

# **AGENDA**

## **HEALTHY RIVERS AND STREAMS CITIZENS ADVISORY BOARD**

**August 16, 2010 4 p.m.  
Airport Operations Center  
Aspen, CO**

**4:00 Public Comment**

**4:05 Board Comments**

**4:10 Approval of the Minutes**

June 17, 2010

Aug 3, 2010 - Joint meeting with the Board of County Commissioners of Pitkin County

**4:15 Rick Lofaro, Roaring Fork Conservancy**  
Requesting Letter of Support

**4:30 GIS-Based Evaluation Groundwater Resources in Developed and Developable Areas, Pitkin County, Colorado**  
Proposal from Kenneth E. Kolm and Paul van der Heijde of Hydrologic Systems Analysis, LLC and Heath Hydrology, Inc. to continue study work

**4:45 Executive Session**  
**Augmentation of stream flows**  
C.R.S. 24-6-402 (4)(b)

*Agenda is subject to change*

**HEALTHY RIVERS AND STREAMS CITIZENS ADVISORY BOARD**  
**Meeting Minutes**  
**June 17, 2010**  
**Basalt Town Hall 101 Midland Avenue**  
**Basalt, CO 81621**

**Board members present:** Ruthie Brown, Bill Jochems, Lisa Tasker, Steve Hunter,  
Rick Neiley Jr.

**Board members absent:** Andre Wille, Greg Poschman

**Others present:** John Ely, Lisa MacDonald, Lance Clark, Catherine Berg  
Michael Owsley

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**Public Comment**

None

**Board Comments**

Mr. Jochems asked for clarification on the water projects line item. Mr. Ely explained the costs associated with the line item.

**Approval of Minutes May 20, 2010**

***Ms. Jochems moved to approve the minutes of May 20, 2010. Mr. Hunter seconded the motion. Motion passed 3 to 0.***

***Ms. Tasker and Mr. Neiley joined the meeting at approximately 4:15 p.m.***

**FEMA Floodplain Map Project**

Catherine Berg, Pitkin County Planning Engineer presented information to the Board on the Federal Emergency Management Agency ("FEMA") Floodplain Map project. The County has been offered a FEMA grant for the digitization and update of its floodplain maps. The project cost is \$517,220 with FEMA committing 75% of the funds. Ms. Berg requested a \$41,155.00 contribution from the Board with remaining funding to come from other entities.

***Mr. Neiley moved to recommend approval of a budget allocation for the FEMA Floodplain Mapping Project for the digitization and update of floodplain maps in the amount of \$41,155.00. Mr. Hunter seconded. Motion passed 4 to 0 with Mr. Neiley, Mr. Hunter, Ms. Tasker and Chairman Brown in favor and Mr. Jochems abstaining.***

**GIS-Based Evaluation Groundwater Resources in Developed and Developable Areas, Pitkin County, Colorado**

Kenneth E. Kolm and Paul van der Heijde of Hydrologic Systems Analysis, LLC and Heath Hydrology, Inc.

Mr. Kolm and Mr. van der Heijde provided a presentation to the Board on their work to date involving a GIS –based, stepwise groundwater resources evaluation procedure that can be used as a land use management tool by the county. The procedure, supported by GIS maps and related data bases, guides the site specific analysis with respect to, economical exploitability, long-term sustainability of the utilization of the resources for water supply and the vulnerability or susceptibility of the resources to contamination. The map also provides information with respect to wells for which augmentation is required and shows well applications approved or denied and wells actually drilled. Maps thus far prepared focused on the non-public lands areas of the Upper and Middle

Roaring Fork valleys and the watersheds of Snowmass Creek, Capital Creek, Sopris Creek, Brush Creek, Owl Creek, lower sections of Woody Creek and the Crystal River.

HSA LLC, recommends continued analysis on areas not yet studied, in particular, Castle, Maroon and Woody Creeks, the Frying Pan River as well as the Town of Aspen.

HSA LLC is seeking funding from the Board for the completion of their work in order to provide Pitkin County and the public with an overview of the groundwater resources in the county. They will prepare and submit a proposal for the completion of the analysis for the Board's consideration.

The Board took a five minute break.

***The Board reconvened at approximately 5:45***

**Executive Session**

***The Board moved into executive session pursuant C.R.S. 24-6-4 402 (4)(b) for the purpose of discussing augmentation of stream flows.***

***The Board returned from executive session and reconvened at approximately 7:00 p.m.***

***Ms. Tasker moved to approve an expenditure of up to \$150,000.00 for the Roaring Fork Healthy River Study on sections of the Salvation Ditch and on Castle Creek. Mr. Jochems seconded. Motion passed 5 to 0.***

**Adjourn**

The Board meeting adjourned at approximately 7:10 p.m.

**Approved:**

**Attest:**

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Ruthie Brown – Chairman  
Healthy Rivers and Streams  
Citizens Advisory Board

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Lisa MacDonald

**JOINT MEETING WITH THE HEALTHY RIVERS AND STREAMS CITIZENS  
ADVISORY BOARD AND THE BOARD OF COUNTY COMMISSIONERS OF  
PITKIN COUNTY**

**Meeting Minutes  
August 3, 2010, 12 noon  
Aspen Fire Department, 3<sup>rd</sup> Floor Conference Room  
Aspen, CO**

**Board members present:** Ruthie Brown, Bill Jochems, Lisa Tasker,  
Rick Neiley Jr., Andre Wille, Greg Poschman

**BOCC members present:** Patti Kay-Clapper, George Newman, Michael  
Owsley, Jack Hatfield

**Board members absent:** Steve Hunter

**BOCC members absent:** Rachel Richards

**Others present:** John Ely, Lisa MacDonald, Hilary Fletcher,  
Dale Will, Cindy Houben

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**Public Comment**

None

**Board Comments**

BOCC members made brief comments about the progress of the River Board and expressed enthusiasm of River Board's work to date. River Board members thanked staff and the BOCC for its forward thinking in the protection of the rivers and streams in the valley.

**Community aspects of whitewater parks in Colorado**

John Ely provided an overview of the Basalt whitewater park project and discussed the potential for a Special Opportunity GOCO grant. Mr. Ely noted the deadline for filing for such grant is August 27, 2010.

Bill McKee, president of the Board of Directors, Colorado Watershed Assembly and former City of Golden Council member, provided a presentation on the creation, benefits, legal issues, challenges and impacts of Golden's water park.

Discussions ensued regarding costs, economic stimulus to the community, recreational in-channel diversions (RICDs) and enhancement and protection of the in-stream flow along stretch of the Roaring Fork River where the park is proposed. It was noted, the park will not only attract kayakers but also fishermen and women, tubers and other water recreationalists.

Jason Carey of RiverRestoration.org along with Peter Nichols of Trout, Raley, Montano, Witwer & Freeman answered questions from both Boards concerning legal costs, construction costs, parking concerns and the effect of the park on the Glenwood Springs Water Park.

Rick Lofaro of the Roaring Fork Conservancy noted the conservancy's support of the project. Dale Will, director of the Open Space and Trails Department, also expressed support for the project.

Chairman Brown wants a commitment from the Town of Basalt. Mr. Wille and Commissioner Owsley would like feedback from members of the recreational community for input and support.

Mr. Neiley stated that the board has looked at the project for quite a long time. The scope of the project has been modified somewhat in response to the River Board's concerns in that the board wasn't established to create recreational opportunities in the rivers but was established to look at issues related to habitat, quality of riparian zones, preservation of water rights, and use of RICD's for example and the project is responsive to that. The Board has not had a chance to discuss the issue with respect to the immediacy of this opportunity grant.

The River Board has been supportive of the project and wanted to engage the Town of Basalt and the Open Space and Trails program on how to fund it. This opportunity to receive a large amount of money however, probably accelerates the need to consider what the Board wants to do right now. The Board was prepared to support some level of financial participation by Pitkin County out of the river fund, but the immediacy now is the \$700,000 grant opportunity.

***Mr. Poschman moved to recommend to the Board of County Commissioners to move forward with the grant application for the Special Opportunity GOCO grant and to continue moving forward with the water park. Ms. Tasker seconded. Motion passed 6 to 0.***

***Chairman Brown wanted to clarify that the River Board was established as Mr. Neiley represented above.***

George Newman, Chair of the BOCC directed staff to move forward and apply for the GOCO special opportunity grant. BOCC members, Newman, Kay-Clapper, Hatfield all support moving forward with the park as the timing is right for construction costs and increased economic benefits. The BOCC also directed staff to prepare a "next steps" memo.

Rick Lofaro of the Roaring Fork Conservancy suggested calling the project a water park or a river park and not limit it to a kayak park. Mr. Poschman agreed, it was decided to call the project a River Park.

Chairman Newman also requested the boards meet quarterly to stay up to date on issues and projects the River Board is working on.

**Adjourn**

The Board meeting adjourned at approximately 2:05 p.m.

**Approved:**

**Attest:**

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Ruthie Brown – Chairman  
Healthy Rivers and Streams  
Citizens Advisory Board

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Lisa MacDonald

Rick Lofaro  
Executive Director  
Roaring Fork Conservancy  
P.O. Box 3349, Basalt, CO 81621

August 15, 2010

Dear Rick,

The Pitkin County Healthy Rivers and Streams Fund Citizens Advisory Board would like to offer our support for Roaring Fork Conservancy's River Center project. We feel that this project will have a tremendous benefit for residents and visitors of Pitkin County and the entire Roaring Fork Watershed.

In November 2008, Pitkin County voters authorized a sales tax of .1% to be dedicated to establishing a Healthy Rivers and Streams Fund. The first of its kind in Colorado, the ballot question outlined four specific objectives for the fund: maintaining and improving water quality and quantity; purchasing, adjudicating changes of, leasing, using, banking, selling, and protecting water rights; working to secure, create and augment minimum stream flows promoting water conservation; and improving and constructing capital facilities that contribute to these objectives. Roaring Fork Conservancy has assisted with the start-up of the Board by providing educational and technical expertise on local watershed issues.

The Healthy Rivers and Stream Fund Board has studied the various threats to water in the Roaring Fork Watershed over the past two years and understands how important it will be to have a united front to protect these vital resources. The Board is an important funding and advisory mechanism for much of this work, and Roaring Fork Conservancy and its River Center are an important part of seeing these threats addressed. The River Center will heighten the awareness of our community regarding these threats and challenges and help boards like ours to make positive changes regarding our water resources. The River Center will create a physical home for much of the education and scientific research needed to make sound policy decisions on water. Quite simply, the River Center will help our entire watershed community put these water-related issues on the maps of residents and visitors alike.

We strongly encourage funding support for this worthwhile project.

Sincerely,

Ruthie Brown  
Chair  
Healthy Rivers and Streams Fund Citizens Advisory Board

**Proposal to  
The Healthy Rivers and Streams Citizen Advisory Board of Pitkin County  
for  
Completion of GIS Maps for Groundwater Resources Evaluation  
of Pitkin County, Colorado**

**July 10, 2010**

**Project History**

Under previous contracts with Pitkin County, Hydrologic Systems Analysis, LLC of Golden, Colorado (HSA) has developed a stepwise groundwater resources evaluation procedure to be used in conjunction with GIS maps and supporting hydrogeological and hydrological documentation as a decision/land use management tool by Pitkin County. In preparation of the production of the hydrogeological GIS maps, HSA conducted a Hydrologic Systems Analysis for each of the study areas, documented in the project reports. These projects covered the area within Pitkin County containing the Roaring Fork River valley and the watersheds west of the Roaring Fork, including the Crystal River watershed. The hydrogeological GIS maps produced in these projects were based, to a large extent, on geological maps authored by the United States Geological Survey and the Colorado Geological Survey. Due to range of publication dates and the various authors involved, the inconsistent nomenclature used in these data sources and subsequently applied to the hydrogeological GIS maps, prevents the county's staff from seamlessly combining the hydrogeological GIS maps produced by HSA.

**Proposed Project**

To complete the county-wide coverage of the GIS-based groundwater resources evaluation procedure, HSA proposes to:

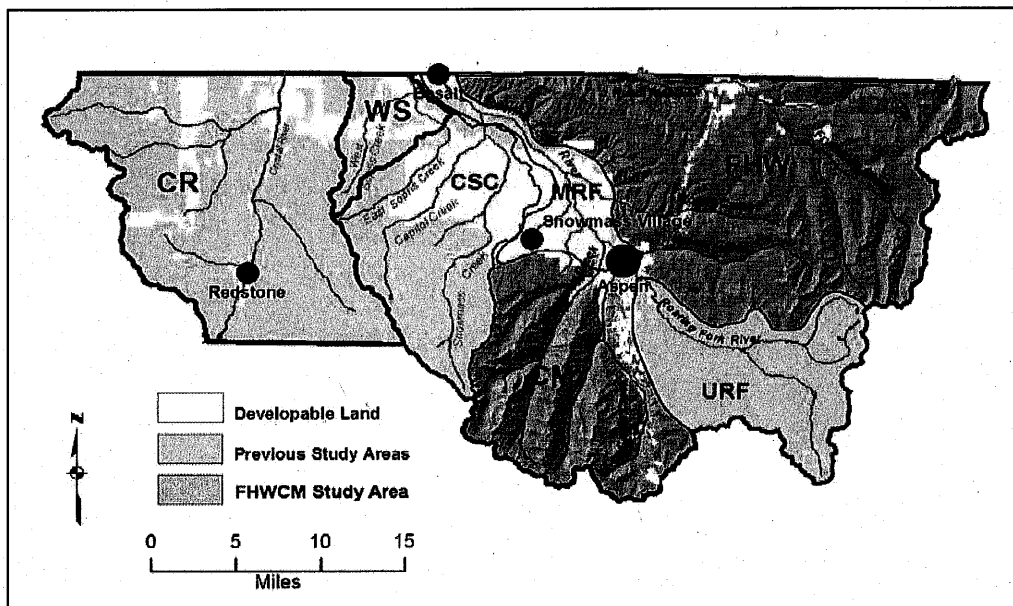
- A. Conduct a Hydrologic Systems Analysis (with report) and create a set of hydrogeological GIS maps with supporting databases for use in the step-wise groundwater resources evaluation procedure focusing on the non-federal lands in the watersheds of the Fryingpan River, Hunter Creek, Woody Creek, Castle Creek and Maroon Creek within Pitkin County (the FHWCM study area; see Figure 1).
- B. Produce a set of hydrogeological maps of the Upper and Middle Roaring Fork areas compatible with the maps produced in the Snowmass/Capitol Creek and Crystal River areas using the information, maps and databases resulting from earlier studies by HSA.
- C. Combine the hydrogeological GIS maps produced in earlier HSA projects with the GIS maps produced in this project and create a continuous and consistent hydrogeological GIS coverage for the entire county.

D. Update the well data bases prepared in previous projects to provide a consistent county wide set of well-related GIS layers.

E. Use the above mentioned county-wide coverage of hydrogeological GIS maps to produce additional GIS maps showing:

1. Natural vulnerability of potential aquifers to contamination from human activities (high, medium, low);
2. Presence of unconsolidated materials providing potential aquifer conditions (alluvium, glacial outwash, basin fill, and combinations of these materials);
3. Presence of bedrock materials providing potential aquifer conditions (sandstone, limestone).

The new maps will be created, in part, from previously published, or otherwise available public information, as well as the results of the Hydrologic Systems Analysis to be conducted for the FHWCM study area as part of the work effort. Additional data layers and evaluation are needed to construct the GIS database – particularly with respect to the hydrogeologic layers; this work effort is also included in this proposal. The Hydrologic Systems Analysis will include a scoping site visit to the FHWCM project area; no additional fieldwork is planned. The maps (and underlying databases) will be produced using the ARCGIS/ARCMAP GIS software system.



**Figure 1. GIS-based Groundwater Resources Evaluation in Pitkin County:  
Previous and Proposed Study Areas**



The results of the Hydrologic Systems Analysis of the FHWCM study area shall be delivered by HSA in narrative form, with accompanying illustrations (in the same manner as the Hydrologic Systems Analysis report prepared for the Crystal River/West Sopris Creek project area under contract 132-2007).

### **Project Purpose**

The purpose of the series of groundwater evaluation projects performed by the HSA team is to provide Pitkin County staff and the public with an overview of the groundwater resources in the county. The set of descriptive groundwater system reports, hydrogeologic GIS maps, and a qualitative groundwater resources evaluation procedure, together with example applications allow users to identify, among others, areas within the Pitkin County:

- A. Where groundwater resources are: (1) available in reasonable, sustainable quantities, at reasonable depths, (2) available in reasonable quantities, at reasonable depths, but (potentially) not sustainable due to current landuse and/or future landuse changes, and (3) not available in reasonable quantities, at reasonable depths.
- B. Where groundwater resources are vulnerable (using a rating of High-Medium-Low) to contamination from human activities.
- C. Where the groundwater table is likely to fluctuate significantly (e.g., due to snowmelt, spring runoff or upland flood irrigation).

The hydrogeologic reports, GIS maps and associated groundwater resources methodology can be used by the County to make such decisions as: (1) what constitutes an adequate quantity of water to sustain development on a parcel of land, (2) what should be the required setbacks of development from watercourses, (3) what should be the required setbacks of wells from onsite wastewater treatment systems, and (4) what should be the requisite design of an onsite wastewater treatment facility on a parcel of land.

It should be noted that that these maps and the associated groundwater evaluation procedure will not obviate the need for additional hydrogeologic analysis on a site-specific/parcel-specific basis by developers and/or the County, or in any water right, geotechnical, or environmental study requiring due diligence. These maps and the associated groundwater evaluation procedure are intended to be used as indicators only, as part of a multi-step land use decision-making process, and to provide a starting point for further study of the County's groundwater resources.

### **Project Team**

Kenneth E. Kolm (Hydrologic Systems Analysis, LLC, Golden, CO) will be the primary consultant on this project, which will be performed with the subcontracted assistance of Paul K.M. van der Heijde, Senior Ground Water Scientist at Heath Hydrology, Inc., Boulder, CO, and a GIS-Specialist of Integral Consulting, Inc., Louisville, CO. Additional advise will be provided by Marieke Dechesne, GIS Specialist/Geologist, Boulder, CO. In addition to creation of the deliverables described above and below, Kenneth Kolm and Paul K.M. van der Heijde will be available during the project's duration to address questions from County staff regarding the project, its implementation and use of its deliverables. Upon request, Kenneth Kolm and/or Paul K.M. van der Heijde will also present the results of the project to the Board of Pitkin County Commissioners and to County staff in Aspen, Colorado.

### **Project Schedule, Deliverables and Payment Terms**

1. HSA will produce and deliver an electronic versions of the following deliverables:

- A. An hydrologic system analysis report and supporting GIS maps and databases for the FHWCM area;
- B. A letter report on the nomenclature of the hydrogeological units identified as having a significant presence within the county, and their hydrogeological characteristics;
- C. The county-wide hydrogeological and hydrological GIS maps described above in ARC GIS 9.2 format;
- D. Updated well database and related GIS maps;
- E. County-wide GIS maps showing aquifer presence, type, and vulnerability.
- F. An outreach document describing the various groundwater projects performed by HSA for the County and their potential usability.

2. **The County will make available** to HSA (at no charge to HSA) current County GIS layers, as required (including but not limited to, roads, watersheds, parcels, County/city boundaries, and topography (2' or 10')) for HSA's use in creation of the maps described above.

### **3. Milestones and Payment Schedule**

We request that the County shall pay HSA a firm fixed price of \$ 41,000.00 for performance of the services and delivery of the work products in accordance with the schedule described hereunder. Note that the time line can be adjusted if county budgeting requires a longer duration of the project.

1. Conduction of an Hydrologic System Analysis, including the development of conceptual models of subsystems and supporting GIS data bases for the FHWCM area.

DATE DUE: 6 months after Effective Date.

MILESTONE PAYMENT: \$22,000.00 of the firm fixed price will be paid upon acceptance of this deliverable by Pitkin County.

2. Reporting on the nomenclature of the hydrogeological units identified as having a significant presence within the county, and their hydrogeological characteristics; and completion of a county-wide hydrogeological and hydrological GIS maps described above in ARC GIS 9.3 format and the updated well database and related GIS maps, including updating the maps produced in the Upper and Middle Roaring Fork study and the well data base;

DATE DUE: 3 months after receipt of Pitkin County approval of the deliverable specified in #1.

MILESTONE PAYMENT: \$11,000.00 of the firm fixed price will be paid upon acceptance of this deliverable by Pitkin County.

3. Production of the county-wide GIS maps showing aquifer presence, type, and vulnerability and an outreach document describing the various groundwater projects performed by HSA for the County and their potential usability.

DATE DUE: 3 months after receipt of Pitkin County approval of the deliverable specified in #2.

MILESTONE PAYMENT: \$6,000.00 of the firm fixed price will be paid upon acceptance of this deliverable by Pitkin County.

4. Overview presentation to the Board of Pitkin County Commissioners and in-depth presentation to County staff and public at a location in Pitkin County, Colorado.

DATE(S): TBD by mutual agreement of the parties.

MILESTONE PAYMENT: The remainder of the additional firm fixed price (\$2,000.00) will be paid upon acceptance of this deliverable by Pitkin County.

Note: The above budget includes costs for updating the well data base from State records, copying of well log records, travel to Pitkin County, and other additional costs.