January 19, 2012 Technical Group Meeting Summary

In Attendance:

Thom McConathy
Marty McGinn
Brett Raunig
Jeff Schnabel
Dorie Sutton
Lisa Willis
Phil Trask
Eileen Stone

By phone: Rob Zisette, sub-contractor

Opening

Phil opened the meeting with an overview of the development of the matrix. In our August Technical Group meeting, the group decided to not refine the Techniques document until the USGS data collection is complete. This would allow the group to put energy into those techniques that make sense based on our new knowledge from USGS. The Steering Group asked for the Technical Group to look at which actions may deserve more attention sooner rather than later.

To address this request, the project management team and Jeff Schnabel developed an early form of this matrix to help us look at Partnership values and what we can feasibly implement.

The matrix was revised with the Steering and Technical Groups in early December before discussing with the full Partnership at the December 21st meeting. The result of those meetings included bringing more specificity to actions.

The Technical Group was asked to address the following needs:

1. Identify new actions;
2. Identify any needed splitting of techniques;
3. Suggest changes to the numerical scoring (with supporting information: the second page of the work sheet gives some of the reasoning for why a score was given.)
4. Review and comment on the columns on the far right, which are: “Expected Outcome:” what we think will happen if a given action took place; “Likelihood of Success:” likelihood that this technique would work, and “Additional Study Needed.”

One of the purposes of this matrix is to get at what actions will be beneficial to the lake in general.

General Comments:

Thom commented that the numbers are subjective, not objective, and that he is concerned that impacts on beneficial uses will be weighed despite the subjectivity of the numbers. He believes this should be in a narrative instead of the current matrix form.

It was remarked that looking at a narrative all at once can be difficult. The narrative for most of the techniques is in the algal control techniques document. A comparison like this matrix is a part of many decision making processes to help distill information.

Aeration was requested to be added as a technique. Jeff noted that this is already considered within the artificial circulation category per the algal control techniques document.

It was noted there are more methods of phosphorus inactivation than those listed. At this point the overall technique is included and we can drill into more specificity at a later time.

Phil asked Rob if any major techniques have been missed. Rob commented that major techniques have been captured in the matrix. There may be techniques that have been used in small cases, and some nuances to those captured, but for the purposes of this exercise major techniques are covered.

Any new techniques are to be sent directly to Jeff to be considered for inclusion in the matrix.

Marty asked if there is a way to keep nutrients out of the lake based on the large nutrient loads from Salmon Creek in the preliminary USGS information.

Phil commented that nutrient inputs could be addressed by increasing Best Management Practices in the Salmon Creek watershed, or by engineering, but not sure how else. One engineering method would be damming, but that would bring other problems, including fish passage issues. Thom commented that with a dam there could be management of fish entering/exiting the lake as well as an increase in trails with access over a dam. Brett remarked that damming seems highly unlikely from a permitting perspective.

Rob commented that managing lake level and high nutrient water sources should be in the matrix. Fish passage could be part of engineering. A permanent dam could be used to reduce the inflow of nutrients that appear to be entering from Salmon Creek. It could also be used for algae control by water drawdown, and as non-algal control to enhance boating access by controlling lake levels.

There was discussion of the change in hydrology of Lake River and of Vancouver Lake that would result if a dam was to disconnect Lake River from Vancouver Lake. USGS will give us more information on flows. A dam is captured in the matrix, and the name of “damming to raise water level” will be changed as damming could also be to control nutrient input, not just to manage the lake’s water level. It was remarked that it is too soon to make assumptions on how a dam will impact nutrient inputs when the USGS study is not yet complete.

The organization of the techniques was discussed. Water management could be a category that would include dilution, flushing, outflow management, damming. This could include management of Burnt Bridge Creek –additional wetlands in this area could be used to filter water from the creek. A separate section could be added to the matrix of all techniques that incorporate significant engineering controls.

Jeff reminded the group that at the end there will be an effort to make a management plan from the resulting list of possible actions. The task of scaling the impacts of techniques on beneficial uses is a detail that will be worked on later.

<u>Expected Outcome column</u>:

There are nuances to expected outcomes: some techniques impact all algae, some impact blue green algae specifically. The group needs to have a good common understanding of what the listed techniques include. The expected outcome then determines the likelihood of success of reaching that outcome.

It was asked if the Technical Group should be considering funding, and what will bring the best outcome for the lake with limited funds. The answer is no: the Partnership will be looking at uses, the Steering Group will look at funding, and the Technical Group is to look at the technical feasibility.

It was noted that some actions could be conducted together, bringing different effects, but we are first looking at techniques one at time and will see later when it makes sense to talk about pairing techniques.

Phil asked the group if the organizational needs of the matrix that are being raised are so big that we cannot go through the methods. If not, let's move forward.

Jeff noted that the Technical Group is also expected to bring to the Steering Group a revised need for research. If we narrow the current list of techniques we can then focus on what techniques have a good shot of making the list. For example, if those are techniques that need research on fish use, then we need to figure out how we are going to get that research conducted.

<u>Expected Outcome and Likelihood of Success of Techniques</u>:

Current programs: It was asked to change the Outcome to "continue on current trajectory." Likelihood of success would be moderate (in continuing current trajectory).

Enhanced pollution reduction: Outcome is to be changed to reduced pollutant loading from watershed (which could include flushing channel). Likelihood of success would be moderate.

Water level drawdown: It was asked how we could draw down the water level when there are multiple inputs and outputs. Rob commented that pumps are usually used in these situations, but this technique only works if you can really dry out sediments. This may not be feasible in Vancouver Lake. Outcome should state: Reduced turbidity (suspended sediment and algae) would switch lake to clear, plant dominated state. Likelihood of success would be low.

Recruit/plant rooted plants as part of water level drawdown: Thom commented that if plants can't grow in the sediments it could be due to soil chemistry. Rob noted that he believes the lake sediments are firm and that may be why there aren't plants. Typically it is turbidity that is limiting plants, but with the shallow depth of Vancouver Lake that seems less of an issue.

Sediment Removal: If the sediment is the source of nutrients, the outcome would be reduced algae and a slight increase in depth for watercraft. Likelihood of success would be moderate. A deeper lake would result in reduced water circulation (based on the Corps study). Lisa asked to split the row so different success measurements could be given for algae and for watercraft.

Modify Lake Footprint: Jeff described this as making the lake smaller by greatly enhancing how shoreline wetlands extend into lake. To do this fill material would be needed. This could be from dredging or sculpting of the lake. Rob noted this technique was used for Capitol Lake. Dredging is usually not viable, but a reasonable way is to use sediment from your own lake so you are accomplishing two things at

once. Outcome: Note in this section that in addition to reduced algae and improved habitat, there would be increased circulation if the lake is smaller (based on the Corps study).

Biomanipulation: Jeff commented that carp will likely be managed at some level no matter what is being done at lake, but here we are looking at carp management in and of itself. This also includes biomanipulation of food web, by fish or plankton, and cyanophages. Cyanophages were discussed; Rob commented that he doesn't know of any use of cyanophages beyond experimental use.
Likelihood of success of any biomanipulation technique: Low to very low.

Phosphorus inactivation: There are several methods of phosphorus inactivation including alum, iron, and calcium hydroxide. Rob noted that it has been found that you can apply smaller amounts of alumon annual basis; it doesn't have to be all at once method. The staged approach can be more effective than all-at-once for systems with nutrient inputs.

Rob was asked how well alum treatments work. He noted that when conditions are ideal and there is no resuspension, it works well. It has been successful in Green Lake, but there are no water input sources. In Vancouver Lake there is resuspension and potentially external loading – it would not work as well. Alum treatments are rarely done on a lake this size. Rob also noted that there can be more success with iron if it is an iron limited system. However, iron bonds loosely to phosphorus; alum permanently binds so it has the most likelihood of success of phosphorus inactivation. Thom commented that some areas have used clay to some success for phosphorus inactivation. Rob agreed that a product called Phoslock has been used in some lakes. Phoslock is essentially clay and binds to phosphorus.

Rob was asked about fish toxicity concerns with alum. He commented that there is rarely a fish toxicity issue with alum because a buffer is added as needed. If it is a concern for any fish, it could be for carp.

Phil asked how difficult permitting might be if we were to apply alum or iron in the lake due to connections to the Columbia River. Rob commented that for alum permitting, it is all about buffering acidity. Permitting is fairly easy because it is a fairly common technique.

Likelihood of success for phosphorus inactivation techniques for Vancouver Lake: low-moderate. We will know more about phosphorus sources to the lake (lake sediment or external sources) from USGS. Thom noted that if seasonal sediment movement is a factor this might tell us if we would need further sediment study.

Closure

Phil noted that it was time to close the meeting. We made good progress; some discussion was longer than anticipated but they were still good conversations to explore.

Any comments on the four remaining categories should be sent to Eileen. We will meet again to talk about additional studies in early February. A meeting date will be set by Doodle poll.

Meeting closed.

Harvey Claussen provided his personal comments by email prior to the meeting. Those comments are included as attached.

Attachment: Email from Harvey Claussen to the Vancouver Lake Technical Group

Sent Tue 1/17/2012

I will not be able to attend the meeting this Thursday, but I want to lend my support to all of the activities and provide a little input. All of us have so many interests that it is difficult sometimes to focus on the Lake itself. I would greatly appreciate it if this could be read into the record of the meeting.

Let's Make the Case for Vancouver Lake

- Make Responsible Lake Management the heart of our program.
- Optimize for the creation of a highly popular destination for all forms of outdoor recreation and experience.
- Create a body of water that is additive to the entire Columbia Watershed.
- Treat the list of Lake Management Techniques as a menu from which we can pick and choose, mix and match to optimize effectiveness, gain synergy.
- Recognize that, to be successful, every Technique must be practiced holistically by persons skilled in the art of Lake Management.
- Trust that waterfowl and fish, clean water and open water, picturesque channels and byways are just as important to the outdoor experience of a rower, a kayaker, a sailor, a student or anyone else attracted to the Lake.
- Value all of our resources: Theoretical microbiology contributes as much as macro balances. Volunteers contribute as much as staff. All are needed to manage a lake.

On Level Management:

Level Management is the key to Lake Management.

- Every other Technique is facilitated by professional Level Management.
- Every Beneficial Use is enhanced by responsible Level Management.
- Most lakes worthy of mention have some form of Level Management.

Popular, beloved, Washington lakes with Level Management:

- Lake Washington: Famous for salmonid restoration, property value.
- Silver Lake, Cowlitz County: Thriving recreational destination.
- Lake Sacajawea: Positive influence in a small town.

The best of everything as you work to add value to the Lake and to the lives of others.