



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

July 5, 2017

MONTHLY ACTIVITIES- June

- 1) Develop and submit project estimates to FEMA for 5 remaining projects; review worksheets prepared by FEMA.
- 2) Prepare competitive bid documents for FEMA work as well as general debris removal work including updating service agreement with FEMA required language, creating scope of work, creating bid schedule, pursuing entry authorizations & notice of bid.
- 3) Review NV DWR Grant application for Clearing Funding; emails with NV DWR.
- 4) Emails with USACE Flood Branch regarding 408 Permit review delays and applicant options; notify applicants regarding delays, options and project timing & request clarifications.
- 5) Review flow models and available data for District jurisdictional reach; evaluate options and timing for creating flow models in missing sections.
- 6) Request delay of USACE Semi-Annual Inspection and reporting until August when flows reduce.

UPCOMING ACTIVITIES

- 1) Open and review competitive bids for debris & sediment removal work; issue contract for work along with completion of entry authorizations.
- 2) Monitor debris removal work and draft NDEP Working in Water Reporting.
- 3) Submit final costs, invoices, details to FEMA or NV DEM for reimbursement of flood related work.
- 4) Complete USACE Semi- Annual Inspection and write the report.
- 5) Update flow model as may be authorized by District Board.
- 6) Communicate changes to the 408 Permit process with likely applicants including the City, and utilities.
- 7) Work 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.

- 8) 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.
- 9) Work with the City of Reno to pursue a permanent encroachment permit for the West Street Plaza and any associated projects.
- 10) 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.
- 11) 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.
- 12) 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.
- 13) Finalize the Equipment Access/Entry Point Documentation and Mapping for the District Jurisdiction;

SUMMARY REPORT

Tri Sage has been working with FEMA to provide estimates for the remaining six project sites for debris and sediment removal work; FEMA has drafted project documents and submitted estimates for review. Final costs, invoices, reporting will likely have to be trued up with NV DEM as FEMA personnel are likely to be moved from this work prior to the completion of the project.

Tri Sage has prepared all the documents to request competitive bids from contractors for this work per NRS 332. A notice was developed and placed in the Reno Gazette Journal on June 30, 17. Bids close on July 24, 2017 at 10am and will be opened that same afternoon at 2pm. The Service Agreement used by the District for this work has been modified to include all FEMA required contract provisions. A Scope of Work document was prepared to instruct bidders on the work to be completed at each location and the limitations at each location. Bidders have been requested to submit their fixed bids on the Contractor Bid Schedule which was prepared for this project and includes pricing by project area as well as a lobbying certification required by FEMA. All available permits and access agreements will become part of this final agreement with the successful contractor. A copy of the bid documents will be provided to the Board. In addition, Tri Sage has mailed letters, emailed or met with property owners to request Right of Entry Authorizations for parcels adjacent to the debris and sediment. Included in this bid are two areas of debris removal that were deposited following the flood and will be removed by the District as part of the normal maintenance of the channel and are not reimbursable by FEMA. This work was included in the competitive bid documents due to the total amount of work to be contracted and in order to comply with NRS 332 purchasing requirements.

NV Division of Water Resources (DWR) is accepting applications from local governments for funding from NRS 532.220 Channel ClearanceProgram which has been funded to the level of \$250,000 by the passage of SB503 in the 2017 Legislature. Tri Sage has confirmed with DWR that this funding may be applied for and used for the 25% match for FEMA related work. Also, it should be noted that there

are currently debris piles that have occurred following the flood and will be the full responsibility of the District to remove.

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 USACE Flood Branch has notified the District that all 408 Permit reviews are on hold due to lack of budget dollars for the review of these projects. This delay will impact the review and issuance of the City of Reno Stoker Storm Drain Outfall 408 Permit; Tri Sage has notified the City and their engineer of this delay. The USACE has offered two options for applicants to enter into funding agreements for the review of their project applications; however the WRDA Section 214 option is expected to take up to 6 months to negotiate such funding provisions. The second funding option under WRDA Section 1156 may offer more timely funding and review. This curtailment of reviews in 2017 will cause a backlog of permits waiting for review once funding is reinstated in October 2017 and timelines for authorizing 408 Permits are expected to extend beyond the typical 9 month period. This permitting delay may impact the NDOT Verdi Bridge Scour Project that was expecting to make application in July and needs the 408 Permit by next June. This may also impact projects planned by the USFWS to upgrade diversions structures on the river. Both NDOT and USFWS have been notified of the delays in review, options and possible project timing impacts.

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.