

Sodom Dam Fish Passage Improvement and Flow Management Project

DRAFT Technical Team Meeting Summary

December 2, 2009 10:00 am - 12:30 pm

Brownsville Library

Prepared by: Pamela Archer, Program Assistant, Calapooia Watershed Council

Prepared for: Distribution to interested parties

Question/corrections: Email/call Denise Hoffert-Hay, Project Manager, Calapooia Watershed Council

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Purpose of meeting:

- Discussion between agency staff and local stakeholders on 30% design for Sodom Dam removal and channel grade control.
- Presentation from project consultants, River Design Group (RDG)
- FERC discussion

10:05 am Introductions (All)

Denise Hoffert-Hay, CWC

Bud Baumgartner, Co-Chair CWC

Mark Running, Co-Chair CWC

Brandy Humphreys, Confederated Tribes of the Grande Ronde

Alex Farrand, ODFW

Janine Castro, USFWS

Jan Houck, OPRD

Kevin Seifert, Linn SWCD

Liz VanLeeuwen, Linn SWCD

Erik Pimm, Calapooia landowner/farmer

Telly Wirth, Calapooia Farmer

Wendy Hudson, OWEB

Tim Otis, Calapooia landowner

Mike Lambert, ODFW

Tara Davis, CWC Director

Karen Hans, ODFW

Gloria Kiryuta, DSL

Peter Jenson, Calapooia landowner

Julie Whalen, OPRD

Michael Mattick, Oregon Water Resources Department

Troy Brandt, River Design Group (RDG)

Scott Wright, River Design Group (RDG)

Shelly Hanson, USACE

Ann Gray, USFWS

Melissa Jundt, NOAA Fisheries

Pamela Archer, CWC

10:15 am Overview of project implementation timeline/Overview of November 20th permitting meeting (Denise Hoffert-Hay, Calapooia Watershed Council (CWC))

- Originally wanted to implement both Sodom and Shear dam removals in 2010
- Will move forward with Sodom Dam removal, redesign of bifurcation, and grade control structures in 2010
- In 2011, Shear Dam will be removed, minimal work in Calapooia channel, bifurcation maintenance
- CWC will conduct permit process for Sodom Dam removal as a separate project from Shear Dam
 - Funding for Sodom expires in 2010

- Funding for Shear doesn't start until April 2010
- Need archaeological work and other for Shear, not ready to start
- CWC fully committed to both projects and restoring Calapooia system
- Spillway Dam is not part of CWC project
- *Concern:* landowner requesting road access after removing dam. *Response:* Denise and Scott will go out with landowner to visit site
- *Concern:* water levels changing in between removals?
 - *Denise:* there will be more water in Calapooia River during summer 2010, goal is 50/50 split during summer months and the past few years, there has been significantly more flow in the Sodom Channel in the summer than in the Calapooia, contributing to the continued silting in of the Calapooia.

10:15 am Background on grade control structures and River Design Group Technical Memo regarding engineered riffles (Denise Hoffert-Hay)

- Addresses science on installation of these structures and their track record for installed projects
- Available on council's web page <http://www.calapooia.org>
- Includes photographs and sketches

10:20 am: Presentation on 30% Design for Sodom Dam removal and channel grade control structures (Scott Wright, River Design Group), including questions/permitting issues that need to be addressed

- Background
 - 25% Sodom Dam Restoration Design
 - Discussing design concepts and detailed information for bifurcation area
 - Will provide philosophy and design considerations for bifurcation area
 - Have spent time in landowner and agency meetings, now are starting to work on bifurcation area project plans
- Slide: Bifurcation to dam is 1400 feet in length
- Slide: Existing vertical profile
 - Green line = thalweg (deepest part of stream)
 - Bifurcation currently has big scour hole
 - Project will connect riffle after scour hole to elevation after Sodom dam—"grading out"
 - Dam @ Sodom is equal to elevation at riffle downstream of bifurcation (so not a lot of change), will be similar in future to what it is today
 - *Concern:* change to scour pools at bifurcation?
 - *Scott:* No
 - *Concern:* what will summer flows look like, with/without boards installed at dam?
 - 50/50 flows in summer
 - Limiting factor for system will be water flows in summer
 - Total vertical drop from bifurcation to past dam area is about 14 feet, about 1% slope through this reach as compared to the system downstream which is 0.2% slope.
- Slide: Bifurcation design principles
 - Current system: generally get a lot of gravel and wood buildup, predictable
 - Need to maintain high shear stresses and uniform velocities to keep scour pool
 - **Important** to minimize maintenance!

- Flexibility for long term durability and management
- Want to mimic natural system—goal is 100% fish passage
- Slides: Learning from other projects
 - RDG has lots of experience on Calapooia
 - Erosion/loss of trees
 - River is dynamic! 30-40' lateral migration of channel is not uncommon
 - From years of working on this River, have developed an understanding of this River's behavior
 - Important for bifurcation site, understanding mechanics and hydraulics
 - Can increase scour with rock structures/barbs (1-2 foot boulders)
 - Radius of curvature/tortuosity—changes in modeling
 - Example—installation of rock barbs with high success, stable banks, revegetation, more stability
- Slide: 25% design/bifurcation
 - Meander bend hydraulics
 - Rip rap revetment along bifurcation—anticipate leaving it there, has created big scour hole
 - Deposition of gravel where stream widens out
 - Will place large wood along revetment to remove gravel deposition near entrance to Calapooia channel
 - Will reconstruct bifurcation to maintain scour and decrease/eliminate deposition, creating a longer scour pool
 - Engineered riffle at entrance to Sodom, which will move deposition throughout the Sodom system
 - Five total engineered riffles will be installed
 - Currently, places exist along Sodom with pool/riffle areas—will work with existing bed topography and align designed structures with current pool/riffles
 - Minimizes excavation
 - Stays within natural river rhythm/sequence
 - Follows established form and function
 - One of the riffles will be installed at dam site
 - Concern: extreme bed load—will design accommodate increased bed load?
 - 1400' of Sodom
 - Want river to carry all material through, further down Sodom ditch
 - Concern: with realignment of flows, will materials go down Calapooia River?
 - Calapooia River won't have capacity for transport
 - Extremely sinuous
 - Sediment will go down Sodom, not Calapooia River
 - Concern: sediment will flow through Sodom?
 - Yes
 - Concern: not a lot of meander in Sodom
 - Will not change a lot in Sodom
 - Won't speed up/slow down Sodom meanders
 - Concern: where sediment from?
 - Erosion in the Calapooia is somewhat natural
 - Lots of activities to reduce sediment input

- Comment: movement of banks/gravel close to bifurcation and considerable erosion, good future projects
- POINT: not a lot of changes will be implemented at the bifurcation, just trying minimize sediment deposition to reduce maintenance, will work within current river structure/alignment
- Slide: Engineered riffles
 - Handout available on CWC website www.calapooia.org
 - Different scenarios: high/low energy, slopes, project examples, annual flow/timing, mini summer droughts where issue becomes flow depth, want narrower channels instead of water spreading out to help fish passage
- Slide: Engineered riffle detail
 - Available on web site www.calapooia.org
 - Reconstruct stream bed at appropriate elevation
 - Place large rocks in riffle
- Concern: Extrapolation of rock sizes from other projects?
 - Stream size doesn't matter, slope does
 - Other projects have been on steeper slopes and can move these rocks
 - But physics dominates, and RDG is placing appropriate rocks that won't move on this slope
- Concern: What is the current substrate through this reach?
 - Cobble/gravel. Table from RDG "Pebble Count Sites: Calapooia River and Sodom Ditch"
 - Typical gravel bed for Calapooia from bifurcation to dam
- Concern: Is mudstone present?
 - Could be at bottom of scour pools
 - Not exposed
- Comment: construction of engineered riffles, materials will be layers and compacted with fines, very stable, build lifts in stages
 - Industry has been doing lots of culvert replacements and rebuilding stream bed inside of culverts with higher velocities
 - Have lots of different project experience
- Slide: Large wood
 - Multiple configurations, sizes, many options
 - Engineered wood, will be stable/immovable with natural anchors of vegetation, large boulders, buried into bank
 - Provides habitat and importantly, energy dissipation
- Concern: How decide on riffle length?
 - We are creating unnatural feature
 - RDG looks at other systems/similar river sites with good riffles, take slopes, rock sizes, other info to utilize as starting point for riffle design
 - Then develop hydraulic model to look at shear stresses, rock sizes, deposition
 - Assess if too steep/too shallow—iterative process
 - Riffle length will be different for each of five riffles, corresponding to current channel characteristics
- Concern: First riffle has potential for sediment to deposit there and increase size of first riffle? Or can riffles transport down ditch?
 - Won't change river release pattern

- Not big enough
- Natural area for riffle to form
- Hard for deposition with tight river bend there
- Current configuration is stable
- Deposition will occur downstream in Sodom
- Denise: OPRD has provided letter of support for future project maintenance at site
 - Note: Design tries to aim for minimal maintenance
 - Note: Will be determining maintenance trigger (hoping for 5-7 years instead of 2-3 years)

11:40 am FERC Discussion: Develop “to-do” list and timeline (NOAA, OPRD, USFWS)

- Background
 - Preferred alternative presented; Parks postponed action until decision made on how dam removal will be implemented
 - Clarify FERC responsibilities
 - Want to move this project forward in 2010
 - Funding expires 12/31/2010
- Melissa—Does FERC have to approve CWC work? Done with attorney? Majority of group is concerned on timeline for FERC application/approval and project completion
- Jan: Yes. FERC has to approve modifications to project
 - Need to submit exemption surrender
 - FERC instructions: develop restoration plan for the site with input from the fish agencies (NOAA, USFWS, ODFW)
 - OPRD needs to give plan to agencies to review (30 days), receive & address comments, then all is put into FERC application
- Melissa:
 - One project not covered Shear Dam—unclear as to handle Shear Dam.
- Denise:
 - Shear Dam in 2011
 - Construction in 8/1/2010 for 2 months on Sodom Dam
 - Want permits submitted by late February, unsure for nationwide USACE permit or individual project permits—120 days for individuals (USACE decides)
- Jan: If no issues with Shear Dam removal, can include with application
 - If Shear Dam not included—need to detail how Melissa/Jan will work together. Not unreasonable
 - Ann has good list of issues to address
 - Fish agencies need to approve plan and instruct on how restoration will move forward
 - Waiting for design to be further along
- Ann: can’t wait, often FERC accepts projects with conceptual designs, we can move forward with what we have
- Melissa:
 - Need to address (1) How maintenance agreement handled and (2) Shear dam
 - Recommend brainstorming session with all Fish agencies
 - Uncomfortable to propose things to project owners
- Jan: Try to capture enough in initial planning stage for surrender
- Ann: NMFS/Parks have list to address, what about spillway dam

- Can include continued agreement to work on these projects with FERC application
 - Understand Parks wants to get out of water management
 - As long as project is sound enough
- Melissa: need RDG to lay out management actions/possibilities, proposal for maintenance framework, benchmarks
- Ken is ODFW contact, Mike will follow through (Mike is fish passage, Ken is hydrology)
- Denise: can have permits and proceed with project as long as FERC has been properly notified via Parks?
- Jan: Not really, they need to be notified. We have been notifying FERC throughout this process about the progress. We have to wait until we submit our application for surrender.
 - Separate process of exemption and surrender, but Parks want them together
- Mike: submit with preliminary plans NOW
- Denise: Jan, what more information do you need? CWC can send everything
 - No
 - Sit down with fish agencies and discuss list (in short time period)
 - Want to develop list that they're going to approve
- Ann: concerned about FERC response, need to ensure they will act, send letter telling them we anticipate sending them a surrender with deadline
 - Technical Team has reached decision, at 25% design, Shear Dam plans,
 - Melissa: tell them funding is ending 12/31/10
 - Jan: biggest this is having fish agencies approve and include this in application
 - Jan: FERC wants to see we went through proper project process.
 - Melissa: project is not just fish passage, includes everything, as specific as possible in application
- Jan—will send out application draft (just a start)
 - Will email list from Ann between fish agencies
 - Fish screen, Juvenile fish passage need to be addressed at the Mills
- Denise—Boston Mill Society needs to be heard
 - Are coming late to process
 - Need to hear why this is moving forward in this way
 - They need to be comfortable with this
- Jan—SHPO has been advised and their take is that this project is part of Thompson's Mills story

12:20 am Calendar

- Upcoming Landowner meeting December 8th 3:00-5:00pm at Pioneer Villa
- Next technical team in January 2010 (Doodle Poll will go out)

12:27 am Meeting adjourned.