

January 21, 2011

Via email
John Ely, Esq.
Pitkin County Attorney
Pitkin County Attorneys Office
530 E. Main St. 3rd Floor
Aspen, CO 81611

Re: Aspen's proposed Castle Creek Hydropower Project

Dear John:

You've asked me to examine the water law-related aspects of Aspen's proposed Castle Creek Hydropower Project ("Project") to assist the Healthy Rivers and Stream Board and the public in evaluating the adequacy of the Project as it relates to the stream health of Castle Creek. To develop the analysis and discussion in this letter, I reviewed Project-related documents provided by the City of Aspen, which I understand are now available for review at the Pitkin County Library.¹ I also participated in discussions with technical members of the consultant team. Where relevant in this letter, I've referenced the reports of Lee Rozaklis or Greg Espegren either as context for my comments or so the reader may obtain additional information.

In general, our conclusions are that:

- the Project faces some hurdles to licensing under the "conduit exemption" approach Aspen has selected;
- Aspen likely has adequate physical water supplies that are legally available to operate the project, although some Project opponents have alleged the water rights to be abandoned;
- Aspen's draft "Memorandum of Understanding" ("MOU") with the Colorado Division of Wildlife aimed at protecting the aquatic values of Castle Creek should be revised to provide for more rigorous adaptive management of the Project along with more enforceable outcomes, such as increased bypass flows when impacts from Project operations are measured;

¹ I have referred to relevant documents by the author, date, and type of document (such as Miller Ecological Consultants Report, October 8, 2010) in case anyone wants to track back to the source of my understanding on things.

- to the extent that implementing the recommendations of the Espegren and Rozaklis reports requires additional bypass flows in either Castle or Maroon Creek to protect stream health, Colorado law provides for means to protect any such additional bypass flows.

1. Background information:

As described in the City's October 15, 2010 Draft FERC Application ("FERC Draft"), water would be diverted at two points, one on Castle Creek and one on Maroon Creek, and the waters commingled in Thomas Reservoir. FERC Draft, Exhibit A, unnumbered page 1. Thomas Reservoir holds approximately 15 acre-feet of water behind an earthen dam, and is the forebay for Aspen's water treatment plant. Water delivered to Thomas Reservoir would be either treated in the water treatment plant or delivered via the "drain line and penstock" to the Project site on Castle Creek. Current plans call for the "drain line and penstock" to be 42 inches in diameter and 4000 feet long. The Project will use a Pelton turbine coupled to a synchronous generator with a total generating capacity of 1.17 MW.

The Project would involve a 52 cfs diversion, a portion of which would be delivered from Maroon Creek via the Maroon Creek Pipeline and a portion of which would be diverted from Castle Creek. Aspen has said that it would divert no more than 25 cfs from Castle Creek, and that as much as 27 cfs could come from Maroon Creek. Aspen previously operated a Castle Creek hydropower facility in the same location. The City switched to conventional electrical service when rural electrification came to the valley in the late 1950s. The plant was mothballed around 1958 and electrical service in town is currently supplied by the Municipal Energy Agency of Nebraska. FERC Draft, Exhibit E, unnumbered page 3.

Aspen has also operated a hydropower project on Maroon Creek for many years. According to Aspen's response to public comments, the Castle Creek Project will be capable of generating more electricity than the Maroon Creek facility. City of Aspen's Response to Comments Received Regarding the Castle Creek Hydroelectric Plant, October 8, 2010 at page 2. The Maroon Creek hydropower project is served by diversion through the Maroon Creek Pipeline, which has a capacity of 68 cfs.

The relevant structures related to the Project include: 1) the rehabilitated Castle Creek hydropower plant on Power Plant Road, next to Castle Creek and below the Highway 82 bridge; 2) the diversion from Castle Creek approximately 2.4 miles upstream from the Project site; 3) the Maroon Creek Intake, which diverts from Maroon Creek and can make deliveries either to the Maroon Creek Hydroplant or to Thomas Reservoir in the Castle Creek drainage, and the site of Aspen's water treatment plant; and the Maroon Creek Hydroplant approximately 1.4 miles downstream of the Maroon Creek Intake. Espegren's diagram of the relevant facilities (taken from the Miller Ecological Consultants, Inc. report for Aspen) is attached for convenience. Also relevant to this discussion are the two currently decreed instream flow water rights, one for 12 cfs below the diversion for the Project and within the dewatered reach on Castle Creek and one

for 14 cfs below the diversion for the Maroon Creek Pipeline and within the dewatered reach on Maroon Creek.²

2. Status of Aspen's FERC application process:

The Federal Energy Regulation Commission ("FERC") is the federal agency authorized to administer the Federal Power Act, and the body to which Aspen's application for hydropower license is made. FERC considers licensing application for hydropower projects pursuant to its statutory and regulatory authority. An applicant must satisfy the statutory and regulatory requirements in order to receive a license.

Federal regulations govern Aspen's submissions under the Federal Power Act. Under 18 C.F.R. 4.38, Aspen is required to engage in three stages of consultation with "resource agencies" including local governments such as Pitkin County. The first stage began on October 13, 2009, when Aspen provided "resource agencies" with the "Preliminary Project Information" which described the Project, including maps and engineering details and scheduled a public meeting on November 13, 2009. CDOW was the only resource agency to respond, and it subsequently filed comments with FERC on January 14, 2010, requesting additional technical information. Aspen's position is that it has responded to CDOW's request for additional technical information through the Miller Ecological Consulting report, disclosed on June 11, 2010.

Presently, Aspen's Project is in the third stage of consultation. Pursuant to regulation, Aspen filed with FERC its draft application (the FERC Draft referred to elsewhere), as well as transmitting the FERC Draft to all resource agencies. Pursuant to the schedule, Pitkin County's comments on the FERC Draft are due to the City on January 21, 2011. The City is then obligated, pursuant to federal regulations, to address comments and concerns of resource agencies, and show it has addressed any concerns in its final filing with FERC.

a. FERC: Aspen's Application for Exemption of Small Conduit Hydroelectric Facilities and Status of the Process

On October 15, 2010, Aspen submitted a "Draft Application for Exemption of Small Conduit Hydroelectric Facilities" for the Project, under the "conduit exemption" provisions of the Federal Power Act regulations. A small hydroelectric facility may avoid the more onerous regulatory requirements under the Federal Power Act (such as an Environmental Impact Statement) if an:

existing or proposed hydroelectric facility that is constructed, operated or maintained for the generation of hydroelectric power, and includes all structures, fixtures, equipments and lands used and useful in the operation or maintenance of the hydroelectric facility,

² Espegren's Report provides additional discussion regarding Aspen's proposed operations to take into account these existing instream flow water rights. See, Espegren Report at 4 and 8.

but excludes the conduit on which the hydroelectric facility is located or the transmission lines associated with the hydroelectric facility and which:

- (i) utilizes for electric power generation the hydroelectric potential of a conduit;
- (ii) is located entirely on non-federal lands as defined [elsewhere in the regulations];
- (iii) has an installed generating capacity of 15 MW or less;
- (iv) is not an integral part of a dam;
- (v) discharges the water it uses for power generation either:
 - (A) into a conduit;
 - (B) directly into a point of agricultural, municipal, or industrial consumption; or
 - (C) into a natural water body if a quantity of water equal to or greater than the quantity discharged from the hydroelectric facility is withdrawn from that water body downstream into a conduit that is part of the same water supply system as the conduit on which the hydroelectric facility is located.

18 C.F.R. 4.92.

b. Aspen's FERC Draft

Aspen's Project will use the penstock being constructed (or already constructed) from Thomas Reservoir³ as the "conduit" discharging into the CWCB instream flow in Castle Creek below the Project site. In its FERC Draft application, Aspen has struggled mightily to justify the CWCB instream flow—a wholly nonconsumptive water right—as a "point of municipal consumption" on the ground that CWCB satisfies the definition of "municipality" under FERC regulations and that the wholly *non*-consumptive instream flow is a "point of consumption" nonetheless because the instream flow may lawfully be maintained by the CWCB. This is a stretch at best, but in the absence of more acute legal argument than that made so far by opponents of the project (and in the absence of astute FERC lawyers knowledgeable in Colorado water law), this may be adequate for licensing purposes.

In the alternative, if it cannot satisfy the "small conduit" showing under 18 C.F.R. 4.92, Aspen requests an exemption from the small conduit regulations, but cites only non-Colorado

³ Under FERC regulations, the conduit must be already existing, rather than constructed for the purpose of the hydroelectric project. Whether the Thomas Reservoir conduit meets this requirement, built as it was to protect the neighborhood in the event of a breach of Thomas Reservoir, is an open question. However, the City is likely to be taken at its word that it planned to build the conduit all along to protect the community from property damage, notwithstanding the political miscalculation of announcing the conduit as a safety valve for the reservoir without first informing the neighboring homeowners of the danger.

decisions as its basis. The Federal Power Act requires FERC to apply state law to evaluate licensing applications. *California v. U.S.*, 438 U.S. 645 (1978). Aspen's citation to California-based decisions is particularly unpersuasive because of California's dual doctrine of riparian and prior appropriative rights. However, unless the County desires to assist Aspen in surviving an attack on their licensing application, the question of whether Aspen has met the exemption standards is something that will be left to the FERC process.

3. Aspen has water supplies available to operate its Project.

As described in the Rozaklis report, Aspen has physically available water supplies on Castle Creek and Maroon Creek to operate the Project. On Castle Creek the City has two existing water rights that are decreed for hydropower uses. The Midland Flume Ditch has two water rights decreed to it. Priority No. 136-A which was originally decreed as the "Castle Creek Flume Ditch" for 60 cfs with an 1892 adjudication date and an 1885 priority date. The priority date and change of place of diversion were subsequently changed to the Midland Flume Ditch in the 1949 supplemental adjudication, C.A. No. 3723. The Midland Flume Ditch Priority No. 207 for 100 cfs with an 1889 priority date also in C.A. No. 3723. Together these rights provide 160 cfs of decreed flow for hydropower purposes as well as domestic uses.

Aspen also has water rights in Maroon Creek decreed for hydropower uses. Under the adjudication conducted by the district court in Case No. 3723, August 25, 1949, the Nestell Ditch, Priority No. 208A was decreed for 3.4 cfs for domestic and power purposes with an July 10, 1889 priority date and the Maroon Ditch was decreed for 65 cfs to generate electrical energy, power, and to supply domestic water to Aspen with a priority date of August 12, 1892. Case No. 80CW564 decreed a conditional right for the Maroon Creek Pipeline Intake and Diversion Dam at the same location as the Maroon Ditch rights for 68.4 cfs for municipal and hydropower uses with a priority date of December 29, 1965.

For purposes of this letter, we have not made an examination of whether any of Aspen's water rights listed above should be considered legally abandoned. However, members of the public have raised this issue in comments during the consultation process. *See, e.g.*, Letter from Noto to FERC, November 23, 2009.

4. Aspen has certain legal options to protect stream health via enhanced bypass flows during operation of the Project.

Rozaklis and Espegren reviewed the Miller Ecological Consulting ("MEC") and underlying data used in the MEC report to evaluate the City's assertion that the Project can be operated without undue impact to stream health.⁴ Both Rozaklis and Espegren identify problems or questions relating to flow-based assumptions and conclusions relied upon by the City's

⁴ Specifically, the MEC report concludes that by retaining the peak flow regime and the new recommended minimum flows under the proposed operations, "there are no measurable impacts expected to stream health or the fish community or macroinvertebrates" and that "Castle Creek and Maroon Creek should maintain their current level of stream health." MEC report at 72. *See* discussion in Espegren Report at 8-10.

experts. Rozaklis questions the estimated historical stream flows used by MEC (and generated by K. D. Sundeen) because of the paucity of measured stream flow data relied upon by Sundeen and because the results of Sundeen's estimates are inconsistent with regional streamflow models used by USGS and others. Espegren identifies concerns with MEC's reliance on R2Cross methodology, which is limited to base flow analyses and would allow Castle Creek to be "flat-lined" by Project diversions for as much as 7 months of the year. He recommends, instead, a serious "adaptive management" effort that would measure the effects of Project operations through a study more rigorous and enforceable than that negotiated by CDOW and Aspen.

a. Aspen's MOU with CDOW is insufficiently rigorous.

Even if the MEC analysis is correct, Aspen cannot guarantee continuation of the peak flow regime upon which the environmental analysis is based and its draft MOU with CDOW is inadequate to protect baseflows. As a practical matter, the prior appropriation doctrine does not provide a legal basis to appropriate or "fix" the peak flows in the stream.⁵ Climate change as well as the dynamic nature of the prior appropriation system suggests that the flow regime will be subject to change in the future, and that less water may be available throughout the year. See Rozaklis Report. Such changes will impact management decisions made regarding impacts of operations at times of peak flow and base flow. As a result, Aspen should adopt a robust effort to conduct "adaptive management" studies that would allow for meaningful adjustment of operations to protect stream health. Espegren's report details the technical considerations of a robust adaptive management program.

As a legal matter, if a more robust adaptive management program demonstrated Project impacts that required additional bypass flows to preserve and protect stream health, the CDOW-MOU should also be modified to provide a mechanism by which the additional bypass flows could be legally protected. One option would for Aspen to agree to make a donation to the CWCB of the required additional bypass which CWCB could use to enhance its existing instream flow right for the dewatered reach of Castle Creek.

b. The only real limitation on Project size is the water supply.

In addition, AMEC's physical supply analysis shows that Aspen's water rights on Castle Creek available for hydropower purposes are larger than the reported size of the pipes or the turbine facility. This suggests that even if Aspen commits to operating the Project in an environmentally sensitive way in the near term, it is not foreclosed from increasing the size of the pipes and the turbine in order to run larger quantities of water through the plant in the future. Because of this potential, Aspen should agree to voluntarily limit the size of the Project into the future, by one of the strategies described below.

⁵ The United States of America has articulated a "fluvial geomorphology" theory under the reserved rights doctrine that has been rejected at least twice. *United States v. New Mexico*, 438 U.S. 696 (1978). However, Aspen is not authorized to hold a federal reserved right (rights that can be held only by the United States or Indian Tribes) even if this theory had been confirmed by a Court.

- One option would be to enter into an agreement to provide that amounts available for diversion for hydropower use above the 27/25 cfs regime would be committed to bypass flows. To the extent the amounts were being used to enhance a CWCB instream flow in the impacted reaches of either Maroon or Castle Creek, the model could be the 1998 Castle Creek IGA between Aspen and CWCB.
- Another option would be to donate portions of the hydropower rights to the Pitkin County water trust, to be changed for uses agreed upon by the parties. This would provide a source of water to enhance instream flows in the two affected streams as well as the Roaring Fork.
- A final, “split the baby” option might be to agree to allow Aspen to retain their hydropower rights but by agreement condition their eventual full development with commitments for increased bypass amounts.

5. Conclusion:

Technical concerns raised by Rozaklis and Espegren both implicate the question of how the County or others, through the proposed mediation process, can ask Aspen to “lock in” its Project operations in order to guarantee stream health. Questions regarding stream health arise because of the uncertainties related to the effects of dewatering. Developing bypass flow amounts based on the results of Espegren’s proposed adaptive management program, and protecting those amounts using one of the legal strategies described above, would protect the stream and provide flexibility to Aspen’s operations.

Best regards,



Sarah A. Klahn

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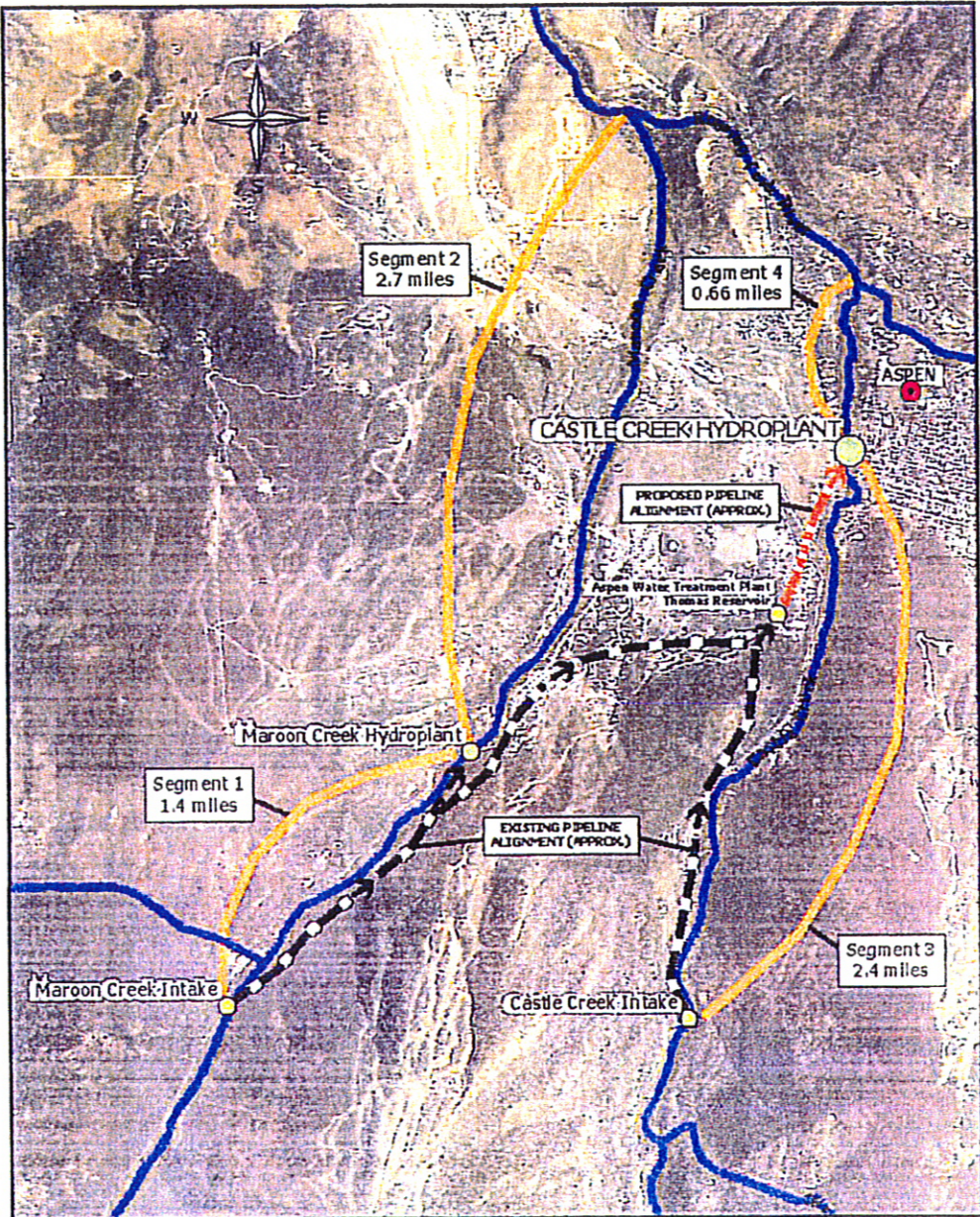
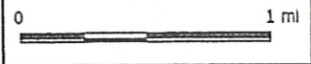


FIGURE 1
 Vicinity Map
 Castle Creek Hydroelectric Project
 Pitkin County, Colorado



Date: April 5, 2010
 Map By: M.F.
 Distance as per table data

