

**AGENDA**

**ENGINEERING COMMITTEE MEETING  
LEUCADIA WASTEWATER DISTRICT**


Friday, October 3, 2014 – 12:00 p.m.  
1960 La Costa Avenue, Carlsbad, CA 92009

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- 1. Call to Order**
- 2. Roll Call**
- 3. Public Comment**
- 4. New Business**
  - A. Authorize the General Manager to execute a sole source Agreement with Laguna Mountain Environmental, Incorporated for archaeological and Native American monitoring services during the construction of the Batiquitos (B1/B2) Force Mains Replacement Project in an amount not to exceed \$85,950. (Pages 2 - 8)
  - B. Authorize the General Manager to execute a sole source Agreement for professional services with Base9 Consulting Services to replace Programmable Logic Controllers for Leucadia Pump Station and the Gafner Water Reclamation Plant in an amount not to exceed \$103,600. (Pages 9 - 16)
- 5. Information Items**
  - A. Recycled Water Pipeline Repair Project status. (verbal)
- 6. Director's Comments**
- 7. General Manager's Comments**
- 8. Adjournment**

MEMORANDUM

Ref: 15-4237

**DATE:** September 25, 2014  
**TO:** Engineering Committee  
**FROM:** Paul J. Bushee, General Manager   
**SUBJECT:** **Contract Award for Archaeological and Native American Monitoring Services for the District's Batiquitos (B1/B2) Force Mains Replacement Project**

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**RECOMMENDATION:**

Staff requests that the Engineering Committee recommend that the Board of Directors:

1. Authorize the General Manager to execute a sole source Agreement with Laguna Mountain Environmental, Incorporated for archaeological and Native American monitoring services during the construction of the Batiquitos (B1/B2) Force Mains Replacement Project in an amount not to exceed \$85,950.
2. Discuss and take other action as appropriate.

**DISCUSSION:**

The District's Batiquitos (B1/B2) Force Mains Replacement Project requires archaeological and Native American Monitoring (cultural monitoring) support during construction to satisfy the parameters of the project's Mitigated Negative Declaration (MND) and Mitigation, Monitoring and Reporting Plan (MMRP). The cultural monitoring support services consist of providing Project Archaeologist and Native American monitors, monitoring all construction activities related to the grading operations and excavation of native soils within the new pipeline trenching areas, documenting activity using a Consultant Site Visit Record and completing a cultural monitoring results report at the completion of the project. Laguna Mountain Environmental (LME), Incorporated completed the Cultural Resources Survey Report during the development of the project environmental documents. Therefore, they were asked to submit a proposal to provide the cultural monitoring services. LME proposed to provide the services in an amount not to exceed \$85,950. The proposal is attached for review. Based on the estimated 250 calendar day period for construction, staff believes this fee is fair and reasonable.

As indicated earlier, LME was involved with the development of the project environmental documents and is familiar with the MND and MMRP requirements. Therefore, retaining LME for cultural monitoring during construction is the most efficient method to obtain these services and is in the best interest of the District. For these reasons, the procurement of these cultural monitoring services satisfies the criteria for sole sourcing allowed under Section 11.1, Sole Source Procurement, and continuity of service under Section 12.4, Continuing Services, of the District's Procurement Policy

The cultural services to be provided by LME will be paid on a time and material basis. Therefore, Staff recommends that the Board award the contract for cultural monitoring services for the B1/B2 Force Mains Replacement Project to Laguna Mountain Environmental.

**FISCAL IMPACT:**

Funds for cultural support for the Batiquitos (B1/B2) Force Mains Replacement Project are available in the project's construction account in the Fiscal Year 2015 budget. The appropriation is sufficient to cover the costs.

rym:PJB

Attachment



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**Laguna Mountain Environmental, Inc.**

September 16, 2014

Mr. Robin Morishita  
Leucadia Wastewater District  
1960 La Costa Avenue  
Carlsbad, California 92009  
rmorishita@lwwd.org

**Re: Cost Proposal for Archaeological and Native American Construction Monitoring for the Batiquitos (B1/B2) Force Mains Replacement Project (049.LWWD.0046).**

Dear Mr. Morishita:

Laguna Mountain Environmental, Inc. (Laguna Mountain) is a Certified Small Business and a Small Local Business Enterprise (SLBE) located in the community of Kearny Mesa in the City of San Diego. The staff at Laguna Mountain appreciates the opportunity to assist you with the archaeological and Native American monitoring required for the Batiquitos (B1/B2) Force Mains Replacement Project.

We understand that archaeological and Native American monitoring is required for new excavation related to construction excavation for this project, and that the Leucadia Wastewater District will serve as lead agency for review under the California Environmental Quality Act (CEQA). The project area is located along and near Carlsbad Boulevard, in the City of Carlsbad, and consists of replacement and enhancement of existing force main pipelines. We anticipate that the new excavation work requiring archaeological and Native American monitoring will be conducted over 122 workdays.

### **Scope of Services**

Based on the construction project's needs, the scope of work has been divided into three tasks. The first task includes participation in the preconstruction meeting. The second task consists of the cultural resource and Native American monitoring. Task 3 includes the preparation of a monitoring letter report. Each task is discussed in greater detail below.

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7969 Engineer Road, Suite 208 ♦ San Diego, CA 92111  
Phone: (858) 505-8164 ♦ Fax: (858) 505-9658  
E-Mail: LagunaEnv@aol.com

Task 1 Preconstruction Meeting

The Project Archaeologist and Native American monitor shall attend the Pre-Construction Meeting to review the construction plans and coordinate monitoring work.

Task 2 Archaeological and Native American Monitoring

Laguna Mountain shall be responsible for monitoring all construction activities related to the grading operations carried out in the archaeological monitoring area. Our duties during construction are outlined below:

1. A qualified archaeologist and Native American monitor shall be present full-time during excavation of native soils within the new pipeline trenching areas and shall document activity via a Consultant Site Visit Record. It will be the contractor's responsibility to keep the monitor up-to-date with current plans and work schedule.
2. In the event of an archaeological discovery, the archaeological monitor will halt or redirect work, and shall immediately notify Leucadia Wastewater District staff of such finding at the time of discovery. If the presence of significant archaeological resources requires the implementation of a resource recovery program, approval shall be obtained from the Leucadia Wastewater District prior to any additional work being performed.
3. If human remains are discovered, work shall halt in that area and procedures set forth in the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be followed by the archaeological monitor after notification to the County Coroner. If Native American remains are present, the County Coroner shall contact the Native American Heritage Commission to designate a Most Likely Descendant, who in turn will arrange for the dignified disposition and treatment of the remains. Ground disturbing activities shall be allowed to resume in the area of discovery upon completion of the above requirements, to the satisfaction of both the archaeologist and the Native American community or their representative.
4. Laguna Mountain shall be responsible for ensuring that all cultural remains collected are cleaned, catalogued, and permanently curated with an appropriate institution; that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified to species, and that specialty studies, if needed, are completed.

### Task 2 Reporting

Following the completion of the monitoring program, a copy of the monitoring results report (even if negative) and/or evaluation report, if applicable, which describes the results, analysis, and conclusions of the archaeological monitoring program (with appropriate graphics) shall be submitted to the Leucadia Wastewater District.

Laguna Mountain shall be responsible for recording (on the appropriate California Department of Park and Recreation forms - DPR 523) any significant or potentially significant resources encountered during the archaeological monitoring program, and submittal of such forms to the South Coastal Information Center at San Diego State University with the final monitoring results report.

### **Assumptions**

- A. Native American coordination and monitoring are necessary.
- B. Costs assume no cultural resources are identified during monitoring and a negative monitoring report will be prepared.
- C. Evaluation, treatment, and curation of any cultural resource discoveries made during monitoring area not included in this scope of work.
- D. Project assumes a ½ day minimum and no overtime hours.

### **Deliverables and Schedule**

Deliverables will include preparation of draft and final cultural resources report. We are prepared to commence the cultural resource study immediately, and we are committed to complete the project in a timely manner. We anticipate that a draft negative report can be completed and submitted to you within two weeks after the construction excavation operations are complete.

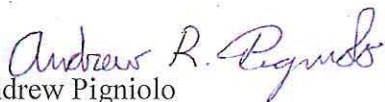
### **Costs**

Costs for completing this project and providing the archaeological monitoring and monitoring letter report are provided below. As we currently understand the scope, costs are estimated at \$116,190. The cost assumes 122 6-hour workdays for an archaeological and Native American monitor. Costs will be billed monthly on a time-and-materials basis. A detailed cost estimate is provided below.

Mr. Robin Morishita  
September 16, 2014  
Page Four

If the terms stated above meet your satisfaction, please indicate your approval by signing below and return a copy by fax or mail to us for our files. If you have any questions or observations regarding this proposed agreement, please do not hesitate to contact me at the office at (858) 505-8164 or on my cell phone at (858) 603-7809. We look forward working with you on this project.

Sincerely,

  
Andrew Pignolo  
Principal Archaeologist

Mr. Robin Morishita  
 September 16, 2014  
 Page Five

**BATIQUITOS (B1/B2) FORCE MAINS REPLACEMENT PROJECT  
 CULTURAL RESOURCE MONITORING  
 COST ESTIMATE:**

<u>Task</u>	<u>Hours</u>	<u>Rate</u>	<u>Total</u>
<i>Task 1: Preconstruction Meeting</i>			
Archaeological Monitor	2	\$50	\$100
Native American Monitor	2	\$55	\$110
<i>Task 2: Archaeological and Native American Monitoring (122 days @ 6 hours/day)</i>			
Archaeological Monitor	732	\$50	\$36,600
Native American Monitor	732	\$55	\$40,260
<i>Task 3: Report Preparation and Recommendations</i>			
Principal Archaeologist	8	\$60	\$480
Associate Archaeologist	32	\$50	\$1,600
Graphics Artist	4	\$50	\$200
<i>Other Expenses (Mileage, Report Reproduction, Telephone, etc.)</i>			\$6,600
<b>Total Cultural Resources</b>			<b>\$85,950</b>

I agree with the terms and conditions stated above and hereby authorize Laguna Mountain to proceed with the archaeological and Native American monitoring of the Batiquitos (B1/B2) Force Mains Replacement Project.

Mr. Robin Morishita

Date



## MEMORANDUM

**Date:** September 25, 2014  
**To:** Engineering Committee  
**From:** Paul J. Bushee, General Manager   
**Subject:** Award of Professional Engineering Services for the Leucadia Pump Station and Gafner Water Reclamation Plant Programmable Logic Controllers Upgrade Project

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**RECOMMENDATION:**

Staff requests that the Engineering Committee recommend that the Board of Directors:

1. Authorize the General Manager to execute a sole source Agreement for professional services with Base9 Consulting Services to replace Programmable Logic Controllers for the Leucadia Pump Station and Gafner Water Reclamation Plant in an amount not to exceed \$103,600.
2. Discuss and take other action as appropriate.

**DISCUSSION:**

The replacement of the Programmable Logic Controllers (PLC) for the Leucadia Pump Station (LPS) and Gafner Water Reclamation Plant (Gafner) is included as a goal in the Fiscal Year 2015 (FY15) Tactics & Action Plan.

The ongoing rehabilitation of the District's pump stations has prompted the evaluation of the overall condition and architecture of the Supervisory Control and Data Acquisition (SCADA) system. SCADA is the critical system used to monitor the operation of the District's collection system pump stations and Gafner. The District's application of SCADA does not enable central control of the pump stations and Gafner. Each facility operates autonomously. However, SCADA monitors each facility and provides an alarm notification when operations are outside of set parameters, such as a high wet well level.

In the past, a formal planned replacement program was not established for SCADA. Typically SCADA system hardware has been operated in the "run to failure" mode where system hardware is replaced only after it fails. Support for the current SCADA software, installed circa 2000, has been inadequate. Additionally, current SCADA components are from different manufacturers requiring translators for effective system communications. System components should be from the same manufacturer for simplicity and reliability. The District's Asset Management Plan estimates the useful life of a pump station control system to be 10 years. Therefore, staff asked Rockwell Construction Services (RCS) to evaluate the District's SCADA System. RCS has the requisite depth of knowledge and experience of SCADA and PLC systems. RCS completed their evaluation in March 2013.

As a result of the evaluation, it was recommended that SCADA be upgraded in phases.

Phase One: RCS recommended that the District's first priority was to upgrade the Central SCADA Station (Central). This phase of the project was completed in FY 14.

Phase Two: RCS recommended that the District replace the PLC's located at the LPS and Gafner.

Base9 Consulting Services (BNC) has submitted a proposal to provide professional services for the LPS and Gafner SCADA Upgrade Project, attached. BNC services include:

- Project Management
- Prepare SCADA System Block Diagram
- Develop PLC hardware, software and cyber security specifications
- Procure and install hardware and software that meet specifications
- Configure Work Stations
- Human Machine Interface (HMI) development and programming
- Factory and field testing
- System startup and documentation

The cost for procurement of the hardware and software required to upgrade the PLC's is included in the proposed BNC contract cost. The total not to exceed cost for the project is \$103,600 consisting of \$48,800 for LPS and \$54,800 for Gafner.

BNC worked closely with RCS during the 2013 SCADA and PLC evaluation and the recently completed Central SCADA upgrade project. BNC has gained significant experience and knowledge of the District's SCADA systems. BNC has demonstrated expertise in PLC systems, PLC programming, and system installation. Retaining BNC services to implement the second phase of the SCADA Upgrade project will provide continuity and efficiency and is in the best interest of the District. For these reasons, the procurement of BNC consulting services satisfies the criteria for sole sourcing allowed under Section 11.1, Sole Source Procurement, and continuity of service under Section 12.4, Continuing Services, of the District's Procurement Policy.

Staff has evaluated the proposal and determined that it is fair and reasonable. Therefore, it is recommended that a sole source Agreement be executed with BNC for services for the PLC Upgrade Project for LPS and Gafner.

**FISCAL IMPACT:**

There is sufficient appropriation in the Fiscal Year 2015 Capital Acquisition Budget to cover the cost of this Agreement.

js:PJB

Attachment



**Proposal To Replace the  
PLC Control System  
at the  
Leucadia Wastewater District  
AWT Plant  
Offered by  
By Base9 Consulting**

Base9 Consulting (BNC) offers this proposal to Leucadia Waste Water District (DISTRICT) to replace the Opto 22 PLC and Laptop Operator Interface at Leucadia Pump Station with an Allen Bradley Compact Logix based system for a Fixed Price Cost.

As a part of this agreement, Base9 Consulting will be responsible for the procurement, development, testing and the installation of the PLC control system to replace the functionality currently in place using an Opto 22 control system and PC Based Operator Interface Panel.

Specifically, **Base9 Consulting, Inc. shall be responsible for the following items:**

- 1: Investigate and verify existing instrumentation and control wiring.
- 2: Procure the parts necessary to replace the existing Opto 22 PLC, I/O cards, PC Based Operator Interface panel with an Allen Bradley Compact Logic L30ER processor, I/O cards and Prosoft Modbus Communications to be installed in the existing enclosure The following hardware will be installed in the existing panel:

Qty	Catalog #	Description
1	1769-L30ER	CompactLogix EtherNet Processor, 750k Memory
1	MVI69-MCM	Modbus Master/slave Communication Module for CompactLogix
3	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module
2	1769-OF4CI	4 Channel Analog Current Isolated Output Module
2	1769-OV16	8 Point AC/DC Relay Output Module
3	1769-IQ16	16 Point 24 VDC Sinking/Sourcing Input Module
2	1769-PA4	120/240V AC Power Supply (5V @ 4 Amp)
1	1769-AENTR	Ethernet Adapter
1	AB 2711P-K12C4D8	AB 2711P-K12C4D8 PANELVIEW PLUS 6 GRAPHIC TERMINAL
1		Liebert UPS BypassSwitch

- 3: Provide as-built drawings of the panel.



- 4: Program, test, startup and commissioning of the new Allen Bradley PLC. The programming will be performed to match the existing operation of the station.
- 5: Modify the existing Wonderware HMI to collect data and support control from the new PLC.
- 6: Remove the existing PLC and install, connect and test the new PLC and communications to the Host Wonderware SCADA.
- 7: Procure and install a Liebert Micropod UPS bypass switch to allow the UPS charge and discharge power circuits to be bypassed for maintenance.
- 8: Provide submittals on the components and panel modifications.
- 9: Factory test (including a witnessed test) of the operation of the control system. Note this may be tested at the station with simulated I/O to confirm the Host Interface.
- 10: Develop Software Test Plans
- 11: Participate in the Factory Test, Station Commissioning and Station Startup.
- 12: Provide a Software Operations and Maintenance Manual covering the software developed for the station.
- 13: Provide 1 year Warranty.
- 14: Provide 4 hours training.

**Terms and Conditions:**

- 1: BNCI will invoice based on the following milestones:

Approval of Submittals	30%
Factory Acceptance Test Executed and Accepted	40%
Final System Acceptance	30%
- 2: All Invoices will be Net 30 days



Proposal To Replace the PLC Control System  
at the Leucadia Wastewater District  
AWT Plant PLC Replacement

Offered by Base9 Consulting

**Changes to the scope of work:**

Should changes be identified that alter the scope of work agreed upon, adjustments will be made to the Fixed Price Costs.

**Schedule:**

BNCI will provide its portions of the submittals within 1 month of a notice to proceed.

BNCI will complete the programming within 2 months

BNCI will complete the project within 3 months after receipt of the notice to proceed.

**Facilities**

Base9 Consulting, Inc. will perform the effort at locations deemed appropriate by BNCI.

**Price**

Base9 Consulting offers the effort described above for the **fixed price of \$54,800.00** (Fifty Four Thousand Eight Hundred Dollars).

Signed

A handwritten signature in black ink that reads "Henry D. Logan".

7/10/2014

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Henry D. Logan

Base9 Consulting  
270F N. El Camino Real #K  
Encinitas, Ca. 92024

(760) 390-5038 / hdlogan@basenine.net

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**Proposal To Replace the  
PLC Control System  
at the  
Leucadia Wastewater District  
Leucadia Pump Station  
Offered by  
By Base9 Consulting**

Base9 Consulting (BNC) offers this proposal to Leucadia Waste Water District (DISTRICT) to replace the PLC at Leucadia Pump Station with an Allen Bradley Compact Logix based system for a Fixed Price Cost.

As a part of this agreement, Base9 Consulting will be responsible for the procurement, development, testing and the installation of the PLC control system to replace the functionality currently in place using a Modicon PLC and Magelis Operator Interface Panel.

Specifically, **Base9 Consulting, Inc. shall be responsible for the following items:**

- 1: Investigate and verify existing instrumentation and control wiring.
- 2: Procure the parts necessary to replace the existing Modicon Compact PLC, I/O cards, Prolinx Interface and Magelis Operator Interface panel with an Allen Bradley Compact Logic L30ER processor, I/O cards and Prosoft Modbus Communications and fabricate a subpanel with the PLC and associated IO interface cards to be installed in the existing enclosure (replacing the existing subpanel with the Modicon PLCs. The following hardware will be installed in the existing panel:

Qty	Catalog #	Description
1	1769-L30ER	CompactLogix EtherNet Processor, 750k Memory
2	MVI69-MCM	Modbus Master/slave Communication Module for CompactLogix
4	1769-IF4I	4 Channel Analog Current/Voltage Isolated Input Module
1	1769-OF4CI	4 Channel Analog Current Isolated Output Module
1	1769-OW8	8 Point AC/DC Relay Output Module
3	1769-IQ16	16 Point 24 VDC Sinking/Sourcing Input Module
2	1769-PA4	120/240V AC Power Supply (5V @ 4 Amp)
1	1769-AENTR	Ethernet Adapter
1	AB 2711P-K12C4D8	AB 2711P-K12C4D8 PANELVIEW PLUS 6 GRAPHIC TERMINAL
1		Liebert UPS BypassSwitch

- 3: Provide as-built drawings of the panel.



- 4: Program, test, startup and commissioning of the new Allen Bradley PLC. The programming will be performed to match the existing operation of the station.
- 5: Remove the existing PLC and install, connect and test the new PLC and communications to the Host Wonderware SCADA.
- 6: Procure and install a Liebert Micropod UPS bypass switch to allow the UPS charge and discharge power circuits to be bypassed for maintenance.
- 7: Provide submittals on the components and panel modifications.
- 8: Factory test (including a witnessed test) of the operation of the control system. Note this may be tested at the station with simulated I/O to confirm the Host Interface.
- 9: Develop Software Test Plans
- 10: Participate in the Factory Test, Station Commissioning and Station Startup.
- 11: Provide a Software Operations and Maintenance Manual covering the software developed for the station.
- 12: Provide 1 year Warranty.
- 13: Provide 4 hours training.

**Terms and Conditions:**

- 1: BNCI will invoice based on the following milestones:

Approval of Submittals	30%
Factory Acceptance Test Executed and Accepted	40%
Final System Acceptance	30%
- 2: All Invoices will be Net 30 days

**Changes to the scope of work:**



Proposal To Replace the PLC Control System  
at the Leucadia Wastewater District  
Leucadia Pump Station

Offered by Base9 Consulting

Should changes be identified that alter the scope of work agreed upon, adjustments will be made to the Fixed Price Costs.

**Schedule:**

BNCI will provide its portions of the submittals within 1 month of a notice to proceed.

BNCI will complete the programming within 2 months

BNCI will complete the project within 3 months after receipt of the notice to proceed.

**Facilities**

Base9 Consulting, Inc. will perform the effort at locations deemed appropriate by BNCI.

**Price**

Base9 Consulting offers the effort described above for the fixed price of \$48,800.00 (Forty Eight Thousand Eight Hundred Dollars).

Signed

*Henry D Logan*

7/10/2014

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Henry D. Logan

Base9 Consulting  
270F N. El Camino Real #K  
Encinitas, Ca. 92024

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