



**TRI SAGE CONSULTING**  
**Monthly Report**  
**Carson Truckee Water Conservancy District**

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August 31, 2020

**MONTHLY ACTIVITIES- June- July-August 2020**

- 1) Complete USACE Semi Annual River inspection once flows reduced;
- 2) Drafting USACE Semi Annual River Inspection Report and transitioning reporting function internal to Tri Sage.
- 3) Document preliminary debris removal requirement for fall debris removal project.
- 4) Notify City of Reno regarding need to remove vegetation along Riverside Dr/Booth Bridge, need to repair channel parapet wall railing failures and need to wrap trees for beaver protection.
- 5) Notify USACE and RTC of District Approval of Mixed-Use Path Permit; Follow up with USACE on Completeness Review of Application and transfer of model files by mail.
- 6) Follow up with RTC on status of funding agreement with USACE; follow up with USACE regarding review of RTC project under the funding agreement.
- 7) Discuss construction approach with Q&D for NDOT Spaghetti Bowl Xpress Bridge permitted by District under Permit 18-02. Work expected to start in 2021.
- 8) Update river model for kayak park, Arlington Bridges and review sediment capabilities; update model to 2D at Wingfield to evaluate bank over-topping.
- 9) Review projects near river for Permit requirements; provide inundation maps for parcels.
- 10) Attend USACE Regulatory Pre-Construction meeting for Arlington Avenue Bridge Replacement Project to discuss 408 Permitting and application process.
- 11) Investigate River Pines pedestrian bridge and permitting.
- 12) Field Inspection of private trees either in river or along river that are likely to end up in the river. discuss strategy with Superintendent and notify private owners of decisions.
- 13) Multiple calls and field visits with City of Reno Clean and Safe and Public Works staff to provide information regarding the 14,000cfs flood channel limits and projects to prevent camping with the river flow-way. Follow up on unauthorized erosion repairs under Keystone bridge and discuss future permitting requirements.
- 14) Attend USACE Flood webinar on PL-84-99 rehabilitation of projects following flood events.
- 15) Conference calls with TRFMA to meet the new Executive Director and discuss sharing of flow models and data; Models and data will be transferred between modeling engineers who can discuss updates and differences between the models.

- 16) Transitioning engineering support will continue into the fall debris work and inspection; Lori Williams will transition to a support role rather than the lead on new projects and inquires going forward.

## **UPCOMING ACTIVITIES**

- 1) Develop scope of work for Fall 2020 Debris Removal Project work and on-board contractors for work.
- 2) Collaborate with the City Forester for the removal of beaver damaged trees within the 14,000cfs flood channel if budget dollars permit.
- 3) Continue working with project proponents for encroachment permit applications for RTC Mixed Use Path, USFWS fish passage projects, Arlington Bridge replacement project and other projects within the 14,000cfs flow channel.
- 4) Continue transitioning Tri Sage Lead Engineer.
- 5) Continue evaluation of the deposits within the Kayak Park Project in Wingfield Park and establish a river capacity maintenance plan with the City based on this evaluation; communicate findings to City.
- 6) As directed by the Board, pursue the encroachment issues with the City of Reno including possibly new City Manager, Mayor and legal;
- 7) Schedule informational meetings with potential entities with river crossings to inform them of CTWCD maintenance activities/capabilities and 408 Encroachment Permit requirements for projects along and across the river. Communicate changes to the 408 Permit process with likely applicants including the City, and utilities; update on Categorical Permission review and differences. Communicate updated fees and Fee Policy for 408 Permit Review if approved by the Board.
- 8) Draft and mail letters to homeowners along Idlewild Drive notifying them of encroachment requirements and limitations.
- 9) Discuss 2-D Model updates with TRFMA and opportunity for CTWCD to use this model update; when completed model 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 and produce inundation map layer for addition to County maps.
- 13) Continued coordination with City of Reno for 1) Flood Response evaluation and incorporation of Interim Risk Reduction Measures into their Flood Response Plan for West Street Plaza, Oxbow Park Platform and Riverside Drive, and 2) Flap-gate Installation Phase 2 needs assessment and installation project.

14) Finalize the Equipment Access/Entry Point Documentation and Mapping for the District jurisdiction;

## **SUMMARY REPORT**

The USACE required semi-annual river inspection was completed during late July and early August. The inspection had been delayed due to higher than normal river flows caused by the release of additional stored waters from upstream reservoirs. During the inspection debris that needs to be removed was noted and photographed for inclusion in the Fall 2020 Debris Removal Project. Debris was identified in several critical locations including two large trees blocking the side-channel upstream of Kietzke Lane Bridge and behind the City Corp Yard. Generally, the river was in good shape with no notable deposition nor any erosion issues. During the inspection it was noted that a few of the parapet wall railing posts were deteriorating near Sierra Street and exposed rebar was rusting; in one case the wall is beginning to crack from the top down. The City of Reno was notified of this failure and the need for repairs prior to this deterioration causing failure of the flow channel wall. Tri Sage also requested the City of Reno again clear vegetation from the gabion walls along Riverside and clear the rip-rap at Booth Bridge of overgrown vegetation; the City agreed to have crews complete this work prior to flood season. Also, during the inspection several trees with minor beaver damage were noted and the City Forester was sent information on locations so that trees with minimal damage may be saved by wrapping in wire. During the inspection the recently completed flow modeling and associated inundation mapping was utilized to better assess the flood channel boundaries for evaluation of tree and debris removal needs. The inspection was used as a field training and transitioning exercise for the Tri Sage engineers who will be taking over this District work from Lori Williams. The Semi-Annual Report for USACE is being drafted and reviewed and this reporting process was also used as a transition and training opportunity.

The RTC Mixed Use Path Project application for a 408 Encroachment Permit has been approved unanimously by the District Board and is still pending review by the USACE. The RTC has negotiated a funding agreement with USACE in which they will pay USACE for the review for their project permit; they have signed the agreement and received the cost estimate for the work, but are waiting on an invoice from USACE in order to pay the funds. This process has taken since May to put this agreement in place and it is not clear how the project review will be treated if it is not reviewed prior to the Federal Fiscal Year budget being renewed in October and 408 Permit review funding once again becoming available. During June/July Tri Sage worked with the applicant's engineer to submit the river flow models for this project to USACE via flash drives and CDs mailed to the office as USACE was not able to download the files from the share drives of any of the parties; USACE finally confirmed receipt of the documents by mail.

The river flow model work is completed and the inundation maps for the entire jurisdictional reach are now available. Arrangements have been made to send GIS files of the 14,000cfs flow channel to both the City of Reno mapping and also to Washoe County mapping for use by project applicants in

determining if project are in the flood channel and may require a 408 Permit. The transfer of these files has been delayed pending the model updates to the Arlington Bridge/Wingfield Park/Kayak Park areas of the model. During the recent assessment of the Kayak Park sediments it was noted that this area of the river had outdated flow model information and bathymetry. This area has been updated to include the existing Arlington Ave. Bridges and the base kayak park and to expand this into a 2D HEC-RAS version to model the bank overtopping. The full model GIS will be made available in early September. These updates to the flow model were critical for two reasons: 1) the engineers for the RTC Arlington Ave Bridge replacement project need an up to date model to work with as the basis for their modeling work for this project, and 2) the assessment of the kayak park and allowable sediment loading needed an accurate model to assess this limit. The findings for the kayak park indicate that any sediments in the flow channel at this location further reduce the channel capacity and are likely to over-top the banks/walls along Island Avenue. This finding will soon be shared with the City of Reno as a maintenance criteria for the kayak park. Additionally, there is a project being developed along Island Avenue that needed clear assessment of the requirement for a 408 Permit and this work has clarified that project to be outside the 14,000cfs flow channel.

The USACE Regulatory held a Pre-Construction conference call for the RTC Arlington Ave Bridge replacement project. Construction is being targeted for 2026. Tri Sage participated in the call to discuss 408 Permitting requirements, the application review timing expected by USACE Flood and the modeling requirements required for the applications. This project was one of the driving forces behind updating the flow model in this area to the best available data.

During the upstream flow modeling a pedestrian bridge constructed in the early 2000s was identified that had no 408 Permit issued. The bridge was investigated and found to have been issued a building permit by the City/County; it was noted in the application that flow modeling and scour analysis had been performed for the project and it was found to be outside the FEMA flood zone. During the application process, the City had not identified the 408 Permitting requirement nor the District's authority. It appears upon review that the flow modeling had used dated and low-quality data and thus it was concluded that the bridge was not in the floodway. This is another example of why it is important to flag all city and county properties along the river for 408 Permitting and why it is critical that we have now created a flow model for this upstream reach that can be used for the assessment. Tri Sage recommends no action be taken regarding this bridge at this time, but that it be monitored following high flow events and that the owner be notified should any signs of erosion or degradation appear.

Tri Sage has had several discussions with various employees at the City of Reno regarding the 14,000cfs flood channel extents and projects to prevent camping in the river area. During the river inspection it was noted that the north bank under the Keystone bridge had been rocked without authorization or permitting from the District. The work was directed to be done by folks "high up" at the city without regard for the flood channel or permitting. This area was an area that had previous severe bank erosion so the repair was needed and was made in a way to not encroach into the flood channel by removing

bank material before placing the rock armoring. Thus the repair of the erosion is permissible under the Martis Agreement without a permit; however, the problem is greater and Tri Sage recommends the District request a meeting with the Mayor, New City Manager and Public Works Director to discuss projects within the flood channel and the permitting requirements. It may also be appropriate to include the City Attorney and District Counsel in that meeting. Staff level employees at the City seem to understand the limitations and the flood channel issues, but their superiors do not. It may be time, if the Board so desires, to do a follow up meeting and a follow up letter to the City regarding camping encroachments in the flood channel because there has been a complete turn over in City leaders since our initial meeting and letter. The Board should direct Tri Sage and the Superintendent on the preferred direction for this issue. In the meantime, Tri Sage will work to assist City staff in appropriate projects allowable by the Martis Agreement without permitting.

Tri Sage attended a webinar hosted by the USACE Flood Branch regarding PL-84-99 Rehabilitation funding to make repairs to projects following flood events. The District may be eligible for these funds through the Martis Creek Agreement and assuming our inspections remain in the acceptable level. There were many questions asked and not yet answered during the webinar; USACE promised answers to be provided via email or web-link at a later date. In order to get any of this funding the USACE basically has to declare an event; this is separate from a FEMA emergency declaration. Secondly, there has to be money available and it is not clear how projects are prioritized for funding. It is also not clear if a bank or berm that was not built by the USACE is eligible for repair dollars or if these dollars strictly apply to USACE constructed/funded initial elements. Since much of the flood protection project was built by the City of Reno not the USACE this could be an important factor. Tri Sage's current assessment is that the event is likely not to be declared on the Truckee and more likely to be on a large river with many USACE projects; also it is not likely that Truckee River projects could be prioritized above other rivers in order to get a block of funding. However, this is worth keeping an eye on in case an opportunity does present itself and the District can get some funding for major repairs through this process.

Tri Sage had a call with the new Executive Director of TRFMA to bring him up to date on the District, our activities, our jurisdiction etc. We discussed having our modeling teams share information and collaborate more so that we both are using the best data and info possible. TRFMA is developing their model up the White Fir Bridge now, which is an extension and their engineer will be doing an update to the FEMA flood plain maps using this model which is generally a 1-D river model with 2-D over-banks; this allows them to map the inundation during various flow events. The District will share our model and data on bridges and river diversions/structures to support their efforts. A second meeting was held with the modeling engineers to discuss challenge areas and share approaches. The engineers will share documentation and models for use by both parties.

The transition of the Tri Sage Team District lead from Lori Williams to Kayla Dowty is now going to continue. The inspection and reporting work and much District information has been shared through the inspection and reporting process. Transitioning will continue as requests and work comes in.

The section that pertained to the USACE April 2013 Inspection report has been eliminated from this report; and it is recommend the District continue to pursue improvements and correction of items noted in that last inspection report. The District has addressed or is currently addressing those items through its work.