

# ***Presentation of Citizen Comments to the Basin Commission Board***

***October 28, 2009***

## **Written Comments**

Prior to the CCC meeting, Rogers Hardy provided comments regarding the Lower Basin Enhanced Conceptual Site Model (ECSM) Draft Executive Summary and Technical Memos to the CCC Chair. They are provided at the end of this document.

## **Verbal Comments**

Verbal comments provided at the October 28, 2009 CCC meeting are reflected in the CCC meeting summary and paraphrased below.

## **Comments**

## **Commenter**

I think the CCC would support the BEIPC taking a leadership role in the matter of flood control to protect Superfund remedies.	<i>Jerry Boyd, CCC Chair</i>
The Blood Lead Screening Program is not universally available; it's only available one week in the summer. The National Academy of Sciences report said it should be done through the Well Child program. A good percentage of the children this Program is interested in fall under the Medicaid program. I think it is deceptive to call it a universal program. It's a voluntary program, not universal.	<i>Bonnie Douglas, CCC Vice Chair</i>
It is posted at East Mission Flats that the site has limited access for safety. If a person crosses those lines, then they take responsibility for those risks. We need to let people know that their safety is important to those working on the site.	<i>Vera Williams, Hayden Citizen</i>
There is work that is currently happening at an aquifer in Kootenai County and some work that is going on for Coeur d'Alene Estates on the Spokane River. CCC members should be aware of these kinds of activities because they are relevant in terms of protecting the whole Basin.	<i>Julie Dalsaso, CCC Member</i>

Comments on the Lower Basin Enhanced Conceptual Site Model (ECSM) Draft Executive Summary and Technical Memos (from Rogers Hardy; originally sent to Ed Moreen, EPA, October 15, 2009 and to the CCC Chair Jerry Boyd on October 20, 2009)

Re: Comments on Lower Basin Enhanced Conceptual Site Model (ECSM) Draft Executive Summary and Technical Memos

Overall, the memos are very professional and thorough, by far the best synthesis of work done to date, and best discussion of issues and work to be done. Although I don't see anything omitted, I consider some important issues under emphasized.

## CHARACTERIZATION OF THE NATURE AND EXTENT OF THE METAL-ENRICHED SEDIMENTS OUTSIDE OF THE MAIN CHANNEL

Much emphasis is placed on the hydrology of the main channel, and understanding of processes to model the present day system to predict the future. While this is important, I believe a vital key to being able to optimally select, design, and prioritize remedial actions in the lakes and wetlands is a much more thorough characterization of the nature and extent of the metal-enriched sediments (MES). This issue is recognized and addressed in a number of the memos. The Executive Summary states:

“To gain a better understanding of how deposition rates have changed from the beginning of mining to the present, additional sediment coring is necessary.”

Memo G states:

“Characterization studies such as the Lane Marsh and Schlepp Field are required to understand contaminant distribution in discrete areas in the Lower Basin.”

Memo E states:

“No other studies attempting to quantify deposition rates since 1993 have been identified, but a future sampling effort could be conducted to provide a more complete understanding of temporal variations and trends in sediment deposition.”

And, a Memo J table states:

(The need for) Higher resolution contaminant concentration distribution in the Lower Basin.

As a function of location in the Lower Basin and magnitude of flood event, the amount of sediment and lead deposited within the river channel, floodplain, and lateral lakes and marshes is poorly understood.

I consider this critical issue under emphasized the Data Gaps memo, however. Specifically, Exhibit 6 of Memo J, Uncertainties Identified, lists only one row out of nearly 40 addressing this issue: “Limited measurements of the vertical distribution of particle size”. And, only couple of rows allude to this effort in the Example Data Collection Plan, totaling only a few months of work. If we don’t conduct a concerted effort of coring, sampling, and logging of the entire lower basin lakes and marshes, I assert we will not have the data to adequately plan remedial actions. To accomplish this, an effort on the scale and intensity conducted for the recent Schlepp and Lane Marsh projects is necessary. All the hydraulic data in the world, and fancy models won’t tell us how thick the MES are over 95% of the surface area of the Lower Basin. I don’t argue that maybe only 15 to 20% of the MES in the lakes and marshes, but I assert that this is where the vast majority of the water fowl feed, and most of the human activity will be. I believe the data points should be dense enough that total thickness, grain size, and lead concentrations can be contoured to a reasonable degree of reliability throughout the lower basin.

I realize this is a very large and expensive undertaking. However, the Bookstrom et al 1999 map and existing surface sampling could be excellent guides to optimally locating and hence minimizing the number of core locations. Also, I recommend contacting an environmental geophysicist experienced in high resolution 3-D seismic surveys. While the MES is too thin in most of the Lower Basin, in the channels, sand splays and the lake delta areas the MES may be thick enough to be delineated. This type survey could reduce the number of core samples. Some grant money from other than traditional sources might be available to acquire this type of survey.

## POSSIBLE REMEDIAL ACTIONS, AND AN ENDMEMBER VISION FOR THE LOWER BASIN

Although this is largely beyond the scope of the memos, Memo A does touch on the subject. So, I think it behooves us all to keep in mind what kind of actions are plausible in the overbank regions of the Lower Basin. (There is some discussion going on now about possible actions in the main channel and its banks, so I will leave that to others.)

It helps me to first envision how I would like the lower basin to be after it is adequately cleaned up. One end member is a series of isolated hydraulic cells separated by flood proof levees, and a totally contained flume-type main channel carrying its entire load to the lake. The other end member is a return to pre-contact nature, with

all man made levees, bridges, and causeways removed, with all the benefits of an open circulation pattern. We all know neither end member will be attained, but, which one would we like to work toward? I personally would like to work toward the latter.

Our two most significant actions to date, however, have frozen into place hydraulic barriers that limit flow to certain parts of the basin forever: The UPRR rails to trails and Schlepp Meadow projects. A continuation of these types of projects moves us closer to the first endmember. Memo A quotes the NAS Report as stating: "Levee enhancements and other flood control actions may cause hydraulic flow alterations and should be evaluated".

And, Memo E states the problem well:

"Several anthropogenic features control the horizontal limits of the river within the segment. The Coeur d'Alene River Road confines the river's floodplain limits to the south, and the toe of the valley, if not the Union Pacific Railroad, may confine the northern floodplain limit."

Time, and remedial actions in the upper basin and main channel will probably lessen the future introduction of MES over bank into the marshes and lakes during high water events. The future modeling will probably predict this. I propose the agencies and trustees refrain from future levee intensive projects until main channel remediation and the modeling is complete.

Then, lake and wetland remedial projects that could take the place of levee building and resultant isolation might include:

A subaqueous mixing of MES with clean sediment within a lake or wetland, where the ratios are right (Much of the MES in the lakes and wetlands is less than a meter thick. And, this is one use for sufficient thickness data.

A subaqueous dredging concentrating, and capping of MES sediment within a lake or wetland, all under mean water level, resulting in some deeper 'holes' than exist today, and 'mounds' below erosion level.

Both of these approaches could be done gradually by a small barge-mounted dredge leased over the long term, moving from one area to the other. (Note I am not suggesting the lunacy of moving MES out of the lower basin, or piling it up somewhere in a big repository.) Memo A touches on this issue, but only mentions one small line on 'Soil Restoration', with no specific mention of soil or sediment mixing, subareal or subaqueous. Frank Frutchy has been touting subareal 'deep plowing' for decades. And, why are the surface soil lead levels so low in the Schlepp meadow, when the levels are higher in the adjacent West Schlepp wetland, and Lane Marsh both along trend? That Meadow was plowed for decades, where the adjacent areas haven't.

#### ECSM PROJECT DOWNSTREAM BOUNDARY

While it is not in the lower basin, the delta wedge deposit at the mouth of the main channel is arbitrarily cut in half by the project boundary. A adequate characterization of this genetically linked delta wedge by more coring and possibly a seismic survey would add greatly the ECSM, and understanding the overall basin system. More grant money?

#### A RAILROAD?

Numerous maps and passages in the memos refer to a railroad in the lower basin. While the terms of the conversion to a trail stipulate a railroad might be re-instated, there is no railroad in the lower basin now. Why does this matter? Other than nitpicking correctness, the levees characterized in the '90's work by the USGS were altered by the conversion process. The rails and ties have been removed, the causeway shaved off and capped by a strip of asphalt. This has altered the hydraulic nature of the levees significantly, as they are more prone to washing out. Also, much of the core of the lower basin levees is locally-derived fines, protocol calls for wash outs to be replaced by boulders, which are erosion proof, but permeable altering the hydraulic nature of the right of way over time.