



**THREE RIVERS LEVEE IMPROVEMENT AUTHORITY**  
**Yuba County Government Center, Board Chambers**  
**915 Eighth Street, Suite 109A**  
**Marysville, California**

**OCTOBER 21, 2014 – 2:00 P.M.**

**CALL TO ORDER:** Welcome to the Three Rivers Levee Improvement Authority (TRLIA) meeting. As a courtesy to others, please turn off cell phones, pagers, or other electronic devices which might disrupt the meeting. Thank you.

I **ROLL CALL** – Directors Atwal, Brown, Crippen, Griego, Nicoletti

II **PUBLIC COMMUNICATIONS:** Any person may speak about any subject of concern within the jurisdiction of TRLIA which is not on today's agenda. The total amount of time allotted shall be limited to a total of 15 minutes and each individual or group will be limited to no more than 5 minutes. Prior to this time, speakers are requested to fill out a "Request to Speak" card and submit it to the secretary.

III **CONSENT AGENDA:** Matters listed are considered to be routine and can be enacted by one motion.

A. Approve minutes of the meeting of September 6, 2014.

IV **ACTION ITEMS**

A. Approve Amendment No. 17 to the agreement with HDR Engineering, Inc. for services related to the Western Pacific Interceptor Canal 200 Year Urban Levee Design Criteria and authorize Executive Director to execute.

V **BOARD AND STAFF MEMBER REPORTS**

VI **CLOSED SESSION**

A. Conference with real property negotiators pursuant to Government Code §54956.8 - Property: Assessors Parcel Nos. 018-150-035/018-190-104 Negotiating Parties: Michele Barker/Karin Deveraux/Brien Smith/Lisa Smith/TRLIA/Kelly Pope Under Negotiation: terms of payment.

B. Conference with real property negotiators pursuant to Government Code §54956.8 - Property: Assessors Parcel No. 020-440-017 Negotiating Parties: Ronald and Marcia Wessels/TRLIA/Morrison/Kelly Pope. Under Negotiation: terms of payment.

VII **ADJOURN**

The complete agenda is available at the Yuba County Government Center, 915 8<sup>th</sup> Street, Suite 109 Marysville, and [www.trlia.org](http://www.trlia.org). Any disclosable public record related to an open session item on the agenda and distributed to all or a majority of the Board less than 72 hours prior to the meeting is available at Suite 109 during normal business hours. In compliance with the Americans with Disabilities Act, the meeting room is wheelchair accessible and disabled parking is available. If you have a disability and need disability-related modifications or accommodations to participate in this meeting, please contact the Clerk of the Board's office at (530) 749-7510 or (530) 749-7353 (fax). Requests must be made one full business day before the start of the meeting.



THREE RIVERS LEVEE IMPROVEMENT AUTHORITY

SEPTEMBER 16, 2014

MINUTES

A meeting of the Board of Directors of the Three Rivers Levee Improvement Authority (TRLIA) was held on the above date, commencing at 2:12 p.m., within the Government Center, Marysville, California, with a quorum being present as follows: Directors Sarbdeep Atwal, Rick Brown, Jerry Crippen, Mary Jane Griego, and John Nicoletti. Also present was Executive Director Paul Brunner, Counsel Andrea Clark, and Secretary/Clerk of the Board of Supervisors Donna Stottlemeyer. Chair Griego presided.

I ROLL CALL – Directors Atwal, Brown, Crippen, Griego, Nicoletti - Director Atwal Absent

II PUBLIC COMMUNICATIONS: None.

III ACTION ITEMS

A. Approve minutes of the meetings of July 15, and August 5, 2014.

MOTION: Move to approve      MOVED: Jerry Crippen      SECOND: John Nicoletti  
AYES: Rick Brown, Jerry Crippen, Mary Jane Griego, John Nicoletti  
NOES: None      ABSTAIN: None      ABSENT: Sarbdeep Atwal

B. Approve Amendment No. 7 to agreement with AECOM Technical Services, in the amount of \$209,735 and authorize Executive Director to execute upon review of Counsel. Executive Director Paul Brunner and Construction Manager Larry Dacas provided a visual presentation outlining proposed improvements to bring deficiencies on levees along the WPIC to urban levee requirements, recapped agreement, cost share, and responded to Board inquiries.

MOTION: Move to approve      MOVED: John Nicoletti      SECOND: Rick Brown  
AYES: Rick Brown, Jerry Crippen, Mary Jane Griego, John Nicoletti  
NOES: None      ABSTAIN: None      ABSENT: Sarbdeep Atwal

C. Approve agreement with Reeb Government Relations, LLC, in the amount of \$60,000 and authorize Executive Director to execute upon review of Counsel. Executive Director Paul Brunner and Counsel Andrea Clark recapped current and proposed use of agricultural lease proceeds generated for maintenance, legislation needed to be successful, and responded to Board inquiries.

Director Atwal joined the meeting at 2:40 p.m.

MOTION: Move to approve      MOVED: John Nicoletti      SECOND: Sardeep Atwal  
AYES: Sarbdeep Atwal, Rick Brown, Jerry Crippen, Mary Jane Griego, John Nicoletti  
NOES: None      ABSTAIN: None      ABSENT: None

Director Griego left the meeting at 2:52 p.m. and did not return.

IV BOARD AND STAFF MEMBER REPORTS

Executive Director Paul Brunner:

- State EIP Audit Results
- TRLIA FESSRO Project Update
- ULDC Requirement for vegetation
- Flood Management Association Conference held September 2-5, 2014
- Water curtailment and possible affect on one orchard
- United States Fish and Wildlife Service press release regarding Elderberry Beetle to remain endangered

Director Nicoletti left the meeting at 3:10 p.m. and returned at 3:12. p.m.

V CLOSED SESSION: The Board retired into closed session at 3:19 p.m. and returned at 3:54 p.m. with all present as indicated above, except Director Griego.

- A. Pending litigation pursuant to Government Code §54956.9(a) - TRLIA vs. Latigo Farms LLC, et al., YSCCVD 10-0000222, APN Nos. 014-360-011 and 014-360-013 No report.
- B. Conference with Real Property Negotiator pursuant to Government Code §54956.8 - Property: APN 020-080-009. Negotiating Parties: Western Aggregates/TRLIA/Kelly Pope. Negotiations: Price and Terms of Payment No report.
- C. Conference with Real Property Negotiator pursuant to Government Code §54956.8 - Property: APN 016-120-008, 015 & 016. Negotiating Parties: Danna Properties, L.P./TRLIA/Kelly Pope. Negotiations: Price and Terms of Payment No report.

VII ADJOURN: 3:55 p.m.

\_\_\_\_\_  
Chair

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

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



## THREE RIVERS LEVEE IMPROVEMENT AUTHORITY

1114 Yuba Street, Suite 218

Marysville, CA 95901

Office (530) 749-7841 Fax (530) 749-6990

October 21, 2014

TO: Three Rivers Levee Improvement Authority Board  
FROM: Paul G. Brunner, Executive Director *PGB*  
Claire Marie Turner, MBK Project Manager  
SUBJECT: Approve Amendment 17 to Contract with HDR Engineering, Inc. for Engineering Services for the Western Pacific Interceptor Canal – 200 Year Urban Levee Design Criteria

### **Recommended Action:**

Approve a Contract Amendment 17 (Attachment 1) to the existing contract with HDR which adds \$726,777 for design services for the WPIC and extends the existing contract to December 31, 2015; and authorize Executive Director to sign and execute upon review of General Counsel.

### **Discussion:**

HDR was tasked by TRLIA to review the California Department of Water Resources' (DWR) Urban Levee Design Criteria (ULDC) and Urban Levee Evaluation (ULE) and provide the information necessary to pursue a compliance determination for the WPIC in accordance with the ULDC. HDR found that certain portions of the WPIC levee do not meet the ULDC and has recently completed an alternatives analysis for remediation of these portions. The proposed work included in Amendment 17 is for remaining engineering efforts associated with design of a preferred alternative. The attached proposal provides additional detail as to the scope of services for this effort.

When plans and specifications are complete and the project is out to bid, an additional amendment will be needed to cover construction management of the project, should staff recommend HDR do this additional work. Construction is expected to begin in 2015.

### **Fiscal Impact:**

The amendment amount is \$726,777 for services on a time-and-expenses basis, not to exceed the maximum amount \$11,109,186 of the contract for Professional Services without prior authorization by TRLIA. This work is part of the TRLIA EIP Upper Yuba Levee Improvement Project funding agreement. The State cost share is 70%. Local funds are available to cover the local share (30%).

### **Attachments:**

- Amendment 17 Agreement
- HDR Scope and Fee Estimate for Amendment 17

ATTACHMENT 1

SEVENTEENTH AMENDMENT  
TO  
AGREEMENT FOR PROFESSIONAL SERVICES  
BETWEEN  
THREE RIVERS LEVEE IMPROVEMENT AUTHORITY  
AND  
HDR ENGINEERING, INC.

THIS SEVENTEENTH AMENDATORY AGREEMENT is made and entered into this \_\_\_\_ day of \_\_\_\_\_ 2014, by and between the Three Rivers Levee Improvement Authority, (“TRLIA”), a California Joint Powers Authority, and HDR Engineering, Inc. (“CONSULTANT”).

WHEREAS, TRLIA and CONSULTANT entered into an agreement on December 13, 2005 to provide professional services for Engineering Design and Environmental Studies for Phase 4 Levee Repairs - Upper Yuba River, Continuation of Phase 2 Construction Management (2006), and FEMA Certification of Contract Work (“Agreement”);

WHEREAS, a FIRST AMENDATORY AGREEMENT, executed February 14, 2006, increased the maximum not to exceed contract fee from \$2,580,038 by \$118,955 to \$2,698,993; and

WHEREAS, a SECOND AMENDATORY AGREEMENT, executed March 7, 2006, increased the maximum not to exceed contract fee from \$2,698,993 by \$117,649 to \$2,876,642; and

WHEREAS, a THIRD AMENDATORY AGREEMENT, executed August 8, 2006, increased the maximum not to exceed contract fee from \$2,876,642 by \$661,193 to \$3,537,835; and

WHEREAS, a FOURTH AMENDATORY AGREEMENT, executed October 16, 2007, increased the maximum not to exceed contract fee from \$3,537,835 by \$280,000 to \$3,817,835; and

WHEREAS, a FIFTH AMENDATORY AGREEMENT, executed August 5, 2008, increased the maximum not to exceed contract fee from \$3,817,835 by \$954,524 to \$4,772,359; and

WHEREAS, a SIXTH AMENDATORY AGREEMENT, executed September 9, 2008, extended the time of services rendered to December 31, 2009; and

WHEREAS, a SEVENTH AMENDATORY AGREEMENT, executed May 12, 2009, increased the maximum not to exceed contract fee from \$4,772,359 by \$2,416,874 to \$7,189,233 and extended the time of services rendered to December 31, 2010; and

WHEREAS, an EIGHTH AMENDATORY AGREEMENT, executed September 15, 2009 increased the maximum not to exceed contract fee from \$7,189,233 by \$155,846 to \$7,345,079; and

WHEREAS, a NINTH AMENDATORY AGREEMENT, executed July 20, 2010 increased the maximum not to exceed contract fee from \$7,345,079 by \$1,473,064 to \$8,818,143; and

**WHEREAS, a TENTH AMENDATORY AGREEMENT, executed August 12, 2011 increased the maximum not to exceed contract fee from \$8,818,143 by \$162,879 to \$8,981,022; and**

**WHEREAS, an ELEVENTH AMENDATORY AGREEMENT, executed October 18, 2011 increased the maximum not to exceed contract fee from \$8,981,022 by \$636,668 to \$9,617,690; and**

**WHEREAS, a TWELFTH AMENDATORY AGREEMENT, executed February 21, 2012 increased the maximum not to exceed contract fee from \$9,617,690 by \$50,000 to \$9,667,690 and extended the contract date to December 31, 2013; and**

**WHEREAS, a THIRTEENTH AMENDATORY AGREEMENT, executed September 18, 2012 increased the maximum not to exceed contract fee from \$9,667,690 by \$59,762 to \$9,727,452; and**

**WHEREAS, a FOURTEENTH AMENDATORY AGREEMENT, executed October 24, 2012 increased the maximum not to exceed contract fee from \$9,727,452 by \$29,873 to \$9,757,325; and**

**WHEREAS, a FIFTEENTH AMENDATORY AGREEMENT, executed May 7, 2013 increased the maximum not to exceed contract fee from \$9,757,325 by \$625,084 to \$10,382,409; and**

**WHEREAS, a SIXTEENTH AMENDATORY AGREEMENT, executed January 21, 2014 extended the Termination Date of the Agreement to December 31, 2014; and**

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

**WHEREAS, TRLIA and CONSULTANT desire to amend Agreement;**

**NOW, THEREFORE, TRLIA and CONSULTANT agree as follows:**

- 1. EXHIBIT A of AGREEMENT shall be amended to perform those additional services as described in Exhibit A to this SEVENTEENTH AMENDMENT.**
- 2. ATTACHMENT B, Provision B.1 of the Agreement shall be revised to increase the maximum not to exceed contract fee by \$726,777 from \$10,382,409 to \$11,109,186.**
- 3. Article 2 of the AGREEMENT shall be amended to extend the Termination Date of the Agreement to December 31, 2015.**
- 4. ATTACHMENT A, Provision A.2 of the Agreement shall be revised to increase the time of services rendered to December 31, 2015.**

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

This Amended agreement is hereby executed on this \_\_\_\_ day of \_\_\_\_\_, 2014.

**THREE RIVERS LEVEE  
IMPROVEMENT AUTHORITY**

**HDR ENGINEERING, INC.**

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

\_\_\_\_\_  
**Robert M. Boling  
Senior Vice President**

**ATTEST:  
DONNA STOTTLEMEYER  
CLERK OF THE BOARD**

**APPROVED AS TO FORM:**

*Andrea P. Clark.*

\_\_\_\_\_  
**ANDREA P. CLARK  
GENERAL COUNSEL**



September 19, 2014

Mr. Paul Brunner  
Three Rivers Levee Improvement Authority  
915 8<sup>th</sup> Street, Suite 115  
Marysville, CA 95901

RE: Design Services for the Western Pacific Interceptor Canal

Dear Mr. Brunner,

HDR Engineering, Inc. (HDR) is pleased to submit this proposal to Three Rivers Levee Improvement Authority (TRLIA) for Design Services for the Western Pacific Interceptor Canal – 200-Year Urban Levee Design Criteria.

Please refer to the attached scope of work and fee proposal. This proposed amendment would increase the contract not-to-exceed amount by \$726,777 to cover the additional services.

If you have any questions or concerns, please call Blake Johnson at (916)817-4879 or Kimberly Brown at (916)817-4925.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Kennedy'.

Holly Kennedy, PE  
*Associate Vice President*  
KB/kg/98455

A handwritten signature in black ink, appearing to read 'Kimberly L. Brown'.

Kimberly Brown, PE  
*Project Manager*

Enclosures (1)

Cc: Blake Johnson, Daniel Jabbour, Katie Gunderman



Scope and Fee Estimate for Engineering  
Design Services along the Western Pacific  
Interceptor Canal (WPIC)

## Engineering and Design (Amendment No. 17)

Three Rivers Levee Improvement Authority

*Yuba County, CA*

September 19, 2014



# Project Understanding

During the last 10 years, the Three Rivers Levee Improvement Authority (TRLIA) designed and constructed improvements to the levees within their jurisdiction in order to attain accreditation from the Federal Emergency Management Agency (FEMA) for a 100-year level of flood protection, including freeboard. On May 27, 2010, the TRLIA levee systems attained FEMA accreditation for a 100-year level of flood protection.

The State of California (Senate Bill 5, 2007) has mandated that levees protecting urban or urbanizing areas, defined as those areas that have or are projected to have populations of 10,000 persons or more, shall have a 200-year level of flood protection by the year 2025. The California Code of Regulations requires that the agency responsible for the flood protection system have a plan for attaining a 200-year level of flood protection by the year 2015. The State of California Department of Water Resources (DWR) provided engineering criteria for a 200-year flood event the Urban Levee Design Criteria (ULDC).

As a part of Amendments 13 and 15 to the original TRLIA contract (HDR Contract number 0071393), HDR Engineering, Inc. (HDR) evaluated the Western Pacific Interceptor Canal (WPIC) West Levee and the Bear River North Levee (east of the setback levee constructed in 2006) against the ULDC. Of the 6.3 miles of the WPIC West Levee, HDR identified 1.7 miles (seven reaches) did not meet ULDC for geotechnical purposes. The 0.8 miles of Bear River North Levee (east of the setback levee) met ULDC.

HDR developed levee improvement features for each reach that did not meet ULDC, as summarized in the draft Geotechnical Alternatives Analysis report dated August 6, 2014. The levee improvement features shown in Table 1 were selected to move forward to design based on a meeting between TRLIA and representatives from the HDR Team, the MBK Team, and TRLIA's environmental consultant, AECOM, and right of way (ROW) consultant, Bender-Rosenthal.

**Table 1. Preliminary Description of Levee Improvement Features**

Levee	Reach	Start Station	End Station	Length (ft)	Levee Improvement Feature
WPIC	1B	10+50	23+50	1,300	73' deep cutoff wall
WPIC	2B	115+00	118+00	300	Ditch backfill to Elevation 43'
WPIC	3	145+50	166+50	2,100	55' deep cutoff wall
WPIC	4B	190+00	195+00	500	26' deep cutoff wall
WPIC	4E	239+50	247+50	800	36' deep cutoff wall
WPIC	5B	260+00	277+00	1,700	10' tall stability berm
WPIC	5D	287+00	310+50	2,350	Fill to Elevation 49'

As a part of this scope of work, HDR will complete preliminary designs, coordinate with TRLIA, the Board of Senior Consultants (BOSC), and Agencies to prepare plans and specifications suitable for bidding.

A preliminary project schedule is include herein which describes the overall work breakdown structure and task duration. For the purpose of this Amendment, it is assumed that construction of the levee improvements on the WPIC West Levee is anticipated to begin in July of 2015 and be completed in 2016.



# Scope of Work

This scope of work has been divided into 5 tasks outlining pre-design, design, deliverables and assumptions. Major tasks are described in detail below and are as follows:

1. Project Management and Coordination
2. Survey
3. Pre-Design
4. Engineering and Design
5. TRLIA Team and Agency Coordination

## 1 Project Management and Coordination

### 1.1 Project Management

HDR's project manager will manage the design contract scope, schedule, and budget for all HDR Team project activities. In addition, the project manager will coordinate with the client, sub-consultant teams, agencies and stakeholders throughout the duration of the project. HDR will help facilitate coordination between TRLIA, United States Army Corps of Engineers (USACE), State of California Department of Water Resources (DWR), the Central Valley Flood Protection Board (CVFPB), local reclamation districts, and other involved agencies to discuss design issues throughout the duration of the project. The project manager will oversee the pre-design and design task managers for all segments of this scope of work.

HDR's project manager will prepare the Project Guide for this scope of work, which will include descriptions of the project team, contact information, communication protocols, scopes of work and task assignments, technical requirements, a detailed schedule, budgets, project administration and documentation protocols. The Project Guide will also include the Quality Control Plan (QCP), described in Task 1.2 below. The Project Guide will be distributed to the HDR Team members and TRLIA, and updated as needed.

#### 1.1.1 Deliverables

- Project Guide (10 Copies, 1 PDF)

#### 1.1.2 Assumptions

- Contract duration is from October 2014 to December 2015.

### 1.2 Quality Assurance & Quality Control (QA/QC)

HDR will prepare a QCP, which will provide the policies and specific actions that will be taken to develop high quality products that are on time and within the specified budget. The QCP will define HDR's management philosophy, approach and dedication for providing TRLIA with deliverables and supporting documents that are complete, conform to standards, and meet or exceed the expectations of HDR and TRLIA.



The QCP will identify key personnel, including internal reviewers and external reviewers that will complete all reviews of the project design. Internal reviewers are those on the HDR team that will complete reviews of draft documents before there are submitted to TRLIA. External reviewers will include TRLIA staff, key agencies (USACE, DWR, and CVFPB), and the Board of Senior Consultants (BOSC) Team personnel (as provided by TRLIA).

The QCP will detail the process for both internal and external reviews, including how the team will document reviewer comments, responses to those comments by the design team, backcheck by the reviewers, and ultimately closure of each comment. Comments will be documented using spreadsheets for internal and external reviews. Quality Control certificates will be provided for both internal reviews and external reviews. The Quality Control review teams (both internal and external) will review the approach presented in the QCP.

#### **1.2.1 Deliverables**

- QCP (included in Project Guide)

#### **1.2.2 Assumptions**

- TRLIA will organize a design review committee that may consist of independent technical representatives from TRLIA consultants as well as appropriate agencies such as USACE, DWR, and the CVFPB.

### **1.3 Progress Reports and Invoicing**

HDR will prepare monthly progress reports that document project activities and update the project schedule and budget status. Items that the progress report will include are:

1. Financial status summary including an earned value analysis by task
2. Project schedule and deliverables
3. Current activities list
4. Issues list (design, schedule, and QA/QC issues)
5. QA/QC review status
6. Decision log

#### **1.3.1 Deliverables:**

- Monthly progress reports
- Monthly schedule updates

### **1.4 Progress Meetings**

HDR will participate in monthly program meetings at the MBK offices in Sacramento. These meetings will include TRLIA staff, HDR Team representatives, MBK Team representatives and representatives from TRLIA's environmental and ROW consultants. The intent of the monthly progress meetings will be to discuss the overall program issues, including coordination, schedule and agency coordination.



#### **1.4.1 Deliverables**

- None

#### **1.4.2 Assumptions**

- HDR team representatives will include the project manager and specific design leads, as appropriate.

## **2 Survey**

As part of the Urban Levee Evaluation (ULE) performed by DWR, LiDAR data was collected along the TRLIA Levee System, including the WPIC West Levee and the Bear River North Levee. In general, the LiDAR data extends from the waterside levee toe to about 100 feet landward of the landside levee toe.

### **2.1 WPIC Survey**

Below is a list of survey-related items and activities needed to complete the tasks included in this scope of work:

- Establish a survey control including field and office work to determine pre-existing LiDAR data horizontal and vertical datum and survey control used in the LiDAR mapping, and recover, establish, and densify survey control for the project for on-going and future survey and construction activities
- Field and office work to survey Reach 2B ditch approximately 100 feet upstream and downstream of the ditch from the landside levee toe to State Route 70 edge of pavement
- Field and office work to survey Reach 5B area from landside levee hinge point to State Route 70 edge of pavement
- Field and office work to survey Reach 5D area from the landside levee toe to State Route 70 edge of pavement

## **3 Pre-Design of Levee Improvements**

### **3.1 Review of Existing Information**

The HDR team will review existing reports, utility surveys, geotechnical data, hydraulic analyses, levee encroachment information, etc. and other relevant information in our project files or provided to us.

### **3.2 Design Alternatives Analysis**

The Design Alternatives Analysis will include an assessment of the design measures, project constraints, and conceptual costs associated with the selected levee improvements described in the draft Geotechnical Alternatives Analysis and presented in Table 1. In addition, the Design Alternatives Analysis will provide preliminary design alternative information for the levee improvements, will outline any necessary utility relocations, will incorporate ROW and environmental constraint information, and will provide conceptual cost estimates for the



preferred levee improvements shown in Table 1. These recommended levee improvements will be reviewed by TRLIA and the stakeholder agencies.

The Design Alternatives Analysis will build upon the draft Geotechnical Alternatives Analysis which was previously prepared by HDR. In general, two remediation alternatives were typically considered for each reach of the WPIC West Levee that did not meet ULDC. Based on a meeting held on August 8, 2014, with TRLIA and representatives from the HDR Team, MBK Team, and TRLIA's environmental and ROW consultants, one remediation alternative was selected for each reach. The Design Alternatives Analysis will confirm the selected levee improvements described in the draft Geotechnical Alternatives Analysis and presented in Table 1 above, as the preferred alternative for each reach.

### **3.2.1 Deliverables**

- Design Alternatives Analysis (10 copies, 1 PDF)

### **3.2.2 Assumptions**

- A preliminary assessment of the environmental constraint information will be provided by TRLIA's environmental consultant, AECOM. This will include an overall, preliminary environmental assessment of the WPIC, including construction constraints due to the presence of habitat, endangered species, etc. The environmental constraints memorandum will also include preliminary mitigation costs associated with levee construction and borrow for the proposed levee improvements.
- A preliminary assessment of the real estate constraint information will be provided by TRLIA's ROW consultant, Bender-Rosenthal. This will include an overall, preliminary assessment of the real estate land use along the WPIC. The real estate constraints memorandum will also include preliminary ROW costs associated with levee construction and borrow for the proposed levee improvements.
- Borrow quantities will be discussed in the alternatives analysis. Development and identification of a borrow site is not included. At this time, borrow will come from a commercial source.

## **3.3 Cost Estimate**

The Design Alternatives Analysis will include the conceptual cost estimate for the proposed levee improvements included in Table 1.

### **3.3.1 Deliverables**

- Preliminary Cost Estimate (included in Design Alternatives Analysis)

### **3.3.2 Assumptions**

- None



## 4 Engineering and Design

### 4.1 Basis of Design Report

HDR will develop a Basis of Design report (BODR) that will describe the accepted project design criteria that will be carried through design. The BODR will summarize the levee repair features that will be carried into the 65% design, and will present specific design criteria and design parameters for levee improvements, interior drainage improvements, roadway construction, utility relocation if required (WAPA Towers and Sprint fiber optic) and anticipated construction staging. A geotechnical BODR will be prepared under a separate cover as part of the Amendment 15 work.

#### 4.1.1 Deliverables:

- Draft Basis of Design concurrent with the 65% submittal (10 copies, 1 CDs)
- Revised Draft Basis of Design concurrent with the 90% submittal (10 copies, 1 CDs)
- Final Basis of Design concurrent with the 100% submittal (10 copies, 1 CDs)

#### 4.1.2 Assumptions:

- Levee improvement features will be as shown in Table 1.
- Hydraulic modeling and the design water surface elevations will be provided by others.
- Detours and traffic control will be provided by the contractor.
- Design Documentation Reports will be provided at the 90% and 100% designs to update the basis of design.

### 4.2 Construction Drawings

Construction drawings will be prepared for the levee improvement features shown in Table 1. The drawings will generally include the following:

- General layout and aerial photography sheets
- Project control sheets
- Project alignment and construction limit sheets
- Levee plan and profile sheets to depict levee degrade and improvements as well as relevant design features
- Typical cross section and detail sheets for the levee, berms, and cutoff wall
- Cutoff wall profiles with logs of borings
- Levee cross sections at 100-ft interval
- Miscellaneous drawings and details relevant to construction

The drawings will also depict a toe access road as identified by TRLIA and the MBK Team and address drainage issues associated with the selected levee improvement features. A preliminary list of drawings is shown in Table 2.



**Table 2. Preliminary List of Drawings**

Type of Drawing	Approximate Number of Sheets
<b>General – Title, Vicinity Map, Drawing List, Abbreviations, Symbols, General Notes</b>	5
Layout, Survey Control, Control Line and Construction Limit	12
<b>Aerial Photo (100-scale)</b>	5
Levee Plan and Profile (40-scale)	15
<b>Typical Sections and Details</b>	6
Levee Cross Sections	20
<b>Cutoff Wall Profile and Geotechnical Stick Logs (100-scale)</b>	4

The drawings will be submitted to TRLIA for review by the BOSC, Agencies and TRLIA. Submittals will be provided at the 65%, 90% and 100% levels. The intent of the 100% submittal is for close out of comments received on the 90% submittal. Once all comments have been closed, HDR will prepare the bid plans.

**4.2.1 Deliverables:**

- 65%, 90%, 100% Half size Construction Drawings (10 Hard Copies, 1 PDF).

**4.2.2 Assumptions:**

- Based on as-built drawings, there are no utility penetrations that require design.
- One set of construction drawings will be prepared for all work described herein and the project will not be phased.
- Four-week turn-around time TRLIA and Regulatory Agencies for the review and comment period at each submittal level.
- Drawings will be prepared using AutoCAD Civil 3D software.
- Borrow sites will not be developed as part of this project. It is assumed that borrow will come from commercial sources.

**4.3 Specifications**

Specifications will be prepared for the levee improvement features shown in Table 1. The specifications will generally include the following:

- Notice to Contractors
- TRLIA General Provisions
- Special Provisions
- Technical specifications
- TRLIA standard contract, forms and instructions
- Bid schedule
- Permits (if available)

General Provisions and Technical Specifications will be developed for the 65% submittal. Special Provisions and a bid schedule will be provided at the 90% level.

The specifications will be submitted to TRLIA for review by the BOSC, Agencies and TRLIA. Submittals will be concurrent with the construction drawing submittals.





#### **4.3.1 Deliverables:**

- 65%, 90%, 100% specifications concurrent with the construction drawing submittals (10 Hard Copies, 1 PDF).

#### **4.3.2 Assumptions:**

- Four-week turn-around time for the regulatory review and comment period.

### **4.4 Opinion of Probable Construction Cost**

Quantity take offs and an Opinion of Probable Construction Cost (OPC) will be prepared for the levee improvement features shown in Table 1. The OPC will be updated at each submittal level and provided to TRLIA. Unit prices used to prepare the OPC will be based on data collected from recently bid projects, adjusted for this project and based on experience.

#### **4.4.1 Deliverables:**

- 65%, 90%, 100% OPC concurrent with the construction drawing submittals (10 Hard Copies, 1 PDF).

#### **4.4.2 Assumptions:**

- The OPC will be prepared using excel software.

### **4.5 Bidding Support**

HDR will assist TRLIA with the bidding process, including attending a pre-bid meeting, preparing bid documents, responding to technical questions submitted by potential bidders and providing clarifying addenda when appropriate.

#### **4.5.1 Deliverables:**

- One addendum to the bid documents.

#### **4.5.2 Comments/Assumptions:**

- One pre-bid meeting and one coordination meeting are assumed.
- One addendum will be required.

## **5 TRLIA Team and Agency Coordination**

HDR will coordinate with other members of the TRLIA team (including the environmental, public outreach, ROW team) as well as the BOSC and review Agencies as needed and as directed by TRLIA to discuss design issues, meet program needs and to help facilitate project approvals. Coordination with WAPA, Sprint, Caltrans, Union Pacific Rail Road Company, will be provided under this task.

### **5.1 Environmental Documentation/Permitting Support**

HDR will support TRLIA's environmental consultant, AECOM for environmental documentation and permitting activities. Specifically, the HDR Team will provide the following:

- A revised project description based off the Basis of Environmental Project Description Technical Memorandum prepared by HDR dated May 15, 2014 and 65% Design Plans



- Review environmental constraints identified by AECOM and incorporate these constraints into the design as appropriate and applicable
- Address and respond to design questions and issues from AECOM during development of the environmental document and permits
- Review the Administrative Draft and Draft Environmental Impact Report (EIR) along with the Mitigation Monitoring and Reporting Plan (MMRP)
- Support TRLIA and MBK in coordination efforts with USACE staff regarding the 408 Authorization. HDR Team members will attend meetings and provide information at TRLIA's direction to support the 408 Authorization. In addition, HDR will review the Administrative Draft and Draft NEPA document prepared as part of the 408 Authorization
- Review draft permit applications for consistency with the proposed design and technically accurate
- Provide design graphics to be used in the environmental documents, permit applications, and at public meetings as requested
- Review of environmental commitments, mitigation measures, and permit requirements so that they are appropriately and adequately addressed in the Design Specifications
- Assist in the preparation of and participate in scoping and public meetings and/or workshops as requested
- Support TRLIA's coordination and consultation with regulatory agencies and stakeholders for understanding of the project design.

#### **5.1.1 Deliverables**

- None

#### **5.1.2 Assumptions**

- The application packages for the USACE 408 Authorization and CVFPB encroachment permit will be prepared by others with support of the HDR team.
- Cost estimate includes an estimated level of effort required for environmental compliance and permitting support.
- One (1) meeting in Yuba City will be required for public outreach.

## **5.2 Right of Way Support**

The HDR Team will support TRLIA's ROW coordination and acquisition program as needed. Support activities will include definition of ROW requirements (e.g. temporary and permanent easements) for levee remediation activities. An allowance has been included in the cost estimate since the actual level of effort needed for support is not known. For budgeting purposes we have assumed that HDR Team members will attend ROW calls and/or meetings approximately every week.

#### **5.2.1 Deliverables**

- None



### 5.2.2 Assumptions:

- Participate in monthly design calls for ROW coordination
- ROW support does not include field surveys or development of plat and legal descriptions
- HDR Team ROW exhibits will consist of AutoCAD line work developed for the design drawings

## 5.3 Public Outreach Support

The HDR Team will support TRLIA's public outreach and involvement process as needed. An allowance has been included in the cost estimate since the actual level of effort needed for support is not known. For budgeting purposes we have assumed that HDR Team members will attend outreach-related meetings every month and three outreach workshops as part of the outreach effort.

### 5.3.1 Deliverables

- None

### 5.3.2 Assumptions

- Participate in monthly calls for outreach coordination
- Attend three meetings or workshops with property owners and/or community stakeholders

## 5.4 Agency and BOSC Review

The HDR Team will participate in one (1) 2-day BOSC meeting per design deliverable (e.g. 65%, 90%).

### 5.4.1 Deliverables

- Meeting notes from BOSC meetings

### 5.4.2 Assumptions

- The HDR Project Manager and design team leads will attend one (1) 2-day BOSC meetings

# 6 Project Schedule

The project schedule is provided below.

### Preliminary Schedule

<b>Task</b>	<b>Start Date</b>
Notice to Proceed	10/8/2014
Surveying	10/13/2014 (2 week duration)
Pre-Design	10/13/2014 (4 week duration)
Prepare 65% PS&E and BODR	10/13/2014 (9 week duration)



HDR Internal review & respond to comments on 65% PS&E and BODR	12/15/2015 (4 week duration)
External review (TRLIA, BOSC & Agencies) of 65% PS&E and BODR	1/12/2015 (2 week duration)
Prepare 90% PS&E and BODR	1/26/2015 (8 week duration)
HDR Internal review & respond to comments on 90% PS&E and BODR	3/23/2015 (2 week duration)
External review (TRLIA, BOSC, & Agencies) of 90% PS&E and BODR	4/6/2015 (2 week duration)
Prepare 100% PSE and BODR	4/20/2015 (6 week duration)
Address and close out of comment	6/1/2015 (1 week duration)
Prepare Bid Documents	6/8/2015 (1 week duration)
Documents ready for bid	6/15/2015
Bid support	6/15/2015 (4 week duration)
Open Bids	7/13/2015

HDR Engineering Design Services Three River Levee Improvement Authority  
HDR Fee Summary – Amendment 17

No.	Task Description	Labor										Total Labor (\$)	Expenses	Sub-Consultants Andropg Surveying	Total	
		Senior Technical Reviewer BJRM	Project Manager BL	Senior Civil DJ	Staff Civil JN	Staff Geotech KB	Environmental LF	CAD Technician HS/AJ	Acct RF	Clerical CN	Total Hours					
	TRRIA WPIC 200-Year ULDC Design Rates	242.00	242.00	199.00	140.00	133.00	125.00	126.00	121.00	100.00						
<b>ENGINEERING DESIGN SERVICES - Western Pacific Interceptor Canal</b>																
Project Management and Coordination																
1.1	Project Management	16	80							40	136	\$ 27,232	\$ 2,179		\$ 29,411	
1.2	Quality Assurance and Quality Control	12	24							16	52	\$ 10,312	\$ 825		\$ 11,137	
1.3	Progress Reports and Invoicing		24						24		48	\$ 8,712	\$ 697		\$ 9,409	
1.4	Progress Meetings		40							24	64	\$ 12,080	\$ 966		\$ 13,046	
	Subtotal Project Management and Coordination	28	168	0	0	0	0	0	24	60	300	\$ 58,336	\$ 4,667		\$ 63,003	
2	Survey															
2.1	WPIC Survey			4	8					8	20	\$ 2,924	\$ 234	\$ 16,500	\$ 21,308	
	Subtotal Survey	0	0	4	8				0	0	20	\$ 2,924	\$ 234	\$ 16,500	\$ 21,308	
3	Pre-Design Levee Improvements															
3.1	Pre-Design Information			8							8	\$ 1,592	\$ 127		\$ 1,719	
3.2	Design Alternatives Analysis	12	16	60	40			60		24	212	\$ 34,276	\$ 2,742		\$ 37,018	
3.3	Cost Estimate	4								24	28	\$ 3,868	\$ 2,868		\$ 6,736	
	Subtotal Pre-Design of Levee Improvements	16	16	68	40			60	0	24	220	\$ 35,868	\$ 2,868		\$ 38,737	
4	Engineering and Design															
4.1	Basis of Design Report	24	60	80		8		60		16	248	\$ 48,472	\$ 3,718		\$ 52,190	
4.2	Construction Drawings	80	160	260	800		1,000			40	2,340	\$ 351,820	\$ 28,146		\$ 379,966	
4.3	Specifications	60	8	100		8		80		80	256	\$ 45,420	\$ 3,634		\$ 49,054	
4.4	Opinion of Probable Construction Cost	16	4	24				8		8	92	\$ 16,016	\$ 1,261		\$ 17,277	
4.5	Bidding Support	8	8	80				80		32	248	\$ 38,672	\$ 3,094		\$ 41,766	
	Subtotal Engineering and Design	188	240	544	880	16	1,140		0	176	3,184	\$ 489,400	\$ 39,872		\$ 529,272	
5	TRRIA Team and Agency Coordination															
5.1	Environmental Compliance Permitting Support	4	24	24				16		8	164	\$ 25,456	\$ 2,036		\$ 27,492	
5.2	Right of Way Support			64							64	\$ 12,736	\$ 1,019		\$ 13,755	
5.3	Public Outreach Support	4	36	24							24	\$ 4,776	\$ 382		\$ 5,158	
5.4	Agency and BOSC Review			152	0	0		16	0	8	80	\$ 17,640	\$ 1,411		\$ 19,051	
	Subtotal TRRIA Team and Agency Coordination	8	60	152	0	0	88	16	0	8	332	\$ 60,608	\$ 4,849		\$ 65,457	
<b>TOTAL EFFORT</b>		240	484	768	928	16	88	1,224	24	288	4,056	\$656,136	\$52,491	\$16,500	\$726,777	