

## Colorado Measurable Results Program

In 2011, the Measurable Results Program (MRP) was implemented in order to measure the water quality affects of point and nonpoint source pollution control activities in support of planning and prioritization of future resources to achieve the best possible water quality benefit for the state.

The strategic goals of the Colorado Water Quality Control Division (Division) align efforts of the diverse programs, sections and units within the division to meet common objectives. The Measureable Results position exists within the environmental data unit which is nested in the Watershed Program of the Division. To attain the desired alignment of efforts, the measurable results position objectives are correlated strongly to these Division strategic goals:

- Protect all designated uses by fully attaining water quality standards through improved implementation of the federal Clean Water Act and Colorado Water Quality Control Act and their associated regulations;
- Restore impaired water quality to attainable standards through improved implementation of the federal Clean Water Act and Colorado Water Quality Control Act and their associated regulations; and
- Assist with Colorado's economic recovery by providing increased funding to water infrastructure and non-point source projects through implementation of applicable portions of the American Recovery and Reinvestment Act and associated regulations.

With the division goals in mind along with previous discussions and position documentation, these position objectives were developed. It is helpful to think of these in chronological order. First, determine where the greatest impact to water quality may be achieved. Second, measure the success of Point and Nonpoint source projects and programs working to solve challenges identified in step one. Third, provide decision making guidance on future project implementations and assist in meeting reporting requirements.

Based on Division Values to work together to solve problems and to collaborate with water quality stakeholders, this program will involve several departments within the division and third party clean water agencies and watershed groups. Third party's include (but not limited to): Publicly Owned Treatment Works (POTWs), Local Watershed Management Groups, Colorado Division of Reclamation Mining and Safety, Colorado Water Conservation Board, US EPA Region 8, US Forest Service, US Fish and Wildlife, US Department of the Interior BLM.

There are two program initiatives in the MRP; Water Pollution Control Revolving Fund Measurable Results and TMDL Bridge to Restoration.

## **Water Pollution Control Revolving Fund Measurable Results**

The Clean Water State Revolving Fund has provided more 900,000,000 in loans and grants in Colorado. This is a significant resource for the state. By making decisions based systematic and scientific research we stand to maximize the benefits to our streams and rivers.

The purpose of this initiative is to measure the surface water and wastewater effluent quality improvements derived from projects funded through the Water Pollution Control Revolving Fund.

Why:

- Water quality benefits currently not measured
- Make informed decisions based on accurate research
- Maximize staff resources and budget

What is Working:

- Effective collaboration with projects
  - Engaged
  - Collecting Samples
- Historic Data Compilation
- Valuable data for MRP and State Water Quality Assessment
- Maximizing financial resources
- Maximizing staff resources

Challenges:

- Long duration of studies
- WWTP partners are busy during upgrade
- Construction milestone changes
- Reduced projects on Clean Water Side
- Complex receiving stream systems
- Planning for Nutrients Regulations

## **TMDL Bridge to Restoration**

Purpose:

Collect and package water quality assessment data from impaired waters to facilitate restoration projects through 319 and Clean Water State Revolving Funds (CWSRF).

Why:

- Large data gaps exist between TMDLs and what is needed to make restoration decisions and plans.
- Actively direct resources to positively impact watersheds
- Queue up shovel ready mining related projects

What is Working:

- Effective multiagency collaboration and cooperation
- Rapid implementation of remediation projects
- Maximizing financial resources

- Maximizing staff resources
- Valuable data for MRP and State Water Quality Assessment

Challenges:

- Correlating current contaminant loading to previous TMDL loadings
- Post site assessment, projects need champion
- Many tasks beyond water quality assessment to complete restoration project.

In the state of Colorado there are over 23,000 hazardous mines and 604 miles of streams impacted by past mining. Dissolved metals and acidity due to legacy mining and natural loading sources make up 51% of the impaired waters list and 89% of completed Total Maximum Daily Loads (TMDLs) in the State of Colorado. Historically, legacy mines or abandoned mine lands (AMLs) have lacked a financially viable “responsible party”, making restoration efforts difficult. Because of the significant impacts on the state’s waterways and lack of funding available for restoration projects, The Nonpoint Source (NPS) group within the Water Quality Control Division (Division) has made legacy mining a high priority for the next five years.

The Environmental Data Unit’s (EDU) Measureable Results Program (MRP) has been tasked with measuring the water quality effects of point and nonpoint source pollution control activities in support of planning and prioritization of future resources to achieve the best possible water quality benefit for the state. EDU’s MRP is assisting the NPS group in its goal to reduce the impact of legacy mines by providing water quality and site characterization to facilitate restoration planning.

There typically is not enough specific water quality information in Total Maximum Daily Loads (TMDLs) for a watershed group or the Division of Reclamation Mining and Safety (DRMS) to determine exact impairment sources or scope out a restoration plan. This project intends to address this issue by better characterizing water quality and identification of specific loadings from legacy mining sites to facilitate restoration planning. Restoration plans may be used to apply for funds through section 319 and Clean Water State Revolving Funds (CWSRF). Through this project, the Division will assume greater control of directing restoration resources to watersheds where the greatest water quality benefit will be achieved.

**Project Site Selection Process:**

A goal of this project is to facilitate restoration planning and projects for water bodies impaired by legacy mining pollution. Acknowledging the level of resource supplied to this project will not allow for all impaired stream segments to receive this advanced level of assessment, a prioritization process was employed. This process utilized qualitative and quantitative measures to select water body segments where mining related restoration projects would have the greatest effect on water quality and potentially achieve attainment status.

The selection process began with impaired segments where TMDLs are developed. Additionally the TMDL group identified a smaller subset of segments where restoration projects could significantly improve water quality. DRMS was consulted on their existing and potential efforts in Colorado’s waters to align efforts. DRMS rated segments based on several factors. Most notably was the desire for additional water quality characterization. As a result these segments would receive additional prioritization points. Points were also applied to streams close to

attaining standards. Abundance of legacy mines in a watershed also played a role in the selection process with watersheds with less mining activities receiving a higher priority. The rationale here is that restoration projects would have a greater effect on watersheds with limited pollution sources.

The prioritization points as applied:

Criteria	Points
TMDL Group Best Professional Judgment on where restoration projects could yield greatest water quality improvements.	4
DRMS Request for Water Quality Monitoring	4
Existing DRMS Work	1
Waterbody is close to attaining	2
Current and Past 319 Projects	1
Abandon mine concentration in watershed (lower the concentration, higher the rating)	Qualitative
Superfund Sites (Eliminated from process)	Eliminated

**What's Next for MRP:**

- Assessment Reporting
- Promote environmental benefits derived from Power Authority/SRF funding
- Decision making from Measurable Results
  - SRF
  - TMDL Implementations
  - 319 and Nonpoint source
- Refocus on other impairment categories i.e. selenium / Nutrients
- Promoting measurable results strategies division wide