



THREE RIVERS LEVEE IMPROVEMENT AUTHORITY
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THREE RIVERS LEVEE IMPROVEMENT AUTHORITY

Project Status Report dated April 16, 2012

(Submitted to The Central Valley Flood Protection Board for the April 27, 2012 meeting)

A progress report of the various phases of the Three Rivers Levee Improvement Authority (TRLIA) program is provided in the following sections of this document. *Updates are indicated with italics and underline.*

1. Levee Design and Construction Work:

a. Phase 4 – Yuba River Levee between Simpson Lane and the Goldfields:

- 1) **Environmental:** The TRLIA Board adopted a Mitigated Negative Declaration on April 20, 2010 and a Notice of Determination was filed on April 23, 2010. The Corps signed the NEPA Finding of No Significant Impact (FONSI) on December 29, 2010.

The CVFPB Anderson Elderberry Mitigation Site encroachment permit was signed and issued to TRLIA on February 7, 2011. TRLIA transplanted the final three shrubs on June 20, 2011. Because the final three shrubs were transplanted in the non-dormant season, the number of associated elderberry seedlings was increased in the revised biological opinion (BO) from 22 seedlings to 250 seedlings. CVFPB Staff has directed TRLIA to make a separate permit application for the additional seedling plantings. *TRLIA submitted a new encroachment permit application for the additional plantings on April 11, 2012.*

- 2) **Design:** Complete.
- 3) **Construction:** Levee embankment construction is complete. Remaining tasks include placement of aggregate base for a portion of the patrol road and installing fencing along the landside O&M corridor. Winter conditions required that construction stop for this year. *Construction on the few remaining items is anticipated to begin again in late May or early June and be completed within a few months.*

b. Phase 4 – Yuba River Levee between Highway 70 and Shad Road:

TRLIA is working to improve landside levee conditions along a short stretch (400 feet) of the Yuba Levee between Highway 70 and Shad Road. The USACE Periodic Inspection noted erosion problems on the landside slope and closer evaluation found a vertical wall in the levee slope, a power line at the levee toe, and no O&M access corridor. TRLIA

continues with design and acquisition efforts that will remove the vertical wall, remove trees at the toe of the levee, relocate the power line, repair and flatten the levee slope, and provide enough land for a 20 foot O&M access corridor for operation, maintenance, and flood fight efforts. The TRLIA Board adopted a CEQA Addendum to cover these efforts at their January 17, 2012 meeting. A relocation plan for tenants who currently live in camping trailers at the toe of the levee was adopted by the TRLIA Board on February 21, 2012. Relocation efforts for the displaced tenants are underway. Design is 60% complete on the plans and specifications which are under review by USACE, DWR, and CVFPB staff. TRLIA submitted an encroachment permit application for these improvements on February 8, 2012. Construction is scheduled to occur in late summer. This work will be cost shared with DWR as part of the UYLIP EIP.

c. Phase 4 – Feather River Levee between Bear and Yuba Rivers:

1) **Segment 2:** Complete. On March 14, 2012 the State Mining and Geology Board (SMGB) informed TRLIA that the lands affected by surface mining activities at the Ella and Platter Borrow Sites had been reclaimed in accordance with the approved reclamation plan and approved release of the financial assurance instrument for the site per California Code of Regulations (CCR) Section 3805.5. The SMGB letter went on to state... "During the past three years the Three Rivers Levee Improvement Authority (TRLIA) has consistently provided timely and complete responses to requests of this office, and the SMGB sincerely appreciates such efforts."

2) Segment 3:

a) **Parcel Encroachments North of Island Avenue (lot 155 to 120):** In the process of providing landside toe access corridors as required by the Corps, CVFPB, and DWR, TRLIA and RD 784 determined that a group of land owners had encroached onto land owned by the CVFPB. This encroachment occurs on 51 parcels that exist along the east levee of the Feather River north of Island Avenue. In most cases, the encroachment consists of a fence in the wrong place and some vegetation. In five cases, there are physical structures (only two permanent structures) that have encroached onto CVFPB land. The initial plan was to remove the encroached fences and vegetation and build a new fence on the correct property line. In those few cases that have structure encroachments, TRLIA proposed to work with the land owner to develop a way to remove or modify the encroachment that will be the least burdensome to the property owner. TRLIA held a public meeting with assistance from CVFPB Staff in the area on August 22 to present information on TRLIA's plan of action and to answer questions of the affected land owners. TRLIA has submitted an encroachment permit application to build the new fence. A hearing was held by the CVFPB on December 2, 2011 for land owners that requested a hearing regarding these encroachments. TRLIA and CVFPB Staff were directed to work together to develop options that could be implemented along this encroached reach that might allow the land owners to continue using some of the encroached area. TRLIA with assistance from CVFPB Staff held another public meeting on January 10, 2012 to discuss these options with the local parcel owners. TRLIA supports the option which sets the new fence 20

feet from the existing landside levee toe and allows the parcel owner to use the remaining State land through a license with the State. The CVFPB held a hearing on these encroachments and the fence encroachment permit at the January 26, 2012 Board meeting in Marysville, Ca. Due to an inadequate time submittal of hearing materials to the subject parcel owners, the Board could not take action on these encroachments and permit application. Hearings on these encroachments were again held by the CVFPB on March 2, 2012 in Marysville, CA. The CVFPB chose to not take actions on the encroachments at that meeting due to again not providing the parcel members with hearing material in the required time period. The CVFPB did approve an encroachment permit for construction of the fence. However, fence construction cannot occur until final action on the encroachments, until a drainage plan is developed and reviewed, until coordination regarding elderberry shrubs has occurred with the USFWS, and until CVFPB Staff have been consulted regarding the appropriate location of the landside levee toe. A meeting was held on April 16 with CVFPB Staff to discuss options for providing the O&M Corridor.

- b) **Parcel Encroachments North of Island Avenue (lot 119 to 82A):** TRLIA is also pursuing acquisition of additional land from eight other parcels. This acquisition is needed to provide an adequate fenced toe access corridor. TRLIA has discussed acquisition with CVFPB and DWR staff and is moving forward with appraisals.

2. Goldfields:

- a. TRLIA analyses of the Goldfields have identified a flood risk through the Goldfields. Working with the mining companies, TRLIA has taken steps to reduce this risk for the 2011-2012 flood season by constructing blocks at critical locations. TRLIA is pursuing additional geotechnical, hydraulic, geomorphic, and environmental studies to determine what work must be accomplished to provide permanent 100 and 200-year flood protection in the Goldfields. TRLIA has selected geotechnical, geomorphic, hydraulic, and environmental consultants to accomplish these studies. The current status report of the Goldfields High Ground Evaluation, which is provided to the TRLIA Board, is attached to this status report. DWR announced on April 2, 2012 that the Decision Memorandum to use Proposition 13 funds for the Goldfields work (Feasibility Study) was approved. A Board of Senior Consultants (BOSC) meeting was held on February 23, 2012 to provide initial information on the Goldfields High Ground Evaluation.
- b. TRLIA remains committed to achieving 200 year flood protection for South Yuba County, and will keep the CVFPB and others up to date on our progress with the Goldfields evaluation.

Attachments:

1. Goldfields High Ground Evaluation Status

TO: Three Rivers Levee Improvement Authority Board of Directors

FROM: Paul Brunner, Executive Director

SUBJECT: Goldfields High Ground Evaluation Status, March 2012

A progress report of the various phases of the Three Rivers Levee Improvement Authority (TRLIA) work in the Goldfields is provided in the following sections of this document. Updates to this report are indicated with italics and underline.

STATUS OF ANALYSIS EFFORTS:

Geotechnical

ENGEO as TRLIA's consultant has been collecting and examining historical information on dredging operations in the Goldfields. ENGEO has coordinated with the aggregate companies to obtain as much existing geotechnical exploration information as possible. ENGEO has evaluated the existing geotechnical exploration information and determined that the initial additional exploration plan of 9 test pits is adequate for now. More explorations may be proposed in the future closer to potential projects. The Goldfields Board of Senior Consultants (BOSC), which met on February 23, concurred with this approach. The Goldfields BOSC consists of Dr. Les Harder, Mr. George Sills, and Dr. David T. Williams. Because this effort is to determine if the Goldfields will serve as high ground, an initial high ground (as opposed to a levee) definition for the dredge tailing mounds in the Goldfields has been proposed. Final details of the definition are still being developed. The BOSC is in agreement with the approach proposed in the high ground definition and is waiting for more detail on specific parameters proposed in the definition. ENGEO is working with topography in the Goldfields and initial 100-year flood elevations to begin identification of potential weak points in the Goldfields. ENGEO has completed developing breach geometry for the breach sites in the South Training Wall to be used in the final determination of flood elevations in the Goldfields. ENGEO has formulated an initial array of alignments through the Goldfields which could serve as high ground, see Alternatives Table. These alignments are being evaluated to determine which would best serve providing 100-year protection quickly and ultimately 200-year protection. Evaluation criteria includes amount of material required to implement, impacts to mining plans, right of way requirements, and environmental impacts. TRLIA plans to discuss these alternatives with the mining interests very soon.

Hydraulic

MBK as TRLIA's consultant has developed hydraulic models of the Goldfields to be used in determining water surface elevations in the Goldfields for identifying potential weak points. These models have just completed an independent technical review and no significant comments were received. MBK is revising documentation regarding the hydraulic models to address review comments. MBK has supplied ENGEO preliminary 100-year water surface elevations in the Goldfields for the initial screening for weak locations. MBK will perform additional hydraulic analyses to provide hydraulic parameters for use in the geomorphic and geotechnical evaluations. Geotechnical weak point identification may require the expansion of hydraulic models if new conveyance corridors are identified due to breaks in the conveying mound banks. Repair alternatives will be hydraulically evaluated to ensure that they are effective in providing

flood protection. MBK is evaluating the hydraulic impacts of blocking certain flow channels as required by the alternatives.

Geomorphic

CBEC as TRLIA's consultant is conducting an historic literature review to summarize previous relevant report and papers for geomorphic research on the Lower Yuba River. CBEC will provide comment on the relevance of the collected information with respect to the erodibility of the South Training Wall. CBEC is collecting, inspecting, and cataloging historic aerial photographs in order to map meander patterns to assist in identifying locations where the river is likely to continue to erode or begin erosion of the training wall. CBEC has installed staff gages along the Yuba River and within the Goldfields to gather information this winter that can be used to determine the Goldfields interior water elevation response to high stages in the Yuba River. An additional interior gage was installed at the west end of the Goldfields and closer to the Training Wall as suggested by the BOSC. One high water event did occur in March which will give some data to be used in evaluating the Goldfields interior response to high stages in the Yuba River. Information on the material composition of the training wall will be gathered and used to identify locations where erosion is likely to occur and estimate a rate of erosion. CBEC performed an evaluation of erosion history at Site J at the upstream end of the Goldfields which is being used in determining breach risk at this location. While the risk of a breach for a 100-year event at Site J is low, the risk of flooding from a breach could be greatly reduced by placing a small amount of fill on BLM land. TRLIA is coordinating with BLM to get permission to place this material.

Historic Research

Review of identified historical reports and records continues to determine past Federal and State actions and responsibilities in the Goldfields related to construction and maintenance of the debris control facilities. These reports and records are under examination for pertinent information with respect to the river control features constructed in the past. The intent of the research is to define and clarify the purpose of these facilities, identify responsibilities that the State and Federal government may have to maintain these facilities and the relationship of these facilities to the Sacramento River Flood Control Project. TRLIA recently obtained electronic copies of many historic documents from Western Aggregates which may provide background on agreements between the Reclamation Board and mining interests for the removal of the Linda Levee in the Goldfields. Research of these documents is underway to determine if the mining interests assumed certain responsibilities in return for approval to remove the Linda Levee.

Right of Way (ROW)

USACE owns large parts of the Goldfields even though the aggregate and dredging companies have the mineral rights on those lands. Four of the test pits are located on USACE owned lands and TRLIA must obtain a right of entry to do these test pits. Obtaining approval for the right of entry is an involved process. TRLIA met with USACE on January 31 to investigate the test pit locations and obtain geotechnical clearance. TRLIA continues coordination with USACE regarding environmental clearance for the test pits. ENGEO coordinated with the mining companies and has excavated the test pits that are not on USACE lands. As repair alternatives are identified, ROW efforts will be necessary to obtain adequate rights to implement these alternatives. USACE has an easement over a large portion of the western Goldfields. TRLIA is determining the details of this easement.

Environmental

Environmental consultation *continues to be* minimal at the beginning of the analysis. *AECOM has accomplished a field survey for one of the 100-year alternatives. This survey will help in determining environmental impacts of the alternative as well as identifying what actions are necessary to obtain any necessary permits and to mitigate for any impacts.*

FINANCIAL IMPLICATIONS:





TRLIA has incurred costs associated with this work (including both design and construction expenses) in advance of a new or modified funding agreement covering the costs of this work by the State. Currently TRLIA EIP funding agreements do not provide funding for this work and TRLIA is paying for this work with local prior levee funding resources. The Department of Water Resources has identified some remaining Proposition 13 Funds that can only be used in the Yuba and Feather River Watersheds. TRLIA has made application for a grant from this program. *DWR announced on April 2, 2012 that the Decision Memorandum to use Proposition 13 funds for the Goldfields work (Feasibility Study) was approved. This is very good news in that the State will now be cost sharing in this effort.*


RECOMMENDATIONS:

Staff recommends that the Board receive and file this report.

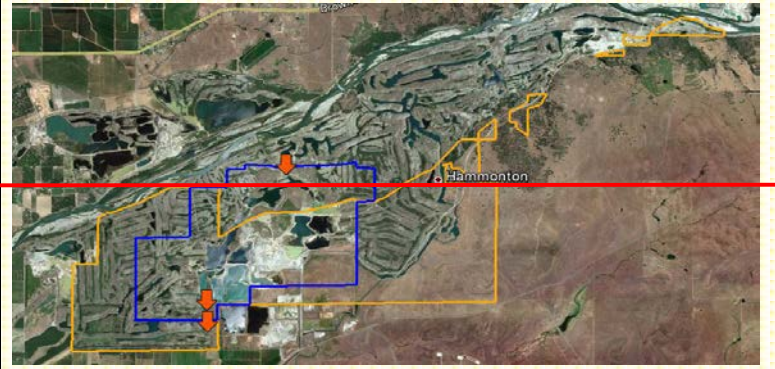
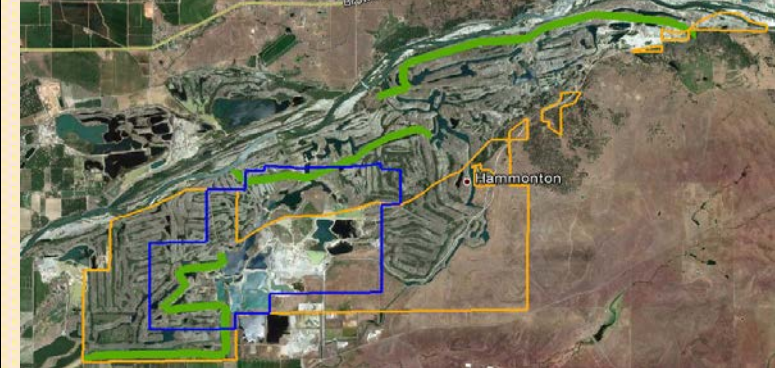


ATTACHMENTS

Alternatives Table

Number	Name	Description	<p>Green = High Ground Alignment Blue = Gold Mining Limits Orange=Aggregate Mining Limits</p>	Impacts					Relative Earthwork Volume	100 year, Temporary	200 year, Permanent	Risk Considerations
				Aggregate Mining	Gold Dredging	USACE	BLM	YCWA				
1a	Continuous High Ground Near Yuba River	Build continuous high ground landside of Southern Training Wall. Construct one-way outlets at Waterway 13 and problem site A		Encroachment of High Ground into reclamation area	None	Portions of improvements on USACE property	Portions of improvements on BLM property	None	High		✓	Addresses entire Goldfields. Approval may be slow on USACE property.
1b	Continuous High Ground Near Yuba River, Cut-off North of Daguerre	Build continuous high ground landside of existing Southern Training Wall. Construct one-way outlets at waterway 13 and problem site A		Encroachment of High Ground into reclamation area	None	Portions of improvements on USACE property	Portions of improvements on BLM property	None	High		✓	Addresses entire Goldfields. Approval may be slow on USACE property.
1c	Continuous High Ground Near Yuba River, Alternate Route Through Middle Goldfields	Build continuous high ground landside of existing Southern Training Wall and then through the middle goldfields. Construct one-way outlets at problem site A		Encroachment of High Ground into reclamation area	Encroachment into Gold Boundary	Portions of improvements on USACE property	None	Crossing Over YCWA Waterway	High		✓	Addresses entire Goldfields. Approval may be slow on USACE property.
2a	Continuous High Ground South, Route 2a	Build continuous high ground starting from existing project levee and then through the middle goldfields.		Encroachment of High Ground into reclamation area	Encroachment into Gold Boundary	Portions of improvements on USACE property inside Gold Boundary	None	Crossing Over YCWA Waterway	High	✓		Addresses entire Goldfields. Approval may be slow on USACE property.

2b	Continuous High Ground South, Route 2b	Build continuous high ground starting from existing project levee and then through the middle goldfields.		Encroachment of High Ground into reclamation area	Encroachment into Gold Boundary	Portions of improvements on USACE property inside Gold Boundary	None	Crossing Over YCWA Waterway	High	✓	Addresses entire Goldfields. Approval may be slow on USACE property.
2c	Continuous High Ground South, Route 2c	Build continuous high ground starting from existing project levee and then through the middle goldfields.		Encroachment of High Ground into reclamation area	Encroachment into Gold Boundary	Portions of improvements on USACE property inside Gold Boundary	None	Crossing Over YCWA Waterway	High	✓	Addresses entire Goldfields. Approval may be slow on USACE property.
3a	Partial Southern Boundary High Ground	Build continuous high ground along southern boundary. Consider a one-way drain from upper to lower goldfields		Encroachment of High Ground into reclamation area	Encroachment into Gold Boundary	none	None	None	Low	✓	Addresses possible breach in the lower Goldfields. Unsure of protection from breaches in middle Goldfields. Does not provide continuous high ground.
3b	Partial Southern Boundary High Ground	Build continuous high ground along southern boundary and crossing 21		Encroachment of High Ground into reclamation area	Encroachment into Gold Boundary	none	None	None	Low	✓	Addresses possible breaches in lower and middle Goldfields. Does not provide continuous high ground.
4	Limited High Ground Restoration South of Daguerre	Reinforce the training wall at critical scour areas and Problem Site A. Construct one way drains at waterway 13 and Site A.		None	None	Portions of improvements on USACE property	None	None	Moderate	✓	Addresses only critical scour areas in Lower and Middle Goldfields. Does not define the Goldfields as high ground.

Flood flows would be forced east and likely exit the Goldfields

5	Verify repairs and tailings meet high ground requirements. Assume Training wall will breach at all Tier 1 Sites.		Encroachment of flood control features into reclamation area	Encroachment into RP80-01 Gold Boundary	none	none	none	None	✓	Likely not sustainable with mining operations. Addresses only breaches in Middle and Lower Goldfields. Does not necessarily define the Goldfields as high ground.
<div style="border: 1px solid red; padding: 5px; width: fit-content;">Would not meet geotechnical criterion</div>										
6	Strategic non-Continuous High Ground ("The Trieu Blue") Build strategic non-continuous high ground through Goldfields		Encroachment of High Ground into reclamation area	Encroachment into RP80-01 Gold Boundary	Portions of improvements on USACE property	Portions of improvements on BLM property	none	Moderate	✓	Could a breach at F flow out YCWA canal route?
7a	The Plug Approach Build strategic plugs in critical location through Goldfields, Site B, Site J, Crossing 21		Encroachment of High Ground into reclamation area	Encroachment into RP80-01 Gold Boundary	Portions of improvements on USACE property or easement but inside Gold or Western mining areas	Portions of improvements on BLM property	none	Low	✓	Could a breach at F flow out YCWA canal route? Would a breach at Site A be ok?
7b	The Plug Approach Build strategic plugs in critical location through Goldfields, Waterway 17, 30, 32, 40, Site J, Crossing 21		Encroachment of High Ground into reclamation area	Encroachment into RP80-01 Gold Boundary	Portions of improvements on USACE property or easement but inside Gold or Western mining areas	Portions of improvements on BLM property	none	Low	✓	Could a breach at F flow out YCWA canal route?