Meeting Summary

Sodom Dam Fish Passage Improvement and Flow Management Project

Landowner/Technical Team Meeting
August 12, 2009 9 am to noon
Pioneer Villa, Halsey, OR

Prepared by: Denise Hoffert-Hay, Project Manager
Prepared for: Project area landowners and Tech Team members, August 2009
Questions? Please call or email Denise at: (541) 619-5896 or hofferthay@peak.org

In attendance:

Bud Baumgartner, Calapooia Watershed Council	Tara Putney, Calapooia Watershed Council
Denise Hoffert-Hay, Calapooia Watershed Council	Scott Wright, River Design Group
Mark Running, Calapooia Watershed Council	Jared Rubin, OR Dept Env Quality
Kerry Griffin, NOAA Restoration Center	Jeff Brown, NOAA Fisheries
Melissa Jundt, NOAA Fisheries	Steve Mamoyac, OR Dept Fish and Wildlife
Michael Lambert, OR Dept Fish and Wildlife	Greg Apke, OR Dept Fish and Wildlife
Dennis Wiley, OR Parks and Recreation Dept	Karen Hans, OR Dept Fish and Wildlife
Jim Morgan, OR Parks and Recreation Dept	Darin Wilson, OR Parks and Recreation Dept
Jenn Cairo, OR Parks and Recreation Dept	Julie Whalen, OR Parks and Recreation Dept
Wendy Hudson, OR Watershed Enhancement Board	Gloria Kiryuta, OR Department of State Lands
Kevin Seifert, Linn SWCD	Chuck Knoll, Linn County Roads Department
Bo Miller, OR Dept Transportation	Jeff Norman, OR Dept Transportation
Ann Gray, US Fish and Wildlife Service	Janine Castro, US Fish and Wildlife Service
Desiree Tullos, OR State University	Michael Mattick, OR Water Resources Dept
Peter Jensen, Landowner	Telly Wirth, Landowner
Tim Otis, Landowner	Dave Goracke, Landowner
Theresa Buckley, Landowner	George Pugh, Landowner
Jim Roberts, Landowner	Nate Kropf, Landowner
Judy Harrison, Landowner	Elaine Poland, Landowner
Brian Glaser, Landowner	Debbie Paul, Landowner
Brett Anderson, Linn County intern	Alex Farin, ODFW intern

Meeting began at 9 am with introductions.

Denise provided a brief overview of: 1. Council's goals for the project 2. Interim Management Concerns 3. Review of the three remaining site alternatives with the concerns that need to be addressed.

Calapooia Watershed Council Goals

1. Improve fish passage for ESA listed species of concern as well as resident aquatic species.
2. Collaborate with local stakeholders, state and federal agencies to develop a water management plan that considers local water uses and ecological needs.

Interim Management Concerns

1. Gravel build-up at the bifurcation. Can ODFW or USACE support removing gravel at the bifurcation during the next few years (until an alternative design is implemented)? Where does the necessary $35,000 to achieve this come from?
2. Water management is still a big concern for landowners. Can OR State Parks clarify how winter flows are managed and provide this information to landowners?

Remaining Alternatives – *concerns were identified during the May 2009 technical team meeting*

Alternative 3: Calapooia Channel Restored

Concerns that need to be addressed:

1. What is the habitat/ecological value for listed species? How are these species utilizing this section of River?
2. County and ODOT infrastructure upgrades.
3. Significant excavation would be required. What are the disposal options for the sediment? What are the testing requirements for the sediment?
4. SHPO archaeological study required. Twenty-nine culturally significant sites are mapped in the project area. Unknown number of yet to be discovered sites.
5. Private residences and out buildings would likely need to be moved. Are local residents supportive of moving their homes?
6. How much intact riparian buffer would remain following excavation?
7. Instead of excavating the channel, could other work be done to gain additional storage in the system?
8. High cost of implementing and potentially a long timeline. Who is responsible for this?

Alternative 4: Restore Sodom Channel

Concerns that need to be addressed:

1. Loss of habitat in Calapooia Channel
2. Lack of variability in Sodom Channel
3. What is the habitat/ecological value of the Sodom Channel? How are listed species utilizing this section of River?
4. Longitudinal gradient would be disrupted. How long until the gradient could be restored? What are the consequences of the River re-establishing in a new location?
5. Can the soils/geology in this location support the River moving to this location?
6. Can the soils in this location support diverse habitats?

Alternative 5: Variable Flow Control

Concerns that need to be addressed:

1. Who manages the VFC device and provides maintenance?
2. Who will manage gravel at the bifurcation?
3. Is this option feasible in this River system given the sediment load?
4. Is there agency staff support for a new structure being built at the bifurcation?
5. Does this option necessarily mean all flows are eventually captured by the Calapooia? Can the system be managed as it was historically (60/30 Sodom/Calapooia)?

Scott Wright of River Design Group (RDG) provided an overview of implementation costs for each of the 3 alternatives as well as interim actions. His entire presentation can be downloaded from the Council's webpage at: http://www.calapooia.org/projects/sodom-dam-fish-passage-improvement-and-flow-management/

A brief summary of his presentation is included here.

*NOTE: For all cost estimates provided below many project elements including: final design, hydraulic modeling, permitting, archaeology study, sediment testing are NOT included. Scott estimated that 20% would need to be added to each for covering these costs.

Interim Action - Cost estimate

Project Element	Number	Low Estimate	High Estimate
Thompson's Mills modification	1	$100,000	$400,000
Bank stabilization	42 sites	$1,260,000	$3,675,000
Work area isolation	42 sites	$84,000	$105,000
Gravel/wood maintenance at bifurcation	Every 1-3 years as needed	$35,000	$35,000
Concrete fishway retrofit	2 sites (Sodom, Shear)	$400,000	$800,000
TOTAL ESTIMATED COST		**$1,879,000**	**$5,015,000**

The interim action does NOT include replacing the Sodom or Shear dams – only retrofitting the existing dams with fishways.

(3) Restore Calapooia as Mainstem – Cost estimate

Project Element	Number	Low Estimate	High Estimate
Home site and outbuilding relocation	43 buildings	$645,000	$2,150,000
Thompson's Mills modification	1	$100,000	$400,000
Flood reduction treatments	20,000 cy	$100,000	$400,000
Irrigation water maintenance			
Bridge removal or modification	2	$2,000,000	$4,000,000
Channel excavation	528,500 cy	$4,228,000	$10,570,000
Grade control structure installation	300 ft	$360,000	$720,000
Bank stabilization	42 sites	$1,260,000	$3,675,000
Revegetation	1,920 ac	$3,840,000	$4,800,000
Work area isolation	44 sites	$44,000	$220,000
Existing dam removal	950 cy	$38,000	$57,000
TOTAL ESTIMATED COST		**$12,615,000**	**$26,992,000**

Alternative 3 costs potentially would be over a 10 to 15 year timeframe.

(4) Sodom Ditch as Mainstem – Cost estimate

Project Element	Number	Low Estimate	High Estimate
Thompson's Mills modification	1	$100,000	$400,000
Irrigation water maintenance			
Grade control structure installation	3,600 ft	$360,000	$720,000

Bank stabilization	42 sites	$1,260,000	$3,675,000
Revegetation	1,920 ac	$3,840,000	$4,800,000
Work area isolation	44 sites	$44,000	$220,000
Existing dam removal	950 cy	$38,000	$57,000
TOTAL ESTIMATED COST		**$5,642,000**	**$9,872,000**

(5) Variable Flow Management – Cost estimate

Project Element	Number	Low Estimate	High Estimate
Home site and outbuilding relocation	43 buildings	$645,000	$2,150,000
Thompson's Mills modification	1	$100,000	$400,000
Flood reduction treatments	20,000 cy	$100,000	$400,000
Irrigation water maintenance			
Bridge removal or modification	2	$2,000,000	$4,000,000
Channel excavation	264,250 cy	$2,114,000	$5,285,000
Grade control structure installation	3,200 ft	$320,000	$640,000
VFM structure installation	1 site	$1,150,000	$1,250,000
Bank stabilization	42 sites	$1,260,000	$3,675,000
Revegetation	1,920 ac	$3,840,000	$4,800,000
Work area isolation	44 sites	$44,000	$220,000
Existing dam removal	950 cy	$38,000	$57,000
TOTAL ESTIMATED COST		**$11,611,200**	**$22,877,000**

Maintenance and upkeep of the weir is not included in the cost estimate. The air bladders installed as part of the design are made of a hypalon material and are expected to be quite durable. However with the large volume of wood that moves through the system and the expected exposure to solar radiation, there will be on-going repair/replacement costs for the system and these are not included. Additionally, the cost estimate does not include system operations.

The Yakima Bureau of Reclamation has experience with operating one of these type of inflatable bladder dam systems that has been in place for 10 years and could potentially answer questions on its ease of use, maintenance, etc.

Questions were raised about the height of the inflatable weir system and if it would need to have a fish ladder installed and how this system would look on the ground since the initial vision for this project was something very low head. Scott responded that a 6-foot tall flow control device would be needed to control flows between the two channels.

Oregon Parks and Recreation Department – *Dennis Wiley*

Overview of OPRD water needs and legal obligations

Jim Morgan had to leave the meeting early and Dennis Wiley provided the overview of the Mills water needs. OPRD is exploring the option of taking the Mills water delivery system offline. No decision has been made to switch operations, but OPRD is investigating what this would look

like and cost. It appears that the off-line system would be adequate for meeting aesthetic and demonstration milling purposes.

Dennis also explained that OPRD owns all the dams associated with the Mills, but not the ground underneath them. Therefore, OPRD will not be managing any type of new flow control device that would be installed. Sodom dam has been identified as a barrier to migrating ESA species and must be addressed. Shear dam has not been identified as a barrier, though OPRD recognizes passage there is not ideal.

Dennis stated that OPRD has no plans, funding or legal obligation to continue gravel mining at the bifurcation. OPRD is not an irrigation district or watershed manager and does not plan to do work to attempt to control the flows at the bifurcation. OPRD will continue to work with FERC and this group to address their legal responsibilities under ESA.

Question was asked on how much water Parks will need to do demonstration milling. Question was asked on where the cut-off for the OPRD "pond" will be on the ground. Both questions require additional investigation.

Linn County bridges and infrastructure – *Chuck Knoll*

Chuck explained that he is participating with the Technical Team solely to address County infrastructure concerns with the proposed alternatives. He provided a road engineer's perspective on the valley. In the flat floodplain, you have to increase the length of the bridge in order to meet the "no rise" requirement of building in the floodplain. However, when you increase the length of a bridge, you also increase the structural thickness to make it strong enough to handle the additional weight. This increase in thickness decreases the capacity of the bridge. In this juggling of thickness and length, there may not be a technical solution with a no-rise impact.

Chuck explained that design flows for each structure can be found from the as-builts that show the hydraulic capacity of each structure when they were designed. Some structures likely have been silted in over the years and capacity could be improved with dredging. He also explained that repeated flooding is extremely detrimental to road conditions and hastens the need for road work and repairs. That is why having appropriately sized bridges is so critical.

Chuck also provided information on how bridges are selected for repair/replacement based on their condition. The Linn-West bridge is slated for replacement, but none of the other bridges that would potentially be impacted by the project, especially those affected by Alternative 3, are slated for replacement. This means that no State, federal or county money would be available for replacing these structures in the near-term. When the bridges aged into replacement, then the structures could be upgraded to have the capacity to pass the flows under a new water management scenario.

ODOT staff at the meeting Bo Miller and Jeff Norman explained that ODOT wants to be kept in the loop on project communication, however they will not weigh in on the project until after viewing the hydraulic modeling of the system. They would like to see the 100 and 500 year flow events modeled. When the I-5 bridges were originally constructed, no hydraulic modeling was

done because ODOT didn't employ hydraulic engineers. It wasn't until after the 1964 floods that ODOT began looking at design flows as part of the design process. ODOT also explained that they have experience with managing bifurcations and grade control and that these systems must be maintained. They can't be built and they walk away. There needs to be a plan in place and a responsible party to implement maintenance.

Local stakeholder concerns

Landowner comments:

- What happens to the Calapooia channel under Alternative 4 – already the Calapooia is acting like a slough? Response: The Calapooia would continue to be more and more filled in over the years and be an alcove/side channel and carry little summer flow, only the groundwater influenced water would remain because the channel would be perched during summer months.
- To move to having the full flows returned to the Calapooia channel seems monumentally disruptive to landowners, not supportive of this approach.
- Concern that the dam at Boston Mills is the biggest reason flows in Calapooia not moving.
- Some restoration of flows in the Calapooia needs to occur to have water during low flows in that channel.

Overview of SHPO response to project, *Denise Hoffert-Hay, CWC*

The proposed project alternatives were provided to the State Historic Preservation Office to find out what we would need to do in order to meet SHPO requirements for implementing one of the project alternatives. This was a preliminary step since we do not have a preferred alternative and do not know all of the project elements (i.e. location of haul roads, equipment staging, etc). However, Denise thought it was important to find out known archaeological sites were in the area so that we could plan for how to address the SHPO requirements and have a preliminary cost estimate developed.

Dennis Griffin, State Archaeologist responded to the Council's request with a letter. He explained there are 29 known culturally significant sites in the project area along the Calapooia channel. Because of the high number of known sites and high potential for additional archaeological sites and buried human remains, for any alternative to go forward, SHPO would require that we hire a certified archaeologist to do a cultural resource survey of the area.

I contacted a local archaeologist who we worked with on the Brownsville project to get a cost estimate for doing a cultural resource survey of the Calapooia side. In addition, he put together an estimate for the evaluation of site significance and to assess potential adverse project effects and mitigation. His estimate has extensive detail and details the assumptions that went into it. To complete the necessary archaeological work to implement Alternative 3 he estimated would cost $2,760,000.

To just do a cultural resource survey for Alternative 4 would cost approximately $20,000.

He could not give me an estimate for Alternative 5 without more information on where the known sites are located and where we propose the VFM device would be installed.

Process for forming a local water district (if Variable Flow Management if the preferred alternative) *Michael Mattick, WRD*

Landowners can form a special district to address flow management between the Calapooia and Sodom channels. There are two possibilities: 1. Water Control District or 2. Water Improvement District. Michael thinks the Water Control District seems like the best fit.

No agency or rules govern the formation of special water districts. The WRD has special rules related to water right transfers within districts, but nothing on their formation or operation specifically. The formation has to be by a vote of the eligible district members, and it has some county approval or coordination necessary, and the members can decide to tax themselves to pay their expenses related to managing the flow control device. The assessment is collected by the county tax collector.

There are six water rights on the Calapooia that would need to move to wells if the summer flow were all in the Sodom. They would be new applications for ground water. These rights would lose their priority date by shifting to ground water, however ground water in the area is not currently over-appropriated and is not currently regulated off. There are 5 cfs of water rights total that would need to be transferred and this would require eight to sixteen wells. Each well requires a new permit and new water right for a cost of approximately $3,000 per well. The cost of construction for wells ranges from $25,000 to $35,000 per well. The Sodom channel has only one water right that would need to be moved to a well. There are two other water rights that are in the project area, but appear to be above and below the bifurcation and therefore not impacted by the project.

Question was asked about the potential for future conditions to change and therefore the rules governing wells in the County to change. Michael said that once permits are issued, no new conditions can be placed on them.

Peter Jensen mentioned hat the Calapooia Irrigators District still exists, though the district is only for landowners above the Thompson's Mills. The CID does have the authority to tax its membership.

Ecological value of the Calapooia channel *Steve Mamoyac, ODFW*

Steve provided an overview of the species that utilize the Calapooia channel including: sand rollers, red-sided shiners, pike minnows, cutthroat, lamprey and amphibians. These are in addition to the ESA threatened species: spring chinook and winter steelhead. The spring chinook and steelhead use either section of river as a migration corridor. All spawning and rearing habitat in the watershed is above Holley. When ODFW conducted fish trapping in 2002 to assess how the spring chinook migrate the Sodom/Calapooia channels, they found that the spring chinook were utilizing the Sodom channel. This is not surprising since during late spring and early summer when the chinook return, flows are much greater in the Sodom channel. The fish are attracted to the higher flows and migrate up the Sodom. One fish was found in the fish trap on the Calapooia channel.

Steve had temperature data for both the Calapooia and Sodom channels from Summer 2001. The Calapooia channel is significantly cooler than the Sodom during the summer months. This is likely due to a number of factors: lack of shade in the Sodom and groundwater influence in the Calapooia. There is no funding to do temperature modeling of any scenario for this project.

Steve explained his view that many people on the project's Technical Team initially put their support behind Alternative 3 at the May 2009 meeting. However, in the intervening time is is clear that there are significant barriers to implementing Alternative 3. How do we from here to there and what can we actually implement? Both channels have a significant future role. Sodom needs significant work and it is a serious issue that chinook are delayed at this dam. Sodom dam must come out and grade control structure could be put in its place.

Steve would like to acknowledge that Alternative 4 could work if we approach it right and if we could maintain grade to keep some summer flows in the Calapooia. He also likes the idea of having flow control at the bifurcation, but recognizes that we may not be able to afford it. There are resources in both channels that we don't want to walk away from.

NEPA for each of 3 remaining alternatives, what level of study is required? *Kerry Griffin, NOAA*

NEPA is the over-arching guidance process for federal agencies. The final solution that the project seeks to implement does not have to be the "greenest" alternative under consideration. NEPA does not mandate that the most environmentally friendly alternative is implemented, only that tit was considered.

Each federal agency involved with the project (NOAA, USFWS, USACE) is responsible to conduct their own NEPA. Sometimes on highly complex projects, federal agencies adopt each other's NEPA and there can be a lead federal agency.

Each agency has their own process. NOAA and USACE incorporate NEPA into their regulatory review of the project. Open Rivers Initiative has a programmatic environmental assessment that covers projects that receive ORI funding.

It is not known yet for this project what level of environmental assessment will be required. The project will not do an EIS if we don't have to. The level of project controversy in great part determines if a project needs to prepare an EIS. A consensus decision on how to move the project forward leads to a smoother NEPA process.

The alternative chosen does not have to embrace the entire project. (i.e. The Mills going off-line can be its own permit process separate from the dams).

Overview of project modeling approach and what questions will be answered with the modeling *Scott Wright, RDG*

Scott's presentation is available from the Council's webpage at:
http://www.calapooia.org/projects/sodom-dam-fish-passage-improvement-and-flow-management/

Scott provided an overview of the watershed and available cross-sections that will be used (along with LiDAR data) to build the model. The modeling efforts are complicated by the fact that the watershed area to be modeled is quite large and the number of cross-sections (although there are many) is limited. A surprising finding in the LiDAR data is that the Calapooia channel is perched several feet above the ordinary high water line for the Sodom and is perched several feet above the surrounding floodplain. This is evidence of the backwater effect of the Thompson's Mills and Shear dam on this channel. The corridor of I-5 running through the watershed will also be modeled for its impacts on how water travels once it is out of bank.

Several scenarios will be run through the model when it is complete including:

Scenario 1 – Existing Conditions
Scenario 2 – Sodom Ditch Primary Channel, Remove Dams, Maintain Sodom Dam Elevation
Scenario 3 – Sodom Ditch Primary Channel, Remove Dams, Maintain Sodom and Shear Dam Elevations
Scenario 4 – Calapooia River Primary Channel, Remove Dams, Maintain Sodom Dam Elevation

The plan is to run the model for the 2, 5 and 10 year events for the following reasons: these return intervals are the most likely to occur and when they do, have been causing significant issues for local landowners; these return intervals show what happens just as the River moves out of bank. Once the River is above the 10-year flood stage, the entire area is under water and modeling the 50, 100, 500 year events just shows deeper water in all locations.

The Council's budget for this modeling is extremely lean. Linn County may have some funding to do additional modeling work to show impacts to County infrastructure.

NEXT STEPS

The next Technical Team/Landowner meeting will include a RDG presentation on the modeling results. We will be discussing how to make a decision on which alternative(s) to move forward and how to fund the project next steps. When the modeling is complete, the Council's existing budget for the project will be spent. Potentially the next meeting will be in September (not October as stated at the meeting).

Thank you for your continued support of and participation in this process.

Submitted by: Denise Hoffert-Hay, Project Manager, Calapooia Watershed Council