



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

September 1, 2017

MONTHLY ACTIVITIES- July- August

- 1) Complete semi-annual river inspection required by Martis Agreement (delayed due to high flows) and identified additional debris for removal by contractor.
- 2) Bid opening for Flood Debris and Deposit removal work; work with contractor to address means and methods allowable by the USACE and amend bid and agreement for additional work. Complete and issue contract.
- 3) Work with property owners for access for Flood work; access denied by property owner at Stag Lane so work was eliminated from the contract.
- 4) Monitor debris and deposit removal work in the river for reporting & FEMA needs.
- 5) Submit a request to State DEM for an extension of time beyond the August 17, 2017 project completion date for the completion of the sites submitted in the #4 District project.
- 6) Meet with FEMA on regarding quarterly project reporting & final documents; correspond with FEMA regarding estimates and Project Change Request.
- 7) Began drafting Semi-Annual Report for USACE.
- 8) Prepare letter to NV DWR declining to apply for Grant application for Clearing Funding.
- 9) Conference calls with USACE Flood Branch regarding 408 Permit review delays and applicants including USFWS and NDOT; discuss issue with Congressman Amodei's office.
- 10) Review NV Lands request for light project; no permit required.
- 11) Discuss 408 Permit requirements with NDOT Spaghetti Bowl contractor; 14,000cfs model needed for this reach.

UPCOMING ACTIVITIES

- 1) Monitor ongoing debris removal work and draft NDEP Working in Water Reporting.
- 2) Monitor City of Reno work to remove deposition in and around Wingfield Park to restore flood channel capacity.
- 3) Complete FEMA quarterly reporting for completed sites; and change request for estimated sites.
- 4) Submit final costs, invoices, details to FEMA or NV DEM for reimbursement of flood related work.
- 5) Complete USACE Semi- Annual Inspection report and submit with removal project reports.

- 6) Follow-up with local agencies and project applicants on possible participation in the flow model updates for their impacted areas; bring findings back to District Board for discussion.
- 7) Communicate changes to the 408 Permit process with likely applicants including the City, and utilities.
- 8) Continue working with project proponents for encroachment permit applications for City of Reno Stoker Storm Drain Addition, Chism Mobile Home Park, USFWS and NDOT Verdi Bridge Scour Projects.
- 9) Discuss 2-D Model updates with TRFMA and opportunity for CTWCD to use this model update; Model nearly completed and will be made available to CTWCD by TRFMA.
- 10) Work with the City of Reno to pursue a permanent encroachment permit for the West Street Plaza and any associated projects.
- 11) Continue to evaluate and discuss temporary flood control measures including flow limitations, cost, storage, installation requirements and options for West Street Plaza and Booth-Riverside Drive areas.
- 12) 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.
- 13) Continued coordination with City of Reno for 1) Flood Response evaluation and incorporation of Interim Risk Reduction Measures into their Flood Response plan, and 2) Flap-gate Installation needs assessment and project.
- 14) Finalize the Equipment Access/Entry Point Documentation and Mapping for the District Jurisdiction;

SUMMARY REPORT

Two bids were received for the Flood Debris and Deposit Removal work; DF Drumm was the successful bidder with the low bid of \$61,500 which was later modified with the addition of \$6900 to the total of \$68,400 to address means and methods as discussed below. The second bidder was Reno Tahoe Construction with a total bid of \$ 88,245. Tri Sage worked with the successful bidder, DF Drumm, for the Debris and Deposit removal work to verify the means and methods and proposed equipment met the USACE requirements for completing this work with No Permit Required. The Contractor was required by USACE conditions to use an excavator to dig and lift the deposits from the channel but had proposed the use of skid-steers for this work due to the minimal elevation access under the Lake Street Bridge. The contractor was allowed to add a mini-excavator, operator and some additional man hours to the original bid in order to comply with the USACE requirements. This bid amount was still less than that proposed by the second contractor by \$19,845. The final contract amount was adjusted to remove the work at Stagg Lane (- \$3000) as the property owner REFUSED to allow access through his property and said he wants the trees left for his use as firewood. The final contract amount was adjusted to add debris removal at four additional locations that were identified during the semi-annual inspection an addition of \$3300 for a total contract amount of \$68,700. This additional work will NOT be FEMA reimbursable, but needed removed to comply with the Martis Agreement prior to the flood season. The

work has been successfully completed at the Lake St Bridge with an estimated 600cu.yds of materials removed and hauled to the landfill. Work is continuing on the debris removal at this report writing; but debris removal is expected to be completed by time of the Board meeting. Once work is complete, Tri Sage will draft the NDEP Permit report and submit it for this work.

Tri Sage and Superintendent Penrose drafted and submitted a request to State DEM for an extension of time beyond the August 17, 2017 required project completion date; the FEMA representative had erroneously told the District that we had 180 days after our initial meeting with FEMA which would have given the District until the end of September for completion. The time extension request was based on the high river flows impeding work. Tri Sage and Superintendent Penrose met with State DEM in Carson City to go over the four project submitted by the District and the subsequent quarterly reporting required for each as well as the project close out needs. DEM informed at that meeting that we must request an extension for the incomplete work on a Project Change Form. We have submitted several other question to the DEM related to the fourth and final project with consists six different locations for debris and deposit removal. We are trying to better understand the process and requirements, because when the original estimates were provided to FEMA, the FEMA representative said that the estimates could be modified based on the final bids and that the total project amount would be the test, not the estimate at each site within the project. DEM is saying otherwise at this point and says they will be looking at each site compared to its estimate and the contractor's bid for each site within the final project. A further complication is that the successful contractor bid the project with the majority of the equipment costs and mobilization allocated to one site, the Lake Street Bridge deposit removal, and the bid appears to not spread costs over all sites. This bid approach may negatively impact the amount recoverable by the District from FEMA based on the estimate unless there is a way for the District to process a change for this project work. More information will come on this funding/change matter as Tri Sage and the Superintendent plan to meet with DEM to discuss options.

Tri Sage and Superintendent Penrose completed the semi-annual river inspection as required by the Martis Creek Agreement. During this inspection, four debris deposits were noted that need to be removed prior to the flood season as part of our routine debris removal work. These four sites were added to the contractors work as we bid the FEMA work with the option to add additional sites; the contractors proposed pricing for these sites was reasonable. During this inspection it was noted that the Kayak Park at Wingfield Park needs to be cleared of deposits from the flood in order to restore the channel capacity to 14,000cfs in this reach; the City of Reno plans to remove these deposits in late September and early October. Several other deposits that were being monitored in the channel were partially or wholly eroded by the flood flows which is a help to channel capacity. There were no other notable inspection issues other than those which continue from prior inspections. Tri Sage will complete the drafting of the semi-annual report for USACE and will submit it along with the NDEP reports documenting the work on the river following the flood.

Two conference calls were held with the applicant teams and the USACE to discuss 408 Permit review delays, budget, timing and self-funding options for these projects to expedite reviews through the USACE 408 Permit process for authorization. The first call was with the USFWS team who plans to submit applications to construct fish passage or upgrade diversion structures for the Steamboat Canal and the Verdi Hydroelectric Plant. No applications for 408 Permits have been submitted to date as the design packages are not yet sufficient for submittal for the Permit. USFWS seemed interested in entering into a funding agreement with the USACE in order to move their review forward ahead of approximately 140 project waiting review by the Sacramento Flood Branch. The second conference call was with the NDOT team associated with the Verdi Bridge Scour project. The project has yet to submit an application for a 408 Encroachment Permit; however, it is not likely that this project will be able to fund the review or enter a funding agreement due to the complexity of the partners involved in the project. At the request of Chairman Westergard, Congressman Amodei's office was briefed regarding this notification by the USACE that they were out of budget to review 408 Permit applications and Staff from the Congressman's office attended both conference calls. The result of the calls suggests that the applicant will either have to "pay to play" through a funding agreement, or they will have to get in line behind the other project waiting for review and hope that funding for next fiscal year (available as of October 1, 2017) does not run out before the review backlog is completed.

The modeling need discussed in the paragraph in italics below has not been dealt with as of yet due to other more pressing needs with the District. At the last meeting of the Board, Tri Sage was directed to go out to the project proponents and impacted agencies and see if these parties are willing to contribute to the development of the flow model in areas that impact their jurisdictions. This will be done this fall when time permits. Prior to that time a request has come in for the 14,000cfs flow model which will be used as the basis of a 408 Permit determination in the vicinity of the "Spaghetti Bowl" (395 Bridges and Kietzke Lane Bridge) for the project planning needs. This is an area where TRFMA has a model created at a much higher flow rate that could be used to create and integrate a model with our 14,000cfs upstream sections. The estimated cost of this work is \$3000 - \$3500. The remainder of this model work will be investigated this fall for funding options: *The District has collected all available flow model segments and survey data for the District's jurisdictional section of the Truckee River. TRFMA has provided the District with all survey data and has assisted the District in gaining access to the County survey along the banks and floodplains. Two old models were provided by FEMA from their prior floodplain mapping. After evaluating all the data and model sections available, the District has several reaches of the river for which models are insufficient or non-existent. The District has had several needs for modeling data and water elevations in segments where no model is available for the review of encroachment permits or for establishing the 14,000cfs flow channel for debris removal work. Some of the model segments acquired need updated using the recent LIDAR survey, some of the model segments are not of use and building a model from scratch would be the preferred alternative. In most upstream areas, the raw LIDAR survey data must be integrated with the Washoe County Survey data and georeferenced in order to use this data to build model cross sections. The construction of missing model sections may be accomplished by phasing the work; however, this will be more costly and much less*

efficient than completing the work in one project because phasing would require additional work to integrate segments together. It is recommended that the District fund the creation of a complete flow model for the jurisdictional reach of the river and that this be completed in the most cost effective and efficient manner as a single project. This project is will also require some additional survey of bridges and crossings to incorporate into the model. The total cost of the modeling and survey to create or update all sections using the latest survey is \$35,000.

The City of Reno is continuing with their review of the Flap-Gate requirements in order to address the USACE inspection issue; the city has engaged an engineering firm to design the flap-gates for installation at several locations and will pursue permitting and installations in the coming year. This project may be placed on hold due to high river flows and funding limitations following the flood.

The City is evaluating alternatives for the West Street Plaza interim risk reduction measures to be incorporated into the City's Flood Response Plan while the City works with a potential developer who is interested in the West Street Plaza. The City is working toward an application for a permanent encroachment permit for this project pending the outcome of work with the potential developer.

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 was 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 Idlewild Park to Lake Street areas for the determination of water surface elevations and identification of problem areas.

RECOMMENDATION

It is recommended that the Board of Directors continue to pursue the inspection/evaluation items as outlined in this report and work toward confirming open items with the USACE Flood Branch.