PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM
Technical Advisory Committee (TAC)
Sediment Augmentation Feasibility Analysis Report Workshop Minutes

ED Office – Kearney, NE
January 13, 2010

Attendees

Chad Smith − ED Office
Dave Baasch − ED Office
Jason Farnsworth − ED Office
Steve Smith – ED Office (Teleconference)
Mike Besson – Wyoming (Chair)
Brock Merrill – Bureau of Reclamation
Suzanne Sellers – Colorado Water Conservation Board
Kevin Urie – Colorado Water Users (teleconference)
Bob Mussetter – Tetra Tech
Tom Riley – Flatwater Group
Rick Krushenisky – Flatwater Group
Pat Engelbert − HDR
John Morton – HDR
Jim Jenniges – Nebraska Public Power District
Mark Peyton – Central Nebraska Public Power & Irrigation District
Mike Drain – Central Nebraska Public Power & Irrigation District
Jeff Runge – U.S. Fish and Wildlife Service
Matt Rabbe – U.S. Fish and Wildlife Service
Mike Fritz – Nebraska Game and Parks Commission
Pat Golte – Nebraska Department of Natural Resources
Mark Czaplewski – Central Platte Natural Resource District
Rich Walters – The Nature Conservancy

Welcome and Administrative

Besson welcomed everyone to the meeting and the group proceeded with a roll call.

Sediment Augmentation Feasibility Analysis Report

Engelbert led the discussion, introduced the core group of people that worked on the project, and walked through background information for the Sediment Augmentation Feasibility Analysis Report. Mussetter discussed the base-line modeling behind the analyses. Engelbert discussed sediment augmentation locations, sources, production and delivery technologies, delivery timing, and material gradation. Riley discussed evaluation criteria (cost, existing technology, logistics, and project purpose), alternative analyses, and risk and uncertainty analyses.

Recommendations:

- Pilot-scale study based on alternatives 6 & 8
- Develop monitoring plan
- Update model based on findings
- Develop final design

Besson asked how we get a handle on annual variability in sediment deficit. Mussetter stated we could introduce sediment at a rate the river can transport or stockpile sediment in the channel so it's available when the flows are there to transport it. Mussetter stated a key uncertainty is how best to augment sediment so the river can transport it. Farnsworth said we may have to tier it so we add a consistent amount annually and add more when needed. Fritz asked if the amount of sediment added needed to be determined on a real-time basis. Mussetter said it will be tough to add enough sediment during periods of high flow if sediment is not stock piled in the channel. Drain stated NPPD stock pile sediment below the diversion dam that is removed during periods of high flow. Besson asked how much sediment would be needed if the actual material size needed was <1.2mm. Mussetter stated they analyzed a scenario using 0.5mm sediment and it appeared to be over 300,000 tons of material and still didn't fill the hole. Drain asked if the amount of sediment we will augment will offset the deficits during years the river is not at a low deficit level. Mussetter stated the amount we plan to add would be more than enough to offset the deficit, but during other years it may require 250,000 tons of sediment. Farnsworth stated NPPD put sediment in the channel during drought years and Jenniges stated he thought it was about 120,000-130,000 tons of sediment during 2005-2009 and it seemed the material was stored on the bed of the channel and was moved downstream when flows were high. Krushenisky stated stockpiling didn't appear to meet sediment balance at Cottonwood Ranch, but the river may have been in balance further downstream.

Jenniges asked what we need to do to offset the deficit and if the only reason we couldn't was because we didn't want to put in 300,000 tons of material. Mussetter stated we may run into downstream effects with that much material. Peyton asked if we could move the equilibrium point upstream if we added material even if we don't meet sediment balance at Cottonwood Ranch. Mussetter said he thought it would take time to move equilibrium, but in the mean time the holes would be filling in. Besson asked how many other types of service water uses were in this reach of the river. Farnsworth stated Kearney Canal was the last water right other than ground-water wells downstream. Riley stated there would be a certain amount of sediment that would be deposited on the banks and vegetated islands during periods of high flow as Jenniges described. Runge asked if we could cooperate with NGO's and others so we don't get deposition of material out of the channel (i.e., could we mechanically widen channels). Mussetter said widening channels would definitely increase the capacity of the channel. Runge asked if sediment size impacts our ability to build sandbar macroforms. Mussetter stated we could build bars with an overload of any sized material and would build slower moving sandbars with courser material. Rabbe asked what would happen to coarsening if we put finer material in the system. Mussetter stated we could make the channel bed less course by adding finer material. Runge asked how adding 'clear' water from reservoirs (SDHF) would affect the system. Mussetter stated SDHFs will not impact sediment transport to a large extent where the durations

were so short. Jenniges asked that if we balance the sediment deficit aren't we just stopping degradation rather than filling the holes. Riley stated we would need more than 185,000 tons of sediment to offset the deficit and cause agradation in the channel. Smith stated that if we want to increase the braiding index we need to add more sediment so we can agrade the channels and increase the braiding index.

BREAK

Morton discussed permitting issues with sediment augmentation and stated implementing a pilot study under an individual permit would make it easier for the Program to obtain a regional general permit for full implementation of sediment augmentation in the future. Besson asked what track we should pursue to allow us to conduct a pilot study and the timeframe for getting required permit. Morton stated we should attempt to obtain an individual permit for the pilot study and a regional permit when full implementation takes place and it would be a 6-12 month process for obtaining the permits. Rabbe asked Jenniges what type of permit NPPD had for their Cottonwood Ranch Permit and Jenniges stated they were operating under a regional permit that expired 13 December, 2010. Rabbe asked if they thought the Corp would react more favorably to dozing islands than other potential options for implementing sediment. Morton said the Corp is more familiar with that approach so they may react more favorably to that approach. Rabbe asked if they are pursuing multiple options to augment sediment and Morton stated they Sed-Aug team need to meet with ED Office staff to discuss potential options and would decide how to proceed from there. Jenniges asked how much sediment they would try to permit (150,000 or 300,000 tons). Morton said they would try to permit enough sediment for the pilot study, but didn't have a specific number in mind yet. Farnsworth stated we could get 50,000 at Cottonwood Ranch through channel widening and could add more at Dyer. Smith stated that if the TAC is comfortable with implementing a pilot study then the Sed-Aug team could finalize the feasibility report and draft the pilot study design and pursue permitting. Drain stated we should give the GC background information (cost, feasibility, etc) on implementing a pilot study and for full implementation of sediment augmentation. Jenniges asked if doing a pilot study was to monitor downstream affects or for permitting. Morton stated the pilot study would be easier to permit but that the pilot study would help learn a lot about sediment augmentation. Jenniges stated it would be 2013 before we could implement a pilot study and 2016 before full implementation. Besson asked how and how much we would implement sediment during the pilot study. Farnsworth stated he thinks we need about 100,000 tons sediment implemented with pumps. Smith stated time is an issue for the Program because we still need to build re-regulation reservoirs to be able to implement a SDHF. Jenniges asked if NPPD should look at permitting the 50,000 tons at Cottonwood Ranch or if the Program would permit that activity. Farnsworth stated the Program would try to permit all the work if possible, but may need NPPD to permit the Cottonwood Ranch work if the Corp won't permit the work for the Program. Besson stated we need more detail from ED Office staff and Sediment Augmentation group. Farnsworth stated we would have impact triggers so that when a threshold is met we would stop and assess the problem. Runge stated flow bypass at North Platte could contribute sediment to the central Platte. Rabbe asked if the sediment by North Platte could be mobilized or if vegetation would trap the sediment. Walters stated the vegetation below North Platte was sprayed. Farnsworth said the North Channel was in balance so wouldn't transport more sediment.

Besson asked if we had a timeline for presenting this information to the GC. Smith stated we may have the Sed-Aug team put together a presentation for the GC meeting in March and discuss the pilot study idea with the GC. Jenniges stated the TAC could review the pilot study plan and then present the information to the ISAC to get their feedback prior to going to the GC.

Closing Business

Final comments on Sediment Augmentation Feasibility Analysis Report are due 1 February, 2011.

ED Office staff will meet with the Sediment Augmentation team to discuss Final Report and a design for a Pilot Study.