

## **BEIPC Coeur d'Alene Basin Calendar Year 2015 Work Plan**

### **INTRODUCTION**

This plan covers proposed environmental cleanup and improvement activities in the Coeur d'Alene Basin scheduled for CY 2015 by the Basin Environmental Improvement Project Commission (BEIPC) and coordinating agencies in accordance with their responsibilities as stated in the Memorandum of Agreement (dated August 2002). Actions noted in the plan are intended to implement the goals and objectives of the BEIPC's 2015-2019 Five Year Work Plan. This plan has been prepared by the Executive Director working with the coordinating agencies with review, input and approval by the Technical Leadership Group (TLG) and review and input from the Citizen Coordinating Council (CCC). The work plan is organized as follows:

Part 1 – Environmental cleanup work performed through the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) by the EPA and State of Idaho or work performed by Potentially Responsible Parties (PRP).

Part 2 - Other Activities and Responsibilities

Part 1 includes work to implement the Record of Decision (ROD) for Operable Unit 3 (OU-3) and the Upper Basin ROD Amendment (RODA) for OU-2 and 3.

Part 2 includes work and responsibilities concerning management of Coeur d'Alene Lake by the CDA Tribe and State of Idaho, restoration of natural resources by the Natural Resource Trustees and work the BEIPC has assumed based on recommendations from the National Academy of Sciences (NAS) Study and requests from citizens and communities of the Basin.

The five-year plan outlines activities and work proposed to be implemented over the next five years; however, it does not sequence these activities. This one-year plan establishes and maintains the sequencing of activities that will be needed to complete the activities and work approved in the five-year plan. It may not address all work items noted in the five-year plan because some will not be initiated until later years.

### **PART 1 – ENVIRONMENTAL CLEANUP WORK**

For Part 1, the scope of the proposed work corresponds to the level of funding and the funding sources anticipated for CY 2015 and work anticipated to be performed by the responsible parties. The proposal includes the following work:

- Human Health Issues including Residential and Community Property and Private Drinking Water Supply Remediation (Basin Property Remediation Program, BPRP), the Paved Road Remediation Program, and the Remedy Protection Program.
- Blood Lead Screening in Children
- Recreation Use Activities
- Repository Development and Management
- Remedial actions in the Upper Basin including source control actions, water treatment, and related human health activities provided for in the Upper Basin RODA.

- Remedial actions and/or Pilot Projects in the Lower Basin.
- Basin Environmental Monitoring

## **1.1 HUMAN HEALTH ISSUES**

Remediation of human health exposures is a remedial action priority as defined in the OU-3 ROD. It includes maintaining the Institutional Controls Program (ICP) and conducting cleanup in residential, community and recreational areas in the Upper and Lower Basin and the Paved Road Remediation Program. The RODA addresses source control remedies, water treatment remedies, ecological cleanup projects, and related human health activities and the Remedy Protection Program.

### **1.1.1 Residential and Commercial Property Remediation**

In 2014, the Basin Property Remediation Program (BPRP) remediated approximately 84 residential properties and three large commercial properties. This resulted in over 1.2 million square feet being remediated. During 2015, IDEQ is nearing the end of the BPRP having completed the majority of eligible properties. The remaining properties consist of a more limited number of candidates that qualify for the program. They are properties whose owners have been either unavailable or unknown, or who have not wanted to participate because they object to the mission of the program. These circumstances present particular challenges for 2015. Although the numbers of residences targeted will remain uncertain until late spring or summer of 2015, IDEQ's goal will be 1,000,000 square feet of remediation on 50 residential and two large commercial properties. These commercial properties have already been sampled and will be designed for remediation by the Coeur d'Alene Work Trust. IDEQ will also seek to sample 80 – 100 properties that qualify for remediation in the program.

In 2014, IDEQ completed the public Unpaved (gravel and dirt) Roads Program in the Basin.

### **1.1.2 Paved Roadway Surface Remediation Program**

EPA and IDEQ developed a Roadway Surface Remediation Strategy in 2012 in recognition of some road damage caused by heavy truck traffic during remediation work and potential ongoing risk posed by deterioration of paved roads in remediated areas (583 road segments). The purpose of the continuing program is to address the deterioration of paved road surfaces that are underlain by contamination. Work is intended to ensure road surfaces continue to serve as barriers that reduce or eliminate exposures.

In 2013 and 2014 approximately 20 miles (175 road segments, about 29.5%) were paved or repaired. However, as the program has evolved the Roads Board has realized that a performance measure based on linear feet of roadway is overly simplistic because of the numerous variations in the characteristics of the roadways listed in the strategy. Henceforth the roads report will provide the number of roads segments noted in the Strategy completed within the context of their respective prescriptions, the percent of the Strategy's list completed in each jurisdiction, and the percentage spent of the funding allocation for the program.

In 2015 the Paved Roads Program will likely approve projects costing approximately \$4.5M in the Basin and \$3.9M in the Box. This is approximately 20% of the allocation for the entire paved roads program. Road segments to be addressed are under consideration and a final approved list will be completed so that the local road jurisdictions can prepare designs and contracts for construction during 2015.

### **1.1.3 Remedy Protection Projects**

Remedy Protection is a high priority in the Superfund Cleanup Implementation Plan (SCIP). The objective of this work is to protect the installed human health related remedy from recontamination and scouring caused by heavy precipitation and tributary flooding. In 2015, work on projects in the Box and Upper Basin portion of OU-3 noted in the RODA will continue. That work will include completion of a decision document, design, and construction of side gulch projects along Silver Creek and Slaughterhouse Gulch in the Box; completion of design and construction work on Revenue Gulch in Silverton, and Mill Road and South 2<sup>nd</sup> Street in Mullan, and design work on several projects including Copper Street, Boulder Creek and Mill Creek in Mullan, Rosebud Gulch in Osburn, and Printers Creek in Wallace.

EPA and IDEQ will continue with additional analysis to define the remedy protection projects for the side drainages outside the larger community areas. Completion of the analysis process and preparation of an Explanation of Significant Differences (ESD) or other decision documents will continue in 2015 so that those projects can be incorporated into the on-going Remedy Protection work.

### **1.1.4 Blood Lead Screening in Children**

The Panhandle Health District (PHD) has been screening children for elevated blood lead levels in the CDA Basin since 1996 as a public health service and as part of the Lead Health Intervention Program. The purpose of the screening is to identify children with elevated blood lead levels and provide follow-up from a public health professional to identify ways to reduce lead exposures. The screening program also provides data to assess the effectiveness of the Basin cleanup efforts. The cleanup action decisions are not based on annual blood lead testing results. Rather, the goal is to prevent lead exposures that could result in elevated blood lead levels.

In 2012 the Centers for Disease Control established a new threshold value for blood lead levels in young children. According to CDC's fact sheet, "This new level is based on the population of children aged 1-5 years in the U.S. who are in the top 2.5% of children when tested for lead in their blood. Currently, that is 5 micrograms per deciliter of lead in blood." Previously, CDC's blood lead level of concern" was 10 micrograms per deciliter. In response to this change the PHD has used the 5 micrograms per deciliter as the trigger for follow up since 2012.

Blood lead screening will continue in 2015 with the inclusion of a \$30 per child tested incentive.

### **1.1.5 Recreation Use Activities**

The OU-3 Interim ROD includes remediation of Lower Basin recreational use areas to reduce human exposure to lead and other metals. Some priority developed recreational use areas were

identified in the ROD and these areas and others identified by cooperating agencies have been remediated. Additional dispersed recreational use areas will be evaluated for cleanup based on factors such as risk of exposure, location, and use.

However, due to the widespread contamination in the CDA Basin and the potential for recontamination at dispersed, undeveloped recreation sites; it is not generally feasible to remediate these areas. Increased education and outreach will be undertaken to inform people on how to protect their health while recreating in the CDA Basin.

### 2015 Tasks

1. Continue to work with the Community Involvement Coordinators (CICs) to identify what else can be done to make recreation users aware of human health risks along the river corridor and to further educate people on how to minimize any risks.
2. Continue work with PHD and IDEQ on Riley Raccoon Recreation Education Program to support the Lead Intervention Program. A primary role of the Community Involvement Coordinators (CICs) is participation and development of lead health awareness and support of the PHD Lead Intervention Program. The target area for recreation-related lead intervention education is the Basin including shorelines and floodplains of the river system (with exception of the North Fork) and recreation areas on hillsides near the Bunker Hill Box.
3. Collaborate with other agencies on creation of additional “clean” areas for people to recreate, if the opportunities arise.
4. EPA, CDA Tribe, and IDEQ CICs will assist land management agencies with addressing human health messaging for signs along the trail or in other areas in the Lower Basin.

## **1.2 REPOSITORY DEVELOPMENT AND MANAGEMENT**

### **Background**

There are currently two operational repositories within the OU-3 area, Big Creek Repository (BCR) and East Mission Flats Repository (EMFR) and a third, the Page Repository, in the Box (OU-1 and OU-2 areas). A fourth repository, the Lower Burke Canyon Repository (LBCR) will be available to receive OU-3 area waste starting in 2015. Repository development and management is an ongoing process that must meet the demand for disposal of historic mining related contamination for the Basin environmental and human health related cleanup program. This includes the BPRP, other cleanup actions performed by IDEQ, EPA, and the CDA Work Trust (Trust). It also includes waste generated by private parties and local government agencies under the ICP. Without the operation and expansion of existing repositories or the construction of new repositories, continued cleanup and control of contamination could be compromised and potentially stopped. The repository development effort is coordinated through the BEIPC.

BCR is located at the mouth of Big Creek Canyon and primarily serves the Upper Basin. The BCR has received waste since 2002. The total designed waste disposal capacity is approximately 600,000 cubic yards (cy). The BCR will reach the design capacity during the

2015 construction season. Additional capacity at BCR was identified just southwest of the original site on the west side of Big Creek. The location will be identified as the Big Creek Repository Annex (BCRA) and will use the existing BCR facilities for access, decontamination, site management employees, and ICP disposal. Pre-design investigations and repository design activities were initiated by the Trust in 2013 and 2014 and the site will be available for waste disposal during the latter part of the 2015 construction season. The initial design waste capacity of the BCRA will be approximately 250,000 cy.

EMFR is located north of Interstate 90 off Exit 39, near Cataldo and primarily serves the Lower Basin. The EMFR has been receiving waste since 2009. The designed waste capacity is approximately 410,000 cy. At the current and estimated future waste disposal rates the EMFR is estimated to reach the design capacity in approximately 30 years.

LBCR is located in Burke Canyon on the Star Tailings Impoundment near the community of Woodland Park. Design activities by the Trust for LBCR began in late 2012 and continued through 2014. The total design waste capacity is more than one million cy. Construction of the first phase of the repository by the Trust including site access roads, ICP disposal area, decontamination facilities, and employee facilities will be completed in the fall 2014. The site is expected to be ready to begin receiving waste materials by early 2015.

The Page Repository, which has been operating for almost 20 years, is located just west of Smelterville. Having reached its previous design capacity in 2010, Page has been expanded to contain an additional 700,000 cy of waste. At the current and estimated future waste disposal rate the Page repository is estimated to reach the current design capacity in approximately 20 years.

## **Objectives**

The Repository Work Plan focuses on the following objectives:

- (1) Box repository operations
- (2) Continued development of Box repository capacity to support remedial action projects in the near term and sustain ICP support in-perpetuity
- (3) Operations at BCR, BCRA, EMFR, and LBCR
- (4) Final closure of BCR
- (5) Increasing repository volume in the Upper Basin
- (6) Updating of the Waste Management Strategy (WMS) including considerations for waste reduction or consolidation.

Specific tasks to achieve these objectives are summarized below:

### **Box Repository Operations**

The estimated waste capacity needed to support Box ICP and remedial action operations at the Page repository during 2015 includes approximately 16,000 cy of ICP wastes, 10,000 cy of paved roads waste, and 1,000 cy of remedy protection waste. Anticipating that need, the Page repository operations include but are not limited to the following tasks:

- Receipt and placement of Remedy Protection, Paved Roads and ICP wastes

- Segregation and appropriate re-use or disposal of non-soil waste such as wood and root wads, concrete, asphalt, large (greater than 6 inch) rock fragments and miscellaneous demolition debris
- Equipment decontamination, site stabilization, erosion and sediment control installation
- Surface and ground water monitoring and associated reporting.
- Waste stream management to minimize disposal and maximize re-use of high volume waste materials.

### **Increasing Box Repository Capacity**

The estimated 2016 capacity needs at the Page Repository are estimated to be double that anticipated in 2015. To accommodate this volume, the expansion of the Page Repository will continue during 2015. In addition, as part of the repository expansion ongoing wetland mitigation work will continue in 2015.

Expansion requires careful planning and coordination to limit construction costs while maintaining sufficient capacity. Repository expansion will occur in two to three acre phases. Each phase is initiated by constructing a foundation layer consisting of a “starter berm” from two to four foot concrete blocks, filled in by a “mattress” layer of 1 inch plus to 12 inch minus materials. The starter berms and mattress materials have been designed to exceed geotechnical criteria for structural stability and to platform placed wastes above the 50 year flood conditions that may be realized in the West Page Swamp. Cost effective construction of the foundation layer depends on segregation of waste generated during remedial actions and re-use of appropriate material during mattress construction. If sufficient repository capacity is not available, mattress material must be purchased adding significant cost to the expansion. The pace of cost effective repository expansion could be accelerated if sufficient quantities of segregated waste are available for foundation construction.

### **Basin Repository Operations**

Although nearing completion, the BPRP will include both Lower and Upper Basin property remediation in the 2015 construction season generating an estimated 10,000 to 20,000 cy of waste material. In addition, total Basin ICP waste volume projections are as high as 5,000 cy and paved road projects in the Upper and Lower Basin could generate from 35,000 to 120,000 cy of waste for repository disposal. Although significant uncertainty exists in waste volume projections due to the uncertainty associated with non-remedial action funded projects, waste requiring repository disposal in the Upper and Lower Basin could be as high as 170,000 cy. Anticipating that need, the Basin repository operations include but are not limited to the following tasks:

- Receipt and placement of BPRP, Remedy Protection, Paved Roads and ICP wastes
- Segregation and appropriate re-use or disposal of non-soil waste such as wood and root wads, concrete, asphalt, large (greater than 6 inch) rock fragments and miscellaneous demolition debris
- Equipment decontamination, site stabilization, erosion and sediment control installation
- Surface and ground water monitoring and associated reporting.
- Placing waste to consume all remaining capacity at BCR

- Transition of operations from BCR to the LBCR and the BCRA.

### **Closure of BCR**

The BCR will reach the designed capacity during 2015. Additional planning is required for final closure including finalizing cover designs, assuring convenient disposal areas are available at all times and finalizing operation and maintenance requirements for the closed facility. The closure work planned for 2015 is related to finalizing the engineered cover design with final cap construction likely occurring during 2016. Once the cover design is finalized the operation and maintenance requirements can be developed for post closure care of the facility. Cap construction includes evaluating potential borrow sources for appropriate soils, transporting the material to the site and constructing the cap as designed.

### **Increasing Upper Basin Repository Capacity**

New Basin repository capacity will be needed to dispose of the waste material generated by the cleanups identified in the 2002 OU-3 ROD and the Upper Basin RODA. Assuming the currently available repository capacity and the capacity described below is fully developed; approximately 2,600,000 cy of capacity is still required to dispose of all the waste materials identified in the RODs.

During 2014 the development of the BCRA included the development of the repository design, relocation of utilities at the site and construction of an access road bridge over Big Creek. The work planned for the spring and summer of 2015 includes the development of the BCRA site including access road construction and site preparation. The initial waste consolidation and operation of the BCRA is anticipated in the summer of 2015.

The Upper Basin RODA adopted a two-part approach to waste management that utilizes both the Waste Consolidation Areas (WCA) and repositories. Waste generated by remedial actions in the East Fork of Ninemile Creek is being disposed of in the WCA developed by the Trust. In order to address the waste disposal needs for other cleanup actions, a repository siting process driven by public input identified two new repository sites to support cleanup activities in the Upper Basin. One repository is the LBCR which is scheduled to begin receiving waste materials by early 2015 and the other is the Osburn Tailings Impoundment (OTI) north of Osburn. Baseline site characterization data have been collected at OTI and design proceeded in 2011. A 30% Design Report was nearly completed for the OTI site in late fall 2011. Due to a change in remedial project planning from the RODA process, and to coordinate closely with Hecla's activities at the Star Mine Complex in Burke at that time, the OTI design was put on hold to focus on the more immediate needs for repository capacity in Canyon Creek. Further development of the OTI repository design will be initiated in the fall of 2015.

The repository design program is a dynamic process driven by many factors, including waste stream volume estimates, priority cleanup site locations, funding availability and active mine site activities. As cleanup implementation plans are finalized and waste stream volume generation schedules are developed, repository designs, technical evaluations, and property acquisition will proceed at the repository sites currently identified through the public planning process or new sites best located to serve the cleanup program in the 10 year planning period.

## **Waste Management Strategy Update**

The WMS is a key document that guides repository siting and waste disposal or re-use. It contains the most current estimates of future waste volumes and implementation schedule forecasts within geographic areas. The WMS will be updated to incorporate additional information regarding the projected waste volumes generated by OU-2 and OU-3 remedial activity and remaining repository capacities. The revised WMS is being developed jointly by IDEQ and EPA and in coordination with the Trust, PHD and the TLG and/or Repository Project Focus Team (PFT), when appropriate.

### **1.3 ENVIRONMENTAL REMEDIATION ACTIONS**

Environmental remediation actions include work in the Upper Basin described in the RODA and work in the Lower Basin described in the OU-3 ROD.

#### **1.3.1 Upper Basin Remedies**

This work includes remediation identified for the Upper Basin which includes the South Fork Coeur d'Alene River (SFCDAR) and its tributaries above its confluence with the North Fork.

The Upper Basin RODA identifies \$635 million of work in the Upper Basin including work at 125 mine and mill sites. The EPA Site Cleanup Implementation Plan (SCIP) identifies the priority setting process and outlook for sequencing the work over the next 10 years. This document will be updated on an annual basis as part of the adaptive management process to incorporate lessons learned as the work moves forward<sup>1</sup>. Additional information about the RODA and prioritization of cleanup actions including technical memos, meeting presentations, and community involvement documents are located at the following web site:  
<http://yosemite.epa.gov/R10/CLEANUP.NSF/sites/bh+rod+amendment>

The goals of the RODA include:

- Prioritizing Upper Basin/Box source areas for cleanup to improve water quality and address risks to human health and the environment,
- Moving forward on the OU-2 Phase 2 cleanup to improve water quality in the SFCDAR
- Addressing changes in water treatment to accommodate additional contaminated water,
- Focusing on particulate lead through source control actions which pose a risk to human health and ecological receptors, and
- Protecting remedies in community areas from tributary flooding and heavy precipitation events.

The prioritized cleanups under the RODA are expected to provide significant improvement to surface water quality and will reduce the contribution of contaminated groundwater to surface water. There will also be reduced particulate lead in the Coeur d'Alene River and downstream areas as a result of this work. These actions in turn are expected to reduce the recontamination

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<sup>1</sup> An update including lessons learned from 2014 is currently being prepared and will be available in December or January.

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potential in the Lower Basin and other downstream areas and reduce risks to humans and wildlife from exposure to contaminated mine waste.

This BEIPC 2015 work plan focuses on those cleanup actions that have either already started or planned for the coming year.

The following is expected to be the focus of the work in 2015.

1. The Trust completed construction of the WCA in the East Fork of Ninemile drainage in August, 2014. The first waste from the Interstate Callahan Rock Dumps was placed in the WCA in 2014. In 2015 cleanup work at Interstate Callahan Rock Dumps and associated riparian areas will be completed. EPA and the Trust will also be coordinating with the Restoration Partnership on additional restoration work to be conducted at the Interstate site after the cleanup has been completed.
2. In 2014, the Trust conducted additional characterization of the Success Mine Rock Dumps. The Trust will be completing design work for the Success cleanup in 2015, with cleanup work expected to begin in 2016.
3. In 2015, the Trust will continue characterization work in the East Fork Ninemile watershed, focusing on the Tamarack area.
4. In 2015, the Trust will do further characterization in Canyon Creek at the SVNRT repository site. Work will be done to determine if measures can be taken to stop the seepage with the current configuration or if the deposited repository material will need to be removed and the repository area prepared with a sufficient drainage system to prevent further contaminant migration through the deposited material. It is anticipated that 30% design for the cleanup will be completed by the end of 2015. In the interim, to prevent exposure, the area will be fenced to eliminate the current unauthorized use by pedestrians and ATV's.
5. In 2014 the Trust did not conduct any remediation of commercial properties as part of the BPRP program. The Trust is expected to complete additional work under the BPRP program during 2015. The scope of the BPRP work for 2015 is still being determined and will depend on the overall Trust Budget and other work being performed with other settlement funds.
6. Planning and design for upgrades to the CTP continues in accordance with the 2012 update of Central Treatment Plant (CTP) Master Plan. The purpose of the upgrades are to treat additional water for treatment from OU-2 groundwater in phase 1, to reliably treat waters, to meet current, more stringent discharge requirements, and to operate in High-Density Sludge (HDS) mode. The performance work statement for the upgrades is scheduled to be complete in early 2015 with the selection of the design-build-operate contractor in late 2015. These upgrades have been necessary for some time to provide dependable and more efficient water treatment for both the Bunker Hill Mine water which is currently treated at the CTP combined with groundwater from the Groundwater Collection System (GCS) near the CIA after it is installed and placed on-line. The combined base flows will almost triple the current base flows from the mine and will

require a plant that is capable of meeting current discharge standards during normal as well as challenging periods including large spikes in flows during high runoff events. The plant is currently not capable of meeting discharge standards when being operated in HDS mode but the upgraded plant operating in HDS mode will result in much less sludge production, more efficient operating conditions, and fewer sludge ponds being constructed over time. The combined treatment of mine water and extracted groundwater that will be then discharged from the CTP on an average basis is expected to result in significant removal of dissolved metals, the most notable of which is zinc that is currently being discharged to the South Fork of the Coeur d'Alene River from the groundwater as discussed in the following paragraph.

The conceptual design for the groundwater water collection system for OU-2 was completed in 2014 and the final design and construction of the remedy will be integrated with the CTP upgrades under the same design-build-operate contract. The proof-of-concept design includes an 8,000-linear feet cutoff wall between the Central Impoundment Area (CIA) and Interstate 90 (I-90), a series of extraction wells, and a conveyance pipeline to the CTP that extends along the north and east side of the CIA. Groundwater flow and strength (concentration of metals) predicted by the mathematical model represents the range from base flow/strength (late summer/winter) through maximum flow/strength (spring runoff). Considering this seasonal variability and groundwater monitoring well data from south of I-90, the estimated metals loading to the gaining reach of the SFCDR ranges from 250 to 450 lbs./day. A significant unknown is the potential source of metals in tailings under and north of I-90 that will not be captured by the groundwater collection system. However, the optimistic target is to capture up to 90% of this estimated load.

### **1.3.2 Lower Basin Remedies**

Work described in the OU-3 Interim ROD for the Lower Basin includes actions for wetlands and lateral lakes, river banks, splay areas and river bed dredging. Objectives of remediation in the Lower Basin focus on reducing particulate lead and other heavy metals in the Basin ecosystem.

EPA invested in significant data gathering efforts in 2013 to address key data gaps pertaining to the relationship between Basin ecology and ongoing effects and movement of historic mining related contamination. This is a multi-year effort, described in the Enhanced Conceptual Site Model (ECSM, EPA release 2010), focused on filling critical data gaps and computational model development to better understand and predict contaminated sediment transport in the Lower Basin. Such modeling and data collection will further enhance the working hypothesis for contaminated sediment locations, concentrations and transport and will support the selection of pilot projects, future cleanup decision making, project prioritization and future decision documents. The results of these data gathering efforts continue to be shared with the subgroups of the BEIPC (e.g. Lower Basin PFT, TLG and CCC), interested stakeholders, and citizen groups after they are compiled and synthesized. In 2015, a series of technical memoranda to summarize the ongoing data gaps and modeling efforts will be finalized. EPA resources will focus in 2015 on completing 2-dimensional hydraulic model calibration and developing and calibrating the sediment transport model. Following calibration of the model, validation will be performed using data collected during flood events. Cleanup options will be evaluated using the sediment transport model beginning in 2015, after validation and calibration are complete.

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By the end of 2014, EPA will complete the design and construction of a recreational site source stabilization project at the Kahnderosa Campground in Cataldo. This pilot project to address source stabilization and human health issues was the first of several pilot projects selected for review and implementation that resulted from the Lower Basin Pilot Project Forum session in spring 2013. Design for recreational site source stabilization has been completed and implementation is underway and scheduled for completion in late 2014 by the Trust. A key objective of this project is to isolate contaminated river bank soils and serve as a model for long term erosion resistance on the CDA River. This work has been coordinated with the upland remediation being performed at the site under the BPRP.

A second project that evolved from the Pilot Project Forum involves water level manipulation at key waterfowl feeding areas in the Lower Basin. Flooding in March 2014 resulted in the inundation of the wetlands and lateral lakes in the Lower Basin except at Schleppe Easement where the water levels could be manipulated. Unprecedented usage of the site by Tundra swans displayed that manipulation of water levels can be used to discourage feeding on contaminated areas but it remains unknown if only one site is manipulated where the swans would choose to feed. As part of the proof-of-concept, EPA is assessing key factors associated with selection and implementation of potential water level management pilots at several sites in the Lower Basin and will be determining viability of those sites, in coordination with the Restoration Partnership, in 2015. Selection and commencement of design at one water level manipulation location remains an objective for 2015.

In 2015, The Lower Basin PFT will continue to assist the TLG and provide updates on new technologies, pilot projects for consideration, and project ideas in order to implement the ROD for OU-3 where remedial actions are identified and where the potential for recontamination is low. The Lower Basin PFT will pursue the identification of both pilot projects and larger scale projects in the Lower Basin that could benefit from remedial action and restoration work and are of low risk of recontamination. This will be accomplished while initial cleanup priorities focus on addressing source stabilization in the Upper Basin and decreasing recontamination potential in the near term.

Documents that will be generated as a result of the Lower Basin work include modeling work plans, model development reports, data reports and other technical memorandums that are generated as more is learned about contaminated sediment transport and source areas in the Lower Basin. These documents will be available to the subgroups of the BEIPC (e.g. Lower Basin PFT, TLG and CCC), interested stakeholders and citizen groups.

The actions being planned and undertaken in the Upper Basin discussed in earlier section are expected to improve water quality and reduce the movement of contaminated sediments downstream into the Lower Basin. Thus, the Upper Basin cleanup is expected to complement cleanup activities in the Lower Basin by reducing the loading of contaminated materials to the watershed and reducing the potential for recontamination from the Upper Basin to the Lower Basin.

Also in 2013 a wetland restoration project was initiated on Idaho Department of Fish and Game managed property near Robinson Creek and the Schleppe wetlands. The wetland restoration will create clean waterfowl habitat. The property acquisition and restoration work was only made possible through the collaboration of multiple entities including Idaho Fish and Game, Idaho

Transportation Department, The Restoration Partnership, EPA, IDEQ, and potentially private land owners. Superfund dollars will be used to construct the wetlands in return for the wetland mitigation credits required for the expansion of the Page Repository. Work plans include the development of a comprehensive mitigation plan, wetland delineation, and preparation of a 30% design. This project is an excellent opportunity for collaboration between multiple entities and it will provide valuable experience for learning how to get the most out of natural resource restoration funds.

Refer to the Restoration Partnership (RP) section for more details on restoration work that will be conducted in the Lower Basin in 2015.

#### **1.4 BASIN ENVIRONMENTAL MONITORING**

EPA has been working over the last several years to optimize the current sampling program by strategically reducing the overall effort while continuing to update data quality objectives to better meet the long term monitoring needs of the cleanup. For over ten years, EPA has implemented the BEMP to meet the following objectives:

- Assess long-term status and trends of surface water, sediment, groundwater and biological resource conditions in the Basin.
- Evaluate progress toward meeting remedial action objectives (RAOs), applicable or relevant and appropriate requirements (ARARs), and preliminary remediation goals (PRGs).
- Improve the understanding of Basin environmental processes and variability to improve the effectiveness and efficiency of remedial actions.
- Provide data for CERCLA required Five-Year Reviews of remedy performance.

Extensive data has been collected and in preparation for the 2015 Five Year Review, EPA has been working with the an optimization team from EPA headquarters and monitoring agencies to evaluate the BEMP data and explore changes to the program that reduce redundant or outdated monitoring from phase 1 remediation work.

To assist with the optimization effort, EPA tasked USGS, who implement the surface water component of the BEMP, to review and evaluate surface water data that has been collected under the BEMP and general site characterization since 1990. As part of this work, USGS has developed a draft report for EPA's 2015 Five Year Review that is currently being peer reviewed. The report estimates annual loads of cadmium, lead, zinc, nitrogen, and phosphorus for water years 2009-13. Water quality data from 2003-13 was used to calibrate the LOADEST models, and then estimate loads for each year during 2009-13. EPA is currently evaluating remedy effectiveness and long-term monitoring surface water locations. Changes to the surface water monitoring program are being implemented in 2015 and will be fully detailed in the 2015 Five Year Review.

EPA, in coordination with IDEQ, made reductions to the OU-2 groundwater monitoring network during the fall 2014 sampling event. These reductions support EPA's strategy to optimize the spatial and temporal sampling network. The primary objective of groundwater monitoring in OU-2 is to support the groundwater collection system remedy optimization and to measure

remedy effectiveness. A second objective is to maintain a minimal long-term monitoring network. As EPA and IDEQ continue to evaluate monitoring needs, it is anticipated that further reductions will be made to the groundwater monitoring program.

EPA is currently working with the monitoring agencies to evaluate the sediment and biological sampling programs. As EPA continues to implement remedies outlined in decision documents, it is important that monitoring activities evolve as the understanding of the system and data needs change. EPA expects to communicate additional changes to the BEMP in the 2015 Five Year Review.

EPA continues to make analytical results from site surface water, sediment, and groundwater sampling available on a web-accessible data management system; human health-related data will not be included in this database. For the last several years, EPA has made site environmental monitoring data available through a web page. Nationally the STORET system has transitioned to the new WQX data management system and the site environmental monitoring data will be accessible at a new website: <http://gispub9.epa.gov/CDA/#>. If needed, EPA will assist interested stake holders in accessing the information.

## **PART 2 – OTHER ACTIVITIES AND RESPONSIBILITIES**

For Part 2, the scope of the five-year work plan recognizes a number of work items that the BEIPC will be involved in and items of work needed to accommodate some of the recommendations of the NAS study; it also includes implementation of the Lake Management Plan by the State of Idaho and CDA Tribe and the activities of the Natural Resource Trustees (Restoration Partnership).

The plan includes the following work:

- Lake Management Activities
- Flood Control, and Infrastructure Revitalization
- Communications and Public Involvement
- Restoration Partnership

### **2.1 LAKE MANAGEMENT ACTIVITIES**

The OU-3 Interim ROD did not include CDA Lake in the Selected Remedy nor is there a remedy identified in the Upper Basin RODA. The OU-3 Interim ROD anticipated that the State, Tribe, federal agencies, and local governments would implement a Lake Management Plan (LMP) outside the CERCLA process using separate regulatory authorities. The updated LMP was approved in 2009 and implementation has been underway. Implementation of the LMP is an adaptive management process and adjustments may be necessary as monitoring and other data are obtained and analyzed.

As referenced in Subsection 4.5.1 of the 2009 LMP, many of the agencies, governments, and other stakeholders that address water quality in CDA Lake are represented on the BEIPC, TLG or CCC. As such, these various BEIPC forums represent unique opportunities for LMP coordination and implementation which IDEQ and the Tribe intend to fully utilize.

Examples of activities envisioned for implementation of the LMP in 2015 include, but are not limited to the following activities, grouped by LMP goals:

**Research and Monitoring:**

1. In 2010, the Tribe and IDEQ initiated the 3 Year Nutrient Source Inventory (as identified in Section 3.3, Objective 3 of the LMP) in the St. Maries/St. Joe River watersheds. The Tribe and IDEQ selected 7 sites where water quality has been monitored. After evaluating the available data, the Tribe has decided to continue collecting flow data in the St. Maries/St. Joe watershed for another year, as well as analyze GIS data to characterize land use. Preliminary results will be presented to Watershed Advisory Groups, local stakeholders, and the TLG in 2015. The information will be used for further discussion and project identification.

IDEQ will be investigating the feasibility of installing an automated sampler in the mouth of Mica Creek in 2014 and 2015, as well as several turbidity meters in the creek to begin collecting nutrient information for this tributary to begin refining priority areas in this watershed as well.

2. In support of the Nutrient Source Inventory, IDEQ will revisit and measure the St. Joe River rebar bank pins. A survey of riverbank erosion on the lower 9 miles of the St. Maries River will also be initiated.
3. Continue joint water quality monitoring throughout Coeur d'Alene Lake for metals, nutrients, physical parameters, and biological communities. Throughout 2015, the Tribe and IDEQ will continue utilizing the ELCOM-CAEDYM and LOADEST models. These models are utilizing real-time data that is collected from Coeur d'Alene Lake including the establishment of four meteorological stations. In the summer of 2014, the Tribe installed the data logger buoy on Chatcolet Lake (collecting parameters such as water temperature and dissolved oxygen at multiple depths). The location of the logger buoy for 2015 has yet to be determined.
4. Both the Tribe and IDEQ are collaborating with the University of Idaho EPSCoR – “Managing Idaho Landscapes for Ecosystem Services (MILES)” project, which will take place through 2018. The project will support joint outreach activities, special studies, and will be used to leverage support for additional research. In 2014 and/or 2015, MILES will place four sondes (probes) in the St. Joe River, the Coeur d'Alene lateral lakes, and possibly Cougar Bay, to provide data to enhance ELCOM-CAEDYM modeling and our understanding of river/lake dynamics.
5. In 2013, the Tribe and the University of Idaho submitted a joint NSF proposal to support social and ecological modeling of the watershed. In 2015, IDEQ and the Tribe will continue to partner with area research universities to pursue funding to support research on nutrient sources in the watershed, nutrient cycling in lakebed sediments, and strengthening the predictive ability of ELCOM-CAEDYM.
6. Present the draft 5-Year monitoring reports for TLG review and comment when they are available.

## **Nutrient Reduction and Implementation**

1. Participate in Coeur d'Alene Basin Watershed Advisory Groups in order to coordinate implementation opportunities. Provide support for the interim sediment reduction project approved for implementation through the State of Idaho's Clean Water Act Section 319 program. Provide support on implementation of other selected projects that align with LMP goals. Should the consortium led by the Kootenai-Shoshone Soil and Water Conservation District be successful in receiving funding from the USFS Western States Competitive Grant, the LMP team will provide support on the development and implementation of a community action plan for Fernan, Blue, and Wolf Lodge Creeks.
2. Communicate nutrient reduction results to Watershed Advisory Groups and other potential partners for feedback and project identification.
3. Provide an annual overview of LMP implementation activities to the CCC and solicit their input.
4. A set of tables identifying management entities and actions aka; Management Action Tables (MATs) affecting lake water quality in the Coeur d'Alene basin was created as part of the 1996 LMP effort. These MATs were updated and revised through an audit process conducted during 2007 by the Tribe and IDEQ using EPA CWA grant funding, available through the BEIPC, and are a key component of the 2009 LMP. The LMP identifies an audit of these MATs every 5 years. The audit process was initiated in 2014 by IDEQ and the Tribe and will continue into 2015.
5. Prioritize and initiate riverbank stabilization projects along eroding riverbanks in the St. Joe and lower St. Maries Rivers. IDEQ and Tribal staff will collaborate with Avista Corporation, the Natural Resource Conservation Service (NRCS), the Soil & Water Conservation Districts, the Counties, and local landowners. Planning for future project sites under the IDEQ agreement with Avista began in 2014 and will continue into 2015.
6. The Tribe will continue to implement the invasive Aquatic Plant Survey and Treatment Program within their current jurisdiction, and IDEQ will continue implementing their aquatic plant surveys within northern pool bays.
7. The LMP Coordinators will continue to be involved in the Lower Basin PFT and support implementing projects identified in the 2002 OU-3 Interim ROD.

## **Outreach and Education**

1. The LMP Education/Outreach Program, Lake\*A\*Syst (a home owner's guide to environmental stewardship within the Coeur d'Alene Basin), was developed in 2013, and a limited number of manuals was printed. IDEQ and the Tribe will be revising the materials based on stakeholder feedback in 2014-2015. A joint website that includes online access to Lake\*A\*Syst Program materials was developed in 2014. Lake\*A\*Syst workshops were held in the Fernan Lake watershed in 2014. Workshops will be made available to bay associations and other groups interested in the program. Volunteer

monitoring opportunities will be explored with bay associations, where there is interest, to develop relationships with the community and enhance efficiency in data collection.

2. Participate in joint educational outreach events such as: the North Idaho Fair, Leadership Coeur d'Alene, Women in Science, training of camp counselors at Camp Cross, Camp Four Echoes (Girl Scouts), and UI - Coeur d'Alene camps (Back to the Earth, school water quality days).
3. Continue to participate on an Advisory Committee to support the University of Idaho (UI) Extension Master Water Steward Program (IDAH20), and be involved in activities of the UI Community Water Resource Center (CWRC).
4. Continue collaborating with the Spokane River Forum and the University of Idaho CWRC to expand research and educational opportunities.
5. Launch joint Lake Management media campaign on the tail of the first Our Gem Coeur d'Alene Lake Symposium to keep the community dialogue alive.
6. Continue to revise the website to increase accessibility and appeal.
7. Continue joint involvement with the Panhandle Stormwater and Erosion Education Program and seek opportunities to expand the stormwater focus.
8. Continue outreach program for local businesses that helps increase commercial involvement in stormwater abatement and promotion of water quality, including volunteer recognition program and partnering on adoption of techniques such as rain gardens, green roofs, etc.
9. Present LMP activity updates to various groups throughout the year such as the North Idaho/Washington Lakes Conference, homeowners' associations, environmental organizations, and chambers of commerce.
10. Coordinate with city and regional partners to explore potential for demonstration projects and educational signage in local waterfront parks.

Coordination with BEIPC forums will maximize opportunities for information exchange and advice working under the BEIPC MOA and work plans. Future coordination with the BEIPC recognizes that IDEQ and the Tribe retain their respective decision making authorities under CERCLA and the Clean Water Act (CWA).

## **2.2 FLOOD CONTROL AND INFRASTRUCTURE REVITALIZATION**

The BEIPC through the office of the Executive Director continues to pursue support and funding for an analysis of flood control needs and the existing levee system in the South Fork CDA River and Pine Creek. The Executive Director will continue to work to develop an approach to dealing with potential flooding problems and levee management in the Upper Basin. The BEIPC will continue to assist Upper Basin communities and utilities in pursuing funding to implement the Upper Basin Drainage Control and Infrastructure Revitalization Plan (DCIRP). In 2015, the

Executive Director will complete the Inventory and Spread Sheet of Existing Drainage Infrastructure and coordinate with the local infrastructure jurisdictions on an Operation and Maintenance plan for the Upper Basin.

### **2.3 COMMUNICATIONS AND PUBLIC INVOLVEMENT**

During 2015, the BEIPC and Community Involvement Coordinators (CICs) from EPA and IDEQ will work together to strengthen public involvement, communication, and education related to BEIPC activities. The CCC will continue to be the focus organization to facilitate the BEIPC public involvement process.

The BEIPC Executive Director, Assistant, Project Focus Team Chairpersons, and CCC Chairperson may request EPA and IDEQ CICs to support public outreach regarding BEIPC activities. EPA and IDEQ CICs may in turn request their support for public involvement activities. Following is a partial list of communications and public involvement work items and coordination opportunities:

- Make presentations to public groups.
- Explore and suggest opportunities for increasing public attendance at meetings and encouraging public involvement.
- Consider local community interests as laid out in the 2012 Technical Assistance Needs Assessment to support meaningful public involvement interactions in the BEIPC and CCC meetings.
- Consider feedback given by local public in the EPA 2014 Community Involvement Plan.
- Support the CCC in exploring ways to maximize the group's value to interested local people.
- Sponsor and participate in a joint booth for public outreach/education at the North Idaho Fair.
- Help coordinate public education/outreach for BEIPC-sponsored activities such as open houses, workshops, training, or public meetings.
- Provide peer reviews for each other upon request to provide input or different perspectives on communication pieces (including brochures, communication strategies, fliers, and posters).
- BEIPC/CCC leads the development, production and distribution of brochures, advertising and meeting announcements.
- Upon request, CIC's may support BEIPC with suggestions for publicizing BEIPC events and meetings (ie: communications strategies).
- BEIPC may inquire about CIC availability to participate in distributing meeting announcements or supporting BEIPC meetings if coordinated in advance.

Community Involvement Coordinators work directly with EPA, IDEQ, PHD, and BEIPC project managers as needed to tailor communications outreach and/or education for specific projects under the programs listed in this work plan. Outreach activities are often reported and discussed at CCC meetings.

## **2.4 RESTORATION PARTNERSHIP (Partnership)**

The CERCLA Natural Resource Trustees in the Coeur d'Alene Basin are the United States (represented by the U.S. Forest Service, U.S. Fish and Wildlife Service and U.S. Bureau of Land Management), the Coeur d'Alene Tribe, and the State of Idaho (represented by the Idaho Department of Fish and Game and IDEQ). A series of lawsuits followed the Superfund designation in the Coeur d'Alene Basin for response costs and natural resource damages. Natural resources injured by contamination included surface and groundwater, soils and sediments, riparian resources, fish, birds, macroinvertebrates and phytoplankton.

Under CERCLA, settlements were reached with all parties. Following the final 2011 settlement agreement, the Trustees entered into a MOA to address the planning and implementation of restoration for natural resources and associated services injured, destroyed or lost as a result of the release of mining-related hazardous substances into the Coeur d'Alene Basin. As specified in CERCLA the funds will be dedicated to projects that restore, rehabilitate, replace, and/or acquire the equivalent of the injured natural resources. The Trustees' goal is to restore the health, productivity and diversity of injured natural resources and the services they provide in the Coeur d'Alene Basin.

In 2013, the Trustees branded their new name as the Restoration Partnership (Partnership) and, began developing a Restoration Plan and Environmental Impact Statement (EIS) following the National Environmental Policy Act (NEPA) process. This plan will be a comprehensive guide for restoration of injured natural resources in the Coeur d'Alene Basin and will be coordinated with remediation activities.

In 2015, the Partnership will continue working on finalizing the Restoration Plan and EIS for the Basin. Currently, the NEPA analysis of effects is underway and the goal is to provide a draft plan/EIS to basin stakeholders and the public in 2015 for public comment.

During 2015, the Partnership will continue to coordinate with the BEIPC, participate in PFTs, and provide updates on restoration planning efforts and ongoing implementation of projects that were identified in the 2007 Interim Restoration Plan. The Partnership will continue to coordinate with EPA to integrate restoration planning with remediation. The following work will occur for the ongoing wetland restoration project along the Lower Coeur d'Alene River:

- Schlepp Agricultural to Wetland Conversion Project: Management and implementation of restoration activities. A 10 year Restoration and Management Plan for the Schlepp Agricultural to Wetland Conversion Project will be developed. Ongoing wetlands habitat management will continue as well as success monitoring.