October 6, 2010 Technical Group Meeting Summary

In Attendance:
Thom McConathy
Kim McKee (by phone)
Jeff Schnabel
Dorie Sutton
Lisa Willis
Rob Zisette (by phone)
Phil Trask
Eileen Stone

Opening

Phil reviewed the agenda and asked if there were any additions, to which there were none.

Research Proposal/Research Plan Discussion

Phil gave an overview of the Partnership budget thorough 2013, which has a projected $90,000 for research or other priorities after funds are committed for Project Management Team, the USGS water balance and nutrient budget study, and miscellaneous expenses. This is with the assumption that Partner agencies are able to continue to fund at the same level through 2013. It was also noted that all of those funds are not available today, but will be over the next few years.

Phil summarized the WSU Proposal:

1. Conduct microscopic analyses on samples collected in 2010 for cyanobacteria, phytoplankton, zooplankton and related water quality variables. Cost: $25K

2. Deploy equipment system that will measure both physico-chemical properties and cyanobacteria pigments in the Vancouver Lake. Cost: $15K

3. Analyze the genetic makeup of blooms in order to pinpoint which species we need to be concerned about as toxin-producing cyanobacteria in the lake. Cost: $25K

If money wasn't an object, it would be great to fund all of this, but in the light of limited funds, the question for the Technical Group is how this proposal fits into what we still need to know about the lake in order to make effective management decisions.

Phil: Task 1 seems like it would be nice to know what happened to the species in the timeframe of the sudden cyanobacteria drop from high numbers to zero this summer, but in terms of Partnership management decisions, it seems the correlation between the plankton analysis to water balance and nutrients could be valuable. I would like to know from Rob and the Technical Group what the value is of this knowledge in comparison to other research needs with limited funding.

Rob: First, I must note that the proposed activities all give valuable information at very low cost. That said, there can be a prioritization between studies for the Partnership.

Understanding the phytoplankton and zooplankton populations and how they react to water and nutrients is critical to the Partnership coming up with solution(s) for the lake. So while it would be useful to know the algae species composition and changes during 2010, with limited funds, it is not as critical to the Partnership as knowing this information concurrent with the USGS study.

Thom: is it really that important in light of the other research needs? The value of these tasks seems low as compared to other tasks in reaching the Partnership's goals.

Rob: if you don't know the cyanobacteria dynamics, and what nutrients are controlling them, you won't know how to control them. Getting the species dynamics information concurrent with the nutrient balance/budges will allow you to calibrate the model for what management actions will work.

Phil: if had money for one year of monitoring and not two, what would you choose? Would monitoring the species concurrent with one year of USGS work be just as good as doing it for two years, or only half as good?

Rob: One year of species monitoring would only be half as good at two due to inter-annual variation. Much like running the USGS study for two years, two years of continuous data is very important for modeling a decision. Not conducting monitoring in the winter could save money, but it would likely be very little cost as monthly sampling.

Thoughts on Task 1: As proposed by WSU for 2010, this is not critical, but to conduct concurrent with USGS work is critical to the Partnership's mission; two years will be twice as valuable as one year.

Thoughts on Task 2: As USGS is conducting grab sampling, and not in-situ monitoring, this monitoring is valuable, gives a better understanding of the changes within the lake. For example, understanding oxygen changes in the lake during the night and how it impacts phosphorus release from the sediments is important for knowing how to best manage phosphorus in the lake. The pigment portion of this task is interesting, still working on accuracy, but could calibrate to the monthly chlorophyll samples and then can see the shifts.

$15,000 is very little for this valuable information, especially if timed with the water balance and nutrient budget study. You could see it as an experiment: do it for at least a year to see if it can be calibrated to cyanobacteria biomass and if so, it could become a useful tool.

Ranking of Task 2: This would be valuable to conduct at same time as USGS work, at least for one year, and could then decide if it is worth continuing. While this is valuable to the Partnership's mission, it is not as critical as Task 1.

Task 3: This is very interesting work, and graduate student research is important, and again at a very reasonable cost to the Partnership, but this task would not result in information that is important to the Partnership in making management decisions for the lake. Species composition and toxin production has been looked at for years and is not really understood yet. If it was linked to the location/timing of Health Department sampling it might be of value to the Health Department.

Kim McKee: Rob gave excellent advice, and I would fully agree about the value of each task, with the nuances Rob mentioned of having work done concurrently with the water balance/nutrient budget study.

Continuous monitoring data would be most valuable to the Partnership, but really concurrent with the nutrient information. Task #3 is not as critical to management of the lake.

On Task 2: where would the in-situ probe be? It should be representative of the entire lake.

Rob: should be at the USGS monitoring station

Kim: From proposal, it seems it may be planned at the Sailing Club? But it would be valuable if at same spot as a USGS sampling spot for calibration purposes.

Jeff: WSU's earlier monitoring found the lake water quality to be relatively the same throughout the lake.

Thom: There was an 8% variance in WSU's sampling sites. I see the most value in having the in-situ monitoring at the swim beach since it is midway between flushing channel and Lake River.

Kim: If sediment release of phosphorous is significant you will want a site that is representative across the lake.

Rob: There will be a limitation in where to mount the equipment due to the vertical profile of the lake.

Jeff: I appreciate the perspective Rob and Kim have shared so far. In addition, there are other studies and research gaps identified. Again with limited funding, I would like to know what you think the next studies should be in prioritizing funding and timing.

Thom: We need to identify refuges for fish within the lake so that we don't destroy them (page 9 in research plan: habitat). I would also like to see invertebrates and shellfish separated. The wildlife composition and habitat studies have a note that they may be less critical to cyanobacteria, but I do not agree. We need to expand the research plan goals to include meeting the necessary environmental and engineering requirements for implementing decisions.

Dorie: The big question to me is we have three years of plankton species data: what do we need to make it meaningful to decision making at the lake? If we conduct the in-situ sampling, I would like to be sure that we plug that in with the grab sampling information.

The food web and wildlife habitat studies will provide good information but are not necessary to do up front. When we look to implement certain solutions that may impact habitat we should be sure at that time to assess habitat within the lake, but if habitat wouldn't be affected by a chosen technique, doing that study now would be wasting money from the standpoint of informing management decisions.

Also, how much would a water quality model cost if that is needed for making a decision? We need to look at what we work we can do with grants.

Phil: On funding, the biggest hope is to help WSU work that was identified above to be funded by Ecology's Freshwater algae grant, which would cover work that begins on July 1. I see the Freshwater Algae grant as very likely, the Centennial grant as less likely (because Centennial's emphasis is on "turn-dirt" type of work). Maybe we could do just a little more work to last year's proposal and ask for less money: then it might get funded this time.

Kim: I recommend taking last year's Centennial proposal and really study the evaluation criteria. Be sure you are meeting those criteria. The big assessment in Centennial is looking at what environmental change will result from the work the grant is funding. I have less experience with Freshwater Algae grant: check in with the staff in that program.

Phil asked the group for their recommendations on WSU's proposal, but focusing not on 2010 but on concurrent work with USGS:

Thom: if in conjunction with USGS, see it making sense to monitor plankton makeup for one year.

Rob: As I've mentioned before, the water and nutrient work is the most important to the Partnership's decision making, and you are getting started on that. I see concurrent plankton monitoring is the next most important, and a longer timeframe is more valuable than just one year.

Next in value is understanding sediment. The USGS will measure the sediment rate, but it will also be important to know what phosphorus is bound to within the surface sediments. The bulk density of the sediment isn't as important as the sediment chemistry.

Knowing the fish population data is important: knowing the bottom feeders: species and abundance, and possibly the inter-annual variability. These will be important for resuspension of sediment.

Other than that, I don't see the fish/food web and wildlife and habitat work giving much information for making management decisions, because virtually all successful lake management is done from the bottom up, not by biomanipulation.

Jeff: wouldn't the USGS work take care of some of the sediment chemistry?

Rob: USGS will get at it from the mass balance difference, which gives you the net change. This is valuable, but not the complete picture. You will want to know the sediment release (in which there is a lot of error). To do so it is best to measure every component. You could do this concurrent with the USGS or wait to do it after the first year of USGS work. After one year of the USGS study you will know how important internal loading is to the nutrient cycle, and if it is important, then you would want to look at the sediment release.

Rob and Kim: We know that nutrient cycling is happening in the lake, but not how important it is within the overall picture. The USGS water balance/nutrient budget work will allow you to know how important internal cycling is. If important, then you drill down to the sediment release of nutrients to quantify that, which would then be important to informed decision making as to how to best manage nutrient levels in the lake.

Phil: each of these studies could be used as model inputs, which is how we'd address analysis of management techniques. So as Dorie mentioned, should we be saving funds for a model?

Rob: Lots of restoration work has been done without an ecosystem model. Decisions can be made and work can be planned with a spreadsheet model. The big ecosystem models help stakeholders feel better about the outcomes, but could first look at through spreadsheet modeling, and then see how complex the lake is, and then decide if need a bigger model. You would know this for the most part after one year of USGS sampling, and can make a modeling decision at that point. The second year of data will help the accuracy of whatever model you choose (spreadsheet or ecosystem). You can do a lot of manipulation within a simple

spreadsheet model in terms of flushing channel and Lake River inputs, watershed inputs, and sediment inputs.

Kim: I agree; a lot can be understood through a spreadsheet model.

Rob: Once you are looking at management scenarios, then would want to know about habitat and invertebrates. But do that later, not upfront.

Also, knowing how much carp are in the lake doesn't tell you very much about nutrient release from sediment re-suspension. Carp were removed from Green Lake (Washington) and had a very small impact on phosphorus loading in the lake.

The WSU proposed genetic study of toxins producing algae could be a good fit for a Freshwater Algae grant.

Phil asked Kim about asking for funding for two projects through the Freshwater Algae grant. Kim would defer to Kathy Hamel about asking for one or two projects; but understand it as that they will need to limit funding to the one of highest priority. Phil commented that from the Partnership's perspective, species sampling and water quality monitoring would be the highest priorities.

Summary of meeting recommendations for Steering Group

1) Decline the current proposal from WSU for 2010 monitoring.
2) Solicit an updated proposal from WSU to perform tasks 1 and 2 of the current proposal during the 2011-2012 timeframe concurrent with USGS field work.
3) Pursue a Freshwater Algae Control Grant from Ecology to fund or partially fund this work.
4) In the absence of grant funding, consider funding the updated WSU proposal using existing VLWP funds.
5) Pursue fish community research and/or sediment research opportunities with remaining VLWP funds and/or through additional grant applications if feasible.

General Comments/Closure

Phil opened the floor to general comments and announcements. Phil asked Kim about Ecology's suspended toxin study in the lake, which Tonnie briefed the Partnership on last fall. Kim will ask for an update on that.

Kim commented that until Ecology is able to fill Tonnie's position, he will gladly provide Ecology's perspective to the Partnership.

Dorie asked about the USGS monitoring location at Burnt Bridge Creek. There was an email in 2005 about collecting samples in this backwater area, and the potential difficulty in understanding where nutrients are coming from if the water is backing up from the lake in that area, and not flowing freely from Burnt Bridge Creek. Thom commented that there is a concern that some of the nutrient inputs could be bubbling up from the sediments in that area, so you want to be sure they are captured. Eileen will get the information from Dorie and raise the questions about this sampling area to Rich Sheibley of USGS.

Thom would like to see legal input about what will need to be done for the required environmental and engineering studies (e.g., NEPA required information) for selected techniques and work towards those requirements.

Thom would like everyone to read the documents on the Partnership's website bibliography, especially the Dames and Moore report of the late 1970s, the Environmental Impact Statement of the 1980s and the Operations Plan, including the planned opening and closing of the flushing channel when it would be most beneficial to the Lake. We need to look at what has and hasn't been done in the Operations Plan.

Thom noted that the link within the bibliography is broken right now. Eileen will check with Lenora of StreamNet.

Thom would like to see more communication beyond meeting notes, possibly a regular newsletter, or a way for Partnership members to communicate their ideas to the group. Phil will raise the idea of additional communications to the Steering Group for a decision.

Phil thanked everyone for coming and brought the meeting to a close.

Next meetings:

Steering Group: The next Steering Group meeting is November 17th at 3:30 pm.
Partnership: The next meeting of the full Partnership is December 15th at 4 pm.
All meetings are at the Port of Vancouver offices.

Post –meeting note:

The funding members of the Steering Group (Clark County, City of Vancouver and Port of Vancouver) met on October 14th regarding the Technical Group's recommendations. After reviewing the available budget, it was decided that VLWP will be unable to fund additional research at this time, as the VLWP has already allocated its available funding to project management and the USGS research project.

Thus the Steering Group expressed their support for WSU to submit a grant proposal under Ecology's Freshwater Algae Control Grant program to fund algae work in 2011 and/or 2012, and Clark County staff would be available to assist with the grant proposal if needed. Unfortunately the VLWP would not be able to provide matching funds, so WSU would need to find other avenues to fill that requirement.