



TRI SAGE CONSULTING
Monthly Report
Carson Truckee Water Conservancy District

May 11, 2017

MONTHLY ACTIVITIES- April - May

- 1) Inspect River Flood work sites with FEMA 4/13/17 and 5/10/17.
- 2) Draft & submit the NDEP Working in Waters Permit Q1 Report for the three flood debris sites completed in March.
- 3) Provide all reports, photos, work descriptions, administrative hours, agreements, permits etc to FEMA for each of the three project sites completed in March; this package will be reviewed by the State for reimbursement by the State.
- 4) Attended roller compacted concrete seminar hosted by USFWS who plans to rebuild several Truckee River diversion structures using this material and method.
- 5) Review plans for deck modifications at the Renaissance (formerly the Siena); meet with project designer/engineer to review requirements. Meet with developer owner regarding encroachment permit authority and requirements.
- 6) Meet with City to discuss letter from the District and the Riverside area options; email regarding wall estimates and length for Hazard Mitigation Project submittal to State for funding by Reno.
- 7) Acquire Washoe County survey data for upstream river sections from Washoe County with the help of TRFMA; pursue old upstream models and data from FEMA and USACE Sacramento; begin to evaluate available data and efforts that will be required to build upstream models.
- 8) Follow up with USACE on 408 Application processing and timing for the City's Stoker Storm Drain Project; respond to inquiries regarding submittals for the NDOT Verdi Bridge Scour Project.

UPCOMING ACTIVITIES

- 1) Prepare scope of work and solicit quotes or bids for the remainder of the FEMA Flood Related Projects to meet State/Federal procurement requirements.
- 2) Complete Post Flood channel evaluations and debris/sediment removal work once river flows allow; expected timeframe in August.
- 3) Apply for FEMA reimbursement for Debris/Sediment Removal Work; this is mostly complete for the first three sites and will need completed for the remaining six sites.

- 4) Work with City of Reno to permit flood work including sediment and debris removal work if river flows permit later in summer.
- 5) Communicate changes to the 408 Permit process with likely applicants including the City, and utilities.
- 6) 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.
- 7) Evaluate cost and methods to update the flow model in the vicinity of Mayberry Park and upstream to the State line to determine the extents of the flow channel in that reach.
- 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) 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.
- 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.
- 13) 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.
- 14) Finalize the Equipment Access/Entry Point Documentation and Mapping for the District Jurisdiction;

SUMMARY REPORT

At the last meeting of the Board, the District discussed the fees for applications for 408 Permits and determined that the current \$400 applications fee plus \$125/hour for additional work on the applications is acceptable to the District. However, Tri Sage would like to have the Board revisit this fee structure and discuss projects that are not sure or clear if a 408 Permit is required. Many of these project require a very quick review of the plans and thus cost the District minimal dollars to process; however, there have been a few recent examples of projects which have required multiple reviews, multiple meeting with the project proponents and/or their representatives. It is worthwhile for the Board to consider whether a project requiring determination as to whether a 408 Permit is required or not should submit a more official request with application fee prior to the District providing such determination. In this fashion, the costs of these reviews, especially the time consuming reviews, can be covered by the potential applicant. Alternatively, these costs may continue to be borne by the District as a general part of the District's purpose. This idea has been placed on the agenda for Board discussion.

Tri Sage and Superintendent Penrose have worked with the FEMA project team to inspect 9 sites (two smaller sites will be combined into a single project) for debris and sediment removal work and reimbursement by FEMA. Three Sites, Verdi River Oak, Dickerson Road and Island Avenue, have been completed by RTC under the \$25,000 agreement authorized by this Board in February. The NDEP Permit First Quarter Report was drafted and submitted for this work. The project information, reports, photos, agreements, invoices, permits etc have been submitted to FEMA for reimbursement by the State. These completed projects are under review by the State at this time and additional information requests have been met. The remaining six sites - Booth Bridge Tree, Idlewild Box Tree (these two will be combined), Mogul Bridge, Kietzke Side Channel, Stagg Lane, and Lake Street Bridge deposit – need authorization from the Board to pursue competitive bids/quotes as required by the State purchasing statutes in order to get this work reimbursed by FEMA. These sites are currently subject to the higher than normal river flows and it is expected that flows will have to substantially subside in order for work to be completed; possibly flows will be low enough in July or August for this work. Since the work will likely be delayed, the District will likely have to request the State allow for an extension of time for the completion of this work and extension of the reimbursement window. This will be the case with many river projects due to the high flows which persist.

The City of Reno has requested funding for a landscape type wall along the berm at Riverside Drive as part of the FEMA Hazard Mitigation Grant Program. This project will have to compete with other projects submitted throughout the State; however, this submittal shows a strong interest by Reno toward correcting the Riverside Drive berm elevation to contain the 14,000cfs flow.

TRFMA has again assisted the District by providing the District with Washoe County survey data to be used in conjunction with the LiDAR survey data in creation of model sections that are currently not modeled or available. Most of the sections needing modeled are upstream of West McCarran to the State line as we have been able to collect other model section for downstream that can be more easily updated with the LiDAR survey. In addition, FEMA was able to provide several old models (prior to HEC_RAS) which may be used as a starting point to develop the upstream sections which are currently not modeled. We are in the process of evaluating the most cost effective process to use the pieces collected to create models where none currently exist. Once we have a cost/time estimate and options (like maybe phasing work) this need will be brought to the Board for consideration, direction and authorization to proceed.

Tri Sage has requested an update on the processing of the 408 Permit for the City of Reno Storm Drain project; as the City would like to construct this year if the flows become manageable in the river. This permit processing has been delayed by the USACE Regulatory Branch who had to re-process the application because the Nationwide Permits recently expired and had to be renewed by USACE.

The USFWS plans to upgrade several of the river diversion to provide fish passage under a grant they received for this purpose. The USFWS engineer has proposed the use of roller compacted concrete for several of these structures and a seminar was put on by the Concrete Association on the topic. The first of these projects will likely be delayed until 2018 due to higher than normal river flows as well as design and permitting requirements.

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.