

Lake Elsinore & San Jacinto Watersheds Authority



City of Lake Elsinore • City of Canyon Lake • County of Riverside
Elsinore Valley Municipal Water District • Santa Ana Watershed Project Authority

REQUEST FOR PROPOSAL

FOR

CANYON LAKE ALUM TREATMENT 2022-2024

OCTOBER 2021

LAKE ELSINORE & SAN JACINTO WATERSHEDS AUTHORITY

Member Agencies:

City of Canyon Lake
Elsinore Valley Municipal Water District
City of Lake Elsinore
County of Riverside
Santa Ana Watershed Project Authority

Administration:

Santa Ana Watershed Project Authority
11615 Sterling Avenue
Riverside, California 92503-4979
(909) 785-5411 FAX (909)785-7076

Introduction:

Lake Elsinore and San Jacinto Watersheds Authority (LESJWA) is a Joint Powers Authority (JPA) and is governed by five member agencies: Elsinore Valley Municipal Water District, the City of Lake Elsinore, the City of Canyon Lake; the County of Riverside, and the Santa Ana Watershed Project Authority which serves as the Authority administrator.

LESJWA has established the following goals and objectives for its organization:

- To support planning, design and implementation of projects to improve water quality at both Lake Elsinore, Canyon Lake and the San Jacinto River Watershed
- To work with stakeholders to secure reliable funding to operate and maintain water quality improvement projects at both Lake Elsinore, Canyon Lake and the San Jacinto River Watershed
- To serve as administrator of the Lake Elsinore and Canyon Lake TMDL Task Force
- To seek ongoing reliable revenue to operate LESJWA JPA in fulfillment of its mission

LESJWA wishes to retain a firm experienced in alum application for lakes. LESJWA is requesting proposals for alum application services for Canyon Lake. The proposal should provide a detailed scope of work, a description of equipment, project schedule, and compensation budget. Details and background material is shown below:

Problem Identification:

Canyon Lake is a warm monomictic lake impacted by algal blooms, which occur throughout the year due to high concentrations of nutrients in the water column. The decay of algae contributes to a substantial sediment oxygen demand at the lake bottom, which depletes dissolved oxygen needed by fish. Anoxic conditions at the sediment water interface increase free reactive phosphorus and ammonia flux rates from sediments to pore water and from pore water to the overlying water column. Occasionally, ammonia releases are large enough to create conditions of toxicity per the California Toxics Rule for a hardness based standard.

In 2004, the Regional Board adopted a Total Maximum Daily Load (TMDL) to control nutrients in Canyon Lake identifying specific numeric water quality targets for total phosphorus, total nitrogen, ammonia, chlorophyll a, and dissolved oxygen.

Project History:

In 2013, LESJWA, working on behalf of stakeholders of the Lake Elsinore and Canyon Lake TMDL Task Force initiated a program to apply alum to treat the lake by removing nutrients (namely phosphorus) that contribute to algal blooms.

Through September 2016, this program was funded in part by a California department of Water Resources Prop 84 grant and entailed seven semi-annual applications to Canyon Lake. A preliminary analysis of the results of these alum applications (September 2013 through May 2016) are included in the [Compliance Assessment with 2015 Interim Response Targets for LE/CL TMDL](#) that was submitted to Regional Board on June 30, 2016.

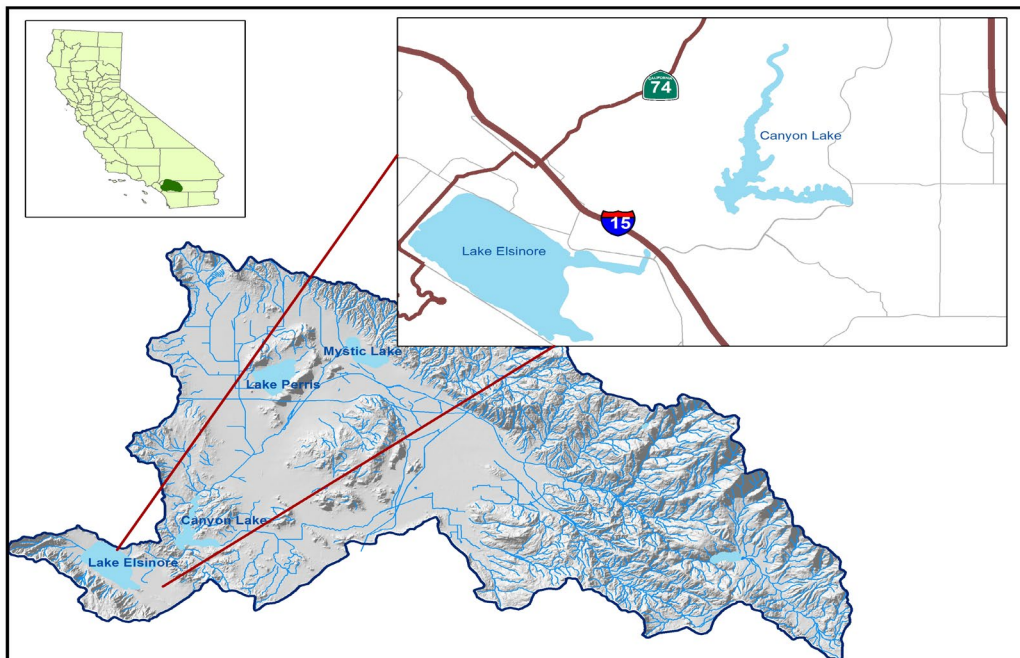
Following completion of the Prop 84 grant, stakeholders have continued to apply alum to Canyon Lake on a near semi-annual basis through the fall of 2021. The results of these applications are summarized in annual reports available on the [LE&CL TMDL webpage](#).

A description of the project including an evaluation of environmental impacts and supporting studies is detailed in the [Initial Study for Canyon Lake Hybrid Treatment Process – Phase 1](#), and follow-on [Addendum No. 1](#).

Project Location:

Canyon Lake is located in Western Riverside County in Southern California and is within the City of Canyon Lake. The two main thoroughfares adjacent to the Lake are Interstate-15 Freeway and State Highway-74, **Figure 1**.

Figure 1 – Canyon Lake Location Map



Project Area:

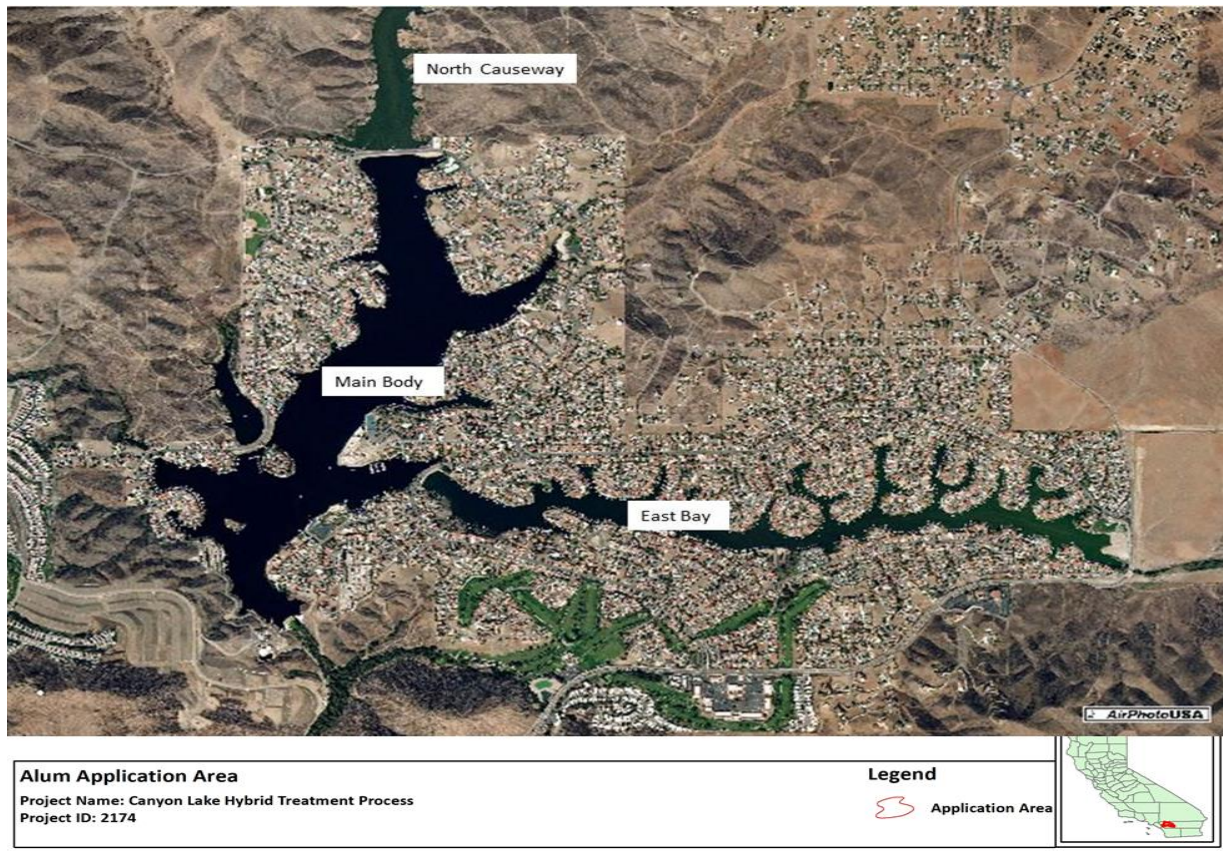
Canyon Lake was formed in 1928 when the Canyon Lake / Railroad Canyon Dam was constructed. It is owned and operated by the Elsinore Valley Municipal Water District (EVMWD). EVMWD has used the reservoir as a potable water source since 1957 when the Canyon Lake water treatment plant began operation. The reservoir is supplied by storm water runoff from the San Jacinto River and Salt Creek. Water from the reservoir feeds the Canyon Lake Water Treatment Plant, which provides approximately 10% of the domestic water supply in the Lake Elsinore/Canyon Lake area.

The reservoir, covers approximately 525 acres (212 ha), has 14.9 miles (24.0 km) of shoreline and has a storage capacity of 11,586 acre-ft (14,291,000 m³). Maximum depth of the main body of the lake is about 50 feet, with a mean depth of approximately 20 feet. In the Central Body of the lake the water column is divided into three depth zones, with the deep-water layer starting at about the 20 to 25 foot depths by mid-summer, with oxygen depletion at or near zero at 16 to 18 feet.

Treatment Area:

The alum will be applied to the navigable areas of the Main Body, East Bay and North Causeway of Canyon Lake, shown on Figure 2 and which encompass approximately 400 acres of the Lake because applications will not occur close to shore.

Figure 2 - Alum Application Area



Alum Application Personnel:

The project calls for the alum applications to be performed by a qualified professional alum applicator or lake management professional.

The Proposer will be required to be pre-qualified by the Canyon Lake Property Owners Association (POA) to conduct any work within the City limits following the requirements specified in the [Canyon Lake Property Owners Association Guidelines](#).

As Canyon Lake is a drinking water reservoir, managed by Elsinore Valley Municipal Water District, the Proposer will be required to follow all standard operating practices prescribed by the district to address health and safety issues relating to water quality.

The Proposer shall provide and be responsible for all labor, mobilization, demobilization, materials, equipment, and incidentals required to complete the work specified in this proposal including chemicals, application equipment, sampling equipment, storage equipment, spill containment equipment, etc.

To assist Proposers LESJWA will arrange a site visit to Canyon Lake, based upon availability for interested Proposers in early November 2021.

Alum Application Schedule:

In order to optimize the effectiveness of the alum application, the best months for alum application in Canyon Lake have typically been February, and September (i.e., late winter and late summer).

The proposed Project is for three years with up to six alum application events following a late winter and late summer schedule as needed.

In addition, the project includes an option to continue two additional years (up to four additional application events).

This schedule may be modified based on the input of the Canyon Lake Alum Treatment Technical Advisory Committee.

It is important to complete the alum treatment in as short of a time as possible to minimize the impacts to lake recreational use and street traffic for Canyon Lake residents. It is estimated that the alum application for Canyon Lake will take approximately 4-5 days of continuous operation to complete a single alum application.

Material Specifications:

Liquid Alum (aluminum sulfate) is recommended to be used to treat Canyon Lake.

The alum applied to Canyon Lake will be water treatment grade aluminum sulfate, which is the product of the reaction between sulfuric acid and a mineral rich in aluminum, such as bauxite, which is a nearly saturated solution of aluminum sulfate, as detailed in the [Liquid Alum Material Safety Data Sheet](#).

The aluminum sulfate supplied under this standard shall contain no soluble mineral or organic substances in quantities capable of producing deleterious or injurious effects on public health or water quality.

Dosage & Application Rate:

Volumes of liquid alum to be applied to Canyon Lake for both the wet and dry season applications have been estimated by LESJWA's outside consultant based on the evaluation of an effective dose for the Main Lake, north ski area and East Bay, as well as an assessment of seasonality in algal growth to determine the appropriate times of year to strip phosphorus from the water column. These applications will occur in both the Main Lake north ski area and East Bay of the Lake, with the first application of liquid alum in late winter/early spring 2020. As Table 1, Alum Addition Plan for Canyon Lake, indicates, a maximum of an estimated 186,200 kilograms (kg) of alum (as dry weight) may be applied to Canyon Lake each September and 142,200 kg each late winter/early spring. The dosage and application rate may be modified based on the feedback of the Canyon Lake Alum Treatment Technical Advisory Committee.

Alum Addition Plan for Canyon Lake (2022-2024)

Lake Segment	Water Level (above sea level)	Lake Volume (AF)	Alum Dose (mg/L)	Alum Application (kg dry alum)	Alum Application (gallons)
Late Summer (September - October)					
North Ski Area	1379	681	10	8,400	3,430
Main Lake	1379	5,757	20	142,000	57,960
East Bay	1379	968	30	35,800	14,610
Totals				186,200	76,000

Late Winter/Early Spring (February - May)					
North Ski Area	1382	906	10	11,200	4,571
Main Lake	1382	6,509	10	80,300	32,776
East Bay	1382	1371	30	50,700	20,694
Totals				142,200	58,041

Proposer is responsible to confirm all calculations to assure that proper dose is applied.

Project Coordination:

The Proposer will be responsible to attend and participate in regular pre alum application coordination meetings of the Canyon Lake Alum Treatment Technical Advisory Committee made of representatives from the various cities and agencies of the LE&CL TMDL Task Force, as well as consultants that support the Task Force effort. Coordination meetings entail meeting with agency staff to discuss and coordinate the dosing plan, application and monitoring schedule, public outreach, as well as any other topics of interest or concern. Meetings are routinely scheduled for one month prior to the alum application.

Project Monitoring:

LESJWA will conduct pre application monitoring of water quality following the guidelines detailed in the [Phase 2 Lake Elsinore & Canyon Lake Nutrient TMDL Compliance Monitoring Work Plan](#), and [Quality Assurance Project Plan](#) to assess water quality conditions of Canyon Lake.

The Proposer will be responsible to conduct field monitoring each morning prior to applying alum to the lake to confirm lake conditions using a field probe to measure, at a minimum water temperature, pH, dissolved oxygen and conductivity

The Proposer will be responsible to report monitoring results to the LESJWA Project Manager in a timely fashion.

Permits

The Proposer will be responsible for all necessary permits relating to the application of alum to Canyon Lake.

GPS tracking

The Proposer will be responsible for creating a detailed application plan and schedule for mapping the navigational route for alum applications to Canyon Lake using a GPS tracking device.

The Proposer will be responsible to submit this plan and schedule to the LESJWA Project Manager prior to the application of alum to Canyon lake.

Application Method:

The Proposer will be responsible to transport and apply the alum slurry to the lake from the designated staging locations. The project envisions a Qualified Applicator (Proposer) will be retained to transport and apply the alum slurry to the lake from the storage site at the existing lake management facility. It is anticipated that the alum will be delivered mixed in tanks and then offloaded to either an existing Canyon Lake POA owned tank (if appropriate for storage of liquid alum) or into a portable tank.

The Proposer will be responsible to provide a boat with an onsite storage tank and a boom in the stern of the boat. It is anticipated that the boat will operate on the lake for up to 8 hours per day over a five-day period to distribute the alum to the lake.

Applications will be allowed from 7 a.m. to 5 p.m. each day.

Staging Area:

The Canyon Lake Property Owners Association will provide two existing parking areas and boat launch ramps that will serve as staging areas and provide access to the Main Lake and the East Bay. The two (2) unloading/staging/filling areas are the East Bay Boat Launch Area at Eastport Park and Main Lake Boat Launch Area at Holiday Harbor Park, as identified on **Figure 3**, Contractor Entrance Gates and Project Staging Areas. All off-loading of material from the trucks to the boat shall occur from one of these two designated areas.

The Proposer is required to provide 10 day notice to the Canyon Lake Property Owners Association to close the Eastport launch ramp for service (East Bay Application).

All commercial traffic associated with the project must be through the North (Greenwald) or East (Goetz) Gates, the main gate on Railroad Canyon Road is not available to commercial traffic. No commercial traffic is allowed before 7am, or after 5pm, Monday through Friday.

Figure 3 – Contractor Entrance Gates and Project Staging Areas



Safety, Storage & Handling:

The Proposer shall be responsible for all safety issues related to the alum treatment. This includes employee training, storage, handling and distribution of material.

The alum mixture has a pH of about 3 and the onsite storage tank will require secondary containment during storage. The Proposer shall be responsible for providing any temporary storage of equipment, materials or supplies. The Contractor must ensure that full containment be maintained at all times to ensure no contamination of the lake.

Emergency Notifications:

The Proposer shall be responsible to provide notification to the LESJWA Project Manager, EVMWD staff and Canyon Lake Marine Patrol of any incidents with local property owners, accidents, and/or issues with the application of alum to the lake (example floating alum residue).

Social Media:

The Proposer shall be responsible to provide outreach to local residents using social media (web page, web blog, facebook, etc.).

Outreach will include posting upcoming alum application schedule and regular updates of progress throughout the application.

PROJECT PROPOSAL

The proposal submitted to LESJWA shall include the following as a minimum.

1. **Understanding of the Project** – The Proposer shall provide a brief description of the Project and their understanding of the important elements, as well as technical considerations of the Project.
2. **Experience & Qualifications** - The Proposer shall provide descriptions of five similar projects that have been successfully completed. References must be submitted for each project, including the name of the contact person, the person's title and telephone number. The Proposer may be required to furnish statements of their financial resources.
3. **Scope of Work** – The Proposer shall provide a detailed description of the tasks it proposes to undertake to complete the Project.
4. **Description of Equipment** – The Proposer shall detail a list of equipment they will use to complete the tasks.
5. **Project Schedule** – The Proposer shall provide a schedule for completing the Project. The schedule shall show each scope of work task and its activity duration.
6. **Compensation Budget** – The Proposer shall provide a budget detailing scope of work tasks and material costs.

PROPOSAL REQUIREMENTS

Responses to this RFP must be made according to the requirements set forth in this section for content and sequence. Failure to adhere to these requirements or to include conditions, limitations, or misrepresentations may be cause for rejection of the proposal. Any correction and resubmission by the proposer will not extend the time for evaluation of the proposal. Responses to this RFP shall be prepared as concise as possible. The proposal should be not more than 25 pages long, not including resumes that may be included in an appendix. Submittal of boilerplate marketing materials is discouraged.

The RFP statement including all attachments and reference materials are available on the LESJWA website: <http://www.mywatersheds.com/>

One electronic copy of the response is to be submitted to the attention of Rick Whetsel, Senior Watershed Planner rwhetsel@sawpa.org by 4:00 p.m. on Monday, December 6, 2021. Thereafter, a review panel, composed of members of the LESJWA Technical Advisory Committee and LESJWA staff, will conduct questions and answer interviews.

Should you have further questions regarding this request for proposals, please feel free to call Rick Whetsel at (951) 354-4222 or rwhetsel@sawpa.org. All proposals must include the following information:

1. Cover letter, including name, telephone number, and address of the firm.
2. Table of contents.
3. Background information about the proposer, including technical qualifications and licenses. Description of the proposer's business; i.e., individual, partnership, joint venture, etc., and list of subcontractors to be used.
4. Description of the proposer's experience. A list of similar design services and project descriptions undertaken by the proposer (preferably with proposed project personnel), with beginning and ending dates, and name, address, phone number, fax number, and e-mail address of a contact person for each reference.
5. Organization chart showing proposed management and project team.
6. Complete list of personnel, including subcontractors that will be dedicated to this project.
7. Assigned personnel background, experience, and job title/classification.
8. Proposed scope of work including the proposer's understanding and approach to the project.
9. Detailed project schedule.
10. Fee proposal shall include breakdown of labor hours by employee billing classification, expense reimbursement schedule that includes cost of non-labor and sub-consultant services. Fee proposal shall be broken down by major tasks. All columns and rows shall have totals.
11. Hourly billing rates for personnel to be assigned to the project.
12. Miscellaneous Other Information. Respondents shall thoroughly review the contents of this Proposal and shall submit all supplemental information, required in this section of miscellaneous information. In addition, the Proposer should also review the following: [Draft LESJWA Contract Agreement](#), the respondent must identify any exceptions to that draft agreement as an element of the Proposal submitted for review and consideration.

REFERENCE DOCUMENTS

The following reference documents are available for viewing/download from the Lake Elsinore and San Jacinto Watersheds Authority website at:

<http://www.mywatersheds.com/>

Please contact Rick Whetsel, email: rwhetsel@sawpa.org or phone: (951) 354-4222 with any questions regarding this request for Proposals and any technical questions to Steve Wolosoff, email: WolosoffSE@cdmsmith.com or phone: (909) 674-7730.

- [Riverside County Flood Control & Water Conservation District Comprehensive Nutrient Reduction Plan for Lake Elsinore and Canyon Lake, January 28, 2013](#)
- [The Lake and Reservoir Restoration Guidance Manual, North American Lake Management Society, 1988](#)
- [North American Lake Management Society guidance on alum applications](#)

- [9th Circuit court decision in Fairhurst v. Hagener \(2005\) governing need for NPDES permit when applying FIFRA-registered pesticides](#)
- [State of California Department of Pesticide Regulation – Qualified Applicator Certificate](#)
- [Initial Study for Canyon Lake Hybrid Treatment Process – Phase 1](#)
- [Addendum No. 1, Initial Study Canyon Lake Hybrid Treatment Process – Phase 1](#)
- [Compliance Assessment with 2015 Interim Response Targets for LE/CL TMDL](#)
- [Phase 2 Lake Elsinore & Canyon Lake Nutrient TMDL Compliance Monitoring Work Plan](#)
- [Phase 2 Quality Assurance Project Plan \(QAPP\) for the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Load \(TMDL\) monitoring](#)
- [Canyon Lake Property Owners Association Guidelines](#)
- [Liquid Alum Material Safety Data Sheet](#)
- [Draft LESJWA Contract Agreement](#)

EVALUATION CRITERIA

Evaluation of qualifications will be conducted on the following:

- Responsiveness to the RFP
- Experience and qualifications of the assigned individuals in performing similar projects
- Experience and qualifications of the firm in performing similar projects
- Project Approach
- Appropriateness of proposed fee structure
- Project schedule
- Anticipated value and quality of services received

LESJWA reserves the sole right to evaluate and select the successful proposal.

The selection process is anticipated to include an evaluation of the proposal and an interview.

GENERAL REQUIREMENTS

1. All proposers are hereby advised that this RFP is an informal solicitation and is not a commitment or offer to enter into an agreement or engage into any competitive bidding or negotiation pursuant to any statute, ordinance, rule, or regulation. LESJWA reserves the right to negotiate with any qualified source. LESJWA reserves the right to reject any or all proposals for any reason or for no reason at all.
2. LESJWA reserves the right to request further information from the proposer either in writing or orally. Such request will be addressed to that person or persons authorized by the proposer to represent the proposer.

3. LESJWA reserves the sole right to judge the proposers' representations, either written or oral.
4. Proposers understand and agree that submission of a proposal constitutes acknowledgement and acceptance of, and a willingness to comply with, all of the terms, conditions, and criteria contained in this RFP.
5. False, incomplete, or unresponsive statements in connection with a proposal may be sufficient cause for the rejection of the proposal. The valuation and determination of the fulfillment of the above requirement will be LESJWA's responsibility and its decision shall be final.
6. LESJWA reserves the right to interpret or change any provisions of this RFP at any time prior to the proposal submission date. Such interpretations or changes will be in the form of addenda to this RFP. Such addenda will become part of this RFP and may become part of any resultant contract. Such addenda will be made available to each person or organization that has received an RFP. Should such addenda require additional information not previously requested, a proposer's failure to address the requirements of such addenda might result in the proposal not being considered.
7. All proposals submitted in response to this RFP will become the exclusive property of LESJWA. At such time as LESJWA's recommendation to the LESJWA Board relative to proposal selection appears on the Board Agenda, all such proposals become a matter of public record, and shall be regarded as public records, with the exception of those parts of each proposal which are defined by the proposer as business or trade secrets, and so marked, as "confidential" or "proprietary." LESJWA shall not in any way be liable or responsible for the disclosure of any such proposals or any part thereof if disclosure of any such proposals or any part thereof is required under the Public Records Act.
8. LESJWA shall not in any way be liable for any costs incurred in connection with the preparation of any proposal submitted in response to this RFP.