

# THREE RIVERS LEVEE IMPROVEMENT AUTHORITY AGENDA

## OCTOBER 17, 2006 – SPECIAL MEETING

Yuba County Government Center  
Board of Supervisors' Chambers  
915 Eighth Street, Suite 109A  
Marysville, California

Unless otherwise indicated

No other business shall be conducted at this meeting. The public shall have an opportunity to address the Authority only with respect to items set forth in this agenda. Each individual or group will be limited to no more than five minutes. Prior to this time, speakers must fill out a "Request to Speak" card and submit it to the Clerk of the Board of Supervisors.

2:00 P.M. I CALL TO ORDER

II ROLL CALL – Directors Rick Brown, Mary Jane Griego, Dan Logue, Richard Webb

III ACTION ITEMS

- A. Approve minutes of the special meeting of September 26, 2006.
- B. Approve First Amendment to agreement with MHM in the amount of \$300,000 for general engineering and surveying services and authorize Chairman to execute same.
- C. Approve amendment to agreement with Bookman-Edmonston/GEI Consultants in the amount of \$262,500 to conduct additional geotechnical investigations and monitoring on the Feather River and authorize Chairman to execute same.
- D. Authorize entering into agreement with Steinberg and Associates in an amount not to exceed \$20,000 for consulting services to pursue Federal reimbursement and authorize Executive Director to execute same upon submittal and review and approval of County Counsel.

IV BOARD AND STAFF MEMBERS' REPORTS

V ADJOURN

THREE RIVERS LEVEE IMPROVEMENT AUTHORITY

MINUTES – BOARD OF DIRECTORS

SEPTEMBER 26, 2006 – SPECIAL MEETINGS

A meeting of the Board of Directors of the Three Rivers Levee Improvement Authority was held on the above date, commencing at 2:00 p.m., within the Government Center, Marysville, California, with a quorum being present as follows: Directors Rick Brown, Mary Jane Griego, and Richard Webb. Director Dan Logue was absent. Also present were Executive Director Paul Brunner, County Counsel Daniel Montgomery, and Clerk of the Board of Supervisors/Secretary Donna Stottlemeyer. Chairman Webb presided.

PUBLIC COMMUNICATIONS

No one came forward.

ACTION ITEMS

- A. Minutes: Upon motion of Director Griego, seconded by Director Brown, and carried with Director Logue being absent, the Board approved the minutes of the regular meetings of September 5 and 12, 2006 as written. APPROVE MINUTES
- B. Bender Rosenthal, Inc./Right-of-Way Services/Amendment: Upon motion of Director Griego, seconded by Director Brown, and carried with Director Logue being absent, the Board approved the third amendment to the agreement with Bender Rosenthal, Inc. in the amount of \$20,000 for right-of-way services and authorized the Executive Director to execute upon review and approval of Counsel. APPROVE AMENDMENT
- C. Economic Planning Systems, Inc./Fourth Amendment: Executive Director Paul Brunner and Assistant Director Randy Margo recapped the agreement for work performed and costs to conclude formation process of community facilities district and responded to Board inquiries.
- Upon motion of Director Griego, seconded by Director Brown, and carried with Director Logue being absent, the Board approved the fourth amendment to the agreement with Economic and Planning Systems, Inc. in the amount of \$240,000 for consulting services and authorized the Executive Director to execute upon review and approval of Counsel. APPROVE AMENDMENT

D. SCI Consulting Group/Assessment Engineering/\$94,050: Executive Director Paul Brunner recapped consulting services necessary for preparation of studies regarding operation and maintenance of levees in the south county and responded to Board inquiries.

Upon motion of Director Brown, seconded by Director Griego, and carried with Director Logue being absent, the Board approved an agreement with SCI Consulting Group in the amount of \$94,050 for assessment engineering services and authorized the Chairman to execute upon review and approval of Counsel.

APPROVE  
AGREEMENT

BOARD AND STAFF MEMBERS' REPORTS

Reports were received on the following:

Executive Director Paul Brunner:

- A99 designation and the County's technical response to FEMA remapping
- Informational packets provided to new buyers regarding levee improvements
- Plan of action for financial audit
- State Reclamation Board meeting of September 15, 2006 and upcoming issues of elderberry bushes within restoration area

Director Griego:

- Yuba County Water Agency operation of reservoirs prior to rainy season

ADJOURNMENT

There being no further business to come before the Three Rivers Levee Improvement Authority the meeting was adjourned at 3:07 p.m. by Chairman Webb.

\_\_\_\_\_  
Chairman

ATTEST: DONNA STOTTLEMEYER  
CLERK OF THE BOARD OF SUPERVISORS  
AND SECRETARY OF THE PUBLIC AUTHORITY

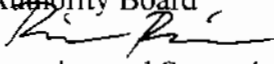
Approved: \_\_\_\_\_



# THREE RIVERS LEVEE IMPROVEMENT AUTHORITY

Government Center  
915 Eighth Street, Suite 115  
Marysville, CA 95901-5273  
(530) 749-7841 (530) 749-7884 Fax

October 17, 2006

TO: Three Rivers Levee Improvement Authority Board  
FROM: Ric Reinhardt, Program Manager   
SUBJECT: Amendment to MHM General Engineering and Surveying Services  
Contract

## **Recommended Action**

Approve the attached contract amendment with MHM for general engineering and surveying services. This first amendment to MHM's contract is to cover additional effort by MHM for right of way survey documentation, quality control surveys, and other engineering services for TRLIA's construction program. Authorize the TRLIA Executive Director to sign once Counsel has reviewed. Cost of proposed amendment is \$300,000.

## **Discussion**

Previously, through work performed under TRLIA approved contract totaling \$151,500 MHM has provided right of way, surveying, and other engineering services throughout TRLIA's construction program. MHM is available on an as needed basis for surveying and right of way assistance. The amount of these services has exceeded MHM's original contract amount. MHM services are very valuable in implementing the TRLIA Program and are still needed to complete the TRLIA program. This amendment will allow TRLIA to continue to utilize MHM as needed.

## **Fiscal Impact**

The proposed effort is contained within the approved 2006/20007 TRLIA budget. This contract amendment amount would come from that budgeted amount from Phases 2-4 design and construction. This amendment would increase the contract by \$300,000 for services on a time-and-expenses basis, to a maximum amount not exceeding \$451,500 without prior authorization by TRLIA. To date MHM has been paid \$339,763 by prior year funds, which means only \$111,737 of the \$300,000 would be applied to this amendment.

FIRST AMENDMENT  
TO  
AGREEMENT BETWEEN  
THREE RIVERS LEVEE IMPROVEMENT AUTHORITY  
AND  
MHM, Inc.

THIS FIRST AMENDATORY AGREEMENT is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2006, by and between the THREE RIVERS LEVEE IMPROVEMENT AUTHORITY, a Joint Powers Authority, (“TRLIA”) and MHM, Inc. (“CONSULTANT”).

**RECITALS:**

WHEREAS, TRLIA and CONSULTANT entered into an agreement to provide Engineering and Surveying Services dated February 16, 2005 (“AGREEMENT”);

WHEREAS, Article D.24 of the AGREEMENT, states that modifications or amendments to the terms of the AGREEMENT shall be in writing and executed by both parties:

WHEREAS, TRLIA and CONSULTANT desire to amend the AGREEMENT;

NOW, THEREFORE, TRLIA and CONSULTANT agree as follows:

1. Article 2 of the AGREEMENT shall be revised to extend the termination date to September 30, 2007.
2. Article A.1 of the AGREEMENT shall be revised to include the Feather River levee improvements and to include quality control surveys as necessary.
3. Article B.1 of the AGREEMENT shall be revised to increase the maximum contract fee from \$151,500 to \$451,500

All other terms and conditions contained in the Agreement shall remain in full force and effect.

This AMENDED AGREEMENT is hereby executed on this \_\_\_\_ day of \_\_\_\_\_ 2006.

TRLIA

CONSULTANT

BY: \_\_\_\_\_  
“THREE RIVERS LEVEE  
IMPROVEMENT AUTHORITY”

BY: \_\_\_\_\_  
“MHM, Inc”

ATTREST:  
DONNA STOLLEMEYER, CLERK OF  
THE BOARD OF SUPERVISORS

APPROVED AS TO FORM:  
DANIEL G. MONTGOMERY  
THREE RIVERS LEVEE IMPROVEMENT  
AUTHORITY COUNSEL

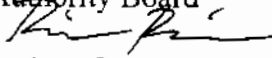
---



# THREE RIVERS LEVEE IMPROVEMENT AUTHORITY

Government Center  
915 Eighth Street, Suite 115  
Marysville, CA 95901-5273  
(530) 749-7841 (530) 749-7884 Fax

October 17, 2006

TO: Three Rivers Levee Improvement Authority Board  
FROM: Ric Reinhardt, Program Manager   
SUBJECT: Amendment to GEI Engineering Services Contract

## **Recommended Action**

Approve the attached contract amendment (Amendment 3) with GEI for additional geotechnical investigations and monitoring and authorize the TRLIA Executive Director to sign once Counsel has reviewed. Cost of proposed amendment is \$262,500.

## **Discussion**

During the January 2006 event, boils were observed at the toe of a seepage berm in the vicinity of Pump Station 3 along the Feather River. Boils were also observed at the pump station itself. While a slurry wall and seepage berm had been installed in this area by the Corps, the area showed more seepage than was expected during this high water event. GEI has prepared a report discussing this issue and potential solutions that may be required. A meeting was held with the Corps, DWR and other interested parties to discuss an early draft of the report. One of the recommendations from that meeting was that additional geotechnical information was needed to better define foundation conditions and groundwater movement. GEI has developed a program to obtain additional geotechnical information and initiate a groundwater monitoring program in this area to obtain more information to assist understanding of the foundation problem and guide design of a solution. This information will help to determine what additional work should be done in this area to ensure the reliability of this reach of the Feather levee. The proposed program is attached.

## **Fiscal Impact**

The approved 2006/20007 TRLIA Budget included funding for Phase 4 design activities. This contract amendment would be funded within the budgeted Phase 4 design costs. This amendment would increase the contract by \$262,500 for services on a time-and-expenses basis, to a maximum amount not exceeding \$4,816,840 without prior authorization by TRLIA. It is anticipated that the information gained from this scope of work will reduce proposed construction measures and result in savings of several millions of construction dollars.

AMENDMENT NO. 3

AGREEMENT FOR PROFESSIONAL SERVICES  
FOR  
PHASE 4 FEATHER RIVER LEVEE REPAIRS  
BETWEEN  
THREE RIVERS LEVEE IMPROVEMENT AUTHORITY AND  
BOOKMAN-EDMONSTON/GEI CONSULTANTS

THIS AMENDMENT TO AGREEMENT is made effective October 17, 2006, by and between Three Rivers Levee Improvement Authority ("TRLIA") and Bookman-Edmonston/GEI Consultants, a division of GEI Consultants, Inc. ("Consultant"), who agree as follows:

1. **Recitals.** This Amendment is made with reference to the following background recitals:
  - 1.1. Effective December 13, 2005, the parties entered into the Agreement for Professional Services relating to TRLIA's Phase 4 Feather River Levee project.
  - 1.2. Effective April 25, 2006, the parties entered into Amendment No. 1 to the Agreement for Professional Services relating to TRLIA's Phase 4 Feather River Levee Repair design for a total of \$4,521,640.
  - 1.3. Effective June 27, 2006, the parties entered into Amendment No. 2 to the Agreement for Professional Services relating to TRLIA's Phase 4 Feather River Levee Repair design for a total of \$4,554,340.
  - 1.4. The parties now desire to amend the Professional Services Agreement to expand scope of services and base contract fee.
  
2. **Third Amendment to Agreement.** The Professional Services Agreement is hereby amended as follows:
  - 2.1. The scope of services (Attachment A to the Agreement for Professional Services between TRLIA and B-E/GEI, dated December 13, 2005) is amended to expand the scope of work for Task 2, Preliminary Geotechnical Studies, to include implementation of a groundwater monitoring system north of Star Bend near Pump Station No. 3 and the Broadway to Anderson Ave areas as described in the GEI letter dated October 4, 2006.
  - 2.2. The payment, budget, and not-to-exceed amounts (Professional Services Agreement Attachment B) are amended to include the additional amounts of \$262,500 for a total contract of \$4,816,840.

3. **No Effect on Other Provisions.** Except for the amendments in Section 2, the remaining provisions of the Professional Services Agreement shall be unaffected and remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on \_\_\_\_\_, 2006.

THREE RIVERS LEVEE IMPROVEMENT  
AUTHORITY OF YUBA COUNTY

BOOKMAN-EDMONSTON, A  
DIVISION OF GEI  
CONSULTANTS, INC.

\_\_\_\_\_  
Paul G. Brunner  
Executive Director

\_\_\_\_\_  
Raymond D. Hart  
Senior Vice President

ATTEST:  
DONNA STOTTEMEYER  
SECRETARY, THREE RIVERS  
  
\_\_\_\_\_

APPROVED AS TO FORM:  
DANIEL G. MONTGOMERY  
COUNTY COUNSEL  
  
\_\_\_\_\_



2201 Broadway, Suite 321  
Oakland, California 94612  
510-835-9838  
FAX 510-835-9842

October 4, 2006  
050110

Mr. Paul Brunner, Executive Director  
Three Rivers Levee Improvement Authority  
915 Eighth Street, Suite 115  
Marysville, CA 95901

Dear Mr. Brunner:

**Re: Phase 4 Feather River Levee Repair Project -  
Additional Geotechnical Investigations and Groundwater Monitoring**

This letter is a follow up to your request to prepare a scope of work and budget to perform additional geotechnical investigations and ground water monitoring along the east bank Feather River Levee from Star Bend to Broadway Avenue in Marysville, California. The need for this work along with your request for this letter arose from general discussions during a technical meeting held at GEI Consultants' Sacramento Office on August 28, 2006. The data collected during this proposed investigation will be used to evaluate the effectiveness of an existing seepage cutoff wall installed along this reach of the levee. The data also will be used to optimize the design of levee repair measures in the vicinity of Pump Station No. 3.

### **Background**

Seeps and boils have been regularly observed in the vicinity of the landside toe of the Pump Station No. 3 and Broadway-to-Anderson portions of the east Feather River Levee during high water events since the 1930s. These seeps and boils reflect locations of unacceptably high upward groundwater gradients and underseepage through the levee foundation soils. Repair measures employed to reduce the gradients and mitigate the seepage have included the installation of relief wells, construction of seepage berms, and, most recently, a 70-foot-deep cutoff wall. However, despite these measures, seeps and boils continue to occur during high water events, which in turn represent a continued threat to the integrity of this portion of the levee. The approximate locations of seeps and boils observed during the January 2006 high water event are shown on Figure 1.

The cutoff wall is keyed into a low-permeability soil layer. Based on recent soil borings, the thickness of the low-permeability soil layer ranges from 2 to 15 feet. Higher permeability sand and gravel layers occur above and below the low-permeability layer. The results of two-dimensional seepage modeling through representative cross sections of this portion of the levee indicate that the effectiveness of the slurry wall as a cutoff is dependent on the continuity of the low-permeability layer at the bottom of the wall. If the layer is discontinuous, communication between sand and gravel layers above and below the low-permeability layer allows for seepage under the cutoff wall with relatively little head loss, thus creating conditions conducive to seep and boil formation at the ground surface. The results of the two-dimensional seepage modeling are discussed in detail in the draft *Feather River Slurry Wall Pump Station No. 3 Area, Geotechnical Evaluation Report*. A conceptual model of the hypothesized flow under the levee and cutoff wall is shown on Figure 3.

In addition, it is also possible that the groundwater gradient could have a significant north-south component, resulting from the aquifer being recharged north of the project reach (north of the existing slurry cutoff wall). The interpretation of the existing exploratory borings indicates the potential presence of a relatively massive and continuous high-permeability stratum that extends from near the confluence with the Yuba River to about the vicinity of Star Bend. This stratum appears to become more fragmented and less massive downstream from Star Bend. Groundwater flow through this aquifer, parallel to the river, would not be mitigated by the slurry cutoff wall even if it is effectively keyed into a substantial low-permeability layer.

The purpose of the proposed work is to explore the possibilities that the low-permeability layer may be discontinuous, or that pressurized groundwater flow may originate from the north and/or east. There is no current groundwater data available to confirm conditions and help evaluate potential levee repair measures. In particular, data on the lateral and vertical distribution of groundwater pressure on the landside of the levee during high water events is desired to make this evaluation. The proposed scope of work described below is designed to provide this data.

### **Scope of Work**

GEI proposes to retain a drilling subcontractor to perform three clusters of five borings per cluster along the alignment of the levee between Star Bend and Broadway Avenue. Two main clusters will be located in the vicinity of Pump Station No. 3 and one between Anderson Avenue and Broadway. Each cluster is arranged in a rough concentric triangular pattern to provide 3-D definition of the water table. The preliminary locations of the borings are shown on the attached Figures 1 and 2. Two or three piezometers will be installed in each of the completed boreholes to monitor water levels in selected highly permeable soil layers. A simplified soil profile with generalized depths of the piezometer installations is presented on the attached Figure 3. The scope of work includes collecting ground water levels from these piezometers, Kleinfelder piezometers KP-1 through KP-4, and selected nearby irrigation wells over a two year monitoring period ending in the spring of 2008.

The specific elements of the geotechnical investigation are as follows:

- Three borings advanced to depths of about 40 feet on the water side toe of the levee in the general vicinity of Pump Station No. 3. The purpose of these borings is to investigate the extent and continuity of shallow layers of low permeability soils that were observed in our borings performed in 2006 along the waterside toe of the levee.
- Twelve borings advanced to depths of about 100 feet on the landside of the levee between Star Bend and Broadway Avenue. Six borings will be located on the landside toe of the levee and six borings will be located at varying distances landward from the toe of the levee. The purpose of the borings is to install piezometers to monitor ground water conditions and to collect information on depths, thicknesses and continuity of layers of high permeability soils that have been observed in previous investigations in this area.
- Installation of up to 36 piezometers in the borings advanced on the landside of the levee. The piezometers will allow the collection of a body of data on the groundwater levels in the high permeability soil layers and to gain an understanding of how the groundwater levels in these layers respond during periods of high water.
- Monitoring of the ground water levels in the piezometers and selected nearby irrigation wells on a bi-weekly basis from December through April for a two year period.

At the conclusion of the geotechnical investigation a summary data report will be prepared that will contain the results of our field investigation including borings logs, piezometer installation logs, updated soil profiles, and field procedures. Quarterly summaries of the ground water monitoring data will be prepared over the two year monitoring program. A final monitoring report will be prepared at the end of the two year period that summarizes the collected data. This report will be included as an appendix in the Segment 2 Basis of Design Report. It will be an integral part of the basis of design for the levee repair measures at Pump Station No. 3 and the design of a monitoring approach for the Anderson-to-Broadway reach of the levee.

### **Costs**

The estimated cost to complete the above scope of work is \$262,500 as summarized in the table below and will be billed using the Phase 4 contract billing rate structure.

Task	GEI Professional Fees	GEI Expenses & Reimbursable	Subcontractor Fees (Note 1)	Total Cost
Prepare Work Plan	\$9,000	--	--	\$9,000
Subcontract Administration	\$5,000	--	--	\$5,000
Field Investigation	\$48,000	\$6,500	\$130,000	\$184,500
Data Report	\$24,000		--	\$24,000
Ground Water Monitoring	\$20,000	\$1,500		\$21,500
Final Monitoring Report	\$18,500	--	--	\$18,500
<b>Total</b>	<b>\$124,500.00</b>	<b>\$8,000</b>	<b>\$130,000</b>	<b>\$262,500</b>

Notes:

1. Subcontractors Fees include costs of piezometers, drillers, and surveying.

The recommended scope and costs presented in this proposal are the result of consideration of several potential piezometer types and installation method. The proposed scope represents the best balance of data distribution, flexibility, and cost. A summary of the piezometer types and installation methods considered is contained in Attachment 1. Installation of the 2-inch observation wells is not recommended because of its high cost. Final selection of vibrating wire or standpipe piezometers will be made in coordination with the drilling subcontractor, based on actual installation costs and subcontractor capability.

We are pleased with the opportunity to work with you and your staff on this project. Please call me or Dan Wanket if you have any questions.

Sincerely,


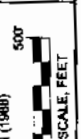
B-E/GEI



Alberto Pujol, P.E., G.E  
Project Manager

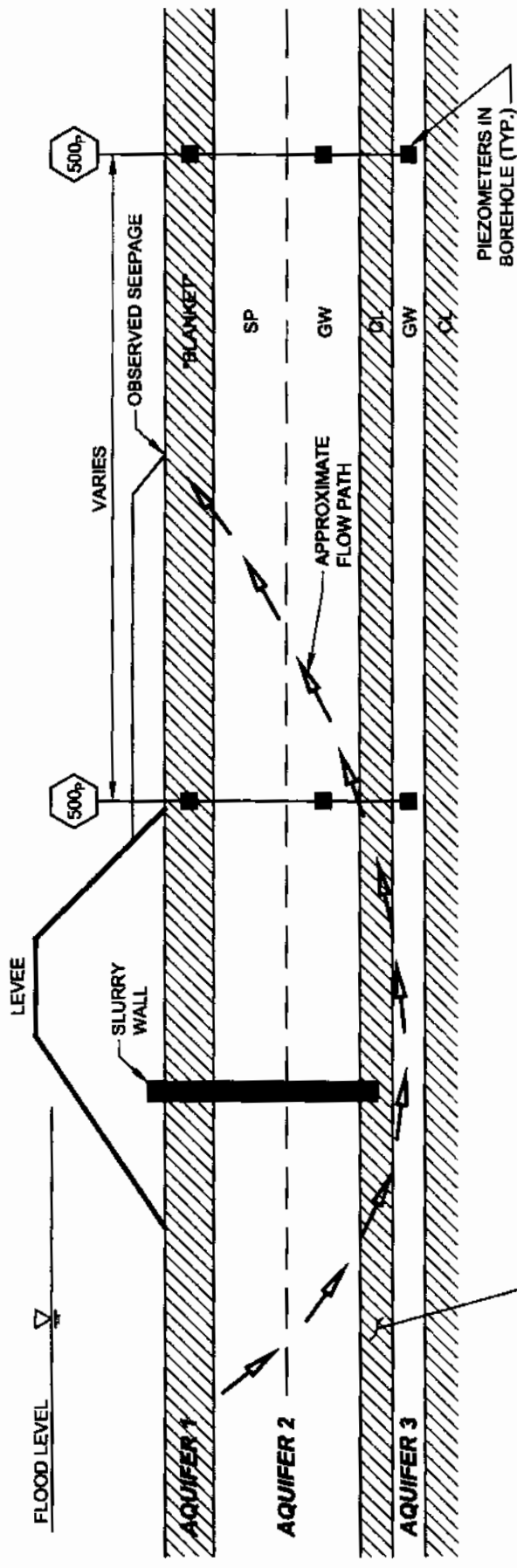
Attachment: Figures 1, 2 and 3  
Attachment 1





<p>PHASE 4 FEATHER RIVER LEVEE REPAIR PROJECT Reclamation District No. 784 Yuba County, California</p>	<p>THREE RIVERS LEVEE IMPROVEMENT AUTHORITY</p>	<p>FIGURE 1</p>
<p>Proposed Boring Locations</p>		
<p><b>Bookman-Edmonston</b> A Division of GEI Consultants</p>		 <p>SCALE, FEET</p>
<p><b>LEGEND:</b></p> <ul style="list-style-type: none"> <li>● GEI-601 PROPOSED SHALLOW BORING</li> <li>● GEI-502P PROPOSED 3-LEVEL PIEZOMETER</li> <li>⊕ GEI-101 APPROX. GEI TEST BORING LOCATION (2006)</li> <li>⊗ NP-1 APPROX. KLEINFELDER PIEZOMETER LOCATION (2006)</li> <li>● D-1 APPROX. WAHLER ASSOC. BORING LOCATION (1998)</li> <li>● 6F-1, 6F7-1 APPROX. CORPUS OF ENGINEERS TEST BORING LOCATION (1988)</li> <li>⊕ CF-88-38 APPROX. CORPUS OF ENGINEERS CONE PENETRATION TEST LOCATION (1988)</li> <li>● 2T-87-7 APPROX. CORPUS OF ENGINEERS TEST BORING LOCATION (1997)</li> <li>⊗ KB-05-1 APPROX. KLEINFELDER BORING LOCATION (2006)</li> </ul>		



WATERSIDE | LANDSIDE



BASED ON SEEPAGE MODELING, EFFECTIVENESS OF SLURRY WALLS IS LARGELY DEPENDENT ON CONTINUITY OF CLAY LAYER THAT WALL IS TIED INTO, RESULTING IN SEEPAGE UNDER THE SLURRY WALL. PROPOSED PIEZOMETERS WOULD PROVIDE DATA TO DETERMINE DEGREE OF INDEPENDENCE OF THE AQUIFERS. DATA COULD ALSO BE USED TO CALIBRATE MODEL.

<p>PHASE 4 FEATHER RIVER LEVEE REPAIR PROJECT Reclamation District No. 784 Yuba County, California</p>	<p>THREE RIVERS LEVEE IMPROVEMENT AUTHORITY</p> 	 <p><b>Bookman-Edmonston</b> A Division of GEI Consultants</p>	<p>FIGURE 3</p>
--------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------

**Attachment 1**  
**Summary of Piezometer Types and Installation Methods**

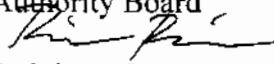
<b>Vibrating Wire Piezometer</b>		<b>1.25 - inch ID Open Stand Pipe Piezometer</b>		<b>2 -inch ID Observation Well</b>	
<p><b>Program:</b></p> <ul style="list-style-type: none"> <li>12 geotechnical borings advanced to depths of about 100 feet with continuous split spoon samples.</li> <li>4-inch borehole utilizing standard mud rotary techniques.</li> <li>Install 3 vibrating wire piezometers in each borehole.</li> <li>3 geotechnical borings advanced to depths of about 40 feet with continuous sampling on the waterside toe of the levee.</li> <li>Advance one borehole to a depth of about 100 feet to install 2-inch observation well.</li> </ul>	<p><b>Program:</b></p> <ul style="list-style-type: none"> <li>12 geotechnical borings advanced to depths of about 100 feet with continuous split spoon samples.</li> <li>4-inch borehole utilizing standard mud rotary techniques.</li> <li>Install 2 open stand pipe piezometers in each borehole.</li> <li>12 borings advanced to depths of about 30 feet with no sampling.</li> <li>Install 1 shallow open stand pipe piezometer in each of the 30 foot boreholes.</li> <li>3 geotechnical borings advanced to depths of about 40 feet with continuous sampling on the waterside toe of the levee.</li> <li>Advance one borehole to a depth of about 100 feet to install 2-inch observation well.</li> </ul>	<p><b>Program:</b></p> <ul style="list-style-type: none"> <li>12 water well borings advanced to depths of about 100 feet with continuous geophysical logging.</li> <li>8-inch borehole utilizing standard mud rotary techniques.</li> <li>Install two 2-inch observation wells in each borehole.</li> <li>12 borings advanced to depths of about 30 feet with no sampling.</li> <li>Install 1 shallow 2-inch observation well in each of the 30 foot boreholes.</li> <li>Develop the observation wells utilizing water well techniques.</li> <li>3 geotechnical borings advanced to depths of about 40 feet with continuous sampling on the waterside toe of the levee.</li> <li>1 geotechnical boring advanced to a depth of about 100 feet with continuous sampling to correlate geophysical logging.</li> </ul>	<b>COST</b>	<b>\$125,023</b>	<b>\$182,020</b>
<p><b>Advantages</b> Geotechnical Drilling Operation</p>	<p><b>Advantages</b> Geotechnical Drilling Operation</p>	<p><b>Advantages</b> Geotechnical Drilling Operation</p>	<p><b>Advantages</b> This procedure utilizes contractors, drilling techniques, and instrumentation techniques that GEI has recent experience with in the same general vicinity.</p>	<p><b>Advantages</b> This procedure utilizes contractors, drilling techniques, and instrumentation techniques that GEI has recent experience with in the same general vicinity.</p>	<p><b>Advantages</b> This procedure utilizes contractors, drilling techniques, and instrumentation techniques that GEI has recent experience with in the same general vicinity.</p>
<p>Can install 3 piezometers in one- 4-inch borehole.</p>	<p>Can install 2 piezometers in one- 4-inch borehole</p>	<p>Will need to install some type of well head assembly to control flow and allow measurements during times of high water</p>	<p>Will need to install some type of well head assembly to control flow and allow measurements during times of high water</p>	<p>Will need to install some type of well head assembly to control flow and allow measurements during times of high water</p>	<p>Will need to install some type of well head assembly to control flow and allow measurements during times of high water</p>
<p>Rapid response to pore pressure changes</p>	<p>Conventional technology, dependable.</p>	<p>Somewhat slower response to pore pressure changes. The effect of drilling with mud rotary techniques might effect response time.</p>	<p>May be able to perform pumping tests in the wells. Also, this might present the best opportunity for the project to perform in-situ permeability tests in the gravel layers.</p>	<p>May be able to perform pumping tests in the wells. Also, this might present the best opportunity for the project to perform in-situ permeability tests in the gravel layers.</p>	<p>May be able to perform pumping tests in the wells. Also, this might present the best opportunity for the project to perform in-situ permeability tests in the gravel layers.</p>
<p>No concern about water flowing out of top of well during times of high water.</p>	<p>May be able to add water or pump water to standpipe to check performance of borehole seals.</p>	<p>Utilizing a large well drilling rig with geophysical logging might be faster.</p>	<p>Utilizing a large well drilling rig with geophysical logging might be faster.</p>	<p>Utilizing a large well drilling rig with geophysical logging might be faster.</p>	<p>Utilizing a large well drilling rig with geophysical logging might be faster.</p>
<p>Can easily be adapted to automated reading in the future.</p>					<p>We will have to deal with the issue of drilling mud and cuttings disposal. This type of drilling generates a significant amount of waste materials. We will need to have a separate rig to perform the geotechnical borings.</p>



# THREE RIVERS LEVEE IMPROVEMENT AUTHORITY

Government Center  
915 Eighth Street, Suite 115  
Marysville, CA 95901-5273  
(530) 749-7841 (530) 749-7884 Fax

October 17, 2006

TO: Three Rivers Levee Improvement Authority Board  
FROM: Ric Reinhardt, Program Manager   
SUBJECT: Agreement to Use the Services of Steinberg & Associates

## **Recommended Action**

Authorize the TRLIA Executive Director to enter into agreement with Steinberg & Associates for assistance in working with the Corps of Engineers (Corps). Cost of services would be \$20,000.

## **Discussion**

TRLIA has closely coordinated with the Corps during design and implementation of the TRLIA Program. TRLIA's goal is to ensure that the repairs being done will be certified by the Corps for FEMA purposes and to have as much of the repairs as possible qualify to be a part of the federal Yuba Basin Project under reevaluation. This will place TRLIA in the position to be eligible for future possible federal reimbursement for work accomplished by TRLIA. TRLIA is also coordinating with the Corps to have the Corps accomplish as much work as possible under existing authorities such as the Sacramento Evaluation Project or as part of the PL 84-99 Emergency Repairs. Steinberg & Associates is uniquely qualified to assist TRLIA's interaction with the Corps. Dr. Bory Steinberg retired from Corps Headquarters as Head of the Policy and Program Division. He has extensive knowledge of Corps policies and knows the principal individuals at Corps Headquarters and in the Assistant Secretary's Office who would review and approve any proposals that would provide credit to TRLIA. Steinberg & Associates has successfully assisted other flood control agencies in their interactions with the Corps of Engineers. The use of Steinberg & Associates would greatly enhance TRLIA's opportunities to receive Corps credit for the work being accomplished. Steinberg & Associates proposal to provide this assistance is attached.

## **Fiscal Impact**

The agreement with Steinberg & Associates would be for an amount not to exceed \$20,000 without further authorization of the TRLIA Board. The contract would be funded from general over head in the approved 2006/20007 TRLIA Budget.

October 6, 2006

Mr. Paul Brunner  
Three Rivers Levee Improvement Authority  
915 8th Street, Ste. 125  
Marysville, CA 95901

SUBJECT: Consulting Services for the Three Rivers Levee Improvement Authority in  
Connection with the Corps of Engineers Projects

Dear Mr. Brunner:

Pursuant to our discussion with Ric Reinhardt on July 28<sup>th</sup>, we are submitting the attached proposal for consulting services in connection with measures needed to obtain Federal assistance in meeting the funding needs for the Three Rivers Levee Improvement Authorities program of levee repairs.

During our discussion with Ric, he indicated that based on recent inspection and analyses, the cost of this work has increased substantially. In order for the necessary work to be accomplished in a timely manner, Federal assistance (most likely through the Corps of Engineers' programs) would be needed. We understand that our services would be as part of a Team under the auspices of the Three Rivers Levee Improvement Authority. Toward this end, Ric mentioned two possible routes that could be explored, as follows:

To expedite this work, we would evaluate the possibility of undertaking improvements by the non-Federal sponsor consistent with work being developed in a GRR by the Sacramento District Corps of Engineers for the Yuba Basin project. This would be somewhat similar to the Natomas work that we are doing for SAFCA. Other options would be to pursue work under the Marysville/Yuba City Project, PL84-99 or through a reimbursement program.

In analyzing how Steinberg & Associates could be of assistance, we offer the following thoughts:

- (a) We can help frame a proposal that will be within the realm of Corps authorized programs and within existing policies. In this regard, we would propose reviewing other projects, including some in California that have had deficiencies corrected and/or reconstruction approved without the need for further Congressional legislation.
- (b) We know well the principal individuals at Corps HQ and in the Assistant Secretary's Office who would be involved in reviewing proposals and playing a key role in decisions approving such proposals for Federal funding.
- (c) While the actions outlined in (a) & (b) above, would not require legislation, ultimately some legislation may be required. We are familiar with several instances in which legislation was enacted in recent years that facilitated the implementation of deficiency corrections and/or reconstruction projects as well as projects that entail credit or reimbursement.

Attached is our proposal for your consideration based on an estimate of the work we would perform as part of the Three Rivers Levee Improvement Authority Team.

Thank you for this opportunity.

Sincerely,

Dr. Bory Steinberg & Naomi Kogon- Steinberg

Enclosure

## Attachment "A"

### SUGGESTED SCOPE OF PROFESSIONAL SERVICES THAT STEINBERG & ASSOCIATES CAN PROVIDE TO THE THREE RIVERS LEVEE IMPROVEMENT AUTHORITY, CA IN CONNECTION WITH THE MARYSVILLE/YUBA CITY LEVEES

- \* Work with the Three Rivers Levee Improvement Authority (Levee Authority), the U.S. Army Corps of Engineers Sacramento District, South Pacific Division, Washington Headquarters and the office of the Assistant Secretary of the Army for Civil Works (ASACW) in the following areas:
  - \* Assist the Levee Authority staff and its other consultants in reviewing different Corps' authorities, policies and guidance regarding upgrades and repair/reconstruction of levees and other flood control issues.
  - \* Assist the Levee Authority in the various planning steps consistent with funding available in a particular fiscal year.
  - \* Attend meetings involving the Corps on planning and policy issues which are critical to the Levee Authority. Suggest planning solutions which are timely and which will be beneficial to the Levee Authority.
  - \* Maintain contact with the Levee Authority and any consultant and/or lobbyist that will be nominated for the purpose of this project, in particular with Mr. Ric Reinhardt and support these efforts as appropriate.

## Attachment "B"

### Steinberg & Associates Budget Proposal

Our hourly rate is \$200 (Exclusive of travel expenses for travel outside of the Washington, DC area)

Based on this rate we propose an initial consulting contract not to exceed \$20,000.