



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

May 12, 2015

MONTHLY ACTIVITIES- April-May 2015

- 1) Draft authorization letter for City of Reno early entry request.
- 2) Met with TRFMA and City of Reno April 28th to discuss Riverside Model findings.
- 3) Met with City of Reno April 28th to discuss inspection issues and next steps.
- 4) Evaluate model between Second Street and Wells Avenue for potential project boundaries; incorporate LiDAR survey to update sections.
- 5) Emails with USACE regarding historical file data from Martis Creek Agreement.
- 6) Follow-up emails with City of Reno Building Department regarding 3305 Idlewild Drive deck.
- 7) Call with Summit Engineering regarding Stagg Lane river rock encroachment.
- 8) Inspected side channel upstream of Kietzke Bridge for debris activity.
- 9) Research temporary flood control measures and submit pricing inquiries.

UPCOMING ACTIVITIES

- 1) Finalize Virginia Street Bridge Replacement Project encroachment permit once other regulatory permits are ready to be issued.
- 2) Complete Semi-Annual River Inspection and USACE Semi-Annual Reporting.
- 3) Evaluate temporary flood control measures including cost, storage, installation requirements and options for West Street Plaza and Riverside Drive.
- 4) Evaluate additional needs for model updates upstream of Keystone Avenue to State Line and downstream of Lake Street to Glendale Bridge.
- 5) Run 14,000cfs steady state HEC-RAS flow model to establish water surface elevations along key river locations to evaluate issues; complete sections upstream and downstream of downtown.
- 6) Schedule a meeting with USACE Regulatory Branch (July 2015) to discuss project work including debris removal, shoaling deposits and box removal.
- 7) Schedule a meeting and with USACE Flood Control Branch (Sept-Oct 2015) regarding inspection issues, West Street Plaza, 14,000cfs model outcomes and evaluation of channel walls in downtown Reno and appropriate application/confirmation of SWIF process eligibility.
- 8) Continued coordination with City of Reno for 1) Flood Response evaluation and incorporation of Interim Risk Reduction Measures into their Flood Response plan, 2) Flap-gate Installation needs assessment and project and 3) Vegetation Variance for trees along channel- not expected to be necessary due to interim order.

- 9) Draft Vegetation Variance Application for Trees in Vegetation Free Zone if applicable under SWIF; confirm eligibility with USACE.
- 10) Finalize the Equipment Access/Entry Point Documentation and Mapping for the District Jurisdiction;

SUMMARY REPORT

A meeting was held with the TRFMA and the City of Reno to discuss the findings from the updated model along Riverside Drive. It was determined that we would request historical survey data from the USACE Flood Branch that might have been the basis for the Martis Creek Agreement and its elevations in order to establish if changes to the river channel have taken place since the inception of that agreement and to evaluate the initial condition compared to the current findings. That information has been requested and the USACE office is reviewing their files. Secondly, it was determined that the CTWCD would start an initial evaluation of options to provide additional temporary flood barriers/measures that could be used along Riverside Drive and options are to be discussed with the group including costs, benefits, installation requirements, feasibility and possible inclusion into the City's Flood Response Plan. Both TRFMA and The City of Reno showed interest in providing support for a combined effort.

A second meeting was held with the City of Reno to discuss inspection issues which include the West Street Plaza interim risk reduction/ mitigation measures for the wall encroachment and next steps for the flap-gate evaluations and installation project. The City will discuss the Plaza with a potential developer and report back on findings and options. The City has engaged an engineering firm to begin the flap-gate assessment. In addition, the City is willing to incorporate mitigation requirements into their Flood Response Plan.

The Virginia Street Bridge Encroachment Permit execution by USACE is still on hold pending communication to the USACE Sacramento Flood Control Branch that the 404 USACE Regulatory Permit is ready for issue. The signature process may take up to two weeks to complete the Encroachment Permit for Reno's use.

Tri Sage has communicated with the City of Reno Building Department regarding the requirement for an encroachment permit for all structures in the 14,000cfs flood channel, including decks that are requesting a building permit. It is not clear if the property owner at 3305 Idlewild Drive will remove the deck or apply for a building permit/encroachment permit. Legal counsel is evaluating the District's jurisdiction over the deck at 3375 Idlewild Drive which was established prior to the Martis Creek Agreement.

Tri Sage has discussed the river encroachment at 6500 Stagg Lane with the property owner's engineer and the engineer has instructed the owner not to pursue a permit but rather for the owner to replace the river rocks to the original condition removing the impoundments once the flows reduce this summer. The Owner is supposed to notify the District when this work is complete; however, Tri Sage will keep tabs on this once flows decline and issue a letter of reminder if necessary.

The side-channel upstream of the Kietzke Bridge, which was cleared of blockage debris in the 2013 Debris Removal Project, was re-inspected for activity this month to insure the channel was flowing without obstruction. The channel was found to be clear of activity and debris.

The following section is repeated from prior reports(*updates in Italics*):

Notably, the USACE has yet to issue their inspection report from April 2013. As a reminder, the USACE criteria for rehabilitation funding and notifications changed late in 2013 such that the CTWCD inspection issues are not subject to loss of the rehabilitation funding nor notification.

Since the May 2014 monthly report, no further discussion has been had with the USACE regarding the determination of “Floodwalls” versus “Channel walls” through the downtown Reno river corridor; however this is an issue that will be pursued for some resolution as it impacts other inspection issues as noted below.

The Status of USACE inspection issues are noted below and the status remains unchanged since July’s Monthly report except for the removal of the Box Culvert at Idlewild Drive and other italicized sections.

- 1) Shoaling- the shoaling deposits identified by USACE have been included in the recent modeling and at the current stage are NOT impacting the 14,000cfs flow. The USACE requested sensitivity analyses have been performed and indicate that doubling the size of the shoaling deposits does NOT push the waters out of the banks in any of the four areas identified during the inspection. The Keystone Avenue Bridge area has been eliminated as a shoaling deposit.
- 2) Flap-gates- *The City of Reno has engaged an engineer to evaluate each penetration relative to the water surface elevation at 14,000cfs through the downtown reach.* Once we have the model updated and run at the reaches upstream and downstream of the downtown areas to produce water surface elevation data, the City of Reno will continue their evaluation on the storm-drain penetrations into the channel. Tri Sage was able to get GIS data for the storm drain locations to correlate to model flow elevations.
- 3) Vegetation- vegetation along the walls and growing from the walls was removed by the City of Reno as part of the 2013 Debris Removal Project; however during the inspection it was noted that vegetation is developing again. *This was too minor to address in 2014 and will be cut back as part of the 2015 project work.* Potential determination of the walls as channel walls, not floodwalls means that there is no “vegetation free zone” requirement and other than the short section that the USACE might determine to be floodwalls, vegetation may become a moot point once specific determination is confirmed.
- 4) *Idlewild Box Culvert/Bank Erosion- the box culvert encroachment was removed in October 2014 and once the flow has an opportunity to re-establish in the unobstructed channel the bank erosion on the Right Bank will be further evaluated if necessary.*
- 5) Flood Response- It appears from the current modeling that the 14,000cfs water surface elevation is below the horizontal surface in all areas downtown except for the West Street Plaza area. There was no approved encroachment by the USACE or the CTWCD for this project including the removal of the walls and railings along this section of river. The USACE has requested that the CTWCD work with the City of Reno to propose Interim Risk Reduction Measures that can be reviewed and approved by the USACE and incorporated into the City’s Flood Response Plan. *The City of Reno is working with the potential developer on this matter and will propose temporary measures at a minimum.* It is not clear at this writing what the requirements will be relative to the

placement of plywood along the railings and walls as called for in the Martis Creek Agreement now that it is apparent from the modeling that the 14,000cfs flow is below the top of wall and below the horizontal surface in all sections except the West Street Plaza.

Next steps include the evaluation and running of the model in reaches above and below the Keystone to Lake Street areas for the determination of water surface elevations. Discussion with agencies regarding the sections along Riverside Drive Bridge where the water leaves the channel at 14,000cfs and evaluation of mitigation options. The City of Reno is working to address the flap-gate needs as well as the Interim Risk Reduction Measures (IRRM) for the West Street Plaza. Director Penrose and Tri Sage will plan a meeting with the USACE Flood Control Branch in September or October of 2015 to discuss the inspection report and associated issues; this will give time for several items to be addressed including the flap-gates and the IRRM.

RECOMMENDATION

It is recommended that the Board of Directors continue to pursue the inspection/evaluation items as outlined in this report.