



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

August 1, 2016

MONTHLY ACTIVITIES- June - July 2016

- 1) Meeting with USACE June 21 to discuss multiple issues including: Riverside Drive channel capacity, Riverside Drive alternatives, projects completed, inspection issues, wall determination, West St Plaza, encroachment process & emergency work. Follow up meeting with Superintendent Penrose regarding these topics. Follow up with USACE on meeting issues.
- 2) Complete Semi-Annual Truckee River Inspection and reporting as required by the Martis Creek Agreement.
- 3) Follow up call/emails with USACE & Engineer regarding Encroachment Permit application for City of Reno Sewer Crossing and tentative Authorization pending Nationwide Permit issuance. Respond to NV Division of Lands permit inquiry for this project.
- 4) Follow up with Chism Mobile Home Park regarding additional encroachment permit requirements for the District including survey.
- 5) Review encroachment application for City 4th & Stoker Storm Drain Outfall Project and request additional information regarding scour, headwall & outfall details, and backflow/flap-gate on this and connected storm drain. Review additional submittals. Draft Encroachment Permit for this project.
- 6) Draft NDEP Working in Waters second quarter report letter for signature by Chairman.
- 7) Meet with City of Reno twice regarding West Street Plaza developer project proposal and encroachment permitting needs.
- 8) Update figure for parapet wall near plaza to answer question of water surface elevations relative to openings.

UPCOMING ACTIVITIES

- 1) Draft letter to USACE documenting the issue with the channel along Riverside Drive as compared to the Martis Agreement.
- 2) Follow up on items with USACE including plywood near plaza, Chism Encroachment, NEPA for projects outside of Regulatory jurisdiction.
- 3) Discuss 2-D Model updates with TRFMA and opportunity for CTWCD to use this model update.
- 4) 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.
- 5) Work with project proponents for encroachment permit applications for City of Reno Sewer Crossing, City of Reno Path Upgrades, City Storm Drain Addition, Chism Mobile Home Park

and NDOT Verdi Bridge Scour Projects(this projects has now been delayed a year pending access).

- 6) 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.
- 7) 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.
- 8) 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.
- 9) Draft Vegetation Variance Application for Trees in Vegetation Free Zone if applicable under SWIF; confirm eligibility with USACE.
- 10) Finalize the Equipment Access/Entry Point Documentation and Mapping for the District Jurisdiction;

SUMMARY REPORT

Tri Sage along with Chairman Westergard and TRFMA General Manager Jay Aldean met with the USACE to discuss a list of items which included the Martis Creek Agreement and the issue with the water surface elevations along Riverside Drive; options evaluated by the District for Riverside Drive flow containment; Projects completed since the last inspection; open inspection issues including debris removal, flap-gate work, plywood needs, shoal deposits and other related matters; determination of walls as channel or flood walls in downtown; West St Plaza; permitting process and emergency work; and other issues raised by the USACE. Tri Sage has pursued follow up on several of these items including the Virginia Street Bridge flap gates that are installed within the outfall pipes, the plywood issue downstream of the West St Plaza, the City's application for the Plaza encroachment, the initiation of a log of District items and projects, and review of the Porta Dam for a risk reduction alternative. Tri Sage will draft a letter to the USACE specifically identifying the issues with the Agreement water surface elevations along Riverside Drive as requested by the USACE so that they can evaluate and respond to these concerns.

Tri Sage along with Superintendent Penrose completed the semi- annual inspection of the river in June and the report for the USACE was drafted and submitted in July. One finding of this inspection was the extensive growth of vegetation around the walls, revetments and within the shoal deposits due to the weather conditions this past spring. Some of these areas need to be thinned and trimmed by either the District or Reno; Reno has been contacted to see which areas they may be able to address before November. In addition, the river side channel upstream of the Kietzke Bridge has a substantial buildup of debris and will need to be cleaned again this fall. Other areas of the channel look normal with no significant findings.

Tri Sage has confirmed that the encroachment permit for the City of Reno Sewer Crossing is acceptable to the USACE and all technical requirements have been met; so the permit document has been executed by the District and the City and has been mailed to the USACE for their execution once the Nationwide Permit has been released. This project is expected to start in August assuming all other permits get issued.

Tri Sage continued to follow up with the Chism Park project on outstanding encroachment permit submittal requirements in order for the District to review this project. This project specifically needs to tie their work to a survey which is on the same datum as the flow model.

The City has made application for an encroachment permit for a storm drain outfall from the 4th & Stoker drain system project. The District has reviewed this project and requested additional information and submittals regarding the outfall design related to scour and flow as well as the installation of backflow/flap gates on this new outlet and the connected outlet. The City has updated the plans and submittals addressing all requested information and has included the backflow on these two storm drains as requested. This project is ready for approval by the District. We are awaiting USACE review and approval of both the project and the permit draft.

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 TMWA project to install a portage around the Glendale Weir. 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.

Tri Sage met with the City of Reno and the Parks Director to discuss the potential development at the West Street Plaza which was not issued an encroachment permit when it was built. This impacts the ability to further modify the plaza as the plaza is now serving as part of the flow channel. The USACE in the June meeting requested that the City apply for a permanent encroachment permit for this project/plaza that is already in place. The City has been advised that the need for encroachment permits is dependent upon how they chose to handle the permit for the plaza and what is approved and authorized by both the District and the USACE. Meetings were held with the Public Works and Parks Departments to discuss the needs and options. The City was provide the figure with the Plaza water elevations and inundation delineation.

In response to the USACE inquiry regarding the need for plywood along the parapet railing just downstream of the West Street Plaza, a figure has been prepared which clearly illustrates that the 14,000cfs flow stays below the railing openings in this area so that plywood is not required to establish the flow channel.

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.