



WATER DEPARTMENT  
WATER RESOURCES MANAGEMENT SECTION  
715 GRAHAM HILL ROAD, SANTA CRUZ, CA 95060

August 06, 2010

Kevin Collins  
P.O. Box 722  
Felton, CA 95018

Re: Temperature data request

Dear Mr. Collins,

Here is the information you requested regarding temperature data collection methods employed by the City of Santa Cruz. I've also included a general location map of the data collection sites, and a copy of the job descriptions for each person involved in the collection process, including myself (Environmental Projects Analyst), Chris Berry (Water Resources manager), Matt Baldzikowski (Environmental Projects analyst), Randy Holloway (Water Resources Technician). All involved hold a minimum of a Bachelor's degree. I have a Bachelor of Science degree in Environmental Science, Technology & Policy with a Watershed Management emphasis from California State University, Monterey Bay (CSUMB).

All data were collected using Onset Stowaway Tidbit or Onset HOBO data loggers. Sites were chosen so as to characterize temperature dynamics in key salmonid rearing reaches with an emphasis on reaches that may be influenced by City operations or provide reference condition information for reaches unaffected by City operations, or sites that would provide information on suitability for coho recovery, independent of City operations. The sites for the 2005 data were selected in consultation with our consulting fisheries biologist, Jeff Hagar, Hagar Environmental Services. Subsequent sites were selected by City staff.

The following study site selection criteria were implemented:

- Install in or near the thalweg when possible
- Choose a site with good water mixing, i.e. in riffles or runs; or located in refugia pools
- Choose a site that is representative of the study reach
- Choose a site that is accessible and secure from vandals and damage
- Choose sites which have relatively comparable canopy and aspect

Installation/deployment of temperature data loggers:

- Ensure that the sensor is completely submerged
- Ensure that the sensor is not in contact with the stream bottom, when possible
- Place sensor midway in water column where possible

- Ensure that the sensor is securely attached
- Set for 15 to 30 minute intervals to record the maximum daily temperature
- Record time that sensor was deployed and other relevant observations (whether observations, etc)

Data collection:

- Perform an accuracy check with a lab-calibrated field thermometer
- Check the data logger for movement/damage/tampering/algal growth, etc
- Check downloaded data for accuracy and any notable
- Record the data logger retrieval time
- Redeploy in same location

Thank you for your patience and please do not hesitate to contact me if you have any questions or concerns.

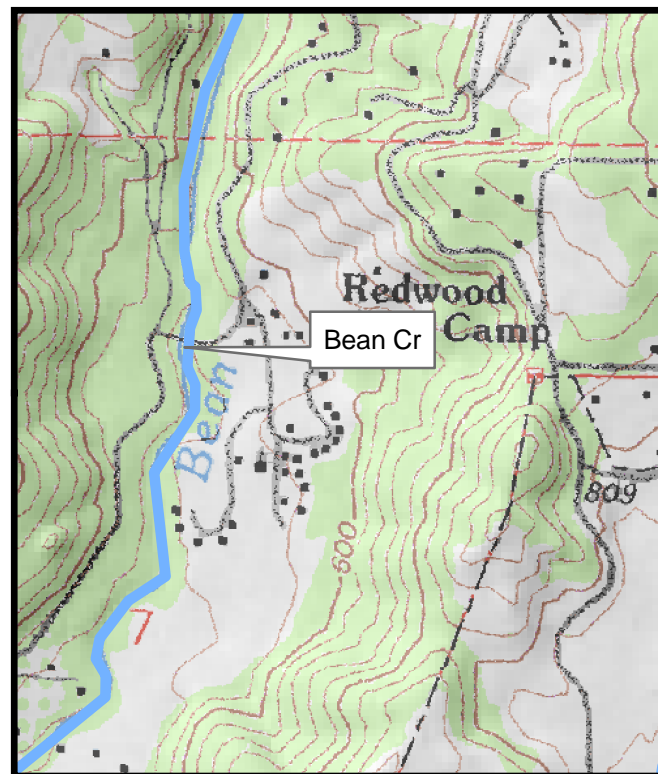
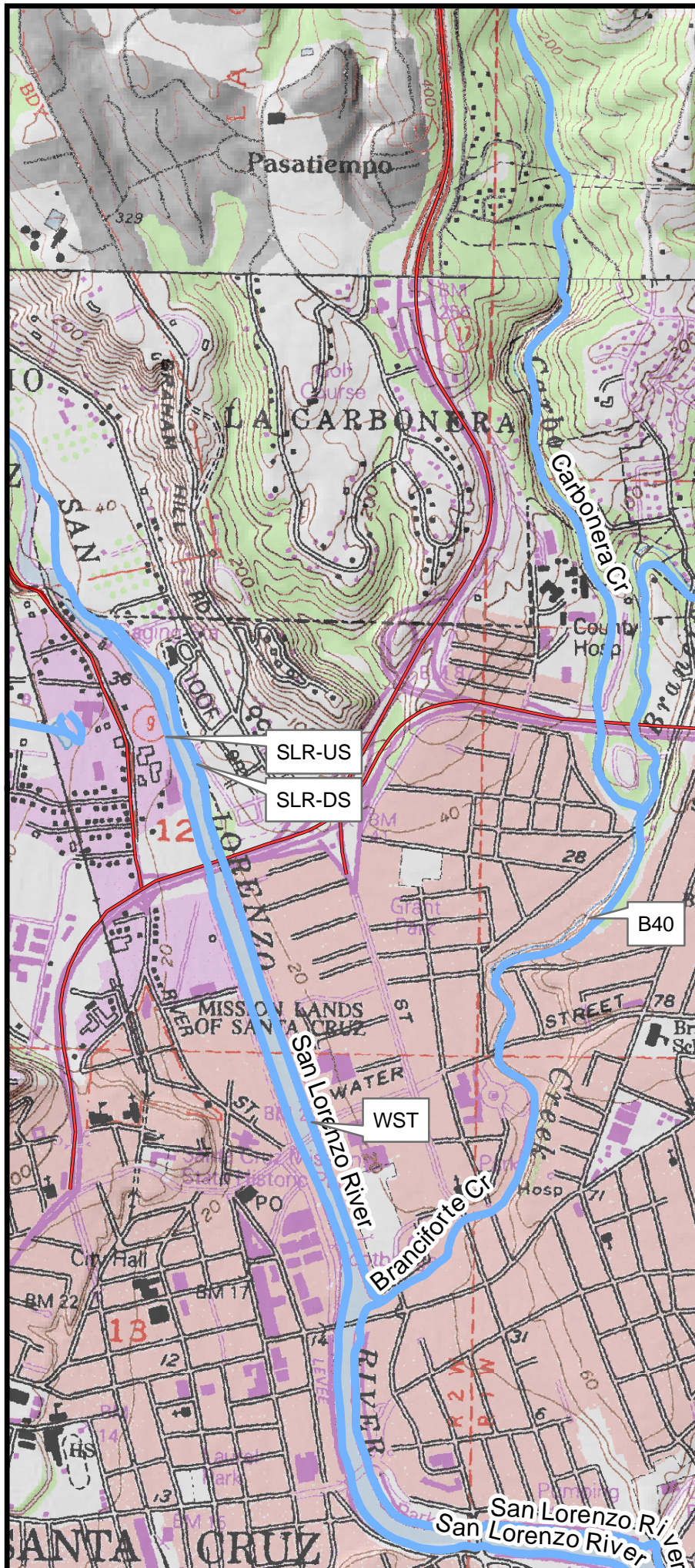
Sincerely,

A handwritten signature in black ink, appearing to read 'Zeke Bean', with a stylized, cursive script.

Zeke Bean  
Environmental Projects Analyst  
City of Santa Cruz - Water Resources  
715 Graham Hill Road  
Santa Cruz, CA 95060  
831/420-5478 (office)  
831/566-2216 (cell)









## **CITY OF SANTA CRUZ WATER RESOURCES MANAGER**

**Reports to:** Receives general direction from the Deputy Water Director/Operations Manager  
**Supervises:** Watershed Specialist  
**Bargaining Unit:** Management

### **DEFINITION:**

Under general direction, develops, plans, organizes and manages departmental projects and programs related to water rights, water supply, and environmental resource protection; manages the Watershed Division; implements resource management plans, interprets and develops appropriate responses to evolving legislation related to water rights and habitat conservation planning; and, performs other related duties as assigned.

### **DISTINGUISHING CHARACTERISTICS:**

The **Water Resources Manager** is a division manager level classification responsible for managing the Watershed Division, acting as the department's inter-agency liaison, and assuring the Water Department's compliance with a variety of regulatory guidelines.

### **TYPICAL DUTIES** *(may include, but not limited to, the following):*

- Develops, oversees, monitors and coordinates departmental projects and programs related to water rights issues, water supply issues, and environmental resource protection; participates with other Water Department managers in strategic planning, capital improvement program development, water supply planning, and integrated water planning; acts as a resource to other department staff in the areas of water rights and environmental regulations; informs department staff of regulatory compliance issues and develops and implements solutions.
- Manages the Watershed Division; supervises, trains and evaluates the Watershed Specialist; responsible for implementation of the Watershed Resources Management Plan; administers and oversees forestland maintenance contracts; makes field inspections; oversees permitting activities for operation and maintenance projects; acts as a technical resource to the ranger staff responsible for patrolling the City's watershed lands.
- Interprets, explains and applies local, state and federal regulations related to water rights and environmental protection; acts as the Water Department's liaison with regulatory agencies; ensures departmental compliance with environmental regulations, including reporting to regulatory agencies; coordinates with other division managers to ensure that construction and maintenance work performed by the department complies with environmental regulations; identifies permit requirements and completes required processes to obtain permits for department projects.

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- Analyzes technical information related to water supply issues; represents the City of Santa Cruz in water rights, water supply, and environmental resource protection discussions and negotiations with State, County, and local water system directors.
- Researches and analyzes technical, legal, habitat conservation, and special-status species issues and develops appropriate action plans; monitors legislation related to water resources issues, including water rights, environmental resources protection, and habitat conservation planning; develops appropriate departmental responses to new legislation and regulations.
- Develops and implements programs and plans, such as the Watershed Resources Management Plan and vegetation management plans for watershed lands; coordinates and participates in the development and implementation of City-wide, inter-departmental projects and programs, such as the City's Habitat Conservation Plan.
- Oversees and participates in the development of project and program budgets and the Watershed Division budget; forecasts necessary funds for staffing, materials and supplies; negotiates and oversees contracts; writes and administers grants.
- Prepares complex technical and administrative reports; prepares written correspondence.
- Makes presentations to department staff, committees and commissions, and the City Council.
- May act as staff to technical committees or commissions.

**ENVIRONMENTAL AND WORKING CONDITIONS:**

Position requires prolonged sitting; standing and walking on level and uneven surfaces; working indoors and outdoors; repetitive hand movements and fine coordination in preparing reports using a computer keyboard; near and far vision in reading written reports and work related documents. Acute hearing is required when providing phone and personal service.

Some of these requirements may be accommodated for otherwise qualified individuals requiring and requesting such accommodations.

**MINIMUM QUALIFICATIONS:**

**Education and/or Experience:**

- Any combination of education and experience that has provided the knowledge, skills and abilities necessary for the **Water Resources Manager** may be qualifying. A typical way of obtaining the required qualifications is to possess the equivalent of three years of progressively responsible experience related to watershed management, water resources management, natural resources management or environmental planning and a Bachelor's degree in natural resources, environmental science, environmental planning or a related field.

**Licenses/Certificates:**

- Possession of a valid California Class C driver's license and a safe driving record, or the ability to provide alternate transportation which is approved by the appointing authority.



## **KNOWLEDGE/SKILLS/ABILITIES:**

### **Working knowledge of:**

- principles, practices, and techniques of water resources management and water utility operations, including the technical issues related to water resources planning.
- water supply issues, programs and strategies.
- federal and state legislation and regulations related to water supply, environmental resource protection, and habitat conservation planning, such as federal and state Endangered Species Acts, the California Environmental Quality Act, and the National Environmental Policy Act.
- environmental monitoring and assessment techniques, including data collection, analysis, and interpretation.
- principles and practices of environmental impact assessment and related regulatory processes.
- principles and practices of project and program development, administration and evaluation.
- mathematics and statistical principles.
- methods and techniques of record keeping and report preparation and writing.
- office practices, methods and equipment, including a computer and applicable software.

### **Some knowledge of:**

- physical and natural sciences, including biology, geology and hydrology.
- vegetation management practices.
- principles and practices of supervision and training.
- principles and practices of workplace safety.

### **Ability to:**

- coordinate and direct water resources and watershed management programs.
- interpret, explain and apply applicable policies, procedures, laws, codes and regulations pertaining to water resources management.
- research and analyze technical, legal and environmental issues and take or recommend appropriate actions.
- analyze administrative, operational and organizational issues, evaluate alternatives and make sound decisions.
- recommend adjustments to standard operating procedures to improve effectiveness of operation and comply with regulatory changes.
- act as a technical advisor to the Director and departmental managers and staff.
- plan, organize and direct the work of assigned staff and consultants.
- develop and implement policies, procedures and goals for assigned areas of responsibility.
- communicate clearly, both orally and in writing; prepare clear and concise reports, and make clear and concise presentations.
- develop and administer division and project budgets.
- negotiate and administer contracts.
- prepare and administer grants.
- establish and maintain effective working relationships.

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**Other requirements:**

- Willingness to attend evening and weekend meetings, as required.

Classification No.:	756
Supersedes:	New
Date of Issue:	9/01



## **CITY OF SANTA CRUZ ENVIRONMENTAL PROJECTS ANALYST**

**Reports to:** Associate Civil Engineer, Water Resources Manager, Water Conservation Manager, or other assigned staff  
**Supervises:** May exercise functional and technical supervision over assigned staff.  
**Bargaining Unit:** Service

### **BASIC FUNCTION**

Under general supervision, oversees, monitors, coordinates and conducts one or more environmental programs in support of City services and operational activities, such as the landfill, storm water, drinking water and wastewater facilities; collects samples, performs inspections and field and laboratory tests and analysis; performs research and analysis, writes reports, grants, correspondence and a variety of other materials; develops and implements or administer programs; performs public outreach regarding assigned programs; and, performs other related duties as assigned. Positions in this classification may be assigned to the Public Works Department in the Engineering Division or to the Water Department in the Engineering, Water Resources, or Water Conservation Sections.

### **DISTINGUISHING CHARACTERISTICS**

The *Environmental Projects Analyst* is a journey-level classification responsible for a variety of environmental programs and projects in support of City services and operational activities. The incumbent oversees daily program operations, provides work direction for assigned staff, and assists in reviewing the work performance of contractors. This classification is distinguished from higher management level classifications, like the Water Resource Manager, the Water Conservation Manager, and the Associate Civil Engineer, in that the latter classifications have a broader scope of management responsibilities and a greater depth of technical knowledge.

### **TYPICAL DUTIES** *(May include, but are not limited to, those duties listed below.)*

- Oversees, monitors, conducts and coordinates one or more environmental programs in support of City services and operational activities, such as the landfill, storm water, drinking water, and wastewater facilities; conducts or assists in research projects.
- Develops and implements City programs, including those involving storm water quality and water resource management; develops, implements and evaluates goals, objectives, policies and priorities for assigned projects and service areas; ensures that established goals and priorities are achieved.
- Stays current with, interprets and applies federal, state and local regulations, codes and ordinances related to area of assignment, such as the Safe Drinking Water Act, California Urban Water Conservation MOU, California Forest Practice Rules, California Environmental Quality Act, federal and California Endangered Species Acts, the National Environment Protection Act, National Pollutant Discharge Elimination System Program (NPDES), and



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other regulations related to groundwater and wastewater, storm water quality, waste management and landfill gas.

- Develops and maintains environmental monitoring and reporting programs; notes compliance violations and assists with remediation efforts; conducts field studies; may perform and coordinate the performance of a variety of laboratory chemical, biological and bacteriological analyses to determine compliance with state and federal agency requirements; performs statistical analyses; adheres to quality assurance programs for laboratory analysis and instrumentation.
- Prepares, organizes and maintains comprehensive records and technical reports, correspondence, requests for proposals, contracts for professional services, brochures, advertisements, posters, and other materials; develops educational materials; writes and monitors grants.
- Acts as liaison with government officials, the public and other City staff; provides public outreach and education; makes presentations; serves as a technical resource; responds to questions and inquiries; coordinates pertinent information, resources and work teams necessary for accomplishing tasks; works closely with other departments and outside groups and agencies to coordinate plans for proposed projects and to respond to their concerns.
- Participates in the development of policies and procedures; recommends programs, projects and work assignments to higher level personnel; assists in the development or revision of policies, ordinances and codes relating to assigned duties; implements those policies and procedures.
- Participates in the review of environmental and planning documents, such as timber harvest plans, environmental monitoring reports, biological assessments, environmental impact reports and permit applications.

**Position Specific Assignment-Water Department/Conservation Section:**

- Assists in developing large landscape conservation and incentive programs, performs landscape and irrigation audits, and provides technical resources and training to improve irrigation efficiency.
- Compiles statistics on conservation activities and makes estimates of water savings; uses spreadsheet software to organize and present data.
- Reviews architectural blueprints to determine compliance with landscape conservation ordinance.
- Advises Realtors, architects, project planners, and the public on conservation requirements.
- Provides technical assistance to commercial, industrial, and institutional customers for improving water use efficiency.
- Collects, organizes, and analyzes information on water production and consumption.

**ENVIRONMENTAL AND WORKING CONDITIONS**

Position requires sitting, standing, walking on level, uneven and slippery surfaces, reaching, twisting, turning, kneeling, bending, stooping, squatting, crouching, grasping and making repetitive hand movements in the performance of daily duties. The position also requires near, far and color vision when collecting and analyzing samples. The need to lift, carry, and push tools, equipment and supplies weighing 25 pounds is also required. Depending on assignment, the incumbent may occasionally need to lift, carry and push tools, equipment and supplies weighing up to 80 pounds with assistance. Additionally, the incumbent may be exposed to

biohazards and a variety of working conditions, including mechanical and electrical hazards and loud noises when collecting samples and performing field inspections and surveys. The incumbent may work in adverse weather conditions, including wet, heat and cold, when collecting samples. The incumbent may use cleaning and lubricating chemicals or work in an environment that may involve exposure to fumes, dust and air contaminants. The nature of the work also requires the incumbent to climb ladders and steep slopes. The incumbent may be required to occasionally work evenings and weekends.

Some of these requirements may be accommodated for otherwise qualified individuals requiring and requesting such accommodations.

## **MINIMUM QUALIFICATIONS**

### **Knowledge:**

- Principles, practices, and terminology of environmental programs related to the area of assignment.
- Applicable federal and state laws, codes, and regulations.
- Natural resource management.
- Basic statistics.
- Methods and techniques for record keeping and report preparation and writing.
- Office practices, methods and equipment, including using a computer for word processing and spreadsheets.
- Principles and practices of program development, administration, and evaluation.
- Methods and techniques of budget development and monitoring.
- Use and application of Geographical Information Systems (G.I.S.).
- Grant writing and administration.
- Nonpoint source water pollution best management practices.

### **The following apply for all positions except for those assigned to Conservation:**

- Occupational hazards and standard safety procedures related to laboratory environments.

### **The following apply for positions assigned to the Water Department/Water Resources Section and the Public Works Department:**

- General principles, methods, and terminology of chemical, biological, and bacteriological testing commonly performed for water/wastewater and soil analyses.
- Hydrology, chemistry, groundwater sampling techniques.

### **The following apply for positions assigned to the Water Department/Conservation Section:**

- Landscape water management methods.
- Water conservation best management practices.

**Abilities:**

- Oversee, plan, organize, conduct, coordinate, and implement projects and programs.
- Learn more complex principles, practices, techniques, and regulations pertaining to assigned duties.
- Implement, explain, and apply applicable laws, codes, and regulations.
- Analyze and interpret large sets of laboratory and/or statistical data.
- Perform mathematical calculations.
- Write and compile effective technical and administrative reports.
- Read, interpret, and record data accurately.
- Read and interpret maps, sketches, drawings, specifications and technical manuals.
- Adjust standard operating procedures to improve effectiveness and comply with regulatory changes as appropriate.
- Participate in the establishment of division and/or department goals, objectives and methods for evaluating achievement and performance levels.
- Assist with budget development and monitoring.
- Plan, organize, and direct work of assigned staff.
- Communicate clearly and concisely, both orally and in writing.
- Follow written and oral directions.
- Work independently.
- Observe safety principles and work in a safe manner.
- Establish and maintain effective working relationships with representatives of community organizations, state and local agencies and associations, City staff and the public.
- May safely and effectively operate the tools and equipment used in environmental fieldwork, sampling and/or laboratory testing and analysis.
- May calibrate and maintain environmental sampling and monitoring equipment.
- May collect a variety of samples in the field.

**OTHER REQUIREMENTS**

- Willingness to work occasional evenings and weekends, as assigned.
- Willingness to attend off-site meetings and training sessions, such as basic health and safety training related to hazardous materials and waste, as required.

**EDUCATION AND EXPERIENCE**

Any combination of education and experience that provides the above knowledge, skills, and abilities combined with any required licenses or certificates is qualifying. A typical way to obtain the required qualifications is to possess the equivalent of the following:

- Bachelor's degree in engineering, biology, chemistry, environmental science, or a related field; and
- Two years of experience in the coordination of environmental programs, environmental compliance programs, or related areas (for positions assigned to Water Conservation, two years of water conservation experience required).

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**LICENSES/CERTIFICATES**

- Possession and continued maintenance of a valid California class C driver's license and a safe driving record.

**Position Specific Assignment-Water Department/Conservation Section:**

- Requirement to obtain the American Water Works Association CA-NV Section Water Conservation Practitioner certification within one year of date of appointment.

Classification No.:	136
Date of Issue:	02/02
Supersedes:	09/00
Update:	03/09

The City of Santa Cruz is seeking applicants for a temporary/seasonal **Water Resources Technician** position. The selected applicant will be primarily responsible for data entry and analysis, assistance with biotic and hydrologic surveys, and other duties supporting the City of Santa Cruz's Water Resource Management program. For more information on this program see:

<http://www.ci.santa-cruz.ca.us/wt/resources/Overview.pdf>

Applicants should have a minimum 2 years experience (either professional or academic), in environmental sciences, fisheries, hydrology, geology or related fields. Work environment will be in both field and office settings. Applicants should be comfortable working in remote settings, walking on uneven ground, working on boats and in the water, with extremes of heat/cold, exposure to stinging flora/fauna and other hazards typical of environmental/water resources work. Applicant should also be comfortable spending lengthy periods of time doing computer work in an informal office setting.

Skills/Experience/Knowledge in the following areas is desirable:

- Microsoft Excel, Word, Access, and Outlook
- Arc Map GIS
- Field data collection/record keeping
- Surveying
- Native flora and fauna
- Water quality monitoring instrumentation (YSI, etc.)
- Fisheries habitat typing methods
- Fisheries sampling methods (snorkeling/electrofishing/seining)
- USGS hydrologic monitoring methods
- Safe boating

The position will run from approximately July 1 - Nov 1 and will be 10-20 hours/week. Salary will be \$17/hr. City of Santa Cruz temporary staff are union employees and are covered by the following MOU:

<http://www.ci.santa-cruz.ca.us/hr/mou/temp%20seiu%20mou%202008-2010.pdf>

Applicants should submit a completed City of Santa Cruz job application and resume to the email or snail mail addresses below (do not mail to the address on the application form):

wrm@ci.santa-cruz.ca.us

Chris Berry  
Water Resources Manager  
City of Santa Cruz Water Department  
715 Graham Hill Rd. Building A  
Santa Cruz, CA 95060

Electronic copies of the City of Santa Cruz job application can be found here:



<http://www.ci.santa-cruz.ca.us/hr/employ.pdf>

Applications are due by Friday, May 29, 2009 at 5 pm.

Applications will then be screened with informal interviews to be held the week of June 7th.

Please direct any questions to [wrm@ci.santa-cruz.ca.us](mailto:wrm@ci.santa-cruz.ca.us) or (831) 420-5483.