

10-28-09 Citizen Coordinating Council Meeting

Hayden City Hall, 6:30 PM to 9:00 PM, Hayden, Idaho

Attendees (who signed in and/or announced themselves)

Bill Adams	Andrea Lindsay
Jerry Boyd	Ed Moreen
Anne Dailey	Andy Mork
Julie Dalsaso	Glen Rothrock
Jeri DeLange	Rebecca Stevens
Bonnie Douglas	Amy Wheelless
Tina Elayer	Vera Williams
Terry Harwood	

Meeting Overview

The October 28, 2009 meeting of the Citizen Coordinating Council (CCC) of the Basin Environmental Improvement Project Commission (Basin Commission or BEIPC) covered the following topics:

- Basin Commission Updates
- Review Draft 2010 Workplan and Draft 2010-2014 Five Year Plan
- Lake Management Plan Implementation
- Repository Update, Enhanced Monitoring Plan and Updates for East Mission Flats and the Upper Basin Siting Process
- ROD Amendment, Priority Setting, and Monitoring Plan
- Lower Basin Enhanced Conceptual Site Model Update
- Communications Project Focus Team (PFT) Update
- Open Discussion/CCC Issues

CCC Chair Jerry Boyd chaired the meeting.

BEIPC Updates

Drainage Control and Infrastructure Revitalization Plan

Terry Harwood, BEIPC Executive Director, provided an update on the Drainage Control and Infrastructure Revitalization Plan. This plan was funded by EPA, Idaho DEQ, and the Basin Commission. It is a comprehensive analysis of the infrastructure in the Upper Basin. The overall conclusion is that infrastructure has many general needs, but the plan identified specific areas of improvement. In developing the plan, local governments worked together to identify priority infrastructure needs. Some of the findings of the plan have been used to identify candidate projects for federal stimulus funds. The top identified infrastructure priority from the plan was upgrade of the sanitary sewer systems feeding the South Fork Wastewater Treatment Plant, and local government are working together to leverage federal and state funds for this project.

CDs of the report are available from Terry upon request.

Department of Homeland Security/FEMA Grants for South Fork and Pine Creek

Terry handed out a document with a question and context that he plans to raise at the next BEIPC meeting. The question is whether the BEIPC should take a leadership role in dealing with flooding issues in the South Fork Coeur d'Alene River and Pine Creek as they pertain to protection of the Superfund remedy and general community protection. The context of this question is that there are federal (FEMA) and other grants available for flood control, and some people in the county have asked the BEIPC to be a grant sponsor. Terry will present this question at the November BEIPC meeting and ask the Commission to vote on it.

Jerry Boyd, Chair, indicated that he thought the CCC would support the BEIPC taking a leadership role in this matter.

Rebecca Stevens, Coeur d'Alene Tribe, asked whether this decision would affect other flood plain districts. Terry answered that this question is just relevant to the authority of the BEIPC.

Construction Update at East Mission Flats

Terry provided an update on the construction activities at East Mission Flats. Originally, before the federal stimulus package was passed by Congress, initial construction at East Mission Flats (EMF) was going to take place in two phases, with Phase 1 involving building the bridge and Phase 2 involving building supplemental facilities, such as parking and electrical services. However, with the availability of federal stimulus money, construction for both phases began in parallel. Terry is leading construction at EMF at the request of the state of Idaho.

Terry noted that stimulus funds have accelerated Basin clean-up activity, and the Big Creek Repository is filling up. Beginning in August, EMF began accepting approximately 300-400 trucks per week of contaminated soils, which will continue until bad weather shuts down clean-up.

The bridge is now in place at EMF, as is a back road that the waste delivery trucks are currently using. Terry has staked the repository site, which has a footprint of approximately 14 acres. A silt fence is in place. An archeologist is on site whenever there is digging more than a foot deep.

Jerry asked whether there had been any water noticed in digging the repository hole. Terry responded that, while it had been damp, there was no visible water.

Bonnie Douglas, CCC Vice-Chair, asked whether there would be a vegetative layer put in before bad weather begins. Terry responded that every area that is finished would be hydroseeded. For other areas, including the newly cleared placement for Phase 3, the crew will apply a resin. Terry estimated that there would be approximately four acres that would be covered with resin for the winter, with that process likely beginning next week.

Bonnie also asked whether the facility is fenced in. Terry answered that there is currently not a perimeter fence, just a silt fence. There is a gate at the entrance for Institutional Control Program (ICP) waste that denies motorized access. In 2010, there will be a barbed wire fence around the repository footprint, and there will be a gate on the bridge at the end of this season.

Rebecca asked whether there are any temporary control measures for runoff. Terry responded that the area is all in-sloped and that everything will flow down to the sediment basin.

Terry mentioned that one consideration for next year is the annual Gonzaga University pilgrimage to the Old Mission that has in the past gone through the repository area. For next year, some plan will need to be available to allow them to come onto the repository, or it is likely that some will try to climb the rip-rapped embankment that will be put in place.

Additional information about East Mission Flats, including a new frequently asked questions document, can be found at the EPA Web site:

http://yosemite.epa.gov/r10/cleanup.nsf/sites/east_mission_flats_repository

Review Draft 2010 Work Plan and Draft 2010-2014 Five Year Plan

Terry described the BEIPC's draft 2010 Work Plan and Five Year (2010-2014) Work Plan, which were prepared by the Technical Leadership Group (TLG) and Terry. The legislation that created the BEIPC requires these plans. To develop the plans, Terry works with the individual work groups of the TLG and agencies on their recommendations for work, and then the TLG edits the items to a draft plan. These plans are currently still draft so are not available on the BEIPC Web site.

Items of note in the 2010 Work Plan include:

- Clean Water Act (CWA) projects are being finished up. Two project reports are still to be completed, and all projects will be done by June 30, 2010.
- Federal stimulus funds have increased remediation activities and waste volume delivery, and thus there is a need to pursue location and design for another Upper Basin Repository. In 2009, the Upper Basin repository siting team identified eight candidate sites that met the minimum initial siting criteria (e.g., storage capacity of greater than 500,000 cubic yards [cy], not currently being used for another purpose, etc.).
- During 2010, IDEQ plans to remediate approximately 700 properties throughout the Upper and Lower Basin. IDEQ expects that approximately 25% of these properties will be classified as high risk and therefore top priority for remediation. This amount of remediation is an increase over past years due to federal stimulus funds. IDEQ also plans to sample approximately 725 targeted properties and have the targeted areas sample program close to completion by the end of the year.
- The blood lead screening program for children will continue to 2010 in the same manner, and there will be efforts to explore ways to increase participation. For 2009 testing, IDEQ increased the incentive for screening from \$20 per child to \$40 per child, which increased participation twofold. However, this incentive increase was only committed to for 2009.
- The Recreation PFT will continue to update the comprehensive inventory of contaminated recreation areas and will work with the Communications PFT on ways to increase awareness among recreationalists about how to minimize health risks.
- EPA's goal is to issue the Upper Basin ROD (Record of Decision) amendment in 2010, and EPA has been working with the Upper Basin PFT on the plan. This amendment will provide a priority list of cleanup actions in the Upper Basin and Box as funds become available. The goals will include prioritizing Upper Basin and Box source areas for cleanup, moving forward on the OU-2 Phase 2 cleanup, addressing changes in water treatment, including a focus on particulate lead, and protecting remedies from tributary flood and heavy precipitation events.

- In 2010, EPA will finalize the development of an Enhanced Conceptual Site Model (ECSM) for the Lower Basin, which will help refine the current understanding of river flows and sediment transport in the Lower Basin.

The five year plan covers most of the same topics. Any minor changes can be provided to Jeri DeLange, and comments should be forwarded to the appropriate PFT chair.

Bonnie said that calling the blood lead screening program “universal” in the plans was not accurate, as it was only available one week of the summer, and that a better term would be “voluntary.” She noted that the National Academy of Sciences had recommended that the program should be conducted in conjunction with the Well Child program. Jerry said he would raise that comment at the Basin Commission meeting.

Lake Management Plan Implementation

Glen Rothrock, IDEQ, and Rebecca Stevens, Coeur d’Alene Tribe, presented information on Lake Management Plan (LMP) implementation. LMP implementation started for IDEQ on July 1. The Idaho legislature had originally approved a staff of 3.75 FTEs, which would have been Glen, a water quality technician, a science position, and a part-time administrative position. The science position has been frozen by budget cuts for now, but they are exploring ways to fill it with a part-time position. All other staff positions have been assigned.

IDEQ will be going from the current part-time lake monitoring program to a full-time monitoring program in 2010. This monitoring program will include a nutrient inventory. The first planning meeting for this inventory was held on October 30 with the Tribe, with the initial focus on the St. Joe’s/St. Maries River, where there is a large data gap.

The Coeur d’Alene Tribe is working with IDEQ. A new scientist that the Tribe has brought on will be leading a needs assessment planning process, where the Tribe can identify whether a lake assistance and education program is needed.

Jerry asked whether IDEQ and the Coeur d’Alene Tribe are doing the same monitoring. Glen answered that they are monitoring the same species but using different labs. Quality monitoring of the different data shows that the different labs are returning some differences in results. However, the Tribe and IDEQ are conducting eight samplings a year and coordinating to sample on the same weeks to minimize data quality issues.

Bonnie and Julie Dalsaso asked whether the Tribe was aware of the proposed rule change on sediments and submerged lands as it might be relevant. More information on this proposed rule can be found here: <http://www.idl.idaho.gov/adminrule/rulemaking.html#draft>.

Repository Update, Enhanced Monitoring Plan and Updates for East Mission Flats and the Upper Basin Siting Process

Andy Mork, IDEQ, provided repository updates, including the enhanced monitoring plan (EMP) for EMF, an EMF Repository update, and information on the Upper Basin Siting Process.

EMF EMP

The EMF EMP was a result of the EPA Inspector General's report, which recommended enhanced monitoring to validate design assumptions that repository soils will not become saturated. Andy provided some diagrams at the meeting to show maps of monitoring locations. There are five elements of the plan:

1. Piezometers monitoring soil moisture in waste soil mass
2. A deep well investigating gradients between shallow and deep water bearing zones
3. Comparison of the South Fork Coeur d'Alene River elevations from the Cataldo stream gauge with EMF water levels to evaluate river influence on EMF water levels
4. Statistical analysis of water quality data to help identify trends in metal concentrations
5. Corrective actions, if required, by metals leaching that will be commensurate with the magnitude and extent of releases.

This plan is out for review until November 12, and the final EMP is due November 30. The plan is posted on the EPA EMF page (http://yosemite.epa.gov/r10/cleanup.nsf/sites/east_mission_flats_repository) and the Basin Commission Web site (<http://www.basincommission.com/>). The wells would go in this winter after the final plan is released and before spring floods.

Bonnie asked whether there was any monitoring of private wells in the area. Andy said that the closest residential well is upgradient 1700 feet.

Jerry asked how the changes in the level of water in the lake would compare with water level changes in the Basin. Andy said that water level changes should be the same as are measured with the Cataldo stream gauge.

East Mission Flats Construction and Groundwater Update

Because Terry had covered the construction updates to EMF, Andy focused on the August 2009 groundwater monitoring report for the site. Andy handed out diagrams that showed well locations for monitoring groundwater in the EMF area. For the August 2009 report, every well met the drinking water standards, except for MW-E, which had an arsenic level above drinking water standards. However, MW-E is the furthest well from the site and is upgradient from the repository. These results let IDEQ know that there is transient arsenic away from the site that is not caused by the site.

Upper Basin Siting Process

Andy discussed the Upper Basin Siting Process. This process has been going on for about nine months. There were two public meetings in May and June to identify siting criteria. Elected officials and PFT members reviewed the criteria and performed relative weighting, and then performed numerical analyses of the eight sites identified as potential sites. From this process, two sites were identified as top sites: Osburn Ponds and Star Ponds. Currently, IDEQ is conducting a site development cost analysis for the two sites, including looking at cultural resources, wetlands, site use history, truck routing and access. The final cost report for internal agency review will be issued in January, and site acquisition negotiations will begin in early 2010 for the selected site.

Tina Elayer asked whether the same process would be used again if there were another Upper Basin repository needed. Andy answered that the non-selected site would be used in that case— unless there had been a fundamental change in land use or zoning.

Jerry asked about the status of “fill-the-holes” (i.e., using contaminated fill to create level ground in the Upper Basin). Andy answered that there was a meeting with IDEQ and the Panhandle Health District to discuss “fill-the-holes” issues. The group came to a mutual agreement on those issues, and the group is drafting a strawman “fill the holes” policy. This process will not be an EPA remedial action process, but instead will be driven by local players. It will likely focus on ICP waste. Bonnie noted that those details were not referenced in the Basin workplan. Andy and Ed Moreen agreed to look at the workplan language by Friday and send a more current draft to Terry by October 30.

ROD Amendment, Priority Setting, and Monitoring Plan

Anne Dailey and Bill Adams, EPA, provided an update on the Upper Basin ROD Amendment. In September, EPA had meetings with the Upper Basin PFT about ROD progress and project prioritization.

- EPA evaluated remedial alternatives for cost effectiveness and results and shared those results.
- EPA shared information on the conceptual evaluation of sediment traps, which would capture contaminated sediment as it moves into the Lower Basin, but evaluation showed that this option was not feasible, as there was not enough space to trap the sediment.
- EPA presented some information on road access costs and needs for road improvement. EPA is reevaluating road access costs based on some feedback from Terry and others.
- EPA worked with the Upper Basin PFT on “bucketing” and prioritizing remedial actions to get packages of work that can move forward.

EPA is continuing to develop a feasibility study, which will be available in early 2010. EPA had been providing pre-draft sections for review, but received very few comments on them, so the agency will be just providing the full document for review in the future. They are also going to present to EPA’s National Remedy Review Board in April 2010. This Board was established in the 1990s to look at large value remedies, and EPA typically presents to this board before releasing a draft cleanup plan. The proposed plan will have a comment period in the summer of 2010, and EPA expects to issue the ROD amendment in late summer or fall of 2010.

EPA will have a technical meeting with the Upper Basin PFT on December 8 and 9 to discuss a number of things, including a recap of the “simplified tool”, multi-attribute utility model updates, road access cost adjustment, Woodland Park remedial alternatives, OU2 remedial alternatives, eco-prioritization tools and implementation straw proposals and remedy protection.

EPA is continuing to conduct outreach in a number of ways and is working to get time on agendas of meetings already occurring to share information about the ROD amendment. Examples include this CCC meeting, the Kootenai Environmental Alliance, and the Audubon Society. EPA would also like to meet with the Silver Valley Chamber in the near future.

Bill noted that with the ROD amendment funds, prioritizing projects will be very important, as there have been estimates that remediating the Basin could cost \$2 billion (currently, approximately \$150 million has been spent in the whole site). EPA will have a spending plan for the funds to ensure that important projects are being completed and that the funds can gain interest and support future work.

Jerry asked for clarification on whether the goal of the plan was to improve human health. Anne and Bill responded that the goal is for ecological health, but that there will be benefits for human health, such as improved water quality.

Further information on the ROD amendment can be found on EPA's Web site at <http://yosemite.epa.gov/R10/CLEANUP.NSF/sites/bh+rod+amendment>.

Lower Basin Enhanced Conceptual Site Model

Ed Moreen, EPA, described progress in developing the Lower Basin Enhanced Conceptual Site Model (ECSM). He said this is essentially a documentation of current understanding about the river system in the Lower Basin. This information will feed into a future ROD amendment process for the Lower Basin. Since Ed last presented to the CCC in July, EPA has released the entire package of the conceptual site model. Originally, there were 11 draft technical memos and an executive summary that constituted the ECSM, but two have been struck for now. The Lower Basin PFT has reviewed the ECSM, and CH2MHill is reviewing the comments. Information is still up on the FTP site, as is a synopsis memo. Ed encouraged those interested to first read the executive summary and the synopsis memo. Ed said that EPA would issue a response to comments document based on comments received on the ECSM. (CCC Vice Chair Bonnie Douglas asked that comments on the ECSM received prior to the CCC meeting from Rogers Hardy be included in the CCC comments document accompanying this summary.)

Ed also encouraged those in attendance to go to the open house on the EMP for the EMF on October 29 from 4:30 – 7:30pm at the Canyon School in Cataldo.

Communications Project Focus Team (PFT) Update

Jeri DeLange, Chair of the Communications PFT, provided an update on the work of the PFT, which had met earlier in the day of October 28. She noted the following:

- The Team discussed different approaches for public education and outreach. Ideas discussed included a workshop for next year, public service announcement videos, getting educational materials out that have already been developed, and having a booth at the North Idaho Fair.
- The Team has a list of avenues for public outreach that includes contact information for various organizations, county commissioners, newspapers, and regional mayors. A suggestion was made at the Communications PFT meeting to put this information into an Access database so that it could be sorted.
- Tina Elayer now has a guest column in the Coeur d'Alene and Shoshone newspapers where she can discuss Basin issues and answer community questions.
- Additional outreach was conducted for this meeting with advertisements in the local newspapers by Tina Elayer of IDEQ for community outreach.
- Some members of the Communications PFT will be working with the Recreation PFT on getting health risk information out for recreational users.

- The next conference call for the Communications PFT will be in January and the next in-person meeting will be in February.

Terry brought up an issue relevant to communications work. He passed around a copy of an email exchange with a community member that said she had been intimidated by a construction member on equipment while on the EMF site, and she copied a number of EPA officials on the message. Terry said that it was very unlikely that a construction member would have gotten that close to someone if the construction member knew that the person was there. Those in attendance discussed ways to conduct outreach and education about public safety at repository and construction sites.

Open Discussion/CCC Issues

Julie Dalsaso mentioned some 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. She said these are relevant in terms of protecting the whole Basin.

Next Meeting/Upcoming Events

The next BEIPC Board meeting will be held on November 18, 2009.

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.