



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

December 1, 2014

MONTHLY ACTIVITIES- October & November 2014

- 1) Monitor City of Reno removal of the Box Culvert at Idlewild Drive and draft the narrative/photo report required by the District's NDEP Working in Waters General Permit.
- 2) Finalize contractor agreement, resolve access issues with finalized entry agreements, manage debris removal work performed by Reno Tahoe Construction, and draft the narrative/photo report required by the District's NDEP Working in Waters General Permit.
- 3) Perform semi-annual river inspection and draft report and cover letter for USACE.
- 4) Apply for newly released NDEP General Working in Waters Permit on behalf of the District for Todd Westergard to execute and deliver.
- 5) Emails with USACE regarding the West Street Plaza area and USACE short and long term expectations; as well as an update to the USACE primary contact for the District.
- 6) Continued development of updated model sections along Riverside Drive near Keystone Bridge to evaluate model outcomes and water elevations.
- 7) Follow-up with TRFMA regarding LIDAR aerial surveying performed October 5, 2014; process invoice with the office.

UPCOMING ACTIVITIES

- 1) Run model and review outcomes for areas downstream of Keystone Avenue bridge problem area where water leaves the channel at 14,000cfs; evaluate options for containment.
- 2) Evaluate additional debris removal work upstream of Sutro at Waste Management.
- 3) Evaluate additional needs for model updates upstream of Keystone Avenue to State Line and downstream of Lake Street to Glendale Bridge.
- 4) 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.
- 5) Schedule a meeting and with USACE 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.
- 6) Continued coordination with City of Reno for 1) Flood Response evaluation and incorporation of Interim Risk Reduction Measures into their plan, 2) Flap-gate Installation needs and project and 3) Vegetation Variance for trees along channel- not expected to be necessary due to interim order.
- 7) Finalize Virginia Street Bridge Replacement Project encroachment permit once other regulatory permits are issued.

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

SUMMARY REPORT

River flows through downtown Reno were less than 50 cfs for most of the past two months but the river flows have recently picked up with the release of some fish water and other stored water from the reservoirs. Fortunately all the District's work was completed during the low flow periods and prior to this increased flow.

In early October when flows were extremely low in the river, the City of Reno began the removal of the Box Culvert at Idlewild Drive. As authorized by the Board at a prior meeting, Tri Sage assisted the City with access and regulatory permitting requirements which included the monitoring of the work and reporting under the NDEP General Working in Waters Permit held by the District for this type of work. The Board has received a copy of this report that will be sent to NDEP at the end of the 4th Quarter; see that report for details. The City of Reno spent an estimated \$29,500 on this project. The City workers did an outstanding job and overcame many challenges to efficiently and effectively remove this encroachment. Once the flow patterns in this reach re-establish with the box out of the way, the Idlewild bank erosion can be further evaluated if necessary.

Tri Sage finalized the agreement with the contractor in early October and worked to obtain rights-of-entry for the County Park at Mayberry and also to get approval to access the Lake Ditch intake. Once access issues were completed, the project went very well. In mid-October the 2014 Debris Removal work was started with Tri Sage managing the contractor Reno Tahoe Construction who completed all identified areas in record time. In addition several additional pieces of debris were added to the project and removed along the way. The project used only about 60% of the authorized \$25,000 budget for the contractor. RTC again did an excellent and efficient job for the District on this removal work. Tri Sage monitored the work and has drafted the NDEP report for this work which will be submitted to NDEP at the end of the 4th Quarter and the Board has received a copy of this report with the details of the debris removal incorporated.

Tri Sage completed the semi-annual inspection and report required under by the USACE under the Martis Creek Agreement. There have not been any flow events on the river so the status is mostly the same as the June Report but with the box culvert encroachment removed. This removal is an important improvement to the channel. The Board has been sent a copy of the semi-annual report so details can be viewed in the report. The inspection status conditions remain mostly unchanged as noted near the end of this report.

Last month, NDEP issued an update to the General Working in Water Ways Permit that the District does the majority of the maintenance work under; this required the District to apply for the new permit without fees at this time as the fees will continue to be collected from the District for the new fiscal year in July. The updated permit has modified the quarterly reporting requirements such that reports are no longer due on the first day of the following the end of the quarter, but now by the 28th of the month following the quarters end.

Model cross sections are being refined using the survey data collected along Riverside Driver and the model will be run at the 14,000cfs flow. Model results will be evaluated to determine the appropriate next steps if the surveys do not resolve the model issues and retain the flow in the banks at this flow rate.

TRFMA completed the Topo-Bathymetric LIDAR study of the river from the State line to Wadsworth during this low flow period on Sunday October 5th, 2014. TRFMA issued an invoice to the District for their portion of this work. It will take approximately three months or more for data from this effort to become available for modeling purposes.

The City of Reno is working with a developer who is interested in making some modifications to the West Street Plaza which is the area that has been identified with inundation during a 14,000cfs event and also is the subject of USACE encroachment concerns. Tri Sage met with the City and discuss opportunities to have planned modifications support the Interim Risk Reduction Measures or permitting as might be requested by the USACE for this area. The USACE confirmed that ideally they would like permanent modifications made to the Plaza that will prevent the inundation of water during the 14,000cfs flow event; however, in the short term, the USACE indicated that they would be agreeable to Interim Risk Reduction Measures being implemented. Discussions will continue on both the long term and short term solutions.

Currently the schedule for Virginia Street Bridge construction will be for a start of work in 2015 as soon as river conditions permit assuming all permits are received by the City of Reno. The City of Reno is continuing to working on issues related to the issuance of the USACE 404 Permit for this project. The City will need a letter from the CTWCD authorizing work prior to June if work in the channel is possible due to flow conditions. At the last meeting the Board delayed acting on this letter until closer to the project start time.

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- Now that we have model water surface elevations in the downtown areas, the City of Reno will evaluate each penetration relative to the water surface elevation at 14,000cfs. (This work has been delayed due to personnel changes at the City). 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. 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. The model runs will be updated for the sections around the Keystone Avenue Bridge where the water leaves the channel at 14,000cfs and re-run to see if the model updates solve this issue or if other measures will be required. The City of Reno will work to address the flap-gate needs as well as the Interim Risk Reduction Measures for the West Street Plaza. Director Penrose and Tri Sage will plan a meeting with the USACE to discuss the inspection report and associated issues.

RECOMMENDATION

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