

**Preliminary Evaluation of the  
Beneficial Value of Waters  
Diverted in the Clear Creek  
Whitewater Park  
in the City of Golden**

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December 7, 2000

## Introduction and Summary

The Golden Whitewater Course for kayaking and canoeing is located at the Clear Creek Whitewater Park (CCWWP), in the City of Golden. Construction of the course was completed in 1998. It provides valuable recreational opportunities. The course is currently 1/4 mile long, with rip-rap along the banks with trails and stair-step rock above that provide seating for viewing. It is a complete, world-class course. This report provides a cursory investigation into the order of magnitude of the economic benefits associated with the water rights used to supply the kayak course. The findings reported here are based on a review of available information on kayaking and other activities associated with the park, economic valuation literature on kayaking, and user data.

Our results demonstrate that water diverted in the CCWWP generates considerable economic benefit to the kayakers using the course, other interested parties, and the community as a whole. As summarized in Table 1, the total annual beneficial value generated by the waters diverted within the CCWWP amounts to between \$1.4 and \$2.0 million, not inclusive of several benefits that could not be quantified or valued within the present study's constraints. Over a 20 year period, the present value of all current and anticipated future benefits provided by the waters diverted within the kayak course would be over \$15.4 million to \$23.0 million.

### 1. Estimation of Total Recreational Value

The total value of kayaking at the course in Golden has two components: (1) what people actually pay to kayak (e.g., equipment costs), plus (2) what they would be willing to pay over and above what they currently pay. The first component of value can be represented simply by the expenditures incurred. The second component deserves more explanation. Consumers purchase products in the marketplace because they are better off with the products than they were with the money needed to obtain the products (or whatever else they would have purchased with the money). If that were not true, goods and services would not be exchanged through free will in the marketplace. Similarly, recreational site visits cost money and time, and recreationalists would not undertake visits unless the visits yielded net benefits. Those net benefits are referred to by economists as "consumer surplus," and are measured as willingness to pay (WTP).

Section 1 is divided into three subsections. In Section 1.1, an estimate of kayaking expenditures is developed. Our figures account for kayak equipment and other costs. In Section 1.2, we show WTP "unit values" obtained from the peer reviewed economics literature. In Section 1.3 we discuss the use of the kayak course, while in Section 1.4 we calculate the value of this use. In



**Table 1. Estimated value of beneficial uses of waters diverted in City of Golden's kayak course (in 1999 dollars per year).**

Beneficial use category	Level of use range	Monetary unit value	Beneficial value range
<b>Kayakers in nonevent uses</b>			
Expenditures	13,170	\$33.00	\$434,610.00
Consumer surplus	13,170	\$33.79	\$445,014.30
<b>Kayakers in special events</b>			
Expenditures <sup>a</sup>	465	\$33.00	\$15,345.00
Consumer surplus <sup>b</sup>	465	\$33.79	\$15,712.35
<b>Economic stimulus for community</b>			
2.0 to 2.88 times out-of-pocket kayaker expenditures <sup>c</sup>			\$449,955.00
Increase in property values			+ <sup>d</sup>
<b>Spectators and near-stream recreators</b>			
Nonevents	>0	>\$0	+>\$0
Special events	1,820	>\$0	+>\$0
<b>Benefits to event sponsors and vendors</b>			
Beneficial use of water downstream of kayak course (heavy use corridor)			+>\$0
Community identity, quality of life			+>\$0
<b>Total beneficial use values per year</b>			<b>\$1,360,636.65</b>
			<b>\$2,031,895.10</b>

a. Expenditures for event participants are probably much higher, including travel and lodging expenses, registration fees, etc.

b. Consumer surplus for elite, competition kayakers probably higher than average literature-based values.

c. Values shown are net of the expenditures shown above for kayakers.

d. "+" indicates positive benefits that could not be quantified or monetized using readily available data.

Section 2 we discuss additional values of the course stemming from the competitive events. Section 3 discusses the economic stimulus and other benefits to the local community because of the whitewater course.

## 1.1 Kayaking Expenditures

We conducted a preliminary assessment of the costs that might be typically incurred by a kayaker visiting the Clear Creek Whitewater Park. We considered three cost items: kayak equipment, automobile, and travel time.

Table 2 shows our cost calculation for kayak equipment. We estimate the cost of purchasing a typical set of new kayak equipment to be about \$2,000. This estimate is based on a review of prices shown at Alpenglow Mountainsport Inc., a retailer of boating gear located in Golden. The set of equipment includes a kayak, paddle, helmet, dry top, life jacket, spray skirt, booties, gloves, and throw rope. We amortize the equipment costs over three to five years and assume the equipment is used on average 15 to 20 days per year. This leads to an average equipment cost ranging between \$20 and \$44 per user day. The 1-day rental cost at Alpenglow for a whitewater kayak is \$20. Hence, we believe the \$20 per use day is a reasonable estimate.

**Table 2. Cost of kayaking equipment.**

Kayak gear cost	Useful life (years)	Average user days/year	Gear days over useful life	Kayak gear cost per user day
\$2,000	5	20	100	\$20
\$2,000	4	20	80	\$25
\$2,000	3	20	60	\$33
\$2,000	5	15	75	\$27
\$2,000	4	15	60	\$33
\$2,000	3	15	45	\$44

The other two cost components we consider relate to travel costs. Table 3 shows automobile costs for roundtrip distances of 30, 40, and 50 miles using the federal reimbursement rate of \$0.325 per mile. Antidotal evidence suggests that kayak users come from many different places; on any given summer day it is common to see kayakers from out of state, the Colorado mountain regions, Boulder, Denver, and Golden. Because we do not have empirical data on kayaker travel distances, in this preliminary assessment we conclude that the 40 mile roundtrip estimate is reasonable, about the distance between the Clear Creek Whitewater Park and Boulder or Denver. A 40 mile roundtrip translates into \$13.00 per trip.



**Table 3. Automobile costs to travel to kayak course.**

Average round trip miles to Clear Creek Whitewater Course	Auto cost per mile <sup>a</sup>	Auto cost <sup>b</sup>
30	\$0.325	\$9.75
40	\$0.325	\$13.00
50	\$0.325	\$16.25

a. Equals the federal reimbursement rate as of January 1, 2000.  
b. Equals round trip miles multiplied by the cost per mile.

Studies of recreational expenditures and travel costs also typically include the opportunity cost (value) of travel time in the estimation process (time spent on site also might be included). Assuming an average 40 miles per hour travel rate (including stop signs, etc.), the average travel time given a 40 mile round trip is one hour. We use a typical \$10 per hour value to reflect this travel time cost. This translates into a \$10 travel time cost per visit.

The total cost from the kayak equipment, automobile, and travel time cost components ranges between \$37.25 and \$73.19 per visit using the range of assumptions shown in Tables 1 and 2. We conclude a conservative point estimate of the cost is \$43 (based on a \$20 equipment cost, \$13 automobile cost, and \$10 travel time cost), of which \$33 is directly out-of-pocket.

## 1.2 User Values for Kayaking (WTP-based estimates of value)

The method of “benefits transfer” is a standard practice used by resource economists to obtain quick approximations of value when there is no opportunity to undertake primary research by administering a new survey or econometric model. Benefits transfer is conducted by obtaining values per unit of use for similar types of activities from studies that have already been conducted in similar locations. Then, those unit values are multiplied by the amount of use. A unit value typically might be the consumer surplus value for an activity such as a fishing day or a hiking trip.

We conducted a benefits transfer using recent, peer-reviewed recreational valuation literature. One set of unit values per day of kayaking was obtained from a 1999 database compiled by John Loomis, a professor of economics at Colorado State University and expert in valuing environmental amenities. This database is a “meta-analysis,” which is an amalgamation of many individual studies to develop an estimate of central tendency. Meta-analysis is used to exploit and combine the strengths of multiple studies that use different valuation methods, and to avoid being misled by a single potential outlier study. These user day values reflect the availability of substitute sites for the recreationalists.



Typically, two types of valuation methods are used in the literature, and in the Loomis database: 1) revealed preference (RP) methods such as travel cost models, which use observed recreational behavior to infer values; and 2) stated preference (SP) methods such as contingent valuation, which ask people to state their values or their willingness to trade off different resource commodities. Carson et al. (1996) demonstrate that estimates of use values do not vary substantively whether RP or SP methods are used.

The Loomis database reports values for five regions of the United States. The values used in this report are taken from the values listed for the "Intermountain" region because they apply directly to Colorado. This region had six studies on floatboating, which includes kayaking, rafting, and sailing. The mean value per person per day for the "Intermountain" region is \$37.86, in 1999 dollars. For comparison, Loomis found the national average to be \$31.36, in 1999 dollars.

The recreation values summarized in the Loomis database are generally consistent with summary values obtained in other analyses, such as Walsh et al. (1980). This study, using the contingent valuation method, found kayaking values on the Crystal, Roaring Fork, and Yampa rivers (all in Colorado) to be \$33.79 in 1999 dollars per person per day. In the same study, rafting on these same rivers was valued at \$29.23 per person per day. Thus, we may deduce that, in general, kayaking is a more highly valued activity than rafting. Accordingly, the Loomis value for floatboating may be an underestimate, since it includes kayaking and rafting together. Nonetheless, the Loomis estimate will be used as an upper bound in our analysis.

Another study focused on kayaking in the West found that the average user day value for kayaking on the Colorado River is \$63.80, in 1999 dollars (Bishop et al., 1989). However, we do not apply this value to the City of Golden kayak course because the Colorado River is considered to be a unique resource in the United States and, thus, values for use of this special amenity may be higher than those for similar activities at other sites.

Therefore, for the purposes of this study, we will use a range of \$33.79 to \$37.86 per person, per activity day, as the value of kayaking (in 1999 dollars).

### 1.3 Levels of Use

Use of the kayak and canoe course at Clear Creek Whitewater Park (CCWWP) can be separated into two categories: event use and nonevent use. Nonevent use includes regular weekend and weekday daily use not organized as specific events. Nonevent use occurs throughout the entire year, with the heaviest use occurring from mid-April to early October (with more modest levels of use continuing through the fall and winter months). Event use consists of boating competitions organized in advance and usually conducted on weekends. The course is one of about 20 man-made top quality whitewater courses in the world. The course attracts competition events for



elite as well as nonelite athletes. There are usually at least three to four events held at the CCWWP in the summer.

### 1.3.1 Nonevent Use

To our knowledge, no formal census has been conducted as to the number of nonevent users of the Clear Creek Whitewater Park. Therefore, we interviewed key users and knowledgeable observers of the park in developing an approximation of user days.

Two estimates of nonevent use of the whitewater course were collected. The first estimate relies on daily direct observation of use at the park by Dan Hartman, director of Public Works for the City of Golden. Mr. Hartman's office overlooks the CCWWP, providing him with daily opportunities to observe visitation to the course. Mr. Hartman divided the boating season into three parts: (1) a high-peak season, which is generally mid-May to mid-July, (2) a moderate-peak season, which is generally mid-April to mid-May and mid-July to early October, and (3) a nonpeak period, which runs from early October through mid-April.

Mr. Hartman gave minimum and maximum estimates of boater use of the course for a typical weekday and a typical weekend day for high-peak and moderate-peak parts of the boating season. Mr. Hartman's estimates are summarized in Table 4. The midpoint of each range was used to calculate number of users. Those midpoints are: 50 users for moderate-peak weekdays, 100 users for moderate-peak weekends, 115 users for high-peak weekdays, and 175 users for high-peak weekends. Mr. Hartman also estimated an average of 10 users per week during the nonpeak period.

Benefits from use of recreational facilities are expressed in user days, which is the number of days of facility use multiplied by the number of users. Excluding number of days on which there were special events in the 2000 season, there are 103 moderate-peak days and 50 high-peak days. Estimates of the number of users were multiplied by the number of days to get the number of user days: 6,550 moderate-peak user days, 6,350 high-peak user days, and 270 nonpeak user days. This yields a total of 13,170 user days.<sup>1</sup>

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1. It should be noted that the patterns of regular daily use visitation to the course during weekdays differ from those of visitation on weekends. Many weekend visitors remain at the park for at least several hours. However, weekday users can be divided into three groups. The first group boats before going to work, usually from sunrise until 8 to 9 a.m. The second group arrives at the park during the day and stays for several hours. The third and largest group arrives at the course around 4 p.m. and stays until dusk or later.

Table 4. Use of Clear Creek Whitewater Park kayak course.

Moderate-peak use (mid-April to mid-May, and mid-July to early October)					
	Min users	Max users	Midpoint	No. of days	User days
Weekday	10-15	80-90	50	75	3,750
Weekend	40-50	150	100	28	2,800
Total moderate peak:					6,550
High-peak use (mid-May to mid-July)					
	Min users	Max users	Midpoint	No. of days	User days
Weekday	30	200	115	40	4,600
Weekend	100	250	175	10	1,750
Total high peak:					6,350
Nonpeak use (early October to mid-April)					
Total nonpeak:					270
Total nonevent user days:					13,170

A second estimate of nonevent use was developed using flow level as the determining factor for use. In interviewing those who kayak and canoe the Clear Creek Whitewater Park, it is clear that flow level is a major determinant of use. Table 5 shows an estimate of user days by flow level from one source. Kayak use is relatively low at flows of 200 cubic feet per second (CFS) or less. In the 200 to 600 CFS range, the course becomes more challenging as the eddy lines and hydraulics take shape, and use levels increase at the course. At flows between 600 and 1,000 CFS, kayak use increases even more, as more features develop (e.g., stronger eddy lines, front surfing of waves, play hole at last drop allows for more maneuvers). At flows over 1,000 CFS, fewer users are present as some of the beginner and intermediate paddlers become intimidated by the size and speed of the current. In addition, at higher flows (over 1000 CFS), some of the hydraulic features in the course design wash out.

Table 5. User days by flow level.

CFS <sup>a</sup>	% of days	Average days/year	Estimated users/day <sup>b</sup>	Average user days/year
0 to 100	58.8%	215	2	430
101 to 200	16.0%	58	15	876
201 to 400	10.1%	37	100	3,683
401 to 600	6.3%	23	150	3,471
601 to 1,000	6.2%	22	200	4,500
1,000+	2.6%	9	80	749
Total	100.0%	365		13,709

a. Based on daily mean flow at the Golden Clear Creek USGS gauge from 9/74 to 9/99.

b. Based on interview with Lucy Ghoda (Golden representative on the Clear Creek Whitewater Board).



### 1.3.2 Competitive Event Use

Regarding the whitewater events at the Clear Creek Whitewater Park, sponsors, organizers, and participants are looking for relatively high flows. Chris Creamer, who organized the Clear Creek Whitewater Festival in 1998, 1999, and 2000, estimates that the rodeo and slalom racing elements of the festival need to have flows between 800 and 1,200 CFS.

As previously stated, there are usually a minimum of three or four events held at the CCWWP in the summer. These events draw large crowds of both participants and observers. In the summer of 2000 there were over 510 event user days, and in 1999 there were 465 (see Table 6 in Section 2 for greater detail).

## 1.4 Total Use Value

The range of nonevent user days from 13,170 (derived from data obtained from City of Golden) to 13,709 (derived from data obtained from Clear Creek Whitewater Board representative), plus the event user days ranging from 465 to 510, sum together for a total user range of 13,635 to 14,219 per year.

To obtain the recreational use value of the kayak course, multiply the user days by the sum of expenditures and consumer surplus. For daily expenditures, we use the estimate of \$33 to \$43 per person, which reflects conservative estimates of out-of-pocket expenses alone, and with travel time included, respectively. Added to this is the consumer surplus realized by each kayaker of from \$34 to \$38 per outing. Thus, our recreational value range per outing is from \$67 to \$81.

Multiplying the user days by the value per outing estimates yields a total recreational beneficial use value of waters diverted in the kayak course of from \$913,545 to \$1.15 million per year.

## 2. Beneficial Value of Competitive Events

The competitive events entail other economic benefits besides ones that accrue from the participants. Table 6 shows a listing of the competition events held at the CCWWP, and information on the number of spectators, and costs associated with organizing the event. We obtained summary information for each event from event organizers.

The Eddie Bauer Championship is an elite level event and was held at three courses in the Denver-metro area over three weeks. These events were timed to lead up to the World Cup whitewater races held on the Ocoee River in Tennessee several weeks later. Participants were

Table 6. Event use at Clear Creek Whitewater Park kayak course, 1999-2000.

Event use	Number of days	Participants per day	Total user days	Number of spectators	Cost of event	Registration fee
<b>Summer 2000</b>						
CSM Spring Icebreaker	2	75	150	150	\$2,500	\$20
Clear Creek Whitewater Festival	1	100	100			
Eddie Bauer Championship	1	110	110	2,000	\$57,000	\$80
U.S. Olympic Qualifying Training	Currently not available					
Front Range Rodeo Series <sup>a</sup>	4-8	20-35	150	120	minimal	none
<b>Total</b>	<b>8-12</b>		<b>510</b>	<b>2,270</b>	<b>\$59,500</b>	
<b>Summer 1999</b>						
CSM Spring Icebreaker	1	70	70	100	\$1,500	\$10
Clear Creek Whitewater Festival	2	100	200	800	na	na
Open Canoe Championship	4	Currently not available				
Junior Olympic Championship	1	75	75	800	\$3,000	\$40
Front Range Rodeo Series <sup>a</sup>	4	20-35	120	120	minimal	none
<b>Total</b>	<b>12</b>		<b>465</b>	<b>1,820</b>	<b>\$4,500</b>	

a. Additional information may be forthcoming.

part of teams representing many countries, including large contingents from France, Australia, and Canada. The competition at the CCWWP was held on the last of the three weekends, and the CCWWP was the preferred training site throughout the Eddie Bauer Championships. On the weekend the Eddie Bauer Championship was held in Golden, the championship was combined with the Clear Creek Whitewater Festival. For the first day of the weekend, there were 100 participants in a whitewater rodeo. There were 110 participants on the second day in the slalom race. The registration fee for participants was \$80. Approximately \$57,000 was spent for organizing and running the part of the event held at the Golden course. This estimate is equal to one-third of the total costs for the event, plus \$6,000 spent on the post-event party held in Golden. These costs included the cost of a music band and a beer garden for each day of the event.<sup>2</sup>

2. Information on the Eddie Bauer Championships provided by event organizer Brian Smiley at Qwest.



Many of the participants in the Eddie Bauer Championship stayed in Golden throughout the duration of the event because of Golden's location between other race sites in Denver and Boulder. Approximately 30 participants stayed at hotels in Golden for a majority of the three weeks during which the event was held. At least another 20 participants stayed at hotels in Golden for the three nights of the weekend the event was held in Golden. In addition, there were 12 coaches present, and some participants were accompanied by spouses or other support.

Annual events held at the CCWWP include the Colorado School of Mines (CSM) Spring Icebreaker, the Front Range Rodeo Series, and the Clear Creek Whitewater Festival. The Spring Icebreaker hosted by the Colorado School of Mines kayak club starts off the whitewater season and is usually held on the third weekend in April. Areas colleges are invited to compete. The event attracts 70-75 racers from 10 colleges and preparatory schools in Colorado. The 2000 event had approximately 150 spectators over the two days of the event. The 1999 event had approximately 100 spectators over one day. There was a \$20 registration fee in 2000 and a \$10 fee in 1999. A citizens race was added for the 2000 season. It attracted 30 participants who each paid a \$5 entry fee.<sup>3</sup>

The Front Range Rodeo Series is held throughout the whitewater season at the CCWWP and other Colorado Front Range sites. The original plan was to alternate sites between the courses at Golden, Confluence Park in Denver, and others, but the Golden course had the best quantity and quality of water. As a result, all but one of the rodeos were held at the CCWWP course. Approximately 20 to 35 racers participate in each day of the rodeo, with an equal number of spectators. There were four days of rodeo held at the CCWWP in the 2000 season.<sup>4</sup>

The Clear Creek Whitewater Festival has been held annually since the opening of the course in the summer of 1998. For the 2000 season, the festival was combined with the Eddie Bauer Championship, as discussed earlier. In the 1999 season, the festival attracted approximately 170 participants and approximately 1,600 spectators over two days. In 1998, the festival attracted approximately the same numbers of participants and spectators as for the 2000 event (210 participants and 2,000 spectators).<sup>5</sup>

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3. Information on the CSM Spring Icebreaker provided by event organizer and CCWWP board member Jim Horan, professor and kayak club organizer at the Colorado School of Mines.

4. Information on the Front Range Rodeo Series provided by event organizer and CCWWP board member Brook Aitken.

5. Information on the Clear Creek Whitewater Festival provided by Chris Cremer, event sponsor and owner of the Alpenglow Mountain Sport shop. Mr. Cremer estimates that participation in the 1999 event was about 80% of the 2000 event.



Two additional elite-level events were held at the CCWWP during the 1999 season. The Junior Olympic Championship features elite or pre-elite level athletes training to represent the country at higher levels of competition such as the Olympics and the World Cup. Approximately 75 racers traveled to Golden from across the United States, including large numbers of racers from the northeastern and southeastern United States, California, and Idaho, and 10 to 12 racers from Colorado. Most participants drove to Golden with at least one other person (usually a coach or family member) and stayed an average of 3 nights in a motel, with some stays lasting considerably longer since racers arrived early to prepare for the event. Registration fee for the event was \$40 per person, or \$3,000 total. Approximately 800 spectators attended the event.<sup>6</sup>

The presence of the CCWWP creates additional value for boat and gear manufacturers. Vendors often set up booths at CCWWP, often for special events but also at some times during the season when there are not events. To the extent that the CCWWP attracts elite level events such as the Eddie Bauer Championship and the Junior Olympic Championships that might not have otherwise come to the Front Range, manufacturers get a chance to associate their products with elite level events and athletes and market their products to event attendees. At the Eddie Bauer Championship, for instance, some athletes spend some time at booths with manufacturers giving testimonials about their experiences using specific boats and gear. More than 10 companies paid to have booths at the Eddie Bauer Championships, including Perception, Dagger, Wave Sport, Mad River, Prijon, Teva, Subaru, Eddie Bauer, and AllAboutRivers.com.

In summary, numerous special events are scheduled for the CCWWP because of the high quality experience provided by the waters diverted within the course. These special events provide numerous important benefits to the participants, the sponsors, spectators, vendors, and the community at large. This section of the report provides detailed information on these events, including benefits above and beyond those included in the monetized estimates shown in Table 1. Specifically:

- ▶ Among the benefits already counted elsewhere (Table 1) are the number of user days for the kayak course (approximately 500 per year). However, the expenditure and consumer surplus values assigned to special event participants probably understate the actual values that apply to the participants in the elite events (i.e., they probably spend more than the local, nonevent participants on food, lodging, and other items, and therefore create a larger economic stimulus to the community than has been projected here).

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6. Information on the Junior Olympic Championship provided by event organizer Nate Lord, teacher at the Dawson School.



- ▶ Among the event-related benefits that are *not* included in the monetized estimates — as summarized in Table 1 — are many of the benefits described above, including:
  - The value derived by the approximately 2000 spectators who participate in the special events.
  - Revenues received by local vendors, and the associated secondary economic stimulus, generated by expenditures made by spectators.
  - Revenues received by the event sponsors and organizers (e.g., registration fees collected), or the economic impact of expenditures made by those parties in hosting the special events.
  - Civic pride and community identity associated with being the host location to elite events, including the Eddie Bauer Championship.
  - Benefits received by boat and gear manufacturers and vendors, by providing a venue where they can show their wares to kayak enthusiasts. By drawing vendors and manufacturers to the site, the kayak course also generates revenues for the local economy (e.g., for food and lodging) that have not been included in the empirical estimates.

### 3. Economic Stimulus to the Local Region

When expenditures on a recreational activity increases, it generates an economic stimulus for the community. The regional economy will be affected through a “multiplier.” The multiplier is a factor that when multiplied by new or increased expenditures (or reductions in expenditures) yields the benefits (or reductions in benefits) to the region. While we do not have precise estimates of the multiplier for kayaking in the City of Golden, some related published literature provides guidance.

Cordell et al. (1990) estimated regional economic multipliers of 2.00 and 2.03 for the total economic effects of water-based recreation expenditures on local economies. Norton et al. (1981) estimated a range of multipliers from 2.03 to 2.88 in an analysis of the total economic value of recreational fishing. We therefore apply a range of literature-based multipliers of from 2.00 (the low end of the range of Cordell et al.), and 2.88 (the high end from Norton et al.).

Applying the multipliers of 2.00 to 2.88 to the out-of-pocket expenditures of \$33 per kayaker day, we obtain a regional economic value of kayaking expenditures of \$441,000 to \$882,000 annually, in addition to the direct expenditures. This estimate is net of the expenditures already



reflected in the benefits estimated for kayak course users [i.e., the multipliers applied are reduced by 1.0 (to 1.0 and 1.88) to obtain a net impact on the local economy above and beyond what is considered in Section 1 of this report].

The \$441,000 to \$882,000 range may be an underestimate of the economic stimulus benefits to the community. Kayakers from outside the immediate region (most notably, those coming to compete in the elite events) are likely to spend far more than \$33 per day during their visit to the Golden area. In addition, the estimates do not include the economic impact of spending by spectators, event organizers, manufacturing representatives, or vendors.

Other economic and nonpecuniary benefits also arise in the City of Golden and surrounding vicinity because of the waters diverted in the course for use in the CCWWP. These likely or potential benefits include enhancement of local property values, improved or renewed community identity and quality of life, and beneficial uses of the waters through a heavy use corridor downstream of the park (as all of the water diverted in the course are available for beneficial use downstream).

## 4. Conclusion

The total recreational and other beneficial use value of waters diverted in the Clear Creek Whitewater Park kayak course, in the City of Golden, is estimated to be from \$1.36 million to \$2.03 million annually. As shown originally in Table 1, these monetized annual benefits values consist of

1. Total willingness to pay (expenditures plus consumer surplus) for those who use the course for kayaking, on the order of \$0.91 million to \$1.15 million per year; plus
2. Economic stimulus to the community on the order of between \$0.44 million to \$0.88 million per year.

In addition to these monetized estimates, numerous additional economic benefits stem from the competitive events: the events in the summer of 2000 drew over 2,200 spectators and event costs totaled about \$60,000. The events hold additional value to boat and gear manufacturers who set up booths at the events. Other nonmonetized benefits are likely to accrue as well.

In addition to the value of the existing course, there are plans for course expansion. The master plan calls for replacing bridges in the 3/4 mile stretch below the course, completing trails underneath the bridges, and building water-level plaza areas. This additional 3/4 mile stretch could provide practice areas for beginners and additional water for those who want to continue downstream. This additional stretch will probably add more beneficial use value to the course



(e.g., drawing more users, and inducing higher participation and use values to existing participants). Such additional benefits will rely on the same volume of water as the existing course already diverts. Thus, the water rights for diversion within the course are likely to produce a higher level of beneficial value in the future.

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