



March 9, 2012

Via e-mail to: [jmartini@cityofsparks.us](mailto:jmartini@cityofsparks.us)

John A. Martini, P.E.  
Assistant Community Services Director  
City of Sparks  
431 Prater Way  
Sparks, NV 89431.

**Re:** Marina Village Channel – 2012-13 Lake Management & Services Proposal

Dear Mr. Martini:

The proposal below is intended to cover this (2012) season's water quality management and maintenance for the Marina Village Channel at the Sparks Marina. The budget and scope of work details what we believe to be the items necessary to maintaining the water quality to a standard as expected by both the residents, as well as the City. We have included a brief summary for explanation to provide the City with a level of detail sufficient to verify our work at the site. Should you have any further questions or require clarification, please do not hesitate to contact me immediately.

2012-13 – Base Channel Maintenance:

Given the unseasonably warm weather and a lack of rainfall, we plan on beginning the monthly maintenance and service of the site in April, initially as an inspection and monitoring operation. It is unlikely that any significant actions would need to be taken in April, however, as a precaution, we will be performing bi-weekly inspections of the site to be proactive in terms of algae and or plant growth. As the inspections crews are on site, we will also remove flotsam and other debris as part of this service. Crews will restart the pump and circulation systems this month (March), given the temperatures and conditions as noted above. The monthly maintenance program is designed to cover the regular and ongoing standard maintenance and testing services as required under this contract. The goal of the standard maintenance program covers the following items:

- Monitor and document the water quality;
- Provide regularly scheduled service events (crew labor) to remove flotsam/debris and other surface materials;
- Through inspection, anticipate any water quality changes, and address in a proactive manner

The intent of this approach is to stay ahead of water quality degradation, nutrient spikes or other environmental factors to provide a healthy body of water. The maintenance and service program will consist of a minimum of one site visit per week to identify, manage and remove excessive or artificial nutrient sources from the channel to reduce or prevent nuisance odors or algae. As part of the documentation, crews will recommend corrective measures to abate nuisance conditions such as vegetation and algae blooms, as well as excessive waterfowl, before or when they occur.

Total Cost for this Service (Service from April through October, 2012): \$8,976

• **Microbial Bacteria Program:**

In an effort to reduce the overall use of chemicals in the system, AEI has been using a microbial product to reduce the available nutrients within the water column. Starting this in 2009, testing showed moderate

and quantifiable reductions in water quality related problems, which was attributed to the addition of beneficial bacteria to the system. The use of microbes since then has been part of a full spectrum IPM program that uses bacteria to remove the algae's primary food sources of Nitrogen and Phosphorus from the water column and underlying benthic layer. Since the channel is a one way flow system, it is treated as a static body for the purposes of this and other control applications. This program has been successful enough that we are recommending that the City continue to reduce chemical additions as a means of both cost saving and IPM compliance.

Microbial Bacteria (Seasonal program cost for 2012): \$2,960

- 2012 Algae Control (Planktonic & Filamentous):

Even with the addition to the microbial applications, the channel sometimes requires to inhibit the growth of both Planktonic and Filamentous algae. The combination of a low movement body of water, and elevated (summer) temperatures results in infrequent blooms, when conditions are right. Much of the nutrients that produce the growth come from the mail lake, as well as urban runoff from the surrounding watershed. During the warmer months, algae, if not treated in a proactive manner, the water becomes malodorous and unsightly, causing complaints from both residents and park patrons. With the IPM program, we attempt to control the nutrient spikes in a proactive manner through microbial and mechanical means, however, there are conditions that can require treatments to minimize these occurrences. If warranted, AEI will treat the channel at label rates to achieve the desired results to preserve the overall water quality and aesthetics. Any products used are approved by the USEPA and the State of Nevada Department of Agriculture and applied by a State of Nevada licensed Pest Control Applicator (PCA). All applications will be performed or observed by Mr. Jose Botello to ensure that all required guidelines and safety measures are strictly followed. Based on our experience at the site, we anticipate that no more than four treatments would be necessary for the 2012 season. Algaecide application (up to four), inclusive of all labor & equipment costs (\$1,550 per event): \$6,200

- 2012 Control and Maintenance Program for *Sago pondweed* and other vegetation:

As a result of the changes at the federal level, the law now requires that any applications have in place an NPDES permit. AEI will again provide this permit for the City to submit as part of the application package, inclusive of the APAP program. We currently use a fisheries biologist to draft the permit and perform all background testing. The permit cost is negligible (\$200 per year), however, the background work (pre, during and post application testing and final YE report) is the significantly more costly portion of this operation. While this is not new (it was in place in 2007 as well), the permit was not required until this past year in October, when it was reinstated by Congress.

AEI has used the *Sonar* program with great success at the site over the last several years, and will continue to implement its use for the control of submerged vegetation this year. The dominant plant within the channel remains to be Sago, which requires little in the way of Sonar to control. For past seasons, we have typically run control in a three year rotation, with an initial application (FY1), followed by half, and a half again application for FY2 & FY3. The results have been a reduction in the plant long term, and minimizing the intrusion of other (less desirable) species that would be more difficult to control. We are currently at FY2 of our rotational program, and would recommend that the application follow the same protocol as noted. Re-infestation from the lake will always be an issue, as we do not treat the lake as part of this vegetation control program. The product will be applied and monitored according to the *Sonar I* prescription program as recommended by the manufacturer to provide multi seasonal control as in the past. The cost of the program includes all material, labor and equipment to perform the applications as a

Preferred Sonar Applicator and remains unchanged for the 2012 season. Similarly, we will sample at 6 different times to be compliant with the NPDES program, as part of this year's regulatory requirements.

2012 *Sonar I* Maintenance Treatment Program Costs (inclusive of 6 Samples & NPDES): \$15,000

*2012 Additional Recommendations:*

Emergency Services – Used as needed: During past seasons, we have allowed for several “emergencies” at the site, many of which related to the pump stopping, pipe flotation, and water quality issues that caused the city and or residents issues. In all cases, AEI crews responded rapidly and addressed the issue at the time, and used this line item to cover the more unforeseen issues that can occur. As a result of AEI's presence at other sites within the area, crews are generally able to respond and address the site needs at no additional charge, if simple to address. For this season, we have continued with the addition of an emergency line item to cover any unscheduled site visits, including application events, pump re-priming, aeration repairs, or debris removal/unclogging. This item is considered to be an as needed basis, and may or may not be utilized. The amount budgeted for 2012 is: \$5,000

Harvesting of Vegetation: AEI in the past has brought one of its smaller harvesters to the site for vegetation removal and channel clean up. We have not had to do this for some time, however, it is relative to keep this as an option in case there is a need. The possibility of needing large scale vegetation removal is unlikely, given the success of the *Sonar* program, but due to the changes in the NPDES permit program this year may have an impact on the plant management program. If this were the case, we would be prepared to address the water quality in an alternate manner, relative to the IPM. If we had to harvest the channel, there would be no more than two (2-day) events required for the 2012 season. As a result, we would recommend a budget of \$4,500, inclusive of mob and demobilization.

Replace damaged and or missing to aeration lines: Annually, crews make repairs to the aeration lines that are continuously damaged by boat propellers or snagged as a result of fishing activities. The damage is not extensive and does not require (typically) more than a day to get the system back up and operational. During the warmer months, the aeration is critical in preventing an anaerobic conversion, resulting in malodorous conditions. Crews made repairs last in 2009, and the work this year should be \$750 or less.

Repairs to the Intake Pump: Construct an all-weather cover for the pump and motor. AEI is still recommending that the City consider an all-weather pump enclosure for the pump and motor; if requested, AEI could construct and install one for \$460, complete.

Should you have any questions or comments with respect to this proposal, please do not hesitate to contact me directly at (510) 406-3473 or at our office (925) 521-0400. AEI is a State of Nevada licensed contractor and possesses a current State of Nevada pesticide applicators license for aquatic applications.

Thank you for your continued patronage and confidence in our services.

Sincerely,



George Peter Forni II  
President

Enc.: Nevada State Contractor's License; Nevada Dept. of Ag Pesticide Applicator License, Nevada State Business License

**Aquatic Environments, Inc.**

The City of Sparks - Marina Village Channel

Weekly/Monthly Work Up Sheet

Months Covered: May - December

Monthly Estimated Totals

F.Y. 2012

Item of Work:

	5/1/2012	6/1/2012	7/1/2012	8/1/2012	9/1/2012	10/1/2012	11/1/2012	12/1/2012	Total
Unit Cost:	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Item Cost

<b>Water Quality/Maintenance</b>																			
1	Monthly Monitoring - Maint/Insp. Services	\$ 1,496.00	1	\$ 1,496.00	1	\$ 1,496.00	1	\$ 1,496.00	1	\$ 1,496.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	8,976.00
2	Microbial Program: Initial Dosage	\$ 888.00	1	\$ 888.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	888.00
3	Microbial Program: Monthly Maintenance	\$ 414.40	0	\$ -	1	\$ 414.40	1	\$ 414.40	1	\$ 414.40	1	\$ 414.40	0	\$ -	0	\$ -	0	\$ -	2,072.00
4	Algae Control (estimated, NTE)*	\$ 1,550.00	0	\$ -	1	\$ 1,550.00	1	\$ 1,550.00	1	\$ 1,550.00	1	\$ 1,550.00	0	\$ -	0	\$ -	0	\$ -	6,200.00
5	NPDES Sampling Analyses (per event)**	\$ 3,754.00	1	\$ 3,754.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	3,754.00
6	Sonar Treatment: Initial	\$ 6,556.00	1	\$ 6,556.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	6,556.00
7	Sonar Testing: 6 total	\$ 135.00	0	\$ -	3	\$ 405.00	0	\$ -	3	\$ 405.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	810.00
8	Sonar Treatment: Bump Treatment (if required)	\$ 3,880.00	0	\$ -	0	\$ -	0	\$ -	1	\$ 3,880.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	3,880.00
9	Emergency Services (used as needed/req) #	\$ 5,000.00	0	\$ -	0	\$ -	0	\$ -	1	\$ 5,000.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	5,000.00
<b>Mechanical Repairs/Recommendations</b>																			
10	Harvesting of Vegetation, if needed	\$ 2,250.00	0	\$ -	0	\$ -	1	\$ 2,250.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	4,500.00
11	Aeration Repairs - Tubing only	\$ 750.00	0	\$ -	0	\$ -	1	\$ 750.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	750.00
12	Repairs to Intake Pump - All-weather housing	\$ 460.00	0	\$ -	1	\$ 460.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	460.00
<b>P.O./Consulting 2012 Amount, NTE:</b>		<b>\$ 43,846.00</b>	<b>Subt</b>	<b>\$ 12,694.00</b>	<b>Subt</b>	<b>\$ 4,325.40</b>	<b>Subt</b>	<b>\$ 6,460.40</b>	<b>Subt</b>	<b>\$ 7,745.40</b>	<b>Subt</b>	<b>\$ 10,710.40</b>	<b>Subt</b>	<b>\$ 1,910.40</b>	<b>Subt</b>	<b>\$ -</b>	<b>Subt</b>	<b>\$ -</b>	<b>\$ 43,846.00</b>

Total this worksheet \$ 43,846.00

Ending Bal \$(43,846.00)

% Used 100%

% Remaining 0%

Numerals in Italics are projected

Notes:

\* Based on AEI Crew experiences, and water conditions will dictate algaeicide treatments to maintain thresholds/standards (averaged one or two small treatments per month for maintenance)

\*\* NPDES permits are now the law for the state of Nevada, and the Nevada State Bureau of Water Pollution Control will still request notification prior to any application.

# An emergency service can consist of any event beyond the regular, scheduled maintenance, and is inclusive of application or harvesting events and chemicals (vegetation and/or algae), as necessary.

Southern Nevada Office  
2310 Corporate Circle, Suite 200  
Henderson, Nevada 89074  
(702) 486-1100

Northern Nevada Office  
9670 Gateway Drive, Suite 100  
Reno, Nevada 89521  
(775) 688-1141

## STATE CONTRACTORS BOARD

The Nevada State Contractors Board certifies that  
**AQUATIC ENVIRONMENTS OF NEVADA**

*Licensed since March 27, 2009*

License No. **0072940**

Is duly licensed as a contractor in the following classification(s):

**PRINCIPALS:**

GEORGE PETER FORNI II, President Qualifie

KERRI LISA FORNI, Secretary/Treasurer

**A-GENERAL ENGINEERING**

LIMIT: \$150,000  
EXPIRES: 03/31/2013

  
Chairman, Nevada State Contractors Board



NEVADA

COMPANY # 6645

### PEST CONTROL BUSINESS LICENSE

EXPIRES DECEMBER 31, 2012

This Is To Certify That **AQUATIC ENVIRONMENTS INC**

dba **AQUATIC ENVIRONMENTS OF NEVADA**

4000 INDUSTRIAL WAY, CONCORD, CA 94520

is a licensed commercial pest control operator in the State of Nevada.

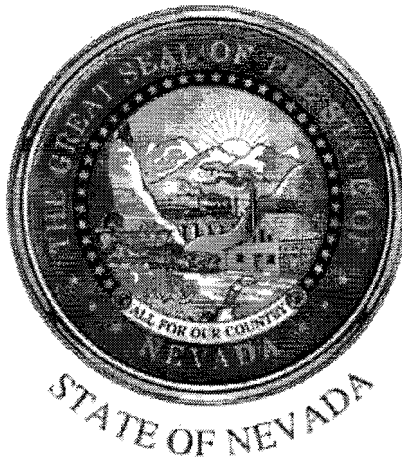
Permanent Nevada License No: 6645

Date Issued: 1/1/2012

Issued by JS

  
NEVADA STATE DEPARTMENT OF AGRICULTURE  
405 South 21st Street, Sparks, NV 89431

SECRETARY OF STATE



## NEVADA STATE BUSINESS LICENSE

**AQUATIC ENVIRONMENTS OF NEVADA**

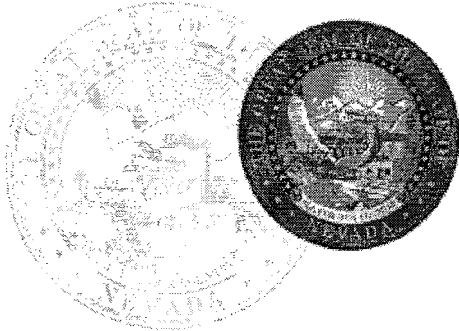
Nevada Business Identification # NV20091383004

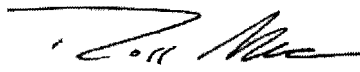
**Expiration Date: February 28, 2013**

In accordance with Title 7 of Nevada Revised Statutes, pursuant to proper application duly filed and payment of appropriate prescribed fees, the above named is hereby granted a Nevada State Business License for business activities conducted within the State of Nevada.

This license shall be considered valid until the expiration date listed above unless suspended or revoked in accordance with Title 7 of Nevada Revised Statutes.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Great Seal of State, at my office on January 24, 2012



  
ROSS MILLER  
Secretary of State

This document is not transferable and is not issued in lieu of any locally-required business license, permit or registration.

*Please Post in a Conspicuous Location*

**You may verify this Nevada State Business License  
online at [www.nvsos.gov](http://www.nvsos.gov) under the Nevada Business Search.**