

STATE OF
COLORADO

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FW: Project Update - Arkansas River Levee Reconstruction/Remediation

1 message

Don Banner <dbanner@bannerbower.com>
To: "Pittinger - DNR, Rachel" <rachel.pittinger@state.co.us>

Mon, May 6, 2019 at 7:48 AM

Rachel, this is an update on the Levee project sent to FEMA yesterday by the independent consultant. Thought you might find it of interest.

Have a great day.

Don Banner

From: Kim Kock [mailto:kkock@northstar-co.com]**Sent:** Sunday, May 05, 2019 4:17 PM**To:** Dawn Gladwell; Thuy Patton; David Sutley**Cc:** pjwill@mindspring.com; Don Banner; Rick Kidd; rickkidd@kiddengineering.com; Michael Cuppy; Jim Prioreschi; Hoffmann, William; Steven Meier; Scott Hobson; Beritt Odom; Jeff Hawkins; Sam Vigil; Carpenter, Joshua G CIV USARMY CESPA (US)**Subject:** Project Update - Arkansas River Levee Reconstruction/Remediation

This email is intended to provide an annual update regarding the status of the Pueblo Conservancy District's (PCD) Arkansas River Levee Reconstruction/Remediation project through the City of Pueblo. As of April 2019, KR Swerdfeger Construction, Inc. (KRS) has completed the scheduled improvements related to Phase 5 of the project, except as more fully described below. Phase 5 of the project included approximately 1,950 linear feet of improvements including, but not limited to, removal of existing reinforced concrete levee facing panels, stabilization of subgrade materials, and installation of new reinforced concrete levee facing panels. The Phase 5 project extended along the northerly side of the Arkansas River from the end of the Phase 4 project (Sta. 206+00, approximately 200 feet west of the existing railroad bridge) to a connection point with the existing Corp of Engineers levee approximately 500 feet upstream (west) of Runyon Lake (Sta. 225+50). The Phase 5 project included crossings under the existing railroad bridge as well as bridges for Interstate 25 and Santa Fe Avenue. The project design and construction teams coordinated project details closely with entities such as the Colorado Department of Transportation, the railroad, the US Army Corp of Engineers, and the St. Charles Water District. The Phase 5 project included a maintenance road that was intended to be constructed on the face of the levee under the bridges referenced above. With out the maintenance road crossings under the existing bridges, access to various points of the levee for maintenance is severely constrained and time consuming. Construction of the Phase 5 maintenance road has been deferred to Phase 6 to support the City of Pueblo's pending grant requests for recreational improvements along the Arkansas River Levee as discussed below. The Phase 5 project also included drilling of exploratory holes and pressure grouting of any voids found in the toe of the levee through the existing "kayak course" (area of the future Phase 6 project).

With the completion of Phase 5, the Levee on the northerly side of the Arkansas River through the City of Pueblo has been completely remediated from the confluence with Wildhorse Creek at 11th Street (Sta. 100+00) to the end of Phase 5 as listed above (Sta. 225+50) with the exception of approximately 2,245 linear feet adjacent to the existing "kayak course" (Phase 6 project area). PCD has also completed remediation/reconstruction of approximately 3,000 linear feet of the Wildhorse Creek Levee from 18th Street to 11th Street (confluence with the Arkansas River) with Phase 2 of the project. As stated above, the Phase 6 project is scheduled to extend along the existing "kayak course" from Sta. 158+05 (which is the location of the existing HARP/BHE Raw Water Diversion Structure and the first drop structure associated with the

"kayak course") to Sta. 180+50 (which is immediately downstream of the last "kayak course" drop structure and the connection point with previous Phase 4 improvements). This Phase 6 construction area is where exploratory drilling and pressure grouting of toe voids was completed during Phase 5 as described above. Water depths downstream of several of the "kayak course" drop structures is significant (8' to 12') which would require major dewatering efforts even at low channel flows. Levee remediation efforts in those areas was also going to have significant impacts on the drop structures themselves as they are constructed directly on top of the existing concrete levee facing material. Based on observations from the previous project phases, the project design and construction team concluded that if subgrade voids in the toe of the levee (area beneath the low water level) could be identified and filled/stabilized, the existing reinforced concrete facing material could then be removed and replaced in the areas above the low water level. This procedure would then significantly reduce dewatering efforts as well as drop structure impacts through the Phase 6 construction area. The Phase 5 effort to identify and pressure grout voids in the Phase 6 toe was successful to a limited extent but, there is no way to be sure that all voids were identified until such time as the existing concrete material above the low water level is removed. It is possible that additional toe stabilization efforts will be required during Phase 6 of the project. Additional details as well as schedule for the pending Phase 6 project will be presented below.

As remediation efforts on the Arkansas River Levee progressed, the project team realized that an excellent opportunity was presenting itself to improve access to the north side of the Arkansas River and increase recreational uses on and adjacent to the River. By lowering the existing embankment approximately 12' a platform on the top of the levee approximately 40' wide was created. This would allow for pedestrian, bicycle, maintenance vehicle, and emergency vehicle access on the north side of the River. Previous embankment heights and construction details would not allow for such access. Also, these levee improvements could possibly create a corridor of approximately 2.5 miles between the City's west side and the Runyon Lake recreational area. That corridor could be pedestrian and bicycle friendly with no motorized vehicle conflicts. To make that a reality, the Phase 5 maintenance road intended to be constructed on the face of the levee under the railroad and roadway bridges (as discussed above) would need to be completed. For the last 18 months, the City of Pueblo Planning and Development Department has spearheaded recreational master planning efforts for the northside of the Arkansas River. They have obtained funds for and hired a consultant team lead by NorthStar Engineering and Surveying, Inc. (NorthStar) to complete the recreational master planning effort. I will not go into details of that Report but copies of the Final Report are available through the City of Pueblo Planning and Development Department. I will state here that several public outreach efforts were undertaken during the recreational master planning effort and the public as a whole is highly supportive of opening the north side of the Arkansas River to the public for recreational purposes. The City is now in the process of obtaining funding, including grant money, to complete many of the improvements identified in the Master Planning effort. The PCD is working closely with the City through the grant application process. PCD is not expending funds for recreational purposes, only levee improvement purposes, but have agreed that several components of the levee improvements project could be used by the City as matching funds for grant funded projects. For example, the previously mentioned Phase 5 maintenance road, which is scheduled to cost \$798,750, is being used as a match for grant money to install a hard surfaced trail on top of the levee as well as a pedestrian bridge across the River from the City's Corona Avenue parking area. There are several other examples which I will not detail here but will provide information upon request. Since portions of the Phase 5 and Phase 6 projects are being used as match money the project schedule has had to be adjusted so as not to expend money on matching projects until such time as grant money is acquired. As a result, the Phase 5 maintenance road was deferred to Phase 6. Also, the work adjacent to the "kayak course" was deferred to Phase 6 to allow the City time to complete the Planning and grant application efforts.

The PCD at its Board meeting on April 24, 2019 voted to award a Phase 6 construction contract to KR Swerdfeger Construction, Inc. The total cost for the Phase 6 base contract is \$3,437,115. In addition, the award included a contract for the maintenance road in an amount of \$798,750, handrail/fence along the entire length (2.5 miles +/-) of the new levee at the river side in an amount of \$290,000 (also being used by the City for grant match), and a "safety ledge" between drops 1 and 2 in an amount of \$149,600 (also being used by the City for grant match). Once Phase 6 is completed, the PCD will have completed levee reconstruction/remediation for the full length (as defined above) of the levee on the northside of the Arkansas River. To complete Phases 1 through 6 of the project the PCD will have expended in excess of \$23,000,000.

Work on Phase 6 of the project is scheduled to begin in October 2019 with a completion in April 2020. Once Phase 6 is completed the project design team, lead by NorthStar, will at the direction of the PCD, submit to FEMA levee certification documentation for both the Arkansas River and Wildhorse Creek levees (limits as detailed above) by August 31, 2020.

Please let me know if you have any questions with respect to the information contained within this document or if you would like additional information on the Planning efforts discussed.

Respectfully Submitted,

Kim Kock, P.E., President

NorthStar Engineering and Surveying, Inc.

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