

# River Board Meeting Agenda

PLAZA 1 MEETING ROOM 530 E. MAIN ASPEN, CO

March 19, 2015

Time	Description
4:00 PM	<ul style="list-style-type: none"><li>• Board Comment</li><li>• Public Comment</li><li>• Additions – Deletions to Agenda</li><li>• Approval of minutes - Feb 15, 2015</li></ul>
4:15 PM	<ul style="list-style-type: none"><li>• Roaring Fork Watershed Regional Water Efficiency Mark Fuller</li></ul>
4:45 PM	<ul style="list-style-type: none"><li>• Roaring Fork Conservancy Grant Request Supplemental Didymo Study</li></ul>
5:15 PM	<ul style="list-style-type: none"><li>• Board Open Discussion</li></ul>
6:00 PM	<ul style="list-style-type: none"><li>• Adjourn</li></ul>

## Future meeting dates 2015

April 16

April 21 Joint meeting with BOCC **3:15 start time**

May 21

June 18

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*Agenda items are subject to change – Times are approximate and are also subject to change*

**HEALTHY RIVERS AND STREAMS CITIZENS ADVISORY BOARD**

**Meeting Minutes**

**530 E. Main St Plaza 1 Aspen, CO**

**February 19, 2015– 4:00 p.m.**

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**River Board members present:** Bill Jochems, Andre Wille, Lisa Tasker, Greg Poschman

**River Board members absent:** Dave Nixa, Ruthie Brown, Ellie Taylor

**Others present:** Lisa MacDonald, Laura Makar, Gary Tennenbaum

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**Board Comments:**

Ms. Tasker and others attended Colorado Mesa University's Water Use and Economics course in Grand Junction on February 18<sup>th</sup>.

Mr. Jochems attended the Colorado Water Congress Winter Conference in Denver and updated the Board on the conference.

**Public Comment:** None

**Additions/Deletions to Agenda:** None

**Approval of the Minutes:** *Ms. Tasker moved to approve the minutes of January 15, 2015. Chairman Wille seconded the motion. The motion passed 4/0.*

**Open Space and Trails Program Overview**

Gary Tennenbaum, Assistant Director of Open Space and Trails, provided the Board with an overview of the program and a video of the Open Space Properties.

**Legislative Updates**

The Board was briefed on upcoming legislation.

*Chairman Wille moved to direct staff to draft a letter of support regarding the Stormwater and Fire Debris Management Legislation. Ms. Tasker seconded the motion. The motion passed 4/0.*

**Open Discussion:** None

The Board adjourned at approximately 5:45 p.m.

**Approved:**

**Attest:**

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Andre Wille – Chairman  
Healthy Rivers Board

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Lisa MacDonald

# REGIONAL WATER EFFICIENCY PLAN

## Roaring Fork Watershed, Colorado



RUEDI WATER & POWER  
AUTHORITY

*PREPARED BY*



**ELEMENT**  
Water Consulting

**P.O. BOX 140785  
DENVER, CO 80214**

*AND*



**1339 HAWTHORN AVENUE  
BOULDER, CO 80304**

March 9, 2015



## EXECUTIVE SUMMARY

### PURPOSE

The Roaring Fork Valley is a scenic and historic part of Colorado that includes 14,000 foot peaks, snow-fed rivers, cities, towns, farms, ranches, homes, businesses, ski areas, and much more. Water is the lifeblood of the Roaring Fork Valley. Recognizing the connection between water conservation, water supply planning, and a broad interest in the Roaring Fork watershed, the water utilities of City of Aspen, Snowmass Water and Sanitation District, Town of Basalt, Town of Carbondale, and City of Glenwood Springs have all completed or updated their municipal Water Efficiency Plans in 2014 and 2015. These plans evaluated the projected water demands for each individual municipal supply system under passive and active water efficiency programs, and compared projected demands to their individual water supplies. Each water provider has selected appropriate efficiency measures to reduce water use and meet their water demand and supply objectives. The intent of this Roaring Fork Watershed Regional Water Efficiency Plan (“Regional Water Efficiency Plan” or “Regional Plan”) is to build upon the individual municipal plans by unifying efforts and identifying programs that benefit from consistency and sharing of resources.

*All communities and stakeholders in the Roaring Fork Valley (not just those that helped create this plan) are invited and encouraged to participate in the regional water efficiency effort.*

**The goals of this Regional Water Efficiency Plan for the Roaring Fork Watershed are to implement municipal water efficiency programs on a regional scale and to achieve higher and more effective benefits, compared to implementing the same programs individually.**

The goals were first agreed to in the Memorandum of Understanding (MOU) that joined the participants together to seek funding from the Colorado Water Conservation Board (attached). The MOU states that the cosignatories:

- “Recognize their individual interests in water conservation planning have regional significance within the Roaring Fork watershed.”
- “May be able to implement elements of their individual water conservation plans more easily and more successfully if they are common components of a Roaring Fork Watershed Regional Water Conservation Plan.”
- “Understand there are community and regional benefits from implementing a Roaring Fork Watershed Regional Water Conservation Plan, such additional water for drought protection, recreational uses and environmental uses.”

The MOU outlined fundamental areas of agreement and basic principles that formed the underlying foundation of this Regional Water Efficiency Plan for the Roaring Fork Watershed.

All water districts and water users in the Roaring Fork Valley are invited and encouraged to join the regional water efficiency effort, to adopt these basic principles of cooperation, and to help implement the recommended regional water efficiency activities described below.

This planning effort was funded in part by a Water Efficiency Planning Grant from the Colorado Water Conservation Board (CWCB), requiring that the grant money be used for municipal water efficiency planning purposes. ELEMENT Water Consulting and WaterDM were selected through an RFP process to prepare this Regional Water Efficiency Plan and the individual plans for City of Aspen, Town of Basalt, Town of Carbondale, and City of Glenwood Springs. SGM prepared the individual plan for Snowmass Water and Sanitation District.

Implementing municipal efficiency on a regional scale is just one of many important steps toward the region's broader watershed health goals, which necessitates engaging other stakeholders and water users. While the scope of this plan was limited to municipal water efficiency measures, other uses also impact the watershed; municipal efficiency cannot be the only approach to maintaining and improving the Roaring Fork Watershed. The activities identified in this plan are not intended to undermine or override Colorado's water rights system, and the hope is that this is the start of a broader conversation and a template that can include other stakeholders and sectors to extent the savings beyond the five municipal providers who were directly involved in creating this regional plan.

*This Regional Plan provides a template that can include other stakeholders and sectors to expand and extend the savings beyond the five municipal water providers who were directly involved in creating this plan.*

## **RECOMMENDED REGIONAL WATER EFFICIENCY ACTIVITIES**

The Roaring Fork communities share common interests, and there is consistency and overlap in the water efficiency-related efforts of the five municipal water providers participating in this regional planning effort. Connected through the Roaring Fork, Fryingpan and Crystal Rivers, and their tributaries, there is opportunity for municipal providers to work collectively with each other and with other stakeholders to improve the effectiveness of demand management and water efficiency for the benefit of the entire watershed. Certain programs benefit from being unified and having consistency (e.g. educational campaigns) and in sharing resources (e.g. developing model landscape/water budget information). The Regional Water Efficiency Plan provides this opportunity and unifies these efforts.

Four broad regional water efficiency programs were identified as part of this Regional Water Efficiency Plan, as summarized below. The regional efficiency programs were selected based on the individual municipal water efficiency plans as well as other local and national water efficiency-related efforts. The specific programs are intended to provide a menu of alternatives and it is understood that *every* program will not be appropriate for every participant, nor will

every participant be capable of participating in all of the programs. In some cases, it will be beneficial to conduct additional feasibility or pilot programs prior to full implementation.

- 1. Water Loss Control Technical Assistance** – System auditing, loss tracking, infrastructure maintenance, leak detection and leak repair for water utilities can be improved by the consistent application of best practices. A coordinated effort to provide technical assistance for completing initial water audits and to establish a regular annual audit program for individual water providers is recommended. Information exchange across providers should be encouraged.
- 2. Regional Water Efficiency Education and Information Campaign** – Engaging water users and stakeholders can be particularly effective when implemented on a regional scale. Potential initiatives include: (a) coordinated public outreach and education campaigns; and (b) a water efficiency challenge for businesses and homeowner associations (HOAs).
- 3. Reduce Outdoor Water Use** – Reducing outdoor water use in the Roaring Fork region is a common goal amongst all of the plan participants. Potential initiatives that could benefit from regional coordination include: (a) a regional model landscape ordinance for new landscapes to be built smart from the start; (b) a landscape design and management certification program targeted at HOA's, property managers and landscaping professionals; and (c) an effort to install rain shut-off devices on irrigation systems across the region.
- 4. Improve Water Resource Management** – Water utilities, other rights holders, and water users in the Roaring Fork Watershed can help create long-lasting benefits to streamflow conditions through efficiency and improved water resource management. Exploration of four program measures is recommended in this area: (a) linking water savings to environmental benefits (i.e. improved streamflows during low-flow events); (b) mechanisms to protect water rights and enhance instream flows; (c) improved water accounting for raw water systems; and (d) climate resiliency measures and additional research on climate change impacts on water supplies in the region.

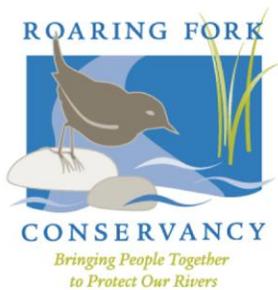
## **IMPLEMENTING THE REGIONAL WATER EFFICIENCY PLAN**

The water efficiency activities identified in this Regional Water Efficiency Plan provide the basis for implementing water efficiency in a regionally-coordinated manner. Executing the plan will require ongoing efforts and adaptive strategies to allow the plan to generate visible benefits, grow, and change. The following actions are recommended as next steps:

- 1. Establish a Regional Plan Implementation Workgroup** with representatives of each major stakeholder group to meet regularly to report on and assist with regional plan implementation. Provide updates at other forum meetings and/or host regular open forms. Include annual reporting around the plan for all participants including:
  - Annual program implementation,

- Program impact estimates including program costs/avoided costs and water savings,
- Lessons learned,
- Public feedback on program,
- Periodic weather data and local trends,
- Water supply concerns,
- Recommendations for studies or pilot programs,
- Recommended plan modifications, and
- Establish ongoing implementation plan.

2. **Develop a funding plan for the Regional Plan implementation.** Identify potential annual and one-time funding sources (e.g. contributions from individual providers, CWCB implementation grants, Colorado Basin Roundtable (CBRT) funding, U.S. Bureau of Reclamation, Natural Resource Conservation Service, and other sources), establish funding commitments, and submit grant applications.
3. **Assign a Regional Plan Coordinator and divide responsibility** for implementing the plan across multiple individuals and organizations. To successfully implement this plan, committed people must step forward and work together. Identifying a plan coordinator and “plan champions” across jurisdictions and stakeholder groups is a critical step in the process. Potential lead organizations include: RWAPA, CORE, or the Roaring Fork Conservancy.
4. **Create a MOU for implementation** that details shared objectives, roles, and responsibilities. An MOU was beneficial in defining goals, expectations, and roles of individual water providers in forming the partnership to create this Regional Water Efficiency Plan. A similar type of agreement would be useful for establishing the roles and responsibilities of participants in the implementation phase.
5. **Dedicate resources and pursue Plan implementation**



Pitkin County Healthy Rivers and Streams Board  
Courthouse Plaza  
530 E. Main St, 3<sup>rd</sup> Floor  
Aspen, CO 81611

February 26, 2015

RE: Request for Funding for the Supplemental Didymo Study

**BOARD OF DIRECTORS**

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*Water Quality Coordinator*  
Heather Lewin  
*Watershed Action Director*  
Sarah Woods  
*Director of Philanthropy*

Dear Board Members,

Roaring Fork Conservancy (RFC) has requested time on the agenda for Thursday, March 19, 2015 to update you on the progress of the Comprehensive Lower Fryingpan Assessment and invite you to fund the 2015 Supplemental Didymo Study. Understanding the impact of this unique alga on the fishery and other water-based recreation is essential to build a case for responsible management of outflows from Ruedi Reservoir. While details of the proposed reservoir management changes will depend on the outcome of this and other studies, there is already legitimate concern over the vitality of the fisheries in the face of changing flow regimes. A defensible *Didymo* aquatic study is needed to help convince the Bureau of Reclamation and other decision makers of the necessity of pursuing ways to keep more water in the Fryingpan River during critical times of the year.

The total budget for the 2015 Supplemental Didymo Study is projected to be \$20,000. We have currently raised \$10,000 through a grant from the Eagle County Community Fund.

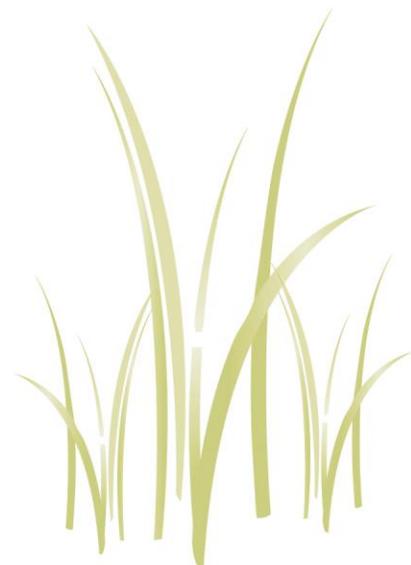
RFC is requesting \$10,000 in funds from Pitkin County Healthy Rivers and Streams to fully fund the project.

Please find the discussion of grant criteria attached.

Thank you for your consideration.

Sincerely,

Heather Lewin  
Watershed Action Director



# ROARING FORK CONSERVANCY: 2015 SUPPLEMENTAL DIDYMO STUDY

## A. Goals of the Healthy Rivers Board

RFC is seeking funding for the costs associated with the 2015 Supplemental Didymo Study to increase understanding of how *Didymo* functions in the Fryingpan River and identify potential management strategies. The second round of Didymo Studies clearly meets the Board's first goal of "Maintaining and improving water quality and quantity within the Roaring Fork Watershed." *Didymo* is a nuisance algae that can grow into long stalks and impact macroinvertebrate and fish populations. Understanding the presence, seasonality and persistence of *Didymo* in the Fryingpan River will help lead to an action plan to ensure this algae does not overtake the river, deteriorate water quality, or impact Gold Medal Fishing.

The big picture actions from this study also meets goals 2 and 3. When we understand how seasonality and flow affect *Didymo* growth, we can work towards best management practices with the Bureau of Reclamation in hopes of maintaining winter flows at a level that minimizes anchor ice formation and allows for flushing flows in the spring to move out sediments and reduce *Didymo* presence.

The 2015 Supplemental Didymo Study is budgeted at \$20,000. Eagle County has already committed to funding \$10,000. For specific budget details please see **Section E**.

## B. Viability of the Project

*Didymosphenia Geminata (Didymo)* is a freshwater alga (also known as 'rock snot') that grows in toilet paper-like stalks attached to rocks and other substrates on the bottom of streams. It is a unique alga that thrives in cold water, low nutrient, and sustained low flow streams. High density algal blooms are frequent in rivers directly below reservoirs and other impoundments. The thick mats that *Didymo* produces can harm macroinvertebrates, and therefore fish. The algae can cover up to 100% of the substrate of a stream with thicknesses of > 20 cm. Other waterways overtaken by *Didymo* have shown declines in fishery health; studies have documented record low trout weights and young populations of trout that struggle to survive past the 1-year mark. Large floods that scour a river bed can return the *Didymo* biomass to a low level. However, *floods must be high enough to cause the rocks on the streambed to mobilize, scouring the algal cells from rock surfaces.*

RFC and its partner, Colorado Mountain College Leadville's Natural Resource Management Program (CMC), conducted 3 rounds of *Didymo* sampling during 2014. Significant *Didymo* was observed in the spring (before peak flows); there was less evidence of the algae during the second sampling (after peak flows); and almost no *Didymo* in late September. Very few studies of this alga exist, and it is necessary to repeat the sampling in 2015 to better understand if there is really any pattern to the *Didymo* presence/absence in the river and any seasonality to its blooms. RFC has a proposed study plan from CMC in hand. Led by Professor Jennifer Moore, a group of student interns will use innovative methods to quantify *Didymo* on the lower Fryingpan. The group has set sampling dates similar to the first study; namely before peak flows, after peak flows, and end of summer. Each sampling event will last 1-

3 days and will yield information to be further evaluated through lab work at CMC. The final report is expected in December of 2015.

Ancillary benefits from the public interest and education resulting from the 2014 *Didymo* study are evident in study replication. Last fall, *Didymo* was identified by CMC researchers in the East Fork of the Eagle River, and an analysis of this potential problem may soon be starting there. The U.S. Forest Service (White River National Forest – Leadville) is also interested in a study of the presence/absence of the algae in the headwaters of the Arkansas River. Similar methodology could also be used in the Roaring Fork River or its other tributaries in the future.

### **C. Public Need, Accessibility and Appreciation**

Citizens and Angling Guides of the Fryingpan Valley approached RFC with concerns about low winter flows, formation of anchor ice, decreased American Dipper and macroinvertebrate populations and, in turn, the potential impacts on the river resource. Flows during the winter of 2012-13 were maintained at a meager 40cfs for over a three month period. Interested citizens along with RFC staff attended the annual Bureau of Reclamation (BOR) meeting to voice these concerns. From these encounters, a scientific study was created to evaluate current conditions on the Lower Fryingpan River. The original *Didymo* Study was an integral piece of the Assessment, and the 2015 Supplemental *Didymo* Study grew directly from the results.

At this time, there are very few *Didymo* studies in Colorado and the core components are already being replicated in other areas in the state (see above). The study and protocol established by CMC for RFC are leading the way statewide.

Sampling events cover nearly the full extent of the Fryingpan, and the interaction with the public, including anglers, has allowed the opportunity for public interface and education. These interactions have helped river users understand what *Didymo* is and the implications of its presence. Many of these anglers, both recreational and professional guides, are Roaring Fork residents who will benefit from the results and potential future management actions that work to ensure a healthy river system and maintain the Gold Medal waters.

The results of this study will be woven into the Comprehensive Lower Fryingpan River Assessment as they become available. Results will be published on RFC's website and distributed to Angling Outfitters who frequent the Fryingpan, the Roaring Fork Valley Fly Fishing Club, and made public through press releases to local papers and radio stations.

The 2015 Supplemental *Didymo* Study is partially funded by Eagle County Community Grants.

### **D. History of the Requesting Party**

RFC is widely-known as the premier watershed conservation organization in the Roaring Fork Valley. It has also become one of the most respected watershed conservation organizations in Colorado. It has an 18-year history of successfully spearheading a diverse portfolio of watershed projects and programs in the Roaring Fork Watershed. Its accomplishments include:

- **Watershed Conservation and Education** – RFC conducts ongoing classroom and outdoor educational programs (students and adults), with over 85,000 educational program contacts

since RFC's inception. It publishes a bi-annual newsletter (5,000 copies), monthly email (*River Notes*), Facebook page, and maintains a web site on watershed issues ([www.roaringfork.org](http://www.roaringfork.org)). RFC releases weekly Snowpack/Stream Flow updates which are discussed on radio stations throughout the valley and published in the Aspen Times every Friday.

- **Land Conservation** – As one of the only watershed conservation organizations in Colorado that acts as a land trust, RFC conserves critical riparian habitat through conservation easements, while maintaining responsible public access. To date, it has protected approximately 280 acres of property on 15 conservation easements throughout the Roaring Fork Valley. RFC partners or holds conservation easements with Pitkin County on 6 of these properties.
- **Water Quality Monitoring** – Through its network of volunteers, staff and local schools, RFC collects and reports scientific water quality data at 29 sample stations throughout the watershed to Colorado River Watch.
- **Water Resources Management** – RFC proactively identifies, researches and coordinates project/program responses to water resources issues as they arise within the watershed. RFC is also a leader in the Roaring Fork Watershed Collaborative.
- **Watershed Planning** - RFC was the lead consultant on the Roaring Fork Watershed planning effort which generated 8 comprehensive planning documents, including the [State of the Roaring Fork Watershed Report 2008](#) and the [Roaring Fork Watershed Plan](#). It is currently coordinating projects and programs to implement the Watershed Plan's recommended actions, including collaboration on a regional water conservation planning initiative, and a related project to identify opportunities to enhance stream flows in the lower Crystal River.

RFC previously received funding from the Healthy Rivers and Streams Fund: to complete the *Roaring Fork Watershed Plan* (as its lead consultant); for planning, grant writing, assessing existing water quality data, and designing baseline and water quality monitoring plans for the Coal Basin and Crystal River area confluence project restoration work; to enable RFC to work with the U.S. Forest Service to initiate the Coal Basin biochar pilot project in 2012; for Crystal River Assessment and Design of Restoration Projects Initiative; to complete the *2012 Snapshot Assessment of the Roaring Fork Watershed* with Public Counsel of the Rockies and the Lower Fryingpan Valley Economic Study. RFC successfully completed all of these projects, within budget, and kept Pitkin County fully informed of its accomplishments using this public funding. We anticipate the same level of professionalism for this project.

**E. Budget, Measurements and Accountability**

PROJECT BUDGET:

TASK DESCRIPTION	DIRECT COSTS			INDIRECT COSTS*
	LABOR	TRAVEL	OTHER	
<i>Didymo</i> Sampling	\$12,210	\$495	\$165	\$350
Lab Analysis	\$1,155			
Draft Report/ Review of Draft Report/Final Report	\$2,475			\$450
Public Outreach and Education on <i>Didymo</i> Study Results	\$2,500	\$200		
<b>TOTAL FY 2015 PROJECT COST:</b>	<b>\$18,340</b>	<b>\$695</b>	<b>\$165</b>	<b>\$800</b>

\*Project oversight and administration by RFC staff to ensure financial accountability.

RFC was granted \$10,000 from the Eagle County Community Fund for the 2015 Supplemental *Didymo* Study. These funds account for half of what is needed for the projected budget. Obtaining matching funds from Pitkin County Healthy Rivers and Streams would allow the full study to be completed and reduce increased expense and staff time working to allot the needed funds. Eagle County requires a yearly report, if this is adequate, the same will be supplied to Pitkin County along with the final report, expected December of 2015.

Progress and success will be measured by completed sampling events and relevant updates from CMC. With adequate notice, Pitkin County Healthy Rivers and Streams board members are welcome to join CMC staff and interns for all or part of a sampling day. RFC will use the results from the final study to provide at least two community presentations within the Valley updating visitors and residents about the state of *Didymo* in the Fryinpan. Supplemental information will be provided to all the angling shops in the Valley whose guides fish the Fryingpan to help raise *Didymo* awareness. Preliminary results of this study, if they are available, may also be displayed at a Scientific Forum at Rocky Mountain Biological Laboratory in Gothic, CO, as early as this summer. In this venue RFC will be able to connect with other like-minded scientists conducting similar studies across Colorado or nationally.