



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

April 4, 2016

MONTHLY ACTIVITIES- March 2016

- 1) Follow up with Nevada Division of Water Resources on the Channel Clearance, Maintenance and Restoration funding and grant process.
- 2) Follow up call/emails with USACE regarding Encroachment Permit application for City of Reno Sewer Crossing for which USACE requested a scour analysis.
- 3) Update model sections in the vicinity of Kietzke Bridge and provide to Reno for project evaluations.
- 4) Evaluate Booth-Riverside for block wall containment benefits & limitations.
- 5) Martis Creek Agreement Review preparation.
- 6) Review City of Reno preliminary project plans for Idlewild Park path upgrades to confirm whether an encroachment permit is required from the District.
- 7) engineers with channel cross sections and WSELs from updated model along Idlewild Park.

UPCOMING ACTIVITIES

- 1) Continue to evaluate temporary flood control measures including flow limitations, cost, storage, installation requirements and options for West Street Plaza and Booth-Riverside Drive areas.
- 2) Work with project proponents for encroachment permit applications for City of Reno Sewer Crossing, City of Reno Path Upgrades, Storm Drain Addition and NDOT Verdi Bridge Scour Projects(this projects has now been delayed a year pending access).
- 3) Evaluate additional needs for model updates upstream of Idlewild Park to State Line and downstream of Lake Street to Glendale Bridge; possibly needed for upcoming 408 Encroachment evaluations.
- 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 Flood Control Branch (Spring 2016) regarding inspection issues, West Street Plaza, Riverside matters, 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 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.

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

SUMMARY REPORT

Tri Sage contacted Eddy Quaglieri the Manager of Engineering, Water Planning, Dam Safety and Flood Programs at the State of Nevada, Division of Water Resources to pursue the Board's direction from the last meeting regarding the State Channel Clearance, Maintenance and Restoration funding and grants program. The findings of that discussion are as follows:

- 1) Currently, the State does not have a specific process established for obtaining grants or funding from this program. The \$200,000 in funding by the Interim Finance Committee in 2016 was unexpected by the Division and since they had not gotten funding since 2008 for this need; they did not have a structured process in place to distribute these funds. Thus without a specific process in place, the 2016 funding was distributed on a first-come first-served basis in order to get the money awarded expeditiously so that much of the work could be performed while many of the flow channels were still at low flows from the drought conditions. The Division plans to develop a specific process for the next distribution of this funding and will continue to require demonstration of a 50% match to this funding by the applicant.
- 2) The State currently is not taking applications for future money that might be funded for Channel Clearance, Maintenance and Restoration because they do not know when or if funding might become available. They do not want to have applications for work that is potentially dated due to unknown funding timing. The State accepted applications for the 2016 money in a free-format as the submitting entity preferred. For future applications, the State plans to develop a specific process, application and/or submittal requirements in order to streamline the review and award of grants to applicants. The District is currently not able to make the application for a \$25,000 grant as directed by the Board as the Division has exhausted the recent funding.
- 3) Through this 2016 distribution of funds, that State has now been made aware of the interests of the District to be notified of the availability of funds for Channel Clearance, Maintenance and Restoration from the State. It has been requested that both Mary Pat at the District office as well as Lori Williams at Tri Sage be notified of the next funding opportunity and application process so that the District may participate and make application for a grant if it is the pleasure of the District's Board. The Division will develop a notification list and process for use during the next funding cycle; the recent applications were made on word-of-mouth communications and without official notifications to parties.
- 4) The State currently does not have a structured selection process for selecting recipients from the applicants. They expect to develop selection criteria as part of their process and prior to the next funding; so more information on selection criteria should be available once the process is developed.
- 5) It was suggested by the Board that the District send a letter to the Interim Finance Committee to thank them for funding this Channel Clearance, Maintenance and Restoration need with the \$200,000 and to support or request future funding from this committee for this ongoing need. The Division was supportive of letter thanking the Committee for the funding and letting them know that a lot of good work was completed using this funding; however, they were a bit unsure

of the timing of such a letter. It was not clear if the Division could or should encourage or support a request for additional and future funding through this Interim Committee. Funding for Channel Clearance, Maintenance and Restoration was originally requested within the Division budget and was not funded in the final approved budget. The Board should discuss such a letter and its contents further now that this initial discussion has been had and provide direction if a letter is to be drafted and the contents of such.

The encroachment permit draft approved by the District for the City of Reno Sewer Line Crossing Project was submitted to the USACE for their review along with the project materials. The USACE has requested the engineer provide a scour analysis for the project or that the sewer line be installed at a depth of 30ft below bed grade; lesser depth may be acceptable with engineering justification or design elements. Tri Sage has continued to work with USACE and applicant to resolve these issues and a conference call was held to discuss the USACE requirements. Following the call an FTP site was setup to transfer large survey and study documents from the USACE to both the District and the applicant. The District has updated the model in the area of the project and has provided the river cross-sections to the City's engineer along with some other historical survey data that the District has in its files. The City's engineer is continuing to work toward satisfying the scour evaluation need of the USACE; however, such analyses seem to be not well documented for cobble and boulder beds such as is found in the Truckee River. Tri Sage will continue to work with the parties to gain authorization for the issuance of the encroachment permit.

Several projects which will require encroachment permits are in the planning stages at this time including a City of Reno Project to upgrade the walking path in Idlewild Park and a City project to install a storm drain inlet into the channel near Dickerson Road. The City has provided preliminary plans for the Idlewild Path Project in order to confirm that the minor involvement of work/construction within the 14,000cfs flow channel will require an encroachment permit. Although the project areas within the flow channel are minimal, the District must have an application for encroachment permit submitted in order to comply with the Martis Agreement and in order to have the USACE authorize the construction work in these minimal areas. Reno will finalize the plans and apply for the permit as necessary. The storm drain project is expected later in the year and the NDOT Verdi Bridge Scour Project has been delayed due to access requirements for the project work.

Work has continued this month to evaluate the benefits and also the limitations of using a variety of risk reduction measures along Riverside Drive from upstream of Booth Bridge to approximately the intersection with Jones Street. Superintendent Penrose requested that a 4ft block wall placed along the park path be added to the evaluation options. This option was evaluated for the approximate water flows that can be contained by such barriers and added to the spreadsheet. Other options are also being explored. Pricing estimates for materials and installations is in process for these options. These options may also be considered for the West Street Plaza area. The City has provided some flood damage cost information for the 2006 event which was approximately a 14,700cfs event and approximates the District's jurisdictional flow. Next steps include discussing these evaluations and options with the City and TRFMA teams to develop regional recommendations which can be brought back to the Board and ultimately shared with the USACE.

Tri Sage will work to schedule a meeting between the local parties to discuss a variety of channel matters and then will schedule a follow up meeting with the USACE with the local parties to discuss similar channel matters once the details of the containment options are available.

The City of Reno is continuing with their review of the Flap-Gate requirements in order to address the USACE inspection issue; work is progressing well on this project and the City should have information from the study by March.

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 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 Spring of 2016* 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.