND ASSET MANAGEMENT
Mike Simms

STORMWATER
Fiona van Ammers, PE, CPSWQ
Mike Flake, PE*, QSD/P

STRATEGIC COMMUNICATIONS
Rachel Garrett
Lauren Armstrong, AICP

HYDROGEOLOGY/GEOLOGY
Kristene Wilder, PG*, CHG*
Kevin Gooding, PE

HYDRAULICS/HYDRAULIC MODELING
Stan Kowalczyk, PE
Jaren Hiller, PE*, LEED AP

KEY // Hawaii Island Personnel · Other Hawaii Personnel · Subconsultant · *Professional license outside the State of Hawaii

Resumes of Key Personnel Proposed for this Contract

SECTION E

Brown AND Caldwell

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Tom Myers, PE	Principal-in-Charge	32	32

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Honolulu, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Environmental Engineering, 1994	Hawaii/Licensed Civil Engineer #9758; Exp 4/30/26

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
Trained in the Sandia Risk Assessment Methodology for Security of Water/Wastewater RAM-WSM; Water Environment Federation/Hawaii Water Environment Association; American Water Works Association

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Stormwater Management Program, Oahu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Principal-in-Charge. As a subconsultant, BC is providing scientific and engineering services to support the Dept. of Transportation, Highways Division, Oahu District (HDOT-Oahu). BC's work includes completing technical reviews and analyses, and providing questions, guidance, and recommendations throughout the total maximum daily load development process. Tasks include establishing land use delineations and Municipal Separate Stormwater Sewer System (MS4) boundaries such as identifying existing MS4 pollutant loads, developing watershed and receiving waterbody models, determining loading capacity, and assigning draft and final MS4 load allocations. Additionally, BC will support HDOT-Oahu in developing an Implementation and Monitoring Plan to achieve compliance with load allocations set by final TMDL requirements.

Total Contract Amount: $50K Client: State of Hawaii, Dept. of Transportation

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Water Resources Master Plan and Updates (GWA Program Management Office), Mangilao, Guam	2018	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Wastewater Collection System Task Leader. BC developed and implemented a comprehensive and accurate Water Resource Master Plan (WRMP) for the Guam Waterworks Authority in 2006. The Water Resource Master Plan provided a long-range planning basis for all Water Resource Systems and Facilities that assisted Guam Waterworks Authority in meeting water quality and environmental regulations. In 2016, the Guam Waterworks Authority received a grant to execute a Water Resources Master Plan Update (WRMPU) to assess Guam Waterworks Authority's progress toward achieving the recommendations outlined in the 2006 Water Resource Master Plan and develop a plan for the next 20 years to address capital improvements needed for source water alternatives and water and wastewater system improvements. The 2018 master plan update acknowledges ratepayer sensitivity to project affordability and incorporates schedule and budget details as guidance for future regulatory actions.

Total Contract Amount: WRMP - $5.3M | WRMPU - $2.4M Client: Guam Waterworks Authority

c.	**(1) TITLE AND LOCATION** *(City and State)* Kalanianaole Interceptor Sewer Rehabilitation Phases 1 and 2, Hilo, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Phase 1: 2004/Phase 2: 2017	**CONSTRUCTION** *(if applicable)* Phase 1: 2004/Phase 2: 2014
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** BC investigated alternatives, prepared construction bid documents, and provided inspection services during construction for the rehabilitation of approximately 5,000 linear feet of severely corroded gravity sewer, which was made of reinforced concrete pipe diameters ranging from 27- to 48-inches in diameter. Phase 1 design and construction was completed using open-trench construction to replace the original unlined reinforced concrete pipe with polyvinyl chloride pipe. For Phase 2, the County opted to use segmented slip lining, a trenchless method of sliding a new pipe into an existing pipe without having to bypass the flow of wastewater. Total Contract Amount: $1M Client: County of Hawaii, Dept. of Environmental Management		
d.	**(1) TITLE AND LOCATION** *(City and State)* Program Management Office, Mangilao, Guam	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2020	**CONSTRUCTION** *(if applicable)* 2020
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Engineer (Civil).** BC was program manager on a 7-year, $450M wastewater and water program, comprising development of a capital improvement plan; design development and procurement for water and wastewater projects; and project financing, asset management, and staff development. Included developing major improvements to 2 existing wastewater treatment plants as well as facility planning for 3 others; developing system-wide water and sewer hydraulic models; rehabilitation and repair of major wastewater collection systems; rehabilitation, repair, and development of groundwater well systems for potable water; operational improvements to a water treatment plant; backflow prevention; and advising on a Master Plan. Complied Federal Court mandates and addressed National Enforcement Investigations Center Findings of Significant Deficiencies in water and wastewater utility. Delivered conventional and design-build delivery packages for 15 wastewater and 30 water projects in the 5-year Capital Improvement Plan. Total Contract Amount: $22.9M Client: Guam Waterworks Authority		
e.	**(1) TITLE AND LOCATION** *(City and State)* Environmental Investigation of Emerging Contaminants Impacting Oahu's Aquifers and Related Technical Services Project, Honolulu, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** BC is supporting the Honolulu BWS with a prioritized review and development of treatment alternatives for high priority groundwater sites impacted by PFAS. BC will be developing a pilot test plan to evaluate GAC and IX media to compare treatment performance and operational characteristics at several impacted sites. Following development and state approval of the test plan, BC will assist with the installation and operation of the pilot testing equipment. Additionally, BC is working with BWS to develop a long-term, island-wide emerging contaminant management plan. Total Contract Amount: $4M Client: Honolulu Board of Water Supply		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Dean Nakano	Project Oversight	41	13

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Honolulu, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BA, Geology, 1977	N/A

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
American Water Works Association; Water Environment Federation/Hawaii Water Environment Association; National Incident Management System training

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Central Oahu Watershed Management Plan, Honolulu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. BC is developing the Central Oahu Watershed Management Plan (WMP) for the Honolulu Board of Water Supply. The overall goal of the Central Oahu WMP is to formulate an environmentally holistic, community-based, and economically viable WMP that provides a balance between preservation/management of Oahu's watersheds and the sustainable development and use of groundwater and surface water supplies. The plan has five objectives: (1) promote sustainable watersheds; (2) protect and enhance water quality and quantity; (3) protect Native Hawaiian rights and traditional practices; (4) facilitate public participation, education, and project implementation; and (5) meet future water demands at reasonable costs. The plan is prepared in coordination with the City and County of Honolulu (CCH), Dept. of Planning and Permitting and in accordance with the State Water Code Chapter 174C, HRS, and CCH Ordinance Chapter 30, ROH. The Central Oahu WMP is one of eight district WMP's that comprise the Oahu WMP.

Total Contract Amount: $625K Client: Honolulu Board of Water Supply

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
One Water Climate Adaptation Framework and Projects Plan, Honolulu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Oversight. The City's initiative, "One Water Climate Adaptation Framework and Projects Plan" (known as One Water Honolulu), focuses on the prioritization of One Water climate resilience initiatives to address critical infrastructure through the development of a Climate Adaptation Framework and a Collaboration Framework. It will integrate and facilitate the management of freshwater, wastewater, and stormwater as one asset, creating resource and financial efficiencies within the City. These efforts will lead to the identification of near-, mid-, and long-term projects that will require collaboration between agencies and proactive adaptation to climate change impacts in Oahu.

Total Contract Amount: $4M Client: City and County of Honolulu, Dept. of Environmental Services

c.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	Feasibility Study for East Maui Source Development, Maui Island, Hawaii	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
		2025	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm		
	Technical Advisor (Water Resources). BC provided the County of Maui with a feasibility study to assess existing capacity, refine future demand projections and evaluate viable water source alternatives that to help assure reliable potable water supply to address existing limitations and accommodate planned growth on the Central and Upcountry water systems. Also included is a stream restoration framework which will outline a long-range plan to analyze and address water availability in select waterways in the Haiku region diverted for irrigation by historic sugarcane operations. Stakeholder engagement occurred throughout the project. Total Contract Amount: $1.2M Client: County of Maui, Dept. of Water Supply, Water Resources and Planning Division		
d.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	Risk and Resiliency Assessment and Emergency Response Update, Hilo, Hawaii	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
		2022	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm		
	Technical Advisor (Water Resources). BC performed a risk and resiliency assessment that included an evaluation of County of Hawaii, Department of Water Supply (HDWS) seven largest systems that met the threshold for America's Water Infrastructure Act 2018 compliance requirements. BC developed a custom vulnerability assessment tool that evaluated HDWS's critical assets against the selected natural hazards and malevolent acts. The tool produced a prioritized risk score for each asset based on the identified threat and the results will be used to support HDWS's future improvement planning. BC also updated HDWS's Emergency Response Plan which included updates to the Action Plans to prepare for, respond to, and recover from an emergency event. Total Contract Amount: $535K Client: County of Hawaii, Dept. of Water Supply		
e.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation, Honolulu, Hawaii	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
		2019	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm		
	Principal Investigator. The Honolulu Board of Water Supply (BWS) and the Water Research Foundation (WRF) undertook a vulnerability assessment to identify and evaluate the potential impacts of climate change on current estimates of groundwater sustainable yield (the chief source of BWS's water supply), its pipelines and pumping system infrastructure, and strategies to address the anticipated changes. This project supported WRF's Climate Change Strategic Initiative to provide water utilities with a set of tools to assess vulnerabilities and develop applicable adaptation strategies. These strategies can be used as a guide for other utilities to evaluate and plan for the impact of climate change on water quantity, quality, and infrastructure. A scenario planning approach was used to evaluate the impacts of climate change and develop adaptive strategies using an iterative process to promote flexible decision making in the face of uncertainties and increase an organization's preparedness. This planning approach can be implemented for a range of potential changing conditions including future climate predictions, water supply demands, and economic development to promote flexibility to changing circumstances. Total Contract Amount: $275K Client: Honolulu Board of Water Supply/Water Research Foundation		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Michelle Sorensen, PE	Project Manager	23	9

15. FIRM NAME AND LOCATION *(City and State)*

Brown and Caldwell, Kamuela, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MBA, Master of Business Administration, 2024 BS, Civil Engineering, 1997	Hawaii/Licensed Civil Engineer #17346; Exp 4/30/26

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

American Water Works Association; Water Environment Federation/Hawaii Water Environment Association; Engineers & Geoscientists of British Columbia

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Feasibility Study for East Maui Source Development, Maui Island, Hawaii	2025	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. BC provided the County of Maui with a feasibility study to assess existing capacity, refine future demand projections and evaluate viable water source alternatives that to help assure reliable potable water supply to address existing limitations and accommodate planned growth on the Central and Upcountry water systems. Also included is a stream restoration framework which will outline a long-range plan to analyze and address water availability in select waterways in the Haiku region diverted for irrigation by historic sugarcane operations. Stakeholder engagement occurred throughout the project.

Total Contract Amount: $1.2M Client: County of Maui, Dept. of Water Supply, Water Resources and Planning Division

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Risk and Resiliency Assessment and Emergency Response Update, Hilo, Hawaii	2022	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Oversight and Client Service Manager. BC performed a risk and resiliency assessment that included an evaluation of County of Hawaii, Department of Water Supply (HDWS) seven largest systems that met the threshold for America's Water Infrastructure Act 2018 compliance requirements. BC developed a custom vulnerability assessment tool that evaluated HDWS's critical assets against the selected natural hazards and malevolent acts. The tool produced a prioritized risk score for each asset based on the identified threat and the results will be used to support HDWS's future improvement planning. BC also updated HDWS's Emergency Response Plan which included updates to the Action Plans to prepare for, respond to, and recover from an emergency event.

Total Contract Amount: $535K Client: County of Hawaii, Dept. of Water Supply

c.	**(1) TITLE AND LOCATION** *(City and State)* Water Systems Investment Plan, Lihue, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** BC is developing a geographic information system (GIS) and hydraulic model for the County of Kauai, Dept. of Water (KDOW) as part of the Water Systems Investment Plan (WSIP) project. The WSIP is a comprehensive master plan, identifying infrastructure and facility improvements in alignment with KDOW's long-range goals and objectives. BC is working with KDOW to develop a capital improvement program to address system improvements needed for water supply infrastructure and enterprise systems and prioritize projects to meet level of service objectives. Included in the project is a financial analysis including utility rates, development charges, and funding opportunities through local, State and Federal programs. A climate change impact assessment for sea level rise and storm surge is being conducted along with a desktop condition and resiliency assessment. Stakeholder engagement is planned throughout the project, including two Ka Pa'akai analyses to collect information on traditional and customary practices within the study area. Total Contract Amount: $2M Client: County of Kauai, Dept. of Water		
d.	**(1) TITLE AND LOCATION** *(City and State)* South Kohala Flood Study, Waikoloa and Puako, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** The South Kohala District on Hawaii Island faces significant flood risks due to intense rainfall events and urban development, which are overwhelming the area's stormwater infrastructure and low-lying coastal areas, and ultimately negatively impacting public and private property. BC is collaborating with COH DPW to create a comprehensive strategy to manage runoff and mitigate flooding in the region. This study aims to provide a thorough understanding of these risks and propose practical solutions to safeguard the area from future flood events. Total Contract Amount: $615K Client: County of Hawaii, Dept. of Public Works		
e.	**(1) TITLE AND LOCATION** *(City and State)* Water Resources Master Plan and Updates (GWA Program Management Office), Mangilao, Guam	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2018	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Task Manager/Project Engineer (Source Water, population and flow projections).** BC developed and implemented a comprehensive and accurate Water Resource Master Plan (WRMP) for the Guam Waterworks Authority in 2006. The Water Resource Master Plan provided a long-range planning basis for all Water Resource Systems and Facilities that assisted Guam Waterworks Authority in meeting water quality and environmental regulations. In 2016, the Guam Waterworks Authority received a grant to execute a Water Resources Master Plan Update (WRMPU) to assess Guam Waterworks Authority's progress toward achieving the recommendations outlined in the 2006 Water Resource Master Plan and develop a plan for the next 20 years to address capital improvements needed for source water alternatives and water and wastewater system improvements. The 2018 master plan update acknowledges ratepayer sensitivity to project affordability and incorporates schedule and budget details as guidance for future regulatory actions. Total Contract Amount: WRMP - $5.3M | WRMPU - $2.4M Client: Guam Waterworks Authority		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Audrey Cabrera, PE	Project Manager	15	15

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Wailuku, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Environmental Engineering, 2009 BA, Individualized Program in Chemistry, Mathematics, and Physics, 2009	Hawaii/Licensed Civil Engineer #16335; Exp 4/30/26

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
American Water Works Association, Hawaii Society of Professional Engineers Maui Chapter

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Water Resources Master Plan and Updates (GWA Program Management Office), Mangilao, Guam	2018	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Engineer (Civil). BC developed and implemented a comprehensive and accurate Water Resource Master Plan (WRMP) for the Guam Waterworks Authority in 2006. The Water Resource Master Plan provided a long-range planning basis for all Water Resource Systems and Facilities that assisted Guam Waterworks Authority in meeting water quality and environmental regulations. In 2016, the Guam Waterworks Authority received a grant to execute a Water Resources Master Plan Update (WRMPU) to assess Guam Waterworks Authority's progress toward achieving the recommendations outlined in the 2006 Water Resource Master Plan and develop a plan for the next 20 years to address capital improvements needed for source water alternatives and water and wastewater system improvements. The 2018 master plan update acknowledges ratepayer sensitivity to project affordability and incorporates schedule and budget details as guidance for future regulatory actions.

Total Contract Amount: WRMP - $5.3M | WRMPU - $2.4M Client: Guam Waterworks Authority

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Honokaa Wastewater Treatment Plant Upgrade Project, Honokaa, Hawaii	2015	2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Engineer (Civil). BC designed upgrades to the Honokaa Wastewater Treatment Plant, located on Hawaii Island, to accommodate increased flows that will result from the abandonment of large capacity cesspools in the community. The existing wastewater treatment plant consisted of two facultative ponds with three injection wells for effluent disposal. The design included modification to three existing injection wells and construction of three additional injection wells to provide the necessary disposal capacity. The upgrade project increases the facility capacity from 56,800-gallons per day to 200,000-gallons per day by converting the system to a partial mix aerated lagoon treatment process.

Total Contract Amount: $1.2M Client: County of Hawaii, Dept. of Environmental Management

c.	**(1) TITLE AND LOCATION** *(City and State)* Engineering Services to Design a Wastewater Treatment Collection and Disposal System for the Pahala Wastewater Treatment Plant and Post-Design, Pahala, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2024	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Engineer (Civil).** BC provided engineering services for the closure of large capacity cesspools and construction of new wastewater infrastructure in Pahala, to meet updated effluent discharge requirements dictated by the USEPA. BC completed the planning phase, which included a preliminary engineering report, environmental assessment, regulatory and permit identification, site alternatives evaluation and land acquisition, community outreach, and conceptual alternatives for the design, construction, and commissioning of the system. While the infrastructure was originally designed around a natural treatment system to minimize environmental impacts, simplify maintenance requirements, and achieve reliability, alternative treatment technologies were evaluated to address additional constraints related to affordability and unique geology of the area. Total Contract Amount: $4.3M Client: County of Hawaii, Dept. of Environmental Management		
d.	**(1) TITLE AND LOCATION** *(City and State)* North Kona Sewage Pump Station Preliminary Design, Hawaii Island, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2019	**CONSTRUCTION** *(if applicable)* Forthcoming
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Engineer (Civil).** The County of Hawaii, Dept. of Environmental Management is planning to construct a new regional sewage pump station in the West Hawaii Business Park to serve the North Kona Sewer System. The North Kona Sewage Pump Station will be built-out as development progresses. Work includes a preliminary design to accommodate historical sites in the area, defining the service area and projected flows, and development of a preliminary design report. Anticipated future work includes detailed design, permitting support, community outreach and services during bidding/construction. Total Contract Amount: $334K Client: County of Hawaii, Dept. of Environmental Management		
e.	**(1) TITLE AND LOCATION** *(City and State)* Lead and Copper Rule Revisions and Improvements Compliance, Hawaii County, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** BC is helping DWS comply with the U.S. Environmental Protection Agency's Lead and Copper Rule Improvements. Over this multi-year contract, BC and subconsultant EnviroServices & Training Center will: prepare lead service line inventories; develop a Lead Service Line Replacement Plan; create a sample site list of residential and commercial properties, and school and child care facilities; conduct tap water sampling; and perform any tasks needed for compliance. Total Contract Amount: $3.5M Client: County of Hawaii, Dept. of Water Supply		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Lauren Armstrong, AICP	Project Manager and Strategic Communications Specialist	16	2

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Kamuela, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MUP, Master of Urban and Regional Planning, 2012 BA, Environmental Studies and Anthropology, 2007	N/A

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
American Institute of Certified Planners (AICP)

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Feasibility Study for East Maui Source Development, Maui Island, Hawaii	2025	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Deputy Project Manager. BC provided the County of Maui with a feasibility study to assess existing capacity, refine future demand projections and evaluate viable water source alternatives that to help assure reliable potable water supply to address existing limitations and accommodate planned growth on the Central and Upcountry water systems. Also included is a stream restoration framework which will outline a long-range plan to analyze and address water availability in select waterways in the Haiku region diverted for irrigation by historic sugarcane operations. Stakeholder engagement occurred throughout the project.

Total Contract Amount: $1.2M Client: County of Maui, Dept. of Water Supply, Water Resources and Planning Division

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Water Systems Investment Plan, Lihue, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Strategic Planning. BC is developing a geographic information system (GIS) and hydraulic model for the County of Kauai, Dept. of Water (KDOW) as part of the Water Systems Investment Plan (WSIP) project. The WSIP is a comprehensive master plan, identifying infrastructure and facility improvements in alignment with KDOW's long-range goals and objectives. BC is working with KDOW to develop a capital improvement program to address system improvements needed for water supply infrastructure and enterprise systems and prioritize projects to meet level of service objectives. Included in the project is a financial analysis including utility rates, development charges, and funding opportunities through local, State and Federal programs. A climate change impact assessment for sea level rise and storm surge is being conducted along with a desktop condition and resiliency assessment. Stakeholder engagement is planned throughout the project, including two Ka Pa'akai analyses to collect information on traditional and customary practices within the study area.

Total Contract Amount: $2M Client: County of Kauai, Dept. of Water

c.	**(1) TITLE AND LOCATION** *(City and State)* Hoaloha Park Adaptation Plan, Kahului, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2025	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Planning and Stakeholder Engagement.** BC supported SSFM International in developing the Hoaloha Park Adaptation Plan. The plan included a site and infrastructure vulnerability assessment, user impact evaluation, and adaptation planning specific to Hoaloha Park, an urban beach park located at Kahului Harbor, Maui. The plan employed an adaptive pathways approach driven by site-specific and infrastructure-specific vulnerabilities, considering park users. BC's scope involved preparing technical memorandums to document opportunities and constraints for future use by assessing existing site conditions and infrastructure against future climate-related hazards such as sea-level rise, hurricanes, and wildfires. Additionally, the plan analyzed the effects of increased future use of the park by residents and nearby employees due to planned redevelopment projects in the vicinity. The team recommended adaptation strategies, including improving sand dunes and relocating infrastructure likely to be affected by sea level rise. Total Contract Amount: $60K Client: County of Maui, Dept. of Parks and Recreation		
d.	**(1) TITLE AND LOCATION** *(City and State)* Koolaupoko Climate Resilience and Adaptation Project, Kaneohe, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Planning and Stakeholder Engagement.** BC is providing engineering services to support the University of Hawaii to conduct a Military Installation Resilience Review focused on the Koolaupoko district, located on Oahu's southeastern shore. The project overall objective is to identify climate related threats and hazards to the community surrounding Kaneohe military base and to present recommendations that enhance resilience and adaption capacity of vulnerable resources within the project study area. Hawaii's unique geographic location makes the islands particularly susceptible to a myriad of climate change impacts. Sea level rise and attendant local erosion and flooding, extreme heat, altered precipitation patterns, and growing wildfire are evident and will become more prevalent in the future, placing an undue burden on coastal communities and resources across the State. In order to avoid widespread environmental catastrophe, development needs to prioritize sustainability and increasing climate resilience. The study will culminate with the three regional implementation strategies identified, mapped, which will be considered "pilot projects." Each pilot project will recommend mitigation measures to better inform efforts and benefit surrounding communities. Total Contract Amount: $235K Client: Research Corporation of the University of Hawaii		
e.	**(1) TITLE AND LOCATION** *(City and State)* Lead and Copper Rule Revisions and Improvements Compliance, Hawaii County, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Deputy Project Manager.** BC is helping DWS comply with the U.S. Environmental Protection Agency's Lead and Copper Rule Improvements. Over this multi-year contract, BC and subconsultant EnviroServices & Training Center will: prepare lead service line inventories; develop a Lead Service Line Replacement Plan; create a sample site list of residential and commercial properties, and school and child care facilities; conduct tap water sampling; and perform any tasks needed for compliance. Total Contract Amount: $3.5M Client: County of Hawaii, Dept. of Water Supply		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Irina Constantinescu, PE, LEED AP	QA/QC	20	12

15. FIRM NAME AND LOCATION *(City and State)*

Brown and Caldwell, Wailuku, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Civil Engineering (Water Resources), 2006 BS, Environmental Engineering, 2005 BA, French, 2005	Hawaii/Licensed Civil Engineer #14926; Exp. 4/30/26 *California/Licensed Civil Engineer #73228 *California/Licensed Traffic Engineer #2622

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Leadership in Energy and Environmental Design, Accredited Professional (LEED AP); Hawaii National Society of Professional Engineers

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Water Resources Master Plan and Updates (GWA Program Management Office), Mangilao, Guam	2018	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Engineer (Civil). BC developed and implemented a comprehensive and accurate Water Resource Master Plan (WRMP) for the Guam Waterworks Authority in 2006. The Water Resource Master Plan provided a long-range planning basis for all Water Resource Systems and Facilities that assisted Guam Waterworks Authority in meeting water quality and environmental regulations. In 2016, the Guam Waterworks Authority received a grant to execute a Water Resources Master Plan Update (WRMPU) to assess Guam Waterworks Authority's progress toward achieving the recommendations outlined in the 2006 Water Resource Master Plan and develop a plan for the next 20 years to address capital improvements needed for source water alternatives and water and wastewater system improvements. The 2018 master plan update acknowledges ratepayer sensitivity to project affordability and incorporates schedule and budget details as guidance for future regulatory actions.

Total Contract Amount: WRMP - $5.3M | WRMPU - $2.4M Client: Guam Waterworks Authority

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Honokaa Wastewater Treatment Plant Upgrade Project, Honokaa, Hawaii	2015	2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Engineer (Civil). BC designed upgrades to the Honokaa Wastewater Treatment Plant, located on Hawaii Island, to accommodate increased flows that will result from the abandonment of large capacity cesspools in the community. The existing wastewater treatment plant consisted of two facultative ponds with three injection wells for effluent disposal. The design included modification to three existing injection wells and construction of three additional injection wells to provide the necessary disposal capacity. The upgrade project increases the facility capacity from 56,800-gallons per day to 200,000-gallons per day by converting the system to a partial mix aerated lagoon treatment process.

Total Contract Amount: $1.2M Client: County of Hawaii, Dept. of Environmental Management

c.	**(1) TITLE AND LOCATION** *(City and State)* Engineering Services to Design a Wastewater Treatment Collection and Disposal System for the Pahala Wastewater Treatment Plant and Post-Design, Pahala, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2024	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Project Engineer (Civil) /Deputy PM.** BC provided engineering services for the closure of large capacity cesspools and construction of new wastewater infrastructure in Pahala, to meet updated effluent discharge requirements dictated by the USEPA. BC completed the planning phase, which included a preliminary engineering report, environmental assessment, regulatory and permit identification, site alternatives evaluation and land acquisition, community outreach, and conceptual alternatives for the design, construction, and commissioning of the system. While the infrastructure was originally designed around a natural treatment system to minimize environmental impacts, simplify maintenance requirements, and achieve reliability, alternative treatment technologies were evaluated to address additional constraints related to affordability and unique geology of the area. Total Contract Amount: $4.3M Client: County of Hawaii, Dept. of Environmental Management		
d.	**(1) TITLE AND LOCATION** *(City and State)* North Kona Sewage Pump Station Preliminary Design, Hawaii Island, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2019	**CONSTRUCTION** *(if applicable)* Forthcoming
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Deputy Project Manager.** The County of Hawaii, Dept. of Environmental Management is planning to construct a new regional sewage pump station in the West Hawaii Business Park to serve the North Kona Sewer System. The North Kona Sewage Pump Station will be built-out as development progresses. Work includes a preliminary design to accommodate historical sites in the area, defining the service area and projected flows, and development of a preliminary design report. Anticipated future work includes detailed design, permitting support, community outreach and services during bidding/construction. Total Contract Amount: $334K Client: County of Hawaii, Dept. of Environmental Management		
e.	**(1) TITLE AND LOCATION** *(City and State)* Lead and Copper Rule Revisions and Improvements Compliance, Hawaii County, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Project Oversight.** BC is helping DWS comply with the U.S. Environmental Protection Agency's Lead and Copper Rule Improvements. Over this multi-year contract, BC and subconsultant EnviroServices & Training Center will: prepare lead service line inventories; develop a Lead Service Line Replacement Plan; create a sample site list of residential and commercial properties, and school and child care facilities; conduct tap water sampling; and perform any tasks needed for compliance. Total Contract Amount: $3.5M Client: County of Hawaii, Dept. of Water Supply		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Craig Lekven, PE	Wastewater and Natural Systems Specialist	41	21

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Houston, Texas

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil Engineering, 1984	Hawaii/Licensed Civil Engineer #13003; Exp 4/30/26

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
N/A

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Feasibility Study for East Maui Source Development, Maui Island, Hawaii	2025	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Technical Advisor (Water Systems). BC provided the County of Maui with a feasibility study to assess existing capacity, refine future demand projections and evaluate viable water source alternatives that to help assure reliable potable water supply to address existing limitations and accommodate planned growth on the Central and Upcountry water systems. Also included is a stream restoration framework which will outline a long-range plan to analyze and address water availability in select waterways in the Haiku region diverted for irrigation by historic sugarcane operations. Stakeholder engagement occurred throughout the project.

Total Contract Amount: $1.2M Client: County of Maui, Dept. of Water Supply, Water Resources and Planning Division

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Honokaa Wastewater Treatment Plant Upgrade Project, Honokaa, Hawaii	2015	2012

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. BC designed upgrades to the Honokaa Wastewater Treatment Plant, located on Hawaii Island, to accommodate increased flows that will result from the abandonment of large capacity cesspools in the community. The existing wastewater treatment plant consisted of two facultative ponds with three injection wells for effluent disposal. The design included modification to three existing injection wells and construction of three additional injection wells to provide the necessary disposal capacity. The upgrade project increases the facility capacity from 56,800-gallons per day to 200,000-gallons per day by converting the system to a partial mix aerated lagoon treatment process.

Total Contract Amount: $1.2M Client: County of Hawaii, Dept. of Environmental Management

c.	**(1) TITLE AND LOCATION** *(City and State)* Engineering Services to Design a Wastewater Treatment Collection and Disposal System for the Pahala Wastewater Treatment Plant and Post-Design, Pahala, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2024	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Program Manager.** BC provided engineering services for the closure of large capacity cesspools and construction of new wastewater infrastructure in Pahala, to meet updated effluent discharge requirements dictated by the USEPA. BC completed the planning phase, which included a preliminary engineering report, environmental assessment, regulatory and permit identification, site alternatives evaluation and land acquisition, community outreach, and conceptual alternatives for the design, construction, and commissioning of the system. While the infrastructure was originally designed around a natural treatment system to minimize environmental impacts, simplify maintenance requirements, and achieve reliability, alternative treatment technologies were evaluated to address additional constraints related to affordability and unique geology of the area. Total Contract Amount: $4.3M Client: County of Hawaii, Dept. of Environmental Management		
d.	**(1) TITLE AND LOCATION** *(City and State)* Engineering Services to Design a Wastewater Treatment Collection and Disposal System for the Naalehu Wastewater Treatment Plant, Naalehu, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2024	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** BC is providing engineering services for the closure of large capacity cesspools and the installation of a new wastewater collection system and treatment plant with disposal system in Naalehu, Hawaii. The scope of work for this project includes scheduling to ensure compliance with U.S. Environmental Protection Agency mandates, community outreach, preliminary engineering report, Phase 1 environmental site assessment, an environmental assessment and coordination, land acquisition. Total Contract Amount: $1.2M Client: County of Hawaii, Dept. of Environmental Management		
e.	**(1) TITLE AND LOCATION** *(City and State)* Water Resources Master Plan and Updates (GWA Program Management Office), Mangilao, Guam	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2018	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Engineer (Civil).** BC developed and implemented a comprehensive and accurate Water Resource Master Plan (WRMP) for the Guam Waterworks Authority in 2006. The Water Resource Master Plan provided a long-range planning basis for all Water Resource Systems and Facilities that assisted Guam Waterworks Authority in meeting water quality and environmental regulations. In 2016, the Guam Waterworks Authority received a grant to execute a Water Resources Master Plan Update (WRMPU) to assess Guam Waterworks Authority's progress toward achieving the recommendations outlined in the 2006 Water Resource Master Plan and develop a plan for the next 20 years to address capital improvements needed for source water alternatives and water and wastewater system improvements. The 2018 master plan update acknowledges ratepayer sensitivity to project affordability and incorporates schedule and budget details as guidance for future regulatory actions. Total Contract Amount: WRMP - $5.3M | WRMPU - $2.4M Client: Guam Waterworks Authority		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Susan Mukai, PE, LEED AP BD+C	One Water Specialist	13	13

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Honolulu, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Civil Engineering, 2011 BS, Civil Engineering, 2010	Hawaii/Licensed Civil Engineer #16031; Exp 4/30/26

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
Leadership in Energy and Environmental Design (LEED AP BD+C) #10593995; City and County of Honolulu Certified Water Pollution Plan Preparer and Erosion and Sediment Control Plan Coordinator; American Water Works Association, Hawaii Section Secretary; American Society of Civil Engineers

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Central Oahu Watershed Management Plan, Honolulu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Engineer (Civil). BC is developing the Central Oahu Watershed Management Plan (WMP) for the Honolulu Board of Water Supply. The overall goal of the Central Oahu WMP is to formulate an environmentally holistic, community-based, and economically viable WMP that provides a balance between preservation/management of Oahu's watersheds and the sustainable development and use of groundwater and surface water supplies. The plan has five objectives: (1) promote sustainable watersheds; (2) protect and enhance water quality and quantity; (3) protect Native Hawaiian rights and traditional practices; (4) facilitate public participation, education, and project implementation; and (5) meet future water demands at reasonable costs. The plan is prepared in coordination with the City and County of Honolulu (CCH), Dept. of Planning and Permitting and in accordance with the State Water Code Chapter 174C, HRS, and CCH Ordinance Chapter 30, ROH. The Central Oahu WMP is one of eight district WMP's that comprise the Oahu WMP.

Total Contract Amount: $625K Client: Honolulu Board of Water Supply

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
One Water Climate Adaptation Framework and Projects Plan, Honolulu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. The City's initiative, "One Water Climate Adaptation Framework and Projects Plan" (known as One Water Honolulu), focuses on the prioritization of One Water climate resilience initiatives to address critical infrastructure through the development of a Climate Adaptation Framework and a Collaboration Framework. It will integrate and facilitate the management of freshwater, wastewater, and stormwater as one asset, creating resource and financial efficiencies within the City. These efforts will lead to the identification of near-, mid-, and long-term projects that will require collaboration between agencies and proactive adaptation to climate change impacts in Oahu.

Total Contract Amount: $4M Client: City and County of Honolulu, Dept. of Environmental Services

c.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	Risk and Resiliency Assessment and Emergency Response Update, Hilo, Hawaii	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		2022	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**		
	Project Manager. BC performed a risk and resiliency assessment that included an evaluation of County of Hawaii, Department of Water Supply (HDWS) seven largest systems that met the threshold for America's Water Infrastructure Act 2018 compliance requirements. BC developed a custom vulnerability assessment tool that evaluated HDWS's critical assets against the selected natural hazards and malevolent acts. The tool produced a prioritized risk score for each asset based on the identified threat and the results will be used to support HDWS's future improvement planning. BC also updated HDWS's Emergency Response Plan which included updates to the Action Plans to prepare for, respond to, and recover from an emergency event. Total Contract Amount: $535K Client: County of Hawaii, Dept. of Water Supply		
d.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation, Honolulu, Hawaii	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		2019	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**		
	Project Engineer (Civil). The Honolulu Board of Water Supply (BWS) and the Water Research Foundation (WRF) undertook a vulnerability assessment to identify and evaluate the potential impacts of climate change on current estimates of groundwater sustainable yield (the chief source of BWS's water supply), its pipelines and pumping system infrastructure, and strategies to address the anticipated changes. This project supported WRF's Climate Change Strategic Initiative to provide water utilities with a set of tools to assess vulnerabilities and develop applicable adaptation strategies. These strategies can be used as a guide for other utilities to evaluate and plan for the impact of climate change on water quantity, quality, and infrastructure. A scenario planning approach was used to evaluate the impacts of climate change and develop adaptive strategies using an iterative process to promote flexible decision making in the face of uncertainties and increase an organization's preparedness. This planning approach can be implemented for a range of potential changing conditions including future climate predictions, water supply demands, and economic development to promote flexibility to changing circumstances. Total Contract Amount: $275K Client: Honolulu Board of Water Supply/Water Research Foundation		
e.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	Water Systems Investment Plan, Lihue, Hawaii	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		Ongoing	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**		
	Project Engineer (Civil). BC is developing a geographic information system (GIS) and hydraulic model for the County of Kauai, Dept. of Water (KDOW) as part of the Water Systems Investment Plan (WSIP) project. The WSIP is a comprehensive master plan, identifying infrastructure and facility improvements in alignment with KDOW's long-range goals and objectives. BC is working with KDOW to develop a capital improvement program to address system improvements needed for water supply infrastructure and enterprise systems and prioritize projects to meet level of service objectives. Included in the project is a financial analysis including utility rates, development charges, and funding opportunities through local, State and Federal programs. A climate change impact assessment for sea level rise and storm surge is being conducted along with a desktop condition and resiliency assessment. Stakeholder engagement is planned throughout the project, including two Ka Pa'akai analyses to collect information on traditional and customary practices within the study area. Total Contract Amount: $2M Client: County of Kauai, Dept. of Water		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Lenise Marrero, PE*	One Water Specialist	20	2

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Los Angeles, California

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil Engineering, 2002	*California/Professional Civil Engineer #C78266 *Puerto Rico/Professional Civil Engineer #28020

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Marrero, L., Vanyo, K.; Holmer, M.; Westphal, K (2022); "One Water Strategies Drive Water Reuse." American Water Works Association, Journal AWWA, Vol 114, Number 7, Pages 71-74. September 2022. Poosti, A., Marrero, L., Jackson, A. (2019); "One Water LA: A Guide Towards Sustainable and Integrated Water Management." California Water Environment Association, Clean Water Magazine, Issue 3, Pages 30-34. June 2019. Poosti, A., Marrero, L., Falcon, P., Wiersema, I., Wagner, J. (2019); "One Water LA: A Collaborative Approach to Integrated Water Management." American Water Works Association, Journal AWWA, Vol 111, Number 4, Pages 44-51. April 2019

19. RELEVANT PROJECTS

	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
a.	One Water Climate Adaptation Framework and Projects Plan, Honolulu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

One Water Subject Matter Expert. The City's initiative, "One Water Climate Adaptation Framework and Projects Plan" (known as One Water Honolulu), focuses on the prioritization of One Water climate resilience initiatives to address critical infrastructure through the development of a Climate Adaptation Framework and a Collaboration Framework. It will integrate and facilitate the management of freshwater, wastewater, and stormwater as one asset, creating resource and financial efficiencies within the City. These efforts will lead to the identification of near-, mid-, and long-term projects that will require collaboration between agencies and proactive adaptation to climate change impacts in Oahu.

Total Contract Amount: $4M Client: City and County of Honolulu, Dept. of Environmental Services

	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
b.	Pure Water Southern California Program, Carson, California	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Stakeholder Outreach and Equity Lead. A joint venture of BC and another firm were chosen to provide program and project management support and engineering design services for the Pure Water Southern California Program, one of the largest water reuse programs in the world. Anticipated for water delivery by 2032 , the program will reuse the largest untapped wastewater source in the region that currently flows to the ocean to increase water resiliency, enhance water quality, and fuel economic growth. The joint venture team will lead environmental compliance efforts and the design and construction of advanced purification facilities at the Sanitation District's Joint Water Pollution Control Plant. The new facilities will incorporate an innovative 3-step procedure to purify water, including membrane bioreactors, reverse osmosis, and an ultraviolet light/advanced oxidation process. Up to 60 miles of new pipelines and associated pump stations will be designed and constructed to transport purified water from the plant to the region's groundwater basins, industrial facilities, and two of Metropolitan's water treatment plants.

Total Contract Amount: $10.3M Client: Metropolitan Water District of Southern California

c.	**(1) TITLE AND LOCATION** *(City and State)* One Water LA 2040 Plan Implementation, Los Angeles, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2021	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☐ **Check if project performed with current firm** **Program Manager.** Lenise was responsible for leading the City of Los Angeles through the process of implementing the One Water LA 2040 Plan and related initiatives. She led a team of engineers in performing technical studies, data analysis, stakeholder engagement, interdepartmental and interagency coordination, and related integration activities. She was responsible for working closely with other City groups to streamline internal policies and processes to create multi benefit projects and to help achieve the water goals set in LA's Green New Deal. Lenise led development of innovative research and feasibility studies to implement One Water LA Plan's ambitious recommended portfolio which focuses on maximizing water reuse, increasing water conservation, and improving stormwater and runoff management through green infrastructure and BMPs. Building on One Water LA work, she championed the development and implementation of climate change adaptation and mitigation measures and recommendations for changes in design criteria to incorporate risk adaptation for wastewater and stormwater infrastructure into the 10-year Capital Improvement Program. Total Contract Amount: $6.8M Client: City of Los Angeles, LA Sanitation & Environment		
d.	**(1) TITLE AND LOCATION** *(City and State)* One Water LA 2040 Plan Development, Los Angeles, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2018	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☐ **Check if project performed with current firm** **Project Manager.** Lenise led scoping and development of the One Water LA 2040 Plan—a collaborative approach to develop a long-term plan for managing the City's watersheds, water resources, and water facilities in an environmentally, economically, and socially beneficial manner. Over the course of several years, she focused on building trust with community groups/individuals, non-governmental organizations, academia, faith-based, business and industry organizations, providing opportunities for meaningful engagement to develop the recommendations in the One Water LA Plan. The One Water LA Plan was completed in 2018. Over 500 stakeholders representing 200+ organizations were and remain engaged in One Water LA. Lenise managed scope, budget, and schedule for One Water LA and related consulting contracts, involving more than 20 consulting firms. She led the development of wastewater and stormwater facilities plans, technical memoranda, innovative research and technical studies on flow management strategies, recycled water optimization, stormwater capture, and compliance with Municipal Separate Storm Sewer System Permit. Total Contract Amount: Unknown Client: City of Los Angeles, LA Sanitation & Environment		
e.	**(1) TITLE AND LOCATION** *(City and State)* Wastewater Facilities Plans (One Water LA 2040 Plan Vol. 2), Los Angeles, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2018	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☐ **Check if project performed with current firm** **Project Manager.** Lenise led the development of a Wastewater Facilities Plan for the City's four water reclamation plants. These plans addressed improvements needed at each facility to maximize water reuse production capabilities and to adapt to multiple reuse scenarios. The plans were used as a basis for the City's Hyperion 2035 efforts, the Donald C. Tillman Water Reclamation Plant Advanced Water Purification Facility project, and improvements at Los Angeles-Glendale Water Reclamation Plant. Total Contract Amount: $880K Client: City of Los Angeles, LA Sanitation & Environment		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Aylin Lewallen	Water Resources Specialist	26	15

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Denver, Colorado

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Environmental Science, Indiana University, 1998 MPA, Public Affairs, Indiana University, 1998 BS, Natural Resources, Cornell University, 1995	N/A

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
N/A

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Hare Snipe Creek Watershed Study, Raleigh, North Carolina	2023	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Stream Assessment Leader. BC provided integrated flooding mitigation and water quality planning, while establishing standards for conducting future watershed studies within the City. The study was guided by the Equity Framework, which established City staff goals and priorities to integrate more equitable practices into watershed study development. BC piloted stream assessment technologies to evaluate results and provide a recommendation for the remaining stream assessments. BC developed a PCSWMM model to identify areas of flooding and developed a spatial water quality model, WIP Tools, to calculation nutrient and sediment loadings. BC identified over 60 project concepts that were evaluated to reduce flooding and/or provide water quality benefits. BC also developed a methodology document to guide consistent future watershed studies.

Total Contract Amount: $1M Client: City of Raleigh, Engineering Services Dept.

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Citywide Watershed and Green Infrastructure Program, Atlanta, Georgia	2025	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. BC prepared a 50-year Comprehensive Watershed Management Plan for management of Atlanta's stormwater system, stream water quality, and strategies for the City's watersheds for permitting compliance and integrated water resources management. BC developed a three-tiered capital improvement project for the City to estimate long-term budget needs for stormwater system management and water quality improvements. Green Infrastructure improvements were proposed for drainage relief and water quality benefits. All three capital improvement projects were combined along with operation and maintenance, monitoring program, and regulatory compliance requirements into an overall annual program and budget over the next 50 years for the City's stormwater management program.

Total Contract Amount: $5M Client: City of Atlanta, Dept. of Watershed Management

c.	**(1) TITLE AND LOCATION** *(City and State)* Watershed Improvement Implementation Program, Duluth, Georgia	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2014	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** Provided management and served as a technical specialist on a team evaluating the capital improvement plan project lists generated from past watershed improvement plans (WIPs) for project design and construction. The program includes evaluating projects for water quality improvement, public education potential, ease of acquiring land, and bundling value for maximizing improvements at the watershed level. Total Contract Amount: $2M Client: Gwinnett County		
d.	**(1) TITLE AND LOCATION** *(City and State)* Colorado Water Plan Update, Denver, Colorado	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2021	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Technical Support.** Comprehensive update of the state's water plan update for future water supply and other demand needs while considering municipal, industrial, agricultural, and environmental flow needs for the state. Provided research and review on topics related to forest health and how can affect watershed health and water supply quality and quantity. Assisted with developing a survey for interviewing identified experts in the forest health field and developing a white paper for use in the Water Plan update. Total Contract Amount: $4M Client: Colorado Water Conservation Board		
e.	**(1) TITLE AND LOCATION** *(City and State)* Spanaway Watershed-Scale Stormwater Management Plan, Pierce County, Washington	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2017	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Technical Specialist.** This plan was developed to meet NPDESMS4/TMDL requirements. Identified water quality concerns include excessive phosphorus, low dissolved oxygen, and elevated bacteria. Elevated nutrient concentrations in the lake water increase cyanobacteria blooms and the excessive growth of rooted aquatic plants. Surface water-groundwater interactions are important in this watershed due to permeable soils, "gaining" lakes and creeks, and the presence of approximately 1,000 stormwater infiltration systems, 100 stormwater ponds, and 4,000 septic systems. Project involved monitoring plan development; surface water, groundwater and lake bottom sediment monitoring; HSPF and MODFLOW modeling; simulation of existing, historical, and future watershed conditions; evaluation of future water quality conditions; and development of retrofit strategies to improve lake water quality and comply with state water quality standards. Total Contract Amount: $350K Client: Pierce County		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Clifton Bell, PE*, PG*	Water Quality Specialist	33	13

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Richmond, Virginia

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Environmental Engineering, 1995 BS, Geology, 1990	*Virginia/Licensed Environmental Engineer #0402031741 *Virginia/Professional Geologist #2801001409

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
National Association of Clean Water Agencies, Water Quality Committee; Data Science Certification, Johns Hopkins University

19. RELEVANT PROJECTS

a.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
	Zone of Mixing Dilution and Assimilative Capacity Study for the Hilo, Papaikou, and Kulaimano Wastewater Treatment Plants, Hilo, Papaikou, and Kulaimano, Hawaii	2020	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Technical Advisor. BC conducted a mixing zone dilution analysis study for the 3 County of Hawaii wastewater treatment plants with ocean outfalls. The study included field data collection and modeling for all 3 WWTPs to determine a dilution factor at the edge of the zone of mixing, as required by their National Pollutant Discharge Elimination System permits. Comprehensive data collected during the outfall dilution field study was used to document environmental conditions, evaluate dilution, support numerical modeling, and provide guidance and assistance with NPDES permit renewal.

Total Contract Amount: $787K Client: County of Hawaii, Dept. of Environmental Management

b.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
	Lahaina Wastewater Reclamation Facility NPDES Permit, Maui, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Technical Advisor. In response to the United States District Court in Honolulu ruling regarding effluent discharged to groundwater via injection wells at the Lahaina Wastewater Reclamation Facility, BC is reviewing and preparing comments on draft NPDES permits issued by the State of Hawaii, Dept. of Health. BC will develop a capital and operational costs, and schedule for the County to implement NPDES permit provisions.

Total Contract Amount: $90K Client: County of Maui, Dept. of Environmental Management, Wastewater Reclamation Division

c.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
	Pollutant Source Tracking and Reduction, Durham, North Carolina	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Lead Scientist. Designed and led scientific investigations to identify the causes and solutions of water quality problems in two urban streams. Techniques employed included water quality sampling, microbial source tracking, thermal imaging, risk assessment, and dry weather screening. The study led to practical improvement recommendations including fixing major water/sewer breaks and restoring stream segments impacted by urban stormwater flows.

Total Contract Amount: $292K Client: City of Durham

d.	**(1) TITLE AND LOCATION** *(City and State)* NPDES Permitting and Water Quality Management Planning, Rochester, New Hampshire	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** Performing water quality monitoring and analysis to support National Pollutant Discharge Elimination System permitting, 303(d) listing, and water quality standards development. This project has included evaluation of nutrient controls on macrophytes and macroalgae in a non-tidal river and coastal/estuarine system. It also involves extensive interaction with Environmental Protection Agency and state regulators to advocate scientifically defensible regulatory actions. Total Contract Amount: $50K Client: City of Rochester and Great Bay Municipal Alliance		
e.	**(1) TITLE AND LOCATION** *(City and State)* Comprehensive Review of United States Environmental Protection Agency Nutrient Permitting Methods, Washington, DC	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2015	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Co-Principal Investigator.** BC led national-level review of Environmental Protection Agency methods for developing National Pollutant Discharge Elimination System permit limits for nutrients. Evaluated modeling and statistical methods for derived waste load allocations and water quality-based effluent limits. BC also provided detailed recommendations for modification of methods to account for differences between nutrients and toxics, as well as developed recommendations for a comprehensive nutrient permitting framework. Total Contract Amount: $70K Client: National Association of Clean Water Agencies		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Damon Diessner	Strategic Planning Specialist	48	17

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Seattle, Washington

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BA, Philosophy, 1975 Rocky Mountain Program for Senior Executives in State and Local Government, 1990	N/A

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
N/A

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
DPW Baseyard Facilities Master Plan, Maui, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Technical Advisor. BC was contracted by the County of Maui to complete a Master Plan for Department of Public Works (DPW) Highways Division Baseyard Facilities. The Master Plan identifies long-term solutions that enable DPW Highways Division to maintain safe roads, bridges, and drainage facilities. This project includes five key tasks: 1) Baseyard Facilities Needs Assessment, 2) Facilities Location Alternatives, 3) Preferred Alternative and Implementation, 4) Baseyards Master Plan and 5) Moloka'i Cemetery Plan. Stakeholder input throughout the process is guided by a stakeholder engagement plan that outlines goals, strategies, and key messaging. The scope of services for this project includes strategic assessment and planning to support infrastructure and operational improvements for DPW Highways Division baseyards. The Baseyards Master Plan identifies and prioritizes actions that support County and State initiatives, and best serve the residents, visitors, and other departments in Maui County. To address sea level rise vulnerability and capacity issues, the Moloka'i Cemetery Plan task evaluates potential expansion alternatives and gathers stakeholder input to determine a preferred site.

Total Contract Amount: $808K Client: County of Maui, Dept. of Public Works, Highways Division

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Stormwater Utility Formation and Rate Study, Coeur d'Alene, Idaho	2023	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Policy Advisor. BC provided utility development support to the City of Coeur d'Alene (City). The stormwater infrastructure varied substantially throughout the city. BC provided policy and evaluation support to identify and select a rate structure to accommodate different levels of service and connectivity with the City's stormwater system. BC used the connectivity evaluation methodology as a new approach to expedite the City's ability to accurately determine the utility's customer base. This effort resulted in a defensible fee structure that the City could justifiably apply across the City to commercial and residential customers. Provided early project advice regarding various rate structure types and the applicability of those rate structure alternatives to the City.

Total Contract Amount: $18K Client: City of Coeur d'Alene

c.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	Stormwater Master Plan, Shoreline, Washington	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		2017	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**		
	Strategic Advisor. Work included developing alternatives and policy recommendations regarding risk assessment, levels of service, asset management, operations and maintenance strategies, potential funding sources, intergovernmental coordination, water quality programs and general National Pollutant Discharge Elimination System Permit compliance. Facilitated client discussions regarding use of utility funds on private property, lateral connections from private property to the public stormwater systems, stormwater rates, operations and maintenance costs and staffing levels, inspections and enforcement for privately managed stormwater systems, and low-impact development measures. Total Contract Amount: $723K Client: City of Shoreline		
d.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	Stormwater Management Action Plan, Mukilteo, Washington	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		Ongoing	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**		
	Strategic Advisor. Currently working with the City to develop a Stormwater Management Action Plan for at least one high priority area that identifies: targeted or customized implementation of stormwater management actions; the need for stormwater facility retrofits; a proposed implementation schedule and budget sources; short term actions (i.e. actions to be accomplished within six years); long-term actions (i.e. actions to be accomplished within seven to twenty years); and processes to adaptively manage the plan. This effort includes reviewing relevant past plans and stormwater data both from Mukilteo and other stakeholders (National Marine Fisheries Service, Washington Department of Fish and Wildlife, Washington State Department of Ecology, Tribes, local governments, and others) to develop a comprehensive watershed management plan. Total Contract Amount: $150K Client: City of Mukilteo		
e.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	NPDES Phase II Stormwater Program Development, Mount Vernon, Washington	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		2016	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**		
	Senior Advisor. Helped the City of Mount Vernon meet the requirements of the State of Washington Department of Ecology's National Pollutant Discharge Elimination System Permit. Work included preparing policy analyses and advising decision makers, conducting gap analyses, program review, staff training, and preparing code updates to ensure compliance with the National Pollutant Discharge Elimination System regulations and the protection of surface and ground waters. BC has been working with the City of Mount Vernon to complete various stormwater project from 2008 to present. Total Contract Amount: $135K Client: City of Mount Vernon		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Tess Sprague, PhD	Climate Change and Resilience Specialist	12	5

15. FIRM NAME AND LOCATION *(City and State)*

Brown and Caldwell, Dallas, Texas

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
PhD, Water Risk Governance, 2016 MSc, Water Science, Policy, and Management, 2011 BA, Political Science/International Relations, 2010	N/A

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

American Water Works Association (AWWA), Vice Chair Climate Change Committee; American Society of Adaptation Professionals; Oxford Water Network; Alliance for Global Water Adaptation; Certifications: AWWA Utility Risk and Resilience Certification Program

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
One Water Climate Adaptation Framework and Projects Plan, Honolulu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Climate Resilience Subject Matter Expert. The City's initiative, "One Water Climate Adaptation Framework and Projects Plan" (known as One Water Honolulu), focuses on the prioritization of One Water climate resilience initiatives to address critical infrastructure through the development of a Climate Adaptation Framework and a Collaboration Framework. It will integrate and facilitate the management of freshwater, wastewater, and stormwater as one asset, creating resource and financial efficiencies within the City. These efforts will lead to the identification of near-, mid-, and long-term projects that will require collaboration between agencies and proactive adaptation to climate change impacts in Oahu.

Total Contract Amount: $4M Client: City and County of Honolulu, Dept. of Environmental Services

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Healthy Waters Plan, Vancouver, British Columbia, Canada	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Task Lead (Leading Practices Review). BC is working with the City to develop a city-wide action and strategic investment plan to guide policy, regulation, advocacy and long-range investments in sewer and stormwater management. The project includes assessing the current state of the City's sewer and stormwater systems, identifying preliminary risks, and integrating climate change projections and growth predictions. BC is now developing a comprehensive, long-term city-wide plan based on a multi-stakeholder consultation process and appropriate level of analysis to inform strategic investments in green and gray infrastructure, watershed planning frameworks, and policy regulation.

Total Contract Amount: $4.7M Client: City of Vancouver

c.

(1) TITLE AND LOCATION *(City and State)*
Hoaloha Park Adaptation Plan, Kahului, Hawaii

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
2025	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Climate Resilience Subject Matter Expert. BC supported SSFM International in developing the Hoaloha Park Adaptation Plan. The plan included a site and infrastructure vulnerability assessment, user impact evaluation, and adaptation planning specific to Hoaloha Park, an urban beach park located at Kahului Harbor, Maui. The plan employed an adaptive pathways approach driven by site-specific and infrastructure-specific vulnerabilities, considering park users. BC's scope involved preparing technical memorandums to document opportunities and constraints for future use by assessing existing site conditions and infrastructure against future climate-related hazards such as sea-level rise, hurricanes, and wildfires. Additionally, the plan analyzed the effects of increased future use of the park by residents and nearby employees due to planned redevelopment projects in the vicinity. The team recommended adaptation strategies, including improving sand dunes and relocating infrastructure likely to be affected by sea level rise.

Total Contract Amount: $60K Client: County of Maui, Dept. of Parks and Recreation

d.

(1) TITLE AND LOCATION *(City and State)*
Koolaupoko Climate Resilience and Adaptation Project, Kaneohe, Hawaii

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Climate Resilience Subject Matter Expert. BC is providing engineering services to support the University of Hawaii to conduct a Military Installation Resilience Review focused on the Koolaupoko district, located on Oahu's southeastern shore. The project overall objective is to identify climate related threats and hazards to the community surrounding Kaneohe military base and to present recommendations that enhance resilience and adaption capacity of vulnerable resources within the project study area. Hawaii's unique geographic location makes the islands particularly susceptible to a myriad of climate change impacts. Sea level rise and attendant local erosion and flooding, extreme heat, altered precipitation patterns, and growing wildfire are evident and will become more prevalent in the future, placing an undue burden on coastal communities and resources across the State. In order to avoid widespread environmental catastrophe, development needs to prioritize sustainability and increasing climate resilience. The study will culminate with the three regional implementation strategies identified, mapped, which will be considered "pilot projects." Each pilot project will recommend mitigation measures to better inform efforts and benefit surrounding communities.

Total Contract Amount: $235K Client: Research Corporation of the University of Hawaii

e.

(1) TITLE AND LOCATION *(City and State)*
Water System Risk and Resilience Assessment Services and Emergency Response Plan, Pacifica, California

(2) YEAR COMPLETED

PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
2021	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. Tess led a team that prepared a RRA and the ERP update for North Coast County Water District. The project included asset and threat characterization; consequence, vulnerability, and threat analyses, and risk/resilience analysis and management. She and the team worked with the District to identify and analyze the broad range of risks to their water system, including and reporting potential threats to critical assets and the consequences of failure. The team presented interim results with the District to emergency management and neighboring agency stakeholders in a workshop and integrated feedback into the RRA. This project also included a Cybersecurity Gap Analysis. The ERP portion of the work further included the development of a mitigation measures prioritization tool to support improved system resilience.

Total Contract Amount: $112K Client: North Coast County Water District

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Seema Chavan, PE*	Funding Specialist	20	1

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, San Jose, California

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Environmental Engineering, 1997 BS, Civil Engineering, 1993	*California/Licensed Civil Engineer #61867

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
N/A

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Water Systems Investment Plan, Lihue, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Federal and State Funding Subject Matter Expert. BC is developing a geographic information system (GIS) and hydraulic model for the County of Kauai, Dept. of Water (KDOW) as part of the Water Systems Investment Plan (WSIP) project. The WSIP is a comprehensive master plan, identifying infrastructure and facility improvements in alignment with KDOW's long-range goals and objectives. BC is working with KDOW to develop a capital improvement program to address system improvements needed for water supply infrastructure and enterprise systems and prioritize projects to meet level of service objectives. Included in the project is a financial analysis including utility rates, development charges, and funding opportunities through local, State and Federal programs. A climate change impact assessment for sea level rise and storm surge is being conducted along with a desktop condition and resiliency assessment. Stakeholder engagement is planned throughout the project, including two Ka Pa'akai analyses to collect information on traditional and customary practices within the study area.

Total Contract Amount: $2M Client: County of Kauai, Dept. of Water

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Desalination Feasibility Study, County of Maui, Hawaii	2025	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Federal and State Funding Subject Matter Expert. BC conducted a feasibility study evaluating desalination as potable water supply source for the County of Maui. The study included consideration of siting, technology, energy, effluent disposal and salt/brackish water supply options.

Total Contract Amount: $916K Client: County of Maui, Dept. of Water Supply

c.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Environmental Investigation of Emerging Contaminants Impacting Oahu's Aquifers and Related Technical Services Project, Honolulu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Federal and State Funding Subject Matter Expert. BC is supporting the Honolulu BWS with a prioritized review and development of treatment alternatives for high priority groundwater sites impacted by PFAS. BC will be developing a pilot test plan to evaluate GAC and IX media to compare treatment performance and operational characteristics at several impacted sites. Following development and state approval of the test plan, BC will assist with the installation and operation of the pilot testing equipment. Additionally, BC is working with BWS to develop a long-term, island-wide emerging contaminant management plan.

Total Contract Amount: $4M Client: Honolulu Board of Water Supply

d.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	Cesspool Conversion Finance Research Project, Honolulu, Hawaii	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		2020	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☐ **Check if project performed with current firm**		
	Funding Lead. Seema was the funding lead for the identification of funding opportunities as well as funding mechanisms for the State of Hawaii's $3.8 billion Cesspool Conversion project. Work components included identification and evaluation of federal, state, and local loan and grant programs and non-traditional funding models to fund the cesspool conversions. She reviewed existing state cesspool conversion programs for applicability, identified financing considerations and recommendations, and developed the Funding Mechanisms Technical Memorandum. Seema participated in workshops with Department of Health, EPA, and the Cesspool Conversion Working Group. Total Contract Amount: $1M Client: State of Hawaii, Dept. of Health		
e.	**(1) TITLE AND LOCATION** *(City and State)*	**(2) YEAR COMPLETED**	
	Pure Water Southern California Program, Carson, California	**PROFESSIONAL SERVICES**	**CONSTRUCTION** *(if applicable)*
		Ongoing	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**		
	Subject Matter Expert/Task Lead. A joint venture of BC and another firm were chosen to provide program and project management support and engineering design services for the Pure Water Southern California Program, one of the largest water reuse programs in the world. Anticipated for water delivery by 2032 , the program will reuse the largest untapped wastewater source in the region that currently flows to the ocean to increase water resiliency, enhance water quality, and fuel economic growth. The joint venture team will lead environmental compliance efforts and the design and construction of advanced purification facilities at the Sanitation District's Joint Water Pollution Control Plant. The new facilities will incorporate an innovative 3-step procedure to purify water, including membrane bioreactors, reverse osmosis, and an ultraviolet light/advanced oxidation process. Up to 60 miles of new pipelines and associated pump stations will be designed and constructed to transport purified water from the plant to the region's groundwater basins, industrial facilities, and two of Metropolitan's water treatment plants. Total Contract Amount: $10.3M Client: Metropolitan Water District of Southern California		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Mike Simms	GIS and Asset Management Specialist	30	30

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Phoenix, Arizona

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Computational Mathematics, 1994	N/A

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
ArcGIS Desktop Associate 10.1 (EADA101) #ESRI00108211

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
West Maui Drainline Assessment, Maui, Hawaii	2020	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Data Manager. BC performed screening-level field inspections, evaluation, and assessment of structural and operational conditions of portions of the West Maui storm drainage system for the County of Maui, Dept. of Public Works, Engineering Division. The approach included screening level inspection of the projects 400 structures and 60,000 linear feet of pipeline by using a pole-mounted zooming camera system. Inventorying of the system during inspection was used to validate and identify discrepencies in current GIS attribute data. Inspection and condition assessment results will be used to prioritize pipelines and structures that need immediate cleaning, detailed CCTV inspection, and/or structural repair, or can be placed on a schedule for future cleaning, screening-level inspection, or detailed CCTV inspection.

Total Contract Amount: $500K Client: County of Maui, Dept. of Public Works, Engineering Division

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Central Maui Storm Drainline Condition Assessment, Wailuku, Maui	2020	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Data Manager. BC performed screening-level field inspections, evaluation, and assessment of structural and operational conditions of portions of the Central Maui storm drainage system for the County of Maui, Dept. of Publc Works, Engineering Division. BC's approach included screening level inspection of nearly 100% of the project's 425 structures and a significant length of nearly 65,000 feet (>12 miles) of pipeline by using a pole-mounted zooming camera system. Inventorying of the system during inspection was used to validate current system attribute data for GIS updates. Inspection and condition assessment results were used to identify and prioritize pipelines and structures that need immediate cleaning, detailed CCTV inspection, and/or structural repair, or could be placed on a schedule for future cleaning, screening-level inspection, or detailed CCTV inspection.

Total Contract Amount: $700K Client: County of Maui, Dept. of Public Works, Engineering Division

c.	**(1) TITLE AND LOCATION** *(City and State)* South Maui Drainline Condition Assessment, Kihei, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2023	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Data Manager.** BC was contracted by the County of Maui to digitize existing analogue construction as-built PDFs of 41 select South Maui Subdivisions into a Geographic Information System (GIS), and perform screening-level stormdrain inspections, evaluations, and structural and operational condition assessments in 28 of those select subdivisions. Results from the screening-level inspections were used to identify and prioritize assets requiring maintenance, repair, rehabilitation, or replacement. This project provided the County of Maui with two benefits: 1) an asset management database of existing stormdrain asset information through the GIS digitization process, and 2) understanding existing stormdrain asset conditions and system prioritization for maintenance, repair, rehabilitation, or replacement of these assets. Total Contract Amount: $700K Client: County of Maui, Dept. of Public Works, Engineering Division		
d.	**(1) TITLE AND LOCATION** *(City and State)* Lahaina Post-Fire Drainline Condition Assessment, Lahaina, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2024	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Data Manager.** Following the destructive 2023 Lahaina wildfires, the County retained BC to perform rapid field inspections and condition assessments of storm drainlines to identify and prioritize assets requiring replacement or other immediate actions by DPW in impacted areas of Lahaina. This rapid field inspection and condition assessment covered approximately 36,000 lf of storm drainline and 340 associated structures including manholes, catch basins, and a limited number of culvert inlets, culvert outlets, outfalls, and other system structures. Total Contract Amount: $782K Client: County of Maui, Dept. of Public Works, Engineering Division		
e.	**(1) TITLE AND LOCATION** *(City and State)* Storm Drain Condition Assessment, Las Vegas, Nevada	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Data Manager.** BC is currently in year eight of a 15-year program. The project includes inspecting, evaluating, prioritizing, and recommending segments for rehabilitation of approximately 52,000 linear feet of 8-inch to 96-inch diameter of the City's storm drain conveyance facilities and over 300 manholes, inlets, junction boxes, and other structures each year. Mike is responsible for overall data management and quality control. He oversees the development, updates, and quality control of the GIS, which includes populating physical and CCTV inspection attributes, calculating invert elevations, and producing a final GIS dataset. Total Contract Amount: $2.8M Client: City of Las Vegas		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Fiona van Ammers, PE, CPSWQ	Stormwater Specialist	25	8

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Wailuku, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil and Environmental Engineering, 1999	Hawaii/Licensed Civil Engineer #11907; Exp 4/30/26

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

EnviroCert Certified Professional in Storm Water Quality (CPSWQ), City and County of Honolulu Certified Erosion Sediment Control Plan Designer (CESCPP) and Certified Water Pollution Plan Preparer (CWPPP) and Certified Erosion Sediment Control Plan Coordinator (CESCPC); Hawaii Water Environment Federation; National Association of Sewer Service Companies Pipeline Assessment Certification Program/Lateral Assessment Certification Program/Manhole Assessment Certification Program #U-1018-0703003411; Hawaii Society of Professional Engineers

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Feasibility Study for East Maui Source Development, Maui Island, Hawaii	2025	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Technical Advisor. BC provided the County of Maui with a feasibility study to assess existing capacity, refine future demand projections and evaluate viable water source alternatives that to help assure reliable potable water supply to address existing limitations and accommodate planned growth on the Central and Upcountry water systems. Also included is a stream restoration framework which will outline a long-range plan to analyze and address water availability in select waterways in the Haiku region diverted for irrigation by historic sugarcane operations. Stakeholder engagement occurred throughout the project.

Total Contract Amount: $1.2M Client: County of Maui, Dept. of Water Supply, Water Resources and Planning Division

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Stormwater Management Program, Oahu, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. As a subconsultant, BC is providing scientific and engineering services to support the Dept. of Transportation, Highways Division, Oahu District (HDOT-Oahu). BC's work includes completing technical reviews and analyses, and providing questions, guidance, and recommendations throughout the total maximum daily load development process. Tasks include establishing land use delineations and Municipal Separate Stormwater Sewer System (MS4) boundaries such as identifying existing MS4 pollutant loads, developing watershed and receiving waterbody models, determining loading capacity, and assigning draft and final MS4 load allocations. Additionally, BC will support HDOT-Oahu in developing an Implementation and Monitoring Plan to achieve compliance with load allocations set by final TMDL requirements.

Total Contract Amount: $50K Client: State of Hawaii, Dept. of Transportation

c.	**(1) TITLE AND LOCATION** *(City and State)* South Kohala Flood Study, Waikoloa and Puako, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Deputy Project Manager.** The South Kohala District on Hawaii Island faces significant flood risks due to intense rainfall events and urban development, which are overwhelming the area's stormwater infrastructure and low-lying coastal areas, and ultimately negatively impacting public and private property. BC is collaborating with COH DPW to create a comprehensive strategy to manage runoff and mitigate flooding in the region. This study aims to provide a thorough understanding of these risks and propose practical solutions to safeguard the area from future flood events. Total Contract Amount: $615K Client: County of Hawaii, Dept. of Public Works		
d.	**(1) TITLE AND LOCATION** *(City and State)* Hoaloha Park Adaptation Plan, Kahului, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2025	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager/Lead Engineer (Civil).** BC supported SSFM International in developing the Hoaloha Park Adaptation Plan. The plan included a site and infrastructure vulnerability assessment, user impact evaluation, and adaptation planning specific to Hoaloha Park, an urban beach park located at Kahului Harbor, Maui. The plan employed an adaptive pathways approach driven by site-specific and infrastructure-specific vulnerabilities, considering park users. BC's scope involved preparing technical memorandums to document opportunities and constraints for future use by assessing existing site conditions and infrastructure against future climate-related hazards such as sea-level rise, hurricanes, and wildfires. Additionally, the plan analyzed the effects of increased future use of the park by residents and nearby employees due to planned redevelopment projects in the vicinity. The team recommended adaptation strategies, including improving sand dunes and relocating infrastructure likely to be affected by sea level rise. Total Contract Amount: $60K Client: County of Maui, Dept. of Parks and Recreation		
e.	**(1) TITLE AND LOCATION** *(City and State)* Koolaupoko Climate Resilience and Adaptation Project, Kaneohe, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** BC is providing engineering services to support the University of Hawaii to conduct a Military Installation Resilience Review focused on the Koolaupoko district, located on Oahu's southeastern shore. The project overall objective is to identify climate related threats and hazards to the community surrounding Kaneohe military base and to present recommendations that enhance resilience and adaption capacity of vulnerable resources within the project study area. Hawaii's unique geographic location makes the islands particularly susceptible to a myriad of climate change impacts. Sea level rise and attendant local erosion and flooding, extreme heat, altered precipitation patterns, and growing wildfire are evident and will become more prevalent in the future, placing an undue burden on coastal communities and resources across the State. In order to avoid widespread environmental catastrophe, development needs to prioritize sustainability and increasing climate resilience. The study will culminate with the three regional implementation strategies identified, mapped, which will be considered "pilot projects." Each pilot project will recommend mitigation measures to better inform efforts and benefit surrounding communities. Total Contract Amount: $235K Client: Research Corporation of the University of Hawaii		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Mike Flake, PE*, QSD/P	Stormwater Specialist	31	17

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Walnut Creek, California

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil Engineering, 1992	*California/Licensed Civil Engineer #C0554948

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
Qualified Stormwater Pollution Prevention Plan Developer and Practitioner (QSD/P) #24268

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Quantify Water Quality Benefits from Caltrans' Wildfire Prevention and Restoration Activities, Sacramento, California	2020	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Contract Manager. BC worked with several Caltrans Districts, focusing on North Coast Regional Water Quality Control Board Region 1, to prepare qualitative and quantitative models that would assess the water quality benefits associated with Caltrans' preventative and restorative wildfire activities. The project demonstrated a connection between water quality protection and Caltrans' efforts to proactively reduce fuels and rehabilitate landscapes adjacent to roadways following wildfires. In addition to reducing sediment impaired waterbodies, reducing wildfire (by reducing available fuels) helps to restore watersheds, reduce levels of nutrients, salts and metals (including mercury) which currently impair hundreds of waterbodies throughout California.

Total Contract Amount: $475K Client: California Dept. of Transportation (Caltrans), Headquarters

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Stormwater Monitoring and Best Management Practices Development Services, Sacramento, California	2021	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Contract Manager. BC assisted Caltrans with discharge characterization from their rights-of-way into areas of special biological significance, impaired receiving waters, and from existing treatment BMPs. The contract included development of pilot projects to evaluate new technologies for use in the Caltrans Stormwater Program. BC executed on evaluation of trash nets and newly created trash capture devices for both full-scale pilot and hydraulic laboratory testing; as a result, BC worked to get Caltrans further options for meeting full-capture trash requirements under TMDLs and a an enforcement order from the San Francisco Bay Bay Regional Water Quality Control Board. Since contract inception, 11 different task orders have been executed.

Total Contract Amount: $6.8M Client: California Dept. of Transportation (Caltrans), Headquarters

c.	**(1) TITLE AND LOCATION** *(City and State)* Willits Bypass Water Quality Monitoring Program, Willits, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2019	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Contract Manager.** Caltrans was issued 401 Water Quality Certification to institute a rigorous program to monitor the impacts of construction upon the creeks and to gauge mitigation success. BC provided technical oversight and quality control of monthly reports and contributed to specialty situations when onsite personnel encountered problems or needed additional help. BC directed the development of a project portal for depicting real-time data from the BC constructed monitoring stations and weather station. This portal was used to generate alerts to identify exceedances of water quality objectives, so that personnel can mobilize to the area for taking corrective actions in advance of exceeding regulatory threshold values. BC provided oversight of all final reports for this project, which show how Caltrans benefitted the watershed and how the mitigation efforts should in the future provide further multiple water quality benefits for the receiving waters once habitat vegetation has undergone maturation and become diverse. Total Contract Amount: $10M Client: California Dept. of Transportation (Caltrans)		
d.	**(1) TITLE AND LOCATION** *(City and State)* Orange Memorial Park Water Capture Project, South San Francisco, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2022	**CONSTRUCTION** *(if applicable)* 2022
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** The Orange Memorial Park design recharges 240 acre-feet of groundwater, offsets 15 million gallons of potable water, and saves $140K in water costs each year. The project was completed in two phases. Phase 1 involved the development of three preliminary concepts and an extensive public and inter-agency engagement process to build consensus behind a preferred alternative. Phase 2 entailed plan completion, specifications, and estimates for construction advertisement and supporting the bidding and construction phases. The team developed 100 percent design plans on schedule and on budget. Total Contract Amount: $389K Client: City of South San Francisco		
e.	**(1) TITLE AND LOCATION** *(City and State)* Low Impact Development Pilot Design, Phases I and II, Sacramento and Los Angeles, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2017	**CONSTRUCTION** *(if applicable)* 2017
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Contract Manager.** BC designed and installed two linear filtration system pilot studies to evaluate different methods to treat runoff from Caltrans roadways where rights-of-ways is limited to narrow linear areas. During Phase I, BC completed a study on the design that included updating existing plans, specifications, design reports, traffic handling plans, soils management (aerially deposited lead) plan, and coordinated the design and planning documents. Under Phase II, BC completed the design drawings and installed the low impact development pilot systems at the Sacramento and Los Angeles sites. Future monitoring will determine the relative effectiveness of the different treatment media that were used in the pilots. Total Contract Amount: $2.1M Client: California Dept. of Transportation (Caltrans), Headquarters		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Rachel Garrett	Strategic Communications Specialist	20	2

15. FIRM NAME AND LOCATION *(City and State)*

Brown and Caldwell, Denver, Colorado

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MA, Environmental Policy, Emphasis in Water Resources, 2004 BA, Spanish, Business Administration, 2000	N/A

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Certifications in Social Marketing (International Social Marketing Association); Foundations in Public Participation (International Association for Public Participation); Water Environment Federation; Social Marketing Association of North America; International Association for Public Participation; Pacific Northwest Social Marketing Association

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Water Systems Investment Plan, Lihue, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Strategic Engagement Lead. BC is developing a geographic information system (GIS) and hydraulic model for the County of Kauai, Dept. of Water (KDOW) as part of the Water Systems Investment Plan (WSIP) project. The WSIP is a comprehensive master plan, identifying infrastructure and facility improvements in alignment with KDOW's long-range goals and objectives. BC is working with KDOW to develop a capital improvement program to address system improvements needed for water supply infrastructure and enterprise systems and prioritize projects to meet level of service objectives. Included in the project is a financial analysis including utility rates, development charges, and funding opportunities through local, State and Federal programs. A climate change impact assessment for sea level rise and storm surge is being conducted along with a desktop condition and resiliency assessment. Stakeholder engagement is planned throughout the project, including two Ka Pa'akai analyses to collect information on traditional and customary practices within the study area.

Total Contract Amount: $2M Client: County of Kauai, Dept. of Water

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Lead and Copper Rule Revisions and Improvements Compliance, Hawaii County, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Communications Strategic Advisor. BC is helping DWS comply with the U.S. Environmental Protection Agency's Lead and Copper Rule Improvements. Over this multi-year contract, BC and subconsultant EnviroServices & Training Center will: prepare lead service line inventories; develop a Lead Service Line Replacement Plan; create a sample site list of residential and commercial properties, and school and child care facilities; conduct tap water sampling; and perform any tasks needed for compliance.

Total Contract Amount: $3.5M Client: County of Hawaii, Dept. of Water Supply

c.	**(1) TITLE AND LOCATION** *(City and State)* Environmental Investigation of Emerging Contaminants Impacting Oahu's Aquifers and Related Technical Services Project, Honolulu, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Outreach/Public Engagement Lead.** BC is supporting the Honolulu BWS with a prioritized review and development of treatment alternatives for high priority groundwater sites impacted by PFAS. BC will be developing a pilot test plan to evaluate GAC and IX media to compare treatment performance and operational characteristics at several impacted sites. Following development and state approval of the test plan, BC will assist with the installation and operation of the pilot testing equipment. Additionally, BC is working with BWS to develop a long-term, island-wide emerging contaminant management plan. Total Contract Amount: $4M Client: Honolulu Board of Water Supply		
d.	**(1) TITLE AND LOCATION** *(City and State)* California Urban Water Agencies Program Management, Walnut Creek, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Strategic Engagement Lead.** California Urban Water Agencies (CUWA) is a non-profit corporation of 11 major urban water agencies collectively delivering drinking water to over two-thirds of California's population. BC has been providing program management support to CUWA since 2011. With direction from the CUWA Board, which is composed of general managers and other high-level decision makers from the member agencies, BC manages CUWA operations, providing technical, financial, and administrative support for near- and long-term initiatives and organization sustainability. BC also works closely with member agencies through committees and work groups to develop technical and policy work products that provide common understanding and consensus among the urban water community. Total Contract Amount: $8M Client: California Urban Water Agencies		
e.	**(1) TITLE AND LOCATION** *(City and State)* Water Resiliency Strategy and Framework, Vancouver, Washington	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2023	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Project Manager.** The City worked with BC to develop a coordinated internal approach that applied outreach and strategic planning best practices. With input from a cross-functional team including finance, communications, utility department leaders, and City leadership, BC developed a Water Resiliency Strategy and Framework that aligned the City's three utilities around shared goals and needs. The Water Resiliency Strategy and Framework has guided Public Works' updated Capital Improvement Program, community engagement planning, and Council communications, and has informed the City's strategic planning processes. The Framework has bolstered Council and broader support for long-term infrastructure investments and led to clear financing strategies and rate stabilization recommendations. Total Contract Amount: $67K Client: City of Vancouver		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Kristene Wilder, PG*, CHG*	Hydrogeology/ Geology Specialist	22	8

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Sacramento, California

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Earth Science/Geology, 1999	*California/Certified Hydrogeologist #969 *California/Professional Geologist #8583

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
OSHA 40-Hour HAZWOPER; American Red Cross First Aid, Cardiopulmonary Resuscitation and Automated External Defibrillator Certification

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Putah Creek Facility, Davis, California	2017	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager. Evaluated the potential for groundwater degradation from the Center for Aquatic Biology and Aquaculture, Putah Creek Facility current effluent discharge. The primary constituent of interest is chloroform from the university's historic landfill. The study included an evaluation of the existing groundwater plume and background groundwater quality near the effluent ponds, and calculations for infiltration from Center for Aquatic Biology and Aquaculture's discharges. BC also evaluated groundwater flow directions and gradients, analyzed chloroform concentrations trends, and the overall plume distribution. Oversaw the project execution and the on time, on budget delivery of the tech memo to support the UC Davis new Report of Waste Discharge.

Total Contract Amount: $20K Client: UC Davis Center for Aquatic Biology and Aquaculture

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Groundwater Evaluation, Folsom Corporation Yard, Folsom, California	2019	2020

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Manager/Hydrogeologist. BC provided technical services to the City of Folsom for a former landfill facility. Groundwater monitoring, sampling, and evaluation has been performed since 1996. The landfill was clean-closed in 2008 and groundwater monitoring has continued since that time. Recently provided technical assistance as the lead hydrogeologist in re-evaluating the well network due to potential data quality issues in the historical well network. Was responsible for evaluating the historical groundwater data, designing the new network, and aiding the project manager with negotiation with the Regional Water Quality Control Board for approval of this new well network. The new well network was put in place in 2017 with the hopes of expedited site closure based on the new data.

Total Contract Amount: $2M Client: City of Folsom

c.	**(1) TITLE AND LOCATION** *(City and State)* Mine Permitting Support/Hydrogeologic Evaluation, Pleasanton, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2018	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Supervising Geologist/Hydrogeologist.** Kristene provided technical expertise on a gravel quarry expansion permitting for CEMEX, Inc. The client was proposing to expand the mining activities to a depth where the permitting agency believed a competent aquitard existed. BC compiled existing well logs from the site and locations in the vicinity. From these logs, BC prepared cross sections that helped evaluate whether the aquitard in question was present beneath the area where additional deeper mining activities were proposed. Kristene reviewed the logs and was responsible for the preparation and interpretation of the cross sections. Total Contract Amount: $20K Client: CEMEX, Inc.		
d.	**(1) TITLE AND LOCATION** *(City and State)* Groundwater and Climate Assessments, Various, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Project Manager.** Kristene serves as the hydrogeologist for compliance activities at an active landfill site in San Jose, California. Compliance activities include preparing and reviewing technical reports and reviewing data for waste discharge requirements, as well as stormwater requirements. Water quality concerns at this site include standard groundwater quality parameters such as inorganics, volatile organic compounds and metals, as well as PFAS and other emerging contaminants. Project work also includes evaluation of potential sea level rise scenarios in response to climate change. Total Contract Amount: $500K Client: Republic Services		
e.	**(1) TITLE AND LOCATION** *(City and State)* PFAS Assessment and Treatment, Long Beach, California	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2022	**CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Technical Advisor.** BC investigated the source and lateral extent of PFAS in soil and groundwater at a California site and provided technical assistance in developing a Remedial Action Plan for remediating PFAS in soil using risk-based clean-up levels for PFOA and PFOS using a construction worker as the receptor. Reasonable assumptions about the potential extent of human contact produced a remedial action goal much higher than the published default screening levels in California. The goals were accepted by the regulator and later implemented per the Remedial Action Plan. Total Contract Amount: $3M Client: Confidential Client		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Stan Kowalczyk, PE	Hydraulics/Hydraulic Modeling Specialist	9	9

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Honolulu, Hawaii

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
BS, Civil Engineering, 2016	Hawaii/Licensed Civil Engineer #19251; Exp 4/30/26

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
Hawaii Water Environment Association Collection System Committee Chair

19. RELEVANT PROJECTS

a.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Risk and Resiliency Assessment and Emergency Response Update, Hilo, Hawaii	2022	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Staff Engineer (Civil). BC performed a risk and resiliency assessment that included an evaluation of County of Hawaii, Department of Water Supply (HDWS) seven largest systems that met the threshold for America's Water Infrastructure Act 2018 compliance requirements. BC developed a custom vulnerability assessment tool that evaluated HDWS's critical assets against the selected natural hazards and malevolent acts. The tool produced a prioritized risk score for each asset based on the identified threat and the results will be used to support HDWS's future improvement planning. BC also updated HDWS's Emergency Response Plan which included updates to the Action Plans to prepare for, respond to, and recover from an emergency event.

Total Contract Amount: $535K Client: County of Hawaii, Dept. of Water Supply

b.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Corrosion Damage Assessment, Hilo and Kona, Hawaii	2019	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Engineer (Civil). BC provided engineering services to the Department of Environmental Management (DEM) assess corrosion related damage at the Hilo Wastewater Treatment Plant, Pua Sewage Pump Station, Kealakehe Wastewater Treatment Plant, Kealakehe Sewage Pump Station,Holualoa Sewage Pump Station, and Hale Halawai Sewage Pump Station. An inspection plan was prepared to document inspection techniques and coordinate field work activities. The condition assessment field work included a visual and physical condition assessment of various wetwells, basins, channels, and other hydraulic structures via confined space entries. The final condition assessment report included documentation of findings, repair recommendations, and budgetary cost estimates. It is anticipated that repair recommendations will be rolled into future construction contracts.

Total Contract Amount: $213K Client: County of Hawaii, Dept. of Environmental Management

c.

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Lead and Copper Rule Revisions and Improvements Compliance, Hawaii County, Hawaii	Ongoing	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm**

Project Engineer (Civil/GIS). BC is helping DWS comply with the U.S. Environmental Protection Agency's Lead and Copper Rule Improvements. Over this multi-year contract, BC and subconsultant EnviroServices & Training Center will: prepare lead service line inventories; develop a Lead Service Line Replacement Plan; create a sample site list of residential and commercial properties, and school and child care facilities; conduct tap water sampling; and perform any tasks needed for compliance.

Total Contract Amount: $3.5M Client: County of Hawaii, Dept. of Water Supply

d.	**(1) TITLE AND LOCATION** *(City and State)* Hydraulic Model Development, Calibration, and Maintenance Services, Honolulu, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Project Manager/Project Engineer (Hydraulic Modeling).** BC is helping the Board of Water Supply (BWS) meet their goal of regularly updating and re-calibrating their island-wide hydraulic models by providing model development, calibration, and maintenance services. Over the years, BC has calibrated models for several of BWS's distribution systems and has developed calibration tools and processes that help perform efficient and accurate model calibrations. BC has worked closely with BWS modeling staff to share knowledge on the modeling software and provide recommended changes to improve BWS's internal model development and calibration processes. BC coordinates closely with BWS staff to solve challenging calibration issues such as identifying and correcting data irregularities and to understand complicated system operations so that they can be reflected accurately in the hydraulic models. BC also provides detailed model documentation to ensure the updated calibrated models can be easily used and understood by end users at BWS. Total Contract Amount: Contract No. 1 - $180K | Contract No. 2 - $175K | Contract No. 3 - $353K Client: Honolulu Board of Water Supply		
e.	**(1) TITLE AND LOCATION** *(City and State)* Galbraith Irrigation System - Lake Wilson Pump Station, Main Transmission Pipeline, & Bott Well Pump Improvements, Wahiawa, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* Forthcoming
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE ☒ Check if project performed with current firm** **Project Engineer (Hydraulic Modeling).** BC is designing an irrigation water supply system for agricultural operations on Oahu. The project involves the use of non-potable surface water from Wahiawa Reservoir. Design includes a reservoir intake structure and pump station, 14 MG storage reservoir, transmission pipelines, and improvements to an existing source well. The project involves hydraulic modeling (InfoWater) and surge analysis of the proposed system. This project follows a $2.97 million project awarded to BC by the State of Hawaii, Agribusiness Development Corporation to design a transmission pipeline from the City and County of Honolulu's Wahiawa Wastewater Treatment Plant to supply recycled water for diversified agriculture on the former Galbraith Estate lands in Central Oahu. Both projects, with the beneficial reuse of recycled water from the City's Wahiawa Wastewater Treatment Plant, brings to fruition a One Water vision and drought-tolerant water supply for sustainable agriculture in Central Oahu. Total Contract Amount: $5M Client: State of Hawaii, Dept. of Agriculture		

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one Section E for each key person.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Jaren Hiller, PE*, LEED AP	Hydraulics/Hydraulic Modeling Specialist	29	5

15. FIRM NAME AND LOCATION *(City and State)*
Brown and Caldwell, Milwaukee, Wisconsin

16. EDUCATION *(Degree and Specialization)*	17. CURRENT PROFESSIONAL REGISTRATION *(State and Discipline)*
MS, Environmental Engineering, 1996 BS, Civil Engineering, 1994	*Wisconsin/Licensed Engineer #33417

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*
Leadership in Energy and Environmental Design, Accredited Professional (LEED-AP) #0000021877

19. RELEVANT PROJECTS

a.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
	Hare Snipe Creek Watershed Study, Raleigh, North Carolina	2023	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm		
	QA/QC Reviewer. BC provided integrated flooding mitigation and water quality planning, while establishing standards for conducting future watershed studies within the City. The study was guided by the Equity Framework, which established City staff goals and priorities to integrate more equitable practices into watershed study development. BC piloted stream assessment technologies to evaluate results and provide a recommendation for the remaining stream assessments. BC developed a PCSWMM model to identify areas of flooding and developed a spatial water quality model, WIP Tools, to calculation nutrient and sediment loadings. BC identified over 60 project concepts that were evaluated to reduce flooding and/or provide water quality benefits. BC also developed a methodology document to guide consistent future watershed studies. Total Contract Amount: $1M Client: City of Raleigh, Engineering Services Dept.		
b.	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
	South Kohala Flood Study, Waikoloa and Puako, Hawaii	Ongoing	N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm		
	Hydrologic/Hydraulic Modeling Lead. The South Kohala District on Hawaii Island faces significant flood risks due to intense rainfall events and urban development, which are overwhelming the area's stormwater infrastructure and low-lying coastal areas, and ultimately negatively impacting public and private property. BC is collaborating with COH DPW to create a comprehensive strategy to manage runoff and mitigate flooding in the region. This study aims to provide a thorough understanding of these risks and propose practical solutions to safeguard the area from future flood events. Total Contract Amount: $615K Client: County of Hawaii, Dept. of Public Works		

c.	**(1) TITLE AND LOCATION** *(City and State)* Waikoloa K-Plant Effluent Disposal, Waikoloa, Hawaii	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* Ongoing
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Hydrologic/Hydraulic Modeling Lead.** BC is tasked with evaluating feasible disposal methods for both current disposal and future disposal demands that meet wastewater and land use regulations, but also the unique soil and topography conditions of the site. Methods to be evaluated include soil aquifer treatment (SAT), expansion of the existing leachfields, and reuse. Activities will include soil investigation and percolation testing to determine the appropriate design hydraulic loading rate for the soil conditions. Upon completion of the feasibility evaluation, BC will design the preferred effluent disposal option that will include improvements such as pump station, piping, and earthwork. Additional services to support the project include Archeological Inventory Study and Unexploded Ordinances field work safety support. Total Contract Amount: $1M Client: Hawaii Water Service Company		
d.	**(1) TITLE AND LOCATION** *(City and State)* Lower Kissimmee Basin Stormwater Treatment Area, Phase I, Kissimmee, Florida	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** 2023	 **CONSTRUCTION** *(if applicable)* N/A
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Hydrologic/Hydraulic Modeling Lead.** Developed modeling work plan for simulation of phosphorus removal in a large, constructed wetland. Executed DMSTA modeling of various wetland alternatives and configurations. Interpreted results to assist selection of the preferred design and operational alternative. Conducted workshops to communicate results to South Florida Water Management District. Total Contract Amount: $6.9M Client: Ecosystem Investment Partners		
e.	**(1) TITLE AND LOCATION** *(City and State)* North District Wastewater Treatment Plant Site Prep and Stormwater Update Plan, Miami, Florida	**(2) YEAR COMPLETED** **PROFESSIONAL SERVICES** Ongoing	 **CONSTRUCTION** *(if applicable)* Forthcoming
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* **AND SPECIFIC ROLE** ☒ **Check if project performed with current firm** **Hydrologic/Hydraulic Modeling Lead.** The hydrologic and hydraulic modeling is being completed using the Interconnected Channel and Pond Routing model to assess and size the storm drains, storm force mains, storm pump stations, and retention pond associated with the expansion and to improve the drainage system at the existing site. Jaren is leading the civil/site design for the 15-acre high level disinfection plant expansion and executed portions of the design. Total Contract Amount: $2.2M Client: Miami-Dade Water and Sewer Dept.		

Example Projects Which Best Illustrate Proposed Team's Qualifications for this Contract

SECTION F

Brown AND Caldwell

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. Example Project Key Number
	1

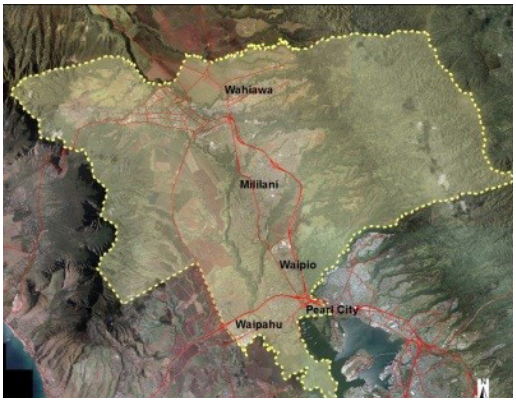
21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Central Oahu Watershed Management Plan Honolulu, Hawaii	Ongoing	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Honolulu Board of Water Supply	Barry Usagawa, PE	808.748.5900

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

BC is preparing the Central Oahu Watershed Management Plan (COWMP), one of eight district watershed management plans that comprise the Oahu Water Management Plan. The goal of the COWMP is to formulate an environmentally holistic, community-based, and economically viable plan that provides a balance between the preservation/management of Oahu's watersheds and the sustainable development and use of groundwater and surface water supplies.



BC is developing a community-based COWMP that is environmentally holistic and economically viable.

RELEVANCE TO CONTRACT
- **Community-based watershed management**
- **Future water demand and land use projections**
- **Water supply**
- **Water master planning**
- **Climate change planning**
- **Stakeholder engagement**

TOTAL CONTRACT AMOUNT
$625K

BC is preparing the COWMP in coordination with the City and County of Honolulu, Department of Planning and Permitting and per City Ordinance Chapter 30, Revised Ordinances of Hawaii and the State Water Code Chapter 174C, Hawaii Revised Statutes. The COWMP has five objectives: promote sustainable watersheds; protect and enhance water quality and quantity; protect Native Hawaiian rights and traditional customary practices; facilitate public participation, education, and project implementation; and, meet future water demands at reasonable costs.

BC will assess four future scenarios for Central Oahu: low-, mid-, and high-growth scenarios through 2040 and an ultimate buildout scenario, to identify projected potable and non-potable water demands for urban and agricultural use. The COWMP will identify specific Central Oahu water issues, including potential climate change impacts, and projects currently being planned or implemented, such as watershed management sub-objectives and strategies.

Development of the COWMP will include extensive discussions and consultations with community members and organizations, landowners, developers, public agencies and officials, and other stakeholders. BC is conducting public outreach efforts and gathering community input from five neighborhood boards: Pearl City, Waipahu, Wahiawa-Whitmore Village, Mililani Mauka-Launani Valley, and Mililani-Waipio. Adoption of the COWMP will require neighborhood board endorsements and subsequent approvals by the State Commission on Water Resource Management and the Honolulu City Council.

Project benefits include:

- Policies and strategies that will guide the City and County of Honolulu in the management, development, and utilization of Oahu's water resources to meet future potable and non-potable water demands.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Honolulu, Hawaii Wailuku, Hawaii Kamuela, Hawaii	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT
(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. Example Project Key Number
2

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Quantify Water Quality Benefits from Caltrans' Wildfire Prevention and Restoration Activities Sacramento, California	2020	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
California Dept. of Transportation (Caltrans) Headquarters	William Pan	916.653.8257

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

BC worked with several Caltrans Districts, focusing on North Coast Regional Water Quality Control Board Region 1, to prepare qualitative and quantitative models that would assess the water quality benefits associated with Caltrans' preventative and restorative wildfire activities.

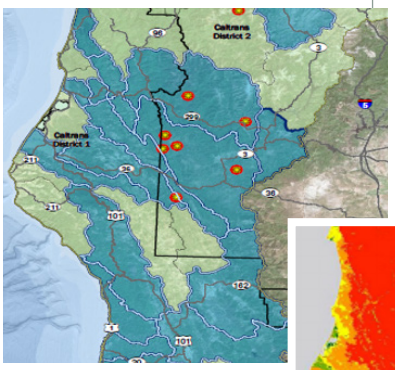
Work began by focusing on the North Coast as this area was the epicenter for two large wildfires and 17 sediment total maximum daily loads (TMDLs) naming Caltrans as a stakeholder. This study expanded its scope to show how wildfires affect water quality throughout the state, affecting not just sediment but other Caltrans pollutants of concern.

Results from BC's analysis suggested that more than 40 percent of Caltrans highway miles, within sediment impaired watersheds, had a very high or high fire hazard severity. Therefore, reducing the potential for wildfire will have a substantial benefit in diminishing sediment loading.

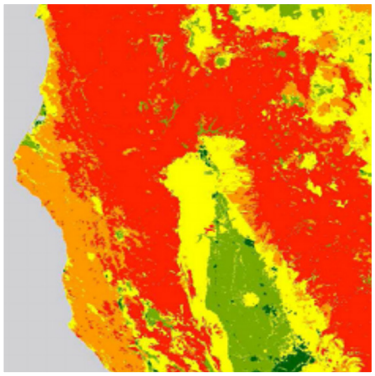
The BC team's foundational work included conducting a comprehensive literature review demonstrating the connection between wildfires and water quality impairments. We established a quantitative correlation between wildfire-related sediment yield impacts to the existing yields of sediment TMDL watersheds in the North Coast; this correlation is not a predictive model. Empirical evidence at the watershed scale from the literature and Revised Universal Soil Loss Equation, Version 2 modeling at the watershed scale showed that severe effects of wildfires increases sediment impacts to water by 100 times.

RELEVANCE TO CONTRACT
- **Storwmater activites planning and implementation**
- **Permit compliance**
- **Modeling**

TOTAL CONTRACT AMOUNT
$475K



Shown on the left, Caltrans highways and the sediment impacted TMDL watersheds.



The figure to the right shows the correlation to CalFire fire hazard severity in these same TMDL watersheds. Most of the North Coast sediment impacted TMDL watersheds have high or very high fire hazard severity.

The project demonstrated a connection between water quality protection and Caltrans' efforts to proactively reduce fuels and rehabilitate landscapes adjacent to roadways following wildfires. In addition to reducing sediment impaired waterbodies, reducing wildfire (by reducing available fuels) helps to restore watersheds, reduce levels of nutrients, salts and metals (including mercury) which currently impair hundreds of waterbodies throughout California.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Walnut Creek, California	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. Example Project Key Number
	3

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
One Water Climate Adaptation Framework and Projects Plan Honolulu, Hawaii	Ongoing	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City and County of Honolulu, Dept. of Environmental Services	Barry Usagawa, PE, Honolulu Board of Water Supply	808.748.5900

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

The One Water Climate Adaptation Framework and Projects Plan, known as One Water Honolulu (OWH), is driven by Oahu's need to adapt to climate change. Climate change is impacting Oahu, resulting in simultaneous conditions of both too much water and too little water. This project builds upon the efforts of the City and County of Honolulu (CCH) Office of Climate Change, Sustainability and Resiliency and the strategies and actions set forth within their Climate Ready Oahu plan.

Various climate change impacts including groundwater inundation, declining rainfall, increasing temperature, marine inundation, coastal erosion, and reduced recharge will affect our island communities.

RELEVANCE TO CONTRACT
- **One Water planning**
- **Infrastructure resilience**
- **Climate change adaptation**
- **Watershed resilience**
- **Asset management**

TOTAL CONTRACT AMOUNT
$4M

City Ordinance 20-47 established a One Water Panel in 2020 consisting of eight CCH departments who are charged with implementing an integrated resource planning approach to managing finite freshwater, wastewater, and stormwater resources for long term resilience and reliability to meet community and ecosystem needs.

OWH focuses on the prioritization of One Water climate resilience initiatives to address critical infrastructure through the development of a Climate Adaptation Framework and a Collaboration Framework. The Climate Adaptation Framework will facilitate climate change and sea level rise adaptation related to the planning, design, construction, maintenance, and operation of key infrastructure under the direction of the One Water Panel agencies. The Collaboration Framework will include guidance on internal and external stakeholder consultation, identify institutional barriers that hinder implementation of an integrated One Water approach, and provide recommendations on how City departments and stakeholders can more effectively collaborate to implement One Water projects and policies.

The One Water Honolulu plan will integrate and facilitate the management of freshwater, wastewater, and stormwater as one asset, creating resource and financial efficiencies within the City. These efforts will lead to the identification of near-, mid-, and long-term projects that will require collaboration between agencies and proactive adaptation to climate change impacts for Oahu.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Honolulu, Hawaii Wailuku, Hawaii Kamuela, Hawaii	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT
(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. Example Project Key Number
4

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Living Shoreline Restoration and Wetland Creation Program Norfolk, Virginia	Ongoing	Ongoing

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City of Norfolk	C.W. Gaskill, Jr., PE	757.823.4006

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

The City was awarded a grant through the National Fish and Wildlife Foundation Hurricane Sandy Coastal Resiliency Competitive Grants Program to restore shorelines, create wetland marsh, and create oyster reefs. Norfolk subsequently selected BC to provide assessment, design, permitting and construction services to deliver 12,400 lf of shoreline restoration, over 8 acres of wetland marsh creation, and 1.5 acres of oyster reef creation at six total project sites.

BC designed suitable, cost-effective sills to establish natural shorelines that protect and buffer the created wetland areas and shoreline banks from coastal flooding and erosion due to sea-level rise.

BC identified 11 potential sites that could meet the remaining grant metrics. BC conducted assessments of the sites, developed conceptual designs and cost estimates, and created a priority ranking matrix for the 11 potential shoreline restoration sites on the Lafayette River. BC prepared a technical memo for the City recommending which projects should proceed to design and construction. The six projects that met grant metrics were selected based on ease of access, ease of permitting, severity of shoreline erosion, risk to adjacent infrastructure, anticipated construction costs, and benefit to the local community.

RELEVANCE TO CONTRACT
- **Environmental reviews**
- **Permits support**
- **Modeling**
- **Survey**
- **Site investigation**
- **Breakwaters, living shorelines and shoreline restoration**
- **Nature-based infrastructure design**
- **Climate resiliency**
- **Erosion control**
- **Construction inspection and administration**

TOTAL CONTRACT AMOUNT
$6.1M

BC held pre-application meetings with the U.S. Army Corps of Engineers and the Virginia Marine Resources Commission to evaluate the chosen sites, obtain feedback on possible design or permitting issues, and discuss the implementation of innovative design strategies permissible under the suggested permits from these agencies. Permitting included submitting a Tidewater Joint Permit Application for Regional Permit 19 and Nationwide Permit 54, Section 106 coordination, Section 408 coordination, Virginia Marine Resources Commission coordination for existing oyster beds, and United States Fish and Wildlife Service coordination.

BC used the U.S. Army Corps of Engineers' Automated Coastal Engineering System to model and analyze wave energy, height and period to design suitable, cost-effective sills to protect the created wetland areas and shoreline banks from erosion, while taking projected sea-level rise and land subsidence estimates into consideration. In coordination with Virginia Institute of Marine Science, BC designed an innovative, more sustainable, lower profile sill that allows greater access for mussels and other fisheries to the created tidal wetland marshes. Where applicable, BC integrated oyster reefs into the sill design to provide better long-term structural stability of the sill, improved water quality, and improved habitat along the eroded shorelines.

Five of the six projects have been constructed, the final project located at the Norfolk International Terminal was transitioned to the Virginia Port Authority as the owner after BC finalized the design. BC is providing construction administration services for the five completed projects. Post construction site visits of the completed projects show healthy and stable wetland marsh areas with healthy recruitment of volunteer oyster and mussel establishment along the riprap sill and into the wetland marsh areas.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Virginia Beach, Virginia	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. Example Project Key Number
	5

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Feasibility Study for East Maui Source Development Maui Island, Hawaii	2025	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
County of Maui, Dept. of Water Supply, Water Resources and Planning Division	Eva Blumenstein	808.463.3102

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

BC conducted a feasibility study to identify new water source development strategies. Additional water supply and infrastructure is needed to accommodate growth outlined in the Maui Island Plan. BC assessed existing source capacity, refined future demand projections, and evaluated viable water source alternatives to assure reliable and resilient potable water supply for the Central and Upcountry water systems.

To accommodate growth in the Central and Upcountry water systems, BC assessed existing capacity, refined future demand projections, and evaluated viable water source alternatives to secure a reliable potable water supply.

RELEVANCE TO CONTRACT

- **Water demand projections**
- **Community outreach and Ka Pa'akai analysis**
- **Surface water and groundwater source alternatives analysis**
- **Stream restoration program**
- **Consent Decree compliance**
- **Cost-benefit analysis**

TOTAL CONTRACT AMOUNT
$1.4M

The study used a multiple criteria decision analysis and Ka Pa'akai analysis to consider valued cultural, historical, and natural resources, including potential effects on traditional and customary Native Hawaiian rights and practices. The study also included a stream restoration program for the Ha'ikū region.

Key tasks included:

- Central and Upcountry demand and capacity analysis, including updating demand projections, evaluating current source availability, and determining reliable capacity.
- Analysis of current and potential surface water and groundwater resources within the Wailuku, Central, and Ko'olau aquifer sectors, including legal, regulatory, and permitting constraints.
- Identification of needed infrastructure and planning level cost estimates for supply and development strategies.
- Development of a customized multiple criteria decision analysis tool to assess non-economic criteria to support source strategy prioritization and decision-making.
- Ka Pa'akai analysis with Native Hawaiian cultural organizations and community leaders.
- Business case evaluation and cost-benefit analysis of supply and development strategies for potential water sources.
- Ha'ikū region stream restoration program framework, including analysis of regulations, stream flows, diversions, ditches and uses of stream water; and stakeholder engagement to identify collaborative solutions for data sharing, watershed management and stream flow restoration.

Project benefits included:

- Rigorous analysis of surface water and groundwater availability in compliance with the 2003 East Maui Consent Decree.
- Evaluation of the Central and Upcountry Maui potable water source capacity.
- Establishment of water demand projections through 2040.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Honolulu, Hawaii Wailuku, Hawaii Kamuela, Hawaii	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT
(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. Example Project Key Number
6

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Healthy Waters Plan Vancouver, British Columbia, Canada	Ongoing	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City of Vancouver	Chris Baber	604.218.5470

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

BC is collaborating with the City to develop a city-wide action and strategic investment plan extending to 2075. This plan will guide policy, regulation, advocacy, and long-term investments in sewer and stormwater management over a four-year project timeline.

BC created a watershed planning charrette, something never done at the city, that hosted over 80 participants to co-create pathways the city could take. BC then used this information to craft the alternative pathways.

RELEVANCE TO CONTRACT
- **Data collection and review**
- **Vulnerabilities/risks screening and assessment**
- **Climate change impact identification**
- **Mitigation strategy development**
- **Near and long-term implementation establishment**
- **Stakeholders engagement**

TOTAL CONTRACT AMOUNT
$4.7M

Phase 1. BC assessed the current state of the City's sewer and stormwater systems through a series of reports and developed a short-term priority action plan focused on achieving immediate, easily attainable water quality improvements. BC also created an engagement framework for the City to work collaboratively with Indigenous Nations, non-profits, and subject matter experts from the City and regional planning agency. This framework included three stakeholder and partner groups: the Project Advisory Group, the Technical Working Group, and the Leadership Forum, with additional input from the Expert Advisory Panel. Together, the City and its stakeholders developed goals, objectives, and decision criteria to guide the project.

Phase 2. BC is developing a comprehensive, long-term, city-wide Sewage and Rainwater Management Plan based on the multi-stakeholder consultation process initiated in Phase 1. This plan uses appropriate technical analysis to guide strategic investments in green and grey infrastructure, watershed planning frameworks, policy regulation, and other actions needed to achieve future objectives for healthy waterways and watersheds. BC integrated community values such as equity, climate resilience, and reconciliation with First Nations into the plan. BC hosted a watershed planning workshop, an unprecedented event for the City, with over 80 participants to co-create potential pathways. The insights from this workshop were then used to craft alternative strategies. BC is assessing multiple pathways to stop combined sewer overflows and maximize community and environmental benefits using BC's multi-criteria decision analysis tool. The 20 decision criteria, co-developed with stakeholders, guide the assessment of these pathways to maximize multiple benefits. Throughout the process, BC has been the prime consultant, coordinating with multiple subconsultants. BC is also the engagement lead, having crafted and led over 20 successful workshops with the engagement groups.

Phase 3. BC will help refine the preferred pathway chosen by the Council at the end of Phase 2. Using an adaptive pathways framework, BC will provide implementation guidance, affordability options, and recommendations for next steps and further studies.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Vancouver, British Columbia, Canada	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT
(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. Example Project Key Number
7

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Risk and Resiliency Assessment and Emergency Response Plan Update Hilo, Hawaii	2022	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
County of Hawaii, Dept. of Water Supply	Keith Okamoto, PE	808.961.8050

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

BC performed a risk and resiliency assessment for the County of Hawaii, Dept. of Water Supply (HDWS) to meet the America's Water Infrastructure Act (AWIA) 2018 compliance requirements. The assessment included an evaluation of HDWS's seven largest systems that meet the threshold for the AWIA 2018 requirements. The assessment evaluated HDWS's readiness for select natural hazard events and malevolent acts. The intent of the assessment was to:

- Identify and assess the risk and resiliency of the seven largest HDWS drinks water systems in the event of a natural hazard or malevolent act. The assets evaluated included wells, storage, and pumping systems.
- Assess the island-wide preparedness and operational ability of HDWS to respond to meet level of service goals during a disastrous event. The evaluation assessed the positioning of emergency generators, baseyards, access, and equipment storage for all HDWS systems.
- Fulfilling Environmental Protection Agency compliance and reporting requirements in accordance with AWIA 2018.

RELEVANCE TO CONTRACT
- **Risk and resiliency**
- **Vulnerability assessment**
- **Criticality analysis**
- **AWIA 2018 compliance**
- **Water infrastructure**
- **Pumping systems**
- **Storage assessment**
- **Emergency response planning**

TOTAL CONTRACT AMOUNT
$535K

BC developed a custom vulnerability assessment tool that evaluated HDWS's critical assets against the selected natural hazards and malevolent acts. The tool produced a prioritized risk score for each asset based on the identified threat. The results were used to support HDWS's future improvement planning.

As part of this project, BC updated the HDWS's Emergency Response Plan which included updates to the Action Plans to prepare for, respond to, and recover from an emergency event. BC also identified recommendations to improve HDWS's preparedness for an emergency event.

Project benefits Included:

- Identification of critical and vulnerable assets that should be prioritized by HDWS to keep online or bring service back online during and after emergency events.
- Identification of proactive measures that may be implemented by HDWS to improve water system resiliency and post-disaster response.
- Identification and mitigation of existing system vulnerabilities in advance of a hazard event to minimize potential damage and reduce recovery and restoration costs.
- Minimization of public health risks for HDWS customers following a hazard event and incorporation of appropriate operational resiliency strategies within HDWS's updated Emergency Response Plan.
- On-schedule delivery and certification to meet regulatory requirements of AWIA 2018.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Honolulu, Hawaii Wailuku, Hawaii Kamuela, Hawaii	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. Example Project Key Number
	8

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation Honolulu, Hawaii	2019	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Honolulu Board of Water Supply/Water Research Foundation	Kenan Ozekin	303.734.3464

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

The Honolulu Board of Water Supply (BWS) and the Water Research Foundation (WRF) undertook a vulnerability assessment to identify and evaluate the potential impacts of climate change on current estimates of groundwater sustainable yield (the chief source of BWS's water supply), pipelines and pumping system infrastructure, and strategies to address the anticipated changes. Aligned with WRF's Climate Change Strategic Initiative, this project developed strategies that can be used as a guide for other utilities to evaluate and plan for the impact of climate change on water quantity, quality, and infrastructure.

BC used an scenario planning approach to evaluate the impacts of climate change and develop adaptive strategies using an iterative process to promote flexible decision making in the face of uncertainties and increase an organization's preparedness. This planning approach can be implemented for a range of potential changing conditions, including future climate predictions, water supply demands, and economic development to promote flexibility to changing circumstances.

RELEVANCE TO CONTRACT

- **Comprehensive potable water utility assessments**
- **Evaluation of multiple scenario-based risks and consequences**
- **Vulnerability analysis of climate change impacts upon utility assets**
- **Development of mitigation strategies to address potential risks to water supply and the overall water distribution system**

TOTAL CONTRACT AMOUNT
$275K

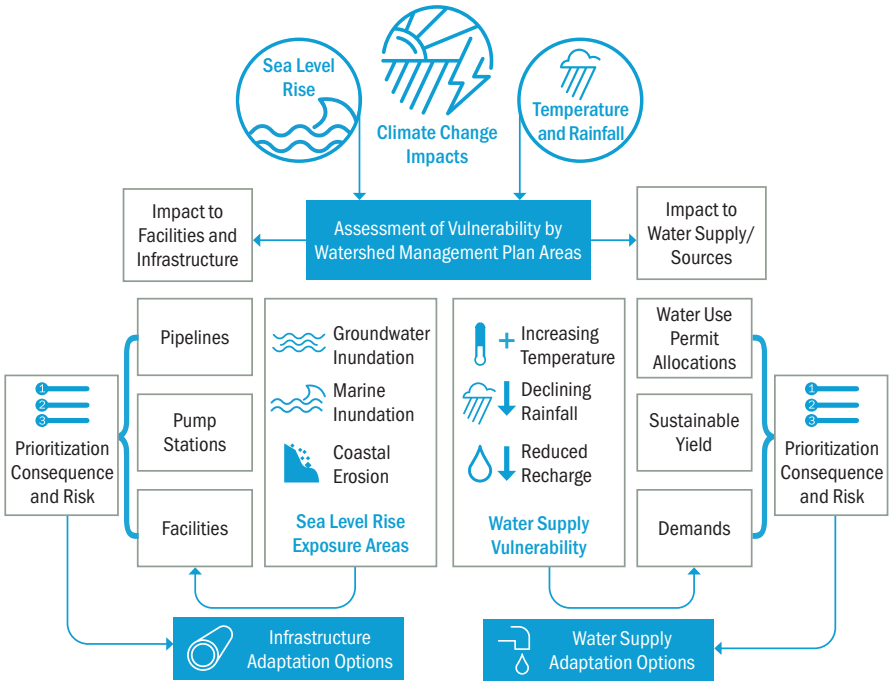
Approach. The climate change projections for sea level rise were used to analyze impacts to BWS's infrastructure for each of the sea level rise hazards—coastal erosion being the most severe, followed by marine and groundwater inundation. Microsoft Excel and geographic information system databases were created to summarize individual asset infrastructure vulnerabilities based on the pipe size and material for each sea level rise scenario.

Forecasted temperature and precipitation data were used to assess impacts to BWS's groundwater sources from one general circulation model (CMIP5), two emission scenarios (Representative Concentration Pathways 4.5 and 8.5), and two downscaling methods (statistical and dynamical). Increased temperatures and changes to seasonal rainfalls were used to project future recharge and potential changes in sustainable yield, water use permit allocations, and forecasted water demands. Water quality vulnerabilities were also assessed to understand how sea level rise could impact salinity in groundwater aquifers, but not to the same extent as water supply and infrastructure asset vulnerabilities.

Adaptation Strategies. A prioritized list of actions was compiled to address a range of potential changing conditions for near-, mid-, and long-term implementation. The goal was to develop an iterative and flexible adaptive planning process to accommodate future uncertainties and identify options and strategies to address potential water supply and infrastructure impacts.

The frequency and severity of "nuisance" intermittent flooding events were also incorporated as a future milestone for implementation of sea level rise adaptation strategies as these nuisance events serve as precursors to longer-term, more significant impacts of sea level rise. Given that 3.2 feet of sea level rise could occur by the end of the century, a mid-century milestone was linked to implement various options to adapt to high tide flooding associated with projected sea level rise. An intermediate scenario of nuisance flooding of 24 times per year was recommended as a trigger for the planning, design, and construction of selected adaptation strategies. At the end of the century, a 6-foot sea level rise planning benchmark was also incorporated to assist with longer-term sea level rise preparations and adaptation.

An important outcome of this project was the development of a proposed County framework for coordinating multiple agency efforts associated with climate change mitigation and adaptation. This proposed framework was intended to support the identification of select pilot areas for which adaptive options can be prioritized and strategically implemented. The assessment culminated in the development of a proposed Sea Level Rise Action Strategy to serve as a template for future implementation of recommended adaptation options. The strategy incorporated a qualitative approach for identifying and assembling planning, design, and construction measures into an adaptive plan based upon existing data and available information. Each proposed action item was tied to a specific initiation and completion time frame and/or recommended implementation trigger or milestone, such as the scenario of 1.7 feet of sea level rise based on nuisance flooding of 24 times per year by 2045.



Vulnerability assessment approach that shows impacts to BWS's facilities and infrastructure as well as their water supply and sources.

In addition to establishing triggers, which need to be constantly updated and refined based on new information, target areas need to be selected for priority application of adaptation measures. These "pilot" areas, and the "lessons learned" through the early implementation of recommended actions, will help guide future government and private sector efforts. These efforts need to be integrated and effectively coordinated to maximize resources, minimize duplication of efforts, and streamline and overcome existing implementation obstacles or impediments.

Conclusions. This assessment provided a recommended starting point for focused discussions beginning with the proposed County Framework for Implementation of Climate Change Adaptation Strategies (starting initially with the affected County agencies), a draft Road Map to Climate Change Resiliency (involving both government agencies, private sector entities, and stakeholders), and a proposed Sea Level Rise Action Strategy (that prioritizes recommended actions in alignment with specific triggers and time frames for execution).

The projected consequences of climate change will require continued, vigilant monitoring of climate trends and ongoing evaluation of projected impacts. This assessment used the best available information to assess climate change vulnerabilities and develop adaptive strategies. As additional climate change predictions and modeling results become available, this assessment is intended to be updated periodically (every 5 to 10 years) to reflect the latest data, scientific knowledge, and lessons learned from other agencies and adaptive strategy implementation.

Project benefits Included:

- A prioritized list of climate change mitigation and adaptation options.
- A proposed County framework for coordination of agency efforts to effectively prepare for future climate change impacts.
- A proposed Sea Level Rise Action Strategy tied to specific actions and time frames for implementation.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Honolulu, Hawaii Wailuku, Hawaii Kamuela, Hawaii	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. Example Project Key Number
	9

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Hare Snipe Creek Watershed Study Raleigh, North Carolina	2023	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
City of Raleigh, Engineering Services Dept.	Barbara Moranta	919.996.3976

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

RELEVANCE TO CONTRACT
- **Implementation/capital improvement project development**
- **Project development and evaluation**
- **Field data collection**
- **Geographic information system (GIS) analysis**
- **Modeling**
- **Public outreach**

TOTAL CONTRACT AMOUNT
$1M

This integrated watershed study is the first undertaken by the City in their next iteration of watershed studies. It incorporates flood mitigation, water quality improvements, and stream health. Hare Snipe Creek has been identified as an impaired water for benthos, but it does not have an established total maximum daily load or associated waste load allocation. Lake Lynn, which is owned and maintained by Wake County, provides regional flood control within the watershed.

The Equity Framework, created by BC and City staff in collaboration with multiple City departments, guided the study process. It outlines actions and priorities to enhance equity in watershed projects and solutions.

BC piloted stream assessment technologies, including drones and use of 360-degree cameras during a portion of the stream assessment to evaluate the usefulness of the additional data collection for current and future project needs. BC utilized the 360-degree cameras to complete the stream assessments for the remainder of Hare Snipe Creek and its tributaries.

BC provided programmatic support by leveraging the Esri ArcGIS platform on the desktop, via mobile devices, and via ArcGIS Online. BC set up ArcGIS Online and partnered collaboration between organizations to share GIS content and used complex geoprocessing and modeling to leverage and integrate project data for use by the project team performing analysis and to support communication with the public. Integration of high-resolution 360 video (via third party hosting service), data collected using Esri mobile applications during stream-walks, and modeling results were managed using the ArcGIS Platform support the core engineering work conducted on the project. The geolocated camera results allowed BC and City staff to walk the streams, pause, and rotate cameras, similar to Google Street View, which allowed anyone to evaluate stream conditions, utility conflicts, or other areas of interest along each stream segment.

Within the Hare Snipe Creek watershed, BC developed an hydrologic and hydraulic model in PCSWMM that evaluated the locations and extent of flooding during existing and projected future conditions. To calibrate the models, BC conducted flow monitoring at two stream sites using continuous stage monitoring and the U.S. Geological Survey velocity measurement methodology. BC also established a water quality baseline across the watershed to identify and evaluate potential water quality improvement projects utilizing a BC-developed GIS-based planning level water quality model (WIP Tools).

BC collaborated with the City to define watershed project goals, including level of service, regulatory requirements, critical infrastructure safety, resident complaints, and water quality priorities and use this to guide the project identification process. The previously developed Equity Framework was also integrated into the project identification process. Projects were identified to meet both flood reduction and water quality/pollutant capture goals and projects were grouped, where appropriate, to achieve combined benefits.

During the development of the Hare Snipe Creek Watershed Study, BC established processes and procedures to complete watershed studies or components of studies to create a consistent methodology for City planning projects. This included developing techniques for public outreach and engagement; a standard schema for field data collection; conducting stream assessments; water quantity and water quality modeling processes; and project identification, prioritizations, and alternatives analysis.

The final product for this project included a two-part deliverable:

- A Watershed Methods Document that detailed the City's approach for conducting watershed plans and could be used to guide the approach for subsequent watershed plans moving forward.
- A Watershed Results Document that summarized the findings and recommendations and included background information, field inventory and model results, project identification, and a plan for implementation.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	Brown and Caldwell	Raleigh, North Carolina	Prime

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT
(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)

20. Example Project Key Number
10

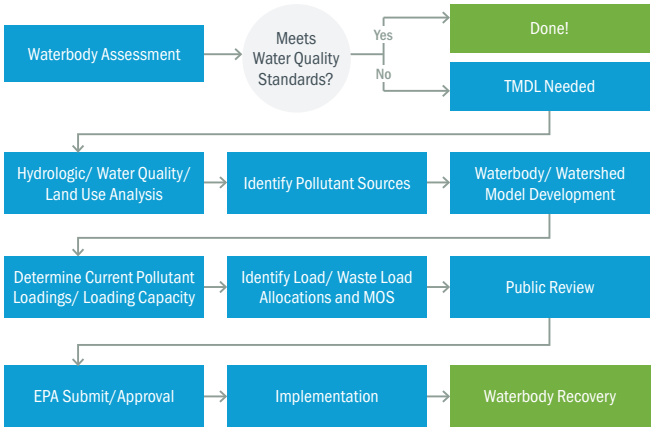
21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Stormwater Management Program Oahu, Hawaii	Ongoing	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
State of Hawaii, Dept. of Transportation	Kyson Morikuni, EnviroServices & Training Center	808.664.1937

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

State of Hawaii, Dept. of Transportation (HDOT) facilities are located within watersheds that discharge to impaired waterbodies under Section 303(d)(1)(C) of the US Clean Water Act. When waterbodies are listed as impaired, the U.S. Environmental Protection Agency's implementing regulations require the establishment of a total maximum daily load (TMDL) for the pollutants of concern to achieve state water quality standards.



The flowchart shows the process order of tasks involved in the TMDL development process.

RELEVANCE TO CONTRACT
- **Regulatory compliance**
- **Stormwater management**
- **Water quality**

TOTAL CONTRACT AMOUNT
$50K

For over 15 years, Keehi Lagoon, Moanalua Stream, and Kalihi Stream on Oahu have been listed as impaired due to excess nutrients (nitrogen and phosphorus) and high turbidity. These waterbodies have nutrient and turbidity levels that exceed the State's water quality standards developed and implemented for the support and propagation of aquatic life, recreation, and/or aesthetic enjoyment. Since these waterbodies are impaired, the State of Hawaii, Clean Water Branch is obligated to develop TMDLs to reduce the volume of pollutants entering the waterbody and enable the waterbody to meet the water quality standards. Keehi Lagoon, Moanalua Stream, and Kalihi Stream were listed as "high priority" in the 2022 Integrated Report and Clean Water Branch has started to develop TMDLs for these waterbodies.

As a subconsultant to EnviroServices & Training Center, BC is providing scientific and engineering services to support the HDOT, Highways Division, Oahu District (HDOT-Oahu), Municipal Separate Stormwater Sewer System (MS4) evaluate and negotiate TMDL requirements with the Dept. of Health which administers National Pollutant Discharge Elimination System (NPDES) MS4 permitting regulations in Hawaii. The overarching objective is to ensure an accurate accounting of MS4 jurisdiction existing pollutant loads and loading capacities and equitable distribution of final load allocations in the TMDLs. BC was selected due to our extensive MS4 and TMDL compliance experience and capabilities, which have helped other state DOTs and municipal clients throughout the US, reduce their cost of TMDL compliance.

BC's work includes completing technical reviews and analyses, and providing questions, guidance, and recommendations throughout the TMDL development process. This includes tasks from establishing land use delineations and MS4 boundaries through identifying existing MS4 pollutant loads, developing watershed and receiving waterbody models, determining loading capacity, and assigning draft and final MS4 load allocations. Additionally, BC will support HDOT-Oahu in developing an Implementation and Monitoring Plan to achieve compliance with load allocations set by final TMDL requirements.

BC will continue to provide support to HDOT as HDOH develops TMDLs for other impaired waterbodies on Hawaii.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a.	EnviroServices & Training Center, LLC	Honolulu, Hawaii	Prime
b.	Brown and Caldwell	Honolulu, Hawaii Wailuku, Hawaii Kamuela, Hawaii	Subconsultant

Key Personnel Participation in Example Projects

SECTION G

Brown AND Caldwell

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

26. NAMES OF KEY PERSONNEL *(From Section E, Block 12)*	27. ROLE IN THIS CONTRACT *(From Section E, Block 13)*	28. EXAMPLE PROJECTS LISTED IN SECTION F *(Fill in "Example Projects Key" section below before completing table. Place "X" under project key number for participation in same or similar role.)*									
		1	2	3	4	5	6	7	8	9	10
Tom Myers, PE	Project Oversight										✓
Dean Nakano	Principal-in-Charge	✓		✓		✓		✓	✓		✓
Michelle Sorensen, PE	Project Manager					✓		✓			
Audrey Cabrera, PE	Project Manager										
Lauren Armstrong, AICP	Project Manager and Strategic Communications Specialist					✓					
Irina Constantinescu, PE, LEED AP	QA/QC										
Craig Lekven, PE	Wastewater and Natural Systems					✓					
Susan Mukai, PE, LEED AP BD+C	One Water Specialist	✓		✓				✓	✓		
Lenise Marrero, PE*	One Water Specialist			✓							
Aylin Lewallen	Water Resources Specialist									✓	
Clifton Bell, PE*, PG*	Water Quality Specialist										
Damon Diessner	Strategic Planning Specialist										
Tess Sprague, PhD	Climate Change and Resilience Specialist			✓			✓				
Seema Chavan, PE*	Funding Specialist										
Mike Simms	GIS and Asset Management Specialist										
Fiona van Ammers, PE, CPSWQ	Stormwater Specialist					✓					✓
Mike Flake, PE*, QSD/P	Stormwater Specialist		✓								
Rachel Garrett	Strategic Communications Specialist										
Kristene Wilder, PG*, CHG*	Hydrogeology/Geology Specialist										

29. EXAMPLE PROJECTS KEY

No.	Title of Example Project *(from Section F)*	No.	Title of Example Project *(from Section F)*
1	**Central Oahu Watershed Management Plan** Honolulu, Hawaii	6	**Healthy Waters Plan** Vancouver, British Columbia, Canada
2	**Quantify Water Quality Benefits from Caltrans' Wildfire Prevention and Restoration Activities** Sacramento, California	7	**Risk and Resiliency Assessment and Emergency Response Plan Update** Hilo, Hawaii
3	**One Water Climate Adaptation Framework and Projects Plan** Honolulu, Hawaii	8	**Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation** Honolulu, Hawaii
4	**Living Shoreline Restoration and Wetland Creation Program** Norfolk, Virginia	9	**Hare Snipe Creek Watershed Study** Raleigh, North Carolina
5	**Feasibility Study for East Maui Source Development** Maui Island, Hawaii	10	**Stormwater Management Program** Oahu, Hawaii

**Professional license outside the State of Hawaii*

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS *(continued)*

26. NAMES OF KEY PERSONNEL *(From Section E, Block 12)*	27. ROLE IN THIS CONTRACT *(From Section E, Block 13)*	28. EXAMPLE PROJECTS LISTED IN SECTION F *(Fill in "Example Projects Key" section below before completing table. Place "X" under project key number for participation in same or similar role.)*									
		1	2	3	4	5	6	7	8	9	10
Stan Kowalczyk, PE	Hydraulics/Hydraulic Modeling Specialist							✓			
Jaren Hiller, PE*, LEED AP	Hydraulics/Hydraulic Modeling Specialist									✓	

29. EXAMPLE PROJECTS KEY

No.	Title of Example Project *(from Section F)*	No.	Title of Example Project *(from Section F)*
1	**Central Oahu Watershed Management Plan** Honolulu, Hawaii	6	**Healthy Waters Plan** Vancouver, British Columbia, Canada
2	**Quantify Water Quality Benefits from Caltrans' Wildfire Prevention and Restoration Activities** Sacramento, California	7	**Risk and Resiliency Assessment and Emergency Response Plan Update** Hilo, Hawaii
3	**One Water Climate Adaptation Framework and Projects Plan** Honolulu, Hawaii	8	**Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation** Honolulu, Hawaii
4	**Living Shoreline Restoration and Wetland Creation Program** Norfolk, Virginia	9	**Hare Snipe Creek Watershed Study** Raleigh, North Carolina
5	**Feasibility Study for East Maui Source Development** Maui Island, Hawaii	10	**Stormwater Management Program** Oahu, Hawaii

**Professional license outside the State of Hawaii*

Additional Information, Authorized Representative

SECTIONS H-I

Brown AND Caldwell

County of Hawaii, Office of Sustainability, Climate, Equity and Resilience

H. ADDITIONAL INFORMATION

30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. *(Attach additional sheets as needed.)*

Executive Summary

Brown and Caldwell (BC) is excited about the opportunity to continue working with the County of Hawaii, Office of Sustainability, Climate, Equity and Resilience, supporting strong and lasting stewardship of water resources and providing quality water service today and into the future. BC invites your review of the enclosed Statement of Qualifications to deliver the following professional services:

Project Category OS.1) Ecology

This Section H addresses key evaluation criteria, emphasizing the core evaluation areas which informs consultant selection. Our dedicated local team will provide steady, trusted expertise for all technical elements of anticipated contract work associated with this category. We are eager to help you achieve your vision as a utility.

In accordance with standard selection criteria, we offer the following:

1. The name of firm or individual's principal place of business and locations of all of its offices:

BC has more than 52 offices nationwide and in Guam, as shown in the map to the right. A detailed list of all office locations is available upon request.

Principal Places of Business (in Hawaii)

Honolulu
737 Bishop Street, Suite 3000
Honolulu, Hawaii 96813
Phone: 808.523.8499
Email: DYamamoto@brwncald.com

Wailuku
2261 Aupuni Street, Suite 201
Wailuku, Hawaii 96793
Phone: 808.244.7005
Email: IConstantinescu@brwncald.com

Kamuela
65-1230 Mamalahoa Hwy, Suite D20A
Kamuela, Hawaii 96743
Phone: 808.442.3306
Email: MSorensen@brwncald.com

2. The age of the firm and its average number of employees over the past five (5) years:

BC is a full-service environmental engineering and construction firm with a strong history of helping Hawaii clients develop innovative, cost-effective solutions.

Founded in 1947, BC has spent decades providing creative solutions to help our clients successfully

Office Location Map

2,300+ National Employees

100% Water/Environmental

77+ Years in Business

35 years
with a Hawaii office

average **54** employees
in our Hawaii offices over the past 5 years

Year	# of Emp.
2024	64
2023	60
2022	53
2021	49
2020	47

overcome their most challenging water and wastewater obstacles. BC has been dedicated to serving clients in Hawaii since the 1970s and established our Maui and Honolulu offices in 1989, and our Kamuela office in 2020. Over the years, BC has built long-term partnerships across Hawaii through local project delivery and thoughtful engagement of our national experts.

3. The education, training, and qualifications of key members of the firm:

Please refer to **Section E Resumes of Key Personnel Proposed for this Contract** of this Federal Standard Form 330 for the education, training, and qualifications of key employees selected to work on any contract work for this submittal category. Work will be managed and primarily executed by our Hawaii-based professionals with the assistance and support of our national experts.

4. A list of recent projects and the names of up to five clients who may be contacted, including at least two for whom services were rendered during the preceding year:

Please refer to **Section F Example Projects Which Best Illustrate Proposed Team's Qualifications for this Contract** of this Federal Standard Form 330. Our projects include references and detailed descriptions that demonstrate BC's ability to provide the required services under this category. The following is a list of local BC clients the you may contact.

Client List

Name and Title	Organization	Phone Number
Keith Okamoto, PE ● Manager-Chief Engineer	County of Hawaii, Dept. of Water Supply	808.961.8050
Eva Blumenstein ● Planning Program Administrator	County of Maui, Dept. of Water Supply	808.463.3102
Michael Hinazumi, PE ● Acting Deputy Manager	County of Kauai, Dept. of Water	808.245.5416
Eric Nakagawa, PE ● Division Chief	County of Maui, Dept. of Environmental Management, Wastewater Reclamation Division	808.270.7746
Wesley Yokoyama, PE ● Division Chief	City and County of Honolulu, Dept. of Environmental Services	808.768.8790

● *Presently Rendering Services*

5. Any promotional or descriptive literature which the firm desires to submit:

On the following pages, we have attached selected information on BC's history working with the County of Hawaii and our standard practices regarding safety, cost control, quality of work, and project schedules. We have also included descriptions of pertinent areas of expertise:

A. Strategic Funding

B. Civil Engineering

C. Stormwater and Nature-Based Solutions

D. Climate Change

E. Environmental Planning and Permitting

F. Groundwater Quality

G. Master Planning and Modeling

H. Drone Inspection

I. One Water

BC's history with the County of Hawaii

Our locally-based team can swiftly provide wastewater, water, solid waste and stormwater expertise, and as-needed access to experts nationwide.

BC has been providing support to County of Hawaii since 1997 when we began our work at the Kealakehe Wastewater Treatment Plant (WWTP). Over this time, BC has played diverse roles, providing a breadth of services to projects across the County of Hawaii. Familiarity with your systems, staff, and goals allows us to deliver effective and efficient solutions.

Select County of Hawaii Experience

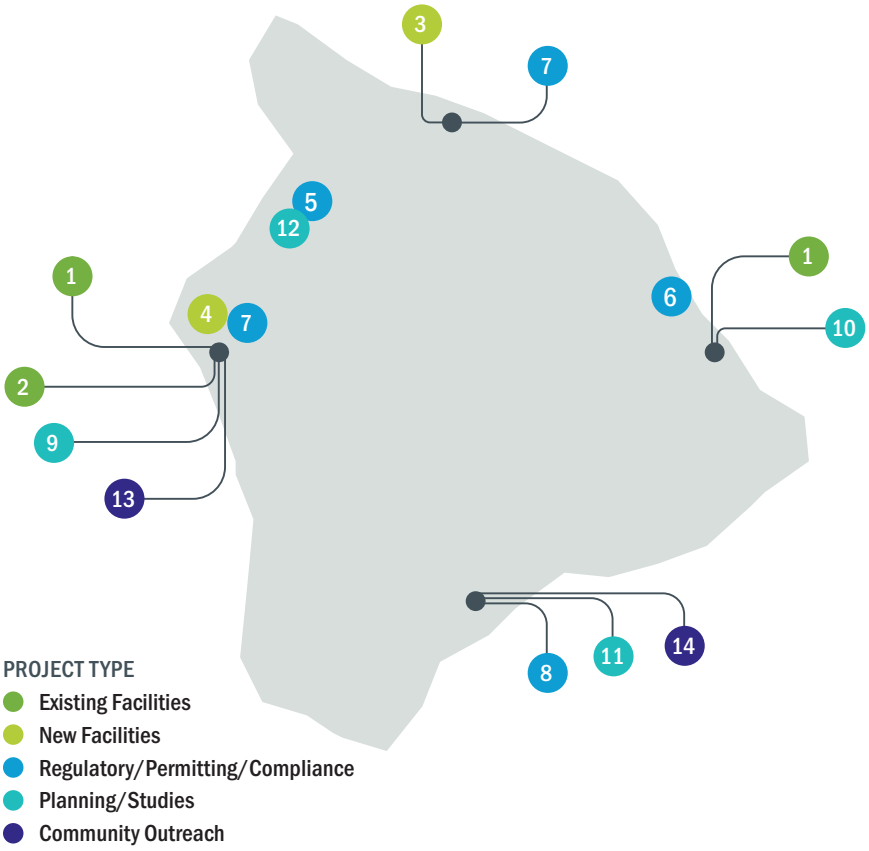


Figure 1.1 // County of Hawaii projects

Projects

1. Corrosion Damage Assessment (Hilo, Kona)
2. Kealakehe WWTP R-1 Upgrade
3. Honokaa Large Capacity Cesspool Conversion Project
4. North Kona Sewage Pump Station Preliminary Design
5. Lead and Copper Rule Revisions and Improvements Compliance
6. Zone of Mixing Dilution and Assimilative Capacity Study for the Hilo, Papaikou, and Kulaimano WWTPs
7. Underground Injection Control Testing Program for the Honokaa WWTP and the Kaloko WWTP
8. Naalehu and Pahala LCC Closures
9. Kealakehe WWTP Upgrades and Photovoltaic Study
10. Pua Pumping System Replacement
11. Naalehu and Pahala EAs
12. South Kohala Flood Study
13. Kealakehe R-1 Upgrade Public Outreach Services
14. Pahala and Naalehu LCC Closure Public Outreach and Engagement

Existing Facilities

BC supports County of Hawaii's existing facilities (such as WWTPs, pump stations, and collection systems) with a variety of services including:

- Existing Facility Studies
- Condition Assessments
- Small Communities Compliance (Environmental Protection Agency Large Capacity Cesspool (LCC) Closure)
- Facility Upgrades
- Operations and Maintenance Guidance

New Facilities

BC provides services at all stages of the lifecycle of County of Hawaii's new facilities:

- Planning
- Design
- Construction

Regulatory/Permitting/ Compliance

Regulatory compliance is a key component to any facility. BC supports the County of Hawaii's regulatory compliance and permitting needs including:

- National Pollutant Discharge Elimination System and Underground Injection Control Permits
- Zone of Mixing/Assimilative Capacity Determinations
- Ocean Outfall Inspections
- LCC Closures

Planning/Studies

Having solid plans in place that are based on studies allows for the greatest chance for success. To that end, BC has supported the County of Hawaii's planning through:

- Environmental Planning (Environmental Site Assessments, Environmental Assessment/Environmental Impact Statement)
- Effluent Management and Reuse Plan
- System Master Planning
- Facility Plans
- Photovoltaic Studies
- Surge/Transient Analyses

Community Outreach

Engaging with stakeholders and informing the public allows the County of Hawaii to maintain positive relationships and facilitates projects smooth project progress. BC has played a role in outreach efforts through:

- Community Outreach Plans
- Public Scoping Meetings
- Focus Groups
- Community Media Relations
- Public Newsletters and Fact Sheets

Supporting County of Hawaii's Past, Present, and Future

For more than 20 years, BC has supported the County of Hawaii's project/program at Kealakehe WWTP. Our understanding of Hawaii's complex ecosystem and the importance of water conservation on the island paired with our extensive experience with similar projects has allowed us to support your varies initiatives at the Kealakehe WWTP while keeping the County of Hawaii's and island's interests in mind. Some examples of our work at the WWTP:

Effluent Reuse Planning

BC's first County of Hawaii project was creating the Kealakehe WWTP Effluent Reuse Master Plan report to develop reuse options such as irrigation. This project began BC's long involvement at the WWTP.

Upgrades and Facility Plan

BC's aeration upgrade and sludge removal project led to restored and improved treatment capacity, decreasing energy consumption, and extending the life of the facility while construction methods preserved the livelihood of the endangered Hawaiian stilt.

R-1 Recycled Water Project

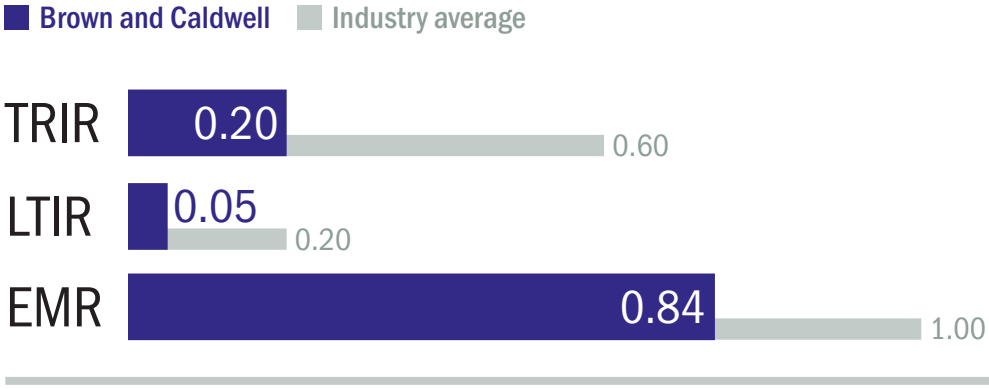
BC's treatment system design would produce the highest grade of recycled water to be used for irrigation. Recycling effluent will expand the County of Hawaii's water resources to enhance potable water capacity and modernize the Kealakehe WWTP.

Soil Aquifer Treatment (SAT) Project

The 10-acre SAT system is designed to replace the controversial sump disposal and result in significant phosphorus and contaminants of emerging concern removal. The unique aspects of the SAT system would make this the first construction of its kind in the State of Hawaii and protect water resources.

Safety Performance

Safety metrics



2024 Total Recordable Incident Rate **(TRIR)** | 2024 Lost Time Incident Rate **(LTIR)** | 2025 Experience Modification Rate **(EMR)**

2025 TRIR and LTIR to be updated in early 2026

A programmatic approach to health and safety

Safety is part of who we are at BC, and zero incidents is our aspirational goal.

Beyond preventing injuries and property damage, reducing health and safety (H&S) occurrences benefits our clients in reduced costs, increased productivity, and a positive public image. Adherence to BC's H&S principles results in incident costs and loss history that are consistently better than those of our industry at large. BC is the recipient of multiple industry and client awards recognizing H&S performance.

Since 2008, BC has been the recipient of 45 different awards from the National Safety Council.

8 AWARDS
Perfect Record

18 AWARDS
Occupational Excellence Achievement

2 AWARDS
Safety Leadership

12 AWARDS
Million Work Hours

5 AWARDS
Industry Leader

121 THINKSHARP AWARDS
were granted to employees over the last year

BC employees average over
13,000 HOURS
per year in safety training

Project Management

The industry is evolving in project delivery and service models, technology is advancing at a breakneck pace, and client needs are changing. BC recognizes that we must be trusted partners to our clients who fully understand their needs and those of their stakeholders. We look beyond simply meeting project requirements to understand our clients' emerging challenges and opportunities and help them achieve their long-term goals.

Effective project management is fundamental to delivering on this commitment. **Through fully understanding client needs, and doing the basics better with consistent, proven management practices, BC is delivering the service and results our clients deserve.**

Schedule and Budget Management

Schedule, budget, and scope are interdependent project elements. Change to any of these elements will likely impact others or may have an adverse effect on project quality. BC schedules and budgets are built around developing high-quality deliverables that meet client expectations. This includes carefully defining the required work effort, confirming the availability of appropriate resources and providing adequate time for work execution and quality reviews.

During project scoping our Project Managers (PMs) outline schedule durations and estimate the level of effort and budget, which then receives an independent review, setting the path for successful project delivery. Our PMs manage schedule and budget during project execution by:

- Using earned-value management to measure performance and progress in an objective manner (monthly, at minimum).
- Communicating regularly with the project team to optimize work efficiency, refine the mix of staff resources, manage subcontractor work performance, and adjust other elements of the work effort to align with the established schedule and budget.
- Communicating regularly with the client and, as appropriate, stakeholders regarding project progress and any anticipated or observed issues and corrective actions to maintain the schedule and budget.
- Collaborating internally with Project Management Office staff and Subject Matter Experts to verify corrective actions.

Our PMs work with clients to proactively identify and address project risks that could adversely impact their goals.

Identify the Risk

- What is the risk?
- What could trigger the risk?

Evaluate the Risk

- What are the potential impacts should the risk occur (e.g., H&S, schedule, budget, quality, etc.)?
- What is the probability of the risk occurring (e.g., rare, unlikely, possible, likely, frequent, etc.)?
- What is the consequence of the potential impacts (e.g., insignificant, minor, moderate, major, catastrophic, etc.)?
- What is the rating (i.e., measure of probability and consequence) of the risk (e.g., low, medium, high, very high, extreme, etc.)?

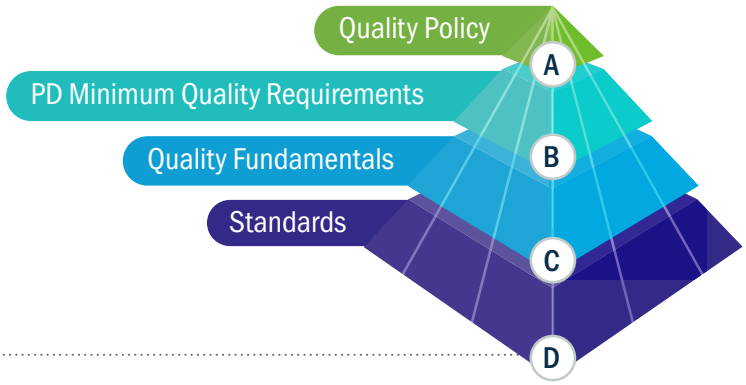
Mitigate and Manage the Risk

- What mitigation and/or management strategies are planned?
- How are the strategies categorized (e.g., preventive, contingency, etc.)
- Who is responsible for what actions?
- When should the actions be complete?

BC's Quality Policy

BC emphasizes quality assurance, investing time up front to plan and do the work right the first time.

BC recognizes that it makes no difference if you have the best project management tools, meet every milestone, or complete a project under budget, if the final deliverable does not meet expectations for quality. That is why we implement a Quality Framework that focuses on delivering quality on every project. Our commitment is to deliver quality work on every project, every time.



A **The Quality Policy** at BC is delivered through consistent application.

B **The Project Delivery Minimum Requirements** establish the expectations for PMs and project teams to budget for quality, develop a Quality Management Plan (QMP), appropriately execute the plan, and ensure that auditable documentation is in place.

C **The Quality Fundamentals** are BC's best practices for technical project delivery, establish quality assurance and quality control program elements to be applied throughout the project lifecycle. These fundamentals are the essential building blocks of a strong QMP and must be employed where applicable.

D **Standards** encompass BC's vast array of information, tools, and resources that project teams can draw from to deliver the best possible product. From technical software and calculation tools to best practices and guidelines, using BC's approved standards helps avoid making mistakes resulting from inexperience or lack of knowledge.

Selecting BC for your projects secures the services of an experienced, Hawaii-based firm that understands local conditions and practices, yet has nationwide expertise to draw from as needed. We look forward to continuing to work closely with your staff to meet your needs.

Areas of Expertise

Strategic Funding

External funding has become an integral part of agency financing strategies – increasing the viability of project implementation, all while reducing the overall burden on a community's ratepayers.

Agencies nationwide are facing increased demand for investments in public infrastructure due to stricter regulatory requirements, aging infrastructure, and increasing costs of projects. BC has a proven track record of providing financing and external funding services, helping clients secure more than $4.4B in low-interest loans, federal and state grants, and IRS tax credits. Funding efforts are led by BC's Senior Director of Strategic Funding, Seema Chavan, who brings extensive federal and state experience having secured $1B in federal and state funding for water infrastructure projects nationwide.

Seema is supported by Dean Nakano, Rene Guillen, Jason Mumm, and other seasoned professionals. Together, they possess the expertise required to collaborate with your staff, community leaders, regulatory officials, as well as your legal and financial advisors, to develop the most advantageous financial strategy for your project. BC will work with your staff and financial consultants to secure the best financing, whether through self-financing or low-interest loans and grants, minimizing the impact on your ratepayers.

KEY SERVICE CATEGORIES

- **Policy and funding tracking**
- **Advocacy support**
- **Funding/financing alternatives analyses**
- **Funding identification/ prioritization**
- **Funding strategy development**
- **Prerequisite documentation (Feasibility Studies, Hazard Mitigation Plans, design, other)**
- **Agency coordination/ project definition**
- **Federal/State loan and grant application development**
- **Federal/State loan and grant administration**
- **Federal compliance support**
- **Funding compliance plan development**
- **Stakeholder engagement**
- **Environmental compliance**

Funding Program Experience

- Environmental Protection Agency (EPA) Water Infrastructure Financing and Innovation Act (WIFIA) and others
- U.S. Bureau of Reclamation (USBR)
- Federal Emergency Management Association
- Department of Health (DOH) State Revolving Fund (SRF)
- U.S. Department of Agriculture (USDA)
- American Recovery and Reinvestment Act (ARRA)
- Internal Revenue Service
- Clean Renewable Energy Bond (CREB)

Approach to Funding

BC's methodology offers a comprehensive funding approach to identify opportunities in planning, design, and implementation. Projects advance by developing Living Funding Strategies, outlining potential federal, state, and local funding sources, and determining program details, requirements, documentation needs, and project applicability. These highly adaptable strategy documents produce an action plan guiding activities from pre-design through construction, and allow for adjustments as needed.

The following table highlights BC's expertise in assisting agencies nationwide to secure funding for their critical projects.

Project Name + Client	Type of Work	Funding Source	Type of Funding	Dollar Amount
Kalaeloa Seawater Desalination Facility Honolulu Board of Water Supply, HI	Planning/Design/ Construction	USBR Title XVI	Grant	$20M
Kealakehe Wastewater Treatment Plant R-1 Upgrade County of Hawaii, HI	Design/ Construction	USBR Title XVI	Grant	$614K
Pure Water Oceanside and Lower Recycled Water Distribution System Expansion City of Oceanside, CA	Design/ Construction	EPA WIFIA	Loan	$69M
Pure Water Southern California Metropolitan Water District of Southern California, CA	Planning/Design/ Pilot Testing	USBR Large Scale Recycled Water	Grant	$125.5M
Nampa Phase II Upgrades City of Nampa, ID	Design/ Construction	USBR Title XVI,WIIN/DOH Clean Water SRF	Loan/ Grant	$4M/$165M
Water Recycling Facility Weber Basin Water Conservancy District, UT	Design/ Construction	USBR Title XVI	Grant	$46M
Program Management for Bull Run Treatment Plant Portland Water Bureau, OR	Planning/Design/ Construction	EPA WIFIA	Loan	$726.6M
Cogeneration Power and Heating Kitsap County, WA	Design/ Construction	Efficiency Grant Program (WA)	Grant	$523K
Wastewater Treatment Plant Energy Conservation Study Eagle River Water and Sanitation District, CO	Planning/Study	Industrial Energy Efficiency Grant Program (CO)	Grant	$30K
Dry Creek Cogeneration Project City of Roseville, CA	Design	Self Generation Incentive Program (CA)	Grant	$600K
RiverRenew Tunnel System Alexandria Renew Enterprises, VA	Design/ Construction	EPA WIFIA	Loan	$321M
Torresdale Filtered Water Pumping Station Philadelphia Water Dept., PA	Design/ Construction	PENNVEST Clean Water SRF (PA)	Loan	$80M
South Adams Kleinfeld PFAS South Adams County Water and Sanitation District, CO	Design/ Construction	EPA Emerging Contaminants in Small Disadvantaged Communities and Drinking Water SRF Emerging Contaminants/Congressional Request	Grant/ Loan	$61.9M/$30M

$4.4B in funding awarded

$78M for ARRA, CREBs, State and Utility Funded Energy Grants

$447M
USDA Funding

$150M
Reclamation Funding

>$500M+ state revolving loan program

>$3.2B total WIFIA low interest loans

BC brings seasoned funding specialists and local presence (left to right) Seema Chavan PE, Sr Director of Strategic Funding; Rene Guillen PE, QSD/P, ENV SP, Managing Environmental Engineer; Jason Mumm, Sr. Director of Infrastructure Finance; and Dean Nakano, Director of Client Service.

Areas of Expertise

Civil Engineering

Quality civil design is the cornerstone for many of the projects that we deliver. Well-executed general site and utility improvements supports all other design and construction elements.

Quality civil design is fundamental in BC's design approach, and our local Hawaii offices have the staff and expertise to address the needs of any project. As a full-service engineering firm, BC can identify issues early, allowing for time to mitigate critical risks, and deliver creative and effective solutions. Risk identification is critical to meeting project schedules and budgets, and BC's civil engineers take the time to think through solutions with the client in mind. BC has a strong understanding of the requirements surrounding site development, infrastructure evaluation and improvements, and compliance and permitting.

Our seasoned team has been supporting municipalities, utilities, and other agencies for decades, providing water and wastewater infrastructure services such as design, condition assessment, asset inventory management, and hydraulic modeling. We work closely with clients to establish site layouts, necessary mechanical equipment, and other preferences resulting in efficient facilities that promote ease of operation and maintenance. Our designs also feature architectural and landscape components that are compatible with their surroundings and take aesthetics into consideration, ultimately increasing public acceptance of projects.

Wahiawa Reclaimed Water Irrigation System, State of Hawaii, Agribusiness Development Corporation, Wahiawa, Hawaii

BC is designing a transmission pipeline to convey reclaimed water from the Wahiawa Wastewater Treatment Plant to Agribusiness Development Corporation's parcels located on the former Galbraith Agricultural Lands. Tasks include conducting a pipe routing study, facilitating meetings, developing a preliminary engineering report, conducting an environmental assessment, design of a slow rate land application system for the disposal of off-spec and excess reclaimed water, and acquiring permits. As a follow on to this project, BC has partnered with the State of Hawaii, Dept. of Agriculture to design the expansion of the Galbraith irrigation water supply system. BC is coordinating with both departments to make sure these concurrent projects align with one another for a cohesive system.

Kealakehe Wastewater Treatment Plant R-1 Upgrade, County of Hawaii, Dept. of Environmental Management, Kailua-Kona, Hawaii

BC designed significant upgrades to the Kealakehe Wastewater Treatment Plant in Kailua-Kona. Upon completion, the Kealakehe Wastewater Treatment Plant will have the largest recycled water treatment system on Hawaii Island–the first facility of its kind for the County of Hawaii. The upgrades included a treatment system to create R-1 recycled water and a new effluent disposal system. The upgrades will significantly reduce the community's impact to the environment. The draft environmental impact statement has been published.

KEY SERVICE CATEGORIES

- General civil and site improvements and design
- Infrastructure evaluation, condition assessment, and improvement planning
- Underground utility condition assessment
- Roadway design and pavement rehabilitation or reconstruction planning
- Pavement marking, striping, and signage design
- Preliminary civil engineering reports and alternatives analysis
- Civil engineer's opinions of probable construction cost
- Grading and drainage improvements and design
- Site utility plan and profile design
- Site fire hydrant and vehicle maneuverability planning
- Accessibility improvements and design
- Erosion, sediment, and dust control planning
- Site demolition and restoration planning
- Land use and engineering permitting/entitlement support
- Environmental impact statements and assessments
- Reviewing and regulatory agency coordination

Engineering Services to Design a Wastewater Treatment Collection and Disposal System for the Pahala Wastewater Treatment Plant and Post-Design, County of Hawaii, Dept. of Environmental Management, Pahala, Hawaii

BC provided engineering services for the closure of large capacity cesspools and design of new wastewater infrastructure in Pahala, to meet updated effluent discharge requirements dictated by the U.S. Environmental Protection Agency. BC completed the planning phase, which included a preliminary engineering report, environmental assessment, regulatory and permit identification, site alternatives evaluation and land acquisition, community outreach, and conceptual alternatives for the design, construction, and commissioning of the system. While the infrastructure was originally designed around a natural treatment system to minimize environmental impacts, simplify maintenance requirements, and achieve reliability, BC evaluated alternative treatment technologies to address additional constraints related to affordability and unique geology of the area.

Tripler Army Medical Center (TAMC) Jarrett White Road Gravity Sewer (JWGS) Upgrade Project, Aqua Engineers, Inc., Oahu, Hawaii

BC prepared the design of the replacement sewer line for the Jarrett White Sanitary Sewer. We provided an experienced pipeline and sewer rehabilitation team to develop cost effective, value-driven solutions that firmly resolved the long-term deterioration of the sewer line that Aqua Engineers had to deal with on at least two separate occasions. Our solution accounted for critical challenges associated with corrosive conditions, hydrogen sulfide controls for reduced odor potential, traffic movement, site topography, maintaining operation during construction, impacts to residents, maintainability, and acceptance by jurisdictional agencies.

P&E Work for Pupukea Iwi Kupuna Reinterment Project, Honolulu Board of Water Supply, Honolulu, Hawaii

BC prepared construction bid documents for an iwi (bones) reinterment site for the Honolulu Board of Water Supply. BC coordinated required permits leading up to construction and provided engineering services during construction.

ADA Improvements at Dept. of Land and Natural Resources Facilities, State of Hawaii, Dept. of Land and Natural Resources, Statewide, Hawaii

This project included designing improvements for the removal of Americans with Disabilities Act barriers at the Iolani Palace State Monument, Kalopa State Recreation Area, Wailua River State Park Fern Grotto, Lava Tree State Monument, and Kahakapao Recreational Area. BC prepared contract drawings and specifications, cost estimates, permit applications, and provided services during construction. All design work conformed to the Dept. of Justice's 2010 Standards for Accessible Design.

Areas of Expertise

Stormwater and Nature-Based Solutions

Stormwater is a key component of the water cycle, including runoff, infiltration, and groundwater recharge. Good stewardship of stormwater is essential to the protection of human life and real property. Stormwater management includes flood prevention, preservation of water quality, groundwater recharge, and instream flows to protect both terrestrial and aquatic ecosystems that are leveraged in native cultural practices and modern life.

BC has a history of helping clients solve water resource issues with cost-effective, science-based, environmentally beneficial solutions. We have been at the forefront of stormwater management, regulatory compliance, and water quality restoration since the inception of stormwater regulations.

BC has developed Master Plans to include a variety of capital project and maintenance program solutions to manage the integrity and performance of our clients' stormwater infrastructure. Master plans are often developed to address multiple objectives, such as total maximum daily load (TMDL) compliance, flood control, and infrastructure asset management. Our master plans focus on identifying implementable projects to support our clients' drainage and water quality objectives as well as capital investments. We leverage client geographic information system data, staff input, public surveys, site visits, and workshops to develop a comprehensive understanding of the system, including its capabilities and deficiencies. We also use hydraulic and hydrologic modeling and water quality modeling to evaluate system capacity to help identify multi-benefit solutions that resonate with stakeholders.

Master plans must integrate a wide range of client priorities and disseminate information in a clear, concise, and implementable plan. Our team develops and costs project and program alternatives to address capacity, water quality, system condition, and natural resources. Selection and prioritization of these capital projects and programs are essential to develop a clear path forward to manage stormwater infrastructure. We often include stormwater funding analyses with master planning efforts to confirm funding levels are in line with community objectives and desired levels of service.

BC brings local and national expertise to problem identification, policy development, modeling, master planning, and design to support your specific stormwater management needs. Our deep regulatory and technical knowledge, coupled with efficient service, provide solutions that minimize the cost of stormwater management and compliance and promote sustainable practices and operations.

Our project approach is to support flexibility and adaptive management to respond to changes and adjust to an ever-growing body of information. Fundamental to flexible design and adaption is prioritizing no-regret or low-regret strategies, strengthening interdependent systems, and pursuing multi-benefit and nature-based solutions.

KEY SERVICE CATEGORIES

MODELING
- Local to citywide scales
- 1D and 2D hydrologic and hydraulic
- Water quality
- Future rainfall projection

MASTER PLANNING
- Flood mitigation
- Water quality improvements
- Integrated planning
- Watershed
- Asset management
- Condition assessments
- NPDES permit and TMDL program development and compliance

DESIGN
- Green stormwater infrastructure
- Living shorelines
- Stream restoration
- Ecosystem restoration
- Flood control
- Conveyance and pump systems
- Street trees
- Stormwater parks
- Integrated green gray infrastructure
- Precipitation intensity analysis
- Constructed wetlands

EQUITY
- Equity and environmental justice

Proposed stormwater green infrastructure along Akiohala Street for the Kaelepulu Green Infrastructure Improvements project for the City and County of Honolulu.

KEY // ● Modeling ● Master Planning ● Design ● Equity

Nature-based solutions leverage the connections between water management and its intersection with ecosystems, species health, and communities to protect people, optimize infrastructure and contribute to a stable and biodiverse future. At its foundation, a nature-based solutions approach illustrates the essential connections between land and water management. The health of communities is directly connected to the health of the ecosystems they depend upon. BC helps our clients assess, plan and respond for these systems and their vulnerability to changing climate conditions.

At BC, we also recognize the increased vulnerability of disadvantaged communities especially as it relates to the impacts of climate change. We take a community-centered approach to planning and design: focus on the community needs and create a dialogue with community members. This leads to projects meeting multiple community needs, accounting for equity considerations, and fostering resilience.

Our deep regulatory and technical knowledge, coupled with efficient service, provides solutions that minimize the cost of stormwater management and compliance and promotes sustainable practices and operations.

Maui Drainline Condition Assessment Program, County of Maui, Dept. of Public Works, Engineering Division, Maui, Hawaii ●

Over the last several years, the County has partnered with BC to execute a storm drain condition assessment program. The work includes screening-level storm drain inspections, evaluations, and structural and operational condition assessments in separate regions of Maui. In Central, West, and South Maui, and Lahaina over 1,500 structures and 39 miles of pipeline have been inspected in accordance with the National Association of Sewer Service Companies guidelines. BC uses inspection results and condition assessments to prioritize stormwater pipelines and structures that need immediate cleaning, additional detailed inspections, or structural repair. These projects, each with their own contract, provide the County with proactive asset management of the island's storm drainage system through a risk-prioritization process that results in a 10-plus-year stormwater pipe repair and replacement program that fits within the County's Capital Improvement Plan budget.

Kaelepulu Green Infrastructure (GI) Improvements, City and County of Honolulu, Dept. of Facility Maintenance, Kailua, Hawaii ●

BC is working with the City to implement structural best management practices (BMPs) with the goal of reducing pollutants discharged through the City's storm drainage system into Kaelepulu Pond. These BMP improvements will address pollutants of concern such as sediment, trash, nutrients, and metals that are typically associated with urbanized areas. BC is leading the design and preparation of construction contract documents to implement two storm water treatment improvements at one location in Kailua, Hawaii. Improvements included the installation of approximately 300 linear feet of green infrastructure northwest of Akiohala Street to infiltrate and treat stormwater and the installation of one hydrodynamic separator to provide sediment and trash removal. BC is also implementing a stakeholder engagement and outreach process throughout this project, to communicate and share project progress as well as document input on future storm water projects.

Vehicle Wash Water Management Study, Environmental Consultation, County of Maui, Dept. of Public Works, Highways Division, Wailuku, Hawaii ●

BC conducted a study to evaluate feasible options for wash water management at two vehicle wash facilities sites for the County of Maui, Dept. of Public Works. To reduce pollution to the County stormdrain system, the study assessed the future wash water discharge quality and demand against available treatment technology and regulatory policies for various disposal options, including a zero-discharge solution. Options were screened for public perception, operations and maintenance considerations, site considerations and life-cycle cost. Moreover, the project identified the need for policy changes and inter-agency policy coordination to optimize industrial water use and minimize industrial pollutant discharge to the environment.

Stormwater Management Program, State of Hawaii, Dept. of Transportation, Oahu, Hawaii ●●

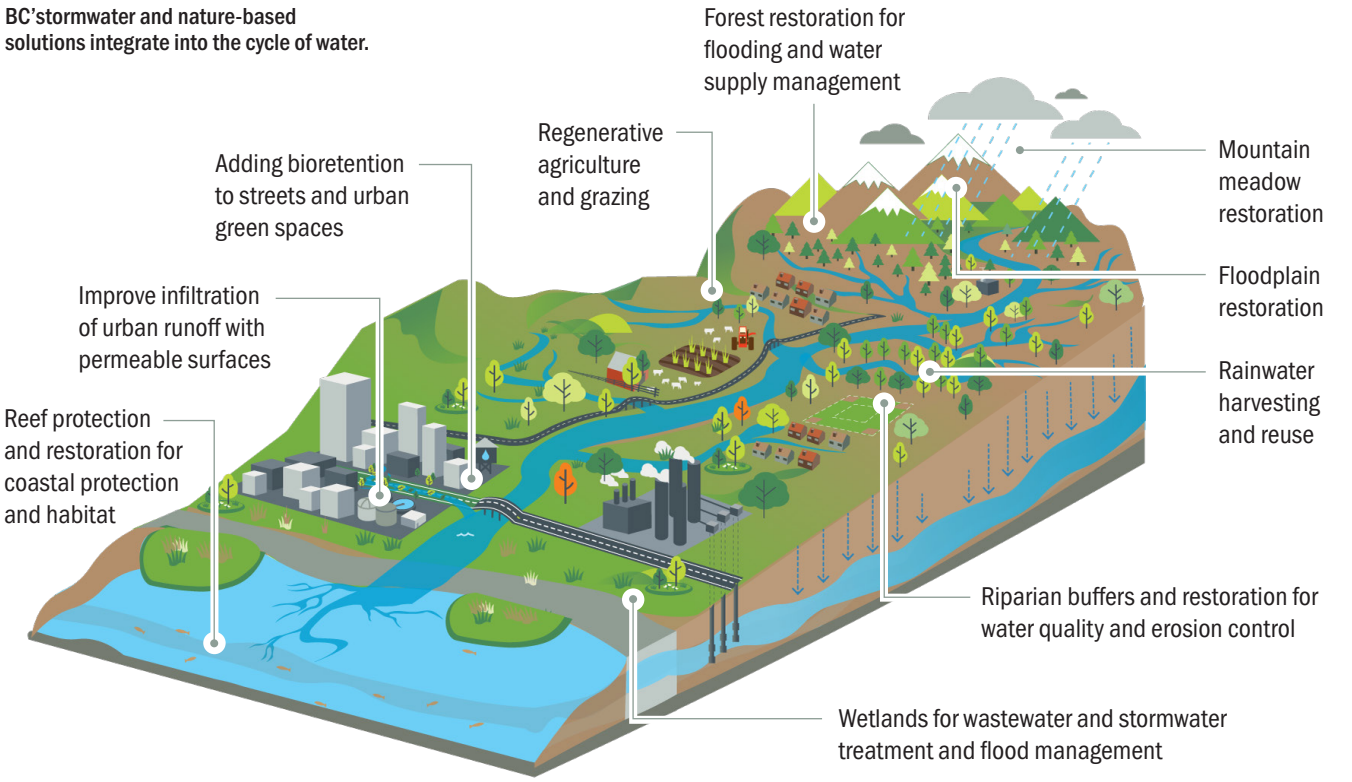
State of Hawaii, Dept. of Transportation (HDOT) facilities are located within watersheds that discharge to impaired waterbodies due to excess nutrients (nitrogen and phosphorus) and high turbidity. BC is providing engineering services to support, evaluate, and negotiate TMDL requirements that adhere to Environmental Protection Agency regulations and meet state water quality standards.

BC's work includes completing technical reviews and analyses, and providing questions, guidance, and recommendations throughout the TMDL development process. This includes tasks from establishing land use delineations, developing watershed model(s), determining loading capacity, and assigning draft and final MS4 load allocations. Additionally, BC will support HDOT-Oahu in developing an Implementation and Monitoring Plan to achieve compliance with load allocations set by final TMDL requirements. Ultimately, this project will support HDOT in improving water quality in Keehi Lagoon.

Statewide Stormwater Study, U.S. Bureau of Reclamation, Statewide, Hawaii ●

BC evaluated hydrogeological information for the completion of three study elements: 1) Stormwater Reclamation and Reuse Framework which identified institutional, social, cultural, and political issues that both enable and hinder stormwater reclamation and reuse, and technical and non-technical solutions to overcome barriers for stormwater reuse, 2) Refinement of the Ewa Plain Stormwater Reclamation and Reuse Opportunity—Potential development of non-potable groundwater recharge at a specific site in the Ewa Plain area of Oahu, and 3) Use of Stormwater Reclamation and Reuse in Hawaii—Focused on groundwater recharge for statewide groundwater aquifers by using a range of technologies.

BC'stormwater and nature-based solutions integrate into the cycle of water.



National Experience

StreetsLA One Infrastructure Plan, City of Los Angeles, StreetsLA, Los Angeles, California

Los Angeles is seeking opportunities to increase its resilience to climate change. The BC team is working with cross-agency and community stakeholders to identify capital project planning goals and to create a methodology that can be used to identify multi-agency funding and planning objectives and identify which are the most competitive for the various funding sources.

San Gabriel Valley Greenway Network Strategic Implementation Plan, Los Angeles County Public Works, San Gabriel Valley, California

BC is leading a multi-objective plan to transform Los Angeles County Flood Control District's facilities into a greenway network. The project includes watershed and infrastructure analysis and stakeholder engagement to identify upgrades and enhancements to flood management assets, condition assessments and environmental reviews, and greenway design standards development.

Green Streets Standard Plans and Design Guidelines, Los Angeles County Public Works, Los Angeles County, California

BC developed the Green Streets Standard Plans and Design Guidelines to assist the Los Angeles County Public Works Stormwater Division in selecting, designing, and implementing appropriate streetscape BMPs. The plans and guidelines focused on four BMP categories: 1) bioretention, 2) subsurface infiltration, 3) permeable pavement, and 4) components. The Green Streets Standard Plan also includes standardized tools to help designers size BMPs and calculate capture volumes.

Integrated Watershed Improvement Services, City of Atlanta, Georgia

BC developed an integrated watershed plan for flood protection, water quality improvement, and long-term asset management. BC identified green infrastructure projects, prioritized projects, and developed green infrastructure management plans, design details, and specifications.

Lafayette River Living Shoreline Designs, City of Norfork, Virgina

BC designed six living shorelines along the Lafayette River, including approximately 111,000 feet of shoreline and over three acres of wetland restoration. BC collaborated on the designs for a hybrid sill detail for low and medium wave energy and focused on extending the marsh wetland up to 40 feet to prevent coastal deterioration.

Integrated Quantity and Quality with Equity, City of Raleigh, North Carolina

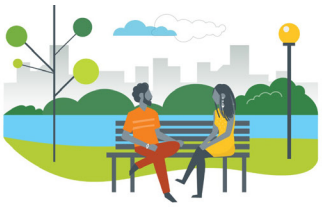
BC developed the first integrated watershed study for the City of Raleigh, which included hydraulic and hydrologic modeling and the use of BC's WIP tools to evaluate flooding and water quality solutions. The watershed study and methodology were both informed by an equity framework for watershed studies, identifying goals for watershed study development with equitable project identification and community engagement.

One Water Master Plan, City of Winter Haven, Florida

BC is supporting the advancement of the Sapphire Necklace Restoration Concept, which will form as extensive greenway loop around the City, and provide water storage, wetlands restoration, resiliency, recharge, and water quality improvement.

Vista Grande Constructed Wetlands, City of Daly, California

This project includes the design of infrastructure and wetlands improvements to address storm-related flooding in the Vista Grande Watershed Drainage Basin while delivering stormwater to restore San Francisco's Lake Merced's water level. The project will also protect the ocean outfall from coastal erosion and stormwater debris, while reconnecting a significant portion of the Lake Merced Watershed to Lake Merced.



Approach to Climate Change Adaptation

Helping our communities become more climate resilient.

Define	Analyze	Formulate	Evaluate	Prepare
– Stakeholders – Values – Goals – Objectives – Success	– Risk/vulnerability – Community and system needs – Adaptive capacity – Plans and projects	– Policy – Strategies – Projects – Thresholds/triggers	– Risk/uncertainty – Cost/benefit – Flexible options – Adaptive pathways	– Plan – Design – Implement – Operate – Monitor

Learn – Engage – Adjust – Adapt

Areas of Expertise

Climate Change

Helping our communities overcome challenges from climate change is the overriding issue of the 21st century and one of the priority issues of the State of Hawaii.

BC recognizes that climate change presents many challenges, but there are also many solutions that can be achieved through collaboration. Accelerated sea level rise, changing precipitation patterns that increase the likelihood of wildfire, drought, and flooding, as well as greater storm intensities among other climate-related hazards, pose risks to communities, built infrastructure, and natural environments.

BC collaborates with clients to develop a comprehensive understanding of climate impacts across the watershed and to explore solutions that promote resilience. Impacts are being felt now and should be planned for in the future to protect Hawaii's economy, sustainability, security, and way of life. To plan for and implement solutions for climate resilience, BC brings together key stakeholders to collaboratively define goals and conduct climate risk and vulnerability assessments, while leveraging the best state of science with stakeholder input. BC analyzes a range of potential impacts and scenarios, existing adaptive capacity, and community and utility needs to formulate and evaluate solutions and understand their triggers and sequencing. This enables us to help our clients establish clear, adaptive pathways and take proactive steps to implement adaptive measures for operations, infrastructure, and systems that serve our communities.

KEY SERVICE CATEGORIES

- **Climate adaptation planning**
- **Climate change mitigation**
- **Resilient planning and design**
- **Risk and vulnerability assessments**
- **Scenario evaluation and planning**
- **Adaptation strategy development and evaluation**
- **Adaptation pathways and adaptive management**
- **Drought planning**
- **Water conservation**
- **Policy analysis**
- **Strategic planning**
- **Staff training**
- **Workshop facilitation**

Staying true to our company mission, BC pursues this work and approach to foster more resilient, thriving communities. Throughout this journey, BC builds in flexibility to adapt to future changes and new knowledge, while identifying opportunities to support vulnerable and frontline communities and build greater climate equity.

Koolaupoko Climate Resilience and Adaptation Project, Research Corporation of the University of Hawaii, Kaneohe, Hawaii

The Dept. of Defense is conducting a Military Installation Resilience Review focused on the Koolaupoko region on Oahu, Hawaii, which surrounds the Marine Corps Base Hawaii. As the base is an integral part of the Koolaupoko region, the review will identify climate-related threats and hazards to the communities within the region and provide recommendations to enhance resiliency and adaptation capacity of the vulnerable infrastructure (i.e., transportation, water systems, natural and cultural assets). BC is supporting the University of Hawaii by mapping infrastructure with climate-related hazards to complete vulnerability assessments, infrastructure typology adaptation strategies, as well as regional adaptation strategies.

The project will identify pilot projects and project champions to implement adaptation strategies across the region. Examples of climate-related concerns include sea level rise, erosion, flooding, extreme heat, altered precipitation patterns, and

increased wildfire risk. BC's review integrates knowledge from scientists, community members, government officials and other technical stakeholders and includes information from climate modeling, vulnerability assessments, and infrastructure mapping.

Hoaloha Park Adaptation Plan, County of Maui, Dept. of Parks and Recreation, Kahului, Hawaii

Hoaloha Park is an urban beach park located at Kahului Harbor, Maui, used for various coastal recreational activities, including outrigger paddling, fishing, and surfing. As a coastal beach park, it was identified as having a medium potential to withstand impacts of sea level rise. BC supported SSFM International, Inc. and Integral Consulting, Inc. in developing the Hoaloha Park Adaptation Plan which included a site and infrastructure vulnerability assessment, user impact evaluation, and adaptation planning specific to Hoaloha Park.

Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation, Honolulu Board of Water Supply/Water Research Foundation, Honolulu, Hawaii

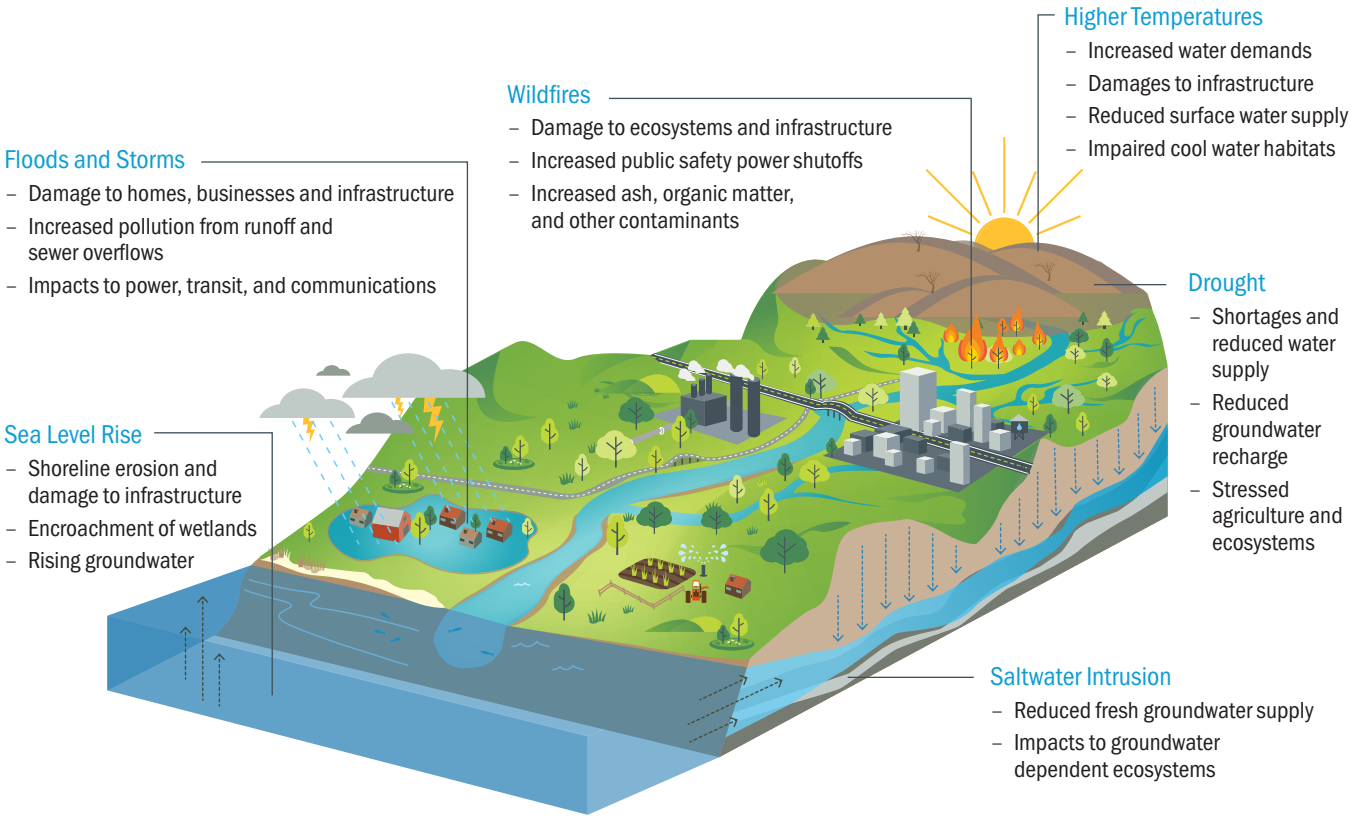
The Water Research Foundation and the Honolulu Board of Water Supply selected BC to develop a climate change adaptive management plan to mitigate potential risks to water supply, treatment, and distribution system infrastructure. The primary objective was to evaluate climate change impacts on the Board of Water Supply and its assets. The project incorporated scenario planning and uncertainty into the process to assess the reliability and resiliency of critical infrastructure. BC identified a suite of adaptive measures for the planning horizon of the study: 2020-2100.

Countywide Pump Station Inundation Study, County of Maui, Dept. of Environmental Management, Wastewater Reclamation Division, Wailuku, Hawaii

BC provided a comprehensive inundation study of the County's wastewater infrastructure exposed to and impacted by sea level rise and storm surge. The project assisted the County in defining level of service goals to evaluate and prepare for projected sea level rise, coastal erosion, and storm surge impacts; developed a prioritized list of critical County wastewater facilities and pipeline systems; and identified adaptation strategies and recommended improvements for wastewater system assets.

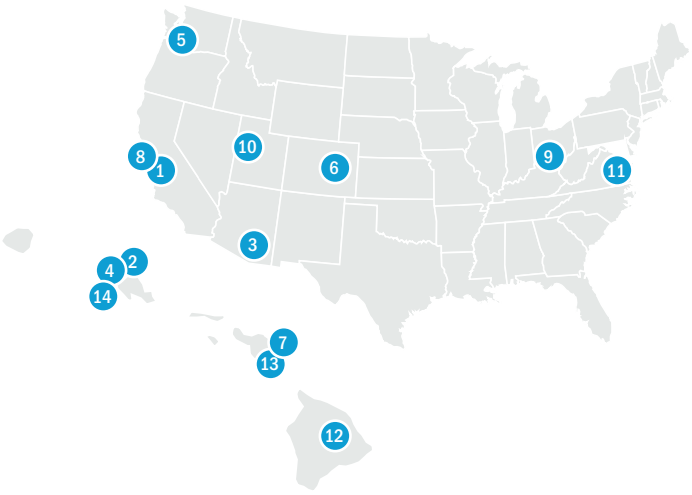
Climate Impacts Across the Watershed

Using the watershed as the unit of analysis for climate change impacts supports a more holistic understanding of interconnected systems, avoids maladaptation, and enables collaborative implementation of adaptive solutions.



BC Approach

BC's approach is driven by the need to maintain flexibility and encourage adaptive management to respond to changes and adjust to an ever-growing body of information. Fundamental methods for flexible design and adaptation include prioritizing no-regret or low-regret strategies, consideration of multiple scenarios or future conditions, strengthening interdependent systems, and pursuing multi-benefit nature-based solutions.



Selected Relevant Projects

1 **Climate Adaptation Plan**
Alameda County Water District, CA
BC supported the District in developing an understanding of climate vulnerabilities, prioritizing physical and regulatory climate-related risks, and preparing adaptation strategies and adaptive pathways into a cohesive plan.

2 **Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation**
Honolulu Board of Water Supply/Water Research Foundation, HI
BC developed an adaptive management plan to evaluate climate change impacts to the Board of Water Supply's infrastructure and identified a suite of adaptive measures.

3 **1W2100 Integrated One Water Plan**
Tucson Water, AZ
With a scenario planning process, BC supported identification of climate-based and policy-based uncertainties that drive future water availability, demand, and resilience to future climate and policy impacts.

4 **One Water Climate Adaptation Framework and Projects Plan**
City and County of Honolulu, HI
BC is leading a multi-year infrastructure investment strategy that fosters collaboration across multiple City and County agencies and moves forward projects, policies, and actions for proactive climate change adaptation and resilient capital planning.

5 **Shape Our Water**
Seattle Public Utilities, WA
Moving beyond regulatory obligations, BC supported an Integrated Plan to develop an equitable, resilient, and affordable long-term plan that is flexible to changing climate and uncertainties in future conditions.

6 **Colorado Water Plan Update**
Colorado Water Conservation Board, CO
Following an adaptive management approach, BC utilized scenario planning with climate change assumptions to provide estimates of future risks to supplies and established a vision for meeting future water challenges.

7 **Countywide Pump Station Inundation Study**
County of Maui, HI
BC provided a comprehensive study of the County's wastewater infrastructure exposed to and impacted by sea level rise and storm surge, and recommended improvement projects for high priority facilities and regions to inform utility and community planning.

8 **Drought Contingency Plan and Shared Water Access Program**
Bay Area Regional Reliability Partners, CA
BC provided a watershed-based assessment of climate impacts and risks to water and wastewater treatment, water quality, agriculture, economy, energy, public health, and the environment.

9 **Water Utility Planning Strategies to Mitigate Impacts of Climate Change in Central Ohio**
Mid-Ohio Regional Planning Commission, OH
BC provided a watershed-based assessment of climate impacts and risks to water and wastewater treatment, water quality, agriculture, economy, energy, public health, and the environment.

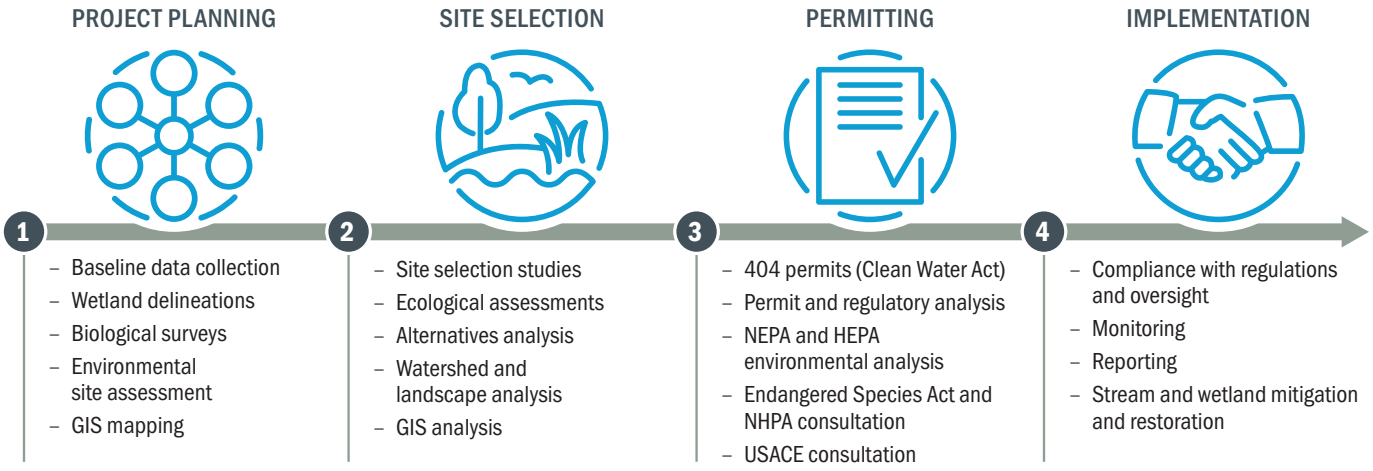
10 **Drought Contingency Plan**
Jordan Valley Water Conservancy, UT
BC helped the Conservancy secure a grant and developed a drought contingency plan to build long-term resilience to drought, understand vulnerabilities, and reduce drought impacts on water quality and quantity across 17 member agencies.

11 **Living Shoreline Restoration and Wetland Creation Program**
City of Norfolk, VA
BC developed a coastal resilience project involving hybrid sill detail for low and medium wave energy and a focus on extending marsh wetland 30 to 40 feet to prevent coastal deterioration.

12 **Risk and Resiliency Assessment and Emergency Response Update**
County of Hawaii, HI
BC completed an island-wide analysis of the County's ability to maintain water service during select emergencies and provided recommendations to improve preparedness and prevention of impacts from natural and man-made hazards including sea level rise.

13 **Hoaloha Park Adaptation Plan**
County of Maui, HI
BC supported the development of the first adaptation plan for a coastal beach park in Hawaii.

14 **Koolaupoko Climate Resilience and Adaptation Project**
Research Corporation of the University of Hawaii, HI
BC is working with the University of Hawaii to conduct a climate vulnerability assessment for sea level rise, wildfire, drought, heat, and pluvial flooding that analyzes climate impacts, identifies adaptation strategies, and develops pilot projects to support community resilience.



Areas of Expertise

Environmental Planning and Permitting

Early understanding of site constraints, historic conditions, and future impacts is crucial to achieve a project design that can be readily implemented.

BC's staff assesses properties for environmental site constraints using a combination of field work, literature, review, online information sources, and leveraging our strong relationships with regulatory agencies. BC is ready to support you by implementing a planning process that promotes clear decision making. An informed plan will yield better scheduling and budgeting. Our team can help guide you through the entire projects lifecycle—from the early stages of project planning through project execution and monitoring.

BC delivers confidence to your compliance programs through tailored environmental solutions:

Programmatic Approach. Nationwide compliance program development to provide facilities the tools to implement efficiencies, maintain compliance, and reduce unknown risks.

Regulatory Compliance. Confidence in applicable regulations and requirements, timeliness, accurate submittal of reports and plans, and completeness of required record keeping.

Operational Flexibility. Through permit negotiation and knowledge of applicable regulations, laws, and system operations.

Informed Business Decisions. Awareness of proposed and new regulations can assist in developing business strategies and preparing for the future.

Cost Control. Ongoing environmental awareness allows utilities to proactively plan for upgrades to meet future regulatory updates, ultimately avoiding costly fines and allowing for preventive maintenance on critical systems.

Public Perception. Improved environmental performance and prevention of potential incidents increases public trust, and builds positive relationships with regulatory agencies.

KEY SERVICE CATEGORIES

- **Environmental Assessment/Impact Statements**
- **Clean Water Act Section 402, National Pollution Discharge Elimination System (NPDES) Permits**
- **Plan Review Use and Conditional Use Permits**
- **Stormwater Pollution Prevention Plans**
- **Spill Prevention Control and Countermeasure Plans**
- **Rivers and Harbors Act Section 10 and Clean Water Act Section 404 (U.S. Army Corps of Engineers) Permits**
- **Clean Water Act Section 401 (State Dept. of Health Clean Water Branch) Water Quality Certification**
- **Special Management Area Permits**
- **Conservation District Use Application Permits**
- **Coastal Zone Management Federal Consistency**
- **Municipal Separate Storm Sewer System Permits**
- **Erosion and Sediment Control Plan Coordination**

Our Relationships

BC combines a sharp technical approach using our experience and relationships to create a regulatory advantage for our clients. Services may range from permit application responsibility and compliance action to technical consultation on in-house programs. BC has established agency relationships that help our clients through the maze of permitting requirements and tailor our level of service to our clients' needs, such as:

- Incorporating sound practices that minimize or remove a permit or adjust burdensome permit conditions.
- Attaining complex operating permits or mandatory environmental permits.

- Implementing an environmental compliance program that satisfies all applicable regulatory requirements.
- Conducting audits to take early response rather than reacting to violations or enforcement.

Ocean Current Monitoring, Nutrient Assimilative Capacity Evaluations and Outfall Dilution Analysis Study, City and County of Honolulu, Dept. of Environmental Services, Honolulu, Hawaii

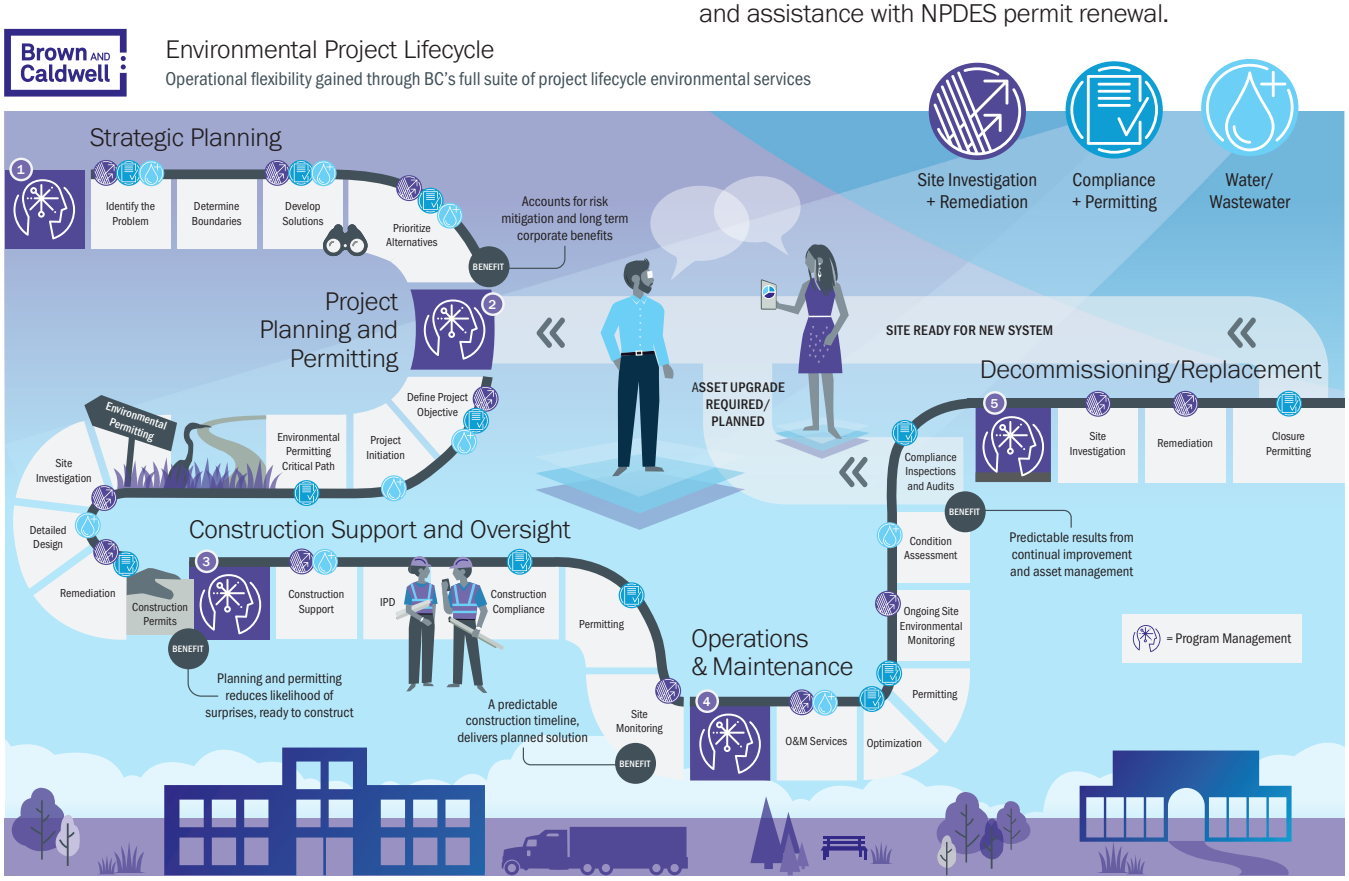
BC is providing technical assistance to the City and County of Honolulu related to National Pollutant Discharge Elimination System permit renewals and issues. The focus of these studies is outfall dilution and assimilative capacity at four wastewater treatment plants. This project includes dilution modeling and assimilative capacity determination for four NPDES permitted facilities. BC has already completed a year-long continuous data collection effort at the Kailua Wastewater Treatment Plant Mokapu Ocean Outfall.

Engineering Services to Design a Wastewater Treatment Collection and Disposal System for the Pahala Wastewater Treatment Plant and Post-Design, County of Hawaii, Dept. of Environmental Management, Pahala, Hawaii

BC provided engineering services for the closure of large capacity cesspools and design of new wastewater infrastructure in Pahala, to meet updated effluent discharge requirements dictated by the U.S. Environmental Protection Agency. BC completed the planning phase, which included a preliminary engineering report, environmental assessment, regulatory and permit identification, site alternatives evaluation and land acquisition, community outreach, and conceptual alternatives for the design, construction, and commissioning of the system. While the infrastructure was originally designed around a natural treatment system to minimize environmental impacts, simplify maintenance requirements, and achieve reliability, BC evaluated alternative treatment technologies to address additional constraints related to affordability and unique geology of the area.

Zone of Mixing Dilution and Assimilative Capacity Study for the Hilo, Papaikou, and Kulaimano Wastewater Treatment Plants, County of Hawaii, Dept. of Environmental Management, Hilo, Papaikou, and Kulaimano, Hawaii

BC conducted a mixing zone dilution analysis study for the three County of Hawaii wastewater treatment plants with ocean outfalls. The study included field data collection and modeling for all three wastewater treatment plants to determine a dilution factor at the edge of the zone of mixing, as required by their NPDES permits. BC used comprehensive data collected during the outfall dilution field study to document environmental conditions, evaluate dilution, support numerical modeling, and provide guidance and assistance with NPDES permit renewal.



BC closely collaborates with our clients to navigate the maze of permitting requirements and tailor our level of service to meet the unique needs of each client.

Areas of Expertise

Groundwater Quality

BC provides successful hydrogeologic investigation and interpretation of subsurface conditions is essential for facilities' siting, permitting, remediation, due diligence, and regulatory compliance.

A critical component of hydrogeologic investigations is groundwater modeling, and while models can be effective tools for evaluating groundwater conditions, they can be easily misunderstood by people unfamiliar with numerical codes or data set limitations. For each modeling project, the BC groundwater modeling team reviews the objectives for the project, develops or refines conceptual models based on project requirements, and selects the best modeling code for the job. Well calibrated, clearly presented, and legally defensible models are our standard whether the modeling project is being undertaken to quantify contaminant fate and transport, surface water-groundwater interactions, impacts of saline intrusion, water supply/water rights, or mine dewatering. Using advanced modeling software and 3-D visualization tools, BC presents clear, defensible business cases that resonate with technical and non-technical stakeholders.

KEY SERVICE CATEGORIES

- Groundwater modeling
- Green and sustainable remediation
- Remediation system optimization
- Site investigation
- Feasibility studies
- Remediation system design
- Operations and maintenance support
- Long-term monitoring
- Risk assessment
- Surface/ groundwater modeling
- Pilot studies/ treatability studies
- Military Munitions Response Program
- Geophysical investigations
- Ecosystem restoration
- Regulatory compliance and permitting support

Hana Landfill Master Plan/Detention Basin Design, and Interim Closure Analysis/ Groundwater Monitoring Well Design and Construction, County of Maui, Dept. of Environmental Management, Solid Waste Division, Hana, Hawaii

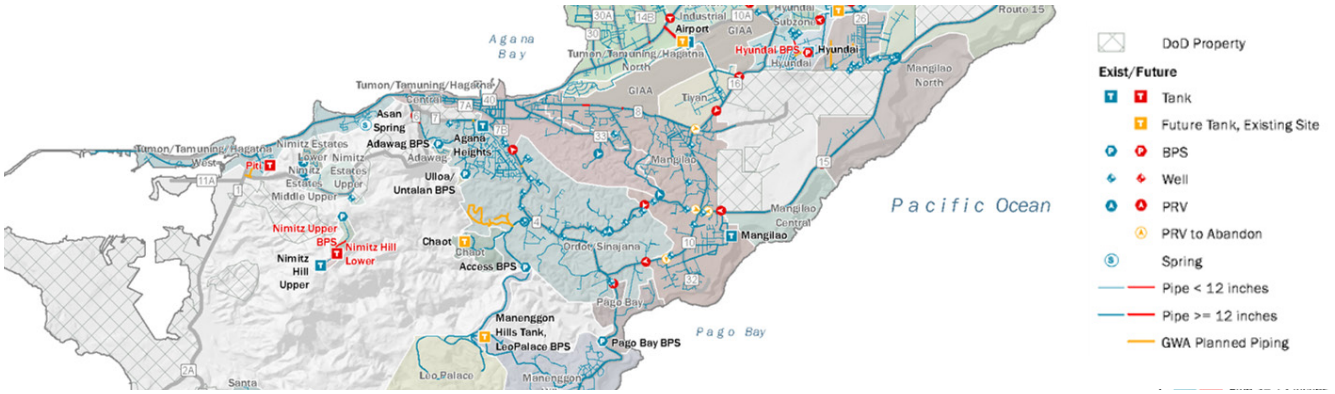
BC oversaw the preparation of a Master Plan covering a 10 year planning period, to evaluate existing regulatory compliance and operational conditions at the Hana Landfill, and present a plan for the landfill's ongoing development. The Master Plan and attachments are intended to supplement the Facility Operating Permit application. An Operations Plan and Closure/ Post-Closure Plan were also prepared as appendices to the Master Plan.

Reclaimed Water Application Study, Honolulu Board of Water Supply, Honolulu, Hawaii

Three-year study assessed potential impacts of irrigation with recycled water in Oahu through multi-phased project. Initial phase characterized over 150 constituents in four local water sources coordinating sampling events, field activities, interfacing with support laboratories, and data analysis of the water quality. Second phase involved a field study with irrigation of turf plots to monitor how the applied water's quality is affected while percolating through the soil column. Third phase included managing groundwater and contaminant transport to assess potential impact of the recycled water on local water supply wells. MODFLOW groundwater model of the Pearl Harbor Aquifer was adapted and assessed 3 selected representative constituents in the aquifer (nitrates, chlorides, and total dissolved solids). Study found the practice of recycled water irrigation isn't a threat to groundwater quality from organic constituents. Salts like sodium, calcium, and chloride don't pose a health threat but are present at elevated concentrations in recycled water and percolate and would eventually impact water supply wells.

Program Management/Construction Management for Guam Water and Wastewater Infrastructure Improvements and Northern District Wastewater Treatment Plant Design, Guam Waterworks Authority, Dededo, Guam

BC is providing extensive stakeholder engagement and coordination for this more than $188M program. This program includes improvements to support Guam Waterworks Authority in providing reliable and sustainable water and wastewater service throughout the island in preparation for the arrival of approximately 5,000 marines and 1,300 dependents by January 2022. For this project, BC is rehabilitating or installing 19 groundwater monitoring wells.



Areas of Expertise

Master Planning and Modeling

Modeling and master planning services have been part of BC's commitment to providing innovative water and wastewater solutions for agencies across the country for much of our 78-year history.

Today, modeling and master planning efforts are approached from One Water perspective. We work with our clients to develop plans to manage finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs. This approach looks to achieve client-specific level of service goals by viewing water holistically from the source to treatment and use to wastewater disposal and potential reuse.

Key trends across the industry are influencing water and wastewater system modeling and master planning projects, including:

- Federal and state mandates requiring master planning
- Distribution system water quality regulations
- Disinfection residuals and water quality issues
- Community growth and re-development
- Decreased demands and oversized infrastructure
- Drought and conservation measures
- Aging infrastructure
- Replacement and rehabilitation programs
- Water loss programs
- Advanced technology relating to "Smart Water" and automation
- Climate change mitigation and adaptation
- Risk and resiliency assessments
- Receiving water quality regulations

KEY SERVICE CATEGORIES

- **Water and wastewater master planning**
- **CIP development, prioritization, and optimization**
- **Regulatory compliance**
- **Policy development**
- **Climate change planning**
- **Water supply planning**
- **Receiving water quality monitoring**
- **GIS development**
- **Hydraulic model development and calibration**
- **Field data collection and testing**
- **System inventories and condition assessment**
- **Risk and resiliency assessment**
- **Transient analysis**

BC has experience supporting utilities through these challenges. Our master planning approach is collaborative and focuses on balancing proven solutions with innovative thinking.

Water Resources Master Plan and Updates (GWA Program Management Office), Guam Waterworks Authority, Mangilao, Guam

BC developed and implemented a comprehensive and accurate Water Resource Master Plan for the Guam Waterworks Authority in 2006. The plan provided a long-range planning basis for all Water Resource Systems and Facilities that assisted Guam Waterworks Authority in meeting water quality and environmental regulations. In 2016, the Guam Waterworks Authority received a grant to execute a update the plan to assess their progress toward achieving the recommendations outlined in the 2006 Water Resource Master Plan and develop a plan for the next 20 years to address capital improvements needed for source water alternatives and water and wastewater system improvements. The 2018 master plan update acknowledges ratepayer sensitivity to project affordability and incorporates schedule and budget details as guidance for future regulatory actions.

Central Oahu Watershed Management Plan, Honolulu Board of Water Supply, Honolulu, Hawaii

BC is developing the Central Oahu Watershed Management Plan for the Honolulu Board of Water Supply. The overall goal is to formulate an environmentally holistic, community-based, and economically viable plan that provides a balance between preservation/management of Oahu's watersheds and the sustainable development and use of groundwater and surface water supplies. The plan has five objectives: (1) promote sustainable watersheds; (2) protect and enhance water quality and quantity; (3) protect Native Hawaiian rights and traditional practices; (4) facilitate public participation, education, and project implementation; and (5) meet future water demands at reasonable costs. The plan is prepared in coordination with the City and County of Honolulu, Dept. of Planning and Permitting and in accordance with the State Water Code Chapter 174C, HRS, and City and County of Honolulu Ordinance Chapter 30, Revised Ordinances of Honolulu. This plan is one of eight district Watershed Management Plans that comprise the Oahu Watershed Management Plan.

Central Oahu Non-Potable Water Master Plan Phase 2, State of Hawaii, Dept. of Land and Natural Resources Commission on Water Resource Management, Honolulu, Hawaii

BC developed a non-potable water master plan for Central Oahu, which included an inventory of existing and potential sources of non-potable water in the Central Oahu area, inclusive of Wahiawa Reservoir, the City and County of Honolulu Wahiawa Wastewater Treatment Plant, Schofield Barracks Wastewater Treatment Plant, stormwater capture and reuse, Waiahole Ditch irrigation system, and existing (and future) urban wastewater systems. The appraisal level study included quantification of existing and potential non-potable water demand and supply, identification of existing and future service areas, water quality characteristics, water service constraints, system storage and conveyance options, and other source characteristics important to regional non-potable water master planning.

Kealakehe Effluent Reuse Master Plan, County of Hawaii, Dept. of Environmental Management, Kona, Hawaii

BC developed an effluent reuse master plan for the North Kona area supplied by the Kealakehe wastewater treatment facility to support the County of Hawaii's goal to protect and preserve the island's water resources. The plan's objectives identified potential users for the reclaimed water; met Dept. of Health standards by developing design criteria; considered policy issues related to implementing reuse on Hawaii island; developed alternatives. Conceptual design of transmission and storage facilities was also included in the plan, as was; and recommended phasing for design and construction.

Statewide Stormwater Study, U.S. Bureau of Reclamation, Statewide, Hawaii

BC evaluated hydrogeological information for the completion of three study elements: 1) Stormwater Reclamation and Reuse Framework which identified institutional, social, cultural, and political issues that both enable and hinder stormwater reclamation and reuse, and technical and non-technical solutions to overcome barriers for stormwater reuse, 2) Refinement of the Ewa Plain Stormwater Reclamation and Reuse Opportunity—Potential development of non-potable groundwater recharge at a specific site in the Ewa Plain area of Oahu, and 3) Use of Stormwater Reclamation and Reuse in Hawaii—Focused on groundwater recharge for statewide groundwater aquifers by using a range of technologies.

Vulnerability and Resiliency Assessment, County of Kauai, Dept. of Water, Lihue, Hawaii

BC conducted a vulnerability and resiliency study of County of Kauai, Dept. of Water's drinking water systems. The vulnerability and resiliency assessment included an island-wide evaluation of their current readiness for natural hazard events and malevolent acts in accordance with America's Water Infrastructure Act 2018 requirements. BC's assessments focused on preparedness for a disaster event, particularly hurricane-related system outages and potential impacts to their drinking water systems. BC identified recommendations that supported the County of Kauai, Dept. of Water's goal of providing safe, affordable, and adequate drinking water for all consumers. BC then developed improvement projects for them to implement to help mitigate and harden its critical assets and infrastructure against a given threat. BC also updated their Emergency Response Plan, which incorporated operational strategies and procedures to better prepare, plan and respond to a threat event.

Countywide Pump Station Inundation Study, County of Maui, Dept. of Environmental Management, Wastewater Reclamation Division, Wailuku, Hawaii

BC provided a comprehensive inundation study of the County of Maui's wastewater infrastructure exposed to and impacted by sea level rise and storm surge. The countywide wastewater infrastructure includes five wastewater reclamation facilities, 42 wastewater pump stations, and approximately 256 miles of pipelines on the islands of Maui, Molokai, and Lanai. The project assisted the County in defining level of service goals to evaluate and prepare for projected sea level rise, coastal erosion, and storm surge impacts; developed a prioritized list of critical County wastewater facilities and pipeline systems; and identified adaptation strategies and recommended improvements for wastewater system assets.

Areas of Expertise

Drone Inspection

BC's aging infrastructure experts can provide innovative inspection tools like our fleet of UAS, also known as drones. In addition to typical 4K video capabilities, our UAS team is capable of deploying advanced sensors like thermal infrared, multispectral, and LiDAR. All BC aircraft are piloted by our Federal Aviation Administration-certified scientists and engineers so you can be confident that the data being collected is the data you need.

Using drones enables our inspection teams to efficiently capture ultra-high definition imagery in areas that would be significantly more complex, costly, and dangerous to access using traditional manned inspection methods. In addition to being safer than manned inspections, UAS inspections usually occur at a significantly faster rate and often collect more thorough visual inspection data. Managing and mitigating risk on UAS operations is always a top priority, and all operations follow a project specific flight plan as well as BC's comprehensive UAS Operation Guidelines to ensure safety. Our team of experienced pilots and data processing experts have successfully delivered diverse UAS projects across the country, from Newark to Honolulu and Tacoma to Tampa. In addition to drones, BC has significant experience collecting data on the water, under it, and in pipe through the use of unmanned surface and submersible vehicles equipped with advanced sensors such as multibeam, 3D scanning sonar, and various electromagnetic technologies.

KEY SERVICE CATEGORIES
- Inspections
- Mapping
- Sample collection

TECHNOLOGIES
- Drone imaging (4k video, thermal imaging)
- Light Detection and Ranging (LiDAR)
- Unmanned aerial systems (UAS)
- Unmanned surface and submersible vehicles
- Multibeam
- Three-dimensional (3D) scanning sonar
- Electromagnetics

Galbraith Irrigation System - Lake Wilson Pump Station, Main Transmission Pipeline & Bott Well Improvements, State of Hawaii, Dept. of Agriculture, Wahiawa, Hawaii

The project involves the use of non-potable surface water from Wahiawa Reservoir; design of a 14 million gallon reservoir, intake, pump station, and transmission pipelines. A UAS was used to create a topographic model of private property along the proposed pipeline alignment that could not initially be surveyed on foot due to legal challenges. The model created using UAS imagery allowed the engineering team to push ahead with hydraulic modeling and the Preliminary Engineering Report which helped minimize project delays.

Aerial Pipe Condition Assessment, Pinellas County Utilities, Clearwater, Florida

To support Pinellas County's ongoing asset management program BC conducted a visual inspection of over 50 aerial pipe crossings and their supporting structures throughout the County using a UAS. The inspection video was then coded for defects using a modified AASHTO rating system. All defects were geolocated and in incorporated into a geographic information system interface allowing all defect attributes, photo, and video to be easily accessed by clicking a defect symbol on the map.

Aeration System Condition Assessment, City of San José, California

BC completed an extensive and comprehensive condition assessment in parallel with a process alternatives analysis for the 167 mgd Santa Clara Regional Water Facility improvements. This effort included planning and completing the inspection of 96 aeration basins measuring more than 750,000 square feet during UAS 200 flights resulting in 42 hours of high definition video. The video was then coded for defects and integrated into an innovative data viewer, allowing the client to see the location, severity, and access the defect video through a geographic information system interface.

Areas of Expertise

One Water

One Water is a paradigm for breaking down water sector silos and thinking of water in a holistic, integrated way. It frames water as one resource—whether it be drinking water, wastewater, stormwater, reclaimed water, or water in the environment.

BC is passionate about supporting responsible management of our critical water systems. Utilities and municipalities across the country are being challenged to consider the multifaceted nature of water in their communities, and BC has partnered with universities, technical advisory committees, and other regulatory groups to develop solutions for environmentally sustainable and reliable water resource planning and infrastructure.

One Water is much more than a planning approach, it's a lens through which we view the connections between resources, people, projects, and policy, and the actions we take to leverage these connections.

Thinking about the future of using water, reusing water, and protecting water means getting creative. One Water represents a new chapter—one rich with fresh dialogue about how we can look at water in ways we have not talked about before.

KEY SERVICE CATEGORIES

- **One Water planning**
- **Community planning**
- **Watershed resilience**
- **Stakeholder engagement**
- **Asset management**
- **Infrastructure resilience**
- **Climate change adaptation**
- **Wastewater and recycled water master planning**
- **Drinking water supply reliability**
- **Economic impacts analysis**
- **Nature based solutions**
- **Cost estimate development**

One Water Climate Adaptation Framework and Projects Plan, City and County of Honolulu, Dept. of Environmental Services, Honolulu, Hawaii

The goal of the One Water Honolulu Plan is to integrate and facilitate the management of freshwater, wastewater, and stormwater as one asset, creating resource and financial efficiencies within the City. To accomplish this, BC is leading a multi-year infrastructure investment strategy that fosters collaboration between agencies and proactive adaptation to climate change impacts. BC is currently developing a Climate Adaptation Framework that will facilitate climate change and sea level rise adaptation related to the planning, design, construction, maintenance, and operation of key infrastructure under the direction of the One Water Panel agencies. Additionally, a Collaboration Framework will include guidance on internal and external stakeholder consultation, identify institutional barriers that hinder implementation of an integrated One Water approach, and provide recommendations on how City departments and stakeholders can more effectively collaborate to implement One Water projects and policies.

Koolaupoko Climate Resilience and Adaptation Project, Research Corporation of the University of Hawaii, Kaneohe, Hawaii

The Dept. of Defense is conducting a Military Installation Resilience Review focused on the Koolaupoko region on Oahu, Hawaii, which surrounds the Marine Corps Base Hawaii. As the base is an integral part of the Koolaupoko region, the review will identify climate-related threats and hazards to the communities within the region and provide recommendations to enhance resiliency and adaptation capacity of the vulnerable infrastructure (i.e., transportation, water systems, natural and cultural assets). BC is supporting the University of Hawaii by mapping infrastructure with climate-related hazards to complete vulnerability assessments, infrastructure typology adaptation strategies, as well as regional adaptation strategies. The project will identify pilot projects and project champions to implement adaptation strategies across the region. Examples of climate-related concerns include sea level rise, erosion, flooding, extreme heat, altered precipitation patterns, and increased wildfire risk. BC's review integrates knowledge from scientists, community members, government officials and other technical stakeholders and includes information from climate modeling, vulnerability assessments, and infrastructure mapping.

National Experience

Resilient water solutions are top of mind for our clients across the country. The following are a sample of our One Water work across North America.

Climate Resilient Engineering Design Guidance for the Water Sector

A Step Forward for Climate Resilience // Water Utility Climate Alliance, U.S.

As 12 of the nation's largest water providers serving more than 50 million customers across the United States, the Water Utility Climate Alliance's mission is to advance water utility climate change adaptation. For this effort, BC will help provide utilities with much needed practical guidance to build climate resilient systems that deliver reliable services to communities today and the future. BC is developing project types, climate adaptation strategies, and recommendations in the form of a guidance document for water, stormwater, and wastewater systems.

Recycled Water Program

Increasing Water Sustainability // City of Boise, ID

The Recycled Water Program was established to preserve local water by protecting the Boise River, bolstering local groundwater supply and creating resilience against the impacts of climate change. It seeks to address multiple drivers including regional growth and capacity needs, climate change, water scarcity, equity and affordability, regulatory compliance, and city-wide sustainability goals. To achieve these goals, BC's national experts are leading policy, permitting, stakeholder engagement, treatment recharge and innovation, and land acquisition elements.

Living Shoreline Restoration and Wetland Creation Program

Collaborating to Restore Essential Habitats // City of Norfolk, VA

BC completed assessment, design, permitting and construction services to restore 11,500 lf of shoreline. BC held pre-application meetings with the U.S. Army Corps of Engineers and the Virginia Marine Resources Commission to discuss innovative design strategies, and coordinated with the Virginia Institute of Marine Science to develop a lower-profile sill. The program restored eroding shorelines to protect roads and utilities and developed a more resilient, lower profile sill that allows greater access for mussels and other fish to tidal wetland marshes. The marshes also enhance water quality by filtering run-off and trapping nutrient-rich soils.

Quincy Water Reuse Utility Program

Bolstering Regional Resilience through Industrial Water Reuse // City of Quincy, WA

In the mid-2000s, the development of data centers in Quincy caused industrial water needs to diversify beyond the agricultural and food processing businesses that comprised their historical industrial base. Starting in 2007, a regional planning effort, guided by the Port of Quincy, City of Quincy, and various Washington State agencies, identified the need for a new reclaimed water utility to manage data center cooling system discharges and limit industrial demands on the City's municipal drinking water system. In support of this effort, BC developed a feasibility study that eventually evolved into the Quincy Water Reuse Utility, which was commissioned in June 2021. Throughout development of the Quincy Water Reuse Utility, BC partnered with the City to provide technical expertise and support, alternatives evaluations, and engineering design and construction services at multiple treatment facilities.

On the Forefront of One Water

BC was on the forefront of the One Water movement through the development of Blueprint for One Water: A practical guide for agencies seeking to manage water resources holistically and sustainably, in partnership with the Water Research Foundation. Our team facilitated an international survey of 800+ water professionals, conducted more than 10 one-on-one interviews, and led a two-day international workshop with 35 participants. This effort demonstrated our capability to successful facilitate large-scale surveys with complex stakeholders. The Blueprint features lessons learned from early One Water adopters and provides useful steps that any water agency can implement on their integrated water management path. BC's creative surveying and outreach approach combined with One Water technical expertise sets our team apart as the leaders of this movement.

1W2100 Integrated One Water Plan

Scenario Planning for Climate Change, Resiliency and Equity // Tucson Water, AZ

To help continue successful water stewardship and management and provide long-term reliable supply, BC led a scenario planning process with a diverse group of stakeholders focusing on climate, policy, and demographic uncertainties. This scenario planning supports Tucson Water's One Water Vision for better water management and supply—improving quality of life by protecting and restoring riparian areas, increasing urban tree canopy, and supporting economic growth; being fiscally responsible and equitable in choosing projects and programs; and ensuring safe, high quality water supplies for public confidence.

Healthy Waters Plan

Community-Centered Planning to Foster a More Resilient and Equitable Future // City of Vancouver, BC, Canada

The Healthy Waters Plan is a 50-year, stakeholder driven, strategy to guide the growth and renewal of the City of Vancouver's sewer and drainage system. BC is leading a team of planners, engineers, and engagement specialists in developing recommendations that will help the City manage its investments in green and grey stormwater and sewer infrastructure to achieve better water quality outcomes while addressing climate change impacts like flooding, urban heat and sea level rise and affordability concerns. The plan assessed the City's current state of sewer and stormwater systems and worked to integrate rainwater and sewer infrastructure policies, projects, and programs into the City's landscape using a One Water approach. The resulting adaptive pathway forward represents an agreement between project partners on the right balance of green and grey infrastructure for increased water quality benefits based on technical analysis and community values.

A Community-Centered Approach to One Water

The key to BC's successful One Water delivery is our community-centered approach. It starts by:

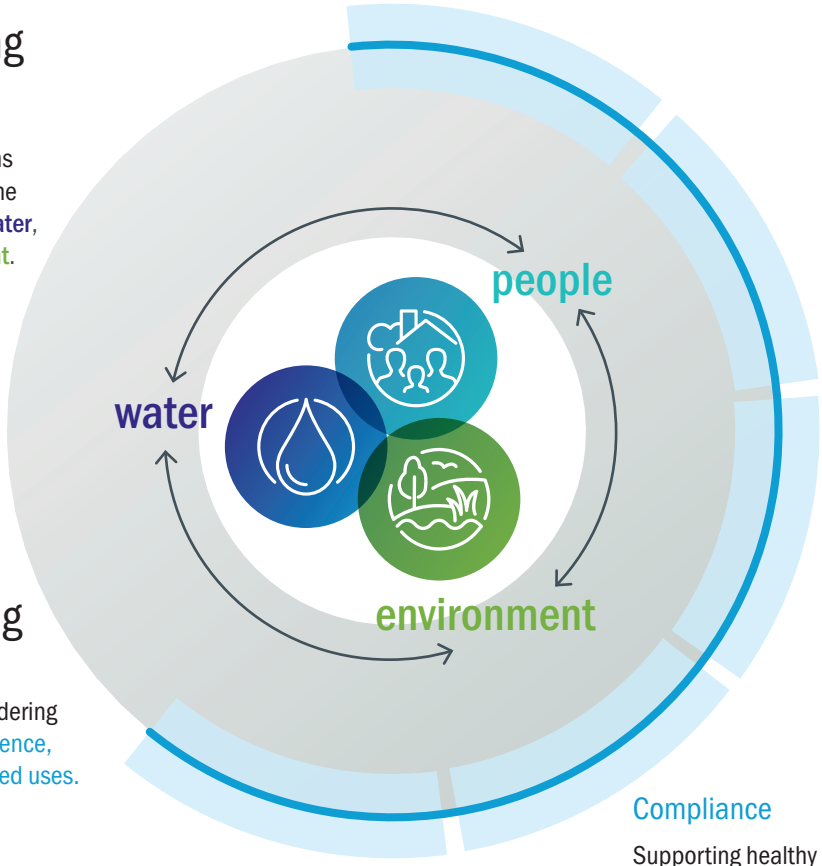
- Taking a holistic view to understand the complex connections between water, people, and environment
- Centering collaboration and community engagement, to leverage and integrate resources, technology, data, and experiences
- Co-creating with our clients and communities projects, policies, and practices that harness the value of water to create thriving communities and healthy ecosystems

Understanding Connections

At BC, One Water is a lens through which we view the connections between **water**, people, and environment.

Considering and Advancing

We act and leverage connections while considering equity, economics, resilience, compliance, and balanced uses.



Equity

Engaging the most vulnerable communities to enable equitable processes and outcomes.

Economics

Connecting individuals and institutions to optimize utility services and promote financially viable collaborative solutions.

Resilience

Increasing the resilience of water infrastructure and systems to protect people and environment.

Compliance

Supporting healthy receiving waters and ecosystems through stormwater and runoff retention and treatment, wastewater treatment, and beneficial water uses.

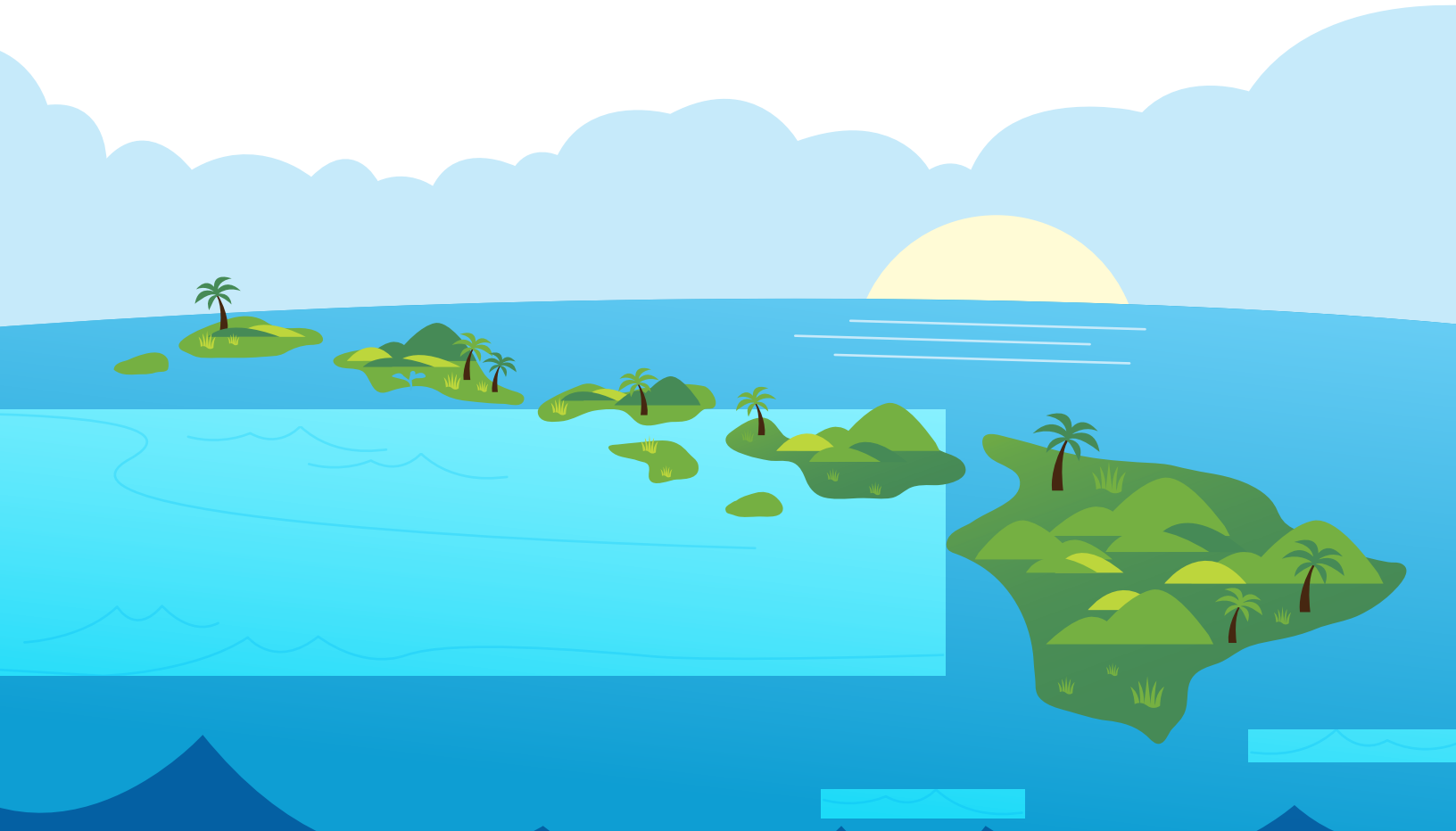
Balanced Uses

Optimizing the water cycle by moving water to where it's needed for the benefit of people and the environment.

I. AUTHORIZED REPRESENTATIVE	
31. SIGNATURE Thomas J. Myers	32. DATE June 30, 2025
33. NAME AND TITLE Tom Myers, PE, Vice President/Pacific Area Director	

General Qualifications

PART II



Brown AND Caldwell

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Honolulu Branch Office)			**3. YEAR ESTABLISHED** 1989	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET Pacific Guardian Center - Mauka Tower, 737 Bishop Street, Suite 3000			**5. OWNERSHIP**	
2c. CITY Honolulu	**2d. STATE** HI	**2e. ZIP CODE** 96813-4020	**a. TYPE** Corporation	
6a. POINT OF CONTACT NAME AND TITLE Dustin Yamamoto, Local Leader			**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 808-203-2671	**6c. EMAIL ADDRESS** dyamamoto@brwncald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable			**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	8
06	Architect	7	
08	CADD Technician	113	2
10	Chemical Engineer	16	
12	Civil Engineer	254	6
14	Computer Programmer	7	7
15	Construction Inspector	33	2
16	Construction Manager	38	2
18	Cost Engineer/Estimator	15	
21	Electrical Engineer	139	2
23	Environmental Engineer	404	9
24	Environmental Scientist	104	
29	Geographic Information System Specialist	9	
30	Geologist	72	1
42	Mechanical Engineer	87	1
47	Planner: Urban/Regional	4	
48	Project Manager	188	4
57	Structural Engineer	47	1
58	Technician/Analyst	25	1
62	Water Resources Engineer	53	3
	Other Employees	283	5
	Total	**2,335**	**54**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C18	Cost Estimating; Cost Engineering & Analysis	2
E07	Energy Conservation, New Energy Sources	4
E09	Environmental Impact Studies, Assessments	2
E11	Environmental Planning	4
E12	Environmental Remediation	1
E13	Environmental Testing and Analysis	1
I03	Industrial Waste Treatment	1
P05	Planning [Community, Regional, Area, State]	6
P06	Planning (Site, Installation and Project)	4
S04	Sewage Collection, Treatment and Disposal	7
S07	Solid Wastes; Incineration; Landfill	1
S13	Storm Water Handling & Facilities	2
W02	Water Resources; Hydrology; Ground Water	1
W03	Water Supply; Treatment and Distribution	5
	Other	2
	Asset Management	1
	Operations Services	6

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	3
b. Non-Federal Work	8
c. Total Work	8

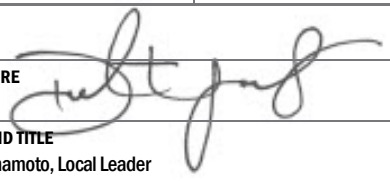
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE
December 17, 2024

c. NAME AND TITLE
Dustin Yamamoto, Local Leader

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME
Brown and Caldwell (Denver Branch Office)

3. YEAR ESTABLISHED
1986

4. UNIQUE ENTITY IDENTIFIER
KMZMQL18BLF1

2b. STREET
1527 Cole Boulevard, Suite 300

5. OWNERSHIP

2c. CITY
Lakewood

2d. STATE
CO

2e. ZIP CODE
80401

a. TYPE
Corporation

b. SMALL BUSINESS STATUS
Not Applicable

6b. TELEPHONE NUMBER
303-968-2005

6c. EMAIL ADDRESS
mthorstenson@brwncald.com

7. NAME OF FIRM *(if Block 2a is a Branch Office)*
Brown and Caldwell

8a. FORMER FIRM NAME(S) *(if any)*
Not Applicable

8b. YEAR ESTABLISHED
N/A

8c. UNIQUE ENTITY IDENTIFIER
N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	75
06	Architect	7	
08	CADD Technician	113	14
10	Chemical Engineer	16	1
12	Civil Engineer	254	16
14	Computer Programmer	7	
15	Construction Inspector	33	1
16	Construction Manager	38	2
18	Cost Engineer/Estimator	15	3
21	Electrical Engineer	139	5
23	Environmental Engineer	404	31
24	Environmental Scientist	104	8
29	Geographic Information System Specialist	9	1
30	Geologist	72	9
42	Mechanical Engineer	87	8
47	Planner: Urban/Regional	4	
48	Project Manager	188	11
57	Structural Engineer	47	6
58	Technician/Analyst	25	1
62	Water Resources Engineer	53	5
	Other Employees	283	29
	Total	**2,335**	**226**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C18	Cost Estimating; Cost Engineering & Analysis	1
D04	Design-Build – Preparation of RFPs	1
E07	Energy Conservation; New Energy Sources	1
E09	Environmental Impact Studies, Assessments	3
E11	Environmental Planning	6
E12	Environmental Remediation	1
E13	Environmental Testing and Analysis	1
I03	Industrial Waste Treatment	7
P05	Planning [Community, Regional, Area, State]	3
P06	Planning (Site, Installation and Project)	1
S04	Sewage Collection, Treatment and Disposal	5
S07	Solid Wastes; Incineration; Landfill	1
S13	Storm Water Handling & Facilities	1
W02	Water Resources; Hydrology; Ground Water	5
W03	Water Supply; Treatment and Distribution	7
	Other	3
	Asset Management	1
	Operations Services	4

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	1
b. Non-Federal Work	8
c. Total Work	8

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE
Michael J. Thorstenson

b. DATE
December 17, 2024

c. NAME AND TITLE
Michael Thorstenson, Municipal Operations Director

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Houston Branch Office)			**3. YEAR ESTABLISHED** 1993	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 10777 Westheimer Road, Suite 975			**5. OWNERSHIP**	
2c. CITY Houston	**2d. STATE** TX	**2e. ZIP CODE** 77042	**a. TYPE** Corporation	
6a. POINT OF CONTACT NAME AND TITLE Andy Gilchriest, Local Leader			**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 713-646-1109	**6c. EMAIL ADDRESS** agilchriest@brwncald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable			**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	7
06	Architect	7	
08	CADD Technician	113	3
10	Chemical Engineer	16	
12	Civil Engineer	254	3
14	Computer Programmer	7	
15	Construction Inspector	33	
16	Construction Manager	38	
18	Cost Engineer/Estimator	15	2
21	Electrical Engineer	139	8
23	Environmental Engineer	404	8
24	Environmental Scientist	104	8
29	Geographic Information System Specialist	9	
30	Geologist	72	6
42	Mechanical Engineer	87	3
47	Planner: Urban/Regional	4	1
48	Project Manager	188	5
57	Structural Engineer	47	
58	Technician/Analyst	25	1
62	Water Resources Engineer	53	1
	Other Employees	283	17
	Total	**2,335**	**73**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C15	Construction Management	3
C18	Cost Estimating; Cost Engineering & Analysis	1
D04	Design-Build – Preparation of RFPs	1
E07	Energy Conservation; New Energy Sources	5
E09	Environmental Impact Studies, Assessments	5
E11	Environmental Planning	5
E12	Environmental Remediation	2
H03	HTRW Remediation	1
I03	Industrial Waste Treatment	5
P05	Planning [Community, Regional, Area, State]	7
S04	Sewage Collection, Treatment and Disposal	1
S13	Storm Water Handling & Facilities	1
W02	Water Resources; Hydrology; Ground Water	3
W03	Water Supply; Treatment and Distribution	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

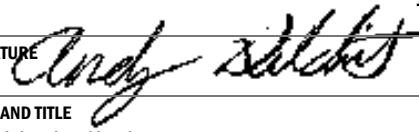
a. Federal Work	0
b. Non-Federal Work	8
c. Total Work	8

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE 	**b. DATE** December 17, 2024
c. NAME AND TITLE Andy Gilchriest, Local Leader	

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Phoenix and Tucson Branch Offices)		**3. YEAR ESTABLISHED** 1982	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 2 North Central Avenue, Suite 1600		**5. OWNERSHIP**	
2c. CITY Phoenix	**2d. STATE** AZ	**2e. ZIP CODE** 85004	**a. TYPE** Corporation
6a. POINT OF CONTACT NAME AND TITLE Ron Ablin, Managing Director Area			**b. SMALL BUSINESS STATUS** Not Applicable
6b. TELEPHONE NUMBER 602-717-2132	**6c. EMAIL ADDRESS** rablin@brwncald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable		**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	24
06	Architect	7	
08	CADD Technician	113	8
10	Chemical Engineer	16	1
12	Civil Engineer	254	11
14	Computer Programmer	7	
15	Construction Inspector	33	6
16	Construction Manager	38	4
18	Cost Engineer/Estimator	15	
21	Electrical Engineer	139	11
23	Environmental Engineer	404	12
24	Environmental Scientist	104	5
29	Geographic Information System Specialist	9	1
30	Geologist	72	1
42	Mechanical Engineer	87	7
47	Planner: Urban/Regional	4	
48	Project Manager	188	6
57	Structural Engineer	47	
58	Technician/Analyst	25	
62	Water Resources Engineer	53	
	Other Employees	283	10
	Total	**2,335**	**107**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A12	Automation; Controls; Instrumentation	
C15	Construction Management	2
C18	Cost Estimating; Cost Engineering & Analysis	1
D04	Design-Build – Preparation of RFPs	4
E07	Energy Conservation; New Energy Sources	4
E09	Environmental Impact Studies, Assessments	5
E11	Environmental Planning	5
E12	Environmental Remediation	1
H03	HTRW Remediation	2
I03	Industrial Waste Treatment	4
P05	Planning [Community, Regional, Area, State]	5
P06	Planning (Site, Installation and Project)	1
S04	Sewage Collection, Treatment and Disposal	7
S07	Solid Wastes; Incineration; Landfill	3
S13	Storm Water Handling & Facilities	1
W02	Water Resources; Hydrology; Ground Water	1
W03	Water Supply; Treatment and Distribution	6
	Other	4
	Asset Management	1
	Operations Services	3

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	0
b. Non-Federal Work	8
c. Total Work	8

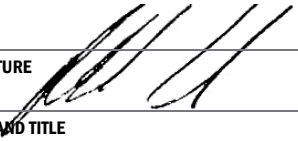
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE
December 17, 2024

c. NAME AND TITLE
Ron Ablin, Managing Director Area

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Los Angeles Branch Office)			**3. YEAR ESTABLISHED** 2005	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 1000 Wilshire Boulevard, Suite 1690			**5. OWNERSHIP**	
2c. CITY Los Angeles	**2d. STATE** CA	**2e. ZIP CODE** 90017	**a. TYPE** Corporation	
6a. POINT OF CONTACT NAME AND TITLE Christopher Kindle, Local Leader			**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 213-271-2237	**6c. EMAIL ADDRESS** ckindle@brwncald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable			**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	3
06	Architect	7	
08	CADD Technician	113	
10	Chemical Engineer	16	
12	Civil Engineer	254	5
14	Computer Programmer	7	
15	Construction Inspector	33	
16	Construction Manager	38	
18	Cost Engineer/Estimator	15	
21	Electrical Engineer	139	3
23	Environmental Engineer	404	3
24	Environmental Scientist	104	
29	Geographic Information System Specialist	9	
30	Geologist	72	
42	Mechanical Engineer	87	2
47	Planner: Urban/Regional	4	
48	Project Manager	188	3
57	Structural Engineer	47	
58	Technician/Analyst	25	
62	Water Resources Engineer	53	1
	Other Employees	283	9
	Total	**2,335**	**29**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
E07	Energy Conservation; New Energy Sources	2
E09	Environmental Impact Studies, Assessments	5
E11	Environmental Planning	4
E12	Environmental Remediation	1
I03	Industrial Waste Treatment	1
P05	Planning [Community, Regional, Area, State]	3
P06	Planning (Site, Installation and Project)	1
S04	Sewage Collection, Treatment and Disposal	6
S07	Solid Wastes; Incineration; Landfill	1
S13	Storm Water Handling & Facilities	2
W02	Water Resources; Hydrology; Ground Water	1
W03	Water Supply; Treatment and Distribution	7
	Other	3
	Operations Services	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	0
b. Non-Federal Work	8
c. Total Work	8

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE

b. DATE
December 17, 2024

c. NAME AND TITLE
Christopher Kindle, Local Leader

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Sacramento Branch Office)			**3. YEAR ESTABLISHED** 1978	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 11020 White Rock Road, Suite 200			**5. OWNERSHIP**	
2c. CITY Rancho Cordova	**2d. STATE** CA	**2e. ZIP CODE** 95670	**a. TYPE** Corporation	
6a. POINT OF CONTACT NAME AND TITLE Melanie Holton, Director Client Services			**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 916-217-5397	**6c. EMAIL ADDRESS** mholton@brwncald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable			**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	15
06	Architect	7	
08	CADD Technician	113	7
10	Chemical Engineer	16	
12	Civil Engineer	254	12
14	Computer Programmer	7	
15	Construction Inspector	33	4
16	Construction Manager	38	3
18	Cost Engineer/Estimator	15	
21	Electrical Engineer	139	4
23	Environmental Engineer	404	7
24	Environmental Scientist	104	1
29	Geographic Information System Specialist	9	1
30	Geologist	72	3
42	Mechanical Engineer	87	8
47	Planner: Urban/Regional	4	
48	Project Manager	188	4
57	Structural Engineer	47	3
58	Technician/Analyst	25	
62	Water Resources Engineer	53	2
	Other Employees	283	8
	Total	**2,335**	**82**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C15	Construction Management	5
C18	Cost Estimating; Cost Engineering & Analysis	2
D04	Design-Build – Preparation of RFPs	3
E07	Energy Conservation; New Energy Sources	4
E09	Environmental Impact Studies, Assessments	3
E11	Environmental Planning	2
P05	Planning [Community, Regional, Area, State]	6
P06	Planning (Site, Installation and Project)	1
S04	Sewage Collection, Treatment and Disposal	7
S07	Solid Wastes; Incineration; Landfill	2
S13	Storm Water Handling & Facilities	4
W02	Water Resources; Hydrology; Ground Water	4
W03	Water Supply; Treatment and Distribution	6
	Other	5
	Asset Management	2
	Operations Services	2

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	1
b. Non-Federal Work	8
c. Total Work	8

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE Melanie E Holton

b. DATE
December 17, 2024

c. NAME AND TITLE
Melanie Holton, Director Client Services

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Seattle, Olympia, and Tacoma, WA and Vancouver, BC Branch Offices)			**3. YEAR ESTABLISHED** 1961	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 701 Pike Street, Suite 1300			**5. OWNERSHIP**	
2c. CITY Seattle	**2d. STATE** WA	**2e. ZIP CODE** 98101-2310	**a. TYPE** Corporation	
6a. POINT OF CONTACT NAME AND TITLE Brent Robinson, Senior Manager Client Services			**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 206-749-2208	**6c. EMAIL ADDRESS** brobinson@brwncald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable			**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	38
06	Architect	7	
08	CADD Technician	113	20
10	Chemical Engineer	16	2
12	Civil Engineer	254	8
14	Computer Programmer	7	
15	Construction Inspector	33	
16	Construction Manager	38	
18	Cost Engineer/Estimator	15	
21	Electrical Engineer	139	25
23	Environmental Engineer	404	31
24	Environmental Scientist	104	3
29	Geographic Information System Specialist	9	
30	Geologist	72	
42	Mechanical Engineer	87	15
47	Planner: Urban/Regional	4	
48	Project Manager	188	17
57	Structural Engineer	47	5
58	Technician/Analyst	25	
62	Water Resources Engineer	53	8
	Other Employees	283	1
	Total	2,335	173

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C15	Construction Management	2
D04	Design-Build – Preparation of RFPs	1
E07	Energy Conservation; New Energy Sources	6
E09	Environmental Impact Studies, Assessments	4
E11	Environmental Planning	5
H03	HTRW Remediation	1
P05	Planning [Community, Regional, Area, State]	2
P06	Planning (Site, Installation and Project)	1
S04	Sewage Collection, Treatment and Disposal	8
S07	Solid Wastes; Incineration; Landfill	4
S13	Storm Water Handling & Facilities	5
W02	Water Resources; Hydrology; Ground Water	6
W03	Water Supply; Treatment and Distribution	6
	Other	6
	Asset Management	3
	Operations Services	5

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	0
b. Non-Federal Work	9
c. Total Work	9

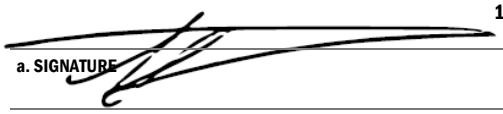
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE
December 17, 2024

c. NAME AND TITLE
Brent Robinson, Senior Manager Client Services

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Richmond Branch)			**3. YEAR ESTABLISHED** 2007	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 3454 West Clay Street			**5. OWNERSHIP**	
2c. CITY Richmond	**2d. STATE** VA	**2e. ZIP CODE** 23452	**a. TYPE** Corporation	
6a. POINT OF CONTACT NAME AND TITLE Tracy Fee, Director Client Services			**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 757-518-2404	**6c. EMAIL ADDRESS** TFee@BrwnCald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable			**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	4
06	Architect	7	
08	CADD Technician	113	1
10	Chemical Engineer	16	
12	Civil Engineer	254	5
14	Computer Programmer	7	
15	Construction Inspector	33	
16	Construction Manager	38	
18	Cost Engineer/Estimator	15	
21	Electrical Engineer	139	
23	Environmental Engineer	404	6
24	Environmental Scientist	104	
29	Geographic Information System Specialist	9	
30	Geologist	72	
42	Mechanical Engineer	87	
47	Planner: Urban/Regional	4	
48	Project Manager	188	2
57	Structural Engineer	47	
58	Technician/Analyst	25	
62	Water Resources Engineer	53	
	Other Employees	283	4
	Total	**2,335**	**22**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
C15	Construction Management	1
E07	Energy Conservation; New Energy Sources	1
E09	Environmental Impact Studies, Assessments	3
E11	Environmental Planning	3
E12	Environmental Remediation	1
I03	Industrial Waste Treatment	1
P05	Planning [Community, Regional, Area, State]	1
S04	Sewage Collection, Treatment and Disposal	5
S07	Solid Wastes; Incineration; Landfill	1
S13	Storm Water Handling & Facilities	3
W02	Water Resources; Hydrology; Ground Water	2
W03	Water Supply, Treatment, and Distribution	5
	Other	3
	Asset Management	1
	Operations Services	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	3
b. Non-Federal Work	7
c. Total Work	7

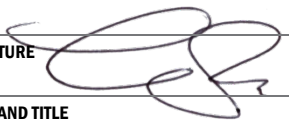
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE
December 17, 2024

c. NAME AND TITLE
Tracy Fee, Director Client Services

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (San Jose Branch Office)			**3. YEAR ESTABLISHED** 2017	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 111 W St John St, Suite 1040			**5. OWNERSHIP**	
2c. CITY San Jose	**2d. STATE** CA	**2e. ZIP CODE** 95113	**a. TYPE** Corporation	
6a. POINT OF CONTACT NAME AND TITLE Anup Shah, Senior Director Local Leader			**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 925-210-2224	**6c. EMAIL ADDRESS** ashah@brwncald.com		**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable			**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	
06	Architect	7	
08	CADD Technician	113	
10	Chemical Engineer	16	
12	Civil Engineer	254	2
14	Computer Programmer	7	
15	Construction Inspector	33	
16	Construction Manager	38	3
18	Cost Engineer/Estimator	15	
21	Electrical Engineer	139	1
23	Environmental Engineer	404	5
24	Environmental Scientist	104	
29	Geographic Information System Specialist	9	
30	Geologist	72	
42	Mechanical Engineer	87	
47	Planner: Urban/Regional	4	
48	Project Manager	188	1
57	Structural Engineer	47	
58	Technician/Analyst	25	
62	Water Resources Engineer	53	
	Other Employees	283	6
	Total	**2,335**	**18**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
E07	Energy Conservation; New Energy Sources	1
E09	Environmental Impact Studies, Assessments	2
E11	Environmental Planning	2
S04	Sewage Collection, Treatment and Disposal	6
S07	Solid Wastes; Incineration; Landfill	4
S13	Storm Water Handling & Facilities	1
W02	Water Resources; Hydrology; Ground Water	2
W03	Water Supply; Treatment and Distribution	6
	Other	1
	Operations Services	2

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	0
b. Non-Federal Work	7
c. Total Work	7

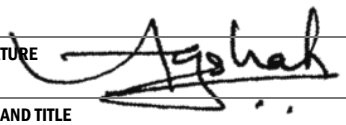
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE



b. DATE
December 17, 2024

c. NAME AND TITLE
Anup Shah, Senior Director Local Leader

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(if any)*
HRS 103D-304

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Brown and Caldwell (Dallas Branch Office)		**3. YEAR ESTABLISHED** 2023	**4. UNIQUE ENTITY IDENTIFIER** KMZMQL18BLF1
2b. STREET 8144 Walnut Hill Lane, Suite 1075		**5. OWNERSHIP**	
2c. CITY Dallas	**2d. STATE** TX	**2e. ZIP CODE** 75231	**a. TYPE** Corporation
6a. POINT OF CONTACT NAME AND TITLE Chris Patin, Director Client Services		**b. SMALL BUSINESS STATUS** Not Applicable	
6b. TELEPHONE NUMBER 713-646-1149	**6c. EMAIL ADDRESS** cpatin@brwncald.com	**7. NAME OF FIRM** *(if Block 2a is a Branch Office)* Brown and Caldwell	
8a. FORMER FIRM NAME(S) *(if any)* Not Applicable		**8b. YEAR ESTABLISHED** N/A	**8c. UNIQUE ENTITY IDENTIFIER** N/A

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
02	Administrative	437	2
06	Architect	7	
08	CADD Technician	113	1
10	Chemical Engineer	16	
12	Civil Engineer	254	
14	Computer Programmer	7	
15	Construction Inspector	33	
16	Construction Manager	38	
18	Cost Engineer/Estimator	15	1
21	Electrical Engineer	139	
23	Environmental Engineer	404	7
24	Environmental Scientist	104	1
29	Geographic Information System Specialist	9	
30	Geologist	72	
42	Mechanical Engineer	87	
47	Planner: Urban/Regional	4	
48	Project Manager	188	1
57	Structural Engineer	47	
58	Technician/Analyst	25	3
62	Water Resources Engineer	53	1
	Other Employees	283	5
	Total	**2,335**	**22**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
I03	Industrial Waste Treatment	1
P05	Planning [Community, Regional, Area, State]	1
S04	Sewage Collection, Treatment and Disposal	4
W02	Water Resources; Hydrology; Ground Water	1
W03	Water Supply; Treatment and Distribution	3
	Other	3

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

(Insert revenue index number shown at right)

a. Federal Work	0
b. Non-Federal Work	6
c. Total Work	6

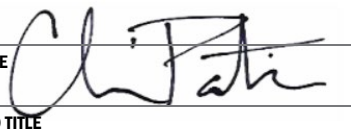
PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

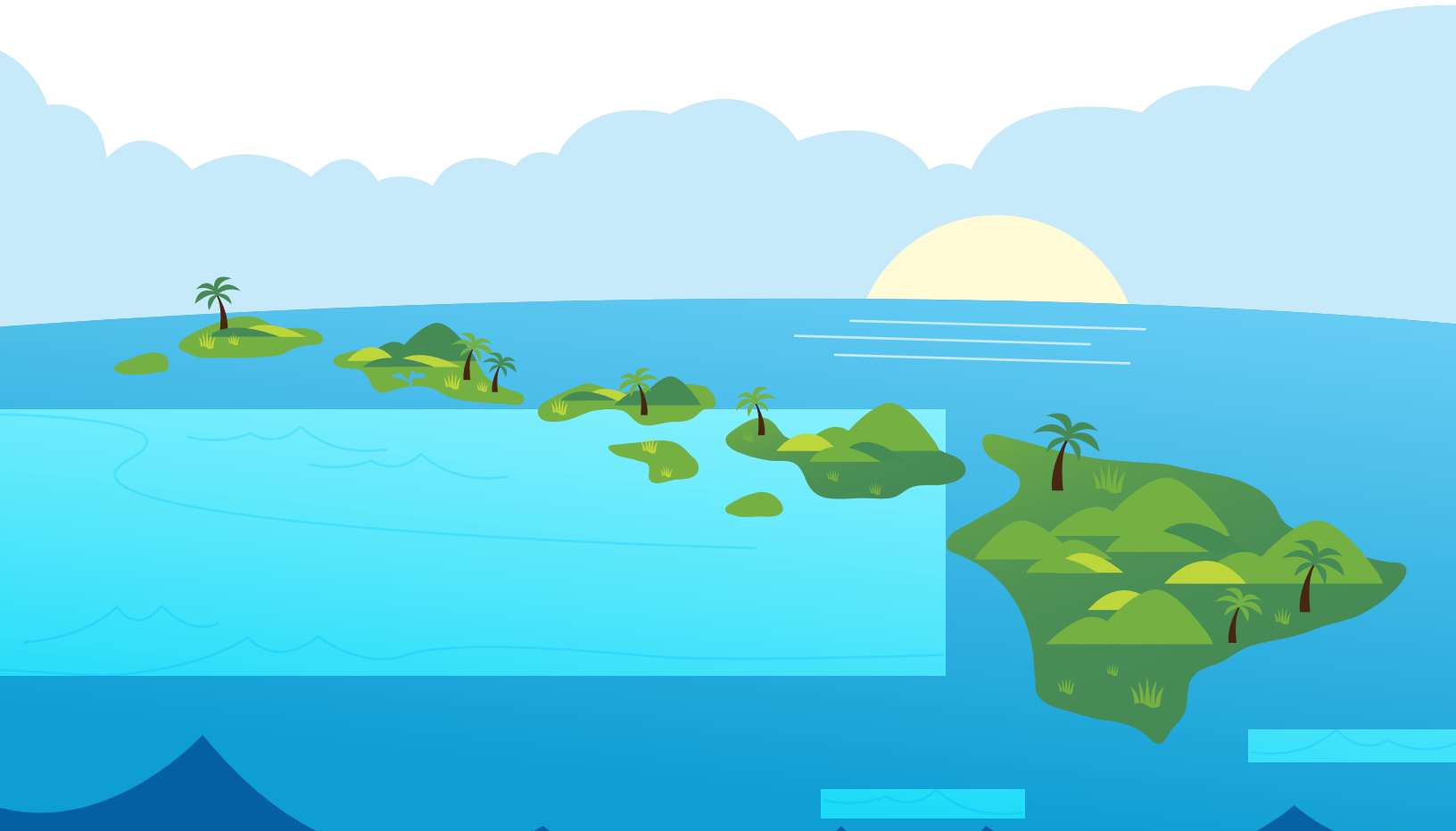
a. SIGNATURE



b. DATE
December 17, 2024

c. NAME AND TITLE
Chris Patin, Director Client Services

Attachments



Brown AND Caldwell

License ID PE-9758	**Entity Type** INDIVIDUAL
License Type PROFESSIONAL ENGINEER	**Active/Inactive** ACTIVE
Legal License Name THOMAS T MYERS	**Original License Date** 07/15/1999
Status CURRENT, VALID & IN GOOD STANDING	**Expiration Date** 04/30/2026

License Number
PE-17346

Expiration date
4/30/2026

STATE OF HAWAII DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

PROFESSIONAL ENGINEER

CLASS(ES): CE CIVIL

MICHELLE L SORENSEN

SIGNATURE OF LICENSEE

License Number
PE-16335

Expiration date
4/30/2026

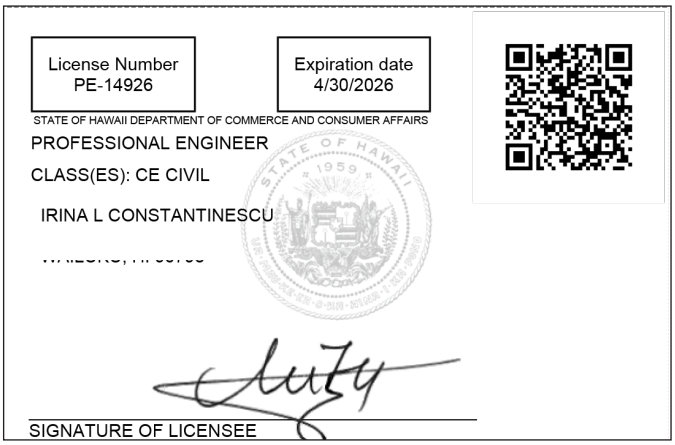
STATE OF HAWAII DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

PROFESSIONAL ENGINEER

CLASS(ES): CE CIVIL

AUDREY S C CABRERA

SIGNATURE OF LICENSEE


License Number
PE-14926

Expiration date
4/30/2026

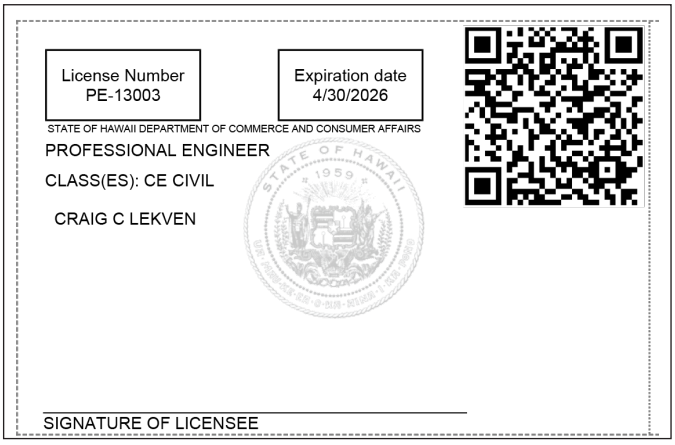
STATE OF HAWAII DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

PROFESSIONAL ENGINEER

CLASS(ES): CE CIVIL

IRINA L CONSTANTINESCU

SIGNATURE OF LICENSEE


License Number
PE-13003

Expiration date
4/30/2026

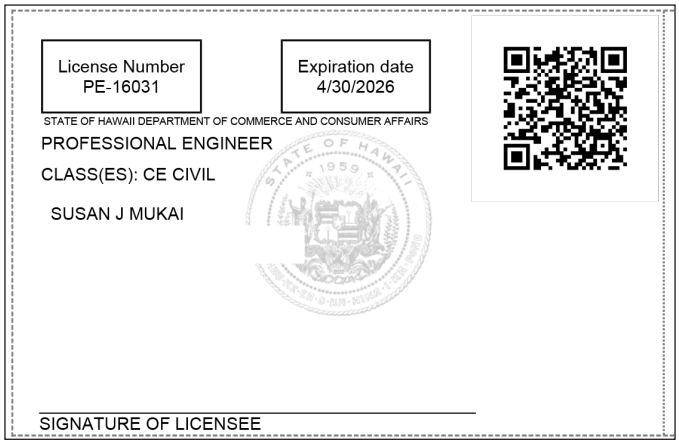
STATE OF HAWAII DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

PROFESSIONAL ENGINEER

CLASS(ES): CE CIVIL

CRAIG C LEKVEN

SIGNATURE OF LICENSEE


License Number
PE-16031

Expiration date
4/30/2026

STATE OF HAWAII DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

PROFESSIONAL ENGINEER

CLASS(ES): CE CIVIL

SUSAN J MUKAI

SIGNATURE OF LICENSEE

MARRERO, LENISE DANIELLE

LICENSE NUMBER: 78266 **LICENSE TYPE:** CIVIL ENGINEER
LICENSE STATUS: CLEAR **EXPIRATION DATE:** SEPTEMBER 30, 2025
SECONDARY STATUS: N/A
CITY: MAYAGUEZ **STATE:** PUERTO RICO **COUNTY:** OUT OF STATE **ZIP:** 00680

Name	BELL, CLIFTON FORBES
License Number	0402031741
License Description	Professional Engineer License
Rank	Professional Engineer
Address	WILLIAMSBURG, VA 23185
Initial Certification Date	1998-02-07
Expiration Date	2026-02-28

CHAVAN, SEEMA BHIMANI

LICENSE NUMBER: 61867 **LICENSE TYPE:** CIVIL ENGINEER
LICENSE STATUS: CLEAR **EXPIRATION DATE:** SEPTEMBER 30, 2025
SECONDARY STATUS: N/A
CITY: LOS ALTOS **STATE:** CALIFORNIA **COUNTY:** SANTA CLARA **ZIP:** 94022

License Number
PE-11907

Expiration date
4/30/2026

STATE OF HAWAII DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

PROFESSIONAL ENGINEER

CLASS(ES): CE CIVIL

FIONA K VAN AMMERS

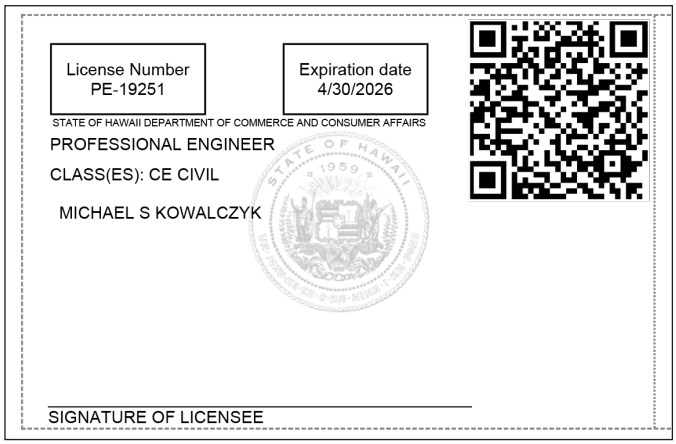
SIGNATURE OF LICENSEE

FLAKE, MICHAEL

LICENSE NUMBER: 54948 **LICENSE TYPE:** CIVIL ENGINEER
LICENSE STATUS: CLEAR **EXPIRATION DATE:** JUNE 30, 2026
SECONDARY STATUS: N/A
CITY: WALNUT CREEK **STATE:** CALIFORNIA **COUNTY:** CONTRA COSTA **ZIP:** 94597

WILDER, KRISTENE

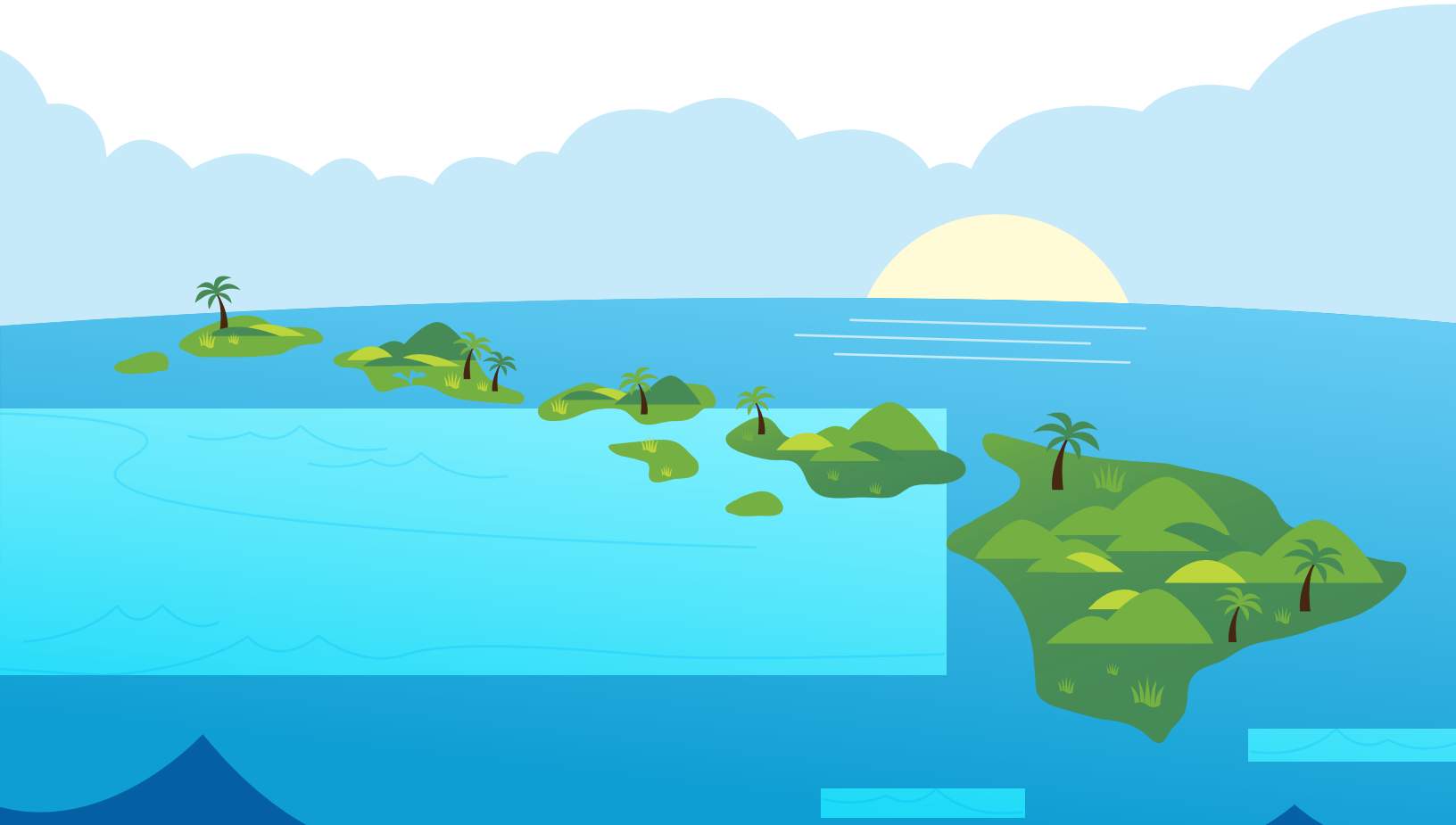
LICENSE NUMBER: 8583 **LICENSE TYPE:** GEOLOGIST
LICENSE STATUS: CLEAR **EXPIRATION DATE:** DECEMBER 31, 2026
SECONDARY STATUS: N/A
CITY: FAIRFIELD **STATE:** CALIFORNIA **COUNTY:** SOLANO **ZIP:** 94534



Credential/License Summary for 33417 - 6

Name : Jaren J Hiller	**Credential/License Number :** 33417 - 6
Professions : Professional Engineer	**Location :** Brookfield, Wisconsin - 53005
Credential/License Type : Regular	**Status :** License is current (Active)
Eligible To Practice : Eligible	**Credential Expiration Date :** 2026-07-31
Granted Date : 1999-04-15	**Multi-State :** N

Brown AND Caldwell



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