



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

May 9, 2016

MONTHLY ACTIVITIES- April-May 2016

- 1) Meeting with City of Reno, TRFMA and CTWCD to discuss Riverside Drive and West St Plaza areas for flood channel risk reduction measures.
- 2) Schedule a meeting and with USACE Flood Control Branch 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, flap-gate evaluation, and projects completed.
- 3) Follow up call/emails with USACE regarding Encroachment Permit application for City of Reno Sewer Crossing for which USACE requested a scour analysis.
- 4) Inspect Chism Mobile Home Park work in progress, respond to NV Lands/Reno inquiry and provide information to the park owner regarding encroachment permit requirements.
- 5) Letter to State Engineer regarding channel clearing and snagging funding.

UPCOMING ACTIVITIES

- 1) 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.
- 2) Work with project proponents for encroachment permit applications for City of Reno Sewer Crossing, City of Reno Path Upgrades, Storm Drain Addition, Chism Mobile Home Park 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) 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.
- 6) Draft Vegetation Variance Application for Trees in Vegetation Free Zone if applicable under SWIF; confirm eligibility with USACE.
- 7) Finalize the Equipment Access/Entry Point Documentation and Mapping for the District Jurisdiction;

SUMMARY REPORT

Tri Sage was notified by the Nevada Division of State Lands regarding the project/work taking place at the Chism Mobile Home Park along the Truckee River to see if this work would require an encroachment permit from the District; the Division also notified the City of Reno to see if a permit would be required for this work. Tri Sage performed a field inspection as soon as this inquiry was received because the work was already in progress. Tri Sage informed the Division and the City that yes, this work was within the 14,000cfs flow channel and would require an encroachment permit from the District. The City Planning Department has informed Tri Sage that City Code Enforcement has issued a stop work on the job and issued a notice of violation for lack of a building permit. Tri Sage has made contact with the Park owner and has provided the Encroachment Permit application materials as well as information regarding the 14,000cfs water surface elevations in this section and a flood plain map of the area which shows the work area to be within the jurisdictional flow channel. The owner will seek some professional engineering services to make application and was not certain if such work could be accomplished in time for the May meeting; this item has been placed on the agenda in case the owner is able to make application prior to the meeting such that the materials can be reviewed.

Tri Sage is still waiting to hear back from the USACE regarding the encroachment permit draft approved by the District for the City of Reno Sewer Line Crossing Project which has been submitted to the USACE for their review along with the project materials and an additional technical memorandum from the project proponents which included an analysis of channel scour methods and experience. Tri Sage has continued to work with USACE and the applicant's engineer to 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 cost, 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. A "draft" memorandum was prepared outlining multiple options and a meeting was held to discuss the options with other community participants including TRFMA, City of Reno and CTWCD representatives. The group has a meeting scheduled with the USACE in Sacramento on May 21, 2016 to discuss the preferred option which at this point is to provide only communications to the community and to inform the USACE that the channel modeling was inaccurate in the Martis

Agreement. The memo is provided for the Board to discuss on the May 2016 agenda and provide input for the upcoming meeting.

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 City is evaluating alternatives for the West Street Plaza interim risk reduction measures to be incorporated into the City's Flood Response Plan.

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.